



6

Merchandising Transactions

Figure 6.1 J&J Games. Proper recognition of merchandising transactions gives management a clear inventory picture to make informed business decisions. (credit: modification of "Video game retail store, consumerism at its finest" by Bas de Reuver/Flickr, CC BY 2.0)

Chapter Outline

- L0 6.1** Compare and Contrast Merchandising versus Service Activities and Transactions
- L0 6.2** Compare and Contrast Perpetual versus Periodic Inventory Systems
- L0 6.3** Analyze and Record Transactions for Merchandise Purchases Using the Perpetual Inventory System
- L0 6.4** Analyze and Record Transactions for the Sale of Merchandise Using the Perpetual Inventory System
- L0 6.5** Discuss and Record Transactions Applying the Two Commonly Used Freight-In Methods
- L0 6.6** Describe and Prepare Multi-Step and Simple Income Statements for Merchandising Companies
- L0 6.7** Appendix: Analyze and Record Transactions for Merchandise Purchases and Sales Using the Periodic Inventory System



Why It Matters

Jason and his brother James own a small business called J&J Games, specializing in the sale of video games and accessories. They purchase their merchandise from a Marcus Electronics manufacturer and sell directly to consumers.

When J&J Games (J&J) purchases merchandise from Marcus, they establish a contract detailing purchase costs, payment terms, and shipping charges. It is important to establish this contract so that J&J and Marcus understand the inventory responsibilities of each party. J&J Games typically does not pay with cash immediately and is given an option for delayed payment with the possibility of a discount for early payment. The delayed payment helps continue the strong relationship between the two parties, but the option for early

payment gives J&J a monetary incentive to pay early and allow Marcus to use the funds for other business purposes. Until J&J pays on their account, this outstanding balance remains a liability for J&J.

J&J Games successfully sells merchandise on a regular basis to customers. As the business grows, the company later considers selling gaming accessories in bulk orders to other businesses. While these bulk sales will provide a new growth opportunity for J&J, the company understands that these clients may need time to pay for their orders. This can create a dilemma; J&J Games needs to offer competitive incentives for these clients while also maintaining the ability to pay their own obligations. They will carefully consider sales discounts, returns, and allowance policies that do not overextend their company's financial position while giving them an opportunity to create lasting relationships with a new customer base.

6.1 Compare and Contrast Merchandising versus Service Activities and Transactions

Every week, you run errands for your household. These errands may include buying products and services from local retailers, such as gas, groceries, and clothing. As a consumer, you are focused solely on purchasing your items and getting home to your family. You are probably not thinking about how your purchases impact the businesses you frequent. Whether the business is a service or a merchandising company, it tracks sales from customers, purchases from manufacturers or other suppliers, and costs that affect their everyday operations. There are some key differences between these business types in the manner and detail required for transaction recognition.

Comparison of Merchandising Transactions versus Service Transactions

Some of the biggest differences between a service company and a merchandising company are what they sell, their typical financial transactions, their operating cycles, and how these translate to financial statements.

A **service company** provides intangible services to customers and does not have inventory. Some examples of service companies include lawyers, doctors, consultants, and accountants. Service companies often have simple financial transactions that involve taking customer deposits, billing clients after services have been provided, providing the service, and processing payments. These activities may occur frequently within a company's accounting cycle and make up a portion of the service company's operating cycle.

An **operating cycle** is the amount of time it takes a company to use its cash to provide a product or service and collect payment from the customer. Completing this cycle faster puts the company in a more stable financial position. A typical operating cycle for a service company begins with having cash available, providing service to a customer, and then receiving cash from the customer for the service ([Figure 6.2](#)).

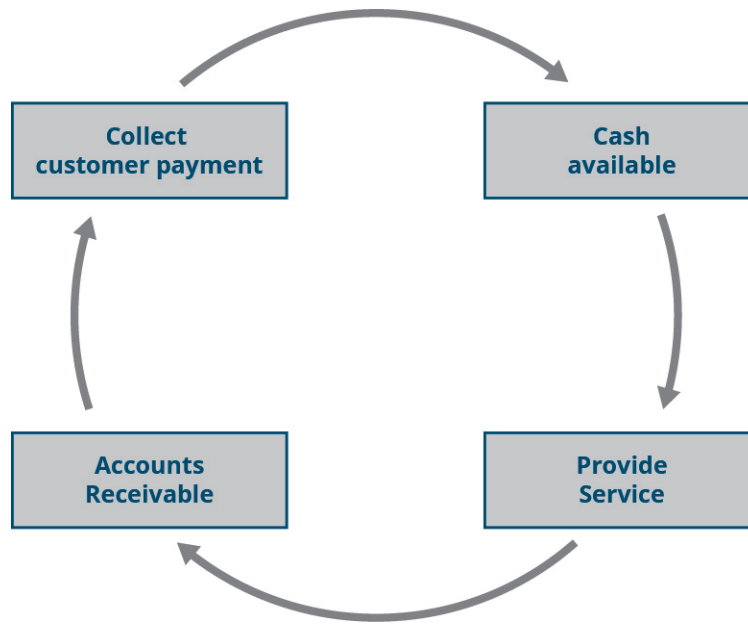


Figure 6.2 Typical Operating Cycle for a Service Firm. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The income statement format is fairly simple as well (see [Figure 6.3](#)). Revenues (sales) are reported first, followed by any period operating expenses. The outcome of sales less expenses, which is net income (loss), is calculated from these accounts.

APPLE GOODS Income Statement Year Ended December 31, 2018	
Sales	\$300,000
Expenses	<u>175,000</u>
Net Income (Loss)	<u>125,000</u>

Figure 6.3 Service Company Income Statement. Expenses are subtracted directly from Sales to produce net income (loss). (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

A **merchandising company** resells finished goods (inventory) produced by a manufacturer (supplier) to customers. Some examples of merchandising companies include **Walmart**, **Macy's**, and **Home Depot**. Merchandising companies have financial transactions that include: purchasing merchandise, paying for merchandise, storing inventory, selling merchandise, and collecting customer payments. A typical operating cycle for a merchandising company starts with having cash available, purchasing inventory, selling the merchandise to customers, and finally collecting payment from customers ([Figure 6.4](#)).

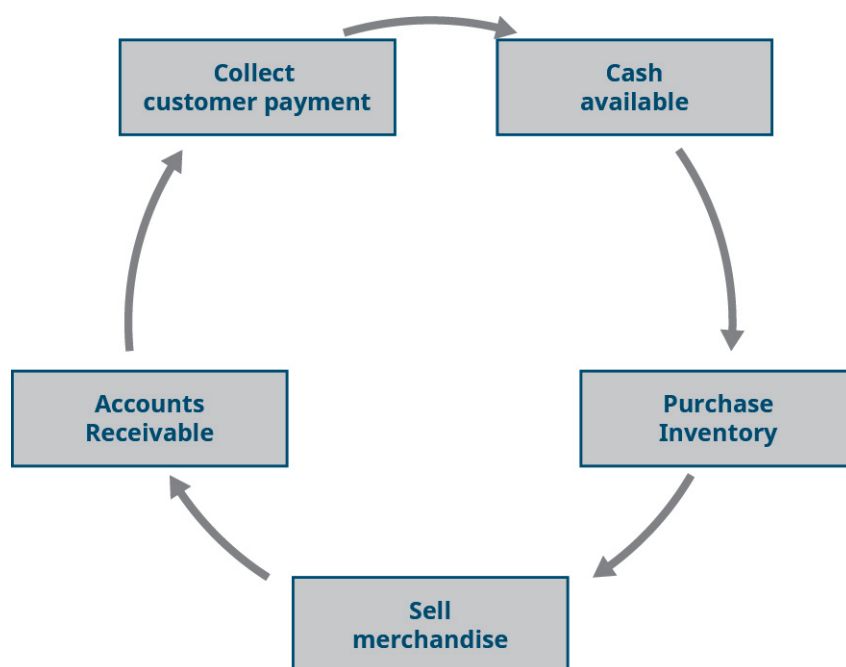


Figure 6.4 Typical Operating Cycle for a Merchandising Company. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Their income statement format is a bit more complicated than for a service company and is discussed in greater detail in [Describe and Prepare Multi-Step and Simple Income Statements for Merchandising Companies](#). Note that unlike a service company, the merchandiser, also sometimes labeled as a retailer, must first resolve any sale reductions and merchandise costs, known as Cost of Goods Sold, before determining other expenses and net income (loss). A simple retailer income statement is shown in [Figure 6.5](#) for comparison.

AIR SUPPLY PLUS Income Statement Year Ended December 31, 2018	
Net Sales	\$350,000
Cost of Goods Sold	<u>50,000</u>
Gross Margin	300,000
Expenses	<u>100,000</u>
Net Income (Loss)	<u><u>\$200,000</u></u>

Figure 6.5 Merchandise Company Income Statement. Cost of Goods Sold is deducted from net sales to calculate gross margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Characteristics of Merchandising Transactions

Merchandising transactions are separated into two categories: purchases and sales. In general, a purchase transaction occurs between a manufacturer and the merchandiser, also called a retailer. A sales transaction occurs between a customer and the merchandiser or retailer. We will now discuss the characteristics that create purchase and sales transactions for a retailer. A merchandiser will need to purchase merchandise for its business to continue operations and can use several purchase situations to accomplish this.

Purchases with Cash or on Credit

A retailer typically conducts business with a manufacturer or with a supplier who buys from a manufacturer. The retailer will purchase their finished goods for resale. When the purchase occurs, the retailer may pay for the merchandise with cash or on credit. If the retailer pays for the merchandise with cash, they would be trading one current asset, Cash, for another current asset, Merchandise Inventory or just Inventory, depending upon the company's account titles. In this example, they would record a debit entry to Merchandise Inventory and a credit entry to Cash. If they decide to pay on credit, a liability would be created, and Accounts Payable would be credited rather than Cash. For example, a clothing store may pay a jeans manufacturer cash for 50 pairs of jeans, costing \$25 each. The following entry would occur.

JOURNAL			
Date	Account	Debit	Credit
	Merchandise Inventory Cash <i>To recognize purchase with cash</i>	1,250	1,250

If this same company decides to purchase merchandise on credit, Accounts Payable is credited instead of Cash.

JOURNAL			
Date	Account	Debit	Credit
	Merchandise Inventory Accounts Payable <i>To recognize purchase on credit</i>	1,250	1,250

Merchandise Inventory is a current asset account that houses all purchase costs associated with the transaction. This includes the cost of the merchandise, shipping charges, insurance fees, taxes, and any other costs that gets the products ready for sale. **Gross purchases** are defined as the original amount of the purchase without considering reductions for purchase discounts, returns, or allowances. Once the purchase reductions are adjusted at the end of a period, net purchases are calculated. **Net purchases** (see [Figure 6.6](#)) equals gross purchases less purchase discounts, purchase returns, and purchase allowances.

Income Statement
Gross Purchases – Purchase Discounts – Purchase Returns – <u>Purchase Allowances</u> = Net Purchases

Figure 6.6 Purchase Transactions' Effects on Gross Purchases. Deducting purchase discounts, returns, and allowances from gross purchases will result in net purchases. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Purchase Discounts

If a retailer, pays on credit, they will work out payment terms with the manufacturer. These payment terms establish the purchase cost, an invoice date, any discounts, shipping charges, and the final payment due date.

Purchase discounts provide an incentive for the retailer to pay early on their accounts by offering a reduced

rate on the final purchase cost. Receiving payment in a timely manner allows the manufacturer to free up cash for other business opportunities and decreases the risk of nonpayment.

To describe the discount terms, the manufacturer can write descriptions such as 2/10, n/30 on the invoice. The “2” represents a discount rate of 2%, the “10” represents the discount period in days, and the “n/30” means “net of 30” days, representing the entire payment period without a discount application. So, “2/10, n/30” reads as, “The company will receive a 2% discount on their purchase if they pay in 10 days. Otherwise, they have 30 days from the date of the sale to pay in full, no discount received.” In some cases, if the retailer exceeds the full payment period (30 days in this example), the manufacturer may charge interest as a penalty for late payment. The number of days allowed for both the discount period and the full payment period begins counting from the invoice date.

If a merchandiser pays an invoice within the discount period, they receive a discount, which affects the cost of the inventory. Let’s say a retailer pays within the discount window. They would need to show a credit to the Merchandise Inventory account, recognizing the decreased final cost of the merchandise. This aligns with the cost principle, which requires a company to record an asset’s value at the cost of acquisition. In addition, since cash is used to pay the manufacturer, Cash is credited. The debit to Accounts Payable does not reflect the discount taken: it reflects fulfillment of the liability in full, and the credits to Merchandise Inventory and Cash reflect the discount taken, as demonstrated in the following example.

If the retailer does not pay within the discount window, they do not receive a discount but are still required to pay the full invoice price at the end of the term. In this case, Accounts Payable is debited and Cash is credited, but no reductions are made to Merchandise Inventory.

For example, suppose a kitchen appliances retailer purchases merchandise for their store from a manufacturer on September 1 in the amount of \$1,600. Credit terms are 2/10, n/30 from the invoice date of September 1. The retailer makes payment on September 5 and receives the discount. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Sept. 5	Accounts Payable Cash Merchandise Inventory <i>To recognize purchase payment with discount taken</i>	1,600	1,568 32

Let’s consider the same situation except the retailer did not make the discount window and paid in full on September 30. The entry would recognize the following instead.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Payable Cash <i>To recognize purchase payment without discount applied</i>	1,600	1,600

There are two kinds of purchase discounts, cash discounts and trade discounts. **Cash discount** provides a discount on the final price after purchase if a retailer pays within a discount window. On the other hand, a **trade discount** is a reduction to the advertised manufacturer’s price that occurs during negotiations of a final purchase price before the inventory is purchased. The trade discount may become larger if the retailer purchases more in one transaction. While the cash discount is recognized in journal entries, a trade discount is

not, since it is negotiated before purchase.

For example, assume that a retailer is considering an order for \$4,000 in inventory on September 1. The manufacturer offers the retailer a 15% discount on the price if they place the order by September 5. Assume that the retailer places the \$4,000 order on September 3. The purchase price would be \$4,000 less the 15% discount of \$600, or \$3,400. Since the trade discount is based on when the order was placed and not on any potential payment discounts, the initial journal entry to record the purchase would reflect the discounted amount of \$3,400. Even if the retailer receives a trade discount, they may still be eligible for an additional purchase discount if they pay within the discount window of the invoice.

JOURNAL			
Date	Account	Debit	Credit
	Merchandise Inventory Accounts Payable <i>To record purchase on credit</i>	3,400	3,400

Purchase Returns and Allowances

If a retailer is unhappy with their purchase—for example, if the order is incorrect or if the products are damaged—they may receive a partial or full refund from the manufacturer in a **purchase returns and allowances** transaction. A purchase return occurs when merchandise is returned and a full refund is issued. A purchase allowance occurs when merchandise is kept and a partial refund is issued. In either case, a manufacturer will issue a debit memo to acknowledge the change in contract terms and the reduction in the amount owed.

To recognize a return or allowance, the retailer will reduce Accounts Payable (or increase Cash) and reduce Merchandise Inventory. Accounts Payable decreases if the retailer has yet to pay on their account, and Cash increases if they had already paid and received a subsequent refund. Merchandise Inventory decreases to show the reduction of inventory cost from the retailer's inventory stock. Note that if a retailer receives a refund before they make a payment, any discount taken must be from the new cost of the merchandise less the refund.

To illustrate, assume that Carter Candle Company received a shipment from a manufacturer that had 150 candles that cost \$150. Assume that they have not yet paid for these candles and 100 of the candles are badly damaged and must be returned. The other 50 candles are marketable, but are not the right style. The candle company returned the 100 defective candles for a full refund and requested and received an allowance of \$20 for the 50 improper candles they kept. The first entry shows the return and the second entry shows the allowance.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Payable Merchandise Inventory <i>To recognize purchase return for full refund</i>	100	100
	Accounts Payable Merchandise Inventory <i>To recognize purchase allowance with partial refund</i>	20	20

It is possible to show these entries as one, since they affect the same accounts and were requested at the same time. From a manager's standpoint, though, it may be better to record these as separate transactions to

better understand the specific reasons for the reduction to inventory (either return or allowance) and restocking needs.

ETHICAL CONSIDERATIONS

Internal Controls over Merchandise Returns^[1]

Returning merchandise requires more than an accountant making journal entries or a clerk restocking items in a warehouse or store. An ethical accountant understands that there must be internal controls governing the return of items. As used in accounting, the term “internal control” describes the methodology of implementing accounting and operational checkpoints in a system to ensure compliance with sound business and operational practices while permitting the proper recording of accounting information. All transactions require both operational and accounting actions to ensure that the amounts have been recorded in the accounting records and that operational requirements have been met.

Merchandise return controls require that there be a separation of duties between the employee approving the return and the person recording the return of merchandise in the accounting records. Basically, the person performing the return should not be the person recording the event in the accounting records. This is called *separation of duties* and is just one example of an internal control that should be used when merchandise is returned.

Every company faces different challenges with returns, but one of the most common challenges includes fake or fictitious returns. The use of internal controls is a protective action the company undertakes, with the assistance of professional accountants, to ensure that fictitious returns do not occur. The internal controls may include prescribed actions of employees, special tags on merchandise, specific store layouts that ensure customers pass checkout points before leaving the store, cameras to record activity in the facility, and other activities and internal controls that go beyond accounting and journal entries to ensure that assets of a company are protected.

Characteristics of Sales Transactions

Business owners may encounter several sales situations that can help meet customer needs and control inventory operations. For example, some customers will expect the opportunity to buy using short-term credit and often will assume that they will receive a discount for paying within a brief period. The mechanics of sales discounts are demonstrated later in this section.

Sales with Cash or on Credit

As previously mentioned, a sale is usually considered a transaction between a merchandiser or retailer and a customer. When a sale occurs, a customer has the option to pay with cash or credit. For our purposes, let's consider “credit” as credit extended from the business directly to the customer.

Whether or not a customer pays with cash or credit, a business must record two accounting entries. One entry recognizes the sale and the other recognizes the cost of the sale. The sales entry consists of a debit to either

1 Committee of Sponsoring Organizations of the Treadway Commission (COSO). *Internal Control—Integrated Framework*. May 2013. https://na.theiia.org/standards-guidance/topics/Documents/Executive_Summary.pdf

Cash or Accounts Receivable (if paying on credit), and a credit to the revenue account, Sales.

The amount recorded in the Sales account is the gross amount. **Gross sales** is the original amount of the sale without factoring in any possible reductions for discounts, returns, or allowances. Once those reductions are recorded at the end of a period, net sales are calculated. **Net sales** (see [Figure 6.7](#)) equals gross sales less sales discounts, sales returns, and sales allowances. Recording the sale as it occurs allows the company to align with the revenue recognition principle. The revenue recognition principle requires companies to record revenue when it is earned, and revenue is earned when a product or service has been provided.

Income Statement	
Gross Sales	
– Sales Discounts	
– Sales Returns	
– <u>Sales Allowances</u>	
= Net Sales	

Figure 6.7 Sales Transactions' Effect on Gross Sales. Deducting sales discounts, returns, and allowances from gross sales, will result in net sales. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The second accounting entry that is made during a sale describes the cost of sales. The cost of sales entry includes decreasing Merchandise Inventory and increasing Cost of Goods Sold (COGS). The decrease to Merchandise Inventory reflects the reduction in the inventory account value due to the sold merchandise. The increase to COGS represents the expense associated with the sale. The **cost of goods sold (COGS)** is an expense account that houses all costs associated with getting the product ready for sale. This could include purchase costs, shipping, taxes, insurance, stocking fees, and overhead related to preparing the product for sale. By recording the cost of sale when the sale occurs, the company aligns with the matching principle. The matching principle requires companies to match revenues generated with related expenses in the period in which they are incurred.

For example, when a shoe store sells 150 pairs of athletic cleats to a local baseball league for \$1,500 (cost of \$900), the league may pay with cash or credit. If the baseball league elects to pay with cash, the shoe store would debit Cash as part of the sales entry. If the baseball league decides to use a line of credit extended by the shoe store, the shoe store would debit Accounts Receivable as part of the sales entry instead of Cash. With the sales entry, the shoe store must also recognize the \$900 cost of the shoes sold and the \$900 reduction in Merchandise Inventory.

JOURNAL			
Date	Account	Debit	Credit
	Cash	1,500	
	Sales		1,500
	<i>To recognize cash sale</i>		
	Cost of Goods Sold	900	
	Merchandise Inventory		900
	<i>To recognize the cost of sale</i>		

You may have noticed that sales tax has not been discussed as part of the sales entry. Sales taxes are liabilities

that require a portion of every sales dollar be remitted to a government entity. This would reduce the amount of cash the company keeps after the sale. Sales tax is relevant to consumer sales and is discussed in detail in [Current Liabilities](#).

There are a few transactional situations that may occur after a sale is made that have an effect on reported sales at the end of a period.

Sales Discounts

Sales discounts are incentives given to customers to entice them to pay off their accounts early. Why would a retailer offer this? Wouldn't they rather receive the entire amount owed? The discount serves several purposes that are similar to the rationale manufacturers consider when offering discounts to retailers. It can help solidify a long-term relationship with the customer, encourage the customer to purchase more, and decreases the time it takes for the company to see a liquid asset (cash). Cash can be used for other purposes immediately such as reinvesting in the business, paying down loans quicker, and distributing dividends to shareholders. This can help grow the business at a more rapid rate.

Similar to credit terms between a retailer and a manufacturer, a customer could see credit terms offered by the retailer in the form of 2/10, n/30. This particular example shows that if a customer pays their account within 10 days, they will receive a 2% discount. Otherwise, they have 30 days to pay in full but do not receive a discount. If the customer does not pay within the discount window, but pays within 30 days, the retailing company records a credit to Accounts Receivable, and a debit to Cash for the full amount stated on the invoice. If the customer is able to pay the account within the discount window, the company records a credit to Accounts Receivable, a debit to Cash, and a debit to Sales Discounts.

The **sales discounts** account is a contra revenue account that is deducted from gross sales at the end of a period in the calculation of net sales. Sales Discounts has a normal debit balance, which offsets Sales that has a normal credit balance.

Let's assume that a customer purchased 10 emergency kits from a retailer at \$100 per kit on credit. The retailer offered the customer 2/10, n/30 terms, and the customer paid within the discount window. The retailer recorded the following entry for the initial sale.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable Sales <i>To reflect the sale on credit</i>	1,000	1,000

Since the retail doesn't know at the point of sale whether or not the customer will qualify for the sales discount, the entire account receivable of \$1,000 is recorded on the retailer's journal.

Also assume that the retail's costs of goods sold in this example were \$560 and we are using the perpetual inventory method. The journal entry to record the sale of the inventory follows the entry for the sale to the customer.

JOURNAL			
Date	Account	Debit	Credit
	Cost of Goods Sold Merchandise inventory <i>To reflect the sale of inventory</i>	560	560

Since the customer paid the account in full within the discount qualification period of ten days, the following journal entry on the retailer's books reflects the payment.

JOURNAL			
Date	Account	Debit	Credit
	Cash Sales Discounts Accounts Receivable <i>To recognize a sales discount and collection of receivable</i> <i>(\$1,000 × 2%)</i>	980 20	1,000

Now, assume that the customer paid the retailer within the 30-day period but did not qualify for the discount. The following entry reflects the payment without the discount.

JOURNAL			
Date	Account	Debit	Credit
	Cash Accounts Receivable <i>To reflect the collection of accounts receivable</i>	1,000	1,000

Please note that the entire \$1,000 account receivable created is eliminated under both payment options. When the discount is missed, the retail received the entire \$1,000. However, when the discount was received by the customer, the retailer received \$980, and the remaining \$20 is recorded in the sales discount account.

ETHICAL CONSIDERATIONS

Ethical Discounts

Should employees or companies provide discounts to employees of other organizations? An accountant's employing organization usually has a code of ethics or conduct that addresses policies for employee discounts. While many companies offer their employees discounts as a benefit, some companies also offer discounts or free products to non-employees who work for governmental organizations. Accountants may need to work in situations where other entities' codes of ethics/conduct do not permit employees to accept discounts or free merchandise. What should the accountant's company do when an outside organization's code of ethics and conduct does not permit its employees to accept discounts or free merchandise?

The long-term benefits of discounts are contrasted with organizational codes of ethics and conduct that limit others from accepting discounts from your organization. The International Association of Chiefs of Police's Law Enforcement Code of Ethics limits the ability of police officers to accept discounts.^[2] These

discounts may be as simple as a free cup of coffee, other gifts, rewards points, and hospitality points or discounts for employees or family members of the governmental organization's employees. Providing discounts may create ethical dilemmas. The ethical dilemma may not arise from the accountant's employer, but from the employer of the person outside the organization receiving the discount.

The World Customs Organization's *Model Code of Ethics and Conduct* states that "customs employees are called upon to use their best judgment to avoid situations of real or perceived conflict. In doing so, they should consider the following criteria on gifts, hospitality and other benefits, bearing in mind the full context of this Code. Public servants shall not accept or solicit any gifts, hospitality or other benefits that may have a real or apparent influence on their objectivity in carrying out their official duties or that may place them under obligation to the donor."^[3]

At issue is that the employee of the outside organization is placed in a conflict between their personal interests and the interest of their employer. The accountant's employer's discount has created this conflict. In these situations, it is best for the accountant's employer to respect the other organization's code of conduct. As well, it might be illegal for the accountant's employer to provide discounts to a governmental organization's employees. The professional accountant should always be aware of the discount policy of any outside company prior to providing discounts to the employees of other companies or organizations.

Sales Returns and Allowances

If a customer purchases merchandise and is dissatisfied with their purchase, they may receive a refund or a partial refund, depending on the situation. When the customer returns merchandise and receives a full refund, it is considered a sales return. When the customer keeps the defective merchandise and is given a partial refund, it is considered a sales allowance. The biggest difference is that a customer returns merchandise in a sales return and keeps the merchandise in a sales allowance.

When a customer returns the merchandise, a retailer issues a credit memo to acknowledge the change in contract and reduction to Accounts Receivable, if applicable. The retailer records an entry acknowledging the return by reducing either Cash or Accounts Receivable and increasing Sales Returns and Allowances. Cash would decrease if the customer had already paid for the merchandise and cash was thus refunded to the customer. Accounts Receivable would decrease if the customer had not yet paid on their account. Like Sales Discounts, the **sales returns and allowances** account is a contra revenue account with a normal debit balance that reduces the gross sales figure at the end of the period.

Beyond recording the return, the retailer must also determine if the returned merchandise is in "sellable condition." An item is in sellable condition if the merchandise is good enough to warrant a sale to another customer in the future. If so, the company would record a decrease to Cost of Goods Sold (COGS) and an increase to Merchandise Inventory to return the merchandise back to the inventory for resale. This is recorded at the merchandise's costs of goods sold value. If the merchandise is in sellable condition but will not realize the original cost of the good, the company must estimate the loss at this time.

2 International Association of Chiefs of Police (IACP). Law Enforcement Code of Ethics. October, 1957. <https://www.theiacp.org/resources/law-enforcement-code-of-ethics>

3 World Customs Organization. *Model Code of Ethics and Conduct*. n.d. <http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/integrity/instruments-and-tools/model-code-of-ethics-and-conduct.pdf?la=en>

On the other hand, when the merchandise is returned and is not in sellable condition, the retailer must estimate the value of the merchandise in its current condition and record a loss. This would increase Merchandise Inventory for the assessed value of the merchandise in its current state, decrease COGS for the original expense amount associated with the sale, and increase Loss on Defective Merchandise for the unsellable merchandise lost value.

JOURNAL			
Date	Account	Debit	Credit
	Merchandise Inventory	\$\$\$	
	Loss on Defective Merchandise	\$\$\$	
	Cost of Goods Sold		\$\$\$
	<i>To account for merchandise in unsellable condition</i>		

Let's say a customer purchases 300 plants on credit from a nursery for \$3,000 (with a cost of \$1,200). The first entry reflects the initial sale by the nursery. The second entry reflects the cost of goods sold.

JOURNAL			
Date	Account	Debit	Credit
	Accounts receivable	3,000	
	Sales		3,000
	<i>To recognize the sale of 300 plants</i>		
	Cost of goods sold	1,200	
	Merchandise inventory		1,200
	<i>To reflect the cost of goods sold for sale of 300 plants</i>		

Upon receipt, the customer discovers the plants have been infested with bugs and they send all the plants back. Assuming that the customer had not yet paid the nursery any of the \$3,000 accounts receivable and assuming that the nursery determines the condition of the returned plants to be sellable, the retailer would record the following entries.

JOURNAL			
Date	Account	Debit	Credit
	Sales Returns and Allowances	3,000	
	Accounts Receivable		3,000
	<i>To recognize a sales return</i>		
	Merchandise Inventory	1,200	
	Cost of Goods Sold		1,200
	<i>To return inventory to stock for resale</i>		

For another example, let's say the plant customer was only dissatisfied with 100 of the plants. After speaking with the nursery, the customer decides to keep 200 of the plants for a partial refund of \$1,000. The nursery would record the following entry for sales allowance associated with 100 plants.

JOURNAL			
Date	Account	Debit	Credit
	Sales Returns and Allowances	1,000	
	Accounts Receivable		1,000
	<i>To record a sales allowance for 100 plants</i>		

The nursery would also record a corresponding entry for the inventory and the cost of goods sold for the 100 returned plants.

JOURNAL			
Date	Account	Debit	Credit
	Merchandise Inventory Cost of Goods Sold <i>To reflect the return of 100 plants</i>	400	400

For both the return and the allowance, if the customer had already paid their account in full, Cash would be affected rather than Accounts Receivable.

There are differing opinions as to whether sales returns and allowances should be in separate accounts. Separating the accounts would help a retailer distinguish between items that are returned and those that the customer kept. This can better identify quality control issues, track whether a customer was satisfied with their purchase, and report how many resources are spent on processing returns. Most companies choose to combine returns and allowances into one account, but from a manager's perspective, it may be easier to have the accounts separated to make current determinations about inventory.

You may have noticed our discussion of credit sales did not include third-party credit card transactions. This is when a customer pays with a credit or debit card from a third-party, such as **Visa**, **MasterCard**, **Discover**, or **American Express**. These entries and discussion are covered in more advanced accounting courses. A more comprehensive example of merchandising purchase and sale transactions occurs in [Calculate Activity-Based Product Costs \(http://cnx.org/content/m68137/latest/\)](http://cnx.org/content/m68137/latest/) and [Compare and Contrast Traditional and Activity-Based Costing Systems \(http://cnx.org/content/m68138/latest/\)](http://cnx.org/content/m68138/latest/), applying the perpetual inventory method.

LINK TO LEARNING

Major retailers must find new ways to manage inventory and reduce operating cycles to stay competitive. Companies such as **Amazon.com Inc.**, have been able to reduce their operating cycles and increase their receivable collection rates to a level better than many of their nearest competitors. Check out [Stock Analysis on Net \(https://openstax.org/l/50StockAnalyNet\)](https://openstax.org/l/50StockAnalyNet) to find out how they do this and to see a comparison of operating cycles for top retail brands.

6.2 Compare and Contrast Perpetual versus Periodic Inventory Systems

There are two ways in which a company may account for their inventory. They can use a perpetual or periodic inventory system. Let's look at the characteristics of these two systems.

Characteristics of the Perpetual and Periodic Inventory Systems

A **perpetual inventory system** automatically updates and records the inventory account every time a sale, or purchase of inventory occurs. You can consider this "recording as you go." The recognition of each sale or

purchase happens immediately upon sale or purchase.

A **periodic inventory system** updates and records the inventory account at certain, scheduled times at the end of an operating cycle. The update and recognition could occur at the end of the month, quarter, and year. There is a gap between the sale or purchase of inventory and when the inventory activity is recognized.

Generally Accepted Accounting Principles (GAAP) do not state a required inventory system, but the periodic inventory system uses a Purchases account to meet the requirements for recognition under GAAP. IFRS requirements are very similar. The main difference is that assets are valued at net realizable value and can be increased or decreased as values change. Under GAAP, once values are reduced they cannot be increased again.



Figure 6.8 Inventory Systems. (credit: “Untitled” by Marcin Wichary/Flickr, CC BY 2.0)

CONTINUING APPLICATION AT WORK

Merchandising Transactions

Gearhead Outfitters is a retailer of outdoor-related gear such as clothing, footwear, backpacks, and camping equipment. Therefore, one of the biggest assets on **Gearhead's** balance sheet is inventory. The proper presentation of inventory in a company's books leads to a number of accounting challenges, such as:

- What method of accounting for inventory is appropriate?
- How often should inventory be counted?
- How will inventory in the books be valued?
- Is any of the inventory obsolete and, if so, how will it be accounted for?
- Is all inventory included in the books?
- Are items included as inventory in the books that should not be?

Proper application of accounting principles is vital to keep accurate books and records. In accounting for inventory, matching principle, valuation, cutoff, completeness, and cost flow assumptions are all important. Did **Gearhead** match the cost of sale with the sale itself? Was only inventory that belonged to the company as of the period end date included? Did **Gearhead** count all the inventory? Perhaps some

goods were in transit (on a delivery truck for a sale just made, or en route to **Gearhead**). What is the correct cost flow assumption for **Gearhead** to accurately account for inventory? Should it use a first-in, first-out method, or last-in, first-out?

These are all accounting challenges **Gearhead** faces with respect to inventory. As inventory will represent one of the largest items on the balance sheet, it is vital that **Gearhead** management take due care with decisions related to inventory accounting. Keeping in mind considerations such as gross profit, inventory turnover, meeting demand, point-of-sale systems, and timeliness of accounting information, what other accounting challenges might arise regarding the company's inventory accounting processes?

Inventory Systems Comparison

There are some key differences between perpetual and periodic inventory systems. When a company uses the perpetual inventory system and makes a purchase, they will automatically update the Merchandise Inventory account. Under a periodic inventory system, Purchases will be updated, while Merchandise Inventory will remain unchanged until the company counts and verifies its inventory balance. This count and verification typically occur at the end of the annual accounting period, which is often on December 31 of the year. The Merchandise Inventory account balance is reported on the balance sheet while the Purchases account is reported on the Income Statement when using the periodic inventory method. The Cost of Goods Sold is reported on the Income Statement under the perpetual inventory method.

JOURNAL			
Date	Account	Debit	Credit
	Perpetual		
	Merchandise Inventory	\$\$\$	
	Accounts Payable		\$\$\$
	Periodic		
	Purchases	\$\$\$	
	Accounts Payable		\$\$\$

A purchase return or allowance under perpetual inventory systems updates Merchandise Inventory for any decreased cost. Under periodic inventory systems, a temporary account, Purchase Returns and Allowances, is updated. Purchase Returns and Allowances is a contra account and is used to reduce Purchases.

JOURNAL			
Date	Account	Debit	Credit
	Perpetual		
	Accounts Payable	\$\$\$	
	Merchandise Inventory		\$\$\$
	Periodic		
	Accounts Payable	\$\$\$	
	Purchase Returns and Allowances		\$\$\$

When a purchase discount is applied under a perpetual inventory system, Merchandise Inventory decreases for the discount amount. Under a periodic inventory system, Purchase Discounts (a temporary, contra account), increases for the discount amount and Merchandise Inventory remains unchanged.

JOURNAL			
Date	Account	Debit	Credit
	Perpetual		
	Accounts Payable	\$\$\$	
	Cash		\$\$\$
	Merchandise Inventory		\$\$\$
	Periodic		
	Accounts Payable	\$\$\$	
	Cash		\$\$\$
	Purchase Discounts		\$\$\$

When a sale occurs under perpetual inventory systems, two entries are required: one to recognize the sale, and the other to recognize the cost of sale. For the cost of sale, Merchandise Inventory and Cost of Goods Sold are updated. Under periodic inventory systems, this cost of sale entry does not exist. The recognition of merchandise cost only occurs at the end of the period when adjustments are made and temporary accounts are closed.

JOURNAL			
Date	Account	Debit	Credit
	Perpetual		
	Accounts Receivable	\$\$\$	
	Sales		\$\$\$
	Cost of Goods Sold	\$\$\$	
	Merchandise Inventory		\$\$\$
	Periodic		
	Accounts Receivable	\$\$\$	
	Sales		\$\$\$

When a sales return occurs, perpetual inventory systems require recognition of the inventory's condition. This means a decrease to COGS and an increase to Merchandise Inventory. Under periodic inventory systems, only the sales return is recognized, but not the inventory condition entry.

JOURNAL			
Date	Account	Debit	Credit
	Perpetual		
	Sales Returns and Allowances	\$\$\$	
	Accounts Receivable		\$\$\$
	Merchandise Inventory	\$\$\$	
	Cost of Goods Sold		\$\$\$
	Periodic		
	Sales Returns and Allowances	\$\$\$	
	Accounts Receivable		\$\$\$

A sales allowance and sales discount follow the same recording formats for either perpetual or periodic inventory systems.

JOURNAL			
Date	Account	Debit	Credit
	Perpetual and Periodic		
	Sales Returns and Allowances	\$\$\$	
	Accounts Receivable		\$\$\$
	Cash	\$\$\$	
	Sales Discount	\$\$\$	
	Accounts Receivable		\$\$\$

Adjusting and Closing Entries for a Perpetual Inventory System

You have already explored adjusting entries and the closing process in prior discussions, but merchandising activities require additional adjusting and closing entries to inventory, sales discounts, returns, and allowances. Here, we'll briefly discuss these additional closing entries and adjustments as they relate to the perpetual inventory system.

At the end of the period, a perpetual inventory system will have the Merchandise Inventory account up-to-date; the only thing left to do is to compare a physical count of inventory to what is on the books. A **physical inventory count** requires companies to do a manual "stock-check" of inventory to make sure what they have recorded on the books matches what they physically have in stock. Differences could occur due to mismanagement, shrinkage, damage, or outdated merchandise. Shrinkage is a term used when inventory or other assets disappear without an identifiable reason, such as theft. For a perpetual inventory system, the adjusting entry to show this difference follows. This example assumes that the merchandise inventory is overstated in the accounting records and needs to be adjusted downward to reflect the actual value on hand.

JOURNAL			
Date	Account	Debit	Credit
	Cost of Goods Sold	\$\$\$	
	Merchandise Inventory		\$\$\$
	<i>To adjust merchandise inventory of books</i>		

If a physical count determines that merchandise inventory is understated in the accounting records, Merchandise Inventory would need to be increased with a debit entry and the COGS would be reduced with a credit entry. The adjusting entry is:

JOURNAL			
Date	Account	Debit	Credit
	Merchandise Inventory Cost of Goods Sold <i>To adjust merchandise inventory of books</i>	\$\$\$	\$\$\$

To sum up the potential adjustment process, after the merchandise inventory has been verified with a physical count, its book value is adjusted upward or downward to reflect the actual inventory on hand, with an accompanying adjustment to the COGS.

Not only must an adjustment to Merchandise Inventory occur at the end of a period, but closure of temporary merchandising accounts to prepare them for the next period is required. Temporary accounts requiring closure are Sales, Sales Discounts, Sales Returns and Allowances, and Cost of Goods Sold. Sales will close with the temporary credit balance accounts to Income Summary.

JOURNAL			
Date	Account	Debit	Credit
	Sales Income Summary	\$\$\$	\$\$\$

Sales Discounts, Sales Returns and Allowances, and Cost of Goods Sold will close with the temporary debit balance accounts to Income Summary.

JOURNAL			
Date	Account	Debit	Credit
	Income Summary Sales Discounts Sales Returns and Allowances Cost of Goods Sold	\$\$\$	\$\$\$ \$\$\$ \$\$\$

Note that for a periodic inventory system, the end of the period adjustments require an update to COGS. To determine the value of Cost of Goods Sold, the business will have to look at the beginning inventory balance, purchases, purchase returns and allowances, discounts, and the ending inventory balance.

The formula to compute COGS is:

$$\text{Cost of Goods Sold} = \text{Beginning inventory} + \text{Net Purchases} - \text{Ending inventory}$$

where:

$$\text{Net Purchases} = (\text{Gross}) \text{ Purchases} - \text{Purchase Discounts} - \text{Purchase Returns and Allowances}$$

Once the COGS balance has been established, an adjustment is made to Merchandise Inventory and COGS, and COGS is closed to prepare for the next period.

[Table 6.1](#) summarizes the differences between the perpetual and periodic inventory systems.

Perpetual and Periodic Transaction Comparison

Transaction	Perpetual Inventory System	Periodic Inventory System
Purchase of Inventory	Record cost to Inventory account	Record cost to Purchases account
Purchase Return or Allowance	Record to update Inventory	Record to Purchase Returns and Allowances
Purchase Discount	Record to update Inventory	Record to Purchase Discounts
Sale of Merchandise	Record two entries: one for sale and one for cost of sale	Record one entry for the sale
Sales Return	Record two entries: one for sales return, one for cost of inventory returned	Record one entry: sales return, cost not recognized
Sales Allowance	Same under both systems	Same under both systems
Sales Discount	Same under both systems	Same under both systems

Table 6.1 There are several differences in account recognition between the perpetual and periodic inventory systems.

There are advantages and disadvantages to both the perpetual and periodic inventory systems.

CONCEPTS IN PRACTICE

Point-of-Sale Systems

Advancements in point-of-sale (POS) systems have simplified the once tedious task of inventory management. POS systems connect with inventory management programs to make real-time data available to help streamline business operations. The cost of inventory management decreases with this connection tool, allowing all businesses to stay current with technology without “breaking the bank.”

One such POS system is Square. Square accepts many payment types and updates accounting records every time a sale occurs through a cloud-based application. **Square, Inc.** has expanded their product offerings to include Square for Retail POS. This enhanced product allows businesses to connect sales and inventory costs immediately. A business can easily create purchase orders, develop reports for cost of goods sold, manage inventory stock, and update discounts, returns, and allowances. With this application, customers have payment flexibility, and businesses can make present decisions to positively affect growth.

Advantages and Disadvantages of the Perpetual Inventory System

The perpetual inventory system gives real-time updates and keeps a constant flow of inventory information available for decision-makers. With advancements in point-of-sale technologies, inventory is updated automatically and transferred into the company's accounting system. This allows managers to make decisions as it relates to inventory purchases, stocking, and sales. The information can be more robust, with exact purchase costs, sales prices, and dates known. Although a periodic physical count of inventory is still required, a perpetual inventory system may reduce the number of times physical counts are needed.

The biggest disadvantages of using the perpetual inventory systems arise from the resource constraints for cost and time. It is costly to keep an automatic inventory system up-to-date. This may prohibit smaller or less established companies from investing in the required technologies. The time commitment to train and retrain staff to update inventory is considerable. In addition, since there are fewer physical counts of inventory, the figures recorded in the system may be drastically different from inventory levels in the actual warehouse. A company may not have correct inventory stock and could make financial decisions based on incorrect data.

Advantages and Disadvantages of the Periodic Inventory System

The periodic inventory system is often less expensive and time consuming than perpetual inventory systems. This is because there is no constant maintenance of inventory records or training and retraining of employees to upkeep the system. The complexity of the system makes it difficult to identify the cost justification associated with the inventory function.

While both the periodic and perpetual inventory systems require a physical count of inventory, periodic inventorying requires more physical counts to be conducted. This updates the inventory account more frequently to record exact costs. Knowing the exact costs earlier in an accounting cycle can help a company stay on budget and control costs.

However, the need for frequent physical counts of inventory can suspend business operations each time this is done. There are more chances for shrinkage, damaged, or obsolete merchandise because inventory is not constantly monitored. Since there is no constant monitoring, it may be more difficult to make in-the-moment business decisions about inventory needs.

While each inventory system has its own advantages and disadvantages, the more popular system is the perpetual inventory system. The ability to have real-time data to make decisions, the constant update to inventory, and the integration to point-of-sale systems, outweigh the cost and time investments needed to maintain the system. (While our main coverage focuses on recognition under the perpetual inventory system, [Appendix: Analyze and Record Transactions for Merchandise Purchases and Sales Using the Periodic Inventory System](#) discusses recognition under the periodic inventory system.)

THINK IT THROUGH

Comparing Inventory Systems

Your company uses a perpetual inventory system to control its operations. They only check inventory once every six months. At the 6-month physical count, an employee notices several inventory items missing and many damaged units. In the company records, it shows an inventory balance of \$300,000.

The actual physical count values inventory at \$200,000. This is a significant difference in valuation and has jeopardized the future of the company. As a manager, how might you avoid this large discrepancy in the future? Would a change in inventory systems benefit the company? Are you constrained by any resources?

6.3 Analyze and Record Transactions for Merchandise Purchases Using the Perpetual Inventory System

The following example transactions and subsequent journal entries for merchandise purchases are recognized using a perpetual inventory system. The periodic inventory system recognition of these example transactions and corresponding journal entries are shown in [Appendix: Analyze and Record Transactions for Merchandise Purchases and Sales Using the Periodic Inventory System](#).

Basic Analysis of Purchase Transaction Journal Entries

To better illustrate merchandising activities, let's follow California Business Solutions (CBS), a retailer providing electronic hardware packages to meet small business needs. Each electronics hardware package (see [Figure 6.9](#)) contains a desktop computer, tablet computer, landline telephone, and a 4-in-1 desktop printer with a printer, copier, scanner, and fax machine.



Figure 6.9 California Business Solutions. Providing businesses electronic hardware solutions. (credit: modification of "Professional desk" by "reynermedia"/Flickr, CC BY 2.0)

CBS purchases each electronic product from a manufacturer. The following are the per-item purchase prices from the manufacturer.

Product	Price per Unit
Desktop computer	\$400
Tablet computer	60
Landline telephone	60
4-in-1 desktop printer	100

Cash and Credit Purchase Transaction Journal Entries

On April 1, CBS purchases 10 electronic hardware packages at a cost of \$620 each. CBS has enough cash-on-hand to pay immediately with cash. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Apr. 1	Merchandise Inventory: Packages Cash <i>To recognize purchase of 10 packages</i>	6,200	6,200

Merchandise Inventory-Packages increases (debit) for 6,200 ($\$620 \times 10$), and Cash decreases (credit) because the company paid with cash. It is important to distinguish each inventory item type to better track inventory needs.

On April 7, CBS purchases 30 desktop computers on credit at a cost of \$400 each. The credit terms are n/15 with an invoice date of April 7. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Apr. 7	Merchandise Inventory: Desktop Computers Accounts Payable <i>To recognize purchase of 30 computers on credit, n/15</i>	12,000	12,000

Merchandise Inventory is specific to desktop computers and is increased (debited) for the value of the computers by \$12,000 ($\400×30). Since the computers were purchased on credit by CBS, Accounts Payable increases (credit).

On April 17, CBS makes full payment on the amount due from the April 7 purchase. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Apr. 17	Accounts Payable Cash <i>To recognize payment in full</i>	12,000	12,000

Accounts Payable decreases (debit), and Cash decreases (credit) for the full amount owed. The credit terms were n/15, which is net due in 15 days. No discount was offered with this transaction. Thus the full payment of \$12,000 occurs.

Purchase Discount Transaction Journal Entries

On May 1, CBS purchases 67 tablet computers at a cost of \$60 each on credit. The payment terms are 5/10, n/

30, and the invoice is dated May 1. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
May 1	Merchandise Inventory: Tablet Computers Accounts Payable <i>To recognize purchase of 67 tablets, 5/10, n/30</i>	4,020	4,020

Merchandise Inventory-Tablet Computers increases (debit) in the amount of \$4,020 ($67 \times \60). Accounts Payable also increases (credit) but the credit terms are a little different than the previous example. These credit terms include a discount opportunity (5/10), meaning, CBS has 10 days from the invoice date to pay on their account to receive a 5% discount on their purchase.

On May 10, CBS pays their account in full. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
May 10	Accounts Payable Merchandise Inventory: Tablet Computers Cash <i>To recognize payment, less purchase discount</i>	4,020	201 3,819

Accounts Payable decreases (debit) for the original amount owed of \$4,020 before any discounts are taken. Since CBS paid on May 10, they made the 10-day window and thus received a discount of 5%. Cash decreases (credit) for the amount owed, less the discount. Merchandise Inventory-Tablet Computers decreases (credit) for the amount of the discount ($\$4,020 \times 5\%$). Merchandise Inventory decreases to align with the Cost Principle, reporting the value of the merchandise at the reduced cost.

Let's take the same example purchase with the same credit terms, but now CBS paid their account on May 25. The following entry would occur instead.

JOURNAL			
Date	Account	Debit	Credit
May 25	Accounts Payable Cash <i>To recognize payment for tablets, no discount</i>	4,020	4,020

Accounts Payable decreases (debit) and Cash decreases (credit) for \$4,020. The company paid on their account outside of the discount window but within the total allotted timeframe for payment. CBS does not receive a discount in this case but does pay in full and on time.

Purchase Returns and Allowances Transaction Journal Entries

On June 1, CBS purchased 300 landline telephones with cash at a cost of \$60 each. On June 3, CBS discovers that 25 of the phones are the wrong color and returns the phones to the manufacturer for a full refund. The following entries occur with the purchase and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
Jun. 1	Merchandise Inventory: Phones Cash <i>To recognize phone purchase with cash</i>	18,000	18,000

Both Merchandise Inventory-Phones increases (debit) and Cash decreases (credit) by \$18,000 ($\60×300).

JOURNAL			
Date	Account	Debit	Credit
Jun. 3	Cash Merchandise Inventory: Phones <i>To recognize return of 25 phones, cash refund</i>	1,500	1,500

Since CBS already paid in full for their purchase, a full cash refund is issued. This increases Cash (debit) and decreases (credit) Merchandise Inventory-Phones because the merchandise has been returned to the manufacturer or supplier.

On June 8, CBS discovers that 60 more phones from the June 1 purchase are slightly damaged. CBS decides to keep the phones but receives a purchase allowance from the manufacturer of \$8 per phone. The following entry occurs for the allowance.

JOURNAL			
Date	Account	Debit	Credit
Jun. 8	Cash Merchandise Inventory: Phones <i>To recognize allowance for 60 phones</i>	480	480

Since CBS already paid in full for their purchase, a cash refund of the allowance is issued in the amount of \$480 ($60 \times \8). This increases Cash (debit) and decreases (credit) Merchandise Inventory-Phones because the merchandise is less valuable than before the damage discovery.

CBS purchases 80 units of the 4-in-1 desktop printers at a cost of \$100 each on July 1 on credit. Terms of the purchase are 5/15, n/40, with an invoice date of July 1. On July 6, CBS discovers 15 of the printers are damaged and returns them to the manufacturer for a full refund. The following entries show the purchase and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
July 1	Merchandise Inventory: Printers Accounts Payable <i>To recognize printer purchase on credit, 5/15, n/40</i>	8,000	8,000

Both Merchandise Inventory-Printers increases (debit) and Accounts Payable increases (credit) by \$8,000 ($\100×80).

JOURNAL			
Date	Account	Debit	Credit
July 6	Accounts Payable Merchandise Inventory: Printers <i>To recognize return of 15 printers, AP reduction</i>	1,500	1,500

Both Accounts Payable decreases (debit) and Merchandise Inventory-Printers decreases (credit) by \$1,500 ($15 \times \100). The purchase was on credit and the return occurred before payment, thus decreasing Accounts Payable. Merchandise Inventory decreases due to the return of the merchandise back to the manufacturer.

On July 10, CBS discovers that 4 more printers from the July 1 purchase are slightly damaged but decides to keep them, with the manufacturer issuing an allowance of \$30 per printer. The following entry recognizes the allowance.

JOURNAL			
Date	Account	Debit	Credit
July 10	Accounts Payable Merchandise Inventory: Printers <i>To recognize allowance for 4 printers, AP reduction</i>	120	120

Both Accounts Payable decreases (debit) and Merchandise Inventory-Printers decreases (credit) by \$120 ($4 \times \30). The purchase was on credit and the allowance occurred before payment, thus decreasing Accounts Payable. Merchandise Inventory decreases due to the loss in value of the merchandise.

On July 15, CBS pays their account in full, less purchase returns and allowances. The following payment entry occurs.

JOURNAL			
Date	Account	Debit	Credit
July 15	Accounts Payable Merchandise Inventory: Printers Cash <i>To recognize payment, less discount, return and allowance</i>	6,380	319 6,061

Accounts Payable decreases (debit) for the amount owed, less the return of \$1,500 and the allowance of \$120 ($\$8,000 - \$1,500 - \120). Since CBS paid on July 15, they made the 15-day window, thus receiving a discount of 5%. Cash decreases (credit) for the amount owed, less the discount. Merchandise Inventory-Printers decreases (credit) for the amount of the discount ($\$6,380 \times 5\%$). Merchandise Inventory decreases to align with the Cost Principle, reporting the value of the merchandise at the reduced cost.

Summary of Purchase Transaction Journal Entries

The chart in [Figure 6.10](#) represents the journal entry requirements based on various merchandising purchase transactions using the perpetual inventory system.

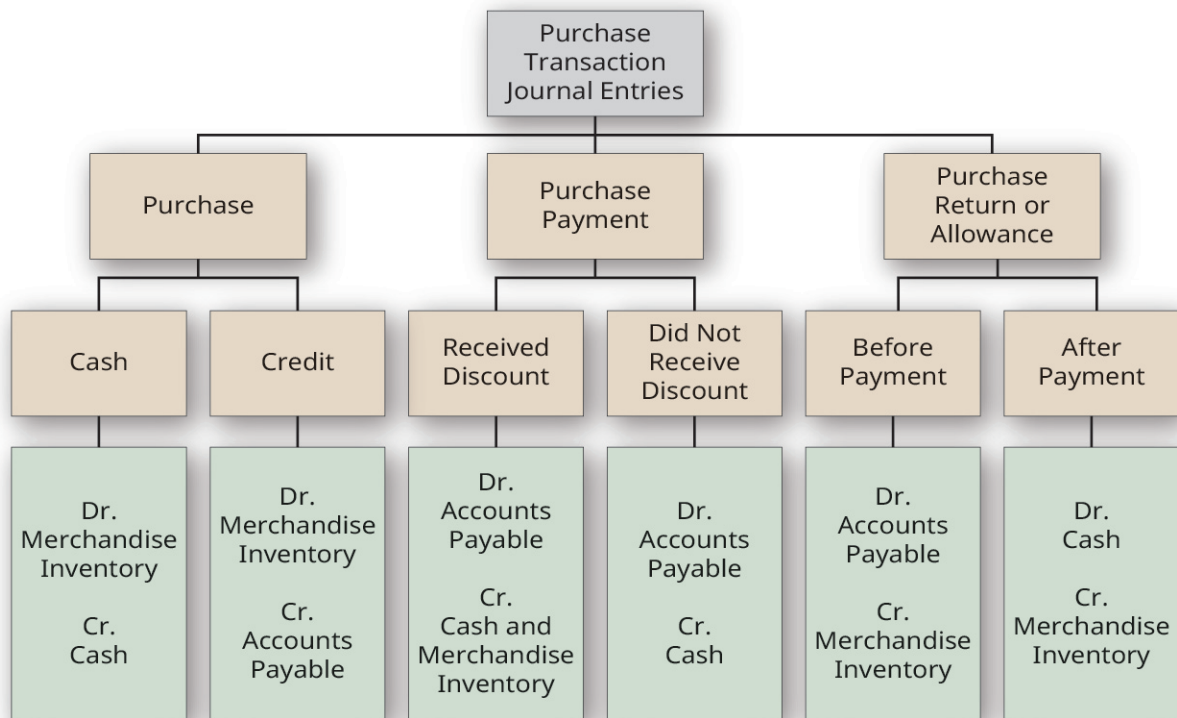


Figure 6.10 Purchase Transaction Journal Entries Using a Perpetual Inventory System. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Note that [Figure 6.10](#) considers an environment in which inventory physical counts and matching books records align. This is not always the case given concerns with shrinkage (theft), damages, or obsolete merchandise. In this circumstance, an adjustment is recorded to inventory to account for the differences between the physical count and the amount represented on the books.

YOUR TURN

Recording a Retailer's Purchase Transactions

Record the journal entries for the following purchase transactions of a retailer.

- | | |
|--------|---|
| Dec. 3 | Purchased \$500 worth of inventory on credit with terms 2/10, n/30, and invoice dated December 3. |
| Dec. 6 | Returned \$150 worth of damaged inventory to the manufacturer and received a full refund. |
| Dec. 9 | Paid the account in full |

Solution

JOURNAL			
Date	Account	Debit	Credit
Dec. 3	Merchandise Inventory Accounts Payable <i>To recognize inventory purchase, 2/10, n/30</i>	500	500
Dec. 6	Accounts Payable Merchandise Inventory <i>To recognize inventory return</i>	150	150
Dec. 9	Accounts Payable Merchandise Inventory Cash <i>To recognize payment, less discount and return</i>	350	7 343

LINK TO LEARNING

Bean Counter is a website that offers free, fun and interactive games, simulations, and quizzes about accounting. You can “Fling the Teacher,” “Walk the Plank,” and play “Basketball” while learning the fundamentals of accounting topics. Check out [Bean Counter \(https://openstax.org/l/50BeanCounter\)](https://openstax.org/l/50BeanCounter) to see what you can learn.

6.4 Analyze and Record Transactions for the Sale of Merchandise Using the Perpetual Inventory System

The following example transactions and subsequent journal entries for merchandise sales are recognized using a perpetual inventory system. The periodic inventory system recognition of these example transactions and corresponding journal entries are shown in [Appendix: Analyze and Record Transactions for Merchandise Purchases and Sales Using the Periodic Inventory System](#).

Basic Analysis of Sales Transaction Journal Entries

Let’s continue to follow California Business Solutions (CBS) and their sales of electronic hardware packages to business customers. As previously stated, each package contains a desktop computer, tablet computer, landline telephone, and a 4-in-1 printer. CBS sells each hardware package for \$1,200. They offer their customers the option of purchasing extra individual hardware items for every electronic hardware package purchase. [Figure 6.11](#) lists the products CBS sells to customers; the prices are per-package, and per unit.

Product	Sales Price per-package, per unit	Cost to CBS per-package, per unit
Electronic hardware package	\$1,200	\$620
Desktop computer	750	400
Tablet computer	300	60
Landline telephone	150	60
4-in-1 printer	350	100

Figure 6.11 CBS's Product Line. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Cash and Credit Sales Transaction Journal Entries

On July 1, CBS sells 10 electronic hardware packages to a customer at a sales price of \$1,200 each. The customer pays immediately with cash. The following entries occur.

JOURNAL			
Date	Account	Debit	Credit
July 1	Cash Sales <i>To recognize sale of 10 packages</i>	12,000	12,000
July 1	Cost of Goods Sold Merchandise Inventory: Packages <i>To recognize cost of sale, 10 packages</i>	6,200	6,200

In the first entry, Cash increases (debit) and Sales increases (credit) for the selling price of the packages, \$12,000 ($\$1,200 \times 10$). In the second entry, the cost of the sale is recognized. COGS increases (debit) and Merchandise Inventory-Packages decreases (credit) for the cost of the packages, \$6,200 ($\620×10).

On July 7, CBS sells 20 desktop computers to a customer on credit. The credit terms are n/15 with an invoice date of July 7. The following entries occur.

JOURNAL			
Date	Account	Debit	Credit
July 7	Accounts Receivable Sales <i>To recognize sale of 20 desktop computers, n/15</i>	15,000	15,000
July 7	Cost of Goods Sold Merchandise Inventory: Desktop Computers <i>To recognize cost of sale, 20 desktop computers</i>	8,000	8,000

Since the computers were purchased on credit by the customer, Accounts Receivable increases (debit) and Sales increases (credit) for the selling price of the computers, \$15,000 ($\750×20). In the second entry, Merchandise Inventory-Desktop Computers decreases (credit), and COGS increases (debit) for the cost of the computers, \$8,000 ($\400×20).

On July 17, the customer makes full payment on the amount due from the July 7 sale. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
July 17	Cash Accounts Receivable <i>To recognize payment in full</i>	15,000	15,000

Accounts Receivable decreases (credit) and Cash increases (debit) for the full amount owed. The credit terms were n/15, which is net due in 15 days. No discount was offered with this transaction; thus the full payment of \$15,000 occurs.

Sales Discount Transaction Journal Entries

On August 1, a customer purchases 56 tablet computers on credit. The payment terms are 2/10, n/30, and the invoice is dated August 1. The following entries occur.

JOURNAL			
Date	Account	Debit	Credit
Aug. 1	Accounts Receivable Sales <i>To recognize sale of 56 tablet computers, 2/10, n/30</i>	16,800	16,800
Aug. 1	Cost of Goods Sold Merchandise Inventory: Tablet Computers <i>To recognize cost of sale, 56 tablet computers</i>	3,360	3,360

In the first entry, both Accounts Receivable (debit) and Sales (credit) increase by \$16,800 (300×56). These credit terms are a little different than the earlier example. These credit terms include a discount opportunity (2/10), meaning the customer has 10 days from the invoice date to pay on their account to receive a 2% discount on their purchase. In the second entry, COGS increases (debit) and Merchandise Inventory–Tablet Computers decreases (credit) in the amount of \$3,360 ($56 \times \60).

On August 10, the customer pays their account in full. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Aug. 10	Cash Sales Discounts Accounts Receivable <i>To recognize payment, less sales discount</i>	16,464 336	16,800

Since the customer paid on August 10, they made the 10-day window and received a discount of 2%. Cash increases (debit) for the amount paid to CBS, less the discount. Sales Discounts increases (debit) for the amount of the discount ($\$16,800 \times 2\%$), and Accounts Receivable decreases (credit) for the original amount owed, before discount. Sales Discounts will reduce Sales at the end of the period to produce net sales.

Let's take the same example sale with the same credit terms, but now assume the customer paid their account on August 25. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Aug. 25	Cash Accounts Receivable <i>To recognize payment for tablets, no discount</i>	16,800	16,800

Cash increases (debit) and Accounts Receivable decreases (credit) by \$16,800. The customer paid on their account outside of the discount window but within the total allotted timeframe for payment. The customer does not receive a discount in this case but does pay in full and on time.

YOUR TURN

Recording a Retailer's Sales Transactions

Record the journal entries for the following sales transactions by a retailer.

- | | |
|---------|--|
| Jan. 5 | Sold \$2,450 of merchandise on credit (cost of \$1,000), with terms 2/10, n/30, and invoice dated January 5. |
| Jan. 9 | The customer returned \$500 worth of slightly damaged merchandise to the retailer and received a full refund. The retailer returned the merchandise to its inventory at a cost of \$130. |
| Jan. 14 | Account paid in full. |

Solution

JOURNAL			
Date	Account	Debit	Credit
Jan. 5	Accounts Receivable Sales <i>To recognize sale on credit, 2/10, n/30</i>	2,450	2,450
Jan. 5	Cost of Goods Sold Merchandise Inventory <i>To recognize cost of sale</i>	1,000	1,000
Jan. 9	Sales Returns and Allowances Accounts Receivable <i>To recognize customer return</i>	500	500
Jan. 9	Merchandise Inventory Cost of Goods Sold <i>To recognize merchandise return to inventory</i>	130	130
Jan. 14	Cash Sales Discounts Accounts Receivable <i>To recognize payment, less discount and return</i>	1,911 39	1,950

Sales Returns and Allowances Transaction Journal Entries

On September 1, CBS sold 250 landline telephones to a customer who paid with cash. On September 3, the customer discovers that 40 of the phones are the wrong color and returns the phones to CBS in exchange for a full refund. CBS determines that the returned merchandise can be resold and returns the merchandise to inventory at its original cost. The following entries occur for the sale and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
Sept. 1	Cash Sales <i>To recognize sale of 250 phones with cash</i>	37,500	37,500
Sept. 1	Cost of Goods Sold Merchandise Inventory: Phones <i>To recognize cost of sale, 250 phones</i>	15,000	15,000

In the first entry on September 1, Cash increases (debit) and Sales increases (credit) by \$37,500 ($250 \times \150), the sales price of the phones. In the second entry, COGS increases (debit), and Merchandise Inventory-Phones decreases (credit) by \$15,000 ($250 \times \60), the cost of the sale.

JOURNAL			
Date	Account	Debit	Credit
Sept. 3	Sales Returns and Allowances Cash <i>To recognize return of 40 phones, cash refund</i>	6,000	6,000
Sept. 3	Merchandise Inventory: Phones Cost of Goods Sold <i>To return merchandise to inventory, sellable condition</i>	2,400	2,400

Since the customer already paid in full for their purchase, a full cash refund is issued on September 3. This increases Sales Returns and Allowances (debit) and decreases Cash (credit) by \$6,000 ($40 \times \150). The second entry on September 3 returns the phones back to inventory for CBS because they have determined the merchandise is in sellable condition at its original cost. Merchandise Inventory-Phones increases (debit) and COGS decreases (credit) by \$2,400 ($40 \times \60).

On September 8, the customer discovers that 20 more phones from the September 1 purchase are slightly damaged. The customer decides to keep the phones but receives a sales allowance from CBS of \$10 per phone. The following entry occurs for the allowance.

JOURNAL			
Date	Account	Debit	Credit
Sept. 8	Sales Returns and Allowances Cash <i>To recognize allowance for 20 phones</i>	200	200

Since the customer already paid in full for their purchase, a cash refund of the allowance is issued in the amount of \$200 ($20 \times \10). This increases (debit) Sales Returns and Allowances and decreases (credit) Cash. CBS does not have to consider the condition of the merchandise or return it to their inventory because the customer keeps the merchandise.

A customer purchases 55 units of the 4-in-1 desktop printers on October 1 on credit. Terms of the sale are 10/

15, n/40, with an invoice date of October 1. On October 6, the customer returned 10 of the printers to CBS for a full refund. CBS returns the printers to their inventory at the original cost. The following entries show the sale and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
Oct. 1	Accounts Receivable Sales <i>To recognize sale of 55 printers on credit, 10/15, n/40</i>	19,250	19,250
Oct. 1	Cost of Goods Sold Merchandise Inventory: Printers <i>To recognize cost of sale, 55 printers</i>	5,500	5,500

In the first entry on October 1, Accounts Receivable increases (debit) and Sales increases (credit) by \$19,250 ($55 \times \350), the sales price of the printers. Accounts Receivable is used instead of Cash because the customer purchased on credit. In the second entry, COGS increases (debit) and Merchandise Inventory-Printers decreases (credit) by \$5,500 ($55 \times \100), the cost of the sale.

JOURNAL			
Date	Account	Debit	Credit
Oct. 6	Sales Returns and Allowances Accounts Receivable <i>To recognize return of 10 printers</i>	3,500	3,500
Oct. 6	Merchandise Inventory: Printers Cost of Goods Sold <i>To return merchandise to inventory, sellable condition</i>	1,000	1,000

The customer has not yet paid for their purchase as of October 6. Therefore, the return increases Sales Returns and Allowances (debit) and decreases Accounts Receivable (credit) by \$3,500 ($10 \times \350). The second entry on October 6 returns the printers back to inventory for CBS because they have determined the merchandise is in sellable condition at its original cost. Merchandise Inventory-Printers increases (debit) and COGS decreases (credit) by \$1,000 ($10 \times \100).

On October 10, the customer discovers that 5 printers from the October 1 purchase are slightly damaged, but decides to keep them, and CBS issues an allowance of \$60 per printer. The following entry recognizes the allowance.

JOURNAL			
Date	Account	Debit	Credit
Oct. 10	Sales Returns and Allowances Accounts Receivable <i>To recognize allowance for 5 printers</i>	300	300

Sales Returns and Allowances increases (debit) and Accounts Receivable decreases (credit) by \$300 ($5 \times \60). A reduction to Accounts Receivable occurs because the customer has yet to pay their account on October 10. CBS does not have to consider the condition of the merchandise or return it to their inventory because the customer keeps the merchandise.

On October 15, the customer pays their account in full, less sales returns and allowances. The following payment entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Oct. 15	Cash Sales Discounts Accounts Receivable <i>To recognize payment, less sales discount, return and allowance</i>	13,905 1,545	15,450

Accounts Receivable decreases (credit) for the original amount owed, less the return of \$3,500 and the allowance of \$300 (\$19,250 – \$3,500 – \$300). Since the customer paid on October 15, they made the 15-day window, thus receiving a discount of 10%. Sales Discounts increases (debit) for the discount amount (\$15,450 × 10%). Cash increases (debit) for the amount owed to CBS, less the discount.

Summary of Sales Transaction Journal Entries

The chart in [Figure 6.12](#) represents the journal entry requirements based on various merchandising sales transactions.

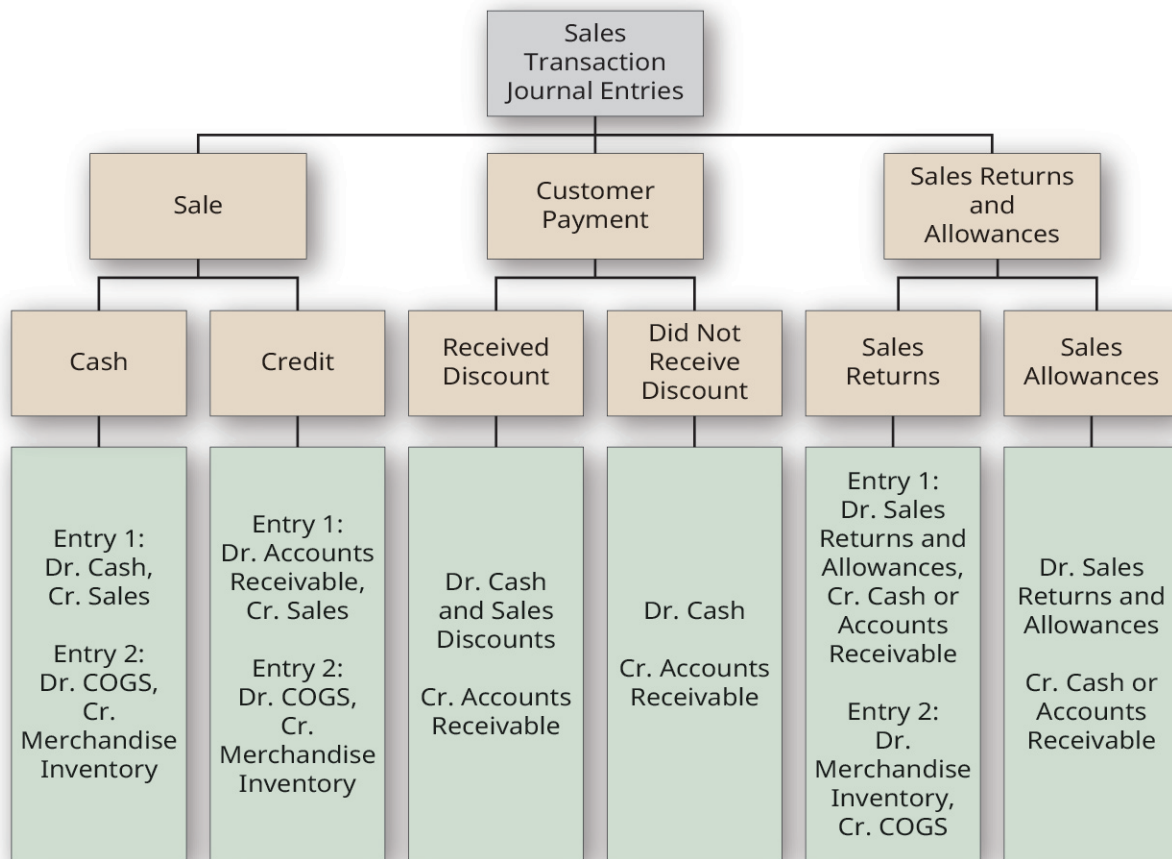


Figure 6.12 Journal Entry Requirements for Merchandise Sales Transaction. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

YOUR TURN

Recording a Retailer's Sales Transactions

Record the journal entries for the following sales transactions of a retailer.

May 10	Sold \$8,600 of merchandise on credit (cost of \$2,650), with terms 5/10, n/30, and invoice dated May 10.
May 13	The customer returned \$1,250 worth of slightly damaged merchandise to the retailer and received a full refund. The retailer returned the merchandise to its inventory at a cost of \$380.
May 15	The customer discovered some merchandise were the wrong color and received an allowance from the retailer of \$230.
May 20	The customer paid the account in full, less the return and allowance.

Solution

JOURNAL			
Date	Account	Debit	Credit
May 10	Accounts Receivable Sales <i>To recognize sale on credit, 5/10, n/30</i>	8,600	8,600
May 10	Cost of Goods Sold Merchandise Inventory <i>To recognize cost of sale</i>	2,650	2,650
May 13	Sales Returns and Allowances Accounts Receivable <i>To recognize customer return</i>	1,250	1,250
May 13	Merchandise Inventory Cost of Goods Sold <i>To recognize merchandise return to inventory</i>	380	380
May 15	Sales Returns and Allowances Accounts Receivable <i>To recognize customer allowance</i>	230	230
May 20	Cash Sales Discounts Accounts Receivable <i>To recognize payment, less discount, allowance and return</i>	6,764 356	7,120

6.5 Discuss and Record Transactions Applying the Two Commonly Used Freight-In Methods

When you buy merchandise online, shipping charges are usually one of the negotiated terms of the sale. As a consumer, anytime the business pays for shipping, it is welcomed. For businesses, shipping charges bring both benefits and challenges, and the terms negotiated can have a significant impact on inventory operations.



Figure 6.13 Shipping Merchandise. (credit: "Guida Siebert Dairy Milk Delivery Truck tractor trailer!" by Mike Mozart/Flickr, CC BY 2.0)

IFRS CONNECTION

Shipping Term Effects

Companies applying US GAAP as well as those applying IFRS can choose either a perpetual or periodic inventory system to track purchases and sales of inventory. While the tracking systems do not differ between the two methods, they have differences in when sales transactions are reported. If goods are shipped FOB shipping point, under IFRS, the total selling price of the item would be allocated between the item sold (as sales revenue) and the shipping (as shipping revenue). Under US GAAP, the seller can elect whether the shipping costs will be an additional component of revenue (separate performance obligation) or whether they will be considered fulfillment costs (expensed at the time shipping as shipping expense). In an FOB destination scenario, the shipping costs would be considered a fulfillment activity and expensed as incurred rather than be treated as a part of revenue under both IFRS and US GAAP.

Example

Wally's Wagons sells and ships 20 deluxe model wagons to Sam's Emporium for \$5,000. Assume \$400 of the total costs represents the costs of shipping the wagons and consider these two scenarios: (1) the wagons are shipped FOB shipping point or (2) the wagons are shipped FOB destination. If Wally's is applying IFRS, the \$400 shipping is considered a separate performance obligation, or shipping revenue, and the other \$4,600 is considered sales revenue. Both revenues are recorded at the time of shipping and the \$400 shipping revenue is offset by a shipping expense. If Wally's used US GAAP instead, they would choose between using the same treatment as described under IFRS or considering the costs of shipping to be costs of fulfilling the order and expense those costs at the time they are incurred. In this latter case, Wally's would record Sales Revenue of \$5,000 at the time the wagons are shipped and \$400 as

shipping expense at the time of shipping. Notice that in both cases, the total net revenues are the same \$4,600, but the distribution of those revenues is different, which impacts analyses of sales revenue versus total revenues. What happens if the wagons are shipped FOB destination instead? Under both IFRS and US GAAP, the \$400 shipping would be treated as an order fulfillment cost and recorded as an expense at the time the goods are shipped. Revenue of \$5,000 would be recorded at the time the goods are received by Sam's emporium.

Financial Statement Presentation of Cost of Goods Sold

IFRS allows greater flexibility in the presentation of financial statements, including the income statement. Under IFRS, expenses can be reported in the income statement either by nature (for example, rent, salaries, depreciation) or by function (such as COGS or Selling and Administrative). US GAAP has no specific requirements regarding the presentation of expenses, but the SEC requires that expenses be reported by function. Therefore, it may be more challenging to compare merchandising costs (cost of goods sold) across companies if one company's income statement shows expenses by function and another company shows them by nature.

The Basics of Freight-in Versus Freight-out Costs

Shipping is determined by contract terms between a buyer and seller. There are several key factors to consider when determining who pays for shipping, and how it is recognized in merchandising transactions. The establishment of a transfer point and ownership indicates who pays the shipping charges, who is responsible for the merchandise, on whose balance sheet the assets would be recorded, and how to record the transaction for the buyer and seller.

Ownership of inventory refers to which party owns the inventory at a particular point in time—the buyer or the seller. One particularly important point in time is the **point of transfer**, when the responsibility for the inventory transfers from the seller to the buyer. Establishing ownership of inventory is important to determine who pays the shipping charges when the goods are in transit as well as the responsibility of each party when the goods are in their possession. **Goods in transit** refers to the time in which the merchandise is transported from the seller to the buyer (by way of delivery truck, for example). One party is responsible for the goods in transit and the costs associated with transportation. Determining whether this responsibility lies with the buyer or seller is critical to determining the reporting requirements of the retailer or merchandiser.

Freight-in refers to the shipping costs for which the buyer is responsible when receiving shipment from a seller, such as delivery and insurance expenses. When the buyer is responsible for shipping costs, they recognize this as part of the purchase cost. This means that the shipping costs stay with the inventory until it is sold. The cost principle requires this expense to stay with the merchandise as it is part of getting the item ready for sale from the buyer's perspective. The shipping expenses are held in inventory until sold, which means these costs are reported on the balance sheet in Merchandise Inventory. When the merchandise is sold, the shipping charges are transferred with all other inventory costs to Cost of Goods Sold on the income statement.

For example, California Business Solutions (CBS) may purchase computers from a manufacturer and part of the agreement is that CBS (the buyer) pays the shipping costs of \$1,000. CBS would record the following entry to recognize freight-in.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable Sales <i>To recognize sale, FOB Destination, 30 × \$150</i>	4,500	4,500
	Cost of Goods Sold Merchandise Inventory <i>To recognize cost of sale, 30 × \$60</i>	1,800	1,800
	Delivery Expense Cash <i>To recognize freight-out shipping costs</i>	120	120

Merchandise Inventory increases (debit), and Cash decreases (credit), for the entire cost of the purchase, including shipping, insurance, and taxes. On the balance sheet, the shipping charges would remain a part of inventory.

Freight-out refers to the costs for which the seller is responsible when shipping to a buyer, such as delivery and insurance expenses. When the seller is responsible for shipping costs, they recognize this as a delivery expense. The delivery expense is specifically associated with selling and not daily operations; thus, delivery expenses are typically recorded as a selling and administrative expense on the income statement in the current period.

For example, CBS may sell electronics packages to a customer and agree to cover the \$100 cost associated with shipping and insurance. CBS would record the following entry to recognize freight-out.

JOURNAL			
Date	Account	Debit	Credit
	Delivery Expense Cash <i>To recognize freight-out shipping costs</i>	100	100

Delivery Expense increases (debit) and Cash decreases (credit) for the shipping cost amount of \$100. On the income statement, this \$100 delivery expense will be grouped with Selling and Administrative expenses.

LINK TO LEARNING

Shipping term agreements provide clarity for buyers and sellers with regards to inventory responsibilities. Use the [animation on FOB Shipping Point and FOB Destination \(https://openstax.org/l/50ShippingTerms\)](https://openstax.org/l/50ShippingTerms) to learn more.

Discussion and Application of FOB Destination

As you've learned, the seller and buyer will establish terms of purchase that include the purchase price, taxes, insurance, and shipping charges. So, who pays for shipping? On the purchase contract, shipping terms establish who owns inventory in transit, the point of transfer, and who pays for shipping. The shipping terms are known as "free on board," or simply FOB. Some refer to FOB as the point of transfer, but really, it

incorporates more than simply the point at which responsibility transfers. There are two FOB considerations: FOB Destination and FOB Shipping Point.

If **FOB destination point** is listed on the purchase contract, this means the seller pays the shipping charges (freight-out). This also means goods in transit belong to, and are the responsibility of, the seller. The point of transfer is when the goods reach the buyer's place of business.

To illustrate, suppose CBS sells 30 landline telephones at \$150 each on credit at a cost of \$60 per phone. On the sales contract, FOB Destination is listed as the shipping terms, and shipping charges amount to \$120, paid as cash directly to the delivery service. The following entries occur.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable Sales <i>To recognize sale, FOB Destination, 30 × \$150</i>	4,500	4,500
	COGS Merchandise Inventory <i>To recognize cost of sale, 30 × \$60</i>	1,800	1,800
	Delivery Expense Cash <i>To recognize freight-out shipping costs</i>	120	120

Accounts Receivable (debit) and Sales (credit) increases for the amount of the sale ($30 \times \$150$). Cost of Goods Sold increases (debit) and Merchandise Inventory decreases (credit) for the cost of sale ($30 \times \$60$). Delivery Expense increases (debit) and Cash decreases (credit) for the delivery charge of \$120.

Discussion and Application of FOB Shipping Point

If **FOB shipping point** is listed on the purchase contract, this means the buyer pays the shipping charges (freight-in). This also means goods in transit belong to, and are the responsibility of, the buyer. The point of transfer is when the goods leave the seller's place of business.

Suppose CBS buys 40 tablet computers at \$60 each on credit. The purchase contract shipping terms list FOB Shipping Point. The shipping charges amount to an extra \$5 per tablet computer. All other taxes, fees, and insurance are included in the purchase price of \$60. The following entry occurs to recognize the purchase.

JOURNAL			
Date	Account	Debit	Credit
	Merchandise Inventory Accounts Payable <i>To recognize purchase on credit, FOB Shipping Point, 40 × \$65</i>	2,600	2,600

Merchandise Inventory increases (debit) and Accounts Payable increases (credit) by the amount of the purchase, including all shipping, insurance, taxes, and fees [$(40 \times \$60) + (40 \times \$5)$].

[Figure 6.14](#) shows a comparison of shipping terms.

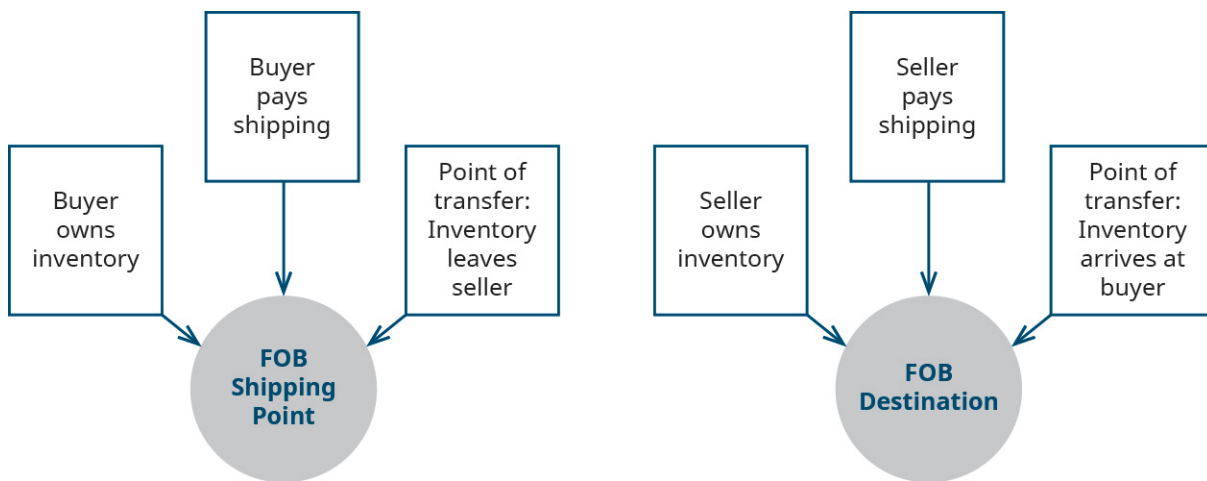


Figure 6.14 FOB Shipping Point versus FOB Destination. A comparison of shipping terms. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

THINK IT THROUGH

Choosing Suitable Shipping Terms

You are a seller and conduct business with several customers who purchase your goods on credit. Your standard contract requires an FOB Shipping Point term, leaving the buyer with the responsibility for goods in transit and shipping charges. One of your long-term customers asks if you can change the terms to FOB Destination to help them save money.

Do you change the terms, why or why not? What positive and negative implications could this have for your business, and your customer? What, if any, restrictions might you consider if you did change the terms?

6.6 Describe and Prepare Multi-Step and Simple Income Statements for Merchandising Companies

Merchandising companies prepare financial statements at the end of a period that include the income statement, balance sheet, statement of cash flows, and statement of retained earnings. The presentation format for many of these statements is left up to the business. For the income statement, this means a company could prepare the statement using a multi-step format or a simple format (also known as a single-step format). Companies must decide the format that best fits their needs.



Figure 6.15 Multi-Step versus Single-Step Formats. (credit: modification of "Balance Swing Equality" by "Mediamodifier"/Pixabay, CC0)

Similarities and Differences between the Multi-Step and Simple Income Statement Format

A multi-step income statement is more detailed than a simple income statement. Because of the additional detail, it is the option selected by many companies whose operations are more complex. Each revenue and expense account is listed individually under the appropriate category on the statement. The multi-step statement separates cost of goods sold from operating expenses and deducts cost of goods sold from net sales to obtain a **gross margin**.

Operating expenses are daily operational costs not associated with the direct selling of products or services. Operating expenses are broken down into selling expenses (such as advertising and marketing expenses) and general and administrative expenses (such as office supplies expense, and depreciation of office equipment). Deducting the operating expenses from gross margin produces **income from operations**.

Following income from operations are **other revenue and expenses** not obtained from selling goods or services or other daily operations. Other revenue and expenses examples include interest revenue, gains or losses on sales of assets (buildings, equipment, and machinery), and interest expense. Other revenue and expenses added to (or deducted from) income from operations produces **net income** (loss).

A simple income statement is less detailed than the multi-step format. A simple income statement combines all revenues into one category, followed by all expenses, to produce net income. There are very few individual accounts and the statement does not consider cost of sales separate from operating expenses.

Demonstration of the Multi-Step Income Statement Format

To demonstrate the use of the multi-step income statement format, let's continue to discuss California Business Solutions (CBS). The following is select account data from the adjusted trial balance for the year ended, December 31, 2018. We will use this information to create a multi-step income statement. Note that the statements prepared are using a perpetual inventory system.

CALIFORNIA BUSINESS SOLUTIONS Trial Balance For Year Ended December 31, 2018		
Account	Debit	Credit
Sales		\$300,000
Sales Discounts	\$ 2,000	
Sales Returns and Allowances	4,500	
Interest Revenue		5,650
Cost of Goods Sold	180,000	
Interest Expense	8,400	
Advertising Expense	6,250	
Sales Salaries Expense	40,000	
Depreciation Expense: Office Equipment	4,700	
Office Supplies Expense	1,200	
Insurance Expense	6,900	

The following is the multi-step income statement for CBS.

CALIFORNIA BUSINESS SOLUTIONS Multi-step Income Statement For Year Ended December 31, 2018		
Sales		\$300,000
Less:		
Sales Discounts	\$ 2,000	
Sales Returns and Allowances	4,500	6,500
Net sales		293,500
Cost of Goods Sold		180,000
Gross Margin		113,500
Operating Expenses		
Selling Expenses		
Advertising Expense	6,250	
Sales Salaries Expense	40,000	
Total Selling Expenses	46,250	
General and Administrative Expenses		
Depreciation Expense: Office Equipment	4,700	
Office Supplies Expense	1,200	
Insurance Expense	6,900	
Total General and Administrative Expenses	12,800	
Total Operating Expenses		59,050
Income from Operations		54,450
Other Revenue and Expenses		
Interest Revenue	5,650	
Interest Expense	(8,400)	
Total other revenue and expenses		(2,750)
Net Income		<u>\$ 51,700</u>

Demonstration of the Simple Income Statement Format

We will use the same adjusted trial balance information for CBS but will now create a simple income statement.

The following is the simple income statement for CBS.

CALIFORNIA BUSINESS SOLUTIONS Simple Income Statement For Year Ended December 31, 2018		
Revenues		
Net sales		\$293,500
Interest Revenue		<u>5,650</u>
Total Revenues		299,150
Expenses		
Cost of Goods Sold	\$180,000	
Total Selling Expenses	46,250	
Total General and Administrative Expenses	12,800	
Interest Expense	<u>8,400</u>	
Total Expenses		<u>247,450</u>
Net Income		\$ 51,700

Final Analysis of the Two Income Statement Options

While companies may choose the format that best suits their needs, some might choose a combination of both the multi-step and simple income statement formats. The multi-step income statement may be more beneficial for internal use and management decision-making because of the detail in account information. The simple income statement might be more appropriate for external use, as a summary for investors and lenders.

From the information obtained on the income statement, a company can make decisions related to growth strategies. One ratio that can help them in this process is the Gross Profit Margin Ratio. The **gross profit margin ratio** shows the margin of revenue above the cost of goods sold that can be used to cover operating expenses and profit. The larger the margin, the more availability the company has to reinvest in their business, pay down debt, and return dividends to shareholders.

$$\text{Gross Profit Margin Ratio} = \frac{(\text{Net sales} - \text{COGS})}{\text{Net sales}}$$

Taking our example from CBS, net sales equaled \$293,500 and cost of goods sold equaled \$180,000. Therefore, the Gross Profit Margin Ratio is computed as 0.39 (rounded to the nearest hundredth). This means that CBS has a margin of 39% to cover operating expenses and profit.

$$\text{Gross profit margin ratio} = \frac{(\$293,500 - \$180,000)}{\$293,500} = 0.39, \text{ or } 39\%$$

THINK IT THROUGH

Which Income Statement Format Do I Choose?

You are an accountant for a small retail store and are tasked with determining the best presentation for your income statement. You may choose to present it in a multi-step format or a simple income statement format. The information on the statement will be used by investors, lenders, and management to make financial decisions related to your company. It is important to the store owners that you give enough information to assist management with decision-making, but not too much information to

possibly deter investors or lenders. Which statement format do you choose? Why did you choose this format? What are the benefits and challenges of your statement choice for each stakeholder group?

LINK TO LEARNING

Target Brands, Inc. is an international retailer providing a variety of resale products to consumers. **Target** uses a multi-step income statement format found at [Target Brands, Inc. annual report \(https://openstax.org/l/50TargetAnnual\)](https://openstax.org/l/50TargetAnnual) to present information to external stakeholders.

6.7 Appendix: Analyze and Record Transactions for Merchandise Purchases and Sales Using the Periodic Inventory System

Some organizations choose to report merchandising transactions using a periodic inventory system rather than a perpetual inventory system. This requires different account usage, transaction recognition, adjustments, and closing procedures. We will not explore the entries for adjustment or closing procedures but will look at some of the common situations that occur with merchandising companies and how these transactions are reported using the periodic inventory system.

Merchandise Purchases

The following example transactions and subsequent journal entries for merchandise purchases are recognized using a periodic inventory system.

Basic Analysis of Purchase Transaction Journal Entries

To better illustrate merchandising activities under the periodic system, let's return to the example of California Business Solutions (CBS). CBS is a retailer providing electronic hardware packages to meet small business needs. Each electronics hardware package contains a desktop computer, tablet computer, landline telephone, and a 4-in-1 desktop printer with a printer, copier, scanner, and fax machine.

CBS purchases each electronic product from a manufacturer. The per-item purchase prices from the manufacturer are shown.

Product	Price per unit
Desktop computer	\$400
Tablet computer	60
Landline telephone	60
4-in-1 desktop printer	100

Cash and Credit Purchase Transaction Journal Entries

On April 1, CBS purchases 10 electronic hardware packages at a cost of \$620 each. CBS has enough cash-on-hand to pay immediately with cash. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Apr. 1	Purchases: Packages Cash <i>To recognize purchase of 10 packages</i>	6,200	6,200

Purchases-Packages increases (debit) by \$6,200 ($\620×10), and Cash decreases (credit) by the same amount because the company paid with cash. Under a periodic system, Purchases is used instead of Merchandise Inventory.

On April 7, CBS purchases 30 desktop computers on credit at a cost of \$400 each. The credit terms are n/15 with an invoice date of April 7. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Apr. 7	Purchases: Desktop Computers Accounts Payable <i>To recognize purchase of 30 computers on credit, n/15</i>	12,000	12,000

Purchases-Desktop Computers increases (debit) for the value of the computers, \$12,000 ($\400×30). Since the computers were purchased on credit by CBS, Accounts Payable increases (credit) instead of cash.

On April 17, CBS makes full payment on the amount due from the April 7 purchase. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Apr. 17	Accounts Payable Cash <i>To recognize payment in full</i>	12,000	12,000

Accounts Payable decreases (debit) and Cash decreases (credit) for the full amount owed. The credit terms were n/15, which is net due in 15 days. No discount was offered with this transaction. Thus the full payment of \$12,000 occurs.

Purchase Discount Transaction Journal Entries

On May 1, CBS purchases 67 tablet computers at a cost of \$60 each on credit. Terms are 5/10, n/30, and invoice dated May 1. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
May 1	Purchases: Tablet Computers Accounts Payable <i>To recognize purchase of 67 tablets, 5/10, n/30</i>	4,020	4,020

Purchases-Tablet Computers increases (debit) in the amount of \$4,020 ($67 \times \60). Accounts Payable also increases (credit), but the credit terms are a little different than the earlier example. These credit terms include a discount opportunity (5/10). This means that CBS has 10 days from the invoice date to pay on their account to receive a 5% discount on their purchase.

On May 10, CBS pays their account in full. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
May 10	Accounts Payable Purchase Discounts Cash <i>To recognize payment, less purchase discount</i>	4,020	201 3,819

Accounts Payable decreases (debit) for the original amount owed of \$4,020 before any discounts are taken. Since CBS paid on May 10, they made the 10-day window, thus receiving a discount of 5%. Cash decreases (credit) for the amount owed, less the discount. Purchase Discounts increases (credit) for the amount of the discount ($\$4,020 \times 5\%$). Purchase Discounts is considered a contra account and will reduce Purchases at the end of the period.

Let's take the same example purchase with the same credit terms, but now assume that CBS paid their account on May 25. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
May 25	Accounts Payable Cash <i>To recognize payment for tablets, no discount</i>	4,020	4,020

Accounts Payable decreases (debit) and Cash decreases (credit) for \$4,020. The company paid on their account outside of the discount window but within the total allotted timeframe for payment. CBS does not receive a discount in this case but does pay in full and on time.

Purchase Returns and Allowances Transaction Journal Entries

On June 1, CBS purchased 300 landline telephones with cash at a cost of \$60 each. On June 3, CBS discovers that 25 of the phones are the wrong color and returns the phones to the manufacturer for a full refund. The following entries occur with the purchase and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
Jun. 1	Purchases: Phones Cash <i>To recognize phone purchase with cash</i>	18,000	18,000

Purchases-Phones increases (debit) and Cash decreases (credit) by \$18,000 ($\60×300).

JOURNAL			
Date	Account	Debit	Credit
Jun. 3	Cash Purchase Returns and Allowances <i>To recognize return of 25 phones, cash refund</i>	1,500	1,500

Since CBS already paid in full for their purchase, a full cash refund is issued. This increases Cash (debit) and

increases (credit) Purchase Returns and Allowances. Purchase Returns and Allowances is a contra account and decreases Purchases at the end of a period.

On June 8, CBS discovers that 60 more phones from the June 1 purchase are slightly damaged. CBS decides to keep the phones but receives a purchase allowance from the manufacturer of \$8 per phone. The following entry occurs for the allowance.

JOURNAL			
Date	Account	Debit	Credit
Jun. 8	Cash Purchase Returns and Allowances <i>To recognize allowance for 60 phones</i>	480	480

Since CBS already paid in full for their purchase, a cash refund of the allowance is issued in the amount of \$480 ($60 \times \8). This increases Cash (debit) and increases Purchase Returns and Allowances.

CBS purchases 80 units of the 4-in-1 desktop printers at a cost of \$100 each on July 1 on credit. Terms of the purchase are 5/15, n/40, with an invoice date of July 1. On July 6, CBS discovers 15 of the printers are damaged and returns them to the manufacturer for a full refund. The following entries show the purchase and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
July 1	Purchases: Printers Accounts Payable <i>To recognize printer purchase on credit, 5/15, n/40</i>	8,000	8,000

Purchases-Printers increases (debit) and Accounts Payable increases (credit) by \$8,000 ($\100×80).

JOURNAL			
Date	Account	Debit	Credit
July 6	Accounts Payable Purchase Returns and Allowances <i>To recognize return of 15 printers, AP reduction</i>	1,500	1,500

Accounts Payable decreases (debit) and Purchase Returns and Allowances increases (credit) by \$1,500 ($15 \times \100). The purchase was on credit and the return occurred before payment. Thus Accounts Payable is debited.

On July 10, CBS discovers that 4 more printers from the July 1 purchase are slightly damaged but decides to keep them because the manufacturer issues an allowance of \$30 per printer. The following entry recognizes the allowance.

JOURNAL			
Date	Account	Debit	Credit
July 10	Accounts Payable Purchase Returns and Allowances <i>To recognize allowance for 4 printers, AP reduction</i>	120	120

Accounts Payable decreases (debit) and Purchase Returns and Allowances increases (credit) by \$120 ($4 \times \30). The purchase was on credit and the allowance occurred before payment. Thus, Accounts Payable is debited.

On July 15, CBS pays their account in full, less purchase returns and allowances. The following payment entry occurs.

JOURNAL			
Date	Account	Debit	Credit
July 15	Accounts Payable Purchase Discount Cash <i>To recognize payment, less discount, return and allowance</i>	6,380	319 6,061

Accounts Payable decreases (debit) for the amount owed, less the return of \$1,500 and the allowance of \$120 (\$8,000 – \$1,500 – \$120). Since CBS paid on July 15, they made the 15-day window and received a discount of 5%. Cash decreases (credit) for the amount owed, less the discount. Purchase Discounts increases (credit) for the amount of the discount (\$6,380 × 5%).

Summary of Purchase Transaction Journal Entries

The chart in [Figure 6.16](#) represents the journal entry requirements based on various merchandising purchase transactions using the periodic inventory system.

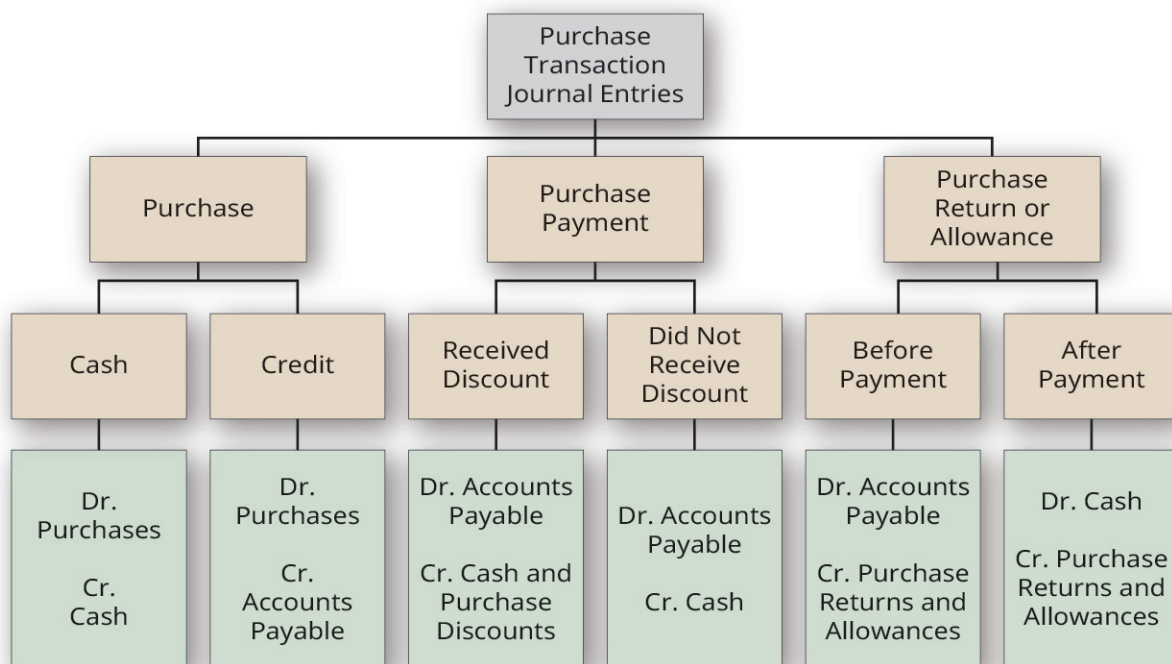


Figure 6.16 Purchase Transaction Journal Entries Flow Chart. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

YOUR TURN

Recording a Retailer's Purchase Transactions using a Periodic Inventory System

Record the journal entries for the following purchase transactions of a retailer, using the periodic inventory system.

Dec. 3	Purchased \$500 worth of inventory on credit with terms 2/10, n/30, and invoice dated December 3.
Dec. 6	Returned \$150 worth of damaged inventory to the manufacturer and received a full refund.
Dec. 9	Customer paid the account in full, less the return.

Solution

JOURNAL			
Date	Account	Debit	Credit
Dec. 3	Purchases Accounts Payable <i>To recognize inventory purchase, 2/10, n/30</i>	500	500
Dec. 6	Accounts Payable Purchase Returns and Allowances <i>To recognize inventory return</i>	150	150
Dec. 9	Accounts Payable Purchase Discounts Cash <i>To recognize payment, less discount and return</i>	350	7 343

Merchandise Sales

The following example transactions and subsequent journal entries for merchandise sales are recognized using a periodic inventory system.

Basic Analysis of Sales Transaction Journal Entries

Let's continue to follow California Business Solutions (CBS) and the sale of electronic hardware packages to business customers. As previously stated, each package contains a desktop computer, tablet computer, landline telephone, and 4-in-1 printer. CBS sells each hardware package for \$1,200. They offer their customers the option of purchasing extra individual hardware items for every electronic hardware package purchase. The following is the list of products CBS sells to customers; the prices are per-package, and per unit.

Product	Sales Price per-package, per unit	Cost to CBS per-package, per unit
Electronic hardware package	\$1,200	\$620
Desktop computer	750	400
Tablet computer	300	60
Landline telephone	150	60
4-in-1 printer	350	100

Cash and Credit Sales Transaction Journal Entries

On July 1, CBS sells 10 electronic packages to a customer at a sales price of \$1,200 each. The customer pays immediately with cash. The following entries occur.

JOURNAL			
Date	Account	Debit	Credit
July 1	Cash Sales <i>To recognize sale of 10 packages</i>	12,000	12,000

Cash increases (debit) and Sales increases (credit) by the selling price of the packages, \$12,000 ($\$1,200 \times 10$). Unlike the perpetual inventory system, there is no entry for the cost of the sale. This recognition occurs at the end of the period with an adjustment to Cost of Goods Sold.

On July 7, CBS sells 20 desktop computers to a customer on credit. The credit terms are n/15 with an invoice date of July 7. The following entries occur.

JOURNAL			
Date	Account	Debit	Credit
July 7	Accounts Receivable Sales <i>To recognize sale of 20 desktop computers, n/15</i>	15,000	15,000

Since the computers were purchased on credit by the customer, Accounts Receivable increases (debit) and Sales increases (credit) by the selling price of the computers, \$15,000 ($\750×20).

On July 17, the customer makes full payment on the amount due from the July 7 sale. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
July 17	Cash Accounts Receivable <i>To recognize payment in full</i>	15,000	15,000

Accounts Receivable decreases (credit) and Cash increases (debit) by the full amount owed. The credit terms were n/15, which is net due in 15 days. No discount was offered with this transaction, thus the full payment of \$15,000 occurs.

Sales Discount Transaction Journal Entries

On August 1, a customer purchases 56 tablet computers on credit. Terms are 2/10, n/30, and invoice dated August 1. The following entries occur.

JOURNAL			
Date	Account	Debit	Credit
Aug. 1	Accounts Receivable Sales <i>To recognize sale of 56 tablet computers, 2/10, n/30</i>	16,800	16,800

Accounts Receivable increases (debit) and Sales increases (credit) by \$16,800 ($\300×56). These credit terms are a little different than the earlier example. These credit terms include a discount opportunity (2/10). This means that the customer has 10 days from the invoice date to pay on their account to receive a 2% discount on their purchase.

On August 10, the customer pays their account in full. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Aug. 10	Cash Sales Discounts Accounts Receivable <i>To recognize payment, less sales discount</i>	16,464 336	16,800

Since the customer paid on August 10, they made the 10-day window, thus receiving a discount of 2%. Cash increases (debit) for the amount paid to CBS, less the discount. Sales Discounts increases (debit) by the amount of the discount ($\$16,800 \times 2\%$), and Accounts Receivable decreases (credit) by the original amount owed, before discount. Sales Discounts will reduce Sales at the end of the period to produce net sales.

Let's take the same example sale with the same credit terms, but now assume that the customer paid their account on August 25. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Aug. 25	Cash Accounts Receivable <i>To recognize payment for tablets, no discount</i>	16,800	16,800

Cash increases (debit) and Accounts Receivable decreases (credit) by \$16,800. The customer paid on their account outside of the discount window but within the total allotted timeframe for payment. The customer does not receive a discount in this case but does pay in full and on time.

Sales Returns and Allowances Transaction Journal Entries

On September 1, CBS sold 250 landline telephones to a customer who paid with cash. On September 3, the customer discovers that 40 of the phones are the wrong color and returns the phones to CBS in exchange for a full refund. The following entries occur for the sale and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
Sept. 1	Cash Sales <i>To recognize sale of 250 phones with cash</i>	37,500	37,500

Cash increases (debit) and Sales increases (credit) by \$37,500 ($250 \times \150), the sales price of the phones.

JOURNAL			
Date	Account	Debit	Credit
Sept. 3	Sales Returns and Allowances Cash <i>To recognize return of 40 phones, cash refund</i>	6,000	6,000

Since the customer already paid in full for their purchase, a full cash refund is issued on September 3. This increases Sales Returns and Allowances (debit) and decreases Cash (credit) by \$6,000 ($40 \times \150). Unlike in the perpetual inventory system, CBS does not recognize the return of merchandise to inventory. Instead, CBS will make an adjustment to Merchandise Inventory at the end of the period.

On September 8, the customer discovers that 20 more phones from the September 1 purchase are slightly damaged. The customer decides to keep the phones but receives a sales allowance from CBS of \$10 per phone. The following entry occurs for the allowance.

JOURNAL			
Date	Account	Debit	Credit
Sept. 8	Sales Returns and Allowances Cash <i>To recognize allowance for 20 phones</i>	200	200

Since the customer already paid in full for their purchase, a cash refund of the allowance is issued in the amount of \$200 ($20 \times \10). This increases (debit) Sales Returns and Allowances and decreases (credit) Cash.

A customer purchases 55 units of the 4-in-1 desktop printers on October 1 on credit. Terms of the sale are 10/15, n/40, with an invoice date of October 1. On October 6, the customer discovers 10 of the printers are damaged and returns them to CBS for a full refund. The following entries show the sale and subsequent return.

JOURNAL			
Date	Account	Debit	Credit
Oct. 1	Accounts Receivable Sales <i>To recognize sale of 55 printers on credit, 10/15, n/40</i>	19,250	19,250

Accounts Receivable increases (debit) and Sales increases (credit) by \$19,250 ($55 \times \350), the sales price of the printers. Accounts Receivable is used instead of Cash because the customer purchased on credit.

JOURNAL			
Date	Account	Debit	Credit
Oct. 6	Sales Returns and Allowances Accounts Receivable <i>To recognize return of 10 printers</i>	3,500	3,500

The customer has not yet paid for their purchase as of October 6. This increases Sales Returns and Allowances (debit) and decreases Accounts Receivable (credit) by \$3,500 ($10 \times \350).

On October 10, the customer discovers that 5 more printers from the October 1 purchase are slightly damaged, but decides to keep them because CBS issues an allowance of \$60 per printer. The following entry recognizes the allowance.

JOURNAL			
Date	Account	Debit	Credit
Oct. 10	Sales Returns and Allowances Accounts Receivable <i>To recognize allowance for 5 printers</i>	300	300

Sales Returns and Allowances increases (debit) and Accounts Receivable decreases (credit) by \$300 ($5 \times \60). A reduction to Accounts Receivable occurs because the customer has yet to pay their account on October 10.

On October 15, the customer pays their account in full, less sales returns and allowances. The following payment entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Oct. 15	Cash Sales Discounts Accounts Receivable <i>To recognize payment, less sales discount, return and allowance</i>	13,905 1,545	15,450

Accounts Receivable decreases (credit) for the original amount owed, less the return of \$3,500 and the allowance of \$300 ($\$19,250 - \$3,500 - \300). Since the customer paid on October 15, they made the 15-day window and receiving a discount of 10%. Sales Discounts increases (debit) for the discount amount ($\$15,450 \times 10\%$). Cash increases (debit) for the amount owed to CBS, less the discount.

Summary of Sales Transaction Journal Entries

The chart in [Figure 6.17](#) represents the journal entry requirements based on various merchandising sales transactions using a periodic inventory system.

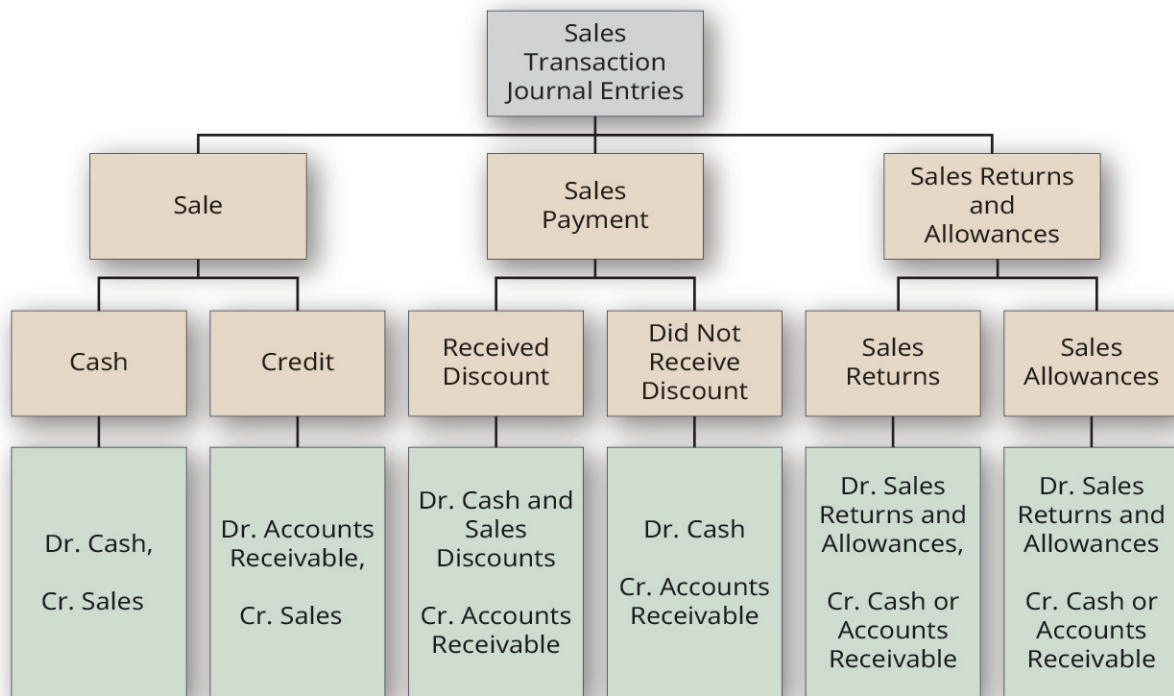


Figure 6.17 Journal Entry Requirements for Merchandise Sales Transaction Using a Periodic Inventory System. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

YOUR TURN

Recording a Retailer's Sales Transactions using a Periodic Inventory System

Record the journal entries for the following sales transactions of a retailer using the periodic inventory system.

- | | |
|---------|---|
| Jan. 5 | Sold \$2,450 of merchandise on credit (cost of \$1,000), with terms 2/10, n/30, and invoice dated January 5. |
| Jan. 9 | The customer returned \$500 worth of slightly damaged merchandise to the retailer and received a full refund. |
| Jan. 14 | Customer paid the account in full, less the return. |

Solution

JOURNAL			
Date	Account	Debit	Credit
Jan. 5	Accounts Receivable Sales <i>To recognize sale on credit, 2/10, n/30</i>	2,450	2,450
Jan. 9	Sales Returns and Allowances Accounts Receivable <i>To recognize customer return</i>	500	500
Jan. 14	Cash Sales Discounts Accounts Receivable <i>To recognize payment, less discount and return</i>	1,911 39	1,950

Key Terms

cash discount provides a discount on the final price after purchase, if a retailer pays within a discount window, typically stated in days

cost of goods sold (COGS) expense account that houses all costs associated with getting a product ready for sale

FOB destination point transportation terms whereby the seller transfers ownership and financial responsibility at the time of delivery

FOB shipping point transportation terms whereby the seller transfers ownership and financial responsibility at the time of shipment

freight-in buyer is responsible for when receiving shipment from a seller

freight-out seller is responsible for when shipping to a buyer

goods in transit time in which the merchandise is being transported from the seller to the buyer

gross margin amount available after deducting cost of goods sold from net sales, to cover operating expenses and profit

gross profit margin ratio proportion of margin a company attains, above their cost of goods sold to cover operating expenses and profit, calculated by subtracting cost of goods sold from total net revenue to arrive at gross profit and then taking gross profit divided by total net revenues

gross purchases original amount of the purchase without factoring in reductions for purchase discounts, returns, or allowances

gross sales original amount of the sale without factoring in reductions for sales discounts, returns, or allowances

income from operations gross margin less deductions for operating expenses

merchandising company resells finished goods produced by a manufacturer (supplier) to customers

net income when revenues and gains are greater than expenses and losses

net purchases outcome of purchase discounts, returns, and allowances deducted from gross purchases

net sales outcome of sales discounts, returns, and allowances deducted from gross sales

operating cycle amount of time it takes a company to use its cash to provide a product or service and collect payment from the customer

operating expenses daily operational costs not associated with the direct selling of products or services

other revenue and expenses revenues and expenses not associated with daily operations, or the sale of goods and services

ownership of inventory which party owns the inventory at a particular point in time, the buyer or the seller

periodic inventory system updates and records the inventory account at certain, scheduled times at the end of an operating cycle

perpetual inventory system system that automatically updates and records the inventory account every time a sale or purchase of inventory occurs

physical inventory count manual stock check of inventory to make sure what is recorded on the books matches what is actually in the warehouse and on the sales floor

point of transfer when the responsibility for the inventory transfers from the seller to the buyer

purchase discounts provide an incentive for the retailer to pay early on their accounts, by issuing a reduced rate on their final purchase cost; the discount reduces the value of merchandise inventory

purchase returns and allowances retailer receives a partial or full refund from the manufacturer for defective merchandise

sales discounts reduction in the selling price offered to customers who pay their account within the discount

period; the actual account is a contra revenue account that reduces sales

sales returns and allowances contra revenue account with a normal debit balance that reduces the gross sales figure at the end of the period; the customer returns merchandise with a sales return, and keeps the merchandise with a sales allowance

service company provides intangible services to customers, and does not have inventory

trade discount reduction to the advertised manufacturer's price during negotiation of a final purchase price



Summary

6.1 Compare and Contrast Merchandising versus Service Activities and Transactions

- Service companies sell intangible services and do not have inventory. Their operating cycle begins with cash-on-hand, providing service to customers, and collecting customer payments.
- Merchandising companies resell goods to consumers. Their operating cycle begins with cash-on-hand, purchasing inventory, selling merchandise, and collecting customer payments.
- A purchase discount is an incentive for a retailer to pay their account early. Credit terms establish the percentage discount, and Merchandise Inventory decreases if the discount is taken.
- A retailer receives a full or partial refund for returning or keeping defective merchandise. This can reduce the value of the Merchandise Inventory account.
- A customer receives an incentive for paying on their account early. Sales Discounts is a contra revenue account that will reduce Sales at the end of a period.
- A customer receives a refund for returning or keeping defective merchandise. Sales returns and allowances is a contra revenue account that will reduce Sales at the end of a period.

6.2 Compare and Contrast Perpetual versus Periodic Inventory Systems

- A perpetual inventory system inventory updates purchase and sales records constantly, particularly impacting Merchandise Inventory and Cost of Goods Sold.
- A periodic inventory system only records updates to inventory and costs of sales at scheduled times throughout the year, not constantly. Merchandise Inventory and Cost of Goods Sold are updated at the end of a period.
- Cost of goods sold (COGS) includes all elements of cost related to the sale of merchandise. The formula to determine COGS if one is using the periodic inventory system, is Beginning Inventory + Net Purchases – Ending Inventory.
- The perpetual inventory system keeps real-time data and the information is more robust. However, it is costly and time consuming, and physical counts of inventory are scarce.
- With the periodic inventory system, there are more frequent inventory counts and reduced chances for shrinkage and damaged merchandise. However, the periodic system makes it difficult for businesses to keep track of inventory costs and to make present decisions about their business.

6.3 Analyze and Record Transactions for Merchandise Purchases Using the Perpetual Inventory System

- A retailer can pay with cash or on credit. If paying with cash, Cash decreases. If paying on credit instead of cash, Accounts Payable increases.
- If a company pays for merchandise within the discount window, they debit Accounts Payable, credit Merchandise Inventory, and credit Cash. If they pay outside the discount window, the company debits Accounts Payable and credits Cash.
- If a company returns merchandise before remitting payment, they would debit Accounts Payable and credit Merchandise Inventory. If the company returns merchandise after remitting payment, they would debit Cash and credit Merchandise Inventory.

- If a company obtains an allowance for damaged merchandise before remitting payment, they would debit Accounts Payable and credit Merchandise Inventory. If the company obtains an allowance for damaged merchandise after remitting payment, they would debit Cash and credit Merchandise Inventory.

6.4 Analyze and Record Transactions for the Sale of Merchandise Using the Perpetual Inventory System

- A customer can pay with cash or on credit. If paying on credit instead of cash, Accounts Receivable increases rather than Cash; Sales increases in both instances. A company must also record the cost of sale entry, where Merchandise Inventory decreases and COGS increases.
- If a customer pays for merchandise within the discount window, the company would debit Cash and Sales Discounts while crediting Accounts Receivable. If the customer pays outside the discount window, the company debits Cash and credits Accounts Receivable only.
- If a customer returns merchandise before remitting payment, the company would debit Sales Returns and Allowances and credit Accounts Receivable or Cash. The company may return the merchandise to their inventory by debiting Merchandise Inventory and crediting COGS.
- If a customer obtains an allowance for damaged merchandise before remitting payment, the company would debit Sales Returns and Allowances and credit Accounts Receivable or Cash. The company does not have to consider the merchandise condition because the customer keeps the merchandise in this instance.

6.5 Discuss and Record Transactions Applying the Two Commonly Used Freight-In Methods

- Establishing ownership of inventory is important because it helps determine who is responsible for shipping charges, goods in transit, and transfer points. Ownership also determines reporting requirements for the buyer and seller. The buyer is responsible for the merchandise, and the cost of shipping, insurance, purchase price, taxes, and fees are held in inventory in its Merchandise Inventory account. The buyer would record an increase (debit) to Merchandise Inventory and either a decrease to Cash or an increase to Accounts Payable (credit) depending on payment method.
- FOB Shipping Point means the buyer should record the merchandise as inventory when it leaves the seller's location. FOB destination means the seller should continue to carry the merchandise in inventory until it reaches the buyer's location. This becomes really important at year-end when each party is trying to determine their actual balance sheet inventory accounts.
- FOB Destination means the seller is responsible for the merchandise, and the cost of shipping is expensed immediately in the period as a delivery expense. The seller would record an increase (debit) to Delivery Expense, and a decrease to Cash (credit).
- In FOB Destination, the seller is responsible for the shipping charges and like expenses. The point of transfer is when the merchandise reaches the buyer's place of business, and the seller owns the inventory in transit.
- In FOB Shipping Point, the buyer is responsible for the shipping charges and like expenses. The point of transfer is when the merchandise leaves the seller's place of business, and the buyer owns the inventory in transit.

6.6 Describe and Prepare Multi-Step and Simple Income Statements for Merchandising Companies

- Multi-step income statements provide greater detail than simple income statements. The format differentiates sales costs from operating expenses and separates other revenue and expenses from operational activities. This statement is best used internally by managers to make pricing and cost reduction decisions.
- Simple income statements are not as detailed as multi-step income statements and combine all revenues and all expenses into general categories. There is no differentiation between operational and non-

operational activities. Therefore, this statement is sometimes used as a summary for external users to view general company information.

- The gross profit margin ratio can show a company if they have a significant enough margin after sales revenue and cost data are computed to cover operational costs and profit goals. If a company is not meeting their target for this ratio, they may consider increasing prices or decreasing costs.

6.7 Appendix: Analyze and Record Transactions for Merchandise Purchases and Sales Using the Periodic Inventory System

- A retailer can pay with cash or credit. Unlike in the perpetual inventory system, purchases of inventory in the periodic inventory system will debit Purchases rather than Merchandise Inventory.
- If a company pays for merchandise within the discount window, it debits Accounts Payable, credits Purchase Discounts, and credits Cash. If they pay outside the discount window, the company debits Accounts Payable and credits Cash.
- If a company returns merchandise before remitting payment, they would debit Accounts Payable and credit Purchase Returns and Allowances. If the company returns merchandise after remitting payment, they would debit Cash and credit Purchase Returns and Allowances.
- If a company obtains an allowance for damaged merchandise before remitting payment, they would debit Accounts Payable and credit Purchase Returns and Allowances. If the company obtains an allowance for damaged merchandise after remitting payment, they would debit Cash and credit Purchase Returns and Allowances.
- A customer can pay with cash or on credit. Unlike a perpetual inventory system, when recording a sale under a periodic system, there is no cost entry.
- If a customer pays for merchandise within the discount window, the company would debit Cash and Sales Discounts and credit Accounts Receivable. If the customer pays outside the discount window, the company debits Cash and credits Accounts Receivable only.
- If a customer returns merchandise before remitting payment, the company would debit Sales Returns and Allowances and credit Accounts Receivable or Cash.
- If a customer obtains an allowance for damaged merchandise before remitting payment, the company would debit Sales Returns and Allowances and credit Accounts Receivable or Cash.

Note: All of the following assessments assume a periodic inventory system unless otherwise noted.



Multiple Choice

1. **LO 6.1** Which of the following is an example of a contra revenue account?
 - A. sales
 - B. merchandise inventory
 - C. sales discounts
 - D. accounts payable
2. **LO 6.1** What accounts are used to recognize a retailer's purchase from a manufacturer on credit?
 - A. accounts receivable, merchandise inventory
 - B. accounts payable, merchandise inventory
 - C. accounts payable, cash
 - D. sales, accounts receivable

3. **LO 6.1** Which of the following numbers represents the discount percentage applied if a customer pays within a discount window and credit terms are 3/15, n/60?
- A. 3
 - B. 15
 - C. 60
 - D. 3 and 15
4. **LO 6.1** If a customer purchases merchandise on credit and returns the defective merchandise before payment, what accounts would recognize this transaction?
- A. sales discount, cash
 - B. sales returns and allowances, cash
 - C. accounts receivable, sales discount
 - D. accounts receivable, sales returns and allowances
5. **LO 6.2** Which of the following is a disadvantage of the perpetual inventory system?
- A. Inventory information is in real-time.
 - B. Inventory is automatically updated.
 - C. It allows managers to make current decisions about purchases, stock, and sales.
 - D. It is cost-prohibitive.
6. **LO 6.2** Which of the following is an advantage of the periodic inventory system?
- A. frequent physical inventory counts
 - B. cost prohibitive
 - C. time consuming
 - D. real-time information for managers
7. **LO 6.2** Which of the following is *not* a reason for the physical inventory count to differ from what is recognized on the company's books?
- A. mismanagement
 - B. shrinkage
 - C. damage
 - D. sale of services to customers
8. **LO 6.2** Which of the following is not included when computing Net Purchases?
- A. purchase discounts
 - B. beginning inventory
 - C. purchase returns
 - D. purchase allowances
9. **LO 6.3** Which of the following accounts are used when recording a purchase?
- A. cash, merchandise inventory
 - B. accounts payable, merchandise inventory
 - C. A or B
 - D. cash, accounts payable

10. LO 6.3 A retailer pays on credit for \$650 worth of inventory, terms 3/10, n/40. If the merchandiser pays within the discount window, how much will the retailer remit in cash to the manufacturer?

- A. \$19.50
- B. \$630.50
- C. \$650
- D. \$195

11. LO 6.3 A retailer returns \$400 worth of inventory to a manufacturer and receives a full refund. What accounts recognize this return before the retailer remits payment to the manufacturer?

- A. accounts payable, merchandise inventory
- B. accounts payable, cash
- C. cash, merchandise inventory
- D. merchandise inventory, cost of goods sold

12. LO 6.3 A retailer obtains a purchase allowance from the manufacturer in the amount of \$600 for faulty inventory parts. Which of the following represents the journal entry for this transaction if the retailer has already remitted payment?

A.

Accounts Payable	600	
Merchandise Inventory		600

B.

Cash	600	
Merchandise Inventory		600

C.

Accounts Payable	600	
Merchandise Inventory		10
Cash		590

13. LO 6.4 Which of the following accounts are used when recording the sales entry of a sale on credit?

- A. merchandise inventory, cash
- B. accounts receivable, merchandise inventory
- C. accounts receivable, sales
- D. sales, cost of goods sold

14. LO 6.4 A customer pays on credit for \$1,250 worth of merchandise, terms 4/15, n/30. If the customer pays within the discount window, how much will they remit in cash to the retailer?

- A. \$1,250
- B. \$1,200
- C. \$50
- D. \$500

15. **L0 6.4** A customer returns \$870 worth of merchandise and receives a full refund. What accounts recognize this sales return (disregarding the merchandise condition entry) if the return occurs before the customer remits payment to the retailer?

- A. accounts receivable, sales returns and allowances
- B. accounts receivable, cash
- C. sales returns and allowances, merchandise inventory
- D. accounts receivable, cost of goods sold

16. **L0 6.4** A customer obtains a purchase allowance from the retailer in the amount of \$220 for damaged merchandise. Which of the following represents the journal entry for this transaction if the customer has not yet remitted payment?

A.

Sales Returns and Allowances	220	
Cash		220

B.

Sales Returns and Allowances	220	
Accounts Receivable		220

C.

Cash	200	
Sales Returns and Allowances	20	
Accounts Receivable		220

17. **L0 6.5** Which of the following is *not* a characteristic of FOB Destination?

- A. The seller pays for shipping.
- B. The seller owns goods in transit.
- C. The point of transfer is when the goods leave the seller's place of business.
- D. The point of transfer is when the goods arrive at the buyer's place of business.

18. **L0 6.5** Which two accounts are used to recognize shipping charges for a buyer, assuming the buyer purchases with cash and the terms are FOB Shipping Point?

- A. delivery expense, cash
- B. merchandise inventory, cash
- C. merchandise inventory, accounts payable
- D. The buyer does not record anything for shipping since it is FOB Shipping Point.

19. **L0 6.5** Which of the following is *not* a characteristic of FOB Shipping Point?

- A. The buyer pays for shipping.
- B. The buyer owns goods in transit.
- C. The point of transfer is when the goods leave the seller's place of business.
- D. The point of transfer is when the goods arrive at the buyer's place of business.

20. **L0 6.6** A multi-step income statement _____.

- A. separates cost of goods sold from operating expenses
- B. considers interest revenue an operating activity
- C. is another name for a simple income statement
- D. combines cost of goods sold and operating expenses

21. **L0 6.6** Which of the following accounts would be reported under operating expenses on a multi-step income statement?

- A. sales
- B. advertising expense
- C. sales returns and allowances
- D. interest expense

22. **L0 6.6** A simple income statement _____.

- A. combines all revenues into one category
- B. does not combine all expenses into one category
- C. separates cost of goods sold from operating expenses
- D. separates revenues into several categories

23. **L0 6.6** Which of the following accounts would *not* be reported under revenue on a simple income statement?

- A. interest revenue
- B. net sales
- C. rent revenue
- D. operating expenses

24. **L0 6.7** Which of the following accounts are used when recording a purchase using a periodic inventory system?

- A. cash, purchases
- B. accounts payable, sales
- C. accounts payable, accounts receivable
- D. cash, merchandise inventory

25. **L0 6.7** A retailer obtains a purchase allowance from the manufacturer in the amount of \$600 for faulty inventory parts. Which of the following represents the journal entry for this transaction, assuming the retailer has already remitted payment?

A.

Accounts Payable	600	
Merchandise Inventory		600

B.

Cash	600	
Purchase Returns and Allowances		600

C.

Accounts Payable	600	
Purchase Discounts		10
Cash		590

26. **L0 6.7** A customer returns \$690 worth of merchandise and receives a full refund. What accounts recognize this sales return, assuming the customer has not yet remitted payment to the retailer?

- A. accounts receivable, sales returns and allowances
- B. accounts receivable, cash
- C. sales returns and allowances, purchases
- D. sales discounts, cost of goods sold

27. **LO 6.7** A customer obtains an allowance from the retailer in the amount of \$450 for damaged merchandise. Which of the following represents the journal entry for this transaction, assuming the customer has not remitted payment?

A.

Sales Returns and Allowances	450	
Cash		450

B.

Sales Returns and Allowances	450	
Accounts Receivable		450

C.

Cash	400	
Sales Returns and Allowances	50	
Accounts Receivable		450

Questions

- LO 6.1** What are some benefits to a retailer for offering a discount to a customer?
- LO 6.1** What do credit terms of 4/10, n/30 mean in regard to a purchase?
- LO 6.1** What is the difference between a sales return and a sales allowance?
- LO 6.1** If a retailer made a purchase in the amount of \$350 with credit terms of 2/15, n/60. What would the retailer pay in cash if they received the discount?
- LO 6.2** What are two advantages and disadvantages of the perpetual inventory system?
- LO 6.2** What are two advantages and disadvantages of the periodic inventory system?
- LO 6.2** Sunrise Flowers sells flowers to a customer on credit for \$130 on October 18, with a cost of sale to Sunrise of \$50. What entry to recognize this sale is required if Sunrise Flowers uses a *periodic* inventory system?
- LO 6.2** Sunrise Flowers sells flowers to a customer on credit for \$130 on October 18, with a cost of sale to Sunrise of \$50. What entry to recognize this sale is required if Sunrise Flowers uses a *perpetual* inventory system?
- LO 6.3** Name two situations where cash would be remitted to a retailer from a manufacturer after purchase.
- LO 6.3** If a retailer purchased inventory in the amount of \$750, terms 2/10, n/60, returned \$30 of the inventory for a full refund, and received an allowance for \$95, how much would the discount be if the retailer remitted payment within the discount window?
- LO 6.3** A retailer discovers that 50% of the total inventory items delivered from the manufacturer are damaged. The original purchase for all inventory was \$1,100. The retailer decides to return 20% of the damaged inventory for a full refund and keep the remaining 80% of damaged inventory. What is the value of the merchandise returned?

12. **L0 6.4** Name two situations where cash would be remitted to a customer from a retailer after purchase.
13. **L0 6.4** If a customer purchased merchandise in the amount of \$340, terms 3/10, n/30, returned \$70 of the inventory for a full refund, and received an allowance for \$65, how much discount would be applied if the customer remitted payment within the discount window?
14. **L0 6.4** A customer discovers 60% of the total merchandise delivered from a retailer is damaged. The original purchase for all merchandise was \$3,600. The customer decides to return 35% of the damaged merchandise for a full refund and keep the remaining 65%. What is the value of the merchandise returned?
15. **L0 6.5** What are the main differences between FOB Destination and FOB Shipping Point?
16. **L0 6.5** A buyer purchases \$250 worth of goods on credit from a seller. Shipping charges are \$50. The terms of the purchase are 2/10, n/30, FOB Destination. What, if any, journal entry or entries will the buyer record for these transactions?
17. **L0 6.5** A seller sells \$800 worth of goods on credit to a customer, with a cost to the seller of \$300. Shipping charges are \$100. The terms of the sale are 2/10, n/30, FOB Destination. What, if any, journal entry or entries will the seller record for these transactions?
18. **L0 6.5** Which statement and where on the statement is freight-out recorded? Why is it recorded there?
19. **L0 6.6** The following is select account information for Sunrise Motors. Sales: \$256,400; Sales Returns and Allowances: \$34,890; COGS: \$120,470; Sales Discounts: \$44,760. Given this information, what is the Gross Profit Margin Ratio for Sunrise Motors? (Round to the nearest whole percentage.)
20. **L0 6.6** What is the difference between a multi-step and simple income statement?
21. **L0 6.6** How can an investor or lender use the Gross Profit Margin Ratio to make financial contribution decisions?
22. **L0 6.6** The following is select account information for August Sundries. Sales: \$850,360; Sales Returns and Allowances: \$148,550; COGS: \$300,840; Operating Expenses: \$45,770; Sales Discounts: \$231,820. If August Sundries uses a multi-step income statement format, what is their gross margin?
23. **L0 6.7** If a retailer purchased inventory in the amount of \$680, terms 3/10, n/60, returned \$120 of the inventory for a full refund, and received an allowance for \$70, how much would the discount be if the retailer remitted payment within the discount window?
24. **L0 6.7** A customer discovers 50% of the total merchandise delivered from the retailer is damaged. The original purchase for all merchandise was \$5,950. The customer decides to return 40% of the damaged merchandise for a full refund and keep the remaining 60%. What is the value of the merchandise returned?
25. **L0 6.7** What is the difference in reporting requirements for customer-returned merchandise in sellable condition under a perpetual inventory system versus a periodic inventory system?



Exercise Set A

EA1. **L0 6.1** On March 1, Bates Board Shop sells 300 surfboards to a local lifeguard station at a sales price of \$400 per board. The cost to Bates is \$140 per board. The terms of the sale are 3/15, n/30, with an invoice date of March 1. Create the journal entries for Bates to recognize the following transactions.

- A. the initial sale
- B. the subsequent customer payment on March 10

EA2. **L0 6.1** Marx Corp. purchases 135 fax machines on credit from a manufacturer on April 7 at a price of \$250 per machine. Terms of the purchase are 4/10, n/20 with an invoice date of April 7. Marx Corp pays in full for the fax machines on April 17. Create the journal entries for Marx Corp. to record:

- A. the initial purchase
- B. the subsequent payment on April 17

EA3. **L0 6.1** Match each of the following terms with the best corresponding definition.

A. Sales allowance	i. A customer returns merchandise for a full refund
B. Purchase return	ii. A retailer receives a partial refund but keeps the defective merchandise
C. Sales discount	iii. A customer receives a partial refund but keeps the defective merchandise
D. Purchase discount	iv. A customer pays their account in full within the discount window
E. Sales return	v. A type of purchase discount negotiated between a manufacturer and a retailer before settlement on a final price
F. Trade discount	vi. A retailer returns merchandise for a full refund
G. Purchase allowance	vii. A retailer pays their account in full within the discount window

EA4. **L0 6.2** The following is selected information from Mars Corp. Compute net purchases, and cost of goods sold for the month of March.

Inventory, February 28, 2018	\$450,000
Inventory, March 31, 2018	330,500
Purchase discounts	12,450
Purchase returns and allowances	23,870
Sales	276,900
Sales discounts	34,660
Gross purchases	120,400

EA5. **L0 6.2** On April 5, a customer returns 20 bicycles with a sales price of \$250 per bike to Barrio Bikes. Each bike cost Barrio Bikes \$100. The customer had yet to pay on their account. The bikes are in sellable condition. Prepare the journal entry or entries to recognize this return if the company uses

- A. the perpetual inventory system
- B. the periodic inventory system

EA6. LO 6.3 Record journal entries for the following purchase transactions of Flower Company.

Oct. 13	Purchased 85 bushels of flowers with cash for \$1,300.
Oct. 20	Purchased 240 bushels of flowers for \$20 per bushel on credit. Terms of the purchase are 5/10, n/30, invoice dated October 20.
Oct. 30	Paid account in full from the October 20 purchase.

EA7. LO 6.3 Record journal entries for the following purchase transactions of Apex Industries.

Nov. 6	Purchased 24 computers on credit for \$560 per computer. Terms of the purchase are 4/10, n/60, invoice dated November 6.
Nov. 10	Returned 5 defective computers for a full refund from the manufacturer.
Nov. 22	Paid account in full from the November 6 purchase.

EA8. LO 6.3 Record the journal entry for each of the following transactions. Glow Industries purchases 750 strobe lights at \$23 per light from a manufacturer on April 20. The terms of purchase are 10/15, n/40, invoice dated April 20. On April 22, Glow discovers 100 of the lights are the wrong model and is granted an allowance of \$8 per light for the error. On April 30, Glow pays for the lights, less the allowance.

EA9. LO 6.4 Record journal entries for the following sales transactions of Flower Company.

Oct. 12	Sold 25 bushels of flowers to a customer for \$1,000 cash; cost of sale \$700.
Oct. 21	Sold 40 bushels of flowers for \$30 per bushel on credit. Terms of the sale are 4/10, n/30, invoice dated October 21. Cost per bushel is \$20 to Flower Company.
Oct. 31	Received payment in full from the October 21 sale.

EA10. LO 6.4 Record the journal entries for the following sales transactions of Apache Industries.

Nov. 7	Sold 10 computers on credit for \$870 per computer. Terms of the sale are 5/10, n/60, invoice dated November 7. The cost per computer to Apache is \$560.
Nov. 14	The customer returned 2 computers for a full refund from Apache. Apache returns the computers to their inventory at full cost of \$560 per computer.
Nov. 21	The customer paid their account in full from the November 7 sale.

EA11. LO 6.4 Record the journal entry or entries for each of the following sales transactions. Glow Industries sells 240 strobe lights at \$40 per light to a customer on May 9. The cost to Glow is \$23 per light. The terms of the sale are 5/15, n/40, invoice dated May 9. On May 13, the customer discovers 50 of the lights are the wrong color and are granted an allowance of \$10 per light for the error. On May 21, the customer pays for the lights, less the allowance.

EA12. **L0** 6.5 Review the following situations and record any necessary journal entries for Mequon's Boutique.

May 10	Mequon's Boutique purchases \$2,400 worth of merchandise with cash from a manufacturer. Shipping charges are an extra \$130 cash. Terms of the purchase are FOB Shipping Point.
May 14	Mequon's Boutique sells \$3,000 worth of merchandise to a customer who pays with cash. The merchandise has a cost to Mequon's of \$1,750. Shipping charges are an extra \$150 cash. Terms of the sale are FOB Shipping Point.

EA13. **L0** 6.5 Review the following situations and record any necessary journal entries for Letter Depot.

Mar. 9	Letter Depot purchases \$11,420 worth of merchandise on credit from a manufacturer. Shipping charges are an extra \$480 cash. Terms of the purchase are 2/10, n/40, FOB Destination, invoice dated March 9.
Mar. 20	Letter Depot sells \$7,530 worth of merchandise to a customer who pays on credit. The merchandise has a cost to Letter Depot of \$2,860. Shipping charges are an extra \$440 cash. Terms of the sale are 3/15, n/50, FOB Destination, invoice dated March 20.

EA14. **L0** 6.5 Review the following situations and record any necessary journal entries for Nine Lives Inc.

Jan. 15	Nine Lives Inc. purchases \$8,770 worth of merchandise with cash from a manufacturer. Shipping charges are an extra \$345 cash. Terms of the purchase are FOB Shipping Point.
Jan. 23	Nine Lives Inc. sells \$4,520 worth of merchandise to a customer who pays with cash. The merchandise has a cost to Nine Lives of \$3,600. Shipping charges are an extra \$190 cash. Terms of the sale are FOB Destination.

EA15. **L0** 6.6 The following select account data is taken from the records of Reese Industries for 2019.

Sales	\$640,363
Merchandise inventory	582,620
Sales discounts	58,040
Interest expense	3,677
Sales returns and allowances	90,232
Interest revenue	10,268
Cost of goods sold	224,598
Rent expense	15,080
Depreciation expense: office equipment	3,200
Insurance expense	2,450
Advertising expense	12,906
Accounts receivable	100,440
Office supplies expense	1,600
Rent revenue	23,622
Sales salaries expense	30,410
Accounts payable	135,404
Common stock	59,419
Marketing expense	31,000

- Use the data provided to compute net sales for 2019.
- Prepare a simple income statement for the year ended December 31, 2019.
- Compute the gross margin for 2019.
- Prepare a multi-step income statement for the year ended December 31, 2019.

EA16. **L0 6.7** Record journal entries for the following purchase transactions of Flower Company.

- A. On October 13, Flower Company purchased 85 bushels of flowers with cash for \$1,300.
- B. On October 20, Flower Company purchased 240 bushels of flowers for \$20 per bushel on credit. Terms of the purchase were 5/10, n/30, invoice dated October 20.
- C. On October 30, Flower Company paid its account in full for the October 20 purchase.

EA17. **L0 6.7** Record journal entries for the following purchase transactions of Apex Industries.

Nov. 6	Purchased 24 computers on credit for \$560 per computer. Terms of the purchase are 4/10, n/60, invoice dated November 6.
Nov. 10	Returned 5 defective computers for a full refund from the manufacturer.
Nov. 22	Paid account in full from the November 6 purchase.

EA18. **L0 6.7** Record the journal entries for the following sales transactions of Julian Sundries.

Nov. 7	Sold 10 tables on credit for \$870 per table. Terms of the sale are 5/10, n/60, invoice dated November 7. The cost per table to Julian is \$560.
Nov. 14	The customer returned 2 slightly damaged tables for a full refund from Julian.
Nov. 21	The customer paid their account in full from the November 7 sale.

EA19. **L0 6.7** Record the journal entry or entries for each of the following sales transactions. Glow Industries sells 240 strobe lights at \$40 per light to a customer on May 9. The cost to Glow is \$23 per light. The terms of the sale are 5/15, n/40, invoice dated May 9. On May 13, the customer discovers 50 of the lights are the wrong color and are granted an allowance of \$10 per light for the error. On May 21, the customer pays for the lights, less the allowance.



Exercise Set B

EB1. **L0 6.1** On June 1, Lupita Candy Supplies sells 1,250 candy buckets to a local school at a sales price of \$10 per bucket. The cost to Lolita is \$2 per bucket. The terms of the sale are 2/10, n/60, with an invoice date of June 1. Create the journal entries for Lupita to recognize the following transactions.

- A. the initial sale
- B. the subsequent customer payment on July 12

EB2. **L0 6.1** Ariel Enterprises purchases 32 cellular telephones on credit from a manufacturer on November 3 at a price of \$400 per phone. Terms of the purchase are 3/5, n/30 with an invoice date of November 3. Ariel Enterprises pays in full for the phones on November 6. Create the journal entries for Ariel Enterprises for the following transactions.

- A. the initial purchase
- B. the subsequent payment on November 6

EB3. **L0 6.1** For each of the following statements, fill in the blanks with the correct account names.

- A retailer purchases merchandise on credit. The retailer would recognize this transaction by debiting ____ and crediting ____.
- A retailer pays for purchased merchandise within the discount window. The retailer would recognize this transaction by debiting ____ and crediting ____ and ____.
- A customer returns merchandise to the retailer and receives a full refund. The retailer would recognize this transaction by debiting ____ and crediting ____ if the customer had not yet paid on their account.
- A customer pays for purchased merchandise within the discount window. The retailer would recognize this transaction by debiting ____ and ____, and crediting ____.

EB4. **L0 6.2** The following is selected information from Orange Industries. Compute net purchases, and cost of goods sold for the month of June.

Sales	\$870,000
Gross purchases	435,080
Sales discounts	82,650
Purchase returns and allowances	50,932
Beginning inventory	321,908
Purchase discounts	14,664
Ending inventory	254,075

EB5. **L0 6.2** On April 20, Barrio Bikes purchased 30 bicycles at a cost of \$100 per bike. Credit terms were 4/10, n/30, with an invoice date of April 20. On April 26, Barrio Bikes pays in full for the purchase. Prepare the journal entry or entries to recognize the purchase and subsequent payment if Barrio Bikes uses:

- the perpetual inventory system
- the periodic inventory system

EB6. **L0 6.3** Blue Barns purchased 888 gallons of paint at \$19 per gallon from a supplier on June 3. Terms of the purchase are 2/15, n/45, invoice dated June 3. Blue Barns pays their account in full on June 20. On June 22, Blue Barns discovers 20 gallons are the wrong color and returns the gallons for a full cash refund. Record the journal entries to recognize these transactions for Blue Barns.

EB7. **L0 6.3** Canary Lawnmowers purchased 300 lawnmower parts at \$3.50 per part from a supplier on December 4. Terms of the purchase are 4/10, n/25, invoice dated December 4. Canary Lawnmowers pays their account in full on December 16. On December 21, Canary discovers 34 of the parts are the wrong size but decides to keep them after the supplier gives Canary an allowance of \$1.00 per part. Record the journal entries to recognize these transactions for Canary Lawnmowers.

EB8. **L0 6.3** Record journal entries for the following purchase transactions of Balloon Depot.

Feb. 8	Purchased 3,000 balloon bundles on credit for \$25 per bundle. Terms of the purchase are 10/10, n/30, invoice dated February 8.
Feb. 11	Returned 450 defective bundles for a full refund from the manufacturer.
Feb. 18	Paid account in full from the February 8 purchase.

EB9. **L0** **6.4** Blue Barns sold 136 gallons of paint at \$31 per gallon on July 6 to a customer with a cost of \$19 per gallon to Blue Barns. Terms of the sale are 2/15, n/45, invoice dated July 6. The customer pays their account in full on July 24. On July 28, the customer discovers 17 gallons are the wrong color and returns the paint for a full cash refund. Blue Barns returns the gallons to their inventory at the original cost per gallon. Record the journal entries to recognize these transactions for Blue Barns.

EB10. **L0** **6.4** Canary Lawnmowers sold 70 lawnmower parts at \$5.00 per part to a customer on December 4 with a cost to Canary of \$3.00 per part. Terms of the sale are 5/10, n/25, invoice dated December 4. The customer pays their account in full on December 16. On December 21, the customer discovers 22 of the parts are the wrong size but decides to keep them after Canary gives them an allowance of \$1.00 per part. Record the journal entries to recognize these transactions for Canary Lawnmowers.

EB11. **L0** **6.4** Record journal entries for the following sales transactions of Balloon Depot.

Mar. 8	Sold 570 balloon bundles to a customer on credit for \$38 per bundle. The cost to Balloon Depot was \$25 per bundle. Terms of the sale are 3/10, n/30, invoice dated March 8.
Mar. 11	The customer returned 70 bundles for a full refund from Balloon Depot. Balloon Depot returns the balloons to their inventory at the original cost of \$25 per bundle.
Mar. 18	The customer paid their account in full from the March 8 purchase.

EB12. **L0** **6.5** Review the following situations and record any necessary journal entries for Lumber Farm.

Feb. 13	Lumber Farm purchases \$9,650 worth of merchandise with cash from a manufacturer. Shipping charges are an extra \$210 cash. Terms of the purchase are FOB Destination.
Feb. 19	Lumber Farm sells \$5,670 worth of merchandise to a customer who pays with cash. The merchandise has a cost to Lumber Farm of \$2,200. Shipping charges are an extra \$230 cash. Terms of the sale are FOB Destination.

EB13. **L0** **6.5** Review the following situations and record any necessary journal entries for Clubs Unlimited.

Jun. 12	Clubs Unlimited purchases \$3,540 worth of merchandise on credit from a manufacturer. Shipping charges are an extra \$150 cash. Terms of the purchase are 2/10, n/45, FOB Shipping Point, invoice dated June 12.
Jun. 18	Clubs Unlimited sells \$8,200 worth of merchandise to a customer who pays on credit. The merchandise has a cost to Clubs Unlimited of \$3,280. Shipping charges are an extra \$150 cash. Terms of the sale are 3/15, n/30, FOB Shipping Point, invoice dated June 18.

EB14. **L0** **6.5** Review the following situations and record any necessary journal entries for Wall World.

Dec. 6	Wall World purchases \$5,510 worth of merchandise on credit from a manufacturer. Shipping charges are an extra \$146 cash. Terms of the purchase are 2/15, n/40, FOB Shipping Point, invoice dated December 6.
Dec. 10	Wall World sells \$3,590 worth of merchandise to a customer, who pays on credit. The merchandise has a cost to Wall World of \$1,400. Shipping charges are an extra \$115 cash. Terms of the sale are 4/10, n/30, FOB Destination, invoice dated December 10.

EB15. **L0 6.6** The following select account data is taken from the records of Carnival Express for 2019.

Sales	\$790,866
Merchandise inventory	465,000
Accounts receivable	115,509
Office supplies expense	2,312
Rent revenue	42,900
Sales salaries expense	65,300
Accounts payable	158,234
Common stock	80,963
Marketing expense	25,450
Sales discounts	62,750
Interest expense	5,444
Sales returns and allowances	100,043
Interest revenue	12,321
Cost of goods sold	295,840
Rent expense	12,678
Depreciation expense: office equipment	4,210
Insurance expense	2,000
Advertising expense	14,650

- Use the data provided to compute net sales for 2019.
- Prepare a simple income statement for the year ended December 31, 2019.
- Compute the gross margin for 2019.
- Prepare a multi-step income statement for the year ended December 31, 2019.

EB16. **L0 6.7** Canary Lawnmowers purchased 300 lawnmower parts at \$3.50 per part from a supplier on December 4. Terms of the purchase are 4/10, n/25, invoice dated December 4. Canary Lawnmowers pays their account in full on December 16. On December 21, Canary discovers 34 of the parts are the wrong size, but decides to keep them after the supplier gives Canary an allowance of \$1.00 per part. Record the journal entries to recognize these transactions for Canary Lawnmowers.

EB17. **L0 6.7** Record journal entries for the following purchase transactions of Balloon Depot.

Feb. 8	Purchased 3,000 balloon bundles on credit for \$25 per bundle. Terms of the purchase are 2/10, n/30, invoice dated February 8.
Feb. 11	Returned 450 defective bundles for a full refund from the manufacturer.
Feb. 18	Paid account in full from the February 8 purchase.

EB18. **L0 6.7** Canary Lawnmowers sold 75 lawnmower parts at \$5.00 per part to a customer on December 4. The cost to Canary is \$3.00 per part. Terms of the sale are 4/10, n/25, invoice dated December 4. The customer pays their account in full on December 16. On December 21, the customer discovers 22 of the parts are the wrong size, but decides to keep them after Canary gives them an allowance of \$1.00 per part. Record the journal entries to recognize these transactions for Canary Lawnmowers.

EB19. **L0 6.7** Record journal entries for the following sales transactions of Balloon Depot.

Mar. 8	Sold 570 balloon bundles to a customer on credit for \$38 per bundle. The cost to Balloon Depot is \$25 per bundle. Terms of the sale are 3/10, n/30, invoice dated March 8.
Mar. 11	The customer returned 70 bundles for a full refund from Balloon Depot.
Mar. 18	The customer paid their account in full from the March 8 purchase.



Problem Set A

PA1. LO 6.1 Record journal entries for the following transactions of Furniture Warehouse.

- A. Aug. 3: Sold 15 couches at \$500 each to a customer, credit terms 2/15, n/30, invoice date August 3; the couches cost Furniture Warehouse \$150 each.
- B. Aug. 8: Customer returned 2 couches for a full refund. The merchandise was in sellable condition at the original cost.
- C. Aug. 15: Customer found 4 defective couches but kept the merchandise for an allowance of \$1,000.
- D. Aug. 18: Customer paid their account in full with cash.

PA2. LO 6.1 Record journal entries for the following transactions of Barrera Suppliers.

- A. May 12: Sold 32 deluxe hammers at \$195 each to a customer, credit terms 10/10, n/45, invoice date May 12; the deluxe hammers cost Barrera Suppliers \$88 each.
- B. May 15: Customer returned 6 hammers for a full refund. The merchandise was in sellable condition at the original cost.
- C. May 20: Customer found 2 defective hammers but kept the merchandise for an allowance of \$200.
- D. May 22: Customer paid their account in full with cash.

PA3. LO 6.2 Costume Warehouse sells costumes and accessories. Review the following transactions and prepare the journal entry or entries if Costume Warehouse uses:

- A. the perpetual inventory system
- B. the periodic inventory system

May 3	A customer purchases 45 costumes at a sales price of \$35 per costume. The cost to Costume Warehouse per costume is \$15. The terms of the sale are 3/15, n/60, with an invoice date of May 3.
May 10	The customer who made the May 3 purchase returns 5 of the costumes to the store for a full refund, claiming they were the wrong size. The costumes were returned to Costume Warehouse's inventory at \$15 per costume.
May 16	The customer pays in full for the remaining costumes, less the return.

PA4. LO 6.2 Pharmaceutical Supplies sells medical supplies to customers. Review the following transactions and prepare the journal entry or entries if Pharmaceutical Supplies uses:

- A. the perpetual inventory system
- B. the periodic inventory system

Jul. 9	A customer purchases 50 pairs of crutches at a sales price of \$20 per pair. The cost to Pharmaceutical Supplies per pair is \$8.00. The terms of the sale are 5/10, n/30, with an invoice date of July 9.
Jul. 12	The customer who made the July 9 purchase returns 9 of the pairs to the store for a full refund, claiming they were the wrong size. The crutch pairs were returned to the store's inventory at \$8.00 per pair.
Jul. 18	The customer pays in full for the remaining crutches, less the return.

PA5. **L0** **6.3** Review the following transactions for Birdy Birdhouses and record any required journal entries.

Sep. 6	Birdy Birdhouses purchases 55 birdhouses at \$40 each with cash.
Sep. 8	Birdy Birdhouses purchases 80 birdhouses at \$45 each on credit. Terms of the purchase are 2/10, n/30, invoice date September 8.
Sep. 10	Birdy discovers 10 of the birdhouses are damaged from the Sept 6 purchase and returns them to the supplier for a full refund. Birdy also discovers that 10 of the birdhouses from the Sept 8 purchase are painted the wrong color but keeps them since the supplier granted an allowance of \$20 per birdhouse.
Sep. 18	Birdy pays their account in full from the September 8 purchase, less any returns, allowances, and/or discounts.

PA6. **L0** **6.3** Review the following transactions for Dish Mart and record any required journal entries. Note that all purchase transactions are with the same supplier.

Nov. 5	Dish Mart purchases 26 sets of dishes for \$460 per set with cash.
Nov. 9	Dish Mart purchases 30 sets of dishes for \$430 per set on credit. Terms of the purchase are 10/15, n/60, invoice date November 9.
Nov. 13	Dish Mart discovers 5 of the dish sets are damaged from the November 9 purchase and returns them to the supplier for a full refund.
Nov. 14	Dish Mart purchases 10 sets of dishes for \$450 per set, on credit. Terms of the purchase are 10/10, n/60, invoice date November 14.
Nov. 15	Dish Mart discovers that 2 of the dish sets from the November 14 purchase and 4 of the dish sets from the November 5 purchase are missing a few dishes but keeps them since the supplier granted an allowance of \$50 per set for the November 14 dish sets and \$75 per set for the November 5 dish sets. Dish Mart and the supplier have agreed to reduce the amount Dish Mart has outstanding debt, instead of sending a separate check for the November 5 allowance in cash.
Nov. 24	Dish Mart pays their account in full for all outstanding purchases, less any returns, allowances, and/or discounts.

PA7. **LO 6.4** Review the following sales transactions for Birdy Birdhouses and record any required journal entries.

Aug. 10	Birdy Birdhouses sells 20 birdhouses to customer Julia Brand at a price of \$70 each in exchange for cash. The cost to Birdy is \$46 per birdhouse.
Aug. 12	Birdy Birdhouses sells 30 birdhouses to customer Julia Brand at a price of \$68 each on credit. The cost of sale for Birdy is \$44 per birdhouse. Terms of the sale are 2/10, n/30, invoice date August 12.
Aug. 14	Julia discovers 6 of the birdhouses are slightly damaged from the August 10 purchase and returns them to Birdy for a full refund. Birdy is able to return the birdhouses to their inventory at the original cost of \$46 each. Julia also discovers that 10 of the birdhouses from the August 12 purchase are painted the wrong color but keeps them since Birdy granted an allowance of \$24 per birdhouse.
Aug. 20	Julia pays her account in full from the August 12 purchase, less any returns, allowances, and/or discounts.

PA8. **LO 6.4** Review the following sales transactions for Dish Mart and record any required journal entries. Note that all sales transactions are with the same customer, Emma Purcell.

Mar. 5	Dish Mart made a cash sale of 13 sets of dishes at a price of \$700 per set to customer Emma Purcell. The cost per set is \$460 to Dish Mart.
Mar. 9	Dish Mart sold 23 sets of dishes to Emma for \$650 per set on credit, at a cost to Dish Mart of \$435 per set. Terms of the sale are 5/15, n/60, invoice date March 9.
Mar. 13	Emma returns eight of the dish sets from the March 9 sale to Dish Mart for a full refund. Dish Mart returns the dish sets to inventory at their original cost of \$435 per set.
Mar. 14	Dish Mart sells 6 sets of dishes to Emma for \$670 per set on credit, at a cost to Dish Mart of \$450 per set. Terms of the sale are 5/10, n/60, invoice date March 14.
Mar. 15	Emma discovers that 3 of the dish sets from the March 14 purchase, and 7 of the dish sets from the March 5 sale are missing a few dishes, but keeps them since Dish Mart granted an allowance of \$2,670 for all 10 dish sets. Dish Mart and Emma have agreed to reduce the amount Dish Mart has outstanding instead of sending a separate check for the March 5 allowance in cash.
Mar. 24	Emma Purcell pays her account in full for all outstanding purchases, less any returns, allowances, and/or discounts.

PA9. **L0** 6.5 Record the following purchase transactions of Money Office Supplies.

Aug. 3	Purchased 45 chairs on credit, at a cost of \$55 per chair. Shipping charges are an extra \$3 cash per chair and are not subject to discount. Terms of the purchase are 4/10, n/60, FOB Shipping Point, invoice dated August 3.
Aug. 7	Purchased 30 chairs with cash, at a cost of \$50 per chair. Shipping charges are an extra \$4.50 cash per chair and are not subject to discount. Terms of the purchase are FOB Destination.
Aug. 12	Money Office Supplies pays in full for their purchase on August 3.

PA10. **L0** 6.6 The following is the adjusted trial balance data for Nino's Pizzeria as of December 31, 2019.

NINO'S PIZZERIA Adjusted Trial Balance Year Ended December 31, 2019		
	Debit	Credit
Cash	\$ 775,984	
Accounts Receivable	45,688	
Buildings	200,460	
Merchandise Inventory	135,624	
Accounts Payable		\$437,880
Common Stock		410,542
Sales		555,696
Interest Revenue		84,652
Rent Revenue		<u>86,900</u>
Sales Salaries Expense	24,500	
Office Supplies Expense	6,270	
Sales Discounts	102,890	
Interest Expense	4,577	
Sales Returns and Allowances	105,854	
Cost of goods sold	122,853	
Rent Expense	20,000	
Depreciation Expense: Office Equipment	10,555	
Insurance Expense	2,780	
Advertising Expense	17,635	
Totals	<u>\$1,575,670</u>	<u>\$1,575,670</u>

- Use the data provided to compute net sales for 2019.
- Compute the gross margin for 2019.
- Compute the gross profit margin ratio (rounded to nearest hundredth).
- Prepare a simple income statement for the year ended December 31, 2019.
- Prepare a multi-step income statement for the year ended December 31, 2019.

PA11. **L0** 6.6 The following is the adjusted trial balance data for Emma's Alterations as of December 31, 2019.

EMMA'S ALTERATIONS Adjusted Trial Balance Year Ended December 31, 2019		
	Debit	Credit
Cash	\$ 600,538	
Accounts Receivable	50,689	
Equipment	199,430	
Merchandise Inventory	169,744	
Accounts Payable		\$ 234,893
Common Stock		502,200
Sales		393,426
Interest Revenue		100,976
Rent Revenue		65,500
Sales Salaries Expense	26,750	
Office Supplies Expense	4,903	
Sales Discounts	61,347	
Interest Expense	3,570	
Sales Returns and Allowances	55,432	
Cost of Goods Sold	90,333	
Rent Expense	10,400	
Depreciation Expense: Office Equipment	8,560	
Insurance Expense	3,421	
Advertising Expense	11,878	
Totals	\$1,296,995	\$1,296,995

- Use the data provided to compute net sales for 2019.
- Compute the gross margin for 2019.
- Compute the gross profit margin ratio (rounded to nearest hundredth).
- Prepare a simple income statement for the year ended December 31, 2019.
- Prepare a multi-step income statement for the year ended December 31, 2019.

PA12. **L0** 6.7 Review the following transactions for Birdy Birdhouses and record any required journal entries.

Sep. 6	Birdy Birdhouses purchases 57 birdhouses at \$46 each with cash.
Sep. 8	Birdy Birdhouses purchases 94 birdhouses at \$44 each on credit. Terms of the purchase are 2/10, n/30, invoice date September 8.
Sep. 10	Birdy discovers 12 of the birdhouses are damaged from the Sept 6 purchase and returns them to the supplier for a full refund. Birdy also discovers that 11 of the birdhouses from the Sept 8 purchase are painted the wrong color but keeps them since the supplier granted an allowance of \$136.
Sep. 18	Birdy pays their account in full from the September 8 purchase, less any returns, allowances, and/or discounts.

PA13. **L0** 6.7 Review the following sales transactions for Dish Mart and record any required journal entries. Note that all sales transactions are with the same customer, Emma Purcell.

Mar. 5	Dish Mart made a cash sale of 13 sets of dishes at a price of \$700 per set to customer Emma Purcell. The cost per set is \$460 to Dish Mart.
Mar. 9	Dish Mart sold 23 sets of dishes to Emma for \$650 per set on credit, at a cost to Dish Mart of \$435 per set. Terms of the sale are 10/15, n/60, invoice date March 9.
Mar. 13	Emma discovers 8 of the dish sets are damaged from the March 9 sale and returns them to Dish Mart for a full refund.
Mar. 14	Dish Mart sells 6 sets of dishes to Emma for \$670 per set on credit, at a cost to Dish Mart of \$450 per set. Terms of the sale are 10/10, n/60, invoice date March 14.
Mar. 15	Emma discovers that 3 of the dish sets from the March 14 purchase and 7 of the dish sets from the March 5 sale are missing a few dishes but keeps them since Dish Mart granted an allowance of \$200 per set for all 10 dish sets. Dish Mart and Emma have agreed to reduce the amount Dish Mart has outstanding instead of sending a separate check for the March 5 allowance in cash.
Mar. 24	Emma Purcell pays her account in full for all outstanding purchases, less any returns, allowances, and/or discounts.



Problem Set B

PB1. **L0** 6.1 Record journal entries for the following transactions of Furniture Warehouse.

- A. July 5: Purchased 30 couches at a cost of \$150 each from a manufacturer. Credit terms are 2/15, n/30, invoice date July 5.
- B. July 10: Furniture Warehouse returned 5 couches for a full refund.
- C. July 15: Furniture Warehouse found 6 defective couches, but kept the merchandise for an allowance of \$500.
- D. July 20: Furniture Warehouse paid their account in full with cash.

PB2. **L0** 6.1 Record journal entries for the following transactions of Mason Suppliers.

- A. Sep. 8: Purchased 50 deluxe hammers at a cost of \$95 each from a manufacturer. Credit terms are 5/20, n/60, invoice date September 8.
- B. Sep. 12: Mason Suppliers returned 8 hammers for a full refund.
- C. Sep. 16: Mason Suppliers found 4 defective hammers, but kept the merchandise for an allowance of \$250.
- D. Sep. 28: Mason Suppliers paid their account in full with cash.

PB3. **L0 6.2** Costume Warehouse sells costumes and accessories and purchases their merchandise from a manufacturer. Review the following transactions and prepare the journal entry or entries if Costume Warehouse uses

- A. the perpetual inventory system
- B. the periodic inventory system

Jun. 4	Costume Warehouse purchases 88 costumes on credit at a purchase price of \$15 per costume. The terms of the purchase are 5/15, n/30, with an invoice date of June 4.
Jun. 12	Costume Warehouse returns 20 costumes to the manufacturer for a full refund.
Jun. 19	Costume Warehouse pays in full for the remaining costumes, less the return.

PB4. **L0 6.2** Pharmaceutical Supplies sells medical supplies and purchases their merchandise from a manufacturer. Review the following transactions and prepare the journal entry or entries if Pharmaceutical Supplies uses

- A. the perpetual inventory system
- B. the periodic inventory system

Apr. 7	Pharmaceutical Supplies purchases 50 medical stands on credit at a purchase price of \$15 per stand. The terms of the purchase are 5/10, n/45, with an invoice date of April 7.
Apr. 11	Pharmaceutical Supplies returns 18 stands to the manufacturer for a full refund.
Apr. 17	Pharmaceutical Supplies pays in full for the remaining stands, less the return.

PB5. **L0 6.3** Review the following transactions for April Anglers and record any required journal entries.

Oct. 4	April Anglers purchases 82 fishing poles at \$33 each with cash.
Oct. 5	April Anglers purchases 116 fishing poles at \$30 each on credit. Terms of the purchase are 3/15, n/30, invoice date October 5.
Oct. 12	April discovers 18 of the fishing poles are damaged from the October 4 purchase and returns them to the supplier for a full refund. April also discovers that 32 of the fishing poles from the October 5 purchase are the wrong length but keeps them since the supplier granted an allowance of \$15 per fishing pole.
Oct. 24	April pays their account in full from the October 5 purchase, less any returns, allowances, and/or discounts.

PB6. **LO 6.3** Review the following transactions for Dish Mart and record any required journal entries. Note that all purchase transactions are with the same supplier.

Nov. 5	Dish Mart purchases 45 sets of cutlery for \$100 per set with cash.
Nov. 9	Dish Mart purchases 50 sets of cutlery for \$120 per set on credit. Terms of the purchase are 5/15, n/60, invoice date November 9.
Nov. 13	Dish Mart discovers 15 of the cutlery sets are damaged from the November 9 purchase and returns them to the supplier for a full refund.
Nov. 14	Dish Mart purchases 30 sets of cutlery for \$130 per set on credit. Terms of the purchase are 5/10, n/60, invoice date November 14.
Nov. 15	Dish Mart discovers that 10 of the cutlery sets from the November 14 purchase and 20 of the cutlery sets from the November 5 purchase are missing a few spoons but keeps them since the supplier granted an allowance of \$30 per set for the November 14 cutlery sets and \$35 per set for the November 5 cutlery sets. Dish Mart and the supplier have agreed to reduce the amount of debt Dish Mart has outstanding instead of sending a separate check for the November 5 allowance in cash.
Nov. 24	Dish Mart pays their account in full for all outstanding purchases, less any returns, allowances, and/or discounts.

PB7. **LO 6.4** Review the following sales transactions for April Anglers and record any required journal entries.

Oct. 4	April Anglers made a cash sale of 40 fishing poles to customer Billie Dyer at a price of \$55 per pole. The cost to April is \$33 per pole.
Oct. 5	April Anglers sells 24 fishing poles to customer Billie Dyer at a price of \$52 per pole on credit. The cost to April is \$30 per pole. Terms of the sale are 2/10, n/30, invoice date October 5.
Oct. 12	Billie returns seven of the fishing poles from the October 4 purchase to April Anglers for a full refund. April returns these poles to their inventory at the original cost per pole. Billie also discovers that 6 of the fishing poles from the October 5 purchase are the wrong color but keeps them since April granted an allowance of \$18 per fishing pole.
Oct. 24	April pays their account in full from the October 5 purchase, less any returns, allowances, and/or discounts.

PB8. **L0** 6.4 Review the following sales transactions for Dish Mart and record any required journal entries. Note that all sales transactions are with the same customer, Bella Davies.

Apr. 5	Dish Mart made a cash sale of 22 sets of cutlery to Bella Davies for \$330 per set. The cost per set to Dish Mart is \$125 per set.
Apr. 9	Dish Mart sells 14 sets of cutlery to Bella Davies on credit for \$345 per set. The cost per set to Dish Mart is \$120 per set. Terms of the sale are 2/15, n/60, invoice date April 9.
Apr. 13	Bella returns nine of the cutlery sets from the April 9 sale to Dish Mart for a full refund. Dish Mart restores the cutlery to its inventory at the original cost of \$120 per set.
Apr. 14	Bella purchases 18 sets of cutlery for \$275 per set on credit, at a cost to Dish Mart of \$124 per set. Terms of the sale are 2/10, n/60, invoice date April 14.
Apr. 15	Bella discovers that 5 of the cutlery sets from the April 14 purchase and 10 of the cutlery sets from the April 5 purchase are missing a few spoons but keeps them since Dish Mart granted an allowance of \$175 per set for all dish sets. Dish Mart and Bella have agreed to reduce the amount Bella has outstanding instead of sending a separate check for the April 5 allowance in cash.
Apr. 28	Bella Davies pays her account in full for all outstanding purchases, less any returns, allowances, and/or discounts.

PB9. **L0** 6.5 Record the following purchase transactions of Custom Kitchens Inc.

Oct. 6	Purchased 230 cabinet doors on credit at a cost of \$46 per door. Shipping charges are an extra \$2 cash per door and are not subject to discount. Terms of the purchase are 5/15, n/35, FOB Shipping Point, invoice dated October 6.
Oct. 9	Purchased 100 cabinet doors with cash at cost of \$40 per door. Shipping charges are an extra \$3.25 cash per door and are not subject to discount. Terms of the purchase are FOB Destination.
Oct. 20	Custom Kitchens Inc. pays in full for their purchase from October 6.

PB10. **L0** 6.5 Record the following sales transactions of Money Office Supplies.

Apr. 4	Made a cash sale to a customer for 15 chairs at a sales price of \$80 per chair. The cost to Money Office Supplies is \$55 per chair. Shipping charges are an extra \$4 cash per chair and are not subject to discount. Terms of the sale are FOB Shipping Point.
Apr. 9	Sold 20 chairs on credit for \$85 per chair to a customer. The cost per chair to Money Office Supplies is \$50 per chair. Shipping charges are an extra \$4.50 cash per chair and are not subject to discount. Terms of the sale are 3/10, n/30, FOB Destination, invoice dated April 9.
Apr. 19	The customer pays in full for their purchase on April 9.

PB11. **L0** 6.5 Record the following sales transactions of Custom Kitchens Inc.

Nov. 12	Made a cash sale to a customer for 34 cabinet doors at a sales price of \$72 per door. The cost to Custom Kitchens Inc. is \$46 per door. Shipping charges are an extra \$3.15 cash per door and are not subject to discount. Terms of the sale are FOB Shipping Point.
Nov. 16	Sold 22 doors on credit for \$80 per door to a customer. The cost per door to Custom Kitchens Inc. is \$40 per door. Shipping charges are an extra \$4.00 cash per door and are not subject to discount. Terms of the sale are 5/15, n/40, FOB Destination, invoice dated November 12.
Nov. 24	The customer pays in full for their purchase on November 16.

PB12. **L0** 6.6 The following is the adjusted trial balance data for Elm Connections as of December 31, 2019.

ELM CONNECTIONS Adjusted Trial Balance Year Ended December 31, 2019		
	Debit	Credit
Cash	\$ 596,823	
Accounts Receivable	34,672	
Buildings	350,000	
Merchandise Inventory	263,909	
Accounts Payable		\$ 502,690
Common Stock		432,975
Sales		603,427
Interest Revenue		94,568
Rent Revenue		90,000
Sales Salaries Expense	25,180	
Office Supplies Expense	5,942	
Sales Discounts	99,651	
Interest Expense	3,566	
Sales Returns and Allowances	110,285	
Cost of Goods Sold	180,630	
Rent Expense	15,485	
Depreciation Expense: Office Equipment	9,000	
Insurance Expense	9,324	
Advertising Expense	19,193	
Totals	\$1,723,660	\$1,723,660

- Use the data provided to compute net sales for 2019.
- Compute the gross margin for 2019.
- Compute the gross profit margin ratio (rounded to nearest hundredth)
- Prepare a simple income statement for the year ended December 31, 2019.
- Prepare a multi-step income statement for the year ended December 31, 2019.

PB13. **L0** 6.6 Following is the adjusted trial balance data for Garage Parts Unlimited as of December 31, 2019.

GARAGE PARTS UNLIMITED Adjusted Trial Balance Year Ended December 31, 2019		
	Debit	Credit
Cash	\$ 624,500	
Accounts Receivable	100,233	
Equipment	465,099	
Merchandise Inventory	277,340	
Accounts Payable		\$ 287,693
Common Stock		564,500
Sales		885,244
Interest Revenue		216,745
Rent Revenue		101,600
Sales Salaries Expense	29,878	
Office Supplies Expense	5,942	
Sales Discounts	112,431	
Interest Expense	9,560	
Sales Returns and Allowances	162,312	
Cost of Goods Sold	208,016	
Rent Expense	19,191	
Depreciation Expense: Office Equipment	8,657	
Insurance Expense	10,234	
Advertising Expense	22,389	
Totals	<u>\$2,055,782</u>	<u>\$2,055,782</u>

- Use the data provided to compute net sales for 2019.
- Compute the gross margin for 2019.
- Compute the gross profit margin ratio (rounded to nearest hundredth)
- Prepare a simple income statement for the year ended December 31, 2019.
- Prepare a multi-step income statement for the year ended December 31, 2019.

PB14. **L0** 6.7 Review the following transactions for April Anglers and record any required journal entries.

Oct. 4	April Anglers purchases 82 fishing poles at \$33 each with cash.
Oct. 5	April Anglers purchases 116 fishing poles at \$30 each on credit. Terms of the purchase are 3/15, n/30, invoice date October 5.
Oct. 12	April discovers 18 of the fishing poles are damaged from the October 4 purchase and returns them to the supplier for a full refund. April also discovers that 32 of the fishing poles from the October 5 purchase are the wrong length but keeps them since the supplier granted an allowance of \$15 per fishing pole.
Oct. 24	April pays their account in full from the October 5 purchase, less any returns, allowances, and/or discounts.

PB15. **L0** **6.7** Review the following sales transactions for Dish Mart and record any required journal entries. Note that all sales transactions are with the same customer, Bella Davies.

Apr. 5	Dish Mart made a cash sale of 22 sets of cutlery to Bella Davies for \$330 per set. The cost per set to Dish Mart is \$125 per set.
Apr. 9	Dish Mart sells 14 sets of cutlery to Bella Davies on credit for \$345 per set, with a cost to Dish Mart of \$120 per set. Terms of the sale are 2/15, n/60, invoice date April 9.
Apr. 13	Bella discovers 9 of the cutlery sets are damaged from the April 9 sale and returns them to Dish Mart for a full refund.
Apr. 14	Bella purchases 18 sets of cutlery for \$275 per set on credit, at a cost to Dish Mart of \$124 per set. Terms of the sale are 2/10, n/60, invoice date April 14.
Apr. 15	Bella discovers that 5 of the cutlery sets from the April 14 purchase and 10 of the cutlery sets from the April 5 purchase are missing a few spoons but keeps them since Dish Mart granted an allowance of \$175 per set for all dish sets. Dish Mart and Bella have agreed to reduce the amount Bella has outstanding instead of sending a separate check for the April 5 allowance in cash.
Apr. 28	Bella Davies pays her account in full for all outstanding purchases, less any returns, allowances, and/or discounts.



Thought Provokers

TP1. **L0** **6.1** Conduct research on a real-world retailer's trade discounts and policies, and discuss the following questions.

- Which company did you choose? What do they sell?
- What is a trade discount?
- What products are subject to a trade discount?
- Describe the discount terms/program in detail. Give examples.
- Are there any restrictions?
- What incentive does this company have to give a trade discount?
- How does this discount benefit the buyer?
- If the buyer had to choose between receiving a trade discount or regular cash purchase discount, which would benefit them more? Why?

TP2. L0 6.2 You have decided to open up a small convenience store in your hometown. As part of the initial set-up process, you need to determine whether to use a perpetual inventory system or a periodic inventory system. Write an evaluation paper comparing the perpetual and periodic inventory systems. Describe the benefits and challenges of each system as it relates to your industry and to your business size. Compare at least one example transaction using the perpetual and periodic inventory systems (a purchase transaction, for example). Research and describe the impact each system has on your financial statements. Decide which system would be the best fit for your business, and support your decision with research.

TP3. L0 6.5 You own your own outdoor recreation supply store. You are in the process of drafting a standard invoice agreement for customer sales conducted on credit. Create a sample sales invoice with the following minimum information listed:

- Your company information
- Date of sale
- Your customer's information
- An example product you sell with name, description, price per unit, and number of units sold
- Terms of sale including credit terms and shipping charges, with numerical figures for shipping charges
- Any contract language necessary to further establish the terms of sale (for example, warranties, limitations on shipping, and returns)

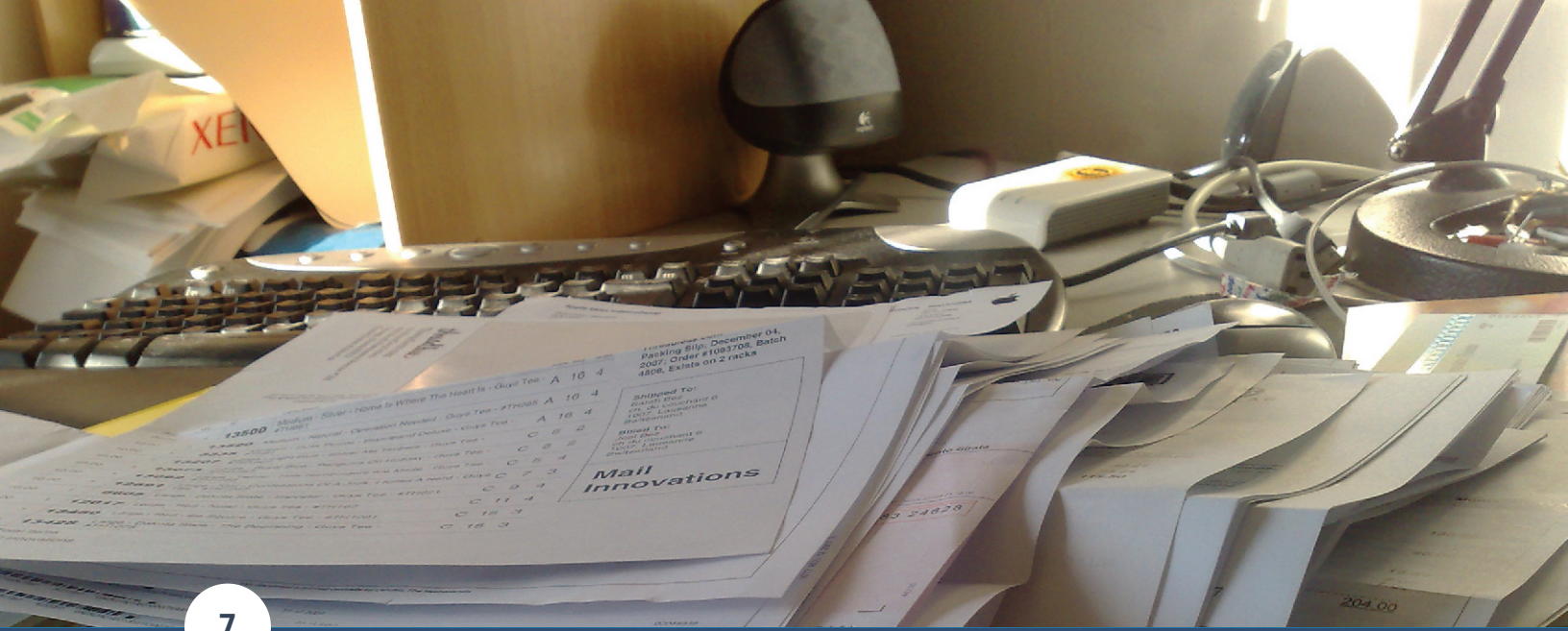
Write a reflection about your invoice choice, as it relates to format, terms, contract language, and pricing strategies. Conduct a comparison study to others in your industry (such as REI) to evaluate your choices. Make sure to support your decisions with concrete examples and research.

TP4. L0 6.6 Review the most recent yearly (or quarterly) income statement for a publicly-traded company and answer the following questions.

- What company did you choose, and which income statement format do they use (multi-step, simple, or combination)?
- What information is included on the statement?
- Do you agree with the format presentation? Why or why not?
- What are the benefits and limitations with the income statement format choice?
- Compute the Gross Profit Margin Ratio. Discuss the results.

TP5. L0 6.7 You own a clothing store and use a periodic inventory system. Research like companies in the clothing industry and answer the following questions.

- Which inventory system is most used in clothing stores, periodic or perpetual?
- Why can periodic inventory reporting be a better approach to use than perpetual inventory reporting for this type of industry?
- What are some of the advantages and disadvantages to the periodic inventory method?
- What other types of businesses may use the periodic inventory method rather than the perpetual method?



7

Accounting Information Systems

Figure 7.1 Accounting Information Systems. Is this the best way to keep up with your business transactions? No. (credit: modification of "4 months of paperwork to sort" by Joel Bez/Flickr, CC BY 2.0)

Chapter Outline

- LO 7.1** Define and Describe the Components of an Accounting Information System
- LO 7.2** Describe and Explain the Purpose of Special Journals and Their Importance to Stakeholders
- LO 7.3** Analyze and Journalize Transactions Using Special Journals
- LO 7.4** Prepare a Subsidiary Ledger
- LO 7.5** Describe Career Paths Open to Individuals with a Joint Education in Accounting and Information Systems



Why It Matters

Shane was a talented tennis player at his university. He had a hard time finding a job in his field upon graduation. While he worked toward finding employment, he spent time on a tennis court playing, and parents began asking if he would give lessons to their kids. Excited for the opportunity and income, he started giving lessons and kept track of sessions and payments by printing out notes and piling them on his desk. When it came time to file a tax return, though, he realized that he should have been keeping up with his bookkeeping all along, either manually in some sort of ledger or electronically on his computer.

Rather quickly, his student pool grew. Some clients paid up front for lessons, others paid after a few lessons were complete, and still others were not sure if they had paid yet. These various payment methods created a record-keeping challenge for Shane. With winter coming, Shane was exploring the idea of securing court time at an indoor facility to continue teaching and knew he would need to consider court time rental costs in his lesson expenses. Additionally, Shane planned to offer group lessons as well as camps and would need to hire another coach. As Shane's impromptu business blossomed, it came with additional sources and types of

revenues as well as new expenses. He needed a better system to keep track of the financial aspects of his business.

A friend told him he needed an accounting information system to organize the financial aspects of his business and to allow him to measure the financial performance of his growing business. But what did Shane's friend mean? What is an accounting information system? In this chapter, we explain accounting information systems, their evolution from paper-based to digital formats, and how a company—whether small like Shane's tennis lesson venture or large like a major corporation—uses these systems to stay on top of its finances and to inform important business decisions.

7.1 Define and Describe the Components of an Accounting Information System

Today, when we refer to an **accounting information system (AIS)**, we usually mean a computerized accounting system, because computers and computer software that help us process accounting transactions have become relatively inexpensive. The benefits of using a computerized accounting system outweigh the costs of purchasing one, and almost all companies, even very small ones, can afford to and do use a computerized accounting system. That is not to say that paper-based or manual accounting systems and processes have disappeared. Most businesses have some form of both noncomputerized and computerized systems. **QuickBooks** is an example of a relatively inexpensive accounting software application that is popular with small and medium-sized businesses.

Manual and Computerized Accounting Information Systems

Interestingly, the term *accounting information system* predates computers. Technically, an AIS is a system or set of processes for collecting data about accounting transactions; recording, organizing, and summarizing the data; and culminating with the preparation of financial statements and other reports for internal and external users. These systems or processes can exist as a series of paper ledgers, computer databases, or some combination of the two. Examples of external users include banks that might lend the company money, investors, and the Securities and Exchange Commission (SEC), which requires that publicly traded companies submit audited financial statements. Since business enterprises needed to produce financial statements long before computers existed, they used manual accounting systems to gather the data needed. **Data** is the term for parts of accounting transactions that constitute the input to an AIS. You have examined many forms of data in this course, for example, the cash received upon the sale of an item is one data point, the reduction of the inventory account related to that specific sold item is another data point, and both the revenue and the cost of goods sold would be additional data points associated with that single transaction of a sale. These data points are summarized and aggregated (in other words “processed”) into more meaningful and useful numbers that appear in the financial statements, and all this data is typically referred to as financial information. A company that may have used a manual AIS years ago likely uses a computerized AIS today. It is important to remember that a computerized accounting system does not change *what* we do with accounting transactions, it only changes *how* we do it, and how we can present the information to different users.

Let's consider the example of a company that came into existence before we had computers, the department store **Macy's**, which currently operates stores in nearly all fifty US states. **Macy's** began as a small, fancy dry goods store that opened in New York City in 1858, became a department store, R.H. Macy & Co., in 1877 using the same red star logo it still uses today. We can assume that even one hundred years ago, **Macy's** needed to perform the same tasks it does today:

- purchase merchandise inventory to sell to customers;
- record returns of some of the inventory;
- record sales made to customers at the sales price;
- record the cost of the goods sold at the amount Macy's paid to purchase them;
- record payments from customers;
- record returns from customers;
- purchase other kinds of items needed for operations, like office supplies and fixed assets;
- pay for prior purchases;
- pay for rent, utilities, and other services;
- pay employees;
- enter all of these transactions;
- post all transactions;
- record adjusting journal entries;
- record closing journal entries;
- keep track of its receivables, payables, and inventory; and
- produce financial statements for internal and external users as well as other reports useful to managers in assessing various performance measures needed to evaluate the success of the company.

As you might imagine, doing all this without computers is quite different than performing these tasks with the aid of computers. In a manual system, each business transaction is recorded, in the form of a journal entry in the general journal or one of the four common other special journals described in [Describe and Explain the Purpose of Special Journals and Their Importance to Stakeholders](#), using pen and paper. Journal entries are then posted to a general ledger; balances would be computed by hand or with an adding machine/calculator for each general ledger account; a trial balance is prepared; adjusting journal entries are prepared; and finally financial statements prepared, all manually.

CONCEPTS IN PRACTICE

Modernization of Accounting Systems

In 1955, in one of the earliest uses of a true computer to facilitate accounting tasks, **General Electric Company** used a UNIVAC computer to process its payroll. Initially it took the computer forty hours just to process payroll for one pay period. The first modern era spreadsheet software for personal computers, VisiCalc, became available in 1978. Thus, between these time periods there were minor improvements to the use of computerized accounting tools, but it was not until the mid-1980s that comprehensive computerized accounting programs became widely used. Thus, prior to the mid-1980s, much accounting was done manually or using a variety of less-advanced computer systems in conjunction with manual systems. Imagine the number of bookkeepers it would take to record the transactions of many companies. For example, on the first day of business at **Macy's** in 1858, the store had revenues of \$11.06.^[1] The actual accounting ledger used to record those sales is shown in [Figure 7.2](#), which seems quite simple. Today **Macy's** has over \$24 billion in sales revenue—can you imagine accounting for all of those transactions (along with all expenses) by hand?

1 Fraser Sherman. "The History of Computerized Accounting." Career Trend. January 14, 2019. <https://careertrend.com/about-6328213-history-computerized-accounting.html>

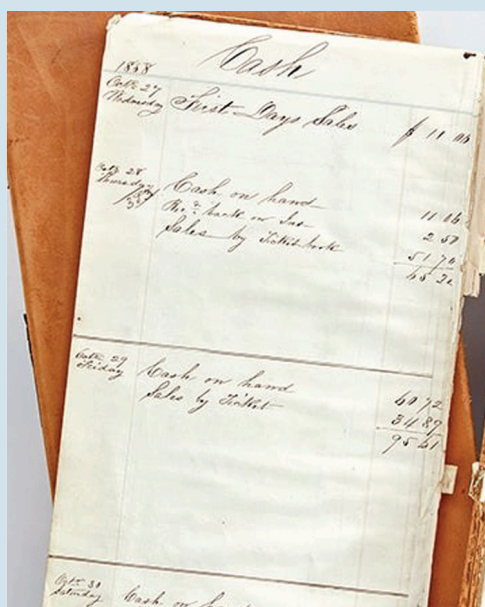


Figure 7.2 Macy's Accounting Ledger. Accounting ledger showing the transactions for Macy's first day. Total revenues were \$11.06 or a little over \$340 in today's dollars. (credit: used with permission of Macy's Corporation)

Today, **Macy's** and other large and small companies perform the same accounting tasks using computer hardware (computers, printers, and keyboards), and software. For example, cashiers can enter transactions into a computer using a keyboard, scanner, or touch screen. The screen displays the data entered or fields available for data entry. As an example, most retail stores have a **point-of-sale system (POS)** that enters the sale by scanning the item at the **point of sale**, meaning at the time the transaction is made. This system records the sale and at the same time updates inventory by reducing it based on the number of items purchased.

Later in the section on how to [Prepare a Subsidiary Ledger](#), you will be provided with a series of transactions for a small business and you will be asked to first enter the transactions manually into the appropriate journal, post the information from the journals to the general ledger, prepare trial balances, adjusting and closing entries, and manually produce financial statements just as **Macy's** or any other business would have done prior to the use of various computer technologies. You will then perform the same tasks using QuickBooks, a popular accounting software program used by many small and medium-sized businesses. A company as large as **Macy's** has stores in locations all over the country and a large volume of transactions, so it is more likely to use a software package designed to meet the needs of a very large business. This is often referred to as an enterprise resource planning (ERP) system which stands for enterprise resource planning (ERP) system. An ERP system integrates all of the company's computerized systems including accounting systems and nonaccounting systems. That is, large companies have various accounting subsystems such as the revenue system (sales/accounts receivable/cash receipts), the expenditure system (purchasing/accounts payable/cash disbursements), the production system, the payroll system, and the general ledger system. Nonaccounting systems might include research and development, marketing, and human resources, which, while not an

integral part of the accounting system, in a large companywide ERP system are integrated with the accounting modules. Examples of popular ERP software systems are PeopleSoft and SAP.

Like many businesses today, **Macy's** also maintains a company website and engages in e-commerce by offering the sale of many company products online. Accounting software companies like QuickBooks and larger software vendors have upgraded the ways in which they can provide AIS software to meet these needs. For example, a small local retail shoe store can purchase QuickBooks software provided on an electronic storage device such as a CD and upload it to be stored on the hard drive of the company's computers, or the store can purchase a "cloud" version. The cloud version provides the shoe store purchasing the software with access to the QuickBooks software online via a user ID and password with no need to load the software on the store's computers. QuickBooks updates the software when new versions are released and stores the company's accounting data in the cloud. **Cloud computing** refers to using the internet to access software and information storage facilities provided by companies rather than, or in addition to, storing this data on the company's computer hard drive or in paper form. An advantage of cloud computing is that company employees can access the software and enter transactions from any device with an internet connection at any location. The company pays a monthly fee for access to updated software, which can be less costly than buying software stored on individual computers. Potential disadvantages include security concerns because an outside company is storing company programs and data, and if the hosting company experiences technical difficulties, companies paying for these services may temporarily be unable to access their own data or conduct business. Nevertheless, cloud services are increasingly popular.

Here, we illustrate the concepts and practices of an AIS using Intuit QuickBooks, a popular and widely used AIS.

While a company typically selects an AIS to suit its specific needs, all systems should have components capable of:

- inputting/entering data (e.g., entering a sale to a customer);
- storing data;
- processing data and computing additional amounts related to transactions (e.g., computing sales tax on the sale, as well as shipping costs and insurance fees; computing an employee's pay by multiplying hours worked by hourly pay rate; processing inventory changes from both inventory purchases and inventory sales and data from any other transaction that occurs in the business);
- aggregating/summarizing data (e.g., computing total sales for the year);
- presenting data (e.g., producing a balance sheet and other financial statements and reports for the year); and
- storing data (such as the customer's name, address, shipping address, and credit limit).

AISs, whether computerized or manual, generally involve three stages: input, processing, and output. We enter raw data into our system at the input stage and try to correct any errors prior to going on to the next stage of processing the data. We ultimately produce "output," which is in the form of useful information.

Inputting/Entering Data

A **source document** is the original document that provides evidence that a transaction occurred. If you hire a company to paint your house, it will most likely provide a document showing how much you owe. That is the company's sales document and your invoice. When you pay, your check or digital transaction record is also a source document for the company that provided the service, in this case, the home painter.

Assume you go into the university bookstore to purchase a school sweatshirt, and it is sold out. You then fill out a document ordering a size medium sweatshirt in blue. The form you fill out is a purchase order to you, and it is a sales order to the university bookstore. It is also a source document that provides evidence that you have ordered the sweatshirt. Assume the bookstore does not ask you to pay in advance because it is not sure it will be able to obtain the sweatshirt for you. At that point, no sale has been made, and you owe no money to the bookstore. A few days later, the bookstore manages to acquire the sweatshirt you ordered and sends you an email notifying you of this. When you return to the bookstore, you are presented with the sweatshirt and an invoice (also known as a bill) that you must pay in order to take your sweatshirt home. This invoice/bill is also a source document. It provides evidence of the sale and your obligation to pay that amount. Let's look at an example.

[Figure 7.3](#) is a source document—an invoice (bill) from **Symmetry Mold Design** for mold design services. Note the terms (agreements about payments) are listed at the top and how the company calculates those outcomes at the bottom.


SYMMETRY
MOLD DESIGN

Invoice

INVOICE: 537
DATE: 3/17/2019

BILL TO:
Any Tool Co.
652 Roselawn Dr.
Sagebrush, IN 55555

REMIT TO:
Symmetry Mold Design LLC
6700 Forest Park Dr.
DeForest, WI 53532

CUSTOMER P.O.	SMD JOB	PAYMENT TERMS	DUE DATE
100063597	201563	4% 30, 2% 60, Net 90	6/15/2019

DESCRIPTION	AMOUNT
(Modeling Only) Design a (4) cavity T-set injection mold to produce Spacer Flange # 659-0002-41586 Custom base with floating B-plate to activate "reverse" lifter center core, latch locks for plate travel, insulator boards top and bottom. Inserted cavity and core - 1 parts / block. Gate sub-inserts, core pins. Cartridge heat in A and B Plates. Special locating ring and sprue. Flat wide runner to gate shut-off pins. Two-stage ejection for gate shut-off. Guided ejection, standard KO pins to eject parts. Vacuum vents. P/L locks. Included: - 3D solid models of the entire mold assembly - Final files will be in STEP format (others on request)	1,126.80
Total Reimbursable Expenses: Revise mold design with new shrink rate	400.00

If paid by 4/16/19, pay \$1,466.32.
 If paid by 5/16/19, pay \$1,496.56.
 If paid by 6/15/19, pay \$1,526.80.

TOTAL	\$1,526.80
PAYMENTS/CREDITS	\$0.00
BALANCE DUE	\$1,526.80

Thank you for your business!

Figure 7.3 Invoice from Symmetry Mold Design showing payment terms. (credit: modification of "Invoice" by James Czeszyk/Flickr, CC B 4.0)

Some companies send paper bills in the mail, often asking the recipient to tear off part of the bill and return it with the payment. This tear-off portion is a **turn-around document** and helps ensure that the payment is applied to the correct customer account and invoice. Generally, this document began as printed output, an invoice, from the billing part of the AIS. When the customer tears off a part of it and returns it in the envelope with a check to the company, it has now been "turned around" and will be used as an input source document, called a remittance advice. A remittance advice is a document that customers send along with checks and informs the recipient as to which invoice the customer is paying for. [Figure 7.4](#) is an example of a turn-around document.

Name or Address Change?
Would you like to receive e-mail sales notification?
Check box and write information on reverse side.

Account Number [REDACTED]
Due Date Apr 5, 2019
New Balance \$1,926.89
Minimum Due \$97.00

Mail this portion with your payment.
1 2 3 4 6 8

Kohl's Payment Center
PO BOX 2983
MILWAUKEE WI 53201-2983

Amount Paid
\$ [REDACTED]

NOTE: Do not mail cash or gift cards.
Please make check payable to Kohl's in US Dollars

Barcodes so a machine can read the address

000094962 01 AV 0.383 106481940370774 P Y

FOREST PARK DR
DEFOREST WI 53532- [REDACTED]

Account number so the correct account can be credited

00000000 058916116552 0009700 0192689 1

Figure 7.4 Turn-Around Document from Kohl's. The use of automation (bar codes) saves time and ensures accuracy since a machine can read the address, the account number, and even the amount on the check. (credit: modification of "Bill" by Kerry Ceszyk/Flickr, CC BY 4.0)

Both manual and computerized accounting systems utilized source documents. E-commerce systems have some additional source documents related to online transactions. Source documents help to establish an **audit trail**, which is a trail of evidence documenting the history of a specific transaction starting from its inception/source document and showing all the steps it went through until its final disposition. The trail of source documents and other records (the audit trail) makes it easier to investigate errors or questions by customers, vendors, employees, and others. For example, when a customer places an order by phone, by mail, or online, the sales order becomes the source document. If the customer does not receive the product ordered, the company can locate the original order, see if a picking ticket was generated (a picking ticket tells warehouse employees what inventory items the customer ordered, that now need to be picked off the shelf), locate the shipping documents, which provide evidence that the product was given to the shipper, and check for customer signature confirming receipt of goods. The trail of documents and entries in journals and ledgers and their electronic equivalent generated by this transaction provides evidence of all the steps that took place along the way. This makes it easy for anyone to verify or investigate, and perhaps find the weak links, where the process may have broken down. It allows the company to identify the reason why the customer never received the goods ordered. Maybe the order was never shipped because the company was out of stock of this specific product, maybe it was shipped and left at the customer's doorstep with no signature requested, or maybe the order was shipped to the wrong customer or to an incorrect address. An audit trail will help company personnel investigate any of these common issues. It should also help them identify weaknesses in their processes and precipitate improvements.

Businesses need a way to input data from the source document such as a sales invoice or purchase order. This was previously done with pen and paper and is currently done by keying it in on a computer keyboard; scanning, with a scanner such as one that reads MICR (magnetic ink character recognition) symbols (found on bank checks) or POS system scanners at cash registers that scan product bar codes/UPC symbols; or receiving

it by e-transmission (or electronic funds transfer [EFT]). Input often involves the use of hardware such as scanners, keypads, keyboards, touch screens, or fingerprint readers called biometric devices. Once data has been input, it must be processed in order to be useful.

Processing Data

Companies need the accounting system to process the data that has been entered and transform it into useful information. In manual accounting systems, employees process all transaction data by journalizing, posting, and creating financial reports using paper. However, as technology has advanced, it became easier to keep records by using computers with software programs specifically developed for accounting transactions. Computers are good at repetition and calculations, both of which are involved in accounting, and computers can perform these calculations and analyses more quickly, and with fewer errors, thus making them a very effective tool for accounting from both an input and an output standpoint.

LINK TO LEARNING

See [a list of popular bookkeeping software \(https://openstax.org/l/50AcctSW\)](https://openstax.org/l/50AcctSW) packages. With this information, potential options for sample accounting software options can be evaluated.

Output: Presenting Information

An AIS should provide a way to present system output (printed page, screen image, e-transmission). Any accounting software application such as that used by large companies (an ERP system) or one used by smaller businesses (QuickBooks) can easily print financial statements and other documents as well as display them on the screen.

Some financial information must be provided to other sources such as banks or government agencies, and though in past decades everything was presented and submitted on paper, today, most of this information is submitted electronically, and AISs help facilitate having the information in the necessary electronic format. Many banks require electronic data, and the Internal Revenue System (IRS) accepts your information as a digital transmission instead of a paper form. In 2017, 92 percent of all taxpayers who filed their own taxes did so electronically.^[2] Most corporations choose to file their taxes electronically, and those with assets over \$10 million are required to file electronically with the IRS.^[3] Since May 5, 1996, all publicly traded companies are required to submit their filings, such as financial statements and stock offerings, to the SEC electronically.^[4] The SEC places all the data into an electronic database known as the Electronic Data Gathering, Analysis, and Retrieval System (EDGAR). This database allows anyone to search the database for financial and other information about any publicly traded company. Thus, AISs facilitate not only internal access to financial information, but the sharing of that information externally as needed or required. Just as the EDGAR system used by the SEC stores data for retrieval, an AIS must provide a way to store and retrieve data.

2 Income Tax Return Statistics. eFile. May 2018. <https://www.efile.com/efile-tax-return-direct-deposit-statistics/>

3 Income Tax Return Statistics. eFile. May 2018. <https://www.efile.com/efile-tax-return-direct-deposit-statistics/>

4 There is a hardship exemption for companies that cannot file their documents electronically. See U.S. Securities and Exchange Commission. Important Information about EDGAR. February 16, 2010. <https://www.sec.gov/edgar/aboutedgar.htm>

Storing Data

Data can be stored by an AIS in paper, digital, or cloud formats. Before computers were widely used, financial data was stored on paper, like the journal and ledger shown in [Figure 7.5](#).

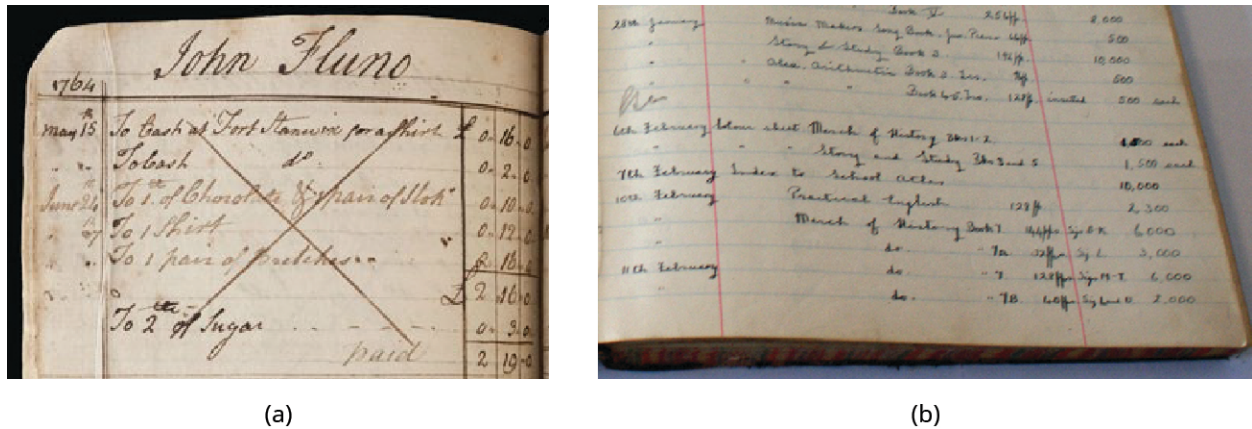


Figure 7.5 Data Storage. (a) General journal and (b) general ledger. (credit a: modification of “Entry in Barent Roseboom’s ledger detailing transactions with John Fluno in 1764” by National Park Service, Public Domain; credit b: modification of “Print Order Book, Holmes McDougall” by Edinburgh City of Print/Flickr, CC BY 2.0)

As technology has evolved, so have storage systems—from floppy disks to CDs, thumb drives, and the cloud. The hard drive on your computer is a data storage device, as is an external hard drive you can purchase. Data that is stored must have the ability to be retrieved when needed. As you can see from [Figure 7.6](#), stored data comes from and/or flows through the three main functions of an AIS (input, processes, and output) with the end result being the use of the data in forms needed for decision-making, such as financial statements. Access to the ability to input data, manage processes, or retrieve data requires adequate controls to prevent fraud or unauthorized access and requires the implementation of data security measures. [Figure 7.6](#) illustrates the key functions performed by an AIS.

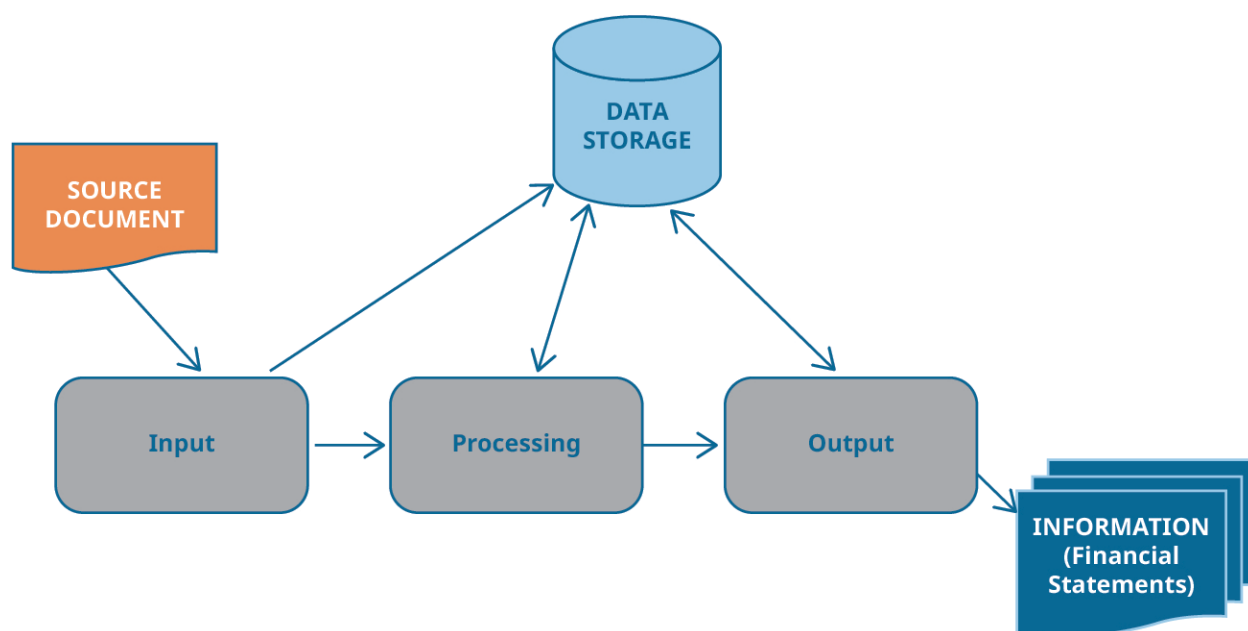


Figure 7.6 Accounting Information System. The four key functions performed by an accounting information system. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

YOUR TURN

The Steps in an Accounting Information System

The three steps of an accounting information system are input, processing, and output. Data is the raw ingredient used in these processes. Some of the data may be obtained from a source document, and other data is obtained from the database where it had previously been stored. When the data has been processed, the final result is usually information. Information is more useful than data. Take, for example, another process that a bakery might use to bake chocolate chip cookies. While computers might not necessarily need to be involved, we begin the process by assembling a bunch of raw ingredients such as eggs, sugar, flour, chocolate chips, and oil, in a large bowl. Taking a spoonful of what is in the bowl at the time is not very pleasing to the taste buds or “useful” to someone craving a chocolate chip cookie. We process the raw ingredients by mixing them well and turning them into dough, cutting them into shapes, baking them, and glazing them. Similarly, raw data about a single sale contained on the sales invoice, such as customer name, date of sale, and amount of sale, is individually not very useful to a financial statement user such as an investor. However, by processing the data related to the sale, making sure it is correct by checking that the number of items ordered were in stock and actually shipped, aggregating it with other sales for the period, and producing an income statement containing the sales for the period is substantially more useful than the individual pieces of data relating to a single sale.

Can you give an example of each of the three steps, as well as a source document that might be used in the input stage and stored data that might be used in the input and processing stages, first for a grocery store, and then a medical office?

Solution*Grocery store:*

- **Source Document:** This would include a check to be deposited; totals from each cash register, including total cash; an invoice for produce; an application for employment by a potential new employee; time card information; a W-4 form (employment information); and so on.
- **Input:** This includes entering the data from the source document on the computer keyboard, electronically scanning the bar code of each product purchased at the grocery store (at checkout counter and to receive goods from vendor off the truck), maybe fingerprinting at the time clock, or keying in a price on the register.
- **Processing:** A cash register processes (accumulates and totals) different categories of items (coupons, checks, and charges) by the user; inventory can be tracked by RFID (radio-frequency identification); and software programs can process information gathered by individual cash registers as well as employee information.
- **Output:** Data that has been processed can be viewed on a computer screen, printed as a hard copy (paper output), or sent as electronic output from the cash register to the computer (can be done wirelessly or with a cable).
- **Storage:** Data can be stored in the company database on its computer hard drive or as cloud storage. Hopefully the store is also paying for safe backup storage offsite (in case of fire at the store or hackers attempting to obtain information), generally accessed through the internet and stored in “the cloud.” Otherwise, storage can be on paper printouts, the computer hard drive, disks, or external drives. The data that is stored may be retrieved and used at the input, processing, and output stages.

Doctor's office:

- **Source Document:** This includes a check to be deposited from the patient; the patient's insurance information on file; a doctor's record of the diagnosis and procedures performed on the patient, to be submitted to the insurance company; and an invoice for medical supplies.
- **Input:** Data from the source document, for example, containing the diagnosis and a treatment plan, would be entered on the computer keyboard.
- **Processing:** The system might retrieve the treatment codes corresponding to every procedure the doctor performed, so it contains the appropriate information for the insurance company.
- **Output:** The treatment form is printed and then mailed to the insurance company for payment.
- **Storage:** The diagnosis and treatment plan are stored on the computer database for retrieval on the next visit for this patient. The form to be sent to the insurance company is also stored electronically so there can be follow-up until the payment from the insurance company is received. Also note that during processing, the system had to retrieve the treatment codes from a file of all of the codes that was stored in the database.

YOUR TURN

The Accounting Information System (AIS)

What are some of the types of information the accounting information system should be able to provide to the owners, managers, and employees of business, at the end of the day, or week, or month, which they in turn may need to provide to other external users?

Solution

- Information for internal purposes will include total sales and how much it cost to generate the sales. Also considered is how much inventory is on hand so a decision can be made as to whether or not to order more inventory.
- The company will need to record all of the economic events of the business in order to find total sales, cost of goods sold, expenses, and net income, as well as the number of hours employees worked, the employee's social security number, and how much the company promised to pay the employee per hour.
- Information for external users, such as the IRS or state and local government agencies, would include income tax returns and sales and payroll tax forms. The business owners and managers will need all sales and expenses, sales tax collected, and employees' earnings.
- In other words, the company needs an AIS.

While an AIS has the primary functions of input, processing, output, and storage, each company or system will decide on the exact steps and processes under each of these broad functions. We know that data is used to create the types of information needed by users to make decisions. One way in which a retail organization may obtain, input, process, and store data related to a sales transaction is through a point-of-sale system (POS). When a customer is ready to buy an item, the cashier scans the product being purchased, the price is retrieved from the price file, the sale is recorded, and inventory is updated. Most POS systems include a scanner, a computer screen, or a tablet with a touch screen. Customer payments are stored in the cash drawer. For noncash sales, credit card readers allow customers to insert, swipe, or tap their cards to pay (which also helps prevent keyboard input errors and keeps the information safer).

ETHICAL CONSIDERATIONS

Ethical Standards in Retail Stores

Professional sales employees operate the POS systems. There is an ethical code for sales professionals created by the Association of Professional Sales to help sales professionals maintain good judgment.^[5]

The organization sets forth standards such as the following:

- Maintain the highest standards of integrity in all business relationships.
- Provide our customers with a buying experience in which we "do the right thing and thereby help get the right results."
- Promote and protect good sales practices.

- Always act in line with my organization's codes and within the law.

Accountants can assist sales professionals in creating an ethical environment. The ethical environment will permit the users of accounting data to make solid business decisions and to better operate a company.

However, the POS is just part of the AIS. As each sale is entered into the register, other data is collected, recorded, and processed by the AIS and becomes information. Data about each sale is recorded in the information system: what was sold, how much it cost, the sales price, and any sales tax. It also records the time of day, the clerk, and anything else the company programmed the cash register to record. When all the sales for the day are totaled, it provides information in the form of organized and processed data with meaning to the company. A business might want to see which hour of the day resulted in the most sales, or to know which product was the best seller. An AIS can provide this information.

A system is created when processes work together to generate information for the business. The sales process accesses customers, accounts receivable, and inventory data and updates the appropriate files. The purchases process also accesses inventory and accounts payable and updates them, because most companies buy goods on credit. Since no two companies operate exactly the same way, you would expect each company to have a slightly different AIS. Some businesses do not have a cash register, but they will still have a Sales account. Some companies only have cash sales, so they would not have an Accounts Receivable account. Regardless of the type of business—retail, manufacturing, or service—an AIS is an important component of the business as it is this system that provides the information needed by internal and external decision-makers.

CONCEPTS IN PRACTICE

Is This an Accounting Information System?

Do you think your average food truck proprietor has an accounting information system?



Figure 7.7 Food Truck. (credit: modification of "Food Trucks" by Daniel Lobo/Flickr, Public Domain)

5 Association of Professional Sales. "APS Sales Code of Conduct." n.d. <https://www.associationofprofessionalsales.com/professional-development/sales-code-conduct-aps-ethical-professional/aps-sales-code-conduct/>

Food trucks will have some type of accounting information system whether paper based or electronic. One common method of creating an accounting information system in this type of business environment is to use an app, such as Square Point of Sale ([Square Inc.](#)). The Square Point of Sale (POS) software system keeps track of the sales. With this type of system, a food truck will likely have a Square Stand (a tablet-based POS), a cash drawer, and printers. The information input into the Square Stand is stored on Square servers using the cloud (online storage space offered by different companies and products) and is accessible by the company via an online dashboard. This system allows the handling of both cash sales and credit card sales. These components—the Square Point of Sale software, the Square Stand, cash drawer, and the printers—make up part of the accounting information system for a food truck.

IFRS CONNECTION

Accounting Information Systems in an International Business Environment

All companies, regardless of whether they are domestic or international, will have an accounting information system with the features described in this chapter. It would be easy to assume that the accounting information systems created by public companies in the United States are created based on US generally accepted accounting principles (GAAP). This implies that these companies design their processes and controls so that in addition to meeting the reporting and monitoring goals of the company, the system also collects, measures, and reports the information that is required under US GAAP. But is this true? What about companies that have subsidiaries or a portion of their operations in another country? Do purely international companies use accounting information systems similar to their US counterparts?

As previously indicated, all companies will create some sort of accounting information system. [General Electric \(GE\)](#), as a US-based manufacturer, uses an accounting information system that allows it to record, collect, produce, and analyze the operations of its various businesses. Since [GE](#) is a US corporation, headquartered in Boston, Massachusetts, its accounting information system is designed around the rules set out by US GAAP. [Fiat Chrysler Automobiles \(FCA\)](#) is headquartered in the United Kingdom, and it designs its accounting information system to produce financials under International Financial Reporting Standards (IFRS). On the surface, it looks as though each company will create an information system based on the accounting rules in its own home country. However, it is not quite that simple. Today, companies take advantage of the ability to borrow money across borders. The lenders often require the financial statements of the borrower to be presented using the accounting rules required by the lender's country. For example, if [GE](#) wanted to borrow money from the [Royal Bank of Scotland](#), it would likely have to present its financial statements based on IFRS rules. Similarly, if [FCA](#) wanted to borrow from [Citibank](#), it would need its financial statements in US GAAP form.

Borrowing is not the only reason a company may need to present financial statements based on a different set of accounting principles. As of 2017, [GE](#) had over 130 subsidiaries, and these businesses were located across 130 countries. A subsidiary is a business over which the parent company has decision-making control, usually indicated by an ownership interest of more than 50 percent. Many of these [GE](#) subsidiaries established their accounting information systems based on the accepted

accounting principles in the countries in which they were located, as required in order to be in compliance with local regulations such as for local taxes. Thus, GE must convert the financial information obtained from the subsidiary's accounting information system, often based on IFRS, to US GAAP in order to consolidate the transactions and operations of all of the subsidiaries with those of the parent company to create one set of financial statements.

We have basically become a two GAAP world—IFRS and US GAAP—and many companies will find it necessary to have accounting information systems that can handle both sets of rules due to the global nature of business and the global nature of raising money through borrowing and issuing stock. This may seem crazy, to have two systems, but a little over ten years ago there were more than seventy different GAAP. Today, since many countries now use IFRS, the quality and consistency of financial reporting have improved. As a result, the cost associated with having accounting information systems that can combine many different sets of accounting rules has decreased.

7.2 Describe and Explain the Purpose of Special Journals and Their Importance to Stakeholders

The larger the business, the greater the likelihood that that business will have a large volume of transactions that need to be recorded in and processed by the company's accounting information system. You've learned that each transaction is recorded in the general journal, which is a chronological listing of transactions. In other words, transactions are recorded into the general journal as they occur. While this is correct accounting methodology, it also can create a cumbersome general journal with which to work and may make finding specific pieces of information very challenging. For example, assume customer John Smith charged an item for \$100 on June 1. In the general journal, the company would record the following.

JOURNAL			
Date	Account	Debit	Credit
Jun. 1	Accounts Receivable: John Smith Sales <i>To record sale on account to customer</i>	100	100

This journal entry would be followed by a journal entry for every other transaction the company had for the remainder of the period. Suppose, on June 27, Mr. Smith asked, "How much do I owe?" To answer this question, the company would need to review all of the pages of the general journal for nearly an entire month to find all of the sales transactions relating to Mr. Smith. And if Mr. Smith said, "I thought I paid part of that two weeks ago," the company would have to go through the general journal to find all payment entries for Mr. Smith. Imagine if there were 1,000 similar credit sales transactions for the month, each one would be written in the general journal in a similar fashion, and all other transactions, such as the paying of bills, or the buying of inventory, would also be recorded, in chronological order, in the general journal. Thus, recording all transactions to the general journal makes it difficult to find the particular tidbits of information that are needed for one of our customers, Mr. Smith. The use of special journal and subsidiary ledgers can make the accounting information system more effective and allow for certain types of information to be obtained more easily.

YOUR TURN

Using General Ledger (Control) Accounts

Here is the information from the accounts payable subsidiary ledger:

ACCOUNTS PAYABLE SUBSIDIARY LEDGER					
Account: E. Presley Ltd			AP No. 34		
Date	Item	Ref.	Debit	Credit	Balance
					Credit
Dec. 1	Beginning Balance				3,512
Dec. 31	Cash Disbursements	144	2,150		1,362

Account: M. Jackson Inc.			AP No. 71		
Date	Item	Ref.	Debit	Credit	Balance
					Credit
Dec. 1	Beginning Balance				1,879
Dec. 31	Purchases Journal			2,589	4,468

Account: Madonna Inc.			AP No. 171		
Date	Item	Ref.	Debit	Credit	Balance
					Credit
Dec. 1	Beginning Balance				3,467
Dec. 31	Purchases Journal			3,450	6,917
Dec. 31	Purchases Journal			1,500	8,417
Dec. 31	General Journal: Return	119	250		8,167

What should the total be in the Accounts Payable Control Total?

Here is the information from the accounts receivable subsidiary ledger.

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER					
Account: M. Jordan Inc.			No. 102045		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Dec. 1	Beginning Balance				2,500
Dec. 4	Sales Journal	27	2,750		5,250
Dec. 10	Cash Receipts	24		3,000	2,250

Account: R. Federer Ltd			No. 460708		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Dec. 1	Beginning Balance				2,670
Dec. 1	Cash Receipts	24		2,670	0

Account: T. Woods Inc.			No. 564300		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Dec. 1	Beginning Balance				2,140
Dec. 17	Sales Journal	27	600		2,740
Dec. 15	Cash Receipts	24		1,240	1,500

Account: S. Williams Inc.			No. 42005		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Dec. 1	Beginning Balance				7,160
Dec. 3	Sales Journal	27	1,800		8,960
Dec. 8	General Journal	119		800	8,160

What should the total be in the Accounts Receivable Control Total?

Solution

Accounts Payable Control Total is: $1,362 + 4,468 + 8,167 = 13,997$

Accounts Receivable Control Total is: $2,250 + 0 + 1,500 + 8,160 = 11,910$

Special Journals

Instead of having just one general journal, companies group transactions of the same kind together and record them in **special journals** rather than in the general journal. This makes it easier and more efficient to find a specific type of transaction and speeds up the process of posting these transactions. In each special journal, all transactions are totaled at the end of the month, and these totals are posted to the general ledger. In addition, instead of one person entering all of the transactions in all of the journals, companies often assign

a given special journal's entries to one person. The relationship between the special journals, the general journal, and the general ledger can be seen in [Figure 7.8](#).

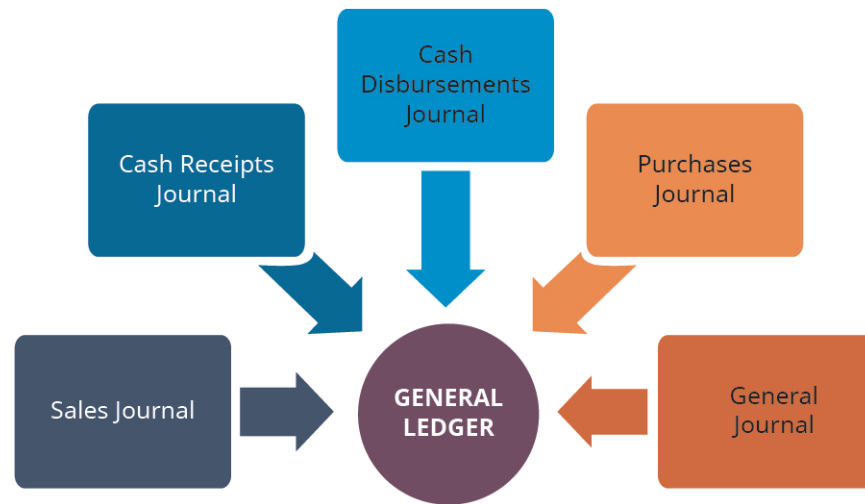


Figure 7.8 Special and General. Transaction summaries form the special journals, and all transactions in the general journal are posted to the general ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Most companies have four special journals, but there can be more depending on the business needs. The four main special journals are the **sales journal**, **purchases journal**, **cash disbursements journal**, and **cash receipts journal**. These special journals were designed because some journal entries occur repeatedly. For example, selling goods for cash is always a debit to Cash and a credit to Sales recorded in the cash receipts journal. Likewise, we would record a sale of goods on credit in the sales journal, as a debit to accounts receivable and a credit to sales. Companies using a perpetual inventory system also record a second entry for a sale with a debit to cost of goods sold and a credit to inventory. You can see sample entries in [Figure 7.9](#).

SALES JOURNAL					Page 10
Date	Account	Invoice No.	Ref.	DR Accts. Receivable CR Sales	DR COGS CR Merchandise Inventory
2019 Feb. 21	Jack Customer	715		\$ 5,200	\$3,800
Feb. 23	Susan Carol	716		\$10,600	\$8,400

Figure 7.9 Sales Journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Note there is a column to enter the date the transaction took place; a column to indicate the customer to whom the transaction pertains; an invoice number that should match the number on the invoice given (in paper or electronically) to the customer; a reference box that indicates the transaction has been posted to the customer's account and can include something as simple as a check mark or a code that links the transaction to other journals and ledgers; and the last two columns that indicate the accounts and amounts debited and credited.

Purchases of inventory on credit would be recorded in the purchases journal ([Figure 7.10](#)) with a debit to Merchandise Inventory and a credit to Accounts Payable.

PURCHASES JOURNAL					Page 36
Date	Account	Invoice No.	Ref.	Merchandise Inventory DR	Accounts Payable CR
2019					
Feb. 14	Irving's Inventory	1542		\$35,000	\$35,000
Feb. 27	Greta's Goods	612		\$14,700	\$14,700

Figure 7.10 Purchases Journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Paying bills is recorded in the cash disbursements journal ([Figure 7.11](#)) and is always a debit to Accounts Payable (or another payable or expense) and a credit to Cash.

CASH DISBURSEMENTS JOURNAL					Page 100
Date	Account	Invoice No.	Ref.	Accounts Payable (or other account) DR	Cash CR
2019					
Feb. 7	Mumford, Inc.	1,100		\$15,000	\$15,000
Feb. 18	Ballyho, Co.	716		\$21,200	\$21,200

Figure 7.11 Cash Disbursements Journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The receipt of cash from the sale of goods, as payment on accounts receivable or from other transactions, is recorded in a cash receipts journal ([Figure 7.12](#)) with a debit to cash and a credit to the source of the cash, whether that is from sales revenue, payment on an account receivable, or some other account.

CASH RECEIPTS JOURNAL					
Date	Account	Invoice No.	Ref.	Cash DR	Accounts Receivable, Sales, or other accounts CR
2019					
Feb. 8	Connie Customer	450		\$ 300	\$ 300
Feb. 27	Billy May	602		\$1,000	\$1,000

Figure 7.12 Cash Receipts Journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

[Table 7.1](#) summarizes the typical transactions in the special journals previously illustrated.

Types and Purposes of Special Journals

Journal Name	Journal Purpose	Account(s) Debited	Account(s) Credited
Sales Journal	Sales on credit	Accounts Receivable, Cost of Goods Sold	Sales, Inventory
Purchases Journal	Purchases on credit	Inventory	Accounts Payable
Cash Disbursements Journal	Paying cash	<i>Could be:</i> Accounts Payable, or other accounts	Cash
Cash Receipts Journal	Receiving cash	Cash	<i>Could be:</i> Sales, Accounts Receivable, or other accounts
General Journal	Any transaction not covered previously; adjusting and closing entries	<i>Could be:</i> Depreciation Expense	<i>Could be:</i> Accumulated Depreciation

Table 7.1

How will you remember all of this? Remember, “Cash Is King,” so we consider cash transactions first. If you receive cash, regardless of the source of the transaction, and even if it is only a part of the transaction, it goes in the cash receipts journal. For example, if the company made a sale for \$1,000 and the customer gave \$300 in cash and promised to pay the remaining balance in the future, the entire transaction would go into the cash receipts journal, because some cash was received, even if it was only part of a transaction. You could not split this journal entry between two journals, because each transaction’s debits must equal the credits or else your journal totals will not balance at the end of the month. You might consider splitting this transaction into two separate transactions and considering it a cash sale for \$300 and a sale on account for \$700, but that would also be inappropriate. Although the balances in the general ledger accounts would technically be correct if you did that, this is not the right approach. Good internal control dictates that this is a single transaction, associated with one invoice number on a given date, and should be recorded in its entirety in a single journal, which in this case is the cash receipts journal. If any cash is received, even if it is only a part of the transaction, the entire transaction is entered in the cash receipts journal. For this example, the transaction entered in the cash receipts journal would have a debit to cash for \$300, a debit to Accounts Receivable for \$700, and a credit to Sales for \$1,000.

If you pay cash (usually by writing a check), for any reason, even if it is only a part of the transaction, the entire transaction is recorded in the cash disbursements journal. For example, if the company purchased a building for \$500,000 and gave a check for \$100,000 as a down payment, the entire transaction would be recorded in the cash disbursements journal as a credit to cash for \$100,000, a credit to mortgage payable for \$400,000, and a debit to buildings for \$500,000.

If the transaction does not involve cash, it will be recorded in one of the other special journals. If it is a credit sale (also known as a sale on account), it is recorded in the sales journal. If it is a credit purchase (also known

as a purchase on account), it is recorded in the purchases journal. If it is none of the above, it is recorded in the general journal.

CONTINUING APPLICATION AT WORK

Accounting Information Systems

Let's consider what **Gearhead Outfitters'** accounting information system might look like. What information will company management find important? Likewise, what information might external users of **Gearhead's** financial reports need? Do regulatory requirements dictate what **Gearhead** needs to track in its accounting system?

Gearhead will want to know its financial position, results of operations, and cash flows. Such data will help management make decisions about the company. Likewise, external users want this data (balance sheet, income statement, and statement of cash flows) to make decisions such as whether or not to extend credit to **Gearhead**.

To keep accurate records, company operations must be considered. For example, inventory is purchased, sales are made, customers are billed, cash is collected, employees work and need to be paid, and other expenses are incurred. All of these operations involve different recording processes. Inventory will require a purchases journal. Sales will require a sales journal, cash receipts journal, and accounts receivable subsidiary ledger (discussed later) journal. Payroll and other disbursements will require their own journals to accurately track transactions.

Such journals allow a company to record accounting information and generate financial statements. The data also provides management with the information needed to make sound business decisions. For example, subsidiary ledgers, such as the accounts receivable ledger, provide data about the aging and collectability of receivables. Thus, the proper design, implementation, and maintenance of the accounting information system are vital to a company's sustainability.

What other questions can be answered through the analysis of information gathered by the accounting information system? Think in terms of the timing of inventory orders and cash flow needs. Is there nonfinancial information to extract from the accounting system? An accounting information system should provide the information needed for a business to meet its goals.

Subsidiary Ledgers

In addition to the four special journals, there are two special ledgers, the accounts receivable subsidiary ledger and the accounts payable subsidiary ledger. The **accounts receivable subsidiary ledger** gives details about each person who owes the company money, as shown in [Figure 7.13](#). Each colored block represents an individual's account and shows only the amount that person owes the company. Notice that the subsidiary ledger provides the date of the transaction and a reference column to link the transaction to the same information posted in one of the special journals (or general journal if special journals are not used)—this reference is usually a code that references the special journal such as SJ for the sales special journal, as well as the amounts owed in the debit column and the payments made in the credit column. The amounts owed by all of the individuals, as indicated in the subsidiary ledger, are added together to form the **accounts receivable**

control total, and this should equal the Accounts Receivable balance reported in the general ledger as shown in [Figure 7.14](#). Key points about the accounts receivable subsidiary ledger are:

- Accounts Receivable in the general ledger is the total of all of the individual account totals that are listed in the accounts receivable subsidiary ledger.
- All of the amounts owed to the company in the accounts receivable subsidiary ledger must equal the amounts in the accounts receivable general ledger account.

SUBSIDIARY LEDGER					SUBSIDIARY LEDGER					SUBSIDIARY LEDGER				
Smith					Jones					Lee				
Date	Ref.	DR	CR	Balance	Date	Ref.	DR	CR	Balance	Date	Ref.	DR	CR	Balance
Feb. 1		\$100		\$100	Feb. 2		\$200	\$100	\$200	Feb. 1		\$300		\$300
Feb. 9		\$300		\$400	Feb. 8		\$300	\$300	\$500	Feb. 4			\$200	\$100

Figure 7.13 Accounts Receivable Subsidiary Ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER						GENERAL LEDGER	
Smith		+	Jones		+	Accounts Receivable	
Balance			Balance			Balance	
\$400			\$500			\$1,000	

Figure 7.14 Accounts Receivable. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

ETHICAL CONSIDERATIONS

Subsidiary Ledger Fraud^[6]

Subsidiary ledgers have to balance and agree with the general ledger. Accountants using QuickBooks and other accounting systems may not have to perform this step, because in these systems the subsidiary ledger updates the general ledger automatically. However, a dishonest person might manipulate accounting records by recording a smaller amount of cash receipts in the control account than is recorded on the subsidiary ledger cards. The ethical accountant must be vigilant to ensure that the ledgers remain balanced and that proper internal controls are in place to ensure the soundness of the accounting system.

The **accounts payable subsidiary ledger** holds the details about all of the amounts a company owes to people and/or companies. In the accounts payable subsidiary ledger, each vendor (the person or company from whom you purchased inventory or other items) has an account that shows the details of all transactions. Similar to the accounts receivable subsidiary ledger, the purchases subsidiary journal indicates the date on which a transaction took place; a reference column used in the same manner as previously described for

6 Joseph R. Dervaes. "Accounts Receivable Fraud, Part Five: Other Accounting Manipulations." *Fraud Magazine*. July/August, 2004. <http://www.fraud-magazine.com/article.aspx?id=4294967822>

accounts receivable subsidiary ledgers; and finally, the subsidiary ledger shows the amount charged or the amount paid. Following are the transactions for ABC Inc. and XYZ Inc. The final balance indicated on each subsidiary purchases journal shows the amount the company owes ABC and XYZ.

SUBSIDIARY LEDGER						SUBSIDIARY LEDGER					
ABC Inc.						XYZ Inc.					
Date	Ref.	Item	DR	CR	Balance	Date	Ref.	Item	DR	CR	Balance
Jan. 1		Purchase		\$200	\$200	Jan. 3		Purchase		\$100	\$100
Jan. 15		Payment	\$75		125	Jan. 15		Payment	\$20		80
Jan. 20		Purchase		\$ 50	\$175	Jan. 20		Purchase		\$ 50	\$130

If the two amounts are added together, the company owes \$305 in total to the two companies. The \$305 is the amount that will show in the Accounts Payable general ledger account.

YOUR TURN

Using the Accounts Payable Subsidiary Ledger

Find the balance in each account in the accounts payable subsidiary ledger that follows. Note that each vendor account has a unique account number or AP No.

ACCOUNTS PAYABLE SUBSIDIARY LEDGER					
Account: Elizabeth I Inc.			AP No. 734		
Date	Item	Ref.	Debit	Credit	Balance
					Credit
2019					
Dec. 1	Beginning Balance				3,134
Dec. 15	Cash Disbursements	124	2,150		?
Dec. 16	Purchases Journal	76		3,112	?
Dec. 29	Cash Disbursements	125	1,250		?

Account: F. Nightingale Inc.			AP No. 731		
Date	Item	Ref.	Debit	Credit	Balance
					Credit
Dec. 1	Beginning Balance				3,446
Dec. 9	Purchases Journal	76		2,589	?
Dec. 15	Purchases Journal	77		1,234	?

Account: L.M. Alcott Inc.			AP No. 671		
Date	Item	Ref.	Debit	Credit	Balance
					Credit
Dec. 1	Beginning Balance				3,467
Dec. 15	Purchases Journal	77		3,450	?
Dec. 28	Purchases Journal	77		1,500	?
Dec. 31	General Journal: Return	127	250		?

Solution

ACCOUNTS PAYABLE SUBSIDIARY LEDGER					
Account: Elizabeth I Inc.			AP No. 734		
Date	Item	Ref.	Debit	Credit	Balance Credit
2019 Dec. 1	Beginning Balance				3,134
Dec. 15	Cash Disbursements	124	2,150		984
Dec. 16	Purchases Journal	76		3,112	4,096
Dec. 29	Cash Disbursements	125	1,250		2,846

Account: F. Nightingale Inc.			AP No. 731		
Date	Item	Ref.	Debit	Credit	Balance Credit
Dec. 1	Beginning Balance				3,446
Dec. 9	Purchases Journal	76		2,589	6,035
Dec. 15	Purchases Journal	77		1,234	7,269

Account: L.M. Alcott Inc.			AP No. 671		
Date	Item	Ref.	Debit	Credit	Balance Credit
Dec. 1	Beginning Balance				3,467
Dec. 15	Purchases Journal	77		3,450	6,917
Dec. 28	Purchases Journal	77		1,500	8,417
Dec. 31	General Journal: Return	127	250		8,167

7.3 Analyze and Journalize Transactions Using Special Journals

Accounting information systems were paper based until the introduction of the computer, so special journals were widely used. When accountants used a paper system, they had to write the same number in multiple places and thus could make a mistake. Now that most businesses use digital technology, the step of posting to journals is performed by the accounting software. The transactions themselves end up on transaction files rather than in paper journals, but companies still print or make available on the screen something that closely resembles the journals. Years ago, all accounting record keeping was manual. If a company had many transactions, that meant many journal entries to be recorded in the general journal. People soon realized that certain types of transactions occurred more frequently than any other types of transaction, so to save time, they designed a special journal for each type that occurs frequently (e.g., credit sales, credit purchases, receipts of cash, and disbursements of cash). We would enter these four types of transactions into their own journals, respectively, rather than in the general journal. Thus, in addition to the general journal, we also have the sales journal, cash receipts journal, purchases journal, and cash disbursements journals.

The main difference between special journals using the perpetual inventory method and the periodic inventory method is that the sales journal in the perpetual method, as you have seen in the prior examples in

the chapter, will have a column to record a debit to Cost of Goods Sold and a credit to Inventory. In the purchases journal, using the perpetual method will require we debit Inventory instead of Purchases. Another difference is that the perpetual method will include freight charges in the Inventory account, while the periodic method will have a special Freight-in account that will be added when Cost of Goods Sold will be computed. For a refresher on perpetual versus periodic and related accounts such as freight-in, please refer to [Merchandising Transactions](#).

THINK IT THROUGH

Which Journal?

If you received a check from Mr. Jones for \$500 for work you performed last week, which journal would you use to record receipt of the amount they owed you? What would be recorded?

The Sales Journal

The sales journal is used to record sales on account (meaning sales on credit or credit sale). Selling on credit always requires a debit to Accounts Receivable and a credit to Sales. Because every credit sales transaction is recorded in the same way, recording all of those transactions in one place simplifies the accounting process. [Figure 7.15](#) shows an example of a sales journal. Note there is a single column for both the debit to Accounts Receivable and the credit to Sales, although we need to post to both Accounts Receivable and Sales at the end of each month. There is also a single column for the debit to Cost of Goods Sold and the credit to Merchandise Inventory, though again, we need to post to both of those. In addition, for companies using the perpetual inventory method, there is another column representing a debit to Cost of Goods Sold and a credit to Merchandise Inventory, since two entries are made to record a sale on account under the perpetual inventory method.

SALES JOURNAL							Page 26
Date	Account	Address	Acct. No.	Terms	Sales Invoice No.	Ref.	DR A/R CR Sales
2019							
Jan. 3	Baker Co.	PO Box 12	1231	n/30	45321		850
Jan. 3	Alpha Co.	Rt 2	2134	2/10, n/30	45322		625
Jan. 5	Tau Inc.	29 Main St.	1257	n/30	45323		700
Jan. 6	Baker Co.	PO Box 12	1231	n/30	45324		600

Figure 7.15

The information in the sales journal was taken from a copy of the sales invoice, which is the source document representing the sale. The sales invoice number is entered so the bookkeeper could look up the sales invoice and assist the customer. One benefit of using special journals is that one person can work with this journal while someone else works with a different special journal.

At the end of the month, the bookkeeper, or computer program, would total the A/R Dr and Sales Cr column and post the amount to the Accounts Receivable control account in the general ledger and the Sales account in the general ledger. The Accounts Receivable control account in the general ledger is the total of all of the amounts customers owed the company. Also at the end of the month, the total debit in the cost of goods sold

column and the total credit to the merchandise inventory column would be posted to their respective general ledger accounts.

The company could have made these entries in the general journal instead of the special journal, but if it had, this would have likely caused the sales transactions to be separated from each other and spread throughout the journal, making it harder to find and keep track of them. When a sales journal is used, if the company is one where sales tax is collected from the customer, then the journal entry would be a debit to Accounts Receivable and a credit to Sales and Sales Tax Payable, and this would require an additional column in the sales journal to record the sales tax. For example, a \$100 sale with \$10 additional sales tax collected would be recorded as a debit to Accounts Receivable for \$110, a credit to Sales for \$100 and a credit to Sales Tax Payable for \$10.

The use of a reference code in any of the special journals is very important. Remember, after a sale is recorded in the sales journal, it is posted to the accounts receivable subsidiary ledger, and the use of a reference code helps link the transactions between the journals and ledgers. Recall that the accounts receivable subsidiary ledger is a record of each customer's account. It looked like [Figure 7.16](#) for Baker Co.

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER					
Account: Baker Co.			Account No. 1231		
Date	Item	Ref.	Debit	Credit	Balance
2019	Beginning Balance				0
Jan. 3	45321	SJ 26	850		850
Jan. 6	45324	SJ 26	600		1,450

Figure 7.16 Accounts Receivable Subsidiary Ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Using the reference information, if anyone had a question about this entry, he or she would go to the sales journal, page 26, transactions #45321 and #45324. This helps to create an audit trail, or a way to go back and find the original documents supporting a transaction.

YOUR TURN

Which Journal Do You Use?

Match each of the transactions in the right column with the appropriate journal from the left column.

A. Purchases journal	i. Sales on account
B. Cash receipts journal	ii. Adjusting entries
C. Cash disbursements journal	iii. Receiving cash from a charge customer
D. Sales journal	iv. Buying inventory on credit
E. General journal	v. Paying the electric bill

Solution

A. iv; B. iii; C. v; D. i; E. ii.

Comprehensive Example

Let us return to the sales journal, shown in [Figure 7.17](#) that includes information about Baker Co. as well as other companies with whom the company does business.

SALES JOURNAL							Page 26
Date	Account	Address	Acct. No.	Terms	Sales Invoice No.	Ref.	DR A/R CR Sales
2019							
Jan. 3	Baker Co.	PO Box 12	1231	n/30	45321		850
Jan. 3	Alpha Co.	Rt 2	2134	2/10, n/30	45322		625
Jan. 5	Tau Inc.	29 Main St.	1257	n/30	45323		700
Jan. 6	Baker Co.	PO Box 12	1231	n/30	45324		600
	Total						\$2,775

Figure 7.17 Partial Sales Journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

At the end of the month, the total Sales on credit were \$2,775. The transactions would be posted in chronological order in the sales journal. As you can see, the first transaction is posted to Baker Co., the second one to Alpha Co., then Tau Inc., and then another to Baker Co. On the date each transaction is posted in the sales journal, the appropriate information would be posted in the subsidiary ledger for each of the customers. As an example, on January 3, amounts related to invoices 45321 and 45322 are posted to Baker's and Alpha's accounts, respectively, in the appropriate subsidiary ledger. At the end of the month, the total of \$2,775 would be posted to the Accounts Receivable control account in the general ledger. Baker Co.'s account in the subsidiary ledger would show that they owe \$1,450; Alpha Co. owes \$625; and Tau Inc. owes \$700 ([Figure 7.18](#)).

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER					
Account: Baker Co.			Account No. 1231		
Date	Item	Ref.	Debit	Credit	Balance
2019	Beginning Balance				0
Jan. 3	45321	SJ 26	850		850
Jan. 6	45324	SJ 26	600		1,450

Account: Alpha Co.			Account No. 2134		
Date	Item	Ref.	Debit	Credit	Balance
2019	Beginning Balance				0
Jan. 3	45322	SJ 26	625		625

Account: Tau Inc.			Account No. 1257		
Date	Item	Ref.	Debit	Credit	Balance
2019	Beginning Balance				0
Jan. 3	45323	SJ 26	700		700

Figure 7.18 Accounts Receivable Subsidiary Ledger. Individual accounts in the accounts receivable subsidiary ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

At the end of the month, we would post the totals from the sales journal to the general ledger ([Figure 7.19](#)).

ACCOUNTS RECEIVABLE GENERAL LEDGER (CONTROL TOTAL)						
Date	Item	Ref.	Balance			
			Debit	Credit	Debit	Credit
2019	Beginning Balance				00	
Jan. 31	January	SJ 26	2,775		2,775	

Figure 7.19 Accounts Receivable General Ledger. End-of-month posting to the Accounts Receivable Control Total account in the general ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Altogether, the three individual accounts owe the company \$2,775, which is the amount shown in the Accounts Receivable control account. It is called a *control total* because it helps keep accurate records, and the total in the accounts receivable must equal the balance in Accounts Receivable in the general ledger. If the amount of all the individual accounts receivable accounts did not add up to the total in the Accounts Receivable general ledger/control account, it would indicate that we made a mistake. [Figure 7.20](#) shows how the accounts and amounts are posted.

SALES JOURNAL								Page 26
Date	Account	Address	Acct. No.	Terms	Sales Invoice No.	Ref.	DR A/R CR Sales	DR COGS CR Merchandise Inventory
2019 Jan. 3	Baker Co.	PO Box 12	1231	n/30	45321		850	625
Jan. 3	Alpha Co.	Rt 2	2134	2/10, n/30	45322		625	480
Jan. 5	Tau Inc.	29 Main St.	1257	n/30	45323		700	510
Jan. 6	Baker Co.	PO Box 12	1231	n/30	45324		600	420
	Total						\$2,775	\$2,035

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER					
Account: Baker Co.			Account No. 1231		
Date	Item	Ref.	Debit	Credit	Balance
2019	Beginning Balance				0
Jan. 3	45321	SJ 26	850		850
Jan. 6	45324	SJ 26	600		1,450

Account: Alpha Co.			Account No. 2134		
Date	Item	Ref.	Debit	Credit	Balance
2019	Beginning Balance				0
Jan. 3	45322	SJ 26	625		625

Account: Tau Inc.			Account No. 1257		
Date	Item	Ref.	Debit	Credit	Balance
2019	Beginning Balance				0
Jan. 3	45323	SJ 26	700		700

ACCOUNTS RECEIVABLE GENERAL LEDGER (CONTROL TOTAL)						
Date	Item	Ref.	Balance			
			Debit	Credit	Debit	Credit
2019	Beginning Balance				00	
Jan. 31	January	SJ 26	2,775		2,775	

SALES RECEIVABLE GENERAL LEDGER (CONTROL TOTAL)						
Date	Item	Ref.	Balance			
			Debit	Credit	Debit	Credit
2019	Beginning Balance				00	
Jan. 31	January	SJ 26		2,775		2,775

COST OF GOODS SOLD RECEIVABLE GENERAL LEDGER (CONTROL TOTAL)						
Date	Item	Ref.	Balance			
			Debit	Credit	Debit	Credit
2019	Beginning Balance				00	
Jan. 31	January	SJ 26	2,035		2,035	

INVENTORY RECEIVABLE GENERAL LEDGER (CONTROL TOTAL)						
Date	Item	Ref.	Balance			
			Debit	Credit	Debit	Credit
2019	Beginning Balance				00	
Jan. 31	January	SJ 26		2,035		2,035

Figure 7.20 Sales Journal. Sales journal transactions are posted individually to the accounts receivable subsidiary ledger and in total to the general ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The Cash Receipts Journal

When the customer pays the amount owed, (generally using a check), bookkeepers use another shortcut to record its receipt. They use a second special journal, the cash receipts journal. The cash receipts journal is used to record all receipts of cash (recorded by a debit to Cash). In the preceding example, if Baker Co. paid the \$1,450 owed, there would be a debit to Cash for \$1,450 and a credit to Accounts Receivable. A notation would be made in the reference column to indicate the payment had been posted to Baker Co.'s accounts receivable subsidiary ledger. After Baker Co.'s payment, the cash receipts journal would appear as in [Figure 7.21](#).

CASH RECEIPTS JOURNAL											Page 87
Other Accounts											
Date	Invoice No.	Description	Cash DR	Sales Discount DR	Ref.	Accounts Receivable CR	Sales CR	Acct. No.	√	DR	CR
2019 Feb. 3		Check No. 123	1,450			1,450		1231			

Figure 7.21 Page from the Cash Receipts Journal. Check the box when you post the transaction to the customer's account in the subsidiary ledger. (Acct # can be the customer's account or, if the transaction touches something other than a customer's account, it can be that account's number.) (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

And the accounts receivable subsidiary ledger for Baker Co. would also show the payment had been posted ([Figure 7.22](#)).

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER					
Account: Baker Co.			Account No. 1231		
Date	Item	Ref.	Debit	Credit	Balance
	Beginning Balance				0
Jan. 3	45321	SJ 26			850
Jan. 6	45324	SJ 26	850		1,450
Feb. 3	Check No. 123	CR 87	600	1,450	0

Figure 7.22 Accounts Receivable Subsidiary Ledger. This is Baker Co.'s account in the accounts receivable subsidiary ledger. Note that we always know how much Baker owes us and how long it has been since Baker paid. SJ stands for sales journal, and CR stands for cash receipts journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

In the cash receipts journal, the credit can be to Accounts Receivable when a customer pays on an account, or Sales, in the case of a cash sale, or to some other account when cash is received for other reasons. For example, if we overpaid our electric bill, we could get a refund check in the mail. We would use the cash receipts journal because we are receiving cash, but the credit would be to our Utility Expense account. If you look at the example in [Figure 7.23](#), you see that there is no column for Utility Expense, so how would it be recorded? We would use some generic column title such as "other" to represent those cash transactions in the subsidiary ledger though the specific accounts would actually be identified by account number in the special journal. We would look up the account number for Utility Expense and credit the account for the amount of the check. If we received a refund from the electric company on June 10 in the amount of \$100, we would find the account number for utility expense (say it is 615) and record it.

CASH RECEIPTS JOURNAL								Page 87			
								Other Accounts			
Date	Invoice No.	Description	Cash DR	Sales Discount DR	Ref.	Accounts Receivable CR	Sales CR	Acct. No.	✓	DR	CR
Jun. 10		Refund	100					615			100

Figure 7.23 Cash Receipts Journal. The “Ref” column stands for reference and can be anything that helps us remember. For example, in the problem, the Ref could be the number of the check the company sent us. Or it could be the account number we use for that company. It is part of the audit trail. *Other* means “various,” so we would use the account number for utility expense and credit it. When it is posted to the general ledger, we will “check” the box next to 615 to remind ourselves that it has been posted. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

At the end of the month, we total the Cash column in the cash receipts journal and debit the Cash account in the general ledger for the total. In this case there were two entries in the cash receipts journal, the cash received from Baker and the refund check for an overpayment on utilities for a total cash received and recorded in the cash receipts journal of \$1,550, as shown in [Figure 7.24](#).

GENERAL LEDGER: CASH						
Date	Item	Ref.	Balance			
			Debit	Credit	Debit	Credit
2019	Beginning Balance				20,000	
Jan. 31	January	CRJ	1,550		21,550	

Figure 7.24 General Ledger: Cash. Cash receipts journal ending balance for January is posted to the cash account in the general ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Any accounts used in the Other Accounts column must be entered separately in the general ledger to the appropriate account. [Figure 7.25](#) shows how the refund would be posted to the utilities expense account in the general ledger.

GENERAL LEDGER: UTILITIES EXPENSE							
Date	Item	Ref.	Acct No.	Balance			
				Debit	Credit	Debit	Credit
2019	Beginning Balance					6,000	
Jan. 31	Refund		615		100		100

Figure 7.25 General Ledger: Utilities Expense. Any postings to Other accounts in the cash receipts journal are posted to the appropriate account in the general ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The Cash Disbursements Journal

Many transactions involve cash. We enter all cash received into the cash receipts journal, and we enter all cash payments into the cash disbursements journal, sometimes also known as the cash payments journal. Good internal control dictates the best rule is that all cash received by a business should be deposited, and all cash paid out for monies owed by the business should be made by check. Money paid out is recorded in the cash disbursements journal, which is generally kept in numerical order by check number and includes all of the checks recorded in the checkbook register. If we paid this month's phone bill of \$135 with check #4011, we would enter it as shown in [Figure 7.26](#) in the cash disbursements journal.

CASH DISBURSEMENTS JOURNAL							Page 18		
						Other Accounts			
Date	Check No.	Payee	Cash DR	Accounts Payable DR	Purchases DR	Acct. No.	✓	DR	CR
Jan. 31	401	Phone Co.	134	134					

Figure 7.26 Using the Cash Disbursements Journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The total of all of the cash disbursements for the month would be recorded in the general ledger Cash account ([Figure 7.27](#)) as follows. Note that the information for both the cash receipts journal and the cash disbursements journal are recorded in the general ledger Cash account.

GENERAL LEDGER: CASH						
Date	Item	Ref.	Balance			
			Debit	Credit	Debit	Credit
2019	Beginning Balance				20,000	
Jan. 31	January	CRJ	1,550		21,550	
Jan. 31	January	CPJ		135	21,415	

Figure 7.27 General Ledger: Cash. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The Purchases Journal

Many companies enter only purchases of inventory on account in the purchases journal. Some companies also use it to record purchases of other supplies on account. However, in this chapter we use the purchases journal for purchases of inventory on account, only. It will always have a debit to Merchandise Inventory if you are using the perpetual inventory method and a credit to Accounts Payable, or a debit to Purchases and a credit to Accounts Payable if using the periodic inventory method. It is similar to the sales journal because it has a corresponding subsidiary ledger, the accounts payable subsidiary ledger. Since the purchases journal is only for purchases of inventory on account, it means the company owes money. To keep track of whom the company owes money to and when payment is due, the entries are posted daily to the accounts payable subsidiary ledger. Accounts Payable in the general ledger becomes a control account just like Accounts Receivable. If we ordered inventory from Jones Mfg. (account number 789) using purchase order #123 and

received the bill for \$250, this would be recorded in the purchases journal as shown in [Figure 7.28](#).

PURCHASES JOURNAL					
Date	Purchase Order No.	Account Credited	Acct. No.	Posting Reference	Inventory DR Acct. Payable CR
XX	123	Jones Mfg.	789	√	250

Figure 7.28 Purchases Journal. Recording the purchase of merchandise on account in the purchases journal. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The posting reference would be to indicate that we had entered the amount in the accounts payable subsidiary ledger ([Figure 7.29](#)).

ACCOUNTS PAYABLE SUBSIDIARY LEDGER					
Account: Jones Mfg.				Account No. 789	
Date	Item	Ref.	Debit	Credit	Balance
Jan. 12	Inventory			250	250

Figure 7.29 Accounts Payable Subsidiary Ledger. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The total of all accounts payable subsidiary ledgers would be posted at the end of the month to the general ledger Accounts Payable control account. The sum of all the subsidiary ledgers must equal the amount reported in the general ledger.

General Journal

Why use a general journal if we have all the special journals? The reason is that some transactions do not fit in any special journal. In addition to the four special journals presented previously (sales, cash receipts, cash disbursements, and purchases), some companies also use a special journal for Sales returns and allowances and another special journal for Purchase returns and allowances if they have many sales returns and purchase returns transactions. However, most firms enter those transactions in the general journal, along with other transactions that do not fit the description of the specific types of transactions contained in the four special journals. The general journal is also necessary for adjusting entries (such as to recognize depreciation, prepaid rent, and supplies that we have consumed) and closing entries.

YOUR TURN

Using the Sales and Cash Receipts Journals

You own and operate a business that sells goods to other businesses. You allow established customers to buy goods from you on account, meaning you let them charge purchases and offer terms of 2/10, n/30. Record the following transactions in the sales journal and cash receipts journal:

Jan. 3	Sales on credit to VJ Armitraj, Ltd., amount of \$7,200, Invoice # 317745
Jan. 9	Sales on credit to M. Baghdatis Inc., amount of \$5,200, Invoice # 317746
Jan. 16	Receive \$7,200 from VJ Armitraj, Ltd. (did not receive during the discount period)
Jan. 17	Sales on credit to A. Ashe Inc., amount of \$3,780, Invoice #317747
Jan. 18	Receive the full amount owed from M. Baghdatis Inc. within the discount period

Solution

SALES JOURNAL				Page 27	
Date	Invoice No.	Account Debited	Acct. No.	Acct. Rec. DR Sales CR	
2019					
Jan. 3	317745	VJ Armitraj, Ltd.	AR 354	7	200
Jan. 9	317746	M. Baghdatis Inc.	AR 471	5	200
Jan. 17	317747	A. Ashe Inc.	AR 371	3	780
				16	180

CASH RECEIPTS JOURNAL								OTHER ACCOUNTS			
Date	Invoice No.	Description	Cash DR	Sales Discounts DR	Ref.	Accounts Receivable CR	Sales CR	Acct. No.	✓	DR	CR
2019											
Jan. 8	317740	VJ Armitraj	7,200			7,200		AR354			
Jan. 12	317746	M. Baghdatis	5,096	104		5,200		AR471			
		Total debits = 12,400	12,296	104		12,400					
		Total credits = 12,400									

Accounts Receivable Subsidiary Ledger					
Account: VJ Armitraj Ltd			AR No. 354		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jan. 3	Sales Journal	27	7,200		7,200
Jan. 16	Cash Receipts	24		7,200	0

Account: A. Ashe Inc.			AR No. 371		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jan. 17	Sales Journal	27	3,780		3,780

Account: M. Baghdatis Inc.			AR No. 471		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jan. 9	Sales Journal	27	5,200		5,200
Jan. 18	Cash Receipts	24		5,200	0

Ensure that the total of all individual accounts receivable equals the total of accounts receivable, or:

$$0 + \$3,780 + 0 = \$3,780.$$

Accounts Receivable	
16,180	7,200
	5,200
3,780	

7.4 Prepare a Subsidiary Ledger

Now that you have seen four special journals and two special ledgers, it is time to put all the pieces together.

Record the following transactions for Store Inc. in the special journals and post to the general ledger provided. Also post to the subsidiary ledgers provided. Beginning account balances are shown below. Use the perpetual inventory method and the gross method of dealing with sales terms.

First, enter these transactions manually by creating the relevant journals and subsidiary ledgers. Then enter them using QuickBooks.

BEGINNING BALANCES			
Cash	\$3,116	Accounts Payable	\$6,382
Accounts Receivable	3,576	Stock	5,000
Prepaid Insurance	130	Retained Earnings	4,357
Inventory	8,917		

Transactions for Store Inc.

Jan. 2	Issued check #629 for January store rent: \$350.00
Jan. 3	Received check from PB&J in payment for December sale on credit, \$915.00
Jan. 4	Issued check #630 to D & D in payment for December purchase on credit of \$736.00
Jan. 5	Sold goods for \$328.00 to Jones Co. on credit, Invoice # 234 (Note: COGS is \$164)
Jan. 6	Bought goods from BSA for \$4,300.00, Purchase Order # 71, terms: 2/10, net/30
Jan. 8	Sold goods on credit to Black & White Inc. for \$2,100, Invoice # 235, terms: 1/10, net/30 (Note: COGS is \$1,050)
Jan. 9	Issued check #63 for telephone bill received today, \$72.00
Jan. 10	Issued check #632 to pay BSA in full, PO #71.
Jan. 15	Received full payment from Black & White, Inc., Invoice # 235
Jan. 20	Bought merchandise from Dow John, \$525.00 payable in 30 days, Purchase Order # 72
Jan. 26	Returned \$100 of merchandise to Dow John, relating to Purchase Order #72
Jan. 31	Recorded cash sales for the month of \$3,408 (Note: COGS is \$1,704)
Jan. 31	Recognized that half of the Prepaid Insurance has been consumed

Table 7.2

Record all transactions using the sales journal, purchases journal, cash receipts journal, cash disbursements journal, and the general journal and post to the accounts receivable and accounts payable subsidiary ledgers. Then prepare a schedule of accounts receivable and a schedule of accounts payable.

CASH RECEIPTS JOURNAL SOLUTION								Page 65			
								Other Accounts			
Date	Invoice No.	Description	Cash DR	Discounts DR	Ref.	Receivable CR	Sales CR	Acct. No.	✓	DR	CR
2019											
Jan. 3	234	PB&J	915			915					
Jan. 15		Black & White	2,079	21		2,100					
Jan. 31		Jan. Cash Sales	3,408				3,408	501		1,204	
								106			1,204
		Total	6,402	21		3,015	3,408			1,204	1,204

Explanation:

Jan. 3	The company received payment from PB&J; thus, a cash receipt is recorded.
Jan. 15	The company received payment on goods that were sold on Jan. 8 with credit terms if paid within the discount period. The payment was received within the discount period.

Jan. 31 Cash sales are recorded.

GENERAL JOURNAL SOLUTION					119
Date	Description	Ref.	Debit	Credit	
2019					
Jan. 26	Accounts Payable: Dow John	200	100		
	Merchandise Inventory	106		100	
	To record return of defective merchandise (Dow John AP No. 115)				
Jan. 31	Insurance Expense	504	65		
	Prepaid Insurance	105		65	
	To record expiration of Prepaid Insurance				

Explanation:

Jan. 26 The company returns merchandise (inventory) previously purchased. Since the company is using the perpetual method, a credit is made to Inventory.

Jan. 31 An adjusting entry is made to recognize insurance expense for the current month that had previously been prepaid.

SALES JOURNAL						Page 143
Date	Invoice No.	Account Debited	Acct. No.	A/R DR Sales CR	COGS DR Inventory CR	
Jan. 5	234	Jones Co.	JC1	328	164	
Jan. 8	235	Black & White Inc.	BW1	2,100	1,050	
				2,428	1,214	

Explanation:

Jan. 8 Sales on credit are recorded

CASH DISBURSEMENTS JOURNAL										Page 102
							Other Accounts			
Date	Check No.	Payee	Cash CR	Ref.	Accounts Payable DR	Purchases Discounts CR	Acct. No.	✓	DR	CR
2019										
Jan. 1	629	Rent	350				535		350	
Jan. 4	630	D&D	736	D1218	736					
Jan. 9	631	Phone	72				545		72	
Jan. 10	632	BSA	4,214		4,300	86				
			5,372		5,036	86			422	
		Debits = 5,458								
		Credits = 5,458								

Explanation:

Jan. 2 Rent for the month is paid.

Jan. 4 Payment is made for inventory purchased on account in a prior month.

Jan. 9	Paid the telephone bill.
Jan. 10	Paid for inventory purchased earlier on account. The payment arrangement had credit terms; the invoice was paid within the time allowed, and the discount was taken.

PURCHASES JOURNAL				Page 54
Date	Purchase Order No.	Account Credited	Acct. No.	Debit Inventory Credit AP
2019				
Jan. 6	71	BSA	110	4,300
Jan. 20	72	Dow John	115	525
				<u>4,825</u>

Explanation:

Jan. 6	Inventory is purchased on account.
Jan. 20	Inventory is purchased on account.

At the end of the month, each of the previous journal totals are posted to the appropriate account in the general ledger, and any individual account postings, such as to Rent Expense (Jan. 2 transaction) would also be posted to the general ledger. Note that each account used by the company has its own account section in the general ledger.

GENERAL LEDGER SOLUTION						
Account: Cash					No. 101	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
2019						
Jan. 1	Beginning Balance				3,116	
Jan. 31	Cash Receipts	CR 65	6,402		9,518	
Jan. 31	Cash Disbursements	CD 18		5,372	4,146	

Account: Accounts Receivable					No. 102	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance				3,576	
Jan. 31	Sales Journal	SJ 143	2,248		6,004	
Jan. 31	Cash Receipts	CR 122		3,015	2,989	

Account: Prepaid Insurance					No. 106	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance				130	
Jan. 31	Adjusting Entry	GJ 119	65		65	

Account: Inventory					No. 106	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance				8,917	
Jan. 14	Purchases Journal	PJ 54	4,825		13,742	
Jan. 31	Purchase Return	GJ 119		100	13,642	
Jan. 31	Cash Receipts Journal	CR 65		1,704	11,938	
Jan. 31	Cash Disbursements	CD 18		86	11,852	
Jan. 31	Sales Journal	SJ 24		1,214	10,638	

Account: Accounts Payable					No. 200	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance					6,382
Jan. 31	Purchases Journal	PJ 54		4,825		11,207
Jan. 31	Cash Disbursements	CD 18	5,036			6,171
Jan. 31	General Journal	GJ	100			6,071

GENERAL LEDGER SOLUTION						
Account: Common Stock				No. 301		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
2019 Jan. 1	Beginning Balance					5,000
Account: Retained Earnings				No. 350		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance					4,357
Account: Sales				No. 401		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance					2,428
Jan. 13	Sales Journal	SJ 24		2,428		2,428
Jan. 31	Cash Receipts	CR		3,408		5,836
Account: Sales Discounts				No. 410		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance					
Jan. 15	General Journal	GJ 119	65		65	
Account: Cost of Goods Sold				No. 501		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 31	Sales Journal	SJ 24	1,214		1,214	
Jan. 31	Cash Receipts	CR 65	1,704		2,918	
Account: Insurance Expense				No. 521		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance					
Jan. 15	General Journal	GJ 119	65		65	
Account: Rent Expense				No. 535		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance					
Jan. 31	Cash Disbursements	CD 18	350		350	
Account: Utilities Expense				No. 545		
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
Jan. 1	Beginning Balance					
Jan. 31	Cash Disbursements	CD 18	72		72	

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER SOLUTION					
PB&J					
Date	Item	Ref.	Debit	Credit	Balance
					Debit
2019					
Dec. 20	Sales Journal	SJ 23	915		915
Jan. 3	Cash Receipts	CR		915	
Jones Co.					
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jan. 5	Sales Journal	SJ 24	328		328
Black & White Inc.					
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jan. 8	Sales Journal	SJ 24	2,100		2,100
Jan. 15	Cash Receipts	CR		2,100	
Tiny Tim's Inc.					
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Dec. 15	Sales Journal	23	2,661		2,661

ACCOUNTS PAYABLE SUBSIDIARY LEDGER					
Account: D & D Inc.					AP No. 34
Date	Item	Ref.	Debit	Credit	Balance Credit
2019 Dec. 1	Purchases Journal	PJ 44		736	736
Dec. 10	Purchases Journal	PJ 44		5,646	6,382
Jan. 4	Cash Disbursements	CD	736		5,646
Account: BSA					AP No. 71
Date	Item	Ref.	Debit	Credit	Balance Credit
Jan. 6	Purchases Journal	PJ 45		4,300	4,300
Jan. 10	Cash Disbursements	CD	4,300		0
Account: Dow John					AP No. 171
Date	Item	Ref.	Debit	Credit	Balance Credit
Jan. 20	Purchases	PJ 45		525	525
Jan. 26	General Journal	GJ 119	100		425

Store Inc.	
Schedule of Accounts Receivable	
Jan. 31	
PB&J	\$ 0
Jones Co.	328
Black & White Inc.	0
Tiny Tim's Inc.	2,661
	<u>\$2,989</u>

Store Inc.	
Schedule of Accounts Payable	
Jan. 31	
D & D Inc.	\$5,646
BSA	0
Dow John	<u>425</u>
	<u>\$6,071</u>

If you check Accounts Receivable in the general ledger, you see the balance is \$2,989, and the balance in Accounts Payable is \$6,071. If the numbers did not match, we would have to find out where the error was and then fix it.

The purpose of keeping subsidiary ledgers is for accuracy and efficiency. They aid us in keeping accurate records. Since the total of the accounts receivable subsidiary ledger must agree with the balance shown in the accounts receivable general ledger account, the system helps us find mistakes. Since bookkeeping using ledgers is older than the United States, it was an ingenious way to double-check without having to actually do everything twice. It provided an internal control over record keeping. Today, computerized accounting information systems use the same method to store and total amounts, but it takes a lot less time.

7.5 Describe Career Paths Open to Individuals with a Joint Education in Accounting and Information Systems

We use accounting information to make decisions about the business. Computer applications now provide so much data that **data analytics** is one of the newest career areas in business. Universities are beginning to

offer degrees in data analysis. Software companies have created different applications to analyze data including SAS, Apache Hadoop, Apache Spark, SPSS, RapidMiner, Power BI, ACL, IDEA, and many more to help companies discover useful information from the transactions that occur. **Big data** refers to the availability of large amounts of data from various sources, including the internet. For example, social media sites contain tremendous amounts of data that marketing companies analyze to determine how popular a product is, and how best to market it. There is so much data to analyze that new ways of mining it for predictive value have evolved.

Another emerging area involves **cryptocurrency**, or the use of a digital currency that uses encryption technologies that make these cryptocurrencies impossible to counterfeit. The use of cryptocurrency does not require a bank to transfer or clear funds as is the case with other currencies. Bitcoin is the most well-known cryptocurrency. **Blockchain** is the platform on which Bitcoin is built. Blockchain serves as a shared ledger for Bitcoin but is also the foundation of many other applications. Simply put, blockchain offers different parties to a transaction (e.g., a buyer and a seller) the opportunity to use a shared ledger rather than each having their own separate ledgers as is the case with traditional systems. Bitcoin is currently accepted by some large, well-known companies including **PwC** and **EY** (the two largest of the “big 4” accounting firms), and **Overstock.com**.

Enterprise resource planning (ERP) software is a collection of integrated programs that track all operations in a company, from payroll to accounts payable, manufacturing, and maintaining electronic connections with suppliers. For example, companies that sell goods to **Walmart**, have access to Walmart’s electronic inventory records so the vendors can make sure Walmart has the right amount of goods on hand. Having such a close relationship brings rewards. They will probably receive payment sooner, using EFT (electronic funds transfer).

The use of accounting information systems (AISs) has drastically changed the way we prepare tax returns. Software is now written to walk anyone through preparing his or her own tax return using an **expert system**. An expert system asks questions like: are you married? If the answer is yes, the software knows to use the married tax tables, and if the answer is no, it uses the single tables. Based on this answer, it will know what kind of question to ask next. Accountants who understand expert systems and tax will be writing and auditing tax software programs.

Firms are also developing and using **artificial intelligence (AI)** systems to perform tasks previously performed by accounting professionals, but now are freeing up the professionals to perform higher-level tasks requiring analysis and judgment. Finally, security of all of this available data is a very important issue, and there are a number of career paths and certifications that information technology professionals can attain. The Information Systems Audit and Control Association (ISACA) offers several certifications including Certified Information Systems Auditor (CISA), Certified in Risk and Information System Controls (CRISC), Certified Information Security Manager (CISM), and others. There is so much technology that we are inundated with more information than we can use. Because the information is being generated by a machine, we generally trust the computation (although there are cases where a bug in the program can even cause problems with simple math), but we also know the old saying, “garbage in, garbage out.” The computer does not always know that your typo is garbage. If you enter the wrong number, the system processes it as if it were the right number. That means we have to build some way into the program to control what is input into the system. For example, if you fill out a form online and it asks for your zip code, does it let you enter just four digits? No—the computer knows that it should only go to the next step if you enter five digits. However, you can enter the wrong digits and it might not catch it. It is critical that we build as many internal controls into our computerized systems as possible so that we can find errors at the input stage before they get into our system. In other words, by using these “preventive” controls, we do not allow “garbage” data to get into our system.

Computerized AISs have also brought changes to the audit trail. In the past, accountants had a set of books

that were paper based. You could see where a transaction was recorded and posted (and see if it had been erased). Once you enter it into a computer, it becomes part of an electronic audit trail, but the trail is only as good as the program that runs it. The screen could show you one number, but the system could be working with a different number all together. In fact, there have been criminal cases in which people wrote programs to cover up fraud. One such program functioned so that when an item was scanned, the correct amount displayed to the customer, but it was recorded in the books as a smaller amount, so the company paid less in sales tax and much less in income tax.

AISs have become more important because information and technology are more important.

CONCEPTS IN PRACTICE

Is Technology *Always* Better?

Technology allows one person to do a job that once took a dozen people to do. However, that can also lead to problems. For example, years ago, one person working in the accounts receivable department at **Burlington Industries** would have been in charge of a few customers. If those customers were not paying their bills on time, a person would be aware of it. Today, one person might be in charge of all accounts receivable. That person may not have time to call individual customers, so everything is preprogrammed. If the customer wanted to place a large order that caused them to go over their limit, the software would deny it instead of having a person weigh the risk of extending more credit.

A risk inherent in an AIS is that one person has access to a lot of information, and sometimes the information crosses department lines. Companies have to figure out ways to mitigate the risk, because AISs are truly essential to businesses today, especially with the growth of e-business and e-commerce. Think of the different business processes when a purchase is made through **Amazon.com**. Their AIS must be able to access inventory records, access customer information and records, process credit cards, calculate delivery dates, handle coupons or discounts, and remember where to ship the goods. Amazon would not be what it is today without all of its systems working together. Seeing what **Amazon** has accomplished opens the door for other companies to follow, and they will need people who understand the system.

Forensic accounting involves the use of accounting skills to inspect the accounting records in order to determine if fraud or embezzlement have occurred. Many universities are offering forensic accounting degrees to prepare students who can testify to criminal activity present in the accounting records.

CONCEPTS IN PRACTICE

The Founding of the Securities and Exchange Commission

In 1933 and 1934, the US Congress passed two acts that established the Securities and Exchange Commission (SEC), giving it the right to regulate and enforce the regulations concerning commerce in the United States. The website of the SEC (<https://www.SEC.gov/>) allows you to view all public company financial reporting and provides a link to all current litigation against individuals and companies that have been accused of breaking an SEC regulation. If you go to the site and look for the Litigation Releases section, you can click on individual cases and find that some cases of fraud involve the use of an

accounting information system.

The Patriot Act also came out of the 9/11 attacks (signed October 26, 2001). The letters in Patriot stand for the following: providing appropriate tools required to intercept and obstruct terrorism. The goal of the act was to prevent any other attacks on the United States by allowing enhanced surveillance procedures.

The act gave law enforcement officials the right to access computers to track IP addresses, websites visited, credit card information provided electronically, and so on, in an effort to uncover terrorism before an attack was made. Several parts of the act call for banks to report suspected money laundering activities. Money laundering is an attempt to hide the facts of the original transaction and would involve an accountant. If you were selling drugs for cash and then tried to deposit that much cash in a bank, the bank would report it, so you would try to cover up where the cash came from and run it through a legitimate company. That is money laundering.

The Patriot Act also includes a section requiring auditors to verify that a company has controls in place to prevent an attack on its accounting information system and that the company has a disaster plan including backup records in case of a disaster.

The AIS enables a company to record all of its business transactions. Systems are different depending on the company's needs. The AIS holds a lot of the information used to run a business. One system can provide everything needed for external reporting to government agencies involving payroll and income taxation. The same system can provide the data needed for managerial analysis used for pricing, budgeting, decision-making, and efficiency studies. Every company is required to keep records of their financial activity, and this means job security for people who are knowledgeable about AISs.

Key Terms

accounting information system (AIS) set of business processes that record transactions using journals and ledgers (for paper systems) and computer files (for computerized systems) to keep track of a company's transactions, process the data associated with these transactions, and produce output useful for internal and external decision-making and analysis

accounts payable subsidiary ledger special ledger that contains information about all vendors and the amounts we owe them; the total of all accounts in the accounts payable subsidiary ledger *must* equal the total of accounts payable control account in the general ledger

accounts receivable control accounts receivable account in the general ledger

accounts receivable subsidiary ledger special ledger that contains information about all customers and the amounts they owe; the total of all accounts in the accounts receivable subsidiary ledger *must* equal the total of accounts receivable control account in the general ledger

artificial intelligence computerized systems that are taught to use reasoning and other aspects of human intelligence to mimic some of the tasks humans perform

audit trail step-by-step trail of evidence documenting the history of a transaction from its inception and all the steps it went through until its completion

big data data sets from online transactions and other sources that are so large that new software and methods have been created to analyze and mine them so they can provide insight into trends and patterns of the business

blockchain underlying technology Bitcoin is built on; provides a single shared ledger used by all of the parties to a transaction resulting in cheaper, more secure, and more private transactions

cash disbursements journal special journal that is used to record outflows of cash; every time cash leaves the business, usually when we issue a check, we record in this journal

cash receipts journal special journal that is used to record inflows of cash; every time we receive checks and currency from customers and others, we record these cash receipts in this journal

cloud computing using the internet to access software and information storage facilities provided by companies (there is usually a charge) rather than, or in addition to, storing this data on the company's computer hard drive or in paper form

cryptocurrency digital currency that uses encryption techniques to verify transfer of the funds but operates independently of a bank

data parts of accounting transactions that constitute the input to an accounting information system

data analytics analyzing the huge amount of data generated by all the electronic transactions occurring in a business

data/information storage way to save data and information; can be on paper, computer hard drive, or through the internet to save in the cloud

enterprise resource planning (ERP) system that helps a company streamline its operations and helps management respond quickly to change

expert system software program that is built on a database; software asks question and uses the response to ask the next question or offer advice

forensic accounting using accounting and computer skills to look for fraud and to analyze financial records in hard copy and electronic formats

point of sale point of time when a sales transaction occurs

point-of-sale system (POS) computerized system to record and process a sale immediately when it occurs, usually by scanning the product bar code

purchases journal special journal that is used to record purchases of merchandise inventory on credit; it always debits the merchandise inventory account (if using the perpetual inventory method) or the Purchases account (if using the periodic method)

sales journal special journal that is used to record all sales on credit; it always debits accounts receivable and credits sales, and if the company uses the perpetual inventory method it also debits cost of goods sold and credits merchandise inventory

schedule of accounts payable table showing each amount owed and to whom it must be paid; total of the schedule should equal the total of accounts payable in the general ledger

schedule of accounts receivable table showing each customer and the amount owed; total of the schedule should equal the total of accounts receivable in the general ledger

source document paper document or electronic record that provides evidence that a transaction has occurred and includes details about the transaction

special journal book of original entry that is used to record transactions of a similar type in addition to the general journal

turn-around document paper document that starts off as an output document from one part of the accounting information system (billing sends bill to customer), that becomes input to another part of the accounting information system upon completion of the next phase of the process (accounts receivable receives payment made on bill)



Summary

7.1 Define and Describe the Components of an Accounting Information System

- An accounting information system is a set of business processes that record transactions using journals and ledgers (a paper-based system) or computer files (using a computerized system) to keep track of a company's money and other assets.
- The key steps in an accounting information system are input, processing, and output.
 - Input: This is any way to record the transaction.
 - Processing: This is a method of combining similar kinds of information (like adding all cash sales together to get a total that is separate from all credit sales; and then adding everything to find total sales).
 - Output: Any way used to display the results of the processing is output.
 - Source document: This is a record that a transaction has taken place; it is often used at the input stage.
 - Storage: This is any method used to save the results generated by the system. Data that is stored is retrieved and used in the input, processing, or output stage. Additional data and information are also stored during these processes.

7.2 Describe and Explain the Purpose of Special Journals and Their Importance to Stakeholders

- We use special journals to keep track of similar types of transactions.
- We use special journals to save time because the same types of transactions occur over and over.
- To decide which special journal to use, first ask, "Is cash involved?" If the answer is "Yes," then use either the cash receipts or cash disbursements journal.
- The cash receipts journal always debits cash but can credit almost anything (primarily sales, Accounts Receivable, or a new loan from the bank).
- The cash disbursements journal always credits cash but can debit almost anything (Accounts Payable, Notes Payable, sales returns and allowances, telephone expense, etc.).

- The sales journal always debits Accounts Receivable and always credits Sales. If the company uses a perpetual inventory method, it also debits cost of goods sold and credits inventory.
- The purchases journal always debits Purchases (if using the periodic inventory method) or Inventory (if using the perpetual inventory method) and credits Accounts Payable.
- We post the monthly balance from each of the special journals to the general ledger at the end of the month.
- We post from all journals to the subsidiary ledgers daily.
- We use the general journal for transactions that do not fit anywhere else—generally, for adjusting and closing entries, and can be for sales returns and/or purchase returns.
- The accounts receivable subsidiary ledger contains all of the details about individual accounts.
- The total of the accounts receivable subsidiary ledger must equal the total in the Accounts Receivable general ledger account.
- The accounts payable subsidiary ledger contains all of the details about individual accounts payable accounts.
- The total of the accounts payable subsidiary ledger must equal the total in the Accounts Payable general ledger account.

7.3 Analyze and Journalize Transactions Using Special Journals

- Rules of cash receipts journals: Use any time you receive cash. Always debit Cash and credit Accounts Receivable or some other account.
- Rules of cash disbursements journals: Any time a check is issued, there should be a credit to cash and a debit to AP or typically an expense. Always credit Cash and debit Accounts Payable or some other account.
- Rules of sales journals: Use only for sales of goods on credit (when customers charge the amount). Always debit Accounts Receivable and credit Sales and debit Cost of Goods Sold and credit Merchandise Inventory when using a perpetual inventory system.
- Rules of purchases journals: Use only for purchase of goods (inventory) on credit (when you charge the amount). Always debit Merchandise Inventory when using a perpetual inventory system (or Purchases when using a periodic inventory system) and credit Accounts Payable.
- Post daily to the subsidiary ledgers.
- Monthly, at the end of each month, after totaling all of the columns in each journal, post to the general ledger accounts which include the Accounts Receivable and Accounts Payable (general ledger) controlling accounts. Note that the only column that you do not post the total to the general ledger account is the Other Accounts column. There is no general ledger account called Other accounts. As mentioned, each entry in that column is posted individually to its respective account.

7.4 Prepare a Subsidiary Ledger

- A schedule of accounts receivable is a list of all individual accounts and balances that make up accounts receivable.
- A schedule of accounts payable is a list of all individual accounts and balances that make up accounts payable.

7.5 Describe Career Paths Open to Individuals with a Joint Education in Accounting and Information Systems

- Data analytics, artificial intelligence systems, data security credentials, blockchain applications, and forensic accounting are some of the areas that provide newer career avenues for accounting professionals.
- Taxes will continue to be prepared using software that pulls information from the accounting information system.

- Integrating accounting software with inventory management and electronic payment as used by Walmart and Amazon will set new standards of business process automation.
- Forensic accounting, data security, artificial intelligence, and data analytics, are all areas for which companies and government agencies will be seeking accounting graduates who are also knowledgeable about information systems.



Multiple Choice

1. **LO 7.1** So far, computer systems cannot yet _____.
 - A. receive data and instructions from input devices such as a scanner.
 - B. decide how to record a business transaction.
 - C. communicate with other computers electronically.
 - D. recognize that you made a mistake entering \$100 when you meant to enter \$101.
2. **LO 7.1** Any device used to provide the results of processing data is a(n) _____ device.
 - A. sources
 - B. input
 - C. output
 - D. storage
3. **LO 7.1** Source documents _____.
 - A. are input devices
 - B. are output devices
 - C. do not have to be on paper
 - D. cannot be electronic files
4. **LO 7.1** All of the following can provide source data *except* _____.
 - A. a scanning device at the grocery store
 - B. a utility bill received in the mail
 - C. a bar code reader
 - D. software to process the source data
5. **LO 7.1** A document that asks you to return an identifying part of it with your payment is a(n) _____.
 - A. source document
 - B. cloud document
 - C. point-of-sale document
 - D. turn-around document
6. **LO 7.1** Which of the following is *false* about accounting information systems?
 - A. They provide reports that people analyze.
 - B. They prevent errors and stop employees from stealing inventory.
 - C. They are designed to gather data about the company's transactions.
 - D. They consist of processes that involve input of data from source documents, processing, output, and storage.

7. **LO 7.2** An unhappy customer just returned \$50 of the items he purchased yesterday when he charged the goods to the company's store credit card. Which special journal would the company use to record this transaction?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
8. **LO 7.2** A customer just charged \$150 of merchandise on the company's own charge card. Which special journal would the company use to record this transaction?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
9. **LO 7.2** A customer just charged \$150 of merchandise using **MasterCard**. Which special journal would the company use to record this transaction?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
10. **LO 7.2** The company just took a physical count of inventory and found \$75 worth of inventory was unaccounted for. It was either stolen or damaged. Which journal would the company use to record the correction of the error in inventory?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
11. **LO 7.2** Your company paid rent of \$1,000 for the month with check number 1245. Which journal would the company use to record this?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
12. **LO 7.2** On January 1, Incredible Infants sold goods to Babies Inc. for \$1,540, terms 30 days, and received payment on January 18. Which journal would the company use to record this transaction on the 18th?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal

13. **L0 7.2** Received a check for \$72 from a customer, Mr. White. Mr. White owed you \$124. Which journal would the company use to record this transaction?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
14. **L0 7.2** You returned damaged goods you had previously purchased from C.C. Rogers Inc. and received a credit memo for \$250. Which journal would your company use to record this transaction?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
15. **L0 7.2** Sold goods for \$650 cash. Which journal would the company use to record this transaction?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
16. **L0 7.2** Sandren & Co. purchased inventory on credit from Acto Supply Co. for \$4,000. Sandren & Co. would record this transaction in the _____.
- A. general journal
 - B. cash receipts journal
 - C. cash disbursements journal
 - D. purchases journal
 - E. sales journal
17. **L0 7.3** Sold goods for \$650, credit terms net 30 days. Which journal would the company use to record this transaction?
- A. sales journal
 - B. purchases journal
 - C. cash receipts journal
 - D. cash disbursements journal
 - E. general journal
18. **L0 7.3** You returned damaged goods to C.C. Rogers Inc. and received a credit memo for \$250. Which journal(s) would the company use to record this transaction?
- A. sales journal only
 - B. purchases journal and the accounts payable subsidiary ledger
 - C. cash receipts journal and the accounts receivable subsidiary ledger
 - D. cash disbursements journal and the accounts payable subsidiary ledger
 - E. general journal and the accounts payable subsidiary ledger

19. **L0 7.3** The sum of all the accounts in the accounts receivable subsidiary ledger should _____.
A. equal the accounts receivable account balance in the general ledger before posting any amounts
B. equal the accounts payable account balance in the general ledger before posting any amounts
C. equal the accounts receivable account balance in the general ledger after posting all amounts
D. equal the cash account balance in the general ledger after posting all amounts
20. **L0 7.3** AB Inc. purchased inventory on account from YZ Inc. The amount was \$500. AB Inc. uses an accounting information system with special journals. Which special journal would the company use to record this transaction?
A. sales journal
B. purchases journal
C. cash receipts journal
D. cash disbursements journal
E. general journal
21. **L0 7.3** You just posted a debit to ABC Co. in the accounts receivable subsidiary ledger. Which special journal did it come from?
A. sales journal
B. cash receipts journal
C. purchases journal
D. cash disbursements journal
E. general journal
22. **L0 7.3** You just posted a credit to Stars Inc. in the accounts receivable subsidiary ledger. Which special journal did it come from?
A. sales journal
B. cash receipts journal
C. purchases journal
D. cash disbursements journal
E. general journal
23. **L0 7.3** You just posted a debit to Cash in the general ledger. Which special journal did it come from?
A. sales journal
B. cash receipts journal
C. purchases journal
D. cash disbursements journal
E. general journal
24. **L0 7.3** You just posted a credit to Accounts Receivable. Which special journal did it come from?
A. sales journal
B. cash receipts journal
C. purchases journal
D. cash disbursements journal
E. general journal

25. **L0 7.3** You just posted a credit to Sales and a debit to Cash. Which special journal did it come from?
- A. sales journal
 - B. cash receipts journal
 - C. purchases journal
 - D. cash disbursements journal
 - E. general journal
26. **L0 7.5** An enterprise resource planning (ERP) system _____.
A. is software to help you prepare your tax return
B. requires that you pay ransom before you can operate it
C. is a large, company-wide integrated accounting information system that connects all of a company's applications
D. is part of the darknet
27. **L0 7.5** Which of the following is not a way to prevent your computer from being attacked by ransomware?
A. making sure your antivirus security programs are up to date
B. opening all attachments from emails from unknown senders
C. using secure (password protected) networks and backing up your files regularly
D. not using open Wi-Fi (nonpassword, nonencrypted) in public locations
28. **L0 7.5** Big data is mined _____.
A. to find business trends
B. to record transactions
C. as an alternative to creating an accounting information system
D. as an alternative to the darknet
29. **L0 7.5** Artificial intelligence refers to _____.
A. tutorials that can make humans smarter than they naturally are
B. programming computers to mimic human reasoning and perform tasks previously performed by humans
C. humans that do not possess reasonably high IQs
D. a concept that exists only in science fiction but has not yet been achieved today
30. **L0 7.5** Blockchain is a technology that _____.
A. is in the early stages of being developed
B. was a failed attempt to change the way we do business
C. refers to an application developed strictly for the real estate business
D. involves the use of a single shared ledger between the many parties that may be involved in a transaction.
31. **L0 7.5** Which of the following is not true about cybercurrency?
A. Bitcoin is one of several cybercurrencies.
B. It is an alternate currency that does not go through the banking system.
C. It does not involve the actual exchange of physical currency.
D. It is not accepted by any legitimate businesses.



Questions

1. **LO 7.1** Why does a student need to understand how to use a manual, paper-based accounting information system since everyone uses computerized systems?
2. **LO 7.1** Provide an example of how paper-based accounting information systems are different from computerized systems.
3. **LO 7.1** Why are scanners better than keyboards?
4. **LO 7.1** Why are there so many different accounting information system software packages?
5. **LO 7.1** Which area of accounting needs a computerized accounting information system the most—payroll, tax, or preparing financial statements?
6. **LO 7.1** The American Institute of Certified Public Accountants (AICPA) has stated that accountants will need to have an even better understanding of computer systems in the future. Why do you think computer skills will be more important?
7. **LO 7.4** Which special journals also require an entry to a subsidiary ledger?
8. **LO 7.4** What is a schedule of accounts receivable?
9. **LO 7.4** How often do we post the cash column in the cash receipts journal to the subsidiary ledger?
10. **LO 7.4** The schedule of accounts payable should equal what?
11. **LO 7.4** Which amounts do we post daily and which do we post monthly?
12. **LO 7.4** Why are special journals used?
13. **LO 7.4** Name the four main special journals.
14. **LO 7.4** A journal entry that requires a debit to Accounts Receivable and a credit to Sales goes in which special journal?
15. **LO 7.4** The purchase of equipment for cash would be recorded in which special journal?
16. **LO 7.4** Can a sales journal be used to record sales on account and a cash sale? Why or why not?
17. **LO 7.4** When should entries from the sales journal be posted?
18. **LO 7.4** We record a sale on account that involves sales tax in which journal?
19. **LO 7.4** We record purchases of inventory for cash in which journal(s)?
20. **LO 7.4** Should the purchases journal have a column that is a debit to Accounts Payable?
21. **LO 7.5** Forensic means “suitable for use in a court of law.” How does that have anything to do with accounting?



Exercise Set A

EA1. **LO 7.1** For each of the following, indicate if the statement reflects an input component, output component, or storage component of an accounting information system.

- A. A credit card scanner at a grocery store.
- B. A purchase order for 1,000 bottles of windshield washing fluid to be used as inventory by an auto parts store.
- C. A report of patients who missed appointments at a doctor's office.
- D. A list of the day's cash and credit sales.
- E. Electronic files containing a list of current customers.

EA2. **LO 7.1** All of the following information pertains to Green's Grocery. Match each of the following parts of Green's accounting information system in the left-hand column with the appropriate item(s) from the right-hand column. You may use items in the right-hand column more than once or not at all. There may be several answers for each item in the left-hand column.

A. Source document	i. Check written for office supplies
B. Output device	ii. Invoice from a supplier of inventory
C. Input device	iii. Payroll check
D. Data and information storage	iv. Time card
E. Information processing	v. Computer software
	vi. Keyboard
	vii. Grocery store bar code scanner
	viii. Printer
	ix. Flash drive
	x. Hard drive
	xi. The cloud
	xii. Computer screen

EA3. LO 7.2 Match the special journal you would use to record the following transactions. Select from the following:

A. cash receipts journal	i. Sold inventory for cash
B. cash disbursements journal	ii. Sold inventory on account
C. sales journal	iii. Received cash a week after selling items on credit
D. purchases journal	iv. Paid cash to purchase inventory
E. general journal	v. Paid a cash dividend to shareholders
	vi. Sold shares of stock for cash
	vii. Bought equipment for cash
	viii. Recorded an adjusting entry for supplies
	ix. Paid for a purchase of inventory on account within the discount period
	x. Paid for a purchase of inventory on account after the discount period has passed

EA4. LO 7.2 For each of the transactions, state which special journal (sales journal, cash receipts journal, cash disbursements journal, purchases journal, or general journal) and which subsidiary ledger (Accounts Receivable, Accounts Payable, or neither) would be used in recording the transaction.

- A. Paid utility bill
- B. Sold inventory on account
- C. Received but did not pay phone bill
- D. Bought inventory on account
- E. Borrowed money from a bank
- F. Sold old office furniture for cash
- G. Recorded depreciation
- H. Accrued payroll at the end of the accounting period
- I. Sold inventory for cash
- J. Paid interest on bank loan

EA5. LO 7.3 Catherine's Cookies has a beginning balance in the Accounts Payable control total account of \$8,200. In the cash disbursements journal, the Accounts Payable column has total debits of \$6,800 for November. The Accounts Payable credit column in the purchases journal reveals a total of \$10,500 for the current month. Based on this information, what is the ending balance in the Accounts Payable account in the general ledger?

EA6. LO 7.3 Record the following transactions in the sales journal:

Jan. 15	Invoice # 325, sold goods on credit for \$2,400, to Maroon 4, account # 4501
Jan. 22	Invoice #326, sold goods on credit for \$3,500 to BTS, account # 5032
Jan. 27	Invoice #327, sold goods on credit for \$1,250 to Imagine Fireflies, account # 3896

EA7. **L0 7.3** Record the following transactions in the cash receipts journal.

Jun. 12	Your company received payment in full from Jolie Inc. in the amount of \$1,225 for merchandise purchased on June 4 for \$1,250, invoice number #1032. Jolie Inc. was offered terms of 2/10, n/30. Record the payment.
Jun. 15	Portman Inc. mailed you a check for \$2500. The company paid for invoice #1027, dated June 1, in the amount of \$2,500, terms offered 3/10, n/30.
Jun. 17	Your company received a refund check (its check #12440) from the State Power Company because you overpaid your electric bill. The check was in the amount of \$72. The Utility Expense account number is #450. Record receipt of the refund.

EA8. **L0 7.4** Maddie Inc. has the following transactions for its first month of business.

May 1	Credit sale to Green Lantern Inc. for \$1,999
May 2	Credit sale to Wonder Woman Inc. for \$2,000
May 3	Credit sale to Flash Inc. for \$3,050
May 4	Received \$1,000 on account from Green Lantern Inc.
May 5	Credit sale to Black Panther Inc. for \$1,875
May 6	Received the full amount from Flash Inc.

- A. What are the individual account balances, and the total balance, in the accounts receivable subsidiary ledger?
- B. What is the balance in the accounts receivable general ledger (control) account?



Exercise Set B

EB1. **L0 7.1** For each of the following, indicate if the statement reflects an input component, output component, or storage component of the accounting information system for a bank.

- A. Online customer check ordering system.
- B. Approved loan applications.
- C. Report of customers with savings accounts over \$5,000.
- D. Desktop hard drive on computer used by bank president's administrative assistant.
- E. List of the amount of money withdrawn from all of the bank's ATMs on a given day.

EB2. **LO 7.1** The following information pertains to Crossroads Consulting, Inc. Match each of the following parts of Crossroad's accounting information system in the left-hand column with the appropriate item(s) from the right-hand column. You may use items in the right-hand column more than once or not at all. There may be several answers for each item in the left-hand column. You may choose items in the right-hand column more than once.

A. Source document	i. Sales invoice from cleaning company
B. Output device	ii. Printed check to be mailed to phone company
C. Input device	iii. Dropbox (online storage)
D. Data and information storage	iv. Voice-to-text software
E. Information processing	v. QuickBooks Accounting Software
	vi. Keyboard
	vii. Printer
	viii. Bar code scanner
	ix. Computer screen
	x. Flash drive
	xi. Text scanner
	xii. Computing interest on a loan

EB3. **LO 7.2** Match the special journal you would use to record the following transactions.

A. Cash Receipts Journal	i. Took out a loan from the bank
B. Cash Disbursements Journal	ii. Paid employee wages
C. Sales Journal	iii. Paid income taxes
D. Purchases Journal	iv. Sold goods with credit terms 1/10, 2/30, n/60
E. General Journal	v. Purchased inventory with credit terms n/90
	vi. Sold inventory for cash
	vii. Paid the phone bill
	viii. Purchased stock for cash
	ix. Recorded depreciation on the factory equipment
	x. Returned defective goods purchased on credit to the supplier. The company had not yet paid for them.

EB4. **L0** **7.2** For each of the following transactions, state which special journal (Sales Journal, Cash Receipts Journal, Cash Disbursements Journal, Purchases Journal, or General Journal) and which subsidiary ledger (Accounts Receivable, Accounts Payable, neither) would be used in recording the transaction.

- A. Sold inventory for cash
- B. Issued common stock for cash
- C. Received and paid utility bill
- D. Bought office equipment on account
- E. Accrued interest on a loan at the end of the accounting period
- F. Paid a loan payment
- G. Bought inventory on account
- H. Paid employees
- I. Sold inventory on account
- J. Paid monthly insurance bill

EB5. **L0** **7.3** Catherine's Cookies has a beginning balance in the Accounts Receivable control total account of \$8,200. \$15,700 was credited to Accounts Receivable during the month. In the sales journal, the Accounts Receivable debit column shows a total of \$12,000. What is the ending balance of the Accounts Receivable account in the general ledger?

EB6. **L0** **7.3** Record the following transactions in the purchases journal:

Feb. 2	Purchased inventory on account from Pinetop Inc. (vendor account number 3765), Purchase Order (PO) # 12345 in the amount of \$3,456.
Feb. 8	Purchased inventory on account from Sherwood Company (vendor account number 5461), PO# 12346, in the amount of \$2,951.
Feb. 12	Purchased inventory on account from Green Valley Inc. (vendor #4653), PO# 12347, in the amount of \$4,631.

EB7. **L0** **7.3** Record the following transactions in the cash disbursements journal:

Mar. 1	Paid Duke Mfg (account number D101) \$980 for inventory purchased on Feb. 27 for \$1,000. Duke Mfg offered terms of 2/10, n/30, and you paid within the discount period using check #4012.
Mar. 3	Paid Emergency Plumbing \$450. They just came to fix the leak in the coffee room. Give them account number E143. Use check #4013 and debit the Repairs and Maintenance account, #655.
Mar. 5	Used check #4014 to pay Wake Mfg (account number W210) \$1,684 for inventory purchased on Feb. 25, no terms offered.

EB8. **L0** 7.4 Piedmont Inc. has the following transactions for its first month of business:

Jun. 1	Purchased inventory from Montana Inc. on credit for \$4,500
Jun. 2	Purchased inventory from Payton Inc. on credit for \$2,400
Jun. 3	Purchased inventory from Montana Inc. on credit for \$1,800
Jun. 4	Paid \$2,000 on account to Montana Inc.
Jun. 8	Purchased inventory on credit from Taylor Inc. for \$2,000
Jun. 9	Paid Payton

- A. What are the individual account balances, and the total balance, in the accounts payable subsidiary ledger?
- B. What is the balance in the Accounts Payable general ledger account?



Problem Set A

PA1. LO 7.2 On June 30, Oscar Inc.'s bookkeeper is preparing to close the books for the month. The accounts receivable control total shows a balance of \$2,820.76, but the accounts receivable subsidiary ledger shows total account balances of \$2,220.76. The accounts receivable subsidiary ledger is shown here. Can you help find the mistake?

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER					
Account: Amazoon		AR No. 246			
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Apr. 5	Beginning Balance	CR 175		1200.50	1,200.50
	Payment				0.00

Account: Cadberry		AR No. 357			
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Apr. 8	Beginning Balance	SJ 123	300		877.30
	Invoice 210				1,177.30

Account: Hewlit Pickard		AR No. 468			
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Apr. 28	Beginning Balance	SJ 123	100		172.99
	Invoice 211				272.99

Account: Neatflicks inc.		AR No. 579			
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Apr. 6	Beginning Balance	CR 175		500	1,570.47
	Payment				1,070.47
Apr. 22	Invoice 212	CJ 123		300	770.47

PA2. **L0** **7.4** Evie Inc. has the following transactions during its first month of business. Journalize the transactions that go in the sales journal.

Jun. 1	Credit sale (invoice #1) to Green Lantern Inc. (acc #101) for \$1,999
Jun. 2	Credit sale (invoice #2) to Wonder Woman Inc. (acc #102) for \$2,000
Jun. 3	Credit sale to Flash Inc. (invoice #3) (acc #103) for \$3,050
Jun. 4	Received \$1,000 on account from Green Lantern Inc.
Jun. 5	Credit sale (invoice #4) to Black Panther Inc. (acc #104) for \$1,875
Jun. 6	Received the full amount from Flash Inc.

PA3. **L0** **7.4** The following transactions occurred for Donaldson Inc. during the month of July.

Jul. 1	Sold 50 items to Palm Springs Inc. and offered terms of 2/10, n/30, \$4,000 on July 1, and issued invoice #12 on account number #312
Jul. 5	Sold 20 thing-a-jigs to Miami Inc. for \$2,150 cash on July 5, and issued invoice #13
Jul. 8	Sold 30 what-is to Smith Mfg. for \$5,000 and offered terms of 2/10, n/30; issued invoice #14 on account number #178
Jul. 9	Received payment from Palm Springs Inc.
Jul. 22	Received payment from Smith Mfg. after expiration of the discount period

- A. Record the transactions for Donaldson Inc. in the proper special journal and subsidiary ledger.
- B. Record the same transactions using QuickBooks, and print the journals and subsidiary ledger. They should match.

PA4. **LO 7.4** Use the journals and ledgers that follow. Total the journals. Post the transactions to the subsidiary ledger and (using T-accounts) to the general ledger accounts. Then prepare a schedule of accounts receivable.

SALES JOURNAL					Page 79
Date	Account	Invoice No.	Ref.	DR Accts. Receivable CR Sales	DR COGS CR Merchandise Inventory
2019					
Feb. 4	Evert Company (E123)	17433		1,000.00	
Feb. 8	King Inc. (K331)	17434		775.30	
Feb. 14	Martina Inc. (M132)	17435		2,301.99	
Feb. 16	Shriver Company (S101)	17436		500.00	

SALES JOURNAL						Page 102
Date	Account	Invoice No.	Ref.	Cash DR	Sales Discounts DR	Accounts Receivable, Sales, or Other Accounts CR
2019						
Feb. 1	Cash Sales			465		465
Feb. 5	Payment from Evert	1723		980	20	1,000
Feb. 15	Bank loan (230)			2,000		2,000
Feb. 21	Payment from Shriver Co.	1719		500		500

PA5. **LO 7.4** Brown Inc. records purchases in a purchases journal and purchase returns in the general journal. Record the following transactions using a purchases journal, a general journal, and an accounts payable subsidiary ledger. The company uses the periodic method of accounting for inventory.

Oct. 1	Purchased inventory on account from Price Inc. for \$2,000
Oct. 1	Purchased inventory on account from Cabrera Inc. for \$3,000
Oct. 8	Returned half of the inventory to Price Inc.
Oct. 9	Purchased inventory on account from Price Inc. for \$4,200



Problem Set B

PB1. **LO 7.2** On June 30, Isner Inc.'s bookkeeper is preparing to close the books for the month. The accounts receivable control total shows a balance of \$550, but the accounts receivable subsidiary ledger shows total account balances of \$850. The accounts receivable subsidiary ledger is shown here. Can you help find the mistake?

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER					
Account: Apple			No. 1103		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jun. 1	Beginning Balance		150		150
Jun. 12	Check received	CR 122	150		300

Account: Orange			No. 1107		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jun. 15	Invoice 234	SJ 24	200		200

Account: Pear			No. 1110		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jun. 20	Invoice 235	SJ 24	350		350

Account: Banana			No. 1115		
Date	Item	Ref.	Debit	Credit	Balance
					Debit
Jun. 18	Beginning Balance		2,661		2,661
	Check received	CR 122		2,661	0

PB2. **L0** 7.4 Piedmont Inc. has the following transactions for the month of July.

Jul. 1	Sold merchandise for \$4,000 to Pinetop Inc. (account number PT152) and offered terms of 1/10, n/30, on July 1, invoice # 1101
Jul. 5	Sold merchandise to Sherwood Inc. (account number SH 224), Invoice # 1102 for \$2,450 cash on July 5
Jul. 9	Sold merchandise, invoice #1103, to Cardinal Inc. (account number CA 118) for \$5,000, and offered terms of 3/10, n/30
Jul. 9	Received payment from Pinetop Inc.
Jul. 22	Received payment from Cardinal Inc. after expiration of the discount period
Jul. 30	Received a refund check in the amount of \$120 from the insurance company (credit Insurance Expense, account number 504)

- Record the transactions for Piedmont Inc. in the proper special journal, and post them to the subsidiary ledger and general ledger account.
- Record the same transactions using QuickBooks, and print the special journals and subsidiary and general ledger. Your solution done manually should match your solution using QuickBooks.

PB3. **L0** 7.4 Use the journals and ledgers that follows. Total and rule (draw a line under the column of numbers) the journals. Post the transactions to the subsidiary ledger and (using T-accounts) to the general ledger accounts. Then prepare a schedule of Accounts Payable.

PURCHASES JOURNAL					
Date	Purchase Order No.	Account Credited	Acct. No.	Debit Merchandise Inventory	Credit AP
2019					
Apr. 4	57346	Murphy Corp.	AP146	1,235	50
Apr. 7	57347	Jensen Company	AP234	678	25
Apr. 15	57348	Murphy Corp.	AP146	715	19

CASH DISBURSEMENTS JOURNAL							Page 102			
							Other Accounts			
Date	Check No.	Payee	Cash CR	Ref.	Accounts Payable DR	Purchases Discounts CR	Acct. No.	✓	DR	CR
Apr. 1	1251	Rent	800				526		800	
Apr. 7	1252	Murphy Corp.	1,210.79	AP 155	1,235.50	24.71				
Apr. 15	1253	Country Bank (loan)	3090				222		3,000	
		Interest					563		90	
Apr. 16	1254	Jensen Company	657.90	AP 234	678.25	20.35				

PB4. LO 7.4 Comprehensive Problem: Manual Accounting Information System versus QuickBooks

The following problem is a comprehensive problem requiring you to complete all of the steps in the accounting cycle, first manually and then by entering the same transactions and performing the same steps using QuickBooks. This will demonstrate the important point that a manual accounting information system (AIS) and a computerized AIS both allow the user to perform the same steps in the accounting cycle, but they are done differently.

In a manual system, every step must be performed by the user. In contrast to this, in a computerized system, for each transaction, the user determines the type of transaction it is and enters it in the appropriate data entry screen. The computer then automatically places the transactions in transaction files (the equivalent of journals in a manual system). The user then instructs the system to post the transaction to the subsidiary ledger and at the end of the month to the general ledger. The computer can do the posting automatically.

Other steps done automatically by the computer are preparing a trial balance, closing entries, and generating financial statements. The user would have to provide the computer with information about adjusting entries at the end of the period. Some adjusting entries can be set up to be done automatically every month, but not all. When we say the computer can do a specific step “automatically,” this presumes that a programmer wrote the programs (i.e., detailed step-by-step instructions in a computer language) that tell the computer how to do the task. The computer can then follow those instructions and do it “automatically” without human intervention.

Problem

Assume there is a small shoe store in your neighborhood with a single owner. The owner started the business on December 1, 2018, and sells two types of shoes: a comfortable sneaker that is something athletes would purchase, and a comfortable dress shoe that looks dressy but has the comfort of a sneaker. The name of the business is *The Shoe Horn*. Complete tasks A and B that follow, using the detailed instructions for each. Following is a list of all transactions that occurred during December 2018.

a.	Dec. 1	Jack Simmons, the owner contributed a \$500,000 check from his personal account, which he deposited into an account opened in the name of the business, to start the business.
b.	Dec. 1	He rented space that had previously been used by a shoe store and wrote check no. 100 for \$9,000 for the first six month's rent.
c.	Dec. 2	He paid for installation and phone usage \$300 (check no. 101)
d.	Dec. 2	He paid for advertising in the local paper \$150 (check no. 102). The ads will all run in December.
e.	Dec. 2	He purchased \$500 of office supplies (check no. 103)
f.	Dec. 3	He paid \$300 for insurance for three months (December 2018, January and February 2019 using check no, 104).
g.	Dec. 4	He purchased 800 pairs of sneakers at \$40 a pair– on account from Nike (using purchase order no. 301). Payment terms were 2/10, net 30. Assume the shoe store uses the perpetual inventory system.
h.	Dec. 5	He purchased 500 pairs of dress shoes from Footwear Corp. on account for \$20 a pair (using purchase order no. 302). Payment terms were 2/10, net 30

i.	Dec. 10	He made a sale on account of 20 pairs of sneakers at \$100 a pair, to a local University – Highland University (sales invoice number 2000) for their basketball team. Payment terms were 2/10 net 30.
j.	Dec. 11	He made a sale on account of 2 pairs of dress shoes at \$50 a pair (sales invoice no. 2001) to a local charity, U.S. Veterans, that intended to raffle them off at one of their events.
k.	Dec. 12	He made a sale on account to The Jenson Group of 300 pairs of dress shoes at \$50 a pair, to use as part of an employee uniform. Payment terms were 2/10 net 30.
l.	Dec. 14	He made a cash sale for 2 sneakers at \$120 each and 1 pair of shoes for \$60.
m.	Dec. 14	He paid the amount owed to Footwear Corp (check no 105)
n.	Dec. 17	Highland University returned 2 pairs of sneakers they had previously purchased on account.
o.	Dec. 18	He received a check from Highland University in full payment of their balance.
p.	Dec. 20	He made a cash sale to Charles Wilson of three pairs of sneakers at \$120 each and 1 pair of dress shoes at \$60.
q.	Dec. 20	He made a partial payment to Nike for \$20,000 (check number 106)
r.	Dec. 23	Received a \$400 utility bill which will be paid in January.
s.	Dec. 27	Received a check from The Jenson Group in the amount of \$9,000.
t.	Dec. 28	He paid \$2,000 of his balance to Nike (check number 107)

- A. Enter all of the transactions and complete all of the steps in the accounting cycle assuming a manual system. Follow the *steps to be performed using a manual system*.
- B. Enter the transactions into QuickBooks, complete all of the steps in the accounting cycle, and generate the same reports (journals trial balances, ledgers, financial statements). Follow the steps to be performed using a manual system. Follow the *steps to be performed using QuickBooks*.

Steps to be performed using a manual system

1. For each of the transactions listed for the month of December 2018, identify the journal to which the entry should be recorded. Your possible choices are as follows: general journal (GJ), cash receipts journal (CR), cash disbursements journal (CD), sales journal (SJ), or purchases journal (PJ). Templates for the journals and ledgers have been provided.

2. Enter each transaction in the appropriate journal using the format provided.

SALES JOURNAL							Page 10
Date	Account	Terms	Ref.	Invoice No.	Accounts Receivable DR Sales CR	Cost of Goods Sold DR Inventory CR	

PURCHASES JOURNAL						Page 15
Date	Account	Terms	Ref.	Invoice No.	Inventory DR Accounts Payable CR	

CASH DISBURSEMENTS JOURNAL								Page 25			
Date	Description	Check No.	Ref.	Cash CR	Acct. Payable DR	Inventory DR	Purchases Discount CR	Other			
								Acct. No.	Ref.	Debit	Credit
Debits = Credits =											

CASH RECEIPTS JOURNAL								Page 30		
Date	Description	Ref.	Cash DR	Acct. Receivable CR	Sales Cr	Sales Discount DR	Other			
							Acct. No.	Ref.	Debit	Credit
Debits = Credits =										

3. Open up Accounts Receivable subsidiary ledger accounts for customers and Accounts Payable subsidiary ledger accounts for vendors using the format provided. Post each entry to the appropriate subsidiary ledger on the date the transaction occurred.

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER						
Highland University (HU)						
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

U.S. VETERANS (USV)						
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

JENSEN GROUP (JG)						
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

ACCOUNTS PAYABLE SUBSIDIARY LEDGER						
Nike						
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

FOOTWEAR CORP. (FC)						
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

4. Total the four special journals, and post from all of them to the general ledger on the last day of December. You should open ledger accounts for the following accounts:

- Cash
- Accounts Receivable
- Merchandise Inventory
- Prepaid Insurance
- Prepaid Rent
- Office Supplies
- Accounts Payable
- Purchases Discounts
- Utilities Expense Payable
- Jack Simmons, Capital
- Sales
- Sales Returns and Allowances
- Sales Discounts
- Cost of Goods Sold
- Rent Expense
- Advertising Expense
- Telephone Expense
- Utilities Expense
- Office Supplies Expense
- Insurance Expense

GENERAL LEDGER						
ACCOUNT: CASH					No. 100	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: ACCOUNTS RECEIVABLE					No. 102	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: MERCHANDISE INVENTORY					No. 110	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

ACCOUNT: PREPAID INSURANCE						No. 118
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: PREPAID RENT						No. 119
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: OFFICE SUPPLIES						No. 125
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: ACCOUNTS PAYABLE						No. 200
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: PURCHASES DISCOUNT						No. 111
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: UTILITIES EXPENSE PAYABLE						No. 210
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: JACK SIMMONS, CAPITAL						No. 500
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

ACCOUNT: SALES						No. 300
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: SALES RETURNS AND ALLOWANCES						No. 301
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: SALES DISCOUNTS						No. 302
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: COST OF GOODS SOLD						No. 400
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: ADVERTISING EXPENSE						No. 420
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: RENT EXPENSE						No. 403
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

ACCOUNT: TELEPHONE EXPENSE					No. 410	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: UTILITIES EXPENSE					No. 405	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: OFFICE SUPPLIES EXPENSE					No. 418	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit
ACCOUNT: INSURANCE EXPENSE					No. 408	
Date	Item	Ref.	Debit	Credit	Balance	
					Debit	Credit

5. Compute balances for each general ledger account and for each Accounts Receivable and Accounts Payable subsidiary ledger account.
6. Prepare a trial balance.
7. Prepare an accounts receivable schedule and an accounts payable schedule.
8. Prepare adjusting journal entries based on the following information given, record the entries in the appropriate journal, and post the entries.
 - There were \$100 worth of office supplies remaining at the end of December.
 - Make an adjusting entry relative to insurance.
 - There was an additional bill received in the mail for utilities expense for the month of December in the amount of \$100 that is due by January 10, 2019. Jack Simmons intends to pay it in January.

GENERAL JOURNAL				Page 1
Date	Description	Ref.	Debit	Credit

9. Prepare an adjusted trial balance
10. Prepare closing journal entries, record them in the general journal, and post them.

GENERAL JOURNAL				Page 1
Date	Description	Ref.	Debit	Credit

11. Prepare an Income statement, Statement of Owner's Equity, and Balance Sheet.

Steps to be performed using QuickBooks. You can access a **trial version of QuickBooks** (<https://quickbooks.intuit.com/pricing/>) to work through this problem.

1. Set up a new company called *The Shoe Horn* using easy step interview.
2. You will be adding a bank account, customizing preferences, adding customers, adding vendors, adding products, and customizing the chart of accounts. You will *not* need to enter opening adjustments since you are entering transactions for a new company, so there are no opening balances. QuickBooks should automatically create a chart of accounts, but you can customize it, and you will need to enter information for a customer list, vendor list, and (inventory) items list.
3. Use “QB transactions” to enter each of the following transactions for the month of December 2018. You can use Onscreen Journal to enter transactions into the general journal, and Onscreen Forms to enter transactions that will end up in the special journals. Identify the type of transaction it is: a sale, a purchase, a receipt of cash, or a payment by check. The categories QuickBooks uses are banking and credit card, customers and sales, vendors and expenses, employees and payroll (not needed in this problem), and other. Note: there is no need to identify the journal as in a manual system or to enter a journal entry, because in an AIS like QuickBooks, you enter the transaction information, and behind the scenes, QuickBooks creates a journal entry that gets added to a transaction file (the equivalent of a journal). After the transactions for the month have been entered, you can print out each of the five journals.

4. Enter the following transactions using the appropriate data entry screens based on the type of transaction it is, as identified in step 3.

a.	Dec. 1	Jack Simmons, the owner contributed a \$500,000 check from his personal account, which he deposited into an account opened in the name of the business, to start the business.
b.	Dec. 1	He rented space that had previously been used by a shoe store and wrote check no. 100 for \$9,000 for the first six month's rent.
c.	Dec. 2	He paid for installation and phone usage \$300 (check no. 101)
d.	Dec. 2	He paid for advertising in the local paper \$150 (check no. 102). The ads will all run in December.
e.	Dec. 2	He purchased \$500 of office supplies (check no. 103)
f.	Dec. 3	He paid \$300 for insurance for three months (December 2018, January and February 2019 using check no, 104).
g.	Dec. 4	He purchased 800 pairs of sneakers at \$40 a pair– on account from Nike (using purchase order no. 301). Payment terms were 2/10, net 30. Assume the shoe store uses the perpetual inventory system.
h.	Dec. 5	He purchased 500 pairs of dress shoes from Footwear Corp. on account for \$20 a pair (using purchase order no. 302). Payment terms were 2/10, net 30
i.	Dec. 10	He made a sale on account of 20 pairs of sneakers at \$100 a pair, to a local University – Highland University (sales invoice number 2000) for their basketball team. Payment terms were 2/10 net 30.
j.	Dec. 11	He made a sale on account of 2 pairs of dress shoes at \$50 a pair (sales invoice no. 2001) to a local charity, U.S. Veterans, that intended to raffle them off at one of their events.
k.	Dec. 12	He made a sale on account to The Jenson Group of 300 pairs of dress shoes at \$50 a pair, to use as part of an employee uniform. Payment terms were 2/10 net 30.
l.	Dec. 14	He made a cash sale for 2 sneakers at \$120 each and 1 pair of shoes for \$60.
m.	Dec. 14	He paid the amount owed to Footwear Corp (check no 105)
n.	Dec. 17	Highland University returned 2 pairs of sneakers they had previously purchased on account.
o.	Dec. 18	He received a check from Highland University in full payment of their balance.
p.	Dec. 20	He made a cash sale to Charles Wilson of three pairs of sneakers at \$120 each and 1 pair of dress shoes at \$60.
q.	Dec. 20	He made a partial payment to Nike for \$20,000 (check number 106)
r.	Dec. 23	Received a \$400 utility bill which will be paid in January.

s.	Dec. 27	Received a check from The Jenson Group in the amount of \$9,000.
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t.	Dec. 28	He paid \$2,000 of his balance to Nike (check number 107)
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5. Generate and print a trial balance. Use QB reports to print this and other reports.
6. Prepare and enter adjusting entries based on the following information given, and print them.
 - There were \$100 worth of office supplies remaining at the end of December.
 - Make an adjusting entry relative to insurance
 - There was an additional bill received in the mail for utilities expense for the month of December in the amount of \$100 that is due by January 10, 2019. Jack Simmons intends to pay it in January.
7. Generate and print an adjusted trial balance.
8. QuickBooks will automatically prepare closing journal entries.
9. Print the financial statements: the Income Statement (same as Profit and Loss Statement) and the Balance Sheet.
10. Print all of the five journals. After the transactions for the month have been entered, you can print out each of the five journals (general journal, cash receipts journal, cash disbursements journal, sales journal, purchases journal).
11. Print the general ledger and the accounts receivable and accounts payable subsidiary ledgers.
12. Compare the items you printed from QuickBooks to what you have manually prepared. The content should be identical, although the format may be slightly different. Note: while the results are the same, the QuickBooks software did many of the steps for you automatically.



Thought Provokers

TP1. **L0** **7.2** Why must the Accounts Receivable account in the general ledger match the totals of all the subsidiary Accounts Receivable accounts?

TP2. **L0** **7.2** Why would a company use a subsidiary ledger for its Accounts Receivable?

TP3. **L0** **7.2** If a customer owed your company \$100 on the first day of the month, then purchased \$200 of goods on credit on the fifth and paid you \$50 on fifteenth, the customer's ending balance for the month would show a (debit or credit) of how much?



Fraud, Internal Controls, and Cash

Figure 8.1 Fraud. Fraud and theft can be very dangerous to the health and survival of a company. This is an issue that companies of all sizes face. (credit: modification of “Road Sign Attention” by “geralt”/Pixabay, CC0)

Chapter Outline

- L0 8.1** Analyze Fraud in the Accounting Workplace
- L0 8.2** Define and Explain Internal Controls and Their Purpose within an Organization
- L0 8.3** Describe Internal Controls within an Organization
- L0 8.4** Define the Purpose and Use of a Petty Cash Fund, and Prepare Petty Cash Journal Entries
- L0 8.5** Discuss Management Responsibilities for Maintaining Internal Controls within an Organization
- L0 8.6** Define the Purpose of a Bank Reconciliation, and Prepare a Bank Reconciliation and Its Associated Journal Entries
- L0 8.7** Describe Fraud in Financial Statements and Sarbanes-Oxley Act Requirements



Why It Matters

One of Jennifer’s fondest memories was visiting her grandparents’ small country store when she was a child. She was impressed by how happy the customers seemed to be in the welcoming environment. While attending college, she decided that the college community needed a coffee/pastry shop where students and the local citizens could congregate, spend time together, and enjoy a coffee or other beverage, along with a pastry that Jennifer would buy from a local bakery. In a sense, she wanted to replicate the environment that people found in her grandparents’ store.

After graduation, while she was in the planning stage, she asked her former accounting professor for advice on planning and operating a business since she had heard that the attrition rate for new businesses is quite high. The professor told her that one of the most important factors was the selection, hiring, and treatment of

happy and productive personnel. The professor further stated that, with the right personnel, many problems that companies might face, such as fraud, theft, and the violation of the organization's internal control policies and principles, can be lessened.

To emphasize her point, the professor stated a statistic from the National Restaurant Association's 2016 *Restaurant Operations Report* that restaurant staff were responsible for an estimated 75% of inventory theft.^[1] This statistic led to the professor's final gem of wisdom for Jennifer: hire the right people, create a pleasant work environment, and also create an environment that does not tempt your personnel to consider fraudulent or felonious activities.

8.1 Analyze Fraud in the Accounting Workplace

In this chapter, one of the major issues examined is the concept of fraud. **Fraud** can be defined in many ways, but for the purposes of this course we define it as the act of intentionally deceiving a person or organization or misrepresenting a relationship in order to secure some type of benefit, either financial or nonfinancial. We initially discuss it in a broader sense and then concentrate on the issue of fraud as it relates to the accounting environment and profession.

Workplace fraud is typically detected by anonymous tips or by accident, so many companies use the fraud triangle to help in the analysis of workplace fraud. Donald Cressey, an American criminologist and sociologist, developed the **fraud triangle** to help explain why law-abiding citizens sometimes commit serious workplace-related crimes. He determined that people who embezzled money from banks were typically otherwise law-abiding citizens who came into a "non-sharable financial problem." A non-sharable financial problem is when a trusted individual has a financial issue or problem that he or she feels can't be shared. However, it is felt that the problem can be alleviated by surreptitiously violating the position of trust through some type of illegal response, such as embezzlement or other forms of misappropriation. The guilty party is typically able to rationalize the illegal action. Although they committed serious financial crimes, for many of them, it was their first offense.

The fraud triangle consists of three elements: incentive, opportunity, and rationalization ([Figure 8.2](#)). When an employee commits fraud, the elements of the fraud triangle provide assistance in understanding the employee's methods and rationale. Each of the elements needs to be present for workplace fraud to occur.

1 National Restaurant Association. "2016 Restaurant Operations Report." 2016. <https://www.restaurant.org/research/reports/restaurant-operations-report>

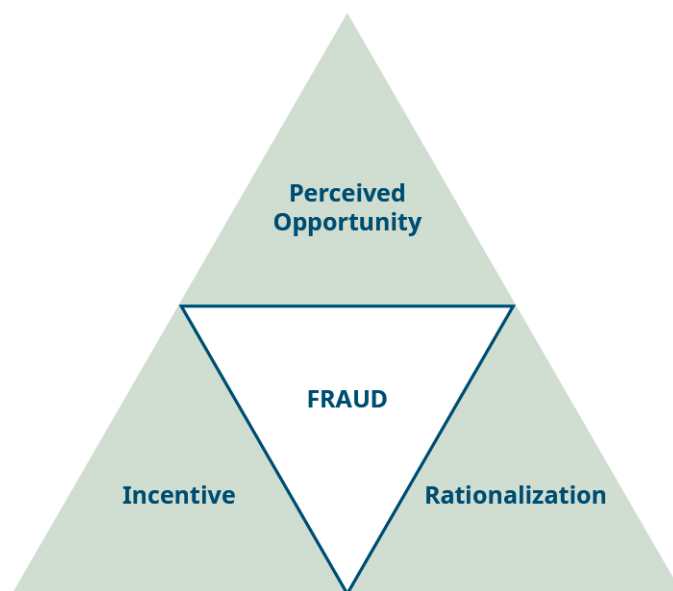


Figure 8.2 Fraud Triangle. The three components identified in the fraud triangle are perceived opportunity, incentive, and rationalization. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Perceived opportunity is when a potential fraudster thinks that the internal controls are weak or sees a way to override them. This is the area in which an accountant has the greatest ability to mitigate fraud, as the accountant can review and test internal controls to locate weaknesses. After identifying a weak, circumvented, or nonexistent internal control, management, along with the accountant, can implement stronger internal controls.

Rationalization is a way for the potential fraudster to internalize the concept that the fraudulent actions are acceptable. A typical fraudster finds ways to personally justify his or her illegal and unethical behavior. Using rationalization as a tool to locate or combat fraud is difficult, because the outward signs may be difficult to recognize.

Incentive (or pressure) is another element necessary for a person to commit fraud. The different types of pressure are typically found in (1) vices, such as gambling or drug use; (2) financial pressures, such as greed or living beyond their means; (3) work pressure, such as being unhappy with a job; and (4) other pressures, such as the desire to appear successful. Pressure may be more recognizable than rationalization, for instance, when coworkers seem to be living beyond their means or complain that they want to get even with their employer because of low pay or other perceived slights.

Typically, all three elements of the triangle must be in place for an employee to commit fraud, but companies usually focus on the opportunity aspect of mitigating fraud because, they can develop internal controls to manage the risk. The rationalization and pressure to commit fraud are harder to understand and identify. Many organizations may recognize that an employee may be under pressure, but many times the signs of pressure are missed.

Virtually all types of businesses can fall victim to fraudulent behavior. For example, there have been scams involving grain silos in Texas inflating their inventory, the sale of mixed oils labeled as olive oil across the globe, and the tens of billions of dollars that Bernie Madoff swindled out of investors and not-for-profits.

To demonstrate how a fraud can occur, let's examine a sample case in a little more detail. In 2015, a long-term employee of the **SCICAP Federal Credit Union** in Iowa was convicted of stealing over \$2.7 million in cash over a 37-year period. The employee maintained two sets of financial records: one that provided customers with

correct information as to how much money they had on deposit within their account, and a second set of books that, through a complex set of transactions, moved money out of customer accounts and into the employee's account as well as those of members of her family. To ensure that no other employee within the small credit union would have access to the duplicate set of books, the employee never took a vacation over the 37-year period, and she was the only employee with password-protected access to the system where the electronic records were stored.

There were, at least, two obvious violations of solid internal control principles in this case. The first was the failure to require more than one person to have access to the records, which the employee was able to maintain by not taking a vacation. Allowing the employee to not share the password-protected access was a second violation. If more than one employee had access to the system, the felonious employee probably would have been caught much earlier. What other potential failures in the internal control system might have been present? How does this example of fraud exhibit the three components of the fraud triangle?

Unfortunately, this is one of many examples that occur on a daily basis. In almost any city on almost any day, there are articles in local newspapers about a theft from a company by its employees. Although these thefts can involve assets such as inventory, most often, employee theft involves cash that the employee has access to as part of his or her day-to-day job.

LINK TO LEARNING

Small businesses have few employees, but often they have certain employees who are trusted with responsibilities that may not have complete internal control systems. This situation makes small businesses especially vulnerable to fraud. The [article “Small Business Fraud and the Trusted Employee” from the Association of Certified Fraud Examiners \(https://openstax.org/l/50ACFEFraud\)](https://openstax.org/l/50ACFEFraud) describes how a trusted employee may come to commit fraud, and how a small business can prevent it from happening.

Accountants, and other members of the management team, are in a good position to control the perceived opportunity side of the fraud triangle through good internal controls, which are policies and procedures used by management and accountants of a company to protect assets and maintain proper and efficient operations within a company with the intent to minimize fraud. An **internal auditor** is an employee of an organization whose job is to provide an independent and objective evaluation of the company's accounting and operational activities. Management typically reviews the recommendations and implements stronger internal controls.

Another important role is that of an **external auditor**, who generally works for an outside certified public accountant (CPA) firm or his or her own private practice and conducts audits and other assignments, such as reviews. Importantly, the external auditor is not an employee of the client. The external auditor prepares reports and then provides opinions as to whether or not the financial statements accurately reflect the financial conditions of the company, subject to generally accepted accounting principles (GAAP). External auditors can maintain their own practice, or they might be employed by national or regional firms.

ETHICAL CONSIDERATIONS

Internal Auditors and Their Code of Ethics

Internal auditors are employees of an organization who evaluate internal controls and other operational metrics, and then ethically report their findings to management. An internal auditor may be a Certified Internal Auditor (CIA), an accreditation granted by the Institute of Internal Auditors (IIA). The IIA defines internal auditing as “an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.”^[2]

Internal auditors have their own organizational code of ethics. According to the IIA, “the purpose of The Institute’s Code of Ethics is to promote an ethical culture in the profession of internal auditing.”^[3] Company management relies on a disciplined and truthful approach to reporting. The internal auditor is expected to keep confidential any received information, while reporting results in an objective fashion. Management trusts internal auditors to perform their work in a competent manner and with integrity, so that the company can make the best decisions moving forward.

One of the issues faced by any organization is that internal control systems can be overridden and can be ineffective if not followed by management or employees. The use of internal controls in both accounting and operations can reduce the risk of fraud. In the unfortunate event that an organization is a victim of fraud, the internal controls should provide tools that can be used to identify who is responsible for the fraud and provide evidence that can be used to prosecute the individual responsible for the fraud. This chapter discusses internal controls in the context of accounting and controlling for cash in a typical business setting. These examples are applicable to the other ways in which an organization may protect its assets and protect itself against fraud.

8.2 Define and Explain Internal Controls and Their Purpose within an Organization

Internal controls are the systems used by an organization to manage risk and diminish the occurrence of fraud. The internal control structure is made up of the control environment, the accounting system, and procedures called *control activities*. Several years ago, the **Committee of Sponsoring Organizations (COSO)**, which is an independent, private-sector group whose five sponsoring organizations periodically identify and address specific accounting issues or projects, convened to address the issue of internal control deficiencies in the operations and accounting systems of organizations. They subsequently published a report that is known as COSO’s *Internal Control-Integrated Framework*. The five components that they determined were necessary in an effective internal control system make up the components in the internal controls triangle shown in [Figure 8.3](#).

2 The Institute of Internal Auditors (IIA). “Code of Ethics.” n.d. <https://na.theiia.org/standards-guidance/mandatory-guidance/Pages/Code-of-Ethics.aspx>

3 The Institute of Internal Auditors (IIA). “Code of Ethics.” n.d. <https://na.theiia.org/standards-guidance/mandatory-guidance/Pages/Code-of-Ethics.aspx>

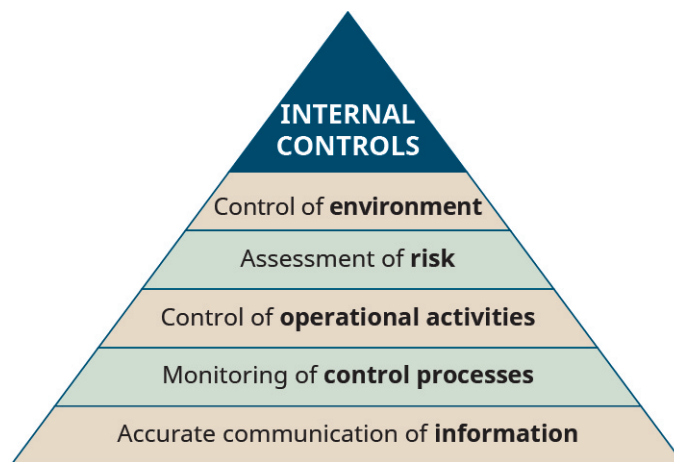


Figure 8.3 The Internal Control Environment. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Here we address some of the practical aspects of internal control systems. The internal control system consists of the formal policies and procedures that do the following:

- ensure assets are properly used
- ensure that the accounting system is functioning properly
- monitor operations of the organization to ensure maximum efficiency
- ensure that assets are kept secure
- ensure that employees are in compliance with corporate policies

A properly designed and functioning internal control system will not eliminate the risk of loss, but it will reduce the risk.

Different organizations face different types of risk, but when internal control systems are lacking, the opportunity arises for fraud, misuse of the organization's assets, and employee or workplace corruption. Part of an accountant's function is to understand and assist in maintaining the internal control in the organization.

LINK TO LEARNING

See the [Institute of Internal Auditors website \(https://openstax.org/l/50IIA\)](https://openstax.org/l/50IIA) to learn more about many of the professional functions of the internal auditor.

Internal control keeps the assets of a company safe and keeps the company from violating any laws, while fairly recording the financial activity of the company in the accounting records. Proper accounting records are used to create the financial statements that the owners use to evaluate the operations of a company, including all company and employee activities. Internal controls are more than just reviews of how items are recorded in the company's accounting records; they also include comparing the accounting records to the actual operations of the company.

For example, a movie theater earns most of its profits from the sale of popcorn and soda at the concession stand. The prices of the items sold at the concession stand are typically high, even though the costs of popcorn and soda are low. Internal controls allow the owners to ensure that their employees do not give away the profits by giving away sodas and popcorn.

If you were to go to the concession stand and ask for a cup of water, typically, the employee would give you a clear, small plastic cup called a courtesy cup. This internal control, the small plastic cup for nonpaying customers, helps align the accounting system and the theater's operations. A movie theater does not use a system to directly account for the sale of popcorn, soda, or ice used. Instead, it accounts for the containers. A point-of-sale system compares the number of soda cups used in a shift to the number of sales recorded in the system to ensure that those numbers match. The same process accounts for popcorn buckets and other containers. Providing a courtesy cup ensures that customers drinking free water do not use the soda cups that would require a corresponding sale to appear in the point-of-sale system. The cost of the popcorn, soda, and ice will be recorded in the accounting system as an inventory item, but the internal control is the comparison of the recorded sales to the number of containers used. This is just one type of internal control. As we discuss the internal controls, we see that the internal controls are used both in accounting, to provide information for management to properly evaluate the operations of the company, and in business operations, to reduce fraud.

It should be clear how important internal control is to all businesses, regardless of size. An effective internal control system allows a business to monitor its employees, but it also helps a company protect sensitive customer data. Consider the 2017 massive data breach at **Equifax** that compromised data of over 143 million people. With proper internal controls functioning as intended, there would have been protective measures to ensure that no unauthorized parties had access to the data. Not only would internal controls prevent outside access to the data, but proper internal controls would protect the data from corruption, damage, or misuse.

YOUR TURN

Bank Fraud in Enid, Oklahoma

The retired mayor of Enid, Oklahoma, Ernst Currier, had a job as a loan officer and then as a senior vice president at **Security National Bank**. In his bank job, he allegedly opened 61 fraudulent loans. He used the identities of at least nine real people as well as eight fictitious people and stole about \$6.2 million.^[4] He was sentenced to 13 years in prison on 33 felony counts.

Currier was able to circumvent one of the most important internal controls: segregation of duties. The American Institute of Certified Public Accountants (AICPA) states that segregation of duties "is based on shared responsibilities of a key process that disperses the critical functions of that process to more than one person or department. Without this separation in key processes, fraud and error risks are far less manageable."^[5] Currier used local residents' identities and created false documents to open loans for millions of dollars and then collect the funds himself, without any oversight by any other employee. Creating these loans allowed him to walk up to the bank vault and take cash out of the bank without anyone questioning him. There was no segregation of duties for opening loans, or if there was, he was able to easily override those internal controls.

How could internal controls have helped prevent Currier's bank fraud in Enid, Oklahoma?

Solution

Simply having someone else confirm the existence of the borrower and make the payment for the loan directly to the borrower would have saved this small bank millions of dollars.

4 Jack Money. "Fraudulent Loans Lead to Enid Banker's Arrest on Numerous Felony Complaints." *The Oklahoman*. November 15, 2017. <https://newsok.com/article/5572195/fraudulent-loans-lead-to-enid-bankers-arrest-on-numerous-felony-complaints>

5 American Institute of Certified Public Accountants (AICPA). "Segregation of Duties." n.d. <https://www.aicpa.org/interestareas/informationtechnology/resources/value-strategy-through-segregation-of-duties.html>

Consider a bank that has to track deposits for thousands of customers. If a fire destroys the building housing the bank's servers, how can the bank find the balances of each customer? Typically, organizations such as banks mirror their servers at several locations around the world as an internal control. The bank might have a main server in Tennessee but also mirror all data in real time to identical servers in Arizona, Montana, and even offshore in Iceland. With multiple copies of a server at multiple locations across the country, or even the world, in the event of disaster to one server, a backup server can take control of operations, protecting customer data and avoiding any service interruptions.

Internal controls are the basic components of an **internal control system**, the sum of all internal controls and policies within an organization that protect assets and data. A properly designed system of internal controls aims to ensure the integrity of assets, allows for reliable accounting information and financial reporting, enhances efficiency within an organization, and provides guidelines and possible consequences for dealing with breaches. Internal controls drive many decisions and overall operational procedures within an organization. A properly designed internal control system will not prevent all loss from occurring, but it will significantly reduce the risk of loss and increase the chance of identifying the responsible party.

CONTINUING APPLICATION AT WORK

Fraud Controls for Grocery Stores

All businesses are concerned with internal controls over reporting and assets. For the grocery industry this concern is even greater, because profit margins on items are so small that any lost opportunity hurts profitability. How can an individual grocery store develop effective controls?

Consider the two biggest items that a grocery store needs to control: food (inventory) and cash. Inventory controls are set up to stop shrinkage (theft). While it is not profitable for each aisle to be patrolled by a security guard, cameras throughout the store linked to a central location allow security staff to observe customers. More controls are placed on cash registers to prevent employees from stealing cash. Cameras at each register, cash counts at each shift change, and/or a supervisor who observes cashiers are some potential internal control methods. Grocery stores invest more resources in controlling cash because they have determined it to be the greatest opportunity for fraudulent activity.

The Role of Internal Controls

The accounting system is the backbone of any business entity, whether it is profit based or not. It is the responsibility of management to link the accounting system with other functional areas of the business and ensure that there is communication among employees, managers, customers, suppliers, and all other internal and external users of financial information. With a proper understanding of internal controls, management can design an internal control system that promotes a positive business environment that can most effectively serve its customers.

For example, a customer enters a retail store to purchase a pair of jeans. As the cashier enters the jeans into the point-of-sale system, the following events occur internally:

1. A sale is recorded in the company's journal, which increases revenue on the income statement. If the transaction occurred by credit card, the bank typically transfers the funds into the store's bank account in a timely manner.
2. The pair of jeans is removed from the inventory of the store where the purchase was made.

3. A new pair of jeans is ordered from the distribution center to replace what was purchased from the store's inventory.
4. The distribution center orders a new pair of jeans from the factory to replace its inventory.
5. Marketing professionals can monitor over time the trend and volume of jeans sold in a specific size. If an increase or decrease in sales volume of a specific size is noted, store inventory levels can be adjusted.
6. The company can see in real time the exact inventory levels of all products in all stores at all times, and this can ensure the best customer access to products.

Because many systems are linked through technology that drives decisions made by many stakeholders inside and outside of the organization, internal controls are needed to protect the integrity and ensure the flow of information. An internal control system also assists all stakeholders of an organization to develop an understanding of the organization and provide assurance that all assets are being used efficiently and accurately.

Environment Leading to the Sarbanes-Oxley Act

Internal controls have grown in their importance as a component of most business decisions. This importance has grown as many company structures have grown in complexity. Despite their importance, not all companies have given maintenance of controls top priority. Additionally, many small businesses do not have adequate understanding of internal controls and therefore use inferior internal control systems. Many large companies have nonformalized processes, which can lead to systems that are not as efficient as they could be. The failure of the **SCICAP Credit Union** discussed earlier is a direct result of a small financial institution having a substandard internal control system leading to employee theft. One of the largest corporate failures of all time was **Enron**, and the failure can be directly attributed to poor internal controls.

Enron was one of the largest energy companies in the world in the late twentieth century. However, a corrupt management attempted to hide weak financial performance by manipulating revenue recognition, valuation of assets on the balance sheet, and other financial reporting disclosures so that the company appeared to have significant growth. When this practice was uncovered, the owners of **Enron** stock lost \$40 billion as the stock price dropped from \$91 per share to less than \$1 per share, as shown in [Figure 8.4](#).^[6] This failure could have been prevented had proper internal controls been in place.

For example, **Enron** and its accounting firm, **Arthur Andersen**, did not maintain an adequate degree of independence. **Arthur Andersen** provided a significant amount of services in both auditing and consulting, which prevented them from approaching the audit of **Enron** with a proper degree of independence. Also, among many other violations, **Enron** avoided the proper use of several acceptable reporting requirements.

6 Douglas O. Linder, ed. "Enron Historical Stock Price." Famous Trials. n.d. <https://www.famous-trials.com/images/ftrials/Enron/documents/enronstockchart.pdf>

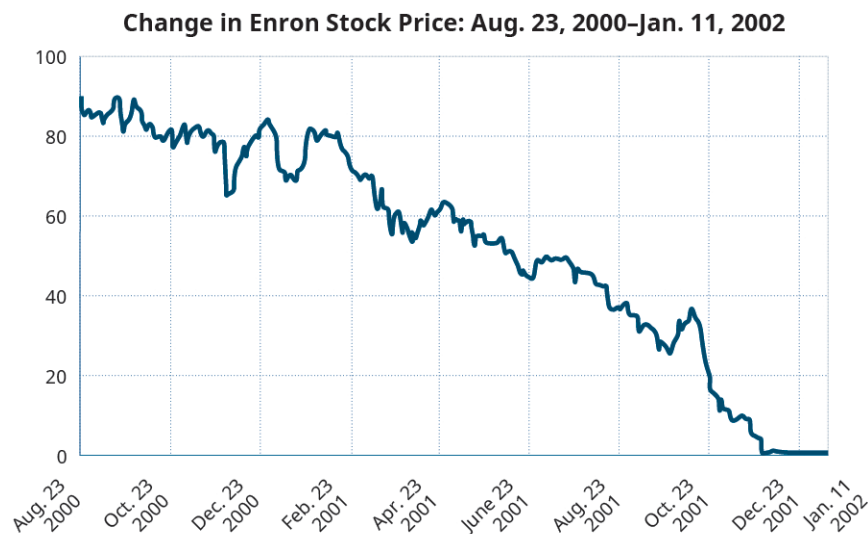


Figure 8.4 Change in Enron Stock Price. The Enron scandal was one of the largest frauds in the history of modern business. It was the main fraud that was responsible for creation of the Sarbanes-Oxley Act as well as the Public Company Accounting Oversight Board (PCAOB). (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

As a result of the **Enron** failure and others that occurred during the same time frame, Congress passed the **Sarbanes-Oxley Act (SOX)** to regulate practice to manage conflicts of analysts, maintain governance, and impose guidelines for criminal conduct as well as sanctions for violations of conduct. It ensures that internal controls are properly documented, tested, and used consistently. The intent of the act was to ensure that corporate financial statements and disclosures are accurate and reliable. It is important to note that SOX only applies to public companies. A **publicly traded company** is one whose stock is traded (bought and sold) on an organized stock exchange. Smaller companies still struggle with internal control development and compliance due to a variety of reasons, such as cost and lack of resources.

Major Accounting Components of the Sarbanes-Oxley Act

As it pertains to internal controls, the SOX requires the certification and documentation of internal controls. Specifically, the act requires that the auditor do the following:

1. Issue an internal control report following the evaluation of internal controls.
2. Limit nonaudit services, such as consulting, that are provided to a client.
3. Rotate who can lead the audit. The person in charge of the audit can serve for a period of no longer than seven years without a break of two years.

Additionally, the work conducted by the auditor is to be overseen by the **Public Company Accounting Oversight Board (PCAOB)**. The PCAOB is a congressionally established, nonprofit corporation. Its creation was included in the Sarbanes-Oxley Act of 2002 to regulate conflict, control disclosures, and set sanction guidelines for any violation of regulations. The PCAOB was assigned the responsibilities of ensuring independent, accurate, and informative audit reports, monitoring the audits of securities brokers and dealers, and maintaining oversight of the accountants and accounting firms that audit publicly traded companies.

LINK TO LEARNING

Visit the [Public Company Accounting Oversight Board \(PCAOB\) website \(https://openstax.org/l/50PCAOB\)](https://openstax.org/l/50PCAOB) to learn more about what it does.

Any employee found to violate SOX standards can be subject to very harsh penalties, including \$5 million in fines and up to 20 to 25 years in prison. The penalty is more severe for securities fraud (25 years) than for mail or wire fraud (20 years).

The SOX is relatively long and detailed, with Section 404 having the most application to internal controls. Under Section 404, management of a company must perform annual audits to assess and document the effectiveness of all internal controls that have an impact on the financial reporting of the organization. Also, selected executives of the firm under audit must sign the audit report and state that they attest that the audit fairly represents the financial records and conditions of the company.

The financial reports and internal control system must be audited annually. The cost to comply with this act is very high, and there is debate as to how effective this regulation is. Two primary arguments that have been made against the SOX requirements is that complying with their requirements is expensive, both in terms of cost and workforce, and the results tend not to be conclusive. Proponents of the SOX requirements do not accept these arguments.

One available potential response to mandatory SOX compliance is for a company to decertify (remove) its stock for trade on the available stock exchanges. Since SOX affects publicly traded companies, decertifying its stock would eliminate the SOX compliance requirement. However, this has not proven to be a viable option, primarily because investors enjoy the protection SOX provides, especially the requirement that the companies in which they invest undergo a certified audit prepared by CPAs employed by national or regional accounting firms. Also, if a company takes its stock off of an organized stock exchange, many investors assume that a company is in trouble financially and that it wants to avoid an audit that might detect its problems.

YOUR TURN

The Growing Importance of the Report on Internal Controls

Internal controls have become an important aspect of financial reporting. As part of the financial statements, the auditor has to issue a report with an opinion on the financial statements, as well as internal controls. Use the internet and locate the annual report of a company, specifically the report on internal controls. What does this report tell the user of financial information?

Solution

The annual report informs the user about the financial results of the company, both in discussion by management as well as the financial statements. Part of the financial statements involves an independent auditor's report on the integrity of the financial statements as well as the internal controls.

LINK TO LEARNING

Many companies have their own internal auditors on staff. The role of the internal auditor is to test and ensure that a company has proper internal controls in place, and that they are functioning. Read about [how the internal audit works from I.S. Partners \(https://openstax.org/l/50ISPartAudit\)](https://openstax.org/l/50ISPartAudit) to learn more.

8.3 Describe Internal Controls within an Organization

The use of internal controls differs significantly across organizations of different sizes. In the case of small businesses, implementation of internal controls can be a challenge, due to cost constraints, or because a small staff may mean that one manager or owner will have full control over the organization and its operations. An owner in charge of all functions has enough knowledge to keep a close eye on all aspects of the organization and can track all assets appropriately. In smaller organizations in which responsibilities are delegated, procedures need to be developed in order to ensure that assets are tracked and used properly.

When an owner cannot have full oversight and control over an organization, internal control systems need to be developed. When an appropriate internal control system is in place, it is interlinked to all aspects of the entity's operations. An appropriate internal control system links the accounting, finance, operations, human resources, marketing, and sales departments within an organization. It is important that the management team, as well as employees, recognize the importance of internal controls and their role in preventing losses, monitoring performance, and planning for the future.

Elements of Internal Control

A strong internal control system is based on the same consistent elements:

- establishment of clear responsibilities
- proper documentation
- adequate insurance
- separation of assets from custody
- separation of duties
- use of technology

Establishment of Clear Responsibilities

A properly designed system of internal control clearly dictates responsibility for certain roles within an organization. When there is a clear statement of responsibility, issues that are uncovered can be easily traced and responsibility placed where it belongs.

As an example, imagine that you are the manager of the Galaxy's Best Yogurt. On any shift, you have three employees working in the store. One employee is designated as the shift supervisor who oversees the operations of the other two employees on the shift and ensures that the store is presented and functioning properly. Of the other two employees, one may be solely responsible for management of the cash register, while the others serve the customers. When only one employee has access to an individual cash register, if

there is an overage or shortage of cash, it can be traced to the one employee who is in charge of the cash register.

Proper Documentation

An effective internal control system maintains proper documentation, including backups, to trace all transactions. The documentation can be paper copies, or documents that are computer generated and stored, on flash drives or in the cloud, for example. Given the possibility of some type of natural (tornado or flood) or man-made (arson) disasters, even the most basic of businesses should create backup copies of documentation that are stored off-site.

In addition, any documentation generated by daily operations should be managed according to internal controls. For example, when the Galaxy's Best Yogurt closes each day, one employee should close out and reconcile the cash drawer using prenumbered forms in pen to ensure that no forms can be altered or changed by another employee who may have access to the cash. In case of an error, the employee responsible for making the change should initial any changes on the form. If there are special orders for cakes or other products, the order forms should be prenumbered. The use of prenumbered documents provides assurance that all sales are recorded. If a form is not prenumbered, an order can be prepared, and the employee can then take the money without ringing the order into the cash register, leaving no record of the sale.

Adequate Insurance

Insurance may be a significant cost to an organization (especially liability coverage), but it is necessary. With adequate insurance on an asset, if it is lost or destroyed, an outside party will recoup the company for the loss. If assets are lost to fraud or theft, an insurance company will investigate the loss and will press criminal charges against any employee found to be involved. Very often, the employer will be hesitant to pursue criminal charges against an employee due to the risk of lawsuit or bad publicity. For example, an employee might assume that the termination was age related and is going to sue the company. Also, there might be a situation where the company experienced a loss, such as theft, and it does not want to let the general public know that there are potential deficiencies in its security system.

If the insurance company presses charges on behalf of the company, this protects the organization and also acts as a deterrent if employees know that the insurance company will always prosecute theft. For example, suppose the manager of the Galaxy's Best Yogurt stole \$10,000 cash over a period of two years. The owner of the yogurt store will most likely file an insurance claim to recover the \$10,000 that was stolen. With proper insurance, the insurance company will reimburse the yogurt store for the money but then has the right to press charges and recover its losses from the employee who was caught stealing. The store owner will have no control over the insurance company's efforts to recover the \$10,000 and will likely be forced to fire the employee in order to keep the insurance policy.

Separation of Assets from Custody

Separation of assets from custody ensures that the person who controls an asset cannot also keep the accounting records. This action prevents one employee from taking income from the business and entering a transaction on the accounting records to cover it up. For example, one person within an organization may open an envelope that contains a check, but a different person would enter the check into the organization's accounting system. In the case of the Galaxy's Best Yogurt, one employee may count the money in the cash register drawer at the end of the night and reconcile it with the sales, but a different employee would recount

the money, prepare the bank deposit, and ensure that the deposit is made at the bank.

Separation of Duties

A properly designed internal control system assures that at least two (if not more) people are involved with most transactions. The purpose of separating duties is to ensure that there is a check and balance in place. One common internal control is to have one employee place an inventory order and a different employee receive the order as it is delivered. For example, assume that an employee at the Galaxy's Best Yogurt places an inventory order. In addition to the needed inventory, the employee orders an extra box of piecrusts. If that employee also receives the order, he or she can take the piecrusts home, and the store will still pay for them. Check signing is another important aspect of separation of duties. Typically, the person who writes a check should not also sign the check. Additionally, the person who places supply orders should not write checks to pay the bills for these supplies.

Use of Technology

Technology has made the process of internal control simpler and more approachable to all businesses. There are two reasons that the use of technology has become more prevalent. The first is the development of more user-friendly equipment, and the second is the reduction in costs of security resources. In the past, if a company wanted a security system, it often had to go to an outside security firm, and the costs of providing and monitoring the system were prohibitive for many small businesses. Currently, security systems have become relatively inexpensive, and not only do many small businesses now have them, they are now commonly used by residential homeowners.

In terms of the application of security resources, some businesses use surveillance cameras focused on key areas of the organization, such as the cash register and areas where a majority of work is performed. Technology also allows businesses to use password protection on their data or systems so that employees cannot access systems and change data without authorization. Businesses may also track all employee activities within an information technology system.

Even if a business uses all of the elements of a strong internal control system, the system is only as good as the oversight. As responsibilities, staffing, and even technology change, internal control systems need to be constantly reviewed and refined. Internal control reviews are typically not conducted by inside management but by internal auditors who provide an impartial perspective of where controls are working and where they can be improved.

Purposes of Internal Controls within a Governmental Entity

Internal controls apply not only to public and private corporations but also to governmental entities. Often, a government controls one of the most important assets of modern times: data. Unprotected financial information, including tax data, social security, and governmental identifications, could lead to identity theft and could even provide rogue nations access to data that could compromise the security of our country. Governmental entities require their contractors to have proper internal controls and to maintain proper codes of ethics.

ETHICAL CONSIDERATIONS

Ethics in Governmental Contractors

Government entities are not the only organizations required to implement proper internal controls and codes of ethics. As part of the business relationship between different organizations, governmental agencies also require contractors and their subcontractors to implement internal controls to ensure compliance with proper ethical conduct. The Federal Acquisition Regulation (FAR) Council outlines regulations under FAR 3.10,^[7] which require governmental contractors and their subcontractors to implement a written “Contractor Code of Business Ethics and Conduct,” and the proper internal controls to ensure that the code of ethics is followed. An employee training program, posting of agency inspector general hotline posters, and an internal control system to promote compliance with the established ethics code are also required. Contractors must disclose violations of federal criminal law involving fraud, conflicts of interest, bribery, or gratuity violations; violations of the civil False Claims Act; and significant overpayments on a contract not resulting from contract financing payments.^[8] Such internal controls help ensure that an organization and its business relationships are properly managed.

To recognize the significant need for internal controls within the government, and to ensure and enforce compliance, the US Government Accountability Office (GAO) has its own standards for internal control within the federal government. All government agencies are subject to governance under these standards, and one of the objectives of the GAO is to provide audits on agencies to ensure that proper controls are in place and within compliance. Standards for internal control within the federal government are located within a publication referred to as the “Green Book,” or *Standards for Internal Control in the Federal Government*.

LINK TO LEARNING

Government organizations have their own needs for internal controls. Read the [GAO “Green Book”](https://openstax.org/l/50GAOGreenBook) (<https://openstax.org/l/50GAOGreenBook>) to learn more about these internal control procedures.

Purposes of Internal Controls within a Not-for-Profit

Not-for-profit (NFP) organizations have the same needs for internal control as many traditional for-profit entities. At the same time, there are unique challenges that these entities face. Based on the objectives and charters of NFP organizations, in many cases, those who run the organizations are volunteers. As volunteers, leaders of NFPs may not have the same training background and qualifications as those in a similar for-profit position. Additionally, a volunteer leader often splits time between the organization and a full-time career. For these reasons, internal controls in an NFP often are not properly implemented, and there may be a greater risk of control lapse. A **control lapse** occurs when there is a deviation from standard control protocol that leads to

7 Federal Acquisition Regulation. “Subpart 3.10: Contractor Code of Business Ethics and Conduct.” January 22, 2019. <https://www.acquisition.gov/content/subpart-310-contractor-code-business-ethics-and-conduct>

8 National Contract Management Association. <https://www.ncmahq.org/>

a failure in the internal control and/or fraud prevention processes or systems. A failure occurs in a situation when results did not achieve predetermined goals or meet expectations.

Not-for-profit organizations have an extra category of finances that need protection, in addition to their assets. They need to ensure that incoming donations are used as intended. For example, many colleges and universities are classified as NFP organizations, and donations are a significant source of revenue. However, donations are often directed to a specific source. For example, suppose an alumnus of Alpha University wants to make a \$1,000,000 donation to the business school for undergraduate student scholarships. Internal controls would track that donation to ensure it paid for scholarships for undergraduate students in the business school and was not used for any other purpose at the school, in order to avoid potential legal issues.

Identify and Apply Principles of Internal Controls to the Receipt and Disbursement of Cash

Cash can be a major part of many business operations. Imagine a Las Vegas casino, or a large grocery store, such as **Publix Super Markets**, **Wegmans Food Markets**, or **ShopRite**; in any of these settings, millions of dollars in cash can change hands within a matter of minutes, and it can pass through the hands of thousands of employees. Internal controls ensure that all of this cash reaches the bank account of the business entity. The first control is monitoring. Not only are cameras strategically placed throughout the store to prevent shoplifting and crime by customers, but cameras are also located over all areas where cash changes hands, such as over every cash register, or in a casino over every gaming table. These cameras are constantly monitored, often offsite at a central location by personnel who have no relationship with the employees who handle the cash, and all footage is recorded. This close monitoring makes it more difficult for misuse of cash to occur.

Additionally, access to cash is tightly controlled. Within a grocery store, each employee has his or her own cash drawer with a set amount of cash. At any time, any employee can reconcile the sales recorded within the system to the cash balance that should be in the drawer. If access to the drawer is restricted to one employee, that employee is responsible when cash is missing. If one specific employee is consistently short on cash, the company can investigate and monitor the employee closely to determine if the shortages are due to theft or if they are accidental, such as if they resulted from errors in counting change. Within a casino, each time a transaction occurs and when there is a shift change for the dealers, cash is counted in real time. Casino employees dispersed on the gaming floor are constantly monitoring play, in addition to those monitoring cameras behind the scenes.

Technology plays a major role in the maintenance of internal controls, but other principles are also important. If an employee makes a mistake involving cash, such as making an error in a transaction on a cash register, the employee who made the mistake typically cannot correct the mistake. In most cases, a manager must review the mistake and clear it before any adjustments are made. These changes are logged to ensure that managers are not clearing mistakes for specific employees in a pattern that could signify **collusion**, which is considered to be a private cooperation or agreement primarily for a deceitful, illegal, or immoral cause or purpose. Duties are also separated to count cash on hand and ensure records are accurate. Often, at the end of the shift, a manager or employee other than the person responsible for the cash is responsible for counting cash on hand within the cash drawer. For example, at a grocery store, it is common for an employee who has been checking out customers for a shift to then count the money in the register and prepare a document providing the counts for the shift. This employee then submits the counted tray to a supervisor, such as a head cashier, who then repeats the counting and documentation process. The two counts should be equal. If there is a discrepancy, it should immediately be investigated. If the store accepts checks and credit/debit card

payments, these methods of payments are also incorporated into the verification process.

In many cases, the sales have also been documented either by a paper tape or by a computerized system. The ultimate goal is to determine if the cash, checks, and credit/debit card transactions equal the amount of sales for the shift. For example, if the shift's register had sales of \$800, then the documentation of counted cash and checks, plus the credit/debit card documentation should also add up to \$800.

Despite increased use of credit cards by consumers, our economy is still driven by cash. As cash plays a very important role in society, efforts must be taken to control it and ensure that it makes it to the proper areas within an organization. The cost of developing, maintaining, and monitoring internal controls is significant but important. Considering the millions of dollars of cash that can pass through the hands of employees on any given day, the high cost can be well worth it to protect the flow of cash within an organization.

LINK TO LEARNING

Internal controls are as important for not-for-profit businesses as they are within the for-profit sector. See this [guide for not-for-profit businesses to set up and maintain proper internal control systems](https://openstax.org/l/50IntConNonProf) (<https://openstax.org/l/50IntConNonProf>) provided by the National Council of Nonprofits.

THINK IT THROUGH

Hiring Approved Vendors

One internal control that companies often have is an official “approved vendor” list for purchases. Why is it important to have an approved vendor list?

8.4 Define the Purpose and Use of a Petty Cash Fund, and Prepare Petty Cash Journal Entries

As we have discussed, one of the hardest assets to control within any organization is cash. One way to control cash is for an organization to require that all payments be made by check. However, there are situations in which it is not practical to use a check. For example, imagine that the Galaxy's Best Yogurt runs out of milk one evening. It is not possible to operate without milk, and the normal shipment does not come from the supplier for another 48 hours. To maintain operations, it becomes necessary to go to the grocery store across the street and purchase three gallons of milk. It is not efficient for time and cost to write a check for this small purchase, so companies set up a **petty cash fund**, which is a predetermined amount of cash held on hand to be used to make payments for small day-to-day purchases. A petty cash fund is a type of **imprest account**, which means that it contains a fixed amount of cash that is replaced as it is spent in order to maintain a set balance.

To maintain internal controls, managers can use a petty cash receipt ([Figure 8.5](#)), which tracks the use of the cash and requires a signature from the manager.

PETTY CASH RECEIPT	
Date: _____	Approved by: _____
Receipt number: _____	Received by: _____
Description	Amount

Figure 8.5 Petty Cash Voucher. A petty cash voucher is an important internal control document to trace the use of cash within a petty cash fund. This voucher allows management to track the use of cash, the balance that should be within the account, and the person responsible for the approval of a payment from the account. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

As cash is spent from a petty cash fund, it is replaced with a receipt of the purchase. At all times, the balance in the petty cash box should be equal to the cash in the box plus the receipts showing purchases.

For example, the Galaxy's Best Yogurt maintains a petty cash box with a stated balance of \$75 at all times. Upon review of the box, the balance is counted in the following way.

Cash in box	\$50
Receipt showing purchase of stamps from Postal Service	15
Receipt from Quick Market for the purchase of milk and bananas	10
Total balance in petty cash box	75

Because there may not always be a manager with check signing privileges available to sign a check for unexpected expenses, a petty cash account allows employees to make small and necessary purchases to support the function of a business when it is not practical to go through the formal expense process. In all cases, the amount of the purchase using petty cash would be considered to not be material in nature. Recall that materiality means that the dollar amount in question would have a significant impact in financial results or influence investor decisions.

Demonstration of Typical Petty Cash Journal Entries

Petty cash accounts are managed through a series of journal entries. Entries are needed to (1) establish the fund, (2) increase or decrease the balance of the fund (replenish the fund as cash is used), and (3) adjust for overages and shortages of cash. Consider the following example.

The Galaxy's Best Yogurt establishes a petty cash fund on July 1 by cashing a check for \$75 from its checking account and placing cash in the petty cash box. At this point, the petty cash box has \$75 to be used for small expenses with the authorization of the responsible manager. The journal entry to establish the petty cash fund would be as follows.

JOURNAL			
Date	Account	Debit	Credit
July 1	Petty cash Cash <i>To record establishment of petty cash fund</i>	75	75

As this petty cash fund is established, the account titled “Petty Cash” is created; this is an asset on the balance sheet of many small businesses. In this case, the cash account, which includes checking accounts, is decreased, while the funds are moved to the petty cash account. One asset is increasing, while another asset is decreasing by the same amount. Since the petty cash account is an imprest account, this balance will never change and will remain on the balance sheet at \$75, unless management elects to change the petty cash balance.

Throughout the month, several payments are made from the petty cash account of the Galaxy’s Best Yogurt. Assume the following activities.

Date	Transaction	Amount
Jul. 10	Postage stamps are purchased	\$30
Jul. 15	Milk purchased	10
Jul. 25	Window cleaner purchased from Dollar Store	5

At the end of July, in the petty cash box there should be a receipt for the postage stamp purchase, a receipt for the milk, a receipt for the window cleaner, and the remaining cash. The employee in charge of the petty cash box should sign each receipt when the purchase is made. The total amount of purchases from the receipts (\$45), plus the remaining cash in the box should total \$75. As the receipts are reviewed, the box must be replenished for what was spent during the month. The journal entry to replenish the petty cash account will be as follows.

JOURNAL			
Date	Account	Debit	Credit
Jul. 31	Postage Expense Inventory Miscellaneous Expense Cash <i>To record replenishment of petty cash fund</i>	30 10 5	45

Typically, petty cash accounts are reimbursed at a fixed time period. Many small businesses will do this monthly, which ensures that the expenses are recognized within the proper accounting period. In the event that all of the cash in the account is used before the end of the established time period, it can be replenished in the same way at any time more cash is needed. If the petty cash account often needs to be replenished before the end of the accounting period, management may decide to increase the cash balance in the account. If, for example, management of the Galaxy’s Best Yogurt decides to increase the petty cash balance to \$100 from the current balance of \$75, the journal entry to do this on August 1 would be as follows.

JOURNAL			
Date	Account	Debit	Credit
Aug. 1	Petty Cash Cash <i>To increase balance of petty cash fund to \$100</i>	25	25

If the management at a later date decides to decrease the balance in the petty cash account, the previous entry would be reversed, with cash being debited and petty cash being credited.

Occasionally, errors may occur that affect the balance of the petty cash account. This may be the result of an employee not getting a receipt or getting back incorrect change from the store where the purchase was made. In this case, an expense is created that creates a *cash overage or shortage*.

Consider Galaxy's expenses for July. During the month, \$45 was spent on expenses. If the balance in the petty cash account is supposed to be \$75, then the petty cash box should contain \$45 in signed receipts and \$30 in cash. Assume that when the box is counted, there are \$45 in receipts and \$25 in cash. In this case, the petty cash balance is \$70, when it should be \$75. This creates a \$5 shortage that needs to be replaced from the checking account. The entry to record a cash shortage is as follows.

JOURNAL			
Date	Account	Debit	Credit
Jul. 30	Cash Over and Short Cash <i>To replenish petty cash balance for cash shortage during period</i>	5	5

When there is a shortage of cash, we record the shortage as a "debit" and this has the same effect as an expense. If we have an overage of cash, we record the overage as a credit, and this has the same impact as if we are recording revenue. If there were cash overage, the petty cash account would be debited and the cash over and short account would be credited. In this case, the expense balance decreases, and the year-end balance is the net balance from all overages and shortages during the year.

If a petty cash account is consistently short, this may be a warning sign that there is not a proper control of the account, and management may want to consider additional controls to better monitor petty cash.

THINK IT THROUGH

Cash versus Debit Card

A petty cash system in some businesses may be replaced by use of a prepaid credit card (or debit card) on site. What would be the pros and cons of actually maintaining cash on premises for the petty cash system, versus a rechargeable debit card that employees may use for petty cash purposes? Which option would you select for your petty cash account if you were the owner of a small business?

LINK TO LEARNING

See this [article on tips for companies to establish and manage petty cash systems \(https://openstax.org/l/50IntConPetCash\)](https://openstax.org/l/50IntConPetCash) to learn more.

8.5

Discuss Management Responsibilities for Maintaining Internal Controls within an Organization

Because internal controls do protect the integrity of financial statements, large companies have become highly regulated in their implementation. In addition to Section 404 of the SOX, which addresses reporting and testing requirements for internal controls, there are other sections of the act that govern management responsibility for internal controls. Although the auditor reviews internal controls and advises on the improvement of controls, ultimate responsibility for the controls is on the management of the company. Under SOX Section 302, in order to provide additional assurance to the financial markets, the **chief executive officer (CEO)**, who is the executive within a company with the highest-ranking title and the overall responsibility for management of the company, and the **chief financial officer (CFO)**, who is the corporation officer who reports to the CEO and oversees all of the accounting and finance concerns of a company, must personally certify that (1) they have reviewed the internal control report provided by the auditor; (2) the report does not contain any inaccurate information; and (3) they believe that all financial information fairly states the financial conditions, income, and cash flows of the entity. The sign-off under Section 302 makes the CEO and CFO personally responsible for financial reporting as well as internal control structure.

While the executive sign-offs seem like they would be just a formality, they actually have a great deal of power in court cases. Prior to SOX, when an executive swore in court that he or she was not aware of the occurrence of some type of malfeasance, either committed by his or her firm or against his or her firm, the executive would claim a lack of knowledge of specific circumstances. The typical response was, “I can’t be expected to know everything.” In fact, in virtually all of the trials involving potential malfeasance, this claim was made and often was successful in a not-guilty verdict.

The initial response to the new SOX requirements by many people was that there was already sufficient affirmation by the CEO and CFO and other executives to the accuracy and fairness of the financial statements and that the SOX requirements were unnecessary. However, it was determined that the SOX requirements provided a degree of legal responsibility that previously might have been assumed but not actually stated.

Even if a company is not public and not governed by the SOX, it is important to note that the tone is set at the managerial level, called the *tone at the top*. If management respects the internal control system and emphasizes the importance of maintaining proper internal controls, the rest of the staff will follow and create a cohesive environment. A proper tone at the top demonstrates management’s commitment toward openness, honesty, integrity, and ethical behavior.

YOUR TURN

Defending the Sarbanes-Oxley Act

You are having a conversation with the CFO of a public company. Imagine that the CFO complains that there is no benefit to Sections 302 and 404 of the Sarbanes-Oxley Act relative to the cost, as “our company has always valued internal controls before this regulation and never had an issue.” He believes that this regulation is an unnecessary overstep. How would you respond and defend the need for Sections 302 and 404 of the Sarbanes-Oxley Act?

Solution

I would tell the CFO the following:

1. Everyone says that they have always valued internal controls, even those who did not.
2. Better security for the public is worth the cost.
3. The cost of compliance is more than recovered in the company's market price for its stock.

THINK IT THROUGH

Personal Internal Controls

Technology plays a very important role in internal controls. One recent significant security breach through technology was the **Equifax** breach. What is an internal control that you can personally implement to protect your personal data as a result of this breach, or any other future breach?

8.6 Define the Purpose of a Bank Reconciliation, and Prepare a Bank Reconciliation and Its Associated Journal Entries

The bank is a very important partner to all businesses. Not only does the bank provide basic checking services, but they process credit card transactions, keep cash safe, and may finance loans when needed.

Bank accounts for businesses can involve thousands of transactions per month. Due to the number of ongoing transactions, an organization's book balance for its checking account rarely is the same as the balance that the bank records reflect for the entity at any given point. These timing differences are typically caused by the fact that there will be some transactions that the organization is aware of before the bank, or transactions the bank is aware of before the company.

For example, if a company writes a check that has not cleared yet, the company would be aware of the transaction before the bank is. Similarly, the bank might have received funds on the company's behalf and recorded them in the bank's records for the company before the organization is aware of the deposit.

With the large volume of transactions that impact a bank account, it becomes necessary to have an internal control system in place to assure that all cash transactions are properly recorded within the bank account, as well as on the ledger of the business. The **bank reconciliation** is the internal financial report that explains and documents any differences that may exist between the balance of a checking account as reflected by the bank's records (bank balance) for a company and the company's accounting records (company balance).

The bank reconciliation is an internal document prepared by the company that owns the checking account. The transactions with timing differences are used to adjust and reconcile both the bank and company balances; after the bank reconciliation is prepared accurately, both the bank balance and the company balance will be the same amount.

Note that the transactions the company is aware of have already been recorded (journalized) in its records. However, the transactions that the bank is aware of but the company is not must be journalized in the entity's records.

Fundamentals of the Bank Reconciliation Procedure

The balance on a bank statement can differ from company's financial records due to one or more of the

following circumstances:

- An **outstanding check**: a check that was written and deducted from the financial records of the company but has not been cashed by the recipient, so the amount has not been removed from the bank account.
- A **deposit in transit**: a deposit that was made by the business and recorded on its books but has not yet been recorded by the bank.
- Deductions for a **bank service fee**: fees often charged by banks each month for management of the bank account. These may be fixed maintenance fees, per-check fees, or a fee for a check that was written for an amount greater than the balance in the checking account, called a **nonsufficient funds (NSF) check**. These fees are deducted by the bank from the account but would not appear on the financial records.
- Errors initiated by either the client or the bank: for example, the client might record a check incorrectly in its records, for either a greater or lesser amount than was written. Also, the bank might report a check either with an incorrect balance or in the wrong client's checking account.
- Additions such as interest or funds collected by the bank for the client: interest is added to the bank account as earned but is not reported on the financial records. These additions might also include funds collected by the bank for the client.

Demonstration of a Bank Reconciliation

A bank reconciliation is structured to include the information shown in [Figure 8.6](#).

COMPANY NAME Bank Reconciliation December 31, 2018			
Bank Statement Balance at 12/31/18	\$ XXX	Book Balance at 12/31/18	\$ XXX
Deposits in transit	XXX	Income not recorded on books	XXX
Outstanding checks	(XXX)	Bank interest income	XXX
		Expenses not recorded on books	(XXX)
		Bank account charges	(XXX)
Adjusted Bank Balance	<u>\$ XXX</u>	Adjusted Book Balance	<u>\$ XXX</u>

Figure 8.6 Bank Reconciliation. A bank reconciliation includes categories for adjustments to both the bank balance and the book balance. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Assume the following circumstances for Feeter Plumbing Company, a small business located in Northern Ohio.

1. After all posting is up to date, at the end of July 31, the book balance shows \$32,760, and the bank statement balance shows \$77,040.
2. Check 5523 for \$9,620 and 6547 for \$10,000 are outstanding.
3. Check 5386 for \$2,000 is removed from the bank account correctly but is recorded on the accounting records for \$1,760. This was in payment of dues. The effects of this transaction resulted in an error of \$320 that must be deducted from the company's book balance.
4. The July 31 night deposit of \$34,300 was delivered to the bank after hours. As a result, the deposit is not on the bank statement, but it is on the financial records.
5. Upon review of the bank statement, an error is uncovered. A check is removed from the account from Feeter for \$240 that should have been removed from the account of another customer of the bank.

6. In the bank statement is a note stating that the bank collected \$60,000 in charges (payments) from the credit card company as well as \$1,800 in interest. This transaction is on the bank statement but not in the company's financial records.
7. The bank notified Feeter that a \$2,200 check was returned unpaid from customer Berson due to insufficient funds in Berson's account. This check return is reflected on the bank statement but not in the records of Feeter.
8. Bank service charges for the month are \$80. They have not been recorded on Feeter's records.

Each item would be recorded on the bank reconciliation as follows:

FEETER PLUMBING Bank Reconciliation July 31, 2018					
Bank Statement Balance		\$ 77,040	Book Balance		\$32,760
Deposit	\$ 34,300		Collection of account	\$60,000	
Bank error	<u>320</u>	<u>34,620</u>	Interest earned	<u>1,800</u>	<u>61,800</u>
		<u>\$111,600</u>			<u>\$94,560</u>
Outstanding checks			NSF check	(2,200)	
5523	(9,620)		Recording error	(240)	
6547	<u>(10,000)</u>	<u>(19,620)</u>	Service charge	<u>(80)</u>	<u>(2,520)</u>
Adjusted Bank Balance		<u>\$ 92,040</u>			<u>\$92,040</u>

One important trait of the bank reconciliation is that it identifies transactions that have not been recorded by the company that are supposed to be recorded. Journal entries are required to adjust the book balance to the correct balance.

In the case of Feeter, the first entry will record the collection of the note, as well as the interest collected.

JOURNAL			
Date	Account	Debit	Credit
	Cash	31,800	
	Notes Receivable		30,000
	Interest Receivable		1,800
	<i>To recognize the note that was collected and charged interest expense</i>		

The second entry required is to adjust the books for the check that was returned from Berson.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable	2,200	
	Cash		2,200
	<i>To adjust the account for the returned check for insufficient funds</i>		

The third entry is to adjust the recording error for check 5386.

JOURNAL			
Date	Account	Debit	Credit
	Dues Expense	240	
	Cash		240
	<i>To adjust for check that was not recorded properly</i>		

The final entry is to record the bank service charges that are deducted by the bank but have not been recorded on the records.

JOURNAL			
Date	Account	Debit	Credit
	Bank Service Charges	80	
	Cash		80
	<i>To record monthly bank service charges</i>		

The previous entries are standard to ensure that the bank records are matching to the financial records. These entries are necessary to update Feeter's general ledger cash account to reflect the adjustments made by the bank.

LINK TO LEARNING

This [practical article illustrates the key points of why a bank reconciliation is important \(https://openstax.org/l/50BankReconcil\)](https://openstax.org/l/50BankReconcil) for both business and personal reasons.

8.7 Describe Fraud in Financial Statements and Sarbanes-Oxley Act Requirements

Financial statements are the end result of an accountant's work and are the responsibility of management. Proper internal controls help the accountant determine that the financial statements fairly present the financial position and performance of a company. **Financial statement fraud** occurs when the financial statements are used to conceal the actual financial condition of a company or to hide specific transactions that may be illegal. Financial statement fraud may take on many different methods, but it is generally called **cooking the books**. This issue may occur for many purposes.

A common reason to cook the books is to create a false set of a company's books used to convince investors or lenders to provide money to the company. Investors and lenders rely on a properly prepared set of financial statements in making their decision to provide the company with money. Another reason to misstate a set of financial statements is to hide corporate looting such as excessive retirement perks of top executives, unpaid loans to top executives, improper stock options, and any other wrongful financial action. Yet another reason to misreport a company's financial data is to drive the stock price higher. Internal controls assist the accountant in locating and identifying when management of a company wants to mislead the inventors or lenders.

The financial accountant or members of management who set out to cook the books are intentionally attempting to deceive the user of the financial statements. The actions of upper management are being concealed, and in most cases, the entire financial position of the company is being purposely misreported. Regardless of the reason for misstating the true condition of a company's financial position, doing so misleads any person using the financial statements of a company to evaluate the company and its operations.

How Companies Cook the Books to Misrepresent Their Financial Condition

One of the most common ways companies cook the books is by manipulating revenue accounts or accounts receivables. Proper **revenue recognition** involves accounting for revenue when the company has met its obligation on a contract. Financial statement fraud involves early revenue recognition, or recognizing revenue that does not exist, and receivable accountings, used in tandem with false revenue reporting. **HealthSouth** used a combination of false revenue accounts and misstated accounts receivable in a direct manipulation of the revenue accounts to commit a multibillion-dollar fraud between 1996 and 2002. Several chief financial officers and other company officials went to prison as a result.^[9]

CONCEPTS IN PRACTICE

Internal Controls at HealthSouth

The fraud at **HealthSouth** was possible because some of the internal controls were ignored. The company failed to maintain standard segregation of duties and allowed management override of internal controls. The fraud required the collusion of the entire accounting department, concealing hundreds of thousands of fraudulent transactions through the use of falsified documents and fraudulent accounting schemes that included revenue recognition irregularities (such as recognizing accounts receivables to be recorded as revenue before collection), misclassification of expenses and asset acquisitions, and fraudulent merger and acquisition accounting. The result was billions of dollars of fraud. Simply implementing and following proper internal control procedures would have stopped this massive fraud.^[10]

Many companies may go to great lengths to perpetuate financial statement fraud. Besides the direct manipulation of revenue accounts, there are many other ways fraudulent companies manipulate their financial statements. Companies with large inventory balances can misrepresent their inventory account balances and use this misrepresentation to overstate the amount of their assets to get larger loans or use the increased balance to entice investors through claims of exaggerated revenues. The inventory accounts can also be used to overstate income. Such inventory manipulations can include the following:

- Channel stuffing: encouraging customers to buy products under favorable terms. These terms include allowing the customer to return or even not pick up goods sold, without a corresponding reserve to account for the returns.
- Sham sales: sales that have not occurred and for which there are no customers.
- Bill-and-hold sales: recognition of income before the title transfers to the buyer, and holding the inventory in the seller's warehouse.
- Improper cutoff: recording sales of inventory in the wrong period and before the inventory is sold; this is a type of early revenue recognition.
- Round-tripping: selling items with the promise to buy the items back, usually on credit, so there is no economic benefit.

9 Melinda Dickinson. "Former HealthSouth Boss Found Liable for \$2.9 Billion." *Reuters*. June 18, 2009. <https://www.reuters.com/article/us-healthsouth-scrushy/former-healthsouth-boss-found-liable-for-2-9-billion-idUSTRE55H4IP20090618>

10 David McCann. "Two CFOs Tell a Tale of Fraud at HealthSouth." *CFO.com*. March 27, 2017. <http://ww2.cfo.com/fraud/2017/03/two-cfos-tell-tale-fraud-healthsouth/>

These are just a few examples of the way an organization might manipulate inventory or sales to create false revenue.

One of the most famous financial statement frauds involved **Enron**, as discussed previously. **Enron** started as an interstate pipeline company, but then branched out into many different ventures. In addition to the internal control deficiencies discussed earlier, the financial statement fraud started when the company began to attempt to hide its losses.

The fraudulent financial reporting schemes included building assets and immediately taking as income any projected profits on construction and hiding the losses from operating assets in an off-the-balance sheet transaction called **special purpose entities**, which are separate, often complicated legal entities that are often used to absorb risk for a corporation. **Enron** moved assets that were losing money off of its books and onto the books of the Special Purpose Entity. This way, **Enron** could hide its bad business decisions and continue to report a profit, even though its assets were losing money. **Enron's** financial statement fraud created false revenues with the misstatement of assets and liability balances. This was further supported by inadequate balance sheet footnotes and the related disclosures. For example, required disclosures were ramped up as a result of these special purpose entities.

Sarbanes-Oxley Act Compliance Today

The **Enron** scandal and related financial statement frauds led to investors requiring that public companies maintain better internal controls and develop stronger governance systems, while auditors perform a better job at auditing public companies. These requirements, in turn, led to the regulations developed under SOX that were intended to protect the investing public.

Since SOX was first passed, it has adapted to changing technology and now requires public companies to protect their accounting and financial data from hackers and other outside or internal forces through stronger internal controls designed to protect the data. The *Journal of Accountancy* supported these new requirements and reported that the results of SOX have been positive for both companies and investors.

As discussed in the *Journal of Accountancy* article,^[11] there are three conditions that are increasingly affecting compliance with SOX requirements:

- **PCAOB requirements.** The PCAOB has increased the requirements for inspection reports, with a greater emphasis on deficiency evaluation.
- **Revenue recognition.** The Financial Accounting Standards Board has introduced a new standard for revenue recognition. This requirement has led to the need for companies to update control documentation.
- **Cybersecurity.** **Cybersecurity** is the practice of protecting software, hardware, and data from digital attacks. As would be expected in today's environment, the number of recent cybersecurity disclosures has significantly grown.

Under current guidelines, instead of the SOX requiring compliance with just the financial component of reporting and internal control, the guidelines now allow application to information technology (IT) activities as well. A major change under the SOX guidelines involves the method of storage of a company's electronic records. While the act did not specifically require a particular storage method, it did provide guidance on which records were to be stored and for how long they should be stored.

11 Ken Tysiac. "Companies Spending More Time on SOX Compliance." *Journal of Accountancy*. June 12, 2017.
<https://www.journalofaccountancy.com/news/2017/jun/companies-spending-more-time-on-sox-compliance-201716857.html>

The SOX now requires that all business records, electronic records, and electronic messages must be stored for at least five years. The penalties for noncompliance include either imprisonment or fines, or a combination of the two options.

Key Terms

bank reconciliation internal financial report that explains and documents any differences that may exist between a balance within a checking account and the company's records

bank service fee fee often charged by a bank each month for management of the bank account

chief executive officer (CEO) executive within a company with the highest ranking title who has the overall responsibility for the management of a company; reports to the board of directors

chief financial officer (CFO) corporation officer who reports to the CEO and oversees all of the accounting and finance concerns of a company

collusion private cooperation or agreement, between more than one person, primarily for a deceitful, illegal, or immoral cause or purpose

Committee of Sponsoring Organizations (COSO) independent, private-sector group whose five sponsoring organizations periodically identify and address specific accounting issues or projects related to internal controls

control lapse when there is a deviation from standard control protocol that leads to a failure in the internal control and/or fraud prevention processes or systems

cooking the books (also, financial statement fraud) financial statements are used to conceal the actual financial condition of a company or to hide specific transactions that may be illegal

cybersecurity practice of protecting software, hardware, and data from digital attacks

deposit in transit deposit that was made by the business and recorded on its books but has not yet been recorded by the bank

external auditor generally works for an outside CPA firm or his or her own private practice and conducts audits and other assignments, such as reviews

financial statement fraud using financial statements to conceal the actual financial condition of a company or to hide specific transactions that may be illegal

fraud act of intentionally deceiving a person or organization or misrepresenting a relationship in order to secure some type of benefit, either financial or nonfinancial

fraud triangle concept explaining the reasoning behind a person's decision to commit fraud; the three elements are perceived opportunity, rationalization, and incentive

imprest account account that is only debited when the account is established or the total ending balance is increased

internal auditor employee of an organization whose job is to provide an independent and objective evaluation of the company's accounting and operational activities

internal control system sum of all internal controls and policies within an organization that protect assets and data

internal controls systems used by an organization to manage risk and diminish the occurrence of fraud, consisting of the control environment, the accounting system, and control activities

nonsufficient funds (NSF) check check written for an amount that is greater than the balance in the checking account

outstanding check check that was written and deducted from the financial records of the company but has not been cashed by the recipient, so the amount has not been removed from the bank account

petty cash fund amount of cash held on hand to be used to make payments for small day-to-day purchases

Public Company Accounting Oversight Board (PCAOB) organization created under the Sarbanes-Oxley Act to regulate conflict, control disclosures, and set sanction guidelines for any violation of regulation

publicly traded company company whose stock is traded (bought and sold) on an organized stock

exchange

revenue recognition accounting for revenue when the company has met its obligation on a contract

Sarbanes-Oxley Act (SOX) federal law that regulates business practices; intended to protect investors by enhancing the accuracy and reliability of corporate financial statements and disclosures through governance guidelines including sanctions for criminal conduct

special purpose entities separate, often complicated legal entities that are often used to absorb risk for a corporation

Summary

8.1 Analyze Fraud in the Accounting Workplace

- The fraud triangle helps explain the mechanics of fraud by examining the common contributing factors of perceived opportunity, incentive, and rationalization.
- Due to the nature of their functions, internal and external auditors, through the implementation of effective internal controls, are in excellent positions to prevent opportunity-based fraud.

8.2 Define and Explain Internal Controls and Their Purpose within an Organization

- A system of internal control is the policies combined with procedures created by management to protect the integrity of assets and ensure efficiency of operations.
- The system prevents losses and helps management maintain an effective means of performance.

8.3 Describe Internal Controls within an Organization

- Principles of an effective internal control system include having clear responsibilities, documenting operations, having adequate insurance, separating duties, and setting clear responsibilities for action.
- Internal controls are applicable to all types of organizations: for profit, not-for-profit, and governmental organizations.

8.4 Define the Purpose and Use of a Petty Cash Fund, and Prepare Petty Cash Journal Entries

- The purpose of a petty cash fund is to make payments for small amounts that are immaterial, such as postage, minor repairs, or day-to-day supplies.
- A petty cash account is an imprest account, so it is only debited when the fund is initially established or increased in amount. Transactions to replenish the account involve a debit to the expenses and a credit to the cash account (e.g., bank account).

8.5 Discuss Management Responsibilities for Maintaining Internal Controls within an Organization

- It is the responsibility of management to assure that internal controls of a company are effective and in place.
- Though management has always had responsibility over internal controls, the Sarbanes-Oxley Act has added additional assurances that management takes this responsibility seriously, and placed sanctions against corporate officers and boards of directors who do not take appropriate responsibility.
- Sarbanes-Oxley only applies to public companies. Even though the rules of this act only apply to public companies, proper internal controls are an important aspect of all businesses of any size. Tone at the top is a key component of a proper internal control system.

8.6 Define the Purpose of a Bank Reconciliation, and Prepare a Bank Reconciliation and Its Associated Journal Entries

- The bank reconciliation is an internal document that verifies the accuracy of records maintained by the depositor and the financial institution. The balance on the bank statement is adjusted for outstanding

checks and uncleared deposits. The record balance is adjusted for service charges and interest earned.

- The bank reconciliation is an internal control document that ensures transactions to the bank account are properly recorded, and allows for verification of transactions.

8.7 Describe Fraud in Financial Statements and Sarbanes-Oxley Act Requirements

- Financial statement fraud has occurred when financial statements intentionally hide illegal transactions or fail to accurately reflect the true financial condition of an entity.
- Cooking the books can be used to create false records to present to lenders or investors. It also is used to hide corporate looting of funds and other resources, or to increase stock prices. Cooking the books is an intentional action and is often achieved through the manipulation of the entity's revenues or accounts receivable.
- Health South and Enron were used as examples of past corporate financial fraud.
- The section takes a brief look at the current state of SOX compliance.



Multiple Choice

1. **LO 8.1** Which of the following would a fraudster perceive as a pressure?
 - A. lack of management oversight
 - B. everyone does it
 - C. living beyond one's means
 - D. lack of an internal audit function
2. **LO 8.2** Internal control is said to be the backbone of all businesses. Which of the following is the best description of internal controls?
 - A. Internal controls ensure that the financial statements published are correct.
 - B. The only role of internal controls is to protect customer data.
 - C. Internal controls and company policies are important to protect and safeguard assets and to protect all company data and are designed to protect the company from fraud.
 - D. Internal controls are designed to keep employees from committing fraud against the company.
3. **LO 8.3** What is the best way for owners of small businesses to maintain proper internal controls?
 - A. The owner must have enough knowledge of all aspects of the company and have controls in place to track all assets.
 - B. Small businesses do not need to worry about internal controls.
 - C. Small businesses should make one of their employees in charge of all aspects of the company, giving the owner the ability to run the company and generate sales.
 - D. Only managers need to be concerned about internal controls.
4. **LO 8.3** Which of the following is *not* considered to be part of the internal control structure of a company?
 - A. Ensure that assets are kept secure.
 - B. Monitor operations of the organization to ensure maximum efficiency.
 - C. Publish accurate financial statements on a regular basis.
 - D. Ensure assets are properly used.

5. **LO 8.3** There are several elements to internal controls. Which of the following would not address the issue of having cash transactions reported in the accounting records?
- A. One employee would have access to the cash register.
 - B. The cash drawer should be closed out, and cash and the sales register should be reconciled on a prenumbered form.
 - C. Ask customers to report to a manager if they do not receive a sales receipt or invoice.
 - D. The person behind the cash register should also be responsible for making price adjustments.
6. **LO 8.3** A company is trying to set up proper internal controls for their accounts payable/inventory purchasing system. Currently the purchase order is generated by the same person who receives the inventory. Together the purchase order and the receiving ticket are sent to accounts payable for payment. What changes would you make to improve the internal control structure?
- A. No changes would be made since the person paying the bills is different from the person ordering the inventory.
 - B. The person in accounts payable should generate the purchase order.
 - C. The person in accounts payable should generate the receiving ticket once the invoice from the supplier is received.
 - D. The responsibilities of generating the purchase order and receiving the inventory should be separated among two different people.
7. **LO 8.3** There are three employees in the accounting department: payroll clerk, accounts payable clerk, and accounts receivable clerk. Which one of these employees should *not* make the daily deposit?
- A. payroll clerk
 - B. account payable clerk
 - C. accounts receivable clerk
 - D. none of them
8. **LO 8.3** Which one of the following documents is *not* needed to process a payment to a vendor?
- A. vendor invoice
 - B. packing slip
 - C. check request
 - D. purchase order
9. **LO 8.3** What is the advantage of using technology in the internal control system?
- A. Passwords can be used to allow access by employees.
 - B. Any cash received does not need to be reconciled because the computer tracks all transactions.
 - C. Transactions are easily changed.
 - D. Employees cannot steal because all cash transactions are recorded by the computer/cash register.
10. **LO 8.3** Which of the following assets require the strongest of internal controls?
- A. inventory
 - B. credit cards
 - C. computer equipment
 - D. cash

11. **L0 8.4** Which of the following is true about the Sarbanes-Oxley Act?
- It was passed to ensure that internal controls are properly documented and tested by public companies.
 - It applies to both public and smaller companies.
 - It requires all companies to report their internal control policies to the US Securities and Exchange Commission.
 - It does not require additional costs or resources to have adequate controls.
12. **L0 8.4** The external auditor of a company has certain requirements due to Sarbanes-Oxley. Which of the following best describes these requirements?
- The auditor is required to only report weaknesses in the internal control design of the company he or she is auditing.
 - The auditor must issue an internal control report on the evaluation of internal controls overseen by the Public Company Accounting Oversight Board
 - The auditor in charge can serve for a period of only two years.
 - The Public Company Accounting Oversight Board reviews reports submitted by the auditors when no evaluations have been performed.
13. **L0 8.4** Petty cash is used to _____.
- avoid having to use checks frequently
 - make small payments
 - avoid having to retain receipts because the amounts are very small
 - avoid having to get approvals due to the small amount of cash being paid
14. **L0 8.4** A company has decided to start a petty cash fund for \$150. Which of the following is the correct journal entry?
- | | | |
|------------|-----|-----|
| Petty Cash | 150 | |
| Cash | | 150 |
 - | | | |
|------------|-----|-----|
| Cash | 150 | |
| Petty Cash | | 150 |
 - No entry is required.
 - | | | |
|------------|-----|-----|
| Expenses | 150 | |
| Petty Cash | | 150 |
15. **L0 8.6** Which of the following items are found on a book side of the bank reconciliation?
- beginning bank balance
 - outstanding checks
 - interest income
 - error made by bank

16. **LO 8.6** Which of the following are found on the bank side of the bank reconciliation?

- A. NSF check
- B. interest income
- C. wire transfer into client's account
- D. deposit in transit

17. **LO 8.7** What would be a reason a company would want to understate income?

- A. to help nudge its stock price higher
- B. to lower its tax bill
- C. to show an increase in overall profits
- D. to increase investor confidence

18. **LO 8.7** What would be a reason a company would want to overstate income?

- A. to help nudge its stock price higher
- B. to lower its tax bill
- C. to show a decrease in overall profits
- D. none of the above

19. **LO 8.7** At what point does revenue recognition occur?

- A. When the purchase order is received
- B. When the seller receives the money for the job
- C. When the seller has met "performance"
- D. When the purchaser makes payment



Questions

1. **LO 8.1** What is an example of *perceived opportunity* as one of the three elements causing a person to commit fraud?

2. **LO 8.1** What is an example of *rationalization* as one of the three elements causing a person to commit fraud?

3. **LO 8.1** What is an example of *incentive* as one of the three elements causing a person to commit fraud?

4. **LO 8.2** Why is it important to have a very sound and well-developed internal control structure?

5. **LO 8.2** The information technology departments of all companies have significant and important roles in the internal control systems. Discuss them and their importance.

6. **LO 8.2** What are the functions of the internal control?

7. **LO 8.3** Discuss the importance of a company having proper insurance and bonding its employees.

8. **LO 8.4** What is the role of the Sarbanes-Oxley Act and the Public Company Accounting Oversight Board?

9. **LO 8.4** Why is it important to have a petty cash fund available in a company?

10. **LO 8.3 LO 8.4** Is it required to have only one petty cashier or should the company appoint more than one person to administer the fund? Why?

11. **LO 8.5** Technology can be used to support a strong internal control system. Discuss how technology has improved the point-of-sale transactions.

12. **L0 8.6** What is the purpose of the bank reconciliation?

13. **L0 8.6** What should be done if differences are found between the bank statement and the book account?



Exercise Set A

EA1. L0 8.4 Record the following transactions:

- A. Started a petty cash fund in the amount of \$300.
- B. Replenished petty cash fund using the following expenses: Auto \$18, Office Expenses \$35, Postage Expense \$56, Miscellaneous Expenses \$67. Cash on hand is \$124.
- C. Increased petty cash by \$50.

EA2. L0 8.4 Record the following transactions:

- A. Started a petty cash fund in the amount of \$200.
- B. Replenished petty cash fund using the following expenses: Auto \$15, Office Expenses \$20, Postage Expense \$81, Miscellaneous Expenses \$66. Cash on hand is \$10.
- C. Increased petty cash by \$75.

EA3. L0 8.4 Record the following transactions:

- A. Started a petty cash fund in the amount of \$300.
- B. Replenished petty cash fund using the following expenses: Auto \$69, Office Expenses \$77, Postage Expense \$56, Miscellaneous Expenses \$98. Cash on hand is \$6.
- C. Increased petty cash by \$60.

EA4. L0 8.4 Record the following transactions:

- A. Started a petty cash fund in the amount of \$500.
- B. Replenished petty cash fund using the following expenses: Auto \$24, Office Expenses \$43, Postage Expense \$19, Miscellaneous Expenses \$25. Cash on hand is \$389.
- C. The company has decided to reduce the petty cash fund to \$300.

EA5. L0 8.6 The bank reconciliation shows the following adjustments:

- Deposits in transit: \$1,234
- Outstanding checks: \$558
- Bank service charges: \$50
- NSF checks: \$250

Prepare the correcting journal entry.

EA6. L0 8.6 The bank reconciliation shows the following adjustments:

- Deposits in transit: \$852
- Notes receivable collected by bank: \$1,000; interest: \$20
- Outstanding checks: \$569
- Error by bank: \$300
- Bank charges: \$30

Prepare the correcting journal entry.

EA7. [LO 8.6](#) Using the following information, prepare a bank reconciliation.

- Bank balance: \$3,678
- Book balance: \$2,547
- Deposits in transit: \$321
- Outstanding checks: \$108 and \$334
- Bank charges: \$25
- Notes receivable: \$1,000; interest: \$35

EA8. [LO 8.6](#) Prepare the journal entry to reconcile the bank statement in [EA7](#).

EA9. [LO 8.6](#) Using the following information, prepare a bank reconciliation.

- Bank balance: \$4,587
- Book balance: \$5,577
- Deposits in transit: \$1,546
- Outstanding checks: \$956
- Interest income: \$56
- NSF check: \$456

EA10. [LO 8.6](#) Prepare the journal entry to reconcile the bank statement in [EA9](#).

EA11. [LO 8.6](#) Using the following information, prepare a bank reconciliation.

- Bank balance: \$6,988
- Book balance: \$6,626
- Deposits in transit: \$1,600
- Outstanding checks: \$599 and \$1,423
- Bank charges: \$75
- Bank incorrectly charged the account \$75. The bank will correct the error next month.
- Check number 2456 correctly cleared the bank in the amount of \$234 but posted in the accounting records as \$324. This check was expensed to Utilities Expense.

EA12. [LO 8.6](#) Prepare the journal entry to reconcile the bank statement in [EA11](#).



Exercise Set B

EB1. [LO 8.4](#) Record the following transactions:

- Started a petty cash fund in the amount of \$575
- Replenished petty cash fund using the following expenses: Auto \$18, Office Expenses \$35, Postage Expense \$56, Miscellaneous Expenses \$67. Cash on hand is \$399.
- Increased petty cash by \$25.

EB2. [LO 8.4](#) Record the following transactions:

- Started a petty cash fund in the amount of \$260.
- Replenished petty cash fund using the following expenses: Auto \$15, Office Expenses \$20, Postage Expense \$81, Miscellaneous Expenses \$104. Cash on hand is \$37.
- Increased petty cash by \$80.

EB3. [LO 8.4](#) Record the following transactions:

- A. Started a petty cash fund in the amount of \$340.
- B. Replenished petty cash fund using the following expenses: Auto \$69, Office Expenses \$77, Postage Expense \$56, Miscellaneous Expenses \$98. Cash on hand is \$45.
- C. Increased petty cash by \$65.

EB4. [LO 8.4](#) Record the following transactions:

- A. Started a petty cash fund in the amount of \$1,000.
- B. Replenished petty cash fund using the following expenses: Auto \$61, Office Expenses \$23, Postage Expense \$57, Miscellaneous Expenses \$30.
- C. The company has decided to reduce the petty cash fund to \$600.

EB5. [LO 8.6](#) The bank reconciliation shows the following adjustments.

- Deposits in transit: \$526
- Outstanding checks: \$328
- Bank charges: \$55
- NSF checks: \$69

Prepare the correcting journal entry.

EB6. [LO 8.6](#) The bank reconciliation shows the following adjustments.

- Deposits in transit: \$1,698
- Notes receivable collected by bank: \$2,500; interest: \$145
- Outstanding checks: \$987
- Error by bank: \$436
- Bank charges: \$70

Prepare the correcting journal entry.

EB7. [LO 8.6](#) Using the following information, prepare a bank reconciliation.

- Bank balance: \$4,021
- Book balance: \$2,928
- Deposits in transit: \$1,111
- Outstanding checks: \$679
- Bank charges: \$35
- Notes receivable: \$1,325; interest: \$235

EB8. [LO 8.6](#) Prepare the journal entry to reconcile the bank statement in [EB7](#).

EB9. [LO 8.6](#) Using the following information, prepare a bank reconciliation.

- Bank balance: \$7,651
- Book balance: \$10,595
- Deposits in transit: \$2,588
- Outstanding checks: \$489
- Interest income: \$121
- NSF check: \$966

EB10. [LO 8.6](#) Prepare the journal entry to reconcile the bank statement in [EB9](#).

EB11. [LO 8.6](#) Using the following information, prepare a bank reconciliation.

- Bank balance: \$12,565.
- Book balance: \$13,744.
- Deposits in transit: \$2,509.
- Outstanding checks: \$1,777.
- Bank charges: \$125.
- Bank incorrectly charged the account for \$412. The bank will correct the error next month.
- Check number 1879 correctly cleared the bank in the amount of \$562 but posted in the accounting records as \$652. This check was expensed to Utilities Expense.

EB12. [LO 8.6](#) Prepare the journal entry to reconcile the bank statement in [EB11](#).



Problem Set A

PA1. [LO 8.4](#) On September 1, French company has decided to initiate a petty cash fund in the amount of \$800. Prepare journal entries for the following transactions:

- On September 5, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$37, Supplies \$124, Postage Expense \$270, Repairs and Maintenance Expense \$168, Miscellaneous Expense \$149. The cash on hand at this time was \$48.
- On September 14, the petty cash fund needed replenishment and the following are the receipts: Auto Expense \$18, Supplies \$175, Postage Expense \$50, Repairs and Maintenance Expense \$269, Miscellaneous Expense \$59. The cash on hand at this time was \$210.
- On September 23, the petty cash fund needed replenishment and the following are the receipts: Auto Expense \$251, Supplies \$88, Postage Expense \$63, Repairs and Maintenance Expense \$182, Miscellaneous Expense \$203. The cash on hand at this time was \$20.
- On September 29, the company determined that the petty cash fund needed to be increased to \$1,000.
- On September 30, the petty cash fund needed replenishment as it was month end. The following are the receipts: Auto Expense \$18, Supplies \$15, Postage Expense \$57, Repairs and Maintenance Expense \$49, Miscellaneous Expense \$29. The cash on hand at this time was \$837.

PA2. [LO 8.4](#) On May 2 Kellie Company has decided to initiate a petty cash fund in the amount of \$1,200.

Prepare journal entries for the following transactions:

- On July 5, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$125, Supplies \$368, Postage Expense \$325, Repairs and Maintenance Expense \$99, Miscellaneous Expense \$259. The cash on hand at this time was \$38.
- On June 14, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$425, Supplies \$95, Postage Expense \$240, Repairs and Maintenance Expense \$299, Miscellaneous Expense \$77. The cash on hand at this time was \$80.
- On June 23, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$251, Supplies \$188, Postage Expense \$263, Repairs and Maintenance Expense \$182, Miscellaneous Expense \$203. The cash on hand at this time was \$93.
- On June 29, the company determined that the petty cash fund needed to be decreased to \$1,000.
- On June 30, the petty cash fund needed replenishment as it was month-end. The following are the receipts: Auto Expense \$114, Supplies \$75, Postage Expense \$50, Repairs and Maintenance Expense \$121, Miscellaneous Expense \$39. The cash on hand at this time was \$603.

PA3. [LO 8.4](#) Domingo Company started its business on January 1, 2019. The following transactions occurred during the month of May. Prepare the journal entries in the journal on Page 1.

- A. The owners invested \$10,000 from their personal account to the business account.
- B. Paid rent \$500 with check #101.
- C. Initiated a petty cash fund \$500 with check #102.
- D. Received \$1,000 cash for services rendered.
- E. Purchased office supplies for \$158 with check #103.
- F. Purchased computer equipment \$2,500, paid \$1,350 with check #104, and will pay the remainder in 30 days.
- G. Received \$800 cash for services rendered.
- H. Paid wages \$600, check #105.
- I. Petty cash reimbursement: office supplies \$256, maintenance expense \$108, postage expense \$77, miscellaneous expense \$55. Cash on hand \$11. Check #106.
- J. Increased petty cash by \$30, check #107.

PA4. [LO 8.4](#) Prepare a trial balance using the journal entries in [PA3](#).

PA5. [LO 8.4](#) Inner Resources Company started its business on April 1, 2019. The following transactions occurred during the month of April. Prepare the journal entries in the journal on Page 1.

- A. The owners invested \$8,500 from their personal account to the business account.
- B. Paid rent \$650 with check #101.
- C. Initiated a petty cash fund \$550 check #102.
- D. Received \$750 cash for services rendered.
- E. Purchased office supplies for \$180 with check #103.
- F. Purchased computer equipment \$8,500, paid \$1,600 with check #104 and will pay the remainder in 30 days.
- G. Received \$1,200 cash for services rendered.
- H. Paid wages \$560, check #105.
- I. Petty cash reimbursement office supplies \$200, Maintenance Expense \$140, Miscellaneous Expense \$65. Cash on Hand \$93. Check #106.
- J. Increased Petty Cash by \$100, check #107.

PA6. [LO 8.4](#) Prepare a trial balance using the journal entries in [PA5](#).

PA7. **LO 8.6** Identify where each of the following transactions would be found on the bank reconciliation.

Transaction	Increase to Bank Side	Decrease to Bank Side	Increase to Book Side	Decrease to Book Side
Outstanding check				
Interest income				
NFS check				
Wire transfer by customer				
Deposit in transit				
Bank charges				

Table 8.1

PA8. **LO 8.6** Which of the following transactions will require a journal entry? Indicate if it will be a debit or a credit and to what account the entry will be recorded.

Transaction	No Journal Entry Needed	Journal Entry Needed	Debit	Credit
Outstanding check				
Interest income				
NFS check				
Wire transfer by customer				
Deposit in transit				
Bank charges				

Table 8.2

PA9. [LO 8.6](#) Domingo Company received the following bank statement. Using [PA9](#), prepare the bank reconciliation.

Bank Statement				
Beginning Balance				\$0
	Deposits	Checks		
A.	\$10,000	101	\$ 500	
D.	1,000	102	500	
		103	158	
		106	489	
		Bank service charges	100	
Total	<u>11,000</u>		<u>1,747</u>	
Ending Balance				\$9,253

PA10. [LO 8.6](#) Prepare the journal entry required to reconcile the book balance to the bank balance.

PA11. [LO 8.6](#) Inner Resources Company received the following bank statement. Using the information from [PA11](#) and [PA12](#), prepare the bank reconciliation.

Bank Statement				
Beginning Balance				\$0
	Deposits	Checks		
A.	\$8,500	101	\$ 650	
D.	1,200	102	550	
		103	180	
		106	457	
		Bank service charges	100	
Total	<u>9,700</u>		<u>1,937</u>	
Ending Balance				\$7,763

PA12. [LO 8.6](#) Prepare the journal entry required to reconcile the book balance to the bank balance.



Problem Set B

PB1. **LO 8.4** On June 1 French company has decided to initiate a petty cash fund in the amount of \$800.

Prepare journal entries for the following transactions:

- A. On June 5, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$37, Supplies \$124, Postage Expense \$270, Repairs and Maintenance Expense \$168, Miscellaneous Expense \$149. The cash on hand at this time was \$48.
- B. On June 14, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$18, Supplies \$175, Postage Expense \$50, Repairs and Maintenance Expense \$269, Miscellaneous Expense \$59. The cash on hand at this time was \$220.
- C. On June 23, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$251, Supplies \$88, Postage Expense \$63, Repairs and Maintenance Expense \$182, Miscellaneous Expense \$203. The cash on hand at this time was \$20.
- D. On June 29, the company determined that the petty cash fund needed to be increased to \$1,000.
- E. On June 30, the petty cash fund needed replenishment, as it was month end. The following are the receipts: Auto Expense \$18, Supplies \$175, Postage Expense \$50, Repairs and Maintenance Expense \$269, Miscellaneous Expense \$59. The cash on hand at this time was \$437.

PB2. **LO 8.4** On July 2 Kellie Company has decided to initiate a petty cash fund in the amount of \$1,200. Prepare journal entries for the following transactions:

- A. On July 5, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$125, Supplies \$368, Postage Expense \$325, Repairs and Maintenance Expense \$99, Miscellaneous Expense \$259. The cash on hand at this time was \$38.
- B. On June 14, the petty cash fund needed replenishment, and the following are the receipts: Auto Expense \$425, Supplies \$95, Postage Expense \$240, Repairs and Maintenance Expense \$299, Miscellaneous Expense \$77. The cash on hand at this time was \$110.
- C. On June 23, the petty cash fund needed replenishment and the following are the receipts: Auto Expense \$251, Supplies \$188, Postage Expense \$263, Repairs and Maintenance Expense \$182, Miscellaneous Expense \$203. The cash on hand at this time was \$93.
- D. On June 29, the company determined that the petty cash fund needed to be decreased to \$1,000.
- E. On June 30, the petty cash fund needed replenishment, as it was month end. The following are the receipts: Auto Expense \$14, Supplies \$75, Postage Expense \$150, Repairs and Maintenance Expense \$121, Miscellaneous Expense \$39. The cash on hand at this time was \$603.

PB3. [LO 8.4](#) Hajun Company started its business on May 1, 2019. The following transactions occurred during the month of May. Prepare the journal entries in the journal on Page 1.

- A. The owners invested \$5,000 from their personal account to the business account.
- B. Paid rent \$400 with check #101.
- C. Initiated a petty cash fund \$200 check #102.
- D. Received \$400 cash for services rendered
- E. Purchased office supplies for \$90 with check #103.
- F. Purchased computer equipment \$1,000 , paid \$350 with check #104 and will pay the remainder in 30 days.
- G. Received \$500 cash for services rendered.
- H. Paid wages \$250, check #105.
- I. Petty cash reimbursement office supplies \$25, Maintenance Expense \$125, Miscellaneous Expense \$35. Cash on hand \$18. Check #106.
- J. Increased Petty Cash by \$50, check #107.

PB4. [LO 8.4](#) Prepare a trial balance using the journal entries in [PB3](#).

PB5. [LO 8.4](#) Lavender Company started its business on April 1, 2019. The following are the transactions that happened during the month of April. Prepare the journal entries in the journal on Page 1.

- A. The owners invested \$7,500 from their personal account to the business account.
- B. Paid rent \$600 with check #101.
- C. Initiated a petty cash fund \$250 check #102.
- D. Received \$350 cash for services rendered.
- E. Purchased office supplies for \$125 with check #103.
- F. Purchased computer equipment \$1,500, paid \$500 with check #104, and will pay the remainder in 30 days.
- G. Received \$750 cash for services rendered.
- H. Paid wages \$375, check #105.
- I. Petty cash reimbursement Office Supplies \$50, Maintenance Expense \$80, Miscellaneous Expense \$60. Cash on hand \$8. Check #106.
- J. Increased Petty Cash by \$70, check #107.

PB6. [LO 8.4](#) Prepare a trial balance for Lavender Company using the journal entries in [PB5](#).

PB7. **LO 8.6** Identify where each of the following transactions would be found on the bank reconciliation.

Transaction	Increase to Bank Side	Decrease to Bank Side	Increase to Book Side	Decrease to Book Side
Overcharge by Bank (Error)				
Interest Income				
Automatic Loan Payment				
Wire Transfer by Customer				
Deposit in Transit				
Outstanding Check				

Table 8.3

PB8. **LO 8.6** Which of the following transactions will require a journal entry? Indicate if it will be a debit or a credit, and to which account the entry will be recorded.

Transaction	No Journal Entry	Journal Entry Needed	Debit	Credit
Overcharge by Bank (Error)				
Interest Income				
Automatic Loan Payment				
Wire Transfer by Customer				
Deposit in Transit				
Outstanding Check				

Table 8.4

PB9. **L0 8.6** Hajun Company received the following bank statement. Using the information from **PB9** and **PB10**, prepare the bank reconciliation.

Bank Statement				
Beginning Balance				\$0
	Deposits	Checks		
A.	\$5,000	101	\$400	
D.	400	102	200	
		103	90	
		106	182	
		Bank service charges	75	
Total	<u>5,400</u>		<u>947</u>	
Ending Balance				\$4,453

PB10. **L0 8.6** Prepare the journal entry required to reconcile the book balance to the bank balance.

PB11. **L0 8.6** Leann Company received the following bank statement. Using the information from **PB11** and **PB12**, prepare the bank reconciliation.

Bank Statement				
Beginning Balance				\$0
	Deposits	Checks		
A.	\$7,500	101	\$ 600	
D.	350	102	250	
		103	125	
		106	242	
		Bank service charges	90	
Total	<u>7,850</u>		<u>1,307</u>	
Ending Balance				\$6,543

PB12. **L0 8.6** Prepare the journal entry required to reconcile the book balance to the bank balance.



Thought Provokers

TP1. **L0 8.2** A retail store normally has three people working in the evening. All of the employees have access to the same cash register. For the last month, the cash count at the end of the evening has been recording losses. The losses range from \$5 to \$300. So the manager has decided to be the only one to count the cash at the end of the evening to keep the losses from happening. Discuss if the change made by the manager is a good one. Will the losses keep happening, or will this change prevent losses due to theft? What other recommendations and changes should be considered by this manager?

TP2. **L0 8.2 L0 8.3** Visit a favorite eatery. Describe some of the internal controls that are implemented in the workplace. Discuss the good and effective internal controls and also discuss areas that need to be addressed where the eatery is vulnerable to losses.

TP3. **L0** **8.3** A manufacturing plant was finding a huge increase in the scrapping of raw materials. Its internal controls were reviewed, and the plant appeared to be strong; segregation of duties was in place. As the accountant was reconciling some inventory accounts, she found more than a normal amount of scrap tickets. The tickets were for scrapping the same inventory part, signed by the same person, and the scrap was sold to only one company. The inventory item was still being ordered, and only one supplier was used to purchase the parts. After further investigation by the accountant, the company buying the inventory and the company selling the inventory to the company had different names but shared the same address. Comment on what went wrong. What happened to the internal controls the company had in place?

TP4. **L0** **8.3** The vice president of finance asks the accounts payable (AP) clerk to write a check in the name of the president for \$10,000. He and the president will sign the check (two signatures needed on a check of this size). He further instructs the AP clerk not to disclose this check to her immediate supervisor. What should the AP clerk do? Should she prepare the check? Should she inform her immediate supervisor? Discuss with internal controls in mind.

TP5. **L0** **8.3** Even though technology has improved the internal control structure of a company, a supervisor cannot depend totally on technology. Discuss other internal controls a supervisor needs to implement to ensure a strong structure.

TP6. **L0** **8.6** A bank reconciliation takes time and must balance. An employee was struggling in balancing the bank reconciliation. Her supervisor told her to “plug” (make an unsupported entry for) the difference, record to Miscellaneous Expense, and simply move on. Discuss the internal controls problem with this directive.

TP7. **L0** **8.6** The bank reconciliation revealed that one deposit had cleared the bank two weeks after the date of the deposit. Should this be of concern? Why, or why not?



9

Accounting for Receivables

Figure 9.1 Skateboards Unlimited. Business success is realized with effective receivable management. (credit: modification of “2013 Street Arts Festival” by Eli Christman/Flickr, CC BY 2.0)

Chapter Outline

- L0 9.1** Explain the Revenue Recognition Principle and How It Relates to Current and Future Sales and Purchase Transactions
- L0 9.2** Account for Uncollectible Accounts Using the Balance Sheet and Income Statement Approaches
- L0 9.3** Determine the Efficiency of Receivables Management Using Financial Ratios
- L0 9.4** Discuss the Role of Accounting for Receivables in Earnings Management
- L0 9.5** Apply Revenue Recognition Principles to Long-Term Projects
- L0 9.6** Explain How Notes Receivable and Accounts Receivable Differ
- L0 9.7** Appendix: Comprehensive Example of Bad Debt Estimation



Why It Matters

Marie owns Skateboards Unlimited, a skateboard lifestyle shop offering a variety of skate-specific clothing, equipment, and accessories. Marie prides herself on her ability to accommodate customer needs. One way she accomplishes this goal is by extending to the customer a line of credit, which would create an account receivable for Skateboards Unlimited. Even though she has yet to collect cash from her credit customers, she recognizes the revenue as earned when the sale occurs. This is important, as it allows her to match her sales correctly with sales-associated expenses in the proper period, based on the matching principle and revenue recognition guidelines.

By offering credit terms, Skateboards Unlimited operates in good faith that customers will pay their accounts in full. Sometimes this does not occur, and the bad debt from the receivable has to be written off. Marie

typically estimates this write-off amount, to show potential investors and lenders a consistent financial position. When writing off bad debt, Marie is guided by specific accounting principles that dictate the estimation and bad debt processes. Skateboards Unlimited will need to carefully manage its receivables and bad debt to reach budget projections and grow the business. This chapter explains and demonstrates demonstrate the two major methods of estimating and recording bad debt expenses that Skateboards Unlimited can apply under generally accepted accounting principles (GAAP).

9.1 Explain the Revenue Recognition Principle and How It Relates to Current and Future Sales and Purchase Transactions

You own a small clothing store and offer your customers cash, credit card, or in-house credit payment options. Many of your customers choose to pay with a credit card or charge the purchase to their in-house credit accounts. This means that your store is owed money in the future from either the customer or the credit card company, depending on payment method. Regardless of credit payment method, your company must decide when to recognize revenue. Do you recognize revenue when the sale occurs or when cash payment is received? When do you recognize the expenses associated with the sale? How are these transactions recognized?

Accounting Principles and Assumptions Regulating Revenue Recognition

Revenue and expense recognition timing is critical to transparent financial presentation. **GAAP** governs recognition for publicly traded companies. Even though GAAP is required only for public companies, to display their financial position most accurately, private companies should manage their financial accounting using its rules. Two principles governed by GAAP are the revenue recognition principle and the matching principle. Both the revenue recognition principle and the matching principle give specific direction on revenue and expense reporting.

The **revenue recognition principle**, which states that companies must recognize revenue in the period in which it is earned, instructs companies to recognize revenue when a four-step process is completed. This may not necessarily be when cash is collected. Revenue can be recognized when all of the following criteria have been met:

- There is credible evidence that an arrangement exists.
- Goods have been delivered or services have been performed.
- The selling price or fee to the buyer is fixed or can be reasonably determined.
- There is reasonable assurance that the amount owed to the seller is collectible.

The **accrual accounting** method aligns with this principle, and it records transactions related to revenue earnings as they occur, not when cash is collected. The revenue recognition principle may be updated periodically to reflect more current rules for reporting.

For example, a landscaping company signs a \$600 contract with a customer to provide landscaping services for the next six months (assume the landscaping workload is distributed evenly throughout the six months). The customer sets up an in-house credit line with the company, to be paid in full at the end of the six months. The landscaping company records revenue earnings each month and provides service as planned. To align with the revenue recognition principle, the landscaping company will record one month of revenue (\$100) each month as earned; they provided service for that month, even though the customer has not yet paid cash for the service.

Let's say that the landscaping company also sells gardening equipment. It sells a package of gardening equipment to a customer who pays on credit. The landscaping company will recognize revenue immediately, given that they provided the customer with the gardening equipment (product), even though the customer has not yet paid cash for the product.

Accrual accounting also incorporates the **matching principle** (otherwise known as the expense recognition principle), which instructs companies to record expenses related to revenue generation in the period in which they are incurred. The principle also requires that any expense not directly related to revenues be reported in an appropriate manner. For example, assume that a company paid \$6,000 in annual real estate taxes. The principle has determined that costs cannot effectively be allocated based on an individual month's sales; instead, it treats the expense as a period cost. In this case, it is going to record 1/12 of the annual expense as a monthly period cost. Overall, the "matching" of expenses to revenues projects a more accurate representation of company financials. When this matching is not possible, then the expenses will be treated as period costs.

For example, when the landscaping company sells the gardening equipment, there are costs associated with that sale, such as the costs of materials purchased or shipping charges. The cost is reported in the same period as revenue associated with the sale. There cannot be a mismatch in reporting expenses and revenues; otherwise, financial statements are presented unfairly to stakeholders. Misreporting has a significant impact on company stakeholders. If the company delayed reporting revenues until a future period, net income would be understated in the current period. If expenses were delayed until a future period, net income would be overstated.

Let's turn to the basic elements of accounts receivable, as well as the corresponding transaction journal entries.

ETHICAL CONSIDERATIONS

Ethics in Revenue Recognition

Because each industry typically has a different method for recognizing income, revenue recognition is one of the most difficult tasks for accountants, as it involves a number of ethical dilemmas related to income reporting. To provide an industry-wide approach, Accounting Standards Update No. 2014-09 and other related updates were implemented to clarify revenue recognition rules. The American Institute of Certified Public Accountants (AICPA) announced that these updates would replace U.S. GAAP's current industry-specific revenue recognition practices with a principle-based approach, potentially affecting both day-to-day business accounting and the execution of business contracts with customers.^[1] The AICPA and the International Federation of Accountants (IFAC) require professional accountants to act with due care and to remain abreast of new accounting rules and methods of accounting for different transactions, including revenue recognition.

The IFAC emphasizes the role of professional accountants working within a business in ensuring the quality of financial reporting: "Management is responsible for the financial information produced by the company. As such, professional accountants in businesses therefore have the task of defending the quality of financial reporting right at the source where the numbers and figures are produced!"^[2] In accordance with proper revenue recognition, accountants do not recognize revenue before it is earned.

CONCEPTS IN PRACTICE

Gift Card Revenue Recognition

Gift cards have become an essential part of revenue generation and growth for many businesses. Although they are practical for consumers and low cost to businesses, navigating revenue recognition guidelines can be difficult. Gift cards with expiration dates require that revenue recognition be delayed until customer use or expiration. However, most gift cards now have no expiration date. So, when do you recognize revenue?

Companies may need to provide an estimation of projected gift card revenue and usage during a period based on past experience or industry standards. There are a few rules governing reporting. If the company determines that a portion of all of the issued gift cards will never be used, they may write this off to income. In some states, if a gift card remains unused, in part or in full, the unused portion of the card is transferred to the state government. It is considered unclaimed property for the customer, meaning that the company cannot keep these funds as revenue because, in this case, they have reverted to the state government.

Short-Term Revenue Recognition Examples

As mentioned, the revenue recognition principle requires that, in some instances, revenue is recognized before receiving a cash payment. In these situations, the customer still owes the company money. This money owed to the company is a type of receivable for the company and a payable for the company's customer.

A **receivable** is an outstanding amount owed from a customer. One specific receivable type is called accounts receivable. **Accounts receivable** is an outstanding customer debt on a credit sale. The company expects to receive payment on accounts receivable within the company's operating period (less than a year). Accounts receivable is considered an asset, and it typically does not include an interest payment from the customer. Some view this account as extending a line of credit to a customer. The customer would then be sent an invoice with credit payment terms. If the company has provided the product or service at the time of credit extension, revenue would also be recognized.

For example, Billie's Watercraft Warehouse (BWW) sells various watercraft vehicles. They extend a credit line to customers purchasing vehicles in bulk. A customer bought 10 Jet Skis on credit at a sales price of \$100,000. The cost of the sale to BWW is \$70,000. The following journal entries occur.

1 American Institute of Certified Public Accountants (AICPA). "Revenue from Contracts with Customers." *Revenue Recognition*. n.d. <https://www.aicpa.org/interestareas/frc/accountingfinancialreporting/revenuerecognition.html>

2 International Federation of Accountants (IFAC). "Roles and Importance of Professional Accountants in Business." n.d. <https://www.ifac.org/news-events/2013-10/roles-and-importance-professional-accountants-business>

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable Sales Revenue <i>To record the sale of 10 jet skis</i>	100,000	100,000
	Cost of Goods Sold Merchandise Inventory <i>To record the cost of sale</i>	70,000	70,000

Accounts Receivable increases (debit) and Sales Revenue increases (credit) for \$100,000. Accounts Receivable recognizes the amount owed from the customer, but not yet paid. Revenue recognition occurs because BWW provided the Jet Skis and completed the earnings process. Cost of Goods Sold increases (debit) and Merchandise Inventory decreases (credit) for \$70,000, the expense associated with the sale. By recording both a sale and its related cost entry, the matching principle requirement is met.

When the customer pays the amount owed, the following journal entry occurs.

JOURNAL			
Date	Account	Debit	Credit
	Cash Accounts Receivable <i>To record payment in full</i>	100,000	100,000

Cash increases (debit) and Accounts Receivable decreases (credit) for the full amount owed. If the customer made only a partial payment, the entry would reflect the amount of the payment. For example, if the customer paid only \$75,000 of the \$100,000 owed, the following entry would occur. The remaining \$25,000 owed would remain outstanding, reflected in Accounts Receivable.

JOURNAL			
Date	Account	Debit	Credit
	Cash Accounts Receivable <i>To record partial payment</i>	75,000	75,000

Another credit transaction that requires recognition is when a customer pays with a credit card (**Visa** and **MasterCard**, for example). This is different from credit extended directly to the customer from the company. In this case, the third-party credit card company accepts the payment responsibility. This reduces the risk of nonpayment, increases opportunities for sales, and expedites payment on accounts receivable. The tradeoff for the company receiving these benefits from the credit card company is that a fee is charged to use this service. The fee can be a flat figure per transaction, or it can be a percentage of the sales price. Using BWW as the example, let's say one of its customers purchased a canoe for \$300, using his or her **Visa** credit card. The cost to BWW for the canoe is \$150. **Visa** charges BWW a service fee equal to 5% of the sales price. At the time of sale, the following journal entries are recorded.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable: Visa	285	
	Credit Card Expense	15	
	Sales Revenue		300
	<i>To record the sale of one canoe, Visa credit fee 5%</i>		
	Cost of Goods Sold	150	
	Merchandise Inventory		150
	<i>To record the cost of sale</i>		

Accounts Receivable: **Visa** increases (debit) for the sale amount (\$300) less the credit card fee (\$15), for a \$285 Accounts Receivable balance due from **Visa**. BWB's Credit Card Expense increases (debit) for the amount of the credit card fee (\$15; $300 \times 5\%$), and Sales Revenue increases (credit) for the original sales amount (\$300). BWB recognizes revenue as earned for this transaction because it provided the canoe and completed the earnings process. Cost of Goods Sold increases (debit) and Merchandise Inventory decreases (credit) for \$150, the expense associated with the sale. As with the previous example, by recording both a sale and cost entry, the matching principle requirement is met. When **Visa** pays the amount owed to BWB, the following entry occurs in BWB's records.

JOURNAL			
Date	Account	Debit	Credit
	Cash	285	
	Accounts Receivable: Visa		285
	<i>To record payment in full, less credit card fee</i>		

Cash increases (debit) and Accounts Receivable: **Visa** decreases (credit) for the full amount owed, less the credit card fee. Once BWB receives the cash payment from **Visa**, it may use those funds in other business activities.

An alternative to the journal entries shown is that the credit card company, in this case **Visa**, gives the merchant immediate credit in its cash account for the \$285 due the merchant, without creating an account receivable. If that policy were in effect for this transaction, the following single journal entry would replace the prior two journal entry transactions. In the immediate cash payment method, an account receivable would not need to be recorded and then collected. The separate journal entry—to record the costs of goods sold and to reduce the canoe inventory that reflects the \$150 cost of the sale—would still be the same.

JOURNAL			
Date	Account	Debit	Credit
	Cash	285	
	Credit Card Expense	15	
	Sales Revenue		300
	<i>To record the sale of one canoe and Visa credit card fee of 5%</i>		

Here's a final credit transaction to consider. A company allows a sales discount on a purchase if a customer charges a purchase but makes the payment within a stated period of time, such as 10 or 15 days from the point of sale. In such a situation, a customer would see credit terms in the following form: 2/10, n/30. This particular example shows that a customer who pays his or her account within 10 days will receive a 2% discount. Otherwise, the customer will have 30 days from the date of the purchase to pay in full, but will not receive a discount. Both sales discounts and purchase discounts were addressed in detail in [Merchandising](#)

[Transactions.](#)**YOUR TURN****Maine Lobster Market**

Maine Lobster Market (MLM) provides fresh seafood products to customers. It allows customers to pay with cash, an in-house credit account, or a credit card. The credit card company charges Maine Lobster Market a 4% fee, based on credit sales using its card. From the following transactions, prepare journal entries for Maine Lobster Market.

- | | |
|---------|---|
| Aug. 5 | Pat paid \$800 cash for lobster. The cost to MLM was \$480. |
| Aug. 10 | Pat purchased 30 pounds of shrimp at a sales price per pound of \$25. The cost to MLM was \$18.50 per pound and is charged to Pat's in-store account. |
| Aug. 19 | Pat purchased \$1,200 of fish with a credit card. The cost to MLM is \$865. |

Solution

JOURNAL			
Date	Account	Debit	Credit
Aug. 5	Cash Sales Revenue <i>To record cash sale</i>	800	800
Aug. 5	Cost of Goods Sold Merchandise Inventory: Lobster <i>To record cost of sale</i>	480	480
Aug. 10	Accounts Receivable Sales Revenue <i>To record credit sale, 30 × \$25</i>	750	750
Aug. 10	Cost of Goods Sold Merchandise Inventory: Shrimp <i>To record cost of sale; 30 × \$18.50</i>	555	555
Aug. 19	Accounts Receivable Credit Card Expense Sales Revenue <i>To record credit card sale, 4% fee, 1200 × 4%</i>	1,152 48	1,200
Aug. 19	Cost of Goods Sold Merchandise Inventory: Fish <i>To record cost of sale</i>	865	865

YOUR TURN

Jamal's Music Supply

Jamal's Music Supply allows customers to pay with cash or a credit card. The credit card company charges Jamal's Music Supply a 3% fee, based on credit sales using its card. From the following transactions, prepare journal entries for Jamal's Music Supply.

May 10	Kerry paid \$1,790 for music supplies with a credit card. The cost to Jamal's Music Supply was \$1,100.
May 19	Kerry purchased 80 drumstick pairs at a sales price per pair of \$14 with a credit card. The cost to Jamal's Music Supply was \$7.30 per pair.
May 28	Kerry purchased \$345 of music supplies with cash. The cost to Jamal's Music Supply was \$122.

Solution

JOURNAL			
Date	Account	Debit	Credit
May 10	Accounts Receivable Credit Card Expense Sales Revenue <i>To record credit card sale, 3% fee, $1790 \times 3\%$</i>	1,736.30 53.70	1,790
May 10	Cost of Goods Sold Merchandise Inventory <i>To record cost of sale</i>	1,100	1,100
May 19	Accounts Receivable Credit Card Expense Sales Revenue <i>To record credit card sale, 3% fee, $(80 \times \\$14) \times 3\%$</i>	1,086.40 33.60	1,120
May 19	Cost of Goods Sold Merchandise Inventory <i>To record cost of sale; $80 \times \\$7.30$</i>	584	584
May 28	Cash Sales Revenue <i>To record cash sale</i>	345	345
May 28	Cost of Goods Sold Merchandise Inventory <i>To record cost of sale</i>	122	122

9.2 Account for Uncollectible Accounts Using the Balance Sheet and Income Statement Approaches

You lend a friend \$500 with the agreement that you will be repaid in two months. At the end of two months, your friend has not repaid the money. You continue to request the money each month, but the friend has yet to repay the debt. How does this affect your finances?

Think of this on a larger scale. A bank lends money to a couple purchasing a home (mortgage). The understanding is that the couple will make payments each month toward the principal borrowed, plus interest. As time passes, the loan goes unpaid. What happens when a loan that was supposed to be paid is not paid? How does this affect the financial statements for the bank? The bank may need to consider ways to recognize this bad debt.

Fundamentals of Bad Debt Expenses and Allowances for Doubtful Accounts

Bad debts are uncollectible amounts from customer accounts. Bad debt negatively affects accounts receivable (see [Figure 9.2](#)). When future collection of receivables cannot be reasonably assumed, recognizing this potential nonpayment is required. There are two methods a company may use to recognize bad debt: the direct write-off method and the allowance method.

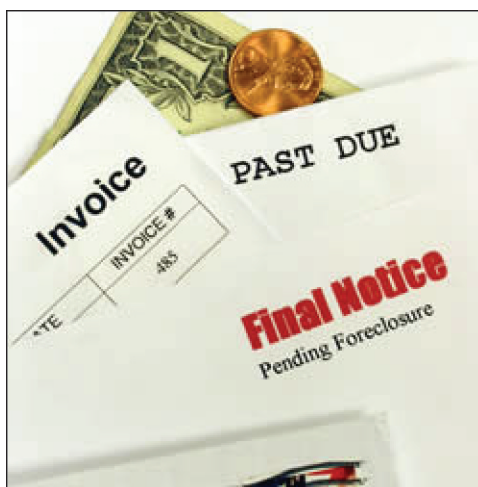


Figure 9.2 Bad Debt Expenses. Uncollectible customer accounts produce bad debt. (credit: modification of "Past Due Bills" by "Maggiebug 21"/Wikimedia Commons, CC0)

The **direct write-off method** delays recognition of bad debt until the specific customer accounts receivable is identified. Once this account is identified as uncollectible, the company will record a reduction to the customer's accounts receivable and an increase to bad debt expense for the exact amount uncollectible.

Under generally accepted accounting principles (GAAP), the direct write-off method is not an acceptable method of recording bad debts, because it violates the matching principle. For example, assume that a credit transaction occurs in September 2018 and is determined to be uncollectible in February 2019. The direct write-off method would record the bad debt expense in 2019, while the matching principle requires that it be associated with a 2018 transaction, which will better reflect the relationship between revenues and the accompanying expenses. This matching issue is the reason accountants will typically use one of the two accrual-based accounting methods introduced to account for bad debt expenses.

It is important to consider other issues in the treatment of bad debts. For example, when companies account for bad debt expenses in their financial statements, they will use an accrual-based method; however, they are required to use the direct write-off method on their income tax returns. This variance in treatment addresses taxpayers' potential to manipulate when a bad debt is recognized. Because of this potential manipulation, the Internal Revenue Service (IRS) requires that the direct write-off method must be used when the debt is determined to be uncollectible, while GAAP still requires that an accrual-based method be used for financial

accounting statements.

For the taxpayer, this means that if a company sells an item on credit in October 2018 and determines that it is uncollectible in June 2019, it must show the effects of the bad debt when it files its 2019 tax return. This application probably violates the matching principle, but if the IRS did not have this policy, there would typically be a significant amount of manipulation on company tax returns. For example, if the company wanted the deduction for the write-off in 2018, it might claim that it was actually uncollectible in 2018, instead of in 2019.

The final point relates to companies with very little exposure to the possibility of bad debts, typically, entities that rarely offer credit to its customers. Assuming that credit is not a significant component of its sales, these sellers can also use the direct write-off method. The companies that qualify for this exemption, however, are typically small and not major participants in the credit market. Thus, virtually all of the remaining bad debt expense material discussed here will be based on an allowance method that uses accrual accounting, the matching principle, and the revenue recognition rules under GAAP.

For example, a customer takes out a \$15,000 car loan on August 1, 2018 and is expected to pay the amount in full before December 1, 2018. For the sake of this example, assume that there was no interest charged to the buyer because of the short-term nature or life of the loan. When the account defaults for nonpayment on December 1, the company would record the following journal entry to recognize bad debt.

JOURNAL			
Date	Account	Debit	Credit
Dec. 1	Bad Debt Expense Accounts Receivable <i>To record bad debts</i>	15,000	15,000

Bad Debt Expense increases (debit), and Accounts Receivable decreases (credit) for \$15,000. If, in the future, any part of the debt is recovered, a reversal of the previously written-off bad debt, and the collection recognition is required. Let's say this customer unexpectedly pays in full on May 1, 2019, the company would record the following journal entries (note that the company's fiscal year ends on June 30)

JOURNAL			
Date	Account	Debit	Credit
May 1, 2019	Accounts Receivable Bad Debt Expense <i>To reverse previous bad debt write-off</i>	15,000	15,000
May 1, 2019	Cash Accounts Receivable <i>To record payment on account</i>	15,000	15,000

The first entry reverses the bad debt write-off by increasing Accounts Receivable (debit) and decreasing Bad Debt Expense (credit) for the amount recovered. The second entry records the payment in full with Cash increasing (debit) and Accounts Receivable decreasing (credit) for the amount received of \$15,000.

As you've learned, the delayed recognition of bad debt violates GAAP, specifically the matching principle. Therefore, the direct write-off method is not used for publicly traded company reporting; the allowance method is used instead.

The allowance method is the more widely used method because it satisfies the matching principle. The

allowance method estimates bad debt during a period, based on certain computational approaches. The calculation matches bad debt with related sales during the period. The estimation is made from past experience and industry standards. When the estimation is recorded at the end of a period, the following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debt</i>	\$\$\$	\$\$\$

The journal entry for the Bad Debt Expense increases (debit) the expense's balance, and the Allowance for Doubtful Accounts increases (credit) the balance in the Allowance. The **allowance for doubtful accounts** is a contra asset account and is subtracted from Accounts Receivable to determine the **Net Realizable Value** of the Accounts Receivable account on the balance sheet. A **contra account** has an opposite normal balance to its paired account, thereby reducing or increasing the balance in the paired account at the end of a period; the adjustment can be an addition or a subtraction from a controlling account. In the case of the allowance for doubtful accounts, it is a contra account that is used to reduce the Controlling account, Accounts Receivable.

At the end of an accounting period, the Allowance for Doubtful Accounts reduces the Accounts Receivable to produce Net Accounts Receivable. Note that allowance for doubtful accounts reduces the overall accounts receivable account, not a specific accounts receivable assigned to a customer. Because it is an estimation, it means the exact account that is (or will become) uncollectible is not yet known.

To demonstrate the treatment of the allowance for doubtful accounts on the balance sheet, assume that a company has reported an Accounts Receivable balance of \$90,000 and a Balance in the Allowance of Doubtful Accounts of \$4,800. The following table reflects how the relationship would be reflected in the current (short-term) section of the company's Balance Sheet.

Accounts Receivable	\$90,000	
– Allowance for Doubtful Accounts	(\$4,800)	\$85,200

There is one more point about the use of the contra account, Allowance for Doubtful Accounts. In this example, the \$85,200 total is the net realizable value, or the amount of accounts anticipated to be collected. However, the company is owed \$90,000 and will still try to collect the entire \$90,000 and not just the \$85,200.

Under the balance sheet method of calculating bad debt expenses, if there is already a balance in Allowance for Doubtful Accounts from a previous period and accounts written off in the current year, this must be considered before the adjusting entry is made. For example, if a company already had a credit balance from the prior period of \$1,000, plus any accounts that have been written off this year, and a current period estimated balance of \$2,500, the company would need to subtract the prior period's credit balance from the current period's estimated credit balance in order to calculate the amount to be added to the Allowance for Doubtful Accounts.

Current period	= \$2,500 credit
Prior period	= <u>\$1,000 credit</u>
Allowance for Doubtful Accounts	= \$1,500 credit

Therefore, the adjusting journal entry would be as follows.

JOURNAL			
Date	Account	Debit	Credit
	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debt</i>	1,500	1,500

If a company already had a debit balance from the prior period of \$1,000, and a current period estimated balance of \$2,500, the company would need to add the prior period's debit balance to the current period's estimated credit balance.

Current period	= \$2,500 credit
Prior period	= \$1,000 debit
Allowance for Doubtful Accounts	= \$3,500 credit

Therefore, the adjusting journal entry would be as follows.

JOURNAL			
Date	Account	Debit	Credit
	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debt</i>	3,500	3,500

When a specific customer has been identified as an uncollectible account, the following journal entry would occur.

JOURNAL			
Date	Account	Debit	Credit
	Allowance for Doubtful Accounts Accounts Receivable: Customer <i>To record bad debt for specific customer</i>	\$\$\$	\$\$\$

Allowance for Doubtful Accounts decreases (debit) and Accounts Receivable for the specific customer also decreases (credit). Allowance for doubtful accounts decreases because the bad debt amount is no longer unclear. Accounts receivable decreases because there is an assumption that no debt will be collected on the identified customer's account.

Let's say that the customer unexpectedly pays on the account in the future. The following journal entries would occur.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable: Customer Allowance for Doubtful Accounts <i>To reinstate previously written-off bad debt</i>	\$\$\$	\$\$\$
	Cash Accounts Receivable: Customer <i>To record bad debt for specific customer</i>	\$\$\$	\$\$\$

The first entry reverses the previous entry where bad debt was written off. This reinstatement requires Accounts Receivable: Customer to increase (debit), and Allowance for Doubtful Accounts to increase (credit). The second entry records the payment on the account. Cash increases (debit) and Accounts Receivable: Customer decreases (credit) for the amount received.

To compute the most accurate estimation possible, a company may use one of three methods for bad debt expense recognition: the income statement method, balance sheet method, or balance sheet aging of receivables method.

THINK IT THROUGH

Bad Debt Estimation

As the accountant for a large publicly traded food company, you are considering whether or not you need to change your bad debt estimation method. You currently use the income statement method to estimate bad debt at 4.5% of credit sales. You are considering switching to the balance sheet aging of receivables method. This would split accounts receivable into three past-due categories and assign a percentage to each group.

While you know that the balance sheet aging of receivables method is more accurate, it does require more company resources (e.g., time and money) that are currently applied elsewhere in the business. Using the income statement method is acceptable under generally accepted accounting principles (GAAP), but should you switch to the more accurate method even if your resources are constrained? Do you have a responsibility to the public to change methods if you know one is a better estimation?

Income Statement Method for Calculating Bad Debt Expenses

The **income statement method** (also known as the percentage of sales method) estimates bad debt expenses based on the assumption that at the end of the period, a certain percentage of sales during the period will not be collected. The estimation is typically based on credit sales only, not total sales (which include cash sales). In this example, assume that any credit card sales that are uncollectible are the responsibility of the credit card company. It may be obvious intuitively, but, by definition, a cash sale cannot become a bad debt, assuming that the cash payment did not entail counterfeit currency. The income statement method is a simple method for calculating bad debt, but it may be more imprecise than other measures because it does not consider how long a debt has been outstanding and the role that plays in debt recovery.

To illustrate, let's continue to use Billie's Watercraft Warehouse (BWW) as the example. Billie's end-of-year credit sales totaled \$458,230. BWW estimates that 5% of its overall credit sales will result in bad debt. The following adjusting journal entry for bad debt occurs.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, income statement method</i>	22,911.50	22,911.50

Bad Debt Expense increases (debit), and Allowance for Doubtful Accounts increases (credit) for \$22,911.50 ($\$458,230 \times 5\%$). This means that BWB believes \$22,911.50 will be uncollectible debt. Let's say that on April 8, it was determined that Customer Robert Craft's account was uncollectible in the amount of \$5,000. The following entry occurs.

JOURNAL			
Date	Account	Debit	Credit
Apr. 8	Allowance for Doubtful Accounts Accounts Receivable: Craft <i>To record known bad debt</i>	5,000	5,000

In this case, Allowance for Doubtful Accounts decreases (debit) and Accounts Receivable: Craft decreases (credit) for the known uncollectible amount of \$5,000. On June 5, Craft unexpectedly makes a partial payment on his account in the amount of \$3,000. The following journal entries show the reinstatement of bad debt and the subsequent payment.

JOURNAL			
Date	Account	Debit	Credit
Jun. 5	Accounts Receivable: Craft Allowance for Doubtful Accounts <i>To reinstate previously written-off bad debt</i>	3,000	3,000
Jun. 5	Cash Accounts Receivable: Craft <i>To record bad debt for specific customer</i>	3,000	3,000

The outstanding balance of \$2,000 that Craft did not repay will remain as bad debt.

YOUR TURN

Heating and Air Company

You run a successful heating and air conditioning company. Your net credit sales, accounts receivable, and allowance for doubtful accounts figures for year-end 2018, follow.

Net credit sales	\$831,400
Accounts receivable	222,850
Allowance for doubtful accounts	0

- Compute bad debt estimation using the income statement method, where the percentage uncollectible is 5%.
- Prepare the journal entry for the income statement method of bad debt estimation.
- Compute bad debt estimation using the balance sheet method of percentage of receivables, where the percentage uncollectible is 9%.
- Prepare the journal entry for the balance sheet method bad debt estimation.

Solution

- \$41,570; $\$831,400 \times 5\%$

B.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, income statement method</i>	41,570	41,570

C. \$20,056.50; $\$222,850 \times 9\%$

D.

Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, balance sheet method</i>	20,056.50	20,056.50

Balance Sheet Method for Calculating Bad Debt Expenses

The **balance sheet method** (also known as the percentage of accounts receivable method) estimates bad debt expenses based on the balance in accounts receivable. The method looks at the balance of accounts receivable at the end of the period and assumes that a certain amount will not be collected. Accounts receivable is reported on the balance sheet; thus, it is called the balance sheet method. The balance sheet method is another simple method for calculating bad debt, but it too does not consider how long a debt has been outstanding and the role that plays in debt recovery. There is a variation on the balance sheet method, however, called the aging method that does consider how long accounts receivable have been owed, and it assigns a greater potential for default to those debts that have been owed for the longest period of time.

Continuing our examination of the balance sheet method, assume that BWV's end-of-year accounts receivable balance totaled \$324,850. This entry assumes a zero balance in Allowance for Doubtful Accounts from the prior period. BWV estimates 15% of its overall accounts receivable will result in bad debt. The following adjusting journal entry for bad debt occurs.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, balance sheet method</i>	48,727.50	48,727.50

Bad Debt Expense increases (debit), and Allowance for Doubtful Accounts increases (credit) for \$48,727.50 ($\$324,850 \times 15\%$). This means that BWV believes \$48,727.50 will be uncollectible debt. Let's consider that BWV had a \$23,000 credit balance from the previous period. The adjusting journal entry would recognize the following.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, balance sheet method</i>	25,727.50	25,727.50

This is different from the last journal entry, where bad debt was estimated at \$48,727.50. That journal entry assumed a zero balance in Allowance for Doubtful Accounts from the prior period. This journal entry takes into account a credit balance of \$23,000 and subtracts the prior period's balance from the estimated balance in the current period of \$48,727.50.

Current period	= \$48,727.50 credit
Prior period	= \$23,000.00 credit
Allowance for Doubtful Accounts	= \$25,727.50 credit

Balance Sheet Aging of Receivables Method for Calculating Bad Debt Expenses

The **balance sheet aging of receivables method** estimates bad debt expenses based on the balance in accounts receivable, but it also considers the uncollectible time period for each account. The longer the time passes with a receivable unpaid, the lower the probability that it will get collected. An account that is 90 days overdue is more likely to be unpaid than an account that is 30 days past due.

With this method, accounts receivable is organized into categories by length of time outstanding, and an uncollectible percentage is assigned to each category. The length of uncollectible time increases the percentage assigned. For example, a category might consist of accounts receivable that is 0–30 days past due and is assigned an uncollectible percentage of 6%. Another category might be 31–60 days past due and is assigned an uncollectible percentage of 15%. All categories of estimated uncollectible amounts are summed to get a total estimated uncollectible balance. That total is reported in Bad Debt Expense and Allowance for Doubtful Accounts, if there is no carryover balance from a prior period. If there is a carryover balance, that must be considered before recording Bad Debt Expense. The balance sheet aging of receivables method is more complicated than the other two methods, but it tends to produce more accurate results. This is because it considers the amount of time that accounts receivable has been owed, and it assumes that the longer the time owed, the greater the possibility that individual accounts receivable will prove to be uncollectible.

Looking at BWW, it has an accounts receivable balance of \$324,850 at the end of the year. The company splits its past-due accounts into three categories: 0–30 days past due, 31–90 days past due, and over 90 days past due. The uncollectible percentages and the accounts receivable breakdown are shown here.

Past-Due Category	Accounts Receivable Total	Uncollectible Percentage	Total
0–30 days	\$145,740	10%	\$14,574
31–90 days	102,100	20%	20,420
Over 90 days	77,010	30%	23,103
Total Estimated Uncollectible:			\$58,097

For each of the individual categories, the accountant multiplies the uncollectible percentage by the accounts receivable total for that category to get the total balance of estimated accounts that will prove to be

uncollectible for that category. Then all of the category estimates are added together to get one total estimated uncollectible balance for the period. The entry for bad debt would be as follows, if there was no carryover balance from the prior period.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, balance sheet aging method</i>	58,097	58,097

Bad Debt Expense increases (debit) as does Allowance for Doubtful Accounts (credit) for \$58,097. BWW believes that \$58,097 will be uncollectible debt.

Let's consider a situation where BWW had a \$20,000 debit balance from the previous period. The adjusting journal entry would recognize the following.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, balance sheet aging method</i>	78,097	78,097

This is different from the last journal entry, where bad debt was estimated at \$58,097. That journal entry assumed a zero balance in Allowance for Doubtful Accounts from the prior period. This journal entry takes into account a debit balance of \$20,000 and adds the prior period's balance to the estimated balance of \$58,097 in the current period.

Current period	= \$58,097 credit
Prior period	= <u>\$20,000 debit</u>
Allowance for Doubtful Accounts	= \$78,097 credit

You may notice that all three methods use the same accounts for the adjusting entry; only the method changes the financial outcome. Also note that it is a requirement that the estimation method be disclosed in the notes of financial statements so stakeholders can make informed decisions.

CONCEPTS IN PRACTICE

Generally Accepted Accounting Principles

As of January 1, 2018, GAAP requires a change in how health-care entities record bad debt expense. Before this change, these entities would record revenues for billed services, even if they did not expect to collect any payment from the patient. This uncollectible amount would then be reported in Bad Debt Expense. Under the new guidance, the bad debt amount may only be recorded if there is an unexpected circumstance that prevented the patient from paying the bill, and it may only be calculated from the amount that the providing entity anticipated collecting.

For example, a patient receives medical services at a local hospital that cost \$1,000. The hospital knows in advance that the patient will pay only \$100 of the amount owed. The previous GAAP rules would allow the company to write off \$900 to bad debt. Under the current rule, the company may only consider revenue to be the expected amount of \$100. For example, if the patient ran into an unexpected job loss and is able to pay only \$20 of the \$100 expected, the hospital would record the \$20 to revenue and the \$80 (\$100 – \$20) as a write-off to bad debt. This is a significant change in revenue reporting and bad debt expense. Health-care entities will more than likely see a decrease in bad debt expense and revenues as a result of this change.^[3]

9.3 Determine the Efficiency of Receivables Management Using Financial Ratios

You received an unexpected tax refund this year and want to invest the money in a profitable and growing company. After conducting research, you determine that it is important for a company to collect on outstanding debt quickly, while showing a willingness to offer customers credit options to increase sales opportunities, among other things. You are new to investing, so where do you begin?

Stakeholders, such as investors, lenders, and management, look to financial statement data to make informed decisions about a company's financial position. They will look at each statement—as well as ratio analysis—for trends, industry comparisons, and past performance to help make financing determinations. Because you are reviewing companies for quick debt collection, as well as credit extension to boost sales, you would consider receivables ratios to guide your decision. [Discuss the Role of Accounting for Receivables in Earnings Management](#) will explain and demonstrate two popular ratios—the accounts receivable turnover ratio and the number of days' sales in receivables ratio—used to evaluate a company's receivables experiences.

It is important to remember, however, that for a comprehensive evaluation of a company's true potential as an investment, you need to consider other types of ratios, in addition to the receivables ratios. For example, you might want to look at the company's profitability, solvency, and liquidity performances using ratios. (See [Appendix A](#) for more information on ratios.)

3 Tara Bannow. "New Bad Debt Accounting Standards Likely to Remake Community Benefit Reporting." *Modern Healthcare*. March 17, 2018. <http://www.modernhealthcare.com/article/20180317/NEWS/180319904>



Figure 9.3 Which Company Is the Best Investment? Receivables ratios can help make this determination. (credit: "Black Laptop Computer Showing Stock Graph" by "Negative Space"/Pexels, CC0)

Basic Functions of the Receivables Ratios

Receivables ratios show company performance in relation to current debt collection, as well as credit policy effect on sales growth. One receivables ratio is called the **accounts receivable turnover ratio**. This ratio determines how many times (i.e., how often) accounts receivable are collected during an operating period and converted to cash (see [Figure 9.3](#)). A higher number of times indicates that receivables are collected quickly. This quick cash collection may be viewed as a positive occurrence, because liquidity improves, and the company may reinvest in its business sooner when the value of the dollar has more buying power (time value of money). The higher number of times may also be a negative occurrence, signaling that credit extension terms are too tight, and it may exclude qualified consumers from purchasing. Excluding these customers means that they may take their business to a competitor, thus reducing potential sales.

In contrast, a lower number of times indicates that receivables are collected at a slower rate. A slower collection rate could signal that lending terms are too lenient; management might consider tightening lending opportunities and more aggressively pursuing outstanding debt. The lower turnover also shows that the company has cash tied up in receivable longer, thus hindering its ability to reinvest this cash in other current projects. The lower turnover rate may signal a high level of bad debt accounts. The determination of a high or low turnover rate really depends on the standards of the company's industry.

Another receivables ratio one must consider is the **number of days' sales in receivables ratio**. This ratio is similar to accounts receivable turnover in that it shows the expected days it will take to convert accounts receivable into cash. The reflected outcome is in number of days, rather than in number of times.

Companies often have outstanding debt that requires scheduled payments. If it takes longer for a company to collect on outstanding receivables, this means it may not be able to meet its current obligations. It helps to know the number of days it takes to go through the accounts receivable collection cycle so a company can plan its debt repayments; this receivables ratio also signals how efficient its collection procedures are. As with the accounts receivable turnover ratio, there are positive and negative elements with a smaller and larger amount of days; in general, the fewer number of collection days on accounts receivable, the better.

To illustrate the use of these ratios to make financial decisions, let's use Billie's Watercraft Warehouse (BWW) as the example. Included are the comparative income statement ([Figure 9.4](#)) and the comparative balance sheet ([Figure 9.5](#)) for BWW, followed by competitor ratio information, for the years 2016, 2017, and 2018 as shown in [Table 9.1](#).

BILLIE'S WATERCRAFT WAREHOUSE Comparative Income Statement Year Ended December 31, 2016, 2017, and 2018			
	2018	2017	2016
Net Credit Sales	\$450,000	\$400,000	\$375,000
Cost of Goods Sold	<u>70,000</u>	<u>65,000</u>	<u>62,000</u>
Gross Margin	<u>380,000</u>	<u>335,000</u>	<u>313,000</u>
Expenses	<u>\$100,000</u>	<u>\$110,000</u>	<u>\$ 95,000</u>
Net Income (Loss)	<u><u>\$280,000</u></u>	<u><u>\$225,000</u></u>	<u><u>\$218,000</u></u>

Figure 9.4 Comparative Income Statements for Billie's Watercraft Warehouse for the Years 2016, 2017, and 2018. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

BILLIE'S WATERCRAFT WAREHOUSE Comparative Balance Sheet December 31, 2016, 2017, and 2018			
	2018	2017	2016
Assets:			
Cash	\$120,000	\$100,000	\$ 85,000
Accounts Receivable	85,000	90,000	70,000
Notes Receivable	20,500	15,200	18,450
Inventory	60,400	55,000	47,600
Equipment	<u>31,000</u>	<u>35,000</u>	<u>28,000</u>
Total Assets:	<u>\$316,900</u>	<u>\$295,200</u>	<u>\$249,050</u>
Liabilities:			
Unearned Revenue	\$ 5,000	\$ 14,500	\$ 4,200
Accounts Payable	10,000	15,600	9,500
Notes Payable	9,500	13,700	7,250
Equity:			
Common Stock	\$ 12,400	\$ 26,400	\$ 10,100
Retained Earnings	<u>280,000</u>	<u>225,000</u>	<u>218,000</u>
Total Liabilities and Equity:	<u>\$316,900</u>	<u>\$295,200</u>	<u>\$249,050</u>

Figure 9.5 Comparative Income Statements for Billie's Watercraft Warehouse for the Years 2016, 2017, and 2018. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Comparison of Ratios: Industry Competitor to BWW		
Year	Accounts Receivable Turnover Ratio	Number of Days' Sales in Receivables Ratio
2016	4.89 times	80 days
2017	4.92 times	79.23 days
2018	5.25 times	76.44 days

Table 9.1 Industry Competitor Ratios for the years 2016, 2017, and 2018.

YOUR TURN

The Investor

You are an investor looking to contribute financially to either Company A or Company B. The following select financial information follows.

	Company A	Company B
Beginning accounts receivable	\$ 50,000	\$ 60,000
Ending accounts receivable	80,000	90,000
Net credit sales	550,000	460,000

Based on the information provided:

- Compute the accounts receivable turnover ratio
- Compute the number of days' sales in receivables ratio for both Company A and Company B (round all answers to two decimal places)
- Interpret the outcomes, stating which company you would invest in and why

Solution

Company A: ART = 8.46 times, Days' Sales = 43.14 days, Company B: ART = 6.13 times, Days' Sales = 59.54 days. Upon initial review of this limited information, Company A seems to be the better choice, since their turnover ratio is higher and the collection time is lower with 43.14 days. One might want more information on trends for each company with these ratios and a comparison to others in the same industry. More information is needed before making an informed decision.

Accounts Receivable Turnover Ratio

The ratio to determine accounts receivable turnover is as follows.

$$\frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

$$\text{Average Accounts Receivable} = \frac{(\text{Beginning Accounts Receivable} + \text{Ending Accounts Receivable})}{2}$$

Net credit sales are sales made on credit only; cash sales are not included because they do not produce receivables. However, many companies do not report credit sales separate from cash sales, so "net sales" may be substituted for "net credit sales" in this case. Beginning and ending accounts receivable refer to the beginning and ending balances in accounts receivable for the period. The beginning accounts receivable balance is the same figure as the ending accounts receivable balance from the prior period.

Use this formula to compute BWW's accounts receivable turnover for 2017 and 2018.

The accounts receivable turnover ratio for 2017 is $5 \times (\$400,000/\$80,000)$. Net credit sales for 2017 are \$400,000, so

$$\text{Average accounts receivable} = \frac{(\$70,000 + \$90,000)}{2} = \$80,000$$

The accounts receivable turnover ratio for 2018 is 5.14 times (rounded to two decimal places). Net credit sales for 2018 are \$450,000, so

$$\text{Average accounts receivable} = \frac{(\$90,000 + \$85,000)}{2} = \$87,500$$

The outcome for 2017 means that the company turns over receivables (converts receivables into cash) 5 times during the year. The outcome for 2018 shows that BWW converts cash at a quicker rate of 5.14 times. There is a trend increase from 2017 to 2018. BWW sells various watercraft. These products tend to have a higher sales price, making a customer more likely to pay with credit. This can also increase the length of debt repayment. Comparing to another company in the industry, BWW's turnover rate is standard. To increase the turnover rate, BWW can consider extending credit to more customers who the company has determined will pay on a quicker basis or schedule, or BWW can more aggressively pursue the outstanding debt from current customers.

Number of Days' Sales in Receivables Ratio

The ratio to determine number of days' sales in receivables is as follows.

$$\frac{365}{\text{Accounts Receivable Turnover Ratio}}$$

The numerator is 365, the number of days in the year. Because the accounts receivable turnover ratio determines an average accounts receivable figure, the outcome for the days' sales in receivables is also an average number. Using this formula, compute BWW's number of days' sales in receivables ratio for 2017 and 2018.

The ratio for 2017 is 73 days (365/5), and for 2018 is 71.01 days (365/5.14), rounded. This means it takes 73 days in 2017 and 71.01 days in 2018 to complete the collection cycle, which is a decrease from 2017 to 2018. A downward trend is a positive for the company, and BWW outperforms the competition slightly. This is good because BWW can use the cash toward other business expenditures, or the downward trend could signal that the company needs to loosen credit terms or more aggressively collect outstanding accounts.

Looking at both ratios, BWW seems well positioned within the industry, and a potential investor or lender may be more apt to contribute financially to the organization with this continued positive trend.

LINK TO LEARNING

American Superconductor Corporation specializes in the production and service of energy-efficient wind turbine systems, as well as energy grid construction solutions. On the company's 2018–2019 financial statements, the accounts receivable turnover ratio is approximately 6.32 times, and the number of day's sales in receivables ratio is approximately 58 days. This [site providing American Superconductor Corporation's current financial statements \(https://openstax.org/l/50AMSCfinan2017\)](https://openstax.org/l/50AMSCfinan2017) is available for

review.

9.4 Discuss the Role of Accounting for Receivables in Earnings Management

Assume that you are an accountant at a large public corporation and are on a team responsible for preparing financial statements. In one team discussion, a dilemma arises: What is the best way to report earnings to create the most favorable possible financial position for your company, while still complying in an ethical manner and also complying fully with generally accepted accounting procedures (GAAP)? Your company is required to follow GAAP rules, but is there a way to comply with these rules while showing the company in its best light? How does receivables accounting factor into this quandary?

Before examining potential ways to improve the company's financial image, let's consider some important conditions. To begin, if the company is publicly traded on a national or regional stock exchange, it is subject to the accounting and financial regulations set by the Securities and Exchange Commission (SEC). Included in these rules is the requirement that each publicly traded company must prepare and make public each year its annual report, including the results of an extensive audit procedure performed by a major public accounting firm.

In the process of auditing the company, the auditing firm will conduct tests to determine whether, in the auditor's opinion, the financial statements accurately reflect the financial position of the company. If the auditor feels that transactions, financial schedules, or other records do not accurately reflect the company's performance for the past year, then the auditor can issue a negative audit report, which could have major negative effects on the company's image in the financial community.

To sum up this issue, any attempts by companies to make their financial position look better must be based on assumptions by the company that can be verified by an outside, independent party, such as a major public accounting firm. As you learn about this topic, assume that any recommendations suggested must be legitimate changes in assumptions by the company and that the recommendations will pass public examination and scrutiny.

Earnings management works within GAAP constraints to improve stakeholders' views of the company's financial position. **Earnings manipulation** is noticeably different in that it typically ignores GAAP rules to alter earnings significantly. Carried to an extreme, manipulation can lead to fraudulent behavior by a company. The major problem in income manipulation is not in manipulating the numbers that constitute the financial reports. Instead, the bigger issue is the engineering of the short-term financial operating decisions. Some of the techniques used include applying universal standards, loose interpretations of revenue recognition, unofficial earnings measures, fair value accounting, and cooking the decision and not the books.^[4]

A company may be enticed to manipulate earnings for several reasons. It may want to show a healthier income level, meet or exceed market expectations, and receive management bonuses. This can produce more investment interest from potential investors. An increase to receivables and inventory can help a business to secure more borrowed funds.

4 H. David Sherman and S. David Young. "Where Financial Reporting Still Falls Short." *Harvard Business Review*. July-August 2016. <https://hbr.org/2016/07/where-financial-reporting-still-falls-short>

ETHICAL CONSIDERATIONS

Improper Revenue Recognition Leads to New Accounting Laws and Regulations

The complete financial collapse of the **Enron Corporation** was a catalyst for major changes in the accounting profession. Fraudulent revenue recognition and financial statement manipulation at **Enron**—an energy, commodities, and services company—helped provide support for the implementation of the Sarbanes-Oxley Act of 2002 (SOX). A federal law, SOX included the creation of the Public Company Accounting Oversight Board (PCAOB), a regulatory agency to oversee auditors and ensure compliance with SOX requirements.

The PCAOB is charged by the Sarbanes-Oxley Act of 2002 with establishing auditing and professional practice standards for registered public accounting firms to follow in the preparation and issuing of audit reports.^[5] The PCAOB regulates how publicly traded companies are audited and provides requirements and ethical standards that direct professional accountants in their work with publicly traded companies. Visit their website at www.pcaobus.org to learn more.

Accounts receivable may also be manipulated to delay revenue recognition. These deferred earnings allow for a reduced tax obligation in the current year. A company involved in the sale or acquisition of a business may show a higher income level to increase the value of the business. Whatever the reason, a company often has the flexibility to manage their earnings slightly, given the amount of estimations and potential bad debt write-offs required to meet the revenue recognition and matching principles.

One area of estimation involves bad debt in relation to accounts receivable. As you've learned, the income statement method, balance sheet method, and the balance sheet aging method all require estimations of bad debt with receivables. The percentage uncollectible is supposed to be presented as an educated estimation based on past performance, industry standards, and other economic factors. However, this estimation is just that—an estimation—and it can be slightly manipulated or managed to overstate or understate bad debt, as well as accounts receivable. For example, a company does not usually benefit from bad debt write-off. It might legitimately—if past experience justifies the change—alter past-due dates to current accounts to avoid having to write off bad debt. This overstates accounts receivable and understates bad debt. The company could also change the percentage uncollectible to a lower or higher figure, if its financial information and the present economic environment justify the change. The company could change the percentage from 2% uncollectible to 1% uncollectible. This increases accounts receivable and potential earnings and reduces bad debt expenses in the current period.

LINK TO LEARNING

The Beneish M-Score is an earnings manipulation measurement system that incorporates eight financial ratios to identify potentially compromised companies. In 2000, a group of students from Cornell University used this measurement to sell all the “Cayuga Fund” stock holdings in **Enron**, one year before the total collapse of company. Read this [article on the Cornell University Enron Case Study \(https://openstax.org/l/50CornellEnron\)](https://openstax.org/l/50CornellEnron) to learn more.

5 Public Company Accounting Oversight Board (PCAOB). “Standards.” n.d. <https://pcaobus.org/Standards>

Let's take Billie's Watercraft Warehouse (BWW), for example. BWW had the following net credit sales and accounts receivable from 2016–2018.

	2018	2017	2016
Net Credit Sales	\$450,000	\$400,000	\$375,000
Accounts Receivable	85,000	90,000	70,000

It also used the following percentage calculations for doubtful accounts under each bad debt estimation method.

Income Statement Method	Balance Sheet Method	Balance Sheet Aging Method
5% of credit sales	15% of accounts receivable	0–30 days past due = 10% 31–90 days past due = 20% Over 90 days past due = 30%

Legitimate current economic conditions could allow BWW to alter its estimation percentages, aging categories, and method used. Altering estimation percentages could mean an increase or decrease in percentages. If BWW decreases its income statement method percentage from 5% of credit sales to 4% of credit sales, the bad debt estimation would go from \$22,500 ($5\% \times \$450,000$) in 2018 to \$18,000 ($4\% \times \$450,000$). The bad debt expense would decrease for the period, and net income would increase. If BWW decreases its balance sheet method percentage from 15% of accounts receivable to 12% of accounts receivable, the bad debt estimation would go from \$12,750 ($15\% \times \$85,000$) in 2018 to \$10,200 ($12\% \times \$85,000$). The bad debt expense would decrease for the period and net income would increase. Accounts receivable would also increase, and allowances for doubtful accounts would decrease. As mentioned, this increase to earnings and asset increase is attractive to investors and lenders.

Another earnings management opportunity may occur with the balance sheet aging method. Past-due categories could expand to encompass greater (or fewer) time periods, accounts receivable balances could be placed in different categories, or estimation percentages could change for each category. However, please remember that such changes would need to be considered acceptable by the company's outside auditors during the annual independent audit.

To demonstrate the recommendation, assume that BWW has three categories: 0–30 days past due, 31–90 days past due, and over 90 days past due. These categories could change to 0–60 days, 61–120 days, and over 120 days. This could move accounts that previously had a higher bad debt percentage assigned to them into a lower percentage category. This category shift could produce an increase to accounts receivable, and a decrease to bad debt expense; thus, increasing net income estimation percentages can change within each category. The following is the original uncollectible distribution for BWW in 2018.

	0–30 days past due	31–90 days past due	Over 90 days past due
Accounts receivable amount	\$40,000	\$20,000	\$25,000
Percent uncollectible	10%	20%	30%
Total per category	\$ 4,000	\$ 4,000	\$ 7,500
Total uncollectible \$15,500			

The following is the uncollectible percentage distribution change.

	0–30 days past due	31–90 days past due	Over 90 days past due
Accounts receivable amount	\$40,000	\$20,000	\$25,000
Percent uncollectible	8%	15%	25%
Total per category	\$ 3,200	\$ 3,000	\$ 6,250
Total uncollectible \$12,450			

Comparing the two outcomes, the original uncollectible figure was \$15,500 and the changed uncollectible figure is \$12,450. This reduction produces a higher accounts receivable balance, a lower bad debt expense, and a higher net income.

A company may also change the estimation method to produce a different net income outcome. For example, BWV may go from the income statement method to the balance sheet method. However, as mentioned, the change would have to be considered to reflect the company's actual bad debt experiences accurately, and not just made for the sake of manipulating the income and expenses reported on their financial statements. A change in the estimation method that provides a comparison of the 2018 income statement follows.

BILLIE'S WATERCRAFT WAREHOUSE Income Statement (Method Comparison) Year Ended December 31, 2018		
	Income Statement Method	Balance Sheet Method
Net Credit Sales	\$450,000	\$450,000
Cost of Goods Sold	<u>70,000</u>	<u>70,000</u>
Gross Margin	\$380,000	\$380,000
Expenses:		
General and Administrative Expense	77,500	77,500
Bad Debt Expense	<u>22,500</u>	<u>12,750</u>
Total Expenses	<u>\$100,000</u>	<u>\$ 90,250</u>
Net Income (Loss)	<u>\$280,000</u>	<u>\$289,750</u>

In this example, net income appears higher under the balance sheet method than the income statement method: \$280,000 compared to \$289,750, respectively. BWV could change to the balance sheet method for estimating bad debt to give the appearance that income is greater. An investor or lender looking at BWV may consider providing funds given the earnings performance, unaware that the estimation method alone may result in an inflated income. So, what can an investor or lender do to recognize earnings management (or manipulation)?

An investor or lender can compare ratio analysis to others in the industry, and year-to-year trend analysis can be helpful. The number of days' sales in receivables ratio is a usually a good indicator of manipulation activity. A quicker collection period found in the first two years of operation can signal negative earnings behavior (as compared to industry standards). Earnings management can be a bit more difficult, given its acceptability under GAAP. As with uncovering earnings manipulation, due diligence with ratio and trend analysis is paramount. These topics will be covered in more depth in [Appendix A: Financial Statement Analysis](#).

CONCEPTS IN PRACTICE

Competitor Acquisitions

As companies become large players in industry, they may consider acquiring competitors. When acquisition discussions occur, financial information, future growth channels, and business organizational structure play heavy roles in the decision process. A level of financial transparency is expected with an acquisition candidate, but during buying negotiations, each business will present the best financial position possible. The seller's goal is to yield a high sales price; the desire to present a rosy picture could lead to earnings manipulation. An acquirer needs to be mindful of this and review trend analysis and

ratio comparisons before making a purchase decision.

Consider **General Electric Company (GE)**. GE's growth model in recent years was based on acquiring additional businesses within the industry. The company did not do its due diligence on several acquisitions, including **Baker Hughes**, and it was misled to believe the acquired businesses were in a stable financial earnings position. The acquisitions led to a declining financial position and reduced stock price. In order for **GE** to restructure and return to a positive growth model, it had to sell its interests in **Baker Hughes** and other acquisitions that were underperforming based on expectations.

9.5 Apply Revenue Recognition Principles to Long-Term Projects

While most receivable reporting is straightforward when recognizing revenue and matching expenses in the same period, a few unique situations require special revenue distribution for long-term projects. Long-term construction-company projects, real estate installment sales, multi-year magazine subscriptions, and a combined equipment sale with an accompanying service contract have special reporting requirements to meet revenue recognition and matching principles.

Long-term construction projects, such as construction of a major sports stadium, can take several years to complete. Typically, revenue is recognized when the earnings process is complete; however, if the construction project did not begin work immediately, this could delay recognition of revenue, and expenses accumulated during the period would be unmatched. These unmatched expenses can misstate financial statements (particularly the income statement) and mislead stakeholders. There are also tax implications, where a company may benefit from tax breaks with reduced earnings.

Two methods can be applied to long-term construction projects that are consistent with the revenue recognition criteria you've learned about. The methods commonly utilized by construction contractors are the percentage of completion and completed contract (see [Figure 9.6](#)). The **percentage of completion method** takes the percentage of work completed for the period and divides that by the total revenues from the contract. The percentage of work completed for the period distributes the estimated total project costs over the contract term based on the actual completion amount, up to that point. The percentage can be based on such factors as percentage of anticipated final costs incurred at a given point or an engineering report that estimates the percentage of completion of the project at a stage of production.



Figure 9.6 Long-Term Construction Project. Revenue recognition requires use of the percentage of completion or completion contract method. (credit: modification of "Construction of Millennium Stadium, Cardiff" by Seth Whales/Wikimedia Commons, CC BY 2.0)

The **completed contract method** delays reporting of both revenues and expenses until the entire contract is complete. This can create reporting issues and is typically used only where cost and earnings cannot be reasonably estimated throughout the contract term.

Unlike most residential home loan transactions (usually labeled as mortgage loans), which tend to require monthly payments, commercial real estate sales are often structured as an **installment sale** (see [Figure 9.7](#)) and usually involve periodic installment payments from buyers. These payments can be structured with annual payments, interest-only payments, or any other payment format to which the parties agree.



Figure 9.7 Real Estate Installment Sales. Revenue recognition requires use of the installment method to account for long-term risk. (credit: modification of "Boost-the-Market-Value-of-Your-Home_L" by Dan Moyle/Flickr, CC BY 2.0)

However, a seller/lender has no guarantee that the buyer will pay the debt in its entirety. In this event, the

property serves as security for the seller/lender if legal action is taken. The longer the debt remains outstanding, the higher the risk the buyer will not complete payment. With traditional accrual accounting, risk is not considered and revenue is reported immediately. The installment method accounts for risk and defers revenue using a gross profit percentage. As installment payments are made, this percentage is applied to the current period.

Multi-year magazine subscriptions are long-term service contracts with payment usually occurring in advance of any provided service. The company may not recognize this revenue until the subscription has been provided, but there is also no guarantee that the contract will be honored in its entirety at the conditions expected. Financial Accounting Standards Board, Topic 606, *Revenue from Contracts with Customers*, requires businesses to report revenue “in an amount that reflects the consideration to which the entity expects to be entitled in exchange for the goods or services.”^[6] Thus, once a change occurs to the expected revenue distribution, this new amount is recorded going forward.

A combined equipment purchase with an accompanying service contract requires separate reporting of the sale and service contract. An example of this is a cell phone purchase that has a service contract (warranty) for any damage to the unit. There is no guarantee that damage will occur or that service will be provided, but the customer has purchased this policy as insurance. Thus, the company must reasonably estimate this revenue each period and distribute this estimation over the life of the service contract. Or, the company may wait until the contract expires before reporting any revenue or expenses associated with the service contract.

CONCEPTS IN PRACTICE

U.S. Bank Stadium Construction

HKS, Inc. received a construction contract from the **Minnesota Sports Facilities Authority** to build the new U.S. Bank Stadium. The construction contract services began in 2012, but the stadium was not complete until 2016. The total construction cost was approximately \$1.129 billion.

The portion of construction revenues earned by **HKS, Inc.** could not be reported upon initial receipt of funds but were instead distributed using the percentage of completion method. Much of the costs and completion associated with building the stadium occurred in the later years of the project (specifically 2015); thus, the company experienced a sharp increase in percentage of completion in the 2015 period. This showed a substantial increase to revenues during this period.

IFRS CONNECTION

Revenue and Receivables

When Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) began their joint work to create converged standards, a primary goal was to develop a single, comprehensive revenue recognition standard. At the time work began, International Financial Reporting Standards (IFRS) had one general standard that was applied to all companies with little guidance for various

6 Financial Accounting Standards Board (FASB). “Revenue from Contracts with Customers (Topic 606).” *FASB Accounting Standards Update, Financial Accounting Series*. April 2016. <https://asc.fasb.org/imageRoot/32/79982032.pdf>

industries or different revenue scenarios. On the other hand, U.S. generally accepted accounting principles (GAAP) had more than 100 standards that applied to revenue recognition. Because of the global nature of business, including investing and borrowing, it was important to increase the comparability of revenue measurement and reporting. After years of work, a new standard was agreed upon; both FASB and IASB released a revenue recognition standard that is essentially the same, with only a few differences. In the United States, the new revenue recognition standards became effective for reporting in 2018 for publicly traded companies.

A few differences remain in the reporting of revenue. In accounting for long-term projects, IFRS does not allow the completed contract method. If estimating the percentage of completion of the project is not possible, IFRS allows revenues equal to costs to be recognized. This results in no profit recognized in the current period, but rather all profit being deferred until the completion of the project.

Receivables represent amounts owed to the business from sales or service activities that have been charged or loans that have been made to customers or others. Proper reporting of receivables is important because it affects ratios used in the analysis of a company's solvency and liquidity, and also because reporting of receivables should reflect future cash receipts.

Under both U.S. GAAP and IFRS, receivables are reported as either current or noncurrent assets depending on when they are due. Also, receivables that do not have an interest component are carried at net realizable value or the amount the company expects to receive for the receivable. This requires estimation and reporting of an allowance for uncollectible accounts (sometimes referred to as "provisions" under IFRS). However, receivables that do have a significant financing component are reported at amortized cost adjusted for an estimate of uncollectible accounts.

GAAP and IFRS can differ in the financial statement presentation of receivables. GAAP requires a liquidity presentation on the balance sheet, meaning assets are listed in order of liquidity (those assets most easily converted into cash to those assets least easily converted to cash). Thus, receivables—particularly accounts receivable, which are highly liquid—are presented right after cash. However, IFRS allows reverse liquidity presentation. Therefore, receivables may appear as one of the last items in the asset section of the balance sheet under IFRS. This requires careful observance of the presentation being used when comparing a company reporting under U.S. GAAP to one using IFRS when assessing receivables.

In the case of notes receivable, the method for estimating uncollectible accounts differs between U.S. GAAP and IFRS. IFRS estimates uncollectible accounts on notes receivable in a three-level process, depending upon whether the note receivable has maintained its original credit risk, increased slightly in credit risk, or increased significantly in riskiness. For companies using U.S. GAAP, estimated uncollectible accounts are based on the overall lifetime riskiness.

9.6

Explain How Notes Receivable and Accounts Receivable Differ

So far, our discussion of receivables has focused solely on accounts receivable. Companies, however, can expand their business models to include more than one type of receivable. This receivable expansion allows a company to attract a more diverse clientele and increase asset potential to further grow the business.

As you've learned, accounts receivable is typically a more informal arrangement between a company and customer that is resolved within a year and does not include interest payments. In contrast, **notes receivable** (an asset) is a more formal legal contract between the buyer and the company, which requires a specific payment amount at a predetermined future date. The length of contract is typically over a year, or beyond one

operating cycle. There is also generally an interest requirement because the financial loan amount may be larger than accounts receivable, and the length of contract is possibly longer. A note can be requested or extended in exchange for products and services or in exchange for cash (usually in the case of a financial lender). Several characteristics of notes receivable further define the contract elements and scope of use.

Key Feature Comparison of Accounts Receivable and Notes Receivable

Accounts Receivable	Notes Receivable
• An informal agreement between customer and company • Receivable in less than one year or within a company's operating cycle • Does not include interest	• A legal contract with established payment terms • Receivable beyond one year and outside of a company's operating cycle • Includes interest

Table 9.2

THINK IT THROUGH

Dishonored Note

You are the owner of a retail health food store and have several large companies with whom you do business. Many competitors in your industry are vying for your customers' business. For each sale, you issue a notes receivable to the company, with an interest rate of 10% and a maturity date 18 months after the issue date. Each note has a minimum principal amount of \$500,000.

Let's say one of these companies is unable to pay in the established timeframe and dishonors the note. What would you do? How does this dishonored note affect your company both financially and nonfinancially? If your customer wanted to renegotiate the terms of the agreement, would you agree? If so, what would be the terms?

Characteristics of Notes Receivable

Notes receivable have several defining characteristics that include principal, length of contract terms, and interest. The **principal** of a note is the initial loan amount, not including interest, requested by the customer. If a customer approaches a lender, requesting \$2,000, this amount is the principal. The date on which the security agreement is initially established is the **issue date**. A note's **maturity date** is the date at which the principal and interest become due and payable. The maturity date is established in the initial note contract. For example, when the previously mentioned customer requested the \$2,000 loan on January 1, 2018, terms of repayment included a maturity date of 24 months. This means that the loan will mature in two years, and the principal and interest are due at that time. The following journal entries occur at the note's established start date. The first entry shows a note receivable in exchange for a product or service, and the second entry illustrates the note from the point of view that a \$2,000 loan was issued by a financial institution to a customer (borrower).

JOURNAL			
Date	Account	Debit	Credit
Jan. 1, 2018	Notes Receivable Sales Revenue <i>To record sale in exchange for notes receivable</i>	2,000	2,000

JOURNAL			
Date	Account	Debit	Credit
Jan. 1, 2018	Notes Receivable Cash <i>To record notes receivable in exchange for a cash loan</i>	2,000	2,000

Before realization of the maturity date, the note is accumulating interest revenue for the lender. **Interest** is a monetary incentive to the lender that justifies loan risk. An annual interest rate is established with the loan terms. The **interest rate** is the part of a loan charged to the borrower, expressed as an annual percentage of the outstanding loan amount. Interest is accrued daily, and this accumulation must be recorded periodically (each month for example). The Revenue Recognition Principle requires that the interest revenue accrued is recorded in the period when earned. Periodic interest accrued is recorded in Interest Revenue and Interest Receivable. To calculate interest, the company can use the following formulas. The following example uses months but the calculation could also be based on a 365-day year.

$$\text{Interest} = \text{Annual Interest Rate} \times \text{Loan Principle} \times \text{Part of Year}$$

where

$$\text{Part of Year} = \frac{\text{Number of Accrued Interest Months}}{12 \text{ Months}}$$

Another common way to state the interest formula is $\text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time}$. From the previous example, the company offered a \$2,000 note with a maturity date of 24 months. The annual interest rate on the loan is 10%. Each period the company needs to record an entry for accumulated interest during the period. In this example, the first year's interest revenue accumulation is computed as $10\% \times \$2,000 \times (12/12) = \200 . The \$200 is recognized in Interest Revenue and Interest Receivable.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31, 2018	Interest Receivable Interest Revenue <i>To record interest accumulated after first 12 months</i>	200	200

When interest is due at the end of the note (24 months), the company may record the collection of the loan principal and the accumulated interest. These transactions can be recorded as one entry or two. The first set of entries show collection of principal, followed by collection of the interest.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31, 2019	Cash Notes Receivable <i>To record collection of note principal</i>	2,000	2,000
Dec. 31, 2019	Cash Interest Receivable Interest Revenue <i>To record interest collection after 24-month term</i>	400	200 200

Interest revenue from year one had already been recorded in 2018, but the interest revenue from 2019 is not recorded until the end of the note term. Thus, Interest Revenue is increasing (credit) by \$200, the remaining revenue earned but not yet recognized. Interest Receivable decreasing (credit) reflects the 2018 interest owed from the customer that is paid to the company at the end of 2019. The second possibility is one entry recognizing principal and interest collection.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31, 2019	Cash Notes Receivable Interest Receivable Interest Revenue <i>To record collection of principal and accumulated interest</i>	2,400	2,000 200 200

If the note term does not exceed one accounting period, the entry showing note collection may not reflect interest receivable. For example, let's say the company's note maturity date was 12 months instead of 24 (payment in full occurs December 31, 2018). The entry to record collection of the principal and interest follows.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31, 2018	Cash Notes Receivable Interest Revenue <i>To record collection of principle and interest</i>	2,200	2,000 200

The examples provided account for collection of the note in full on the maturity date, which is considered an honored note. But what if the customer does not pay within the specified contract length? This situation is considered a dishonored note. A lender will still pursue collection of the note but will not maintain a long-term receivable on its books. Instead, the lender will convert the notes receivable and interest due into an account receivable. Sometimes a company will classify and label the uncollected account as a Dishonored Note Receivable. Using our example, if the company was unable to collect the \$2,000 from the customer at the 12-month maturity date, the following entry would occur.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31, 2018	Accounts Receivable Notes Receivable Interest Revenue <i>To record conversion of note to Accounts Receivable</i>	2,200	2,000 200

If it is still unable to collect, the company may consider selling the receivable to a collection agency. When this occurs, the collection agency pays the company a fraction of the note's value, and the company would write off any difference as a factoring (third-party debt collection) expense. Let's say that our example company turned over the \$2,200 accounts receivable to a collection agency on March 5, 2019 and received only \$500 for its value. The difference between \$2,200 and \$500 of \$1,700 is the factoring expense.

JOURNAL			
Date	Account	Debit	Credit
Mar. 5, 2019	Cash Factoring Expense Accounts Receivable <i>To record sale of Accounts Receivable to third-party factor</i>	500 1,700	2,200

Notes receivable can convert to accounts receivable, as illustrated, but accounts receivable can also convert to notes receivable. The transition from accounts receivable to notes receivable can occur when a customer misses a payment on a short-term credit line for products or services. In this case, the company could extend the payment period and require interest.

For example, a company may have an outstanding account receivable in the amount of \$1,000. The customer negotiates with the company on June 1 for a six-month note maturity date, 12% annual interest rate, and \$250 cash up front. The company records the following entry at contract establishment.

JOURNAL			
Date	Account	Debit	Credit
Jun. 1	Cash Notes Receivable Accounts Receivable <i>To record conversion of Accounts Receivable to Notes Receivable</i>	250 750	1,000

This examines a note from the lender's perspective; see [Current Liabilities](#) for an in-depth discussion on the customer's liability with a note (payable).

Illustrated Examples of Notes Receivable

To illustrate notes receivable scenarios, let's return to Billie's Watercraft Warehouse (BWW) as the example. BWW has a customer, Waterways Corporation, that tends to have larger purchases that require an extended payment period. On January 1, 2018, Waterways purchased merchandise in the amount of \$250,000. BWW agreed to lend the \$250,000 purchase cost (sales price) to Waterways under the following conditions. First, BWW agrees to accept a note payable issued by Waterways. The conditions of the note are that the principal amount is \$250,000, the maturity date on the note is 24 months, and the annual interest rate is 12%. On January 1, 2018, BWW records the following entry.

JOURNAL			
Date	Account	Debit	Credit
Jan. 1, 2018	Notes Receivable: Waterways Sales Revenue <i>To record sale in exchange for notes receivable, 24-month maturity, 12% interest rate</i>	250,000	250,000

Notes Receivable: Waterways increases (debit), and Sales Revenue increases (credit) for the principal amount

of \$250,000. On December 31, 2018, BWV records interest accumulated on the note for 12 months.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31, 2018	Interest Receivable: Waterways Interest Revenue <i>To record interest accumulated after first 12 months</i>	30,000	30,000

Interest Receivable: Waterways increases (debit) as does Interest Revenue (credit) for 12 months of interest computed as $\$250,000 \times 12\% \times (12/12)$. On December 31, 2019, Waterways Corporation honors the note; BWV records this collection as a single entry.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31, 2019	Cash Notes Receivable: Waterways Interest Receivable: Waterways Interest Revenue <i>To record collection of principal and accumulated interest</i>	310,000	250,000 30,000 30,000

Cash increases (debit) for the principal and interest total of \$310,000, Notes Receivable: Waterways decreases (credit) for the principal amount of \$250,000, Interest Receivable: Waterways decreases (credit) for the 2018 accumulated interest amount of \$30,000, and Interest Revenue increases (credit) for the 2019 interest collection amount of \$30,000.

BWV does business with Sea Ferries Inc. BWV issued Sea Ferries a note in the amount of \$100,000 on January 1, 2018, with a maturity date of six months, at a 10% annual interest rate. On July 2, BWV determined that Sea Ferries dishonored its note and recorded the following entry to convert this debt into accounts receivable.

JOURNAL			
Date	Account	Debit	Credit
Jun. 2, 2018	Accounts Receivable: Sea Ferries Notes Receivable: Sea Ferries Interest Revenue <i>To record conversion of note to Accounts Receivable, dishonored note</i>	105,000	100,000 5,000

Accounts Receivable: Sea Ferries increases (debit) for the principal note amount plus interest, Notes Receivable: Sea Ferries decreases (credit) for the principal amount due, and Interest Revenue increases (credit) for interest earned at maturity. Interest is computed as $\$100,000 \times 10\% \times (6/12)$. On September 1, 2018, BWV determines that Sea Ferries's account will be uncollectible and sells the balance to a collection agency for a total of \$35,000.

JOURNAL			
Date	Account	Debit	Credit
Sept. 1, 2018	Cash Factoring Expense Accounts Receivable: Sea Ferries <i>To record sale of Accounts Receivable to third-party factor</i>	35,000 70,000	105,000

Cash increases (debit) for the agreed-upon discounted value of \$35,000, Factoring Expense increases (debit)

for the outstanding amount and the discounted sales price, and Accounts Receivable: Sea Ferries decreases (credit) for the original amount owed.

Alliance Cruises is a customer of BWV with an outstanding accounts receivable balance of \$50,000. Alliance is unable to pay in full on schedule, so it negotiates with BWV on March 1 to convert its accounts receivable into a notes receivable. BWV agrees to the following terms: six-month note maturity date, 18% annual interest rate, and \$10,000 cash up front. BWV records the following entry at contract establishment.

JOURNAL			
Date	Account	Debit	Credit
Mar. 1	Cash	10,000	
	Notes Receivable: Alliance	40,000	
	Accounts Receivable: Alliance		50,000
	<i>To record conversion of Accounts Receivable to Notes Receivable</i>		

Cash increases (debit) for the up-front collection of \$10,000, Notes Receivable: Alliance increases (debit) for the principal amount on the note of \$40,000, and Accounts Receivable: Alliance decreases (credit) for the original amount Alliance owed of \$50,000.

LINK TO LEARNING

Another opportunity for a company to issue a notes receivable is when one business tries to acquire another. As part of an acquisition sale between **MMA Capital Management LLC** and **Hunt Companies Inc.**, MMA “provided financing for the purchase price in the form of a seven-year, note receivable from Hunt” with an interest rate of 5%, payable in quarterly installments. Read this [article on the terms of sale and the role of the notes receivable in the MMA/Hunt Acquisition \(https://openstax.org/l/50MMAHuntAcq\)](https://openstax.org/l/50MMAHuntAcq) to learn more.

9.7 Appendix: Comprehensive Example of Bad Debt Estimation

The following comprehensive example will illustrate the bad debt estimation process from the sales transaction to adjusting entry reporting for all three bad debt estimation methods: income statement, balance sheet, and balance sheet aging of receivables.

Furniture Direct sells office furniture to large scale businesses. Because the purchases are typically large, Furniture Direct allows customers to pay on credit using an in-house account. At the end of the year, Furniture Direct must estimate bad debt using one of the three estimation methods. It is currently using the income statement method and estimates bad debt at 5% of credit sales. If it were to switch to the balance sheet method, it would estimate bad debt at 8% of accounts receivable. If it were to use the balance sheet aging of receivables method, it would split its receivables into three categories: 0–30 days past due at 5%, 31–90 days past due at 10%, and over 90 days past due at 20%. There is currently a zero balance, transferred from the prior year’s Allowance for Doubtful Accounts. The following information is available from the year-end income statement and balance sheet.

2018 Year-end Totals for Furniture Direct	
Credit sales	\$1,350,000
Accounts receivable	745,000

There is also additional information regarding the distribution of accounts receivable by age.

Past-Due Category	Accounts Receivable Total
0–30 days	\$485,000
31–90 days	180,000
Over 90 days	80,000

If the company were to maintain the income statement method, the total bad debt estimation would be \$67,500 ($\$1,350,000 \times 5\%$), and the following adjusting entry would occur.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, income statement method</i>	67,500	67,500

If the company were to use the balance sheet method, the total bad debt estimation would be \$59,600 ($\$745,000 \times 8\%$), and the following adjusting entry would occur.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, balance sheet method</i>	59,600	59,600

If the company were to use the balance sheet aging of receivables method, the total bad debt estimation would be \$58,250, calculated as shown:

Past Due Category	Accounts Receivable Total	Uncollectible Percentage	Total
0–30 days	\$485,000	5%	\$24,250
31–90 days	180,000	10%	18,000
Over 90 days	80,000	20%	16,000
Total Estimated Uncollectible:			\$58,250

The adjusting entry recorded using the aging method is as follows.

JOURNAL			
Date	Account	Debit	Credit
Dec. 31	Bad Debt Expense Allowance for Doubtful Accounts <i>To record estimated bad debts, balance sheet aging method</i>	58,250	58,250

As you can see, the methods provide different financial figures.

Bad Debt Estimation Method Comparison for Furniture Direct	
	Total Bad Debt Estimation
Income Statement Method	\$67,500
Balance Sheet Method	59,600
Balance Sheet Aging of Receivables Method	58,250

While it is up to the company to determine which method best describes its financial position, as you see in [Account for Uncollectible Accounts Using the Balance Sheet and Income Statement Approaches](#), a company may manage these methods and figures to present the best financial position possible.

CONTINUING APPLICATION AT WORK

Grocery Store Offerings

Every week, millions of shoppers visit grocery stores. Consider the various transactions that are occurring at any given time. Most of the items found within a grocery store are perishable and have a finite shelf life. The majority of purchases are paid with cash, check, or credit card. Therefore, you might assume that a grocery store would not have a balance in accounts receivable.

However, grocery stores have evolved to become a one-stop shop for many items. You can now purchase gas, seasonal decorations, cooking utensils, and even fill your prescriptions at many stores.

Key Terms

- accounts receivable** outstanding customer debt on a credit sale, typically receivable within a short time period
- accounts receivable turnover ratio** how many times accounts receivable is collected during an operating period and converted to cash
- accrual accounting** records transactions related to revenue earnings as they occur, not when cash is collected
- allowance for doubtful accounts** contra asset account that is specifically contrary to accounts receivable; it is used to estimate bad debt when the specific customer is unknown
- allowance method** estimates bad debt during a period based on certain computational approaches, and it matches this to sales
- bad debts** uncollectible amounts from customer accounts
- balance sheet aging of receivables method** allowance method approach that estimates bad debt expenses based on the balance in accounts receivable, but it also considers the uncollectible time period for each account
- balance sheet method** (also, percentage of accounts receivable method) allowance method approach that estimates bad debt expenses based on the balance in accounts receivable
- completed contract method** delays reporting of both revenues and expenses until the entire contract is complete
- contra account** account paired with another account type that has an opposite normal balance to the paired account; reduces or increases the balance in the paired account at the end of a period
- direct write-off method** delays recognition of bad debt until the specific customer accounts receivable is identified
- earnings management** works within GAAP constraints to improve stakeholders' views of the company's financial position
- earnings manipulation** ignores GAAP rules to alter earnings significantly to improve stakeholder's views of the company's financial position
- income statement method** allowance method approach that estimates bad debt expenses based on the assumption that at the end of the period, a certain percentage of sales during the period will not be collected
- installment sale** periodic installment payments from buyers
- interest** monetary incentive to the lender, which justifies loan risk; interest is paid to the lender by the borrower
- interest rate** part of a loan charged to the borrower, expressed as an annual percentage of the outstanding loan amount
- issue date** point at which the security agreement is initially established
- matching principle** (also, expense recognition principle) records expenses related to revenue generation in the period in which they are incurred
- maturity date** date a bond or note becomes due and payable
- net realizable value** amount of an account balance that is expected to be collected; for example, if a company has a balance of \$10,000 in accounts receivable and a \$300 balance in the allowance for doubtful accounts, the net realizable value is \$9,700
- note receivable** formal legal contract between the buyer and the company, which requires a specific payment amount at a predetermined future date, usually includes interest, and is payable beyond a

company's operating cycle

number of days' sales in receivables expected days it will take to convert accounts receivable into cash

percentage of completion method percentage of work completed for the period divided by the total revenues from the contract

principal initial borrowed amount of a loan, not including interest; also, face value or maturity value of a bond (the amount to be paid at maturity)

receivable outstanding amount owed from a customer

revenue recognition principle principle stating that company must recognize revenue in the period in which it is earned; it is not considered earned until a product or service has been provided



Summary

9.1 Explain the Revenue Recognition Principle and How It Relates to Current and Future Sales and Purchase Transactions

- According to the revenue recognition principle, a company will recognize revenue when a product or service is provided to a client. The revenue must be reported in the period when the earnings process completes.
- According to the matching principle, expenses must be matched with revenues in the period in which they are incurred. A mismatch in revenues and expenses can lead to financial statement misreporting.
- When a customer pays for a product or service on a line of credit, the Accounts Receivable account is used. Accounts receivable must satisfy the following criteria: the customer owes money and has yet to pay, the amount is due in less than a company's operating cycle, and the account usually does not incur interest.
- When a customer purchases a product or service on credit, using an in-house account, Accounts Receivable increases and Sales Revenue increases. When the customer pays the amount due, Accounts Receivable decreases and Cash increases.
- When a customer purchases a product or service with a third-party credit card, such as **Visa**, Accounts Receivable increases, Credit Card Expense increases, and Sales Revenue increases. When the credit card company pays the amount due, Accounts Receivable decreases and Cash increases for the original sales price less the credit card usage fee.

9.2 Account for Uncollectible Accounts Using the Balance Sheet and Income Statement Approaches

- Bad debt is a result of unpaid and uncollectible customer accounts. Companies are required to record bad debt on financial statements as expenses.
- The direct write-off method records bad debt only when the due date has passed for a known amount. Bad Debt Expense increases (debit) and Accounts Receivable decreases (credit) for the amount uncollectible.
- The allowance method estimates uncollectible bad debt and matches the expense in the current period to revenues generated. There are three ways to calculate this estimation: the income statement method, balance sheet method/percentage of receivables, and balance sheet aging of receivables method.
- The income statement method estimates bad debt based on a percentage of credit sales. Bad Debt Expense increases (debit) and Allowance for Doubtful Accounts increases (credit) for the amount estimated as uncollectible.
- The balance sheet method estimates bad debt based on a percentage of outstanding accounts receivable. Bad Debt Expense increases (debit) and Allowance for Doubtful Accounts increases (credit) for the amount estimated as uncollectible.
- The balance sheet aging of receivables method estimates bad debt based on outstanding accounts

receivable, but it considers the time period that an account is past due. Bad Debt Expense increases (debit) and Allowance for Doubtful Accounts increases (credit) for the amount estimated as uncollectible.

9.3 Determine the Efficiency of Receivables Management Using Financial Ratios

- Receivable ratios are best used to determine quick debt collection and lending practices. An investor, lender, or management may use these ratios—in conjunction with financial statement review, past performance, industry standards, and trends—to make an informed financial decision.
- The accounts receivable turnover ratio shows how many times receivables are collected during a period and converted to cash. The ratio is found by taking net credit sales and dividing by average accounts receivable for the period.
- The number of days' sales in receivables ratio shows the expected number of days it will take to convert accounts receivable into cash. The ratio is found by taking 365 days and dividing by the accounts receivable turnover ratio.

9.4 Discuss the Role of Accounting for Receivables in Earnings Management

- Companies may look to report earnings differently to improve stakeholder's views of financial position. Earnings management works within GAAP to accomplish this, while earnings manipulation ignores GAAP.
- Companies may choose to manage earnings to improve income level, increase borrowing opportunities, decrease tax liabilities, and improve company valuation for sales transactions. Accounts receivable is often prey to earnings manipulations.
- Earnings management can occur in several ways, including changes to bad debt estimation methods, percentage uncollectible figures, and category distribution within the balance sheet aging method.
- To understand company performance and unveil any management or manipulation to earnings, ratio analysis is paramount. Number of days' sales in receivables ratio, and trend analysis, are most commonly used.

9.5 Apply Revenue Recognition Principles to Long-Term Projects

- Long-term construction projects may recognize revenue under the percentage of completion method or the completed contract method. The percentage of completion method distributes cost and revenues based on the amount of estimated contract completion during the period.
- Real estate installment sales require periodic payment from buyers. The installment method takes into account risk and distributes revenue based on a percentage of gross profit realized each period.
- With multi-year magazine subscriptions, customers pay in advance for subscription services, and the amount reported for revenue each period is reasonably estimated, until any disruption to the contract occurs. At that time, a new estimation will be distributed over the life of the subscription.
- In a combined equipment purchase with accompanying service contract, the customer pays for the contract up front, but there is no guarantee that service will be provided. Thus, a company may distribute estimated service revenues over the life of the contract or defer recognition and associated expenses until the contract period is complete.

9.6 Explain How Notes Receivable and Accounts Receivable Differ

- Accounts receivable is an informal agreement between customer and company, with collection occurring in less than a year, and no interest requirement. In contrast, notes receivable is a legal contract, with collection occurring typically over a year, and interest requirements.
- The terms of a note contract establish the principal collection amount, maturity date, and annual interest rate.
- Interest is computed as the principal amount multiplied by the part of the year, multiplied by the annual interest rate. The entry to record accumulated interest increases interest receivable and interest revenue.

- An honored note means collection occurred on time and in full. Recording an honored note includes an increase to cash and interest revenue, and a decrease to interest receivable and notes receivable.
- A dishonored note means collection did not occur on time or in full. In this case, a note and the accumulated interest would be converted to accounts receivable.
- When a company cannot collect on account, the company may consider selling the receivable to a collection agency. They will sell the receivable at a fraction of the value in order to apply resources elsewhere.
- If a customer cannot pay its accounts receivable on time, it may renegotiate terms that include a note and interest, thereby converting the accounts receivable to notes receivable. In this case, accounts receivable decreases, and notes receivable and cash increase.



Multiple Choice

1. **LO 9.1** Which of the following is *not* a criterion to recognize revenue under GAAP?
 - A. The earnings process must be completed.
 - B. A product or service must be provided.
 - C. Cash must be collected.
 - D. GAAP requires that the accrual basis accounting principle be used in the revenue recognition process.
2. **LO 9.1** Which of the following best represents the matching principle criteria?
 - A. Expenses are reported in the period in which they were incurred.
 - B. Expenses may be reported in a different period than the matching revenues.
 - C. Revenue and expenses are matched based on when expenses are paid.
 - D. Revenue is recognized when an order occurs and not when the actual sale is initiated.
3. **LO 9.1** If a customer pays with a credit card and the service has been provided, which of the following accounts will be used to record the sales entry for this transaction?
 - A. Cost of Goods Sold, Merchandise Inventory, Sales Revenue
 - B. Sales Revenue, Credit Card Expense, Accounts Receivable
 - C. Accounts Receivable, Merchandise Inventory, Credit Card Expense
 - D. Cost of Goods Sold, Credit Card Expense, Sales Revenue
4. **LO 9.1** A car dealership sells a car to a customer for \$35,000. The customer makes a 10% down payment, and the dealership finances the remaining 90% in-house. How much will the car dealership record in Accounts Receivable for this customer?
 - A. \$31,500
 - B. \$19,250
 - C. \$8,750
 - D. \$7,000

5. **LO 9.2** Tines Commerce computes bad debt based on the allowance method. They determine their current year's balance estimation to be a credit of \$45,000. The previous period had a credit balance in Allowance for Doubtful Accounts of \$12,000. What should be the reported figure in the adjusting entry for the current period?
- A. \$12,000
 - B. \$45,000
 - C. \$33,000
 - D. \$57,000
6. **LO 9.2** Doer Company reports year-end credit sales in the amount of \$390,000 and accounts receivable of \$85,500. Doer uses the income statement method to report bad debt estimation. The estimation percentage is 3.5%. What is the estimated balance uncollectible using the income statement method?
- A. \$13,650
 - B. \$2,992.50
 - C. \$136,500
 - D. \$29,925
7. **LO 9.2** Balloons Plus computes bad debt based on the allowance method. They determine their current year's balance estimation to be a credit of \$84,000. The previous period had a credit balance in Allowance for Doubtful Accounts of \$26,000. What should be the reported figure in the adjusting entry for the current period?
- A. \$84,000
 - B. \$58,000
 - C. \$26,000
 - D. \$110,000
8. **LO 9.2** Conner Pride reports year-end credit sales in the amount of \$567,000 and accounts receivable of \$134,000. Conner uses the balance sheet method to report bad debt estimation. The estimation percentage is 4.6%. What is the estimated balance uncollectible using the balance sheet method?
- A. \$26,082
 - B. \$6,164
 - C. \$260,820
 - D. \$61,640
9. **LO 9.2** Which method delays recognition of bad debt until the specific customer accounts receivable is identified?
- A. income statement method
 - B. balance sheet method
 - C. direct write-off method
 - D. allowance method
10. **LO 9.2** Which of the following estimation methods considers the amount of time past due when computing bad debt?
- A. balance sheet method
 - B. direct write-off method
 - C. income statement method
 - D. balance sheet aging of receivables method

11. **L0 9.3** Which of the following best represents a positive product of a lower number of days' sales in receivables ratio?
- A. collection of receivables is quick, and cash can be used for other business expenditures
 - B. collection of receivables is slow, keeping cash secured to receivables
 - C. credit extension is lenient
 - D. the lender only lends to the top 10% of potential creditors
12. **L0 9.3** South Rims has an accounts receivable balance at the end of 2018 of \$357,470. The net credit sales for the year are \$769,346. The balance at the end of 2017 was \$325,300. What is the accounts receivable turnover rate for 2018 (rounded to two decimal places)?
- A. 2.02 times
 - B. 2.25 times
 - C. 2.15 times
 - D. 1.13 times
13. **L0 9.3** What information can best be elicited from a receivable ratio?
- A. company performance with current debt collection
 - B. credit extension effect on cash sales
 - C. likelihood of future customer bankruptcy filings
 - D. an increase in future credit sales to current customers
14. **L0 9.3** Ancient Grains Unlimited has an accounts receivable turnover ratio of 3.34 times. The net credit sales for the year are \$567,920. What is the days' sales in receivables ratio for 2018 (rounded to the nearest whole number)?
- A. 190 days
 - B. 109 days
 - C. 110 days
 - D. 101 days
15. **L0 9.4** Which of the following is *not* a way to manage earnings?
- A. Change the method for bad debt estimation.
 - B. Change the figure for the uncollectible percentage.
 - C. Under the balance sheet aging method, change the past-due categories.
 - D. Change the dates of common stock issuance.
16. **L0 9.4** Which of the following is true about earnings management?
- A. It works within the constraints of GAAP.
 - B. It works outside the constraints of GAAP.
 - C. It tries to improve stakeholder's views of the company's financial position.
 - D. Both B and C
 - E. Both A and C
17. **L0 9.4** Which statement is most directly affected by a change to net income?
- A. balance sheet
 - B. income statement
 - C. statement of retained earnings
 - D. statement of cash flows

18. LO 9.4 Michelle Company reports \$345,000 in credit sales and \$267,500 in accounts receivable at the end of 2019. Michelle currently uses the income statement method to record bad debt estimation at 4%. To manage earnings more efficiently, Michelle changes bad debt estimation to the balance sheet method at 4%. How much is the difference in net income between the income statement and balance sheet methods?

- A. \$3,100
- B. \$13,800
- C. \$10,700
- D. \$77,500

19. LO 9.6 Which of the following is true of a maturity date?

- A. It must be calculated in days, not in months or years.
- B. It is the date when principal and interest on a note are to be repaid to the lender.
- C. It is the date of establishment of note terms between a lender and customer.
- D. It is not a characteristic of a note receivable.

20. LO 9.6 Mark Industries issues a note in the amount of \$45,000 on August 1, 2018 in exchange for the sale of merchandise. Which of the following is the correct journal entry for this sale?

A.

Cash	45,000	
Sales Revenue		45,000

B.

Cash	45,000	
Notes Receivable: Mark		45,000

C.

Accounts Receivable: Mark	45,000	
Sales Revenue		45,000

D.

Notes Receivable: Mark	45,000	
Sales Revenue		45,000

21. LO 9.6 A customer takes out a loan of \$130,000 on January 1, with a maturity date of 36 months, and an annual interest rate of 11%. If 6 months have passed since note establishment, what would be the recorded interest figure at that time?

- A. \$7,150
- B. \$65,000
- C. \$14,300
- D. \$2,383

22. LO 9.6 A company collects an honored note with a maturity date of 24 months from establishment, a 10% interest rate, and an initial loan amount of \$30,000. Which accounts are used to record collection of the honored note at maturity date?

- A. Interest Revenue, Interest Expense, Cash
- B. Interest Receivable, Cash, Notes Receivable
- C. Interest Revenue, Interest Receivable, Cash, Notes Receivable
- D. Notes Receivable, Interest Revenue, Cash, Interest Expense

23. **LO 9.6** Orion Rentals is unable to collect on a note worth \$25,000 and has accumulated interest of \$250. It convert this note and interest to accounts receivable. After some time, Orion is still unable to collect the debt and it decides to sell the converted note to a collection agency. The collection agency will pay only 20% of the value of accounts receivable to Orion. What is the amount of cash paid to Orion from the collection agency?
- A. \$5,000
 - B. \$5,050
 - C. \$20,000
 - D. \$19,950



Questions

1. **LO 9.1** What is the matching principle?
2. **LO 9.1** A beverage wholesale outlet sells beverages by the case. On April 13, a customer purchased 18 cases of wine at \$42 per case, 20 cases of soda at \$29 per case, and 45 cases of water at \$17 per case. The customer pays with a Merrill credit card. Merrill charges a usage fee to the company of 5% of the total sale. What is the sales entry for this purchase?
3. **LO 9.1** On January 1, a flower shop contracts with customers to provide flowers for their wedding on June 2. The total contract price is \$3,000, payable in equal installments for the next six months on the first of each month (with the first payment due January 1). How much will be recorded as revenue during the month of April?
4. **LO 9.1** American Signs allows customers to pay with their Jones credit card and cash. Jones charges American Signs a 3.5% service fee for each credit sale using its card. Credit sales for the month of June total \$328,430, where 40% of those sales were made using the Jones credit card. Based on this information, what will be the total in Credit Card Expense at the end of June?
5. **LO 9.2** Which account type is used to record bad debt estimation and is a contra account to Accounts Receivable?
6. **LO 9.2** Earrings Depot records bad debt using the allowance, balance sheet method. They recorded \$97,440 in accounts receivable for the year and \$288,550 in credit sales. The uncollectible percentage is 5.5%. What is the bad debt estimation for the year using the balance sheet method?
7. **LO 9.2** Racing Adventures records bad debt using the allowance, income statement method. They recorded \$134,560 in accounts receivable for the year and \$323,660 in credit sales. The uncollectible percentage is 6.8%. What is the bad debt estimation for the year using the income statement method?
8. **LO 9.2** Aron Larson is a customer of Bank Enterprises. Mr. Larson took out a loan in the amount of \$120,000 on August 1. On December 31, Bank Enterprises determines the loan to be uncollectible. Larson had not paid anything toward the balance due on account. What is the journal entry recording the bad debt write-off?

9. **LO 9.2** The following accounts receivable information pertains to Growth Markets LLC.

Past-Due Category	Accounts Receivable Total	Percentage Uncollectible
0–30 days	\$22,480	6%
31–90 days	36,540	17%
Over 90 days	15,330	25%

What is the total uncollectible estimated bad debt for Growth Markets LLC?

10. **LO 9.2** What are bad debts?

11. **LO 9.3** What are some possible negative signals when the product of the accounts receivable turnover ratio is lower (i.e., fewer times)?

12. **LO 9.3** Berry Farms has an accounts receivable balance at the end of 2018 of \$425,650. The net credit sales for the year are \$924,123. The balance at the end of 2017 was \$378,550. What is the number of days' sales in receivables ratio for 2018 (round all answers to two decimal places)?

13. **LO 9.3** What are the two most common receivables ratios, and what do these ratios tell a stakeholder about the company?

14. **LO 9.4** What is the difference between earnings management and earnings manipulation?

15. **LO 9.4** What is an earnings management benefit from showing a reduced figure for bad debt expense?

16. **LO 9.4** Angelo's Outlet used to report bad debt using the balance sheet method and is now switching to the income statement method. The percentage uncollectible will remain constant at 5%. Credit sales figures for 2019 were \$866,000, and accounts receivable was \$732,000. How much will Angelo's Outlet report for 2019 bad debt estimation under the income statement method?

17. **LO 9.4** What is an earnings management benefit from showing an increased figure for bad debt expense?

18. **LO 9.5** What are the two methods of revenue recognition for long-term construction projects?

19. **LO 9.5** What is the installment method?

20. **LO 9.5** What is a possible ramification of deferred revenue reporting?

21. **LO 9.5** What is the completed contract method?

22. **LO 9.5** What is the percentage of completion method?

23. **LO 9.6** British Imports is unable to collect on a note worth \$215,000 that has accumulated interest of \$465. What is the journal entry to record the conversion of the note to accounts receivable?

24. **LO 9.6** Chemical Enterprises issues a note in the amount of \$156,000 to a customer on January 1, 2018. Terms of the note show a maturity date of 36 months, and an annual interest rate of 8%. What is the accumulated interest entry if 9 months have passed since note establishment?

25. **LO 9.6** What is the principal of a note?

26. **LO 9.6** A customer was unable to pay the accounts receivable on time in the amount of \$34,000. The customer was able to negotiate with the company and transferred the accounts receivable into a note that includes interest, along with an up-front cash payment of \$6,000. The note maturity date is 24 months with a 15% annual interest rate. What is the entry to recognize this transfer?

27. **LO 9.6** What are three differences between accounts receivable and notes receivable?



Exercise Set A

EA1. **L0** 9.1 Prepare journal entries for the following transactions from Restaurant Depot.

- | | |
|---------|--|
| Nov. 8 | Customer Miles Shandy purchased 200 pans at \$35 per pan, costing Restaurant Depot \$21 per pan. Terms of the sale are 2/10, n/30, invoice dated November 8. |
| Nov. 17 | Miles Shandy pays in full with cash for his purchase of November 8. |

EA2. **L0** 9.1 Prepare journal entries for the following transactions from Cars Plus.

- | | |
|---------|--|
| Oct. 18 | Customer Angela Sosa purchased \$132,980 worth of car parts with her Standard credit card. The cost to Cars Plus for the sale is \$86,250. Standard credit card charges Cars Plus a fee of 4% of the sale. |
| Oct. 24 | Standard remits payment to Cars Plus, less any fees. |

EA3. **L0** 9.1 Consider the following transaction: On March 6, Fun Cards sells 540 card decks with a sales price of \$7 per deck to Padma Singh. The cost to Fun Cards is \$4 per deck. Prepare a journal entry under each of the following conditions. Assume MoneyPlus charges a 2% fee for each sales transaction using its card.

- Payment is made using a credit, in-house account.
- Payment is made using a MoneyPlus credit card.

EA4. **L0** 9.2 Window World extended credit to customer Nile Jenkins in the amount of \$130,900 for his purchase of window treatments on April 2. Terms of the sale are 2/60, n/150. The cost of the purchase to Window World is \$56,200. On September 4, Window World determined that Nile Jenkins's account was uncollectible and wrote off the debt. On December 3, Mr. Jenkins unexpectedly paid in full on his account. Record each Window World transaction with Nile Jenkins. In order to demonstrate the write-off and then subsequent collection of an account receivable, assume in this example that Window World rarely extends credit directly, so this transaction is permitted to use the direct write-off method. Remember, however, that in most cases the direct write-off method is not allowed.

EA5. **L0** 9.2 Millennium Associates records bad debt using the allowance, income statement method. They recorded \$299,420 in accounts receivable for the year, and \$773,270 in credit sales. The uncollectible percentage is 3.2%. On February 5, Millennium Associates identifies one uncollectible account from Molar Corp in the amount of \$1,330. On April 15, Molar Corp unexpectedly pays its account in full. Record journal entries for the following.

- Year-end adjusting entry for 2017 bad debt
- February 5, 2018 identification entry
- Entry for payment on April 15, 2018

EA6. **L0 9.2** Millennium Associates records bad debt using the allowance, balance sheet method. They recorded \$299,420 in accounts receivable for the year, and \$773,270 in credit sales. The uncollectible percentage is 3.2%. On November 22, Millennium Associates identifies one uncollectible account from Angel's Hardware in the amount of \$3,650. On December 18, Angel's Hardware unexpectedly pays its account in full. Record journal entries for the following.

- A. Year-end adjusting entry for 2017 bad debt
- B. November 22, 2018 identification entry
- C. Entry for payment on December 18, 2018

EA7. **L0 9.2** The following accounts receivable information pertains to Marshall Inc.

Past-Due Category	Accounts Receivable Total	Percentage Uncollectible
0–30 days	\$84,550	8%
31–90 days	32,230	16%
Over 90 days	22,170	37%

Determine the estimated uncollectible bad debt from Marshall Inc. using the balance sheet aging of receivables method, and record the year-end adjusting journal entry for bad debt.

EA8. **L0 9.3** Using the following select financial statement information from Black Water Industries, compute the accounts receivable turnover ratios for 2018 and 2019 (round answers to two decimal places). What do the outcomes tell a potential investor about Black Water Industries?

BLACK WATER INDUSTRIES		
Year	Net Credit Sales	Ending Accounts Receivable
2017	\$685,430	\$330,250
2018	700,290	360,450
2019	768,500	401,650

EA9. **L0 9.3** Using the following select financial statement information from Black Water Industries, compute the number of days' sales in receivables ratios for 2018 and 2019 (round answers to two decimal places). What do the outcomes tell a potential investor about Black Water Industries?

BLACK WATER INDUSTRIES		
Year	Net Credit Sales	Ending Accounts Receivable
2017	\$685,430	\$330,250
2018	700,290	360,450
2019	768,500	401,650

EA10. **L0 9.3** Millennial Manufacturing has net credit sales for 2018 in the amount of \$1,433,630, beginning accounts receivable balance of \$585,900, and an ending accounts receivable balance of \$621,450. Compute the accounts receivable turnover ratio and the number of days' sales in receivables ratio for 2018 (round answers to two decimal places). What do the outcomes tell a potential investor about Millennial Manufacturing if industry average is 2.6 times and number of day's sales ratio is 180 days?

EA11. **L0** 9.4 Mirror Mart uses the balance sheet aging method to account for uncollectible debt on receivables. The following is the past-due category information for outstanding receivable debt for 2019.

	0–30 days past due	31–90 days past due	Over 90 days past due
Accounts receivable amount	\$50,000	\$30,000	\$15,000
Percent uncollectible	8%	15%	30%
Total per category	?	?	?
Total uncollectible?			

To manage earnings more efficiently, Mirror Mart decided to change past-due categories as follows.

	0–60 days past due	61–120 days past due	Over 120 days past due
Accounts receivable amount	\$80,000	\$10,000	\$5,000
Percent uncollectible	8%	15%	30%
Total per category?			
Total uncollectible?			

Complete the following.

- Complete each table by filling in the blanks.
- Determine the difference between total uncollectible.
- Explain how the new total uncollectible amount affects net income and accounts receivable.

EA12. **L0** 9.4 Aerospace Electronics reports \$567,000 in credit sales for 2018 and \$632,500 in 2019. They have a \$499,000 accounts receivable balance at the end of 2018, and \$600,000 at the end of 2019. Aerospace uses the income statement method to record bad debt estimation at 5% during 2018. To manage earnings more favorably, Aerospace changes bad debt estimation to the balance sheet method at 7% during 2019.

- Determine the bad debt estimation for 2018.
- Determine the bad debt estimation for 2019.
- Describe a benefit to Aerospace Electronics in 2019 as a result of its earnings management.

EA13. **L0** 9.4 Dortmund Stockyard reports \$896,000 in credit sales for 2018 and \$802,670 in 2019. It has a \$675,000 accounts receivable balance at the end of 2018, and \$682,000 at the end of 2019. Dortmund uses the balance sheet method to record bad debt estimation at 8% during 2018. To manage earnings more favorably, Dortmund changes bad debt estimation to the income statement method at 6% during 2019.

- Determine the bad debt estimation for 2018.
- Determine the bad debt estimation for 2019.
- Describe a benefit to Dortmund Stockyard in 2019 as a result of its earnings management.

EA14. **L0** 9.6 Arvan Patel is a customer of Bank's Hardware Store. For Mr. Patel's latest purchase on January 1, 2018, Bank's Hardware issues a note with a principal amount of \$480,000, 13% annual interest rate, and a 24-month maturity date on December 31, 2019. Record the journal entries for Bank's Hardware Store for the following transactions.

- Note issuance
- Subsequent interest entry on December 31, 2018
- Honored note entry at maturity on December 31, 2019.

EA15. **L0 9.6** Resin Milling issued a \$390,500 note on January 1, 2018 to a customer in exchange for merchandise. The merchandise had a cost to Resin Milling of \$170,000. The terms of the note are 24-month maturity date on December 31, 2019 at a 5% annual interest rate. The customer does not pay on its account and dishonors the note. Record the journal entries for Resin Milling for the following transactions.

- A. Initial sale on January 1, 2018
- B. Dishonored note entry on January 1, 2020, assuming interest has not been recognized before note maturity

EA16. **L0 9.6** Mystic Magic issued a \$120,250 note on January 1, 2018 to a customer, Amy Arnold, in exchange for merchandise. Terms of the note are 9-month maturity date on October 1, 2018 at a 9.6% annual interest rate. Amy Arnold does not pay on her account and dishonors the note. On November 10, 2018, Mystic Magic decides to sell the dishonored note to a collection agency for 25% of its value. Record the journal entries for Mystic Magic for the following transactions.

- A. Initial sale on January 1, 2018
- B. Dishonored note entry on October 1, 2018
- C. Receivable sale on November 10, 2018



Exercise Set B

EB1. **L0 9.1** Prepare journal entries for the following transactions from Movie Mart.

Sept. 10 Customer Ellie Monk purchased \$43,820 worth of merchandise from Movie Mart, costing Movie Mart \$28,745. Terms of the sale are 3/10, n/60, invoice dated September 10.

Sept. 22 Ellie Monk pays in full with cash for her purchase on September 22.

EB2. **L0 9.1** Prepare journal entries for the following transactions from Angled Pictures.

June 21 Customer LeShaun Rogers purchased 167 picture frames at a sales price of \$28 per frame with her American credit card. The cost to Angled Pictures for the sale is \$19 per frame. American credit card charges Angled Pictures a fee of 3% of the sale.

June 30 American remits payment to Angled Pictures, less any fees.

EB3. **L0 9.1** Consider the following transaction: On February 15, Darling Dolls sells 110 dolls with a sales price of \$15 per doll to Rosemary Cummings. The cost to Darling Dolls is \$5 per doll. Prepare a journal entry under each of the following conditions. Assume Gentry charges a 3.5% fee for each sales transaction using its card.

- A. Payment is made using a credit, in-house account.
- B. Payment is made using a Gentry credit card.

EB4. **L0 9.2** Laminate Express extended credit to customer Amal Sunderland in the amount of \$244,650 for his January 4 purchase of flooring. Terms of the sale are 2/30, n/120. The cost of the purchase to Laminate Express is \$88,440. On April 5, Laminate Express determined that Amal Sunderland's account was uncollectible and wrote off the debt. On June 22, Amal Sunderland unexpectedly paid 30% of the total amount due in cash on his account. Record each Laminate Express transaction with Amal Sunderland. In order to demonstrate the write-off and then subsequent collection of an account receivable, assume in this example that Laminate Express rarely extends credit directly, so this transaction is permitted to use the direct write-off method. Remember, though, that in most cases the direct write-off method is not allowed.

EB5. **L0 9.2** Olena Mirrors records bad debt using the allowance, income statement method. They recorded \$343,160 in accounts receivable for the year and \$577,930 in credit sales. The uncollectible percentage is 4.4%. On May 10, Olena Mirrors identifies one uncollectible account from Elsa Sweeney in the amount of \$2,870. On August 12, Elsa Sweeney unexpectedly pays \$1,441 toward her account. Record journal entries for the following.

- A. Year-end adjusting entry for 2017 bad debt
- B. May 10, 2018 identification entry
- C. Entry for payment on August 12, 2018

EB6. **L0 9.2** Olena Mirrors records bad debt using the allowance, balance sheet method. They recorded \$343,160 in accounts receivable for the year and \$577,930 in credit sales. The uncollectible percentage is 4.4%. On June 11, Olena Mirrors identifies one uncollectible account from Nadia White in the amount of \$4,265. On September 14, Nadia Chernoff unexpectedly pays \$1,732 toward her account. Record journal entries for the following.

- A. Year-end adjusting entry for 2017 bad debt
- B. June 11, 2018 identification entry
- C. Entry for payment on September 14, 2018

EB7. **L0 9.2** The following accounts receivable information pertains to Envelope Experts.

Past-Due Category	Accounts Receivable Total	Percentage Uncollectible
0–30 days	\$39,540	10%
31–90 days	23,280	26%
Over 90 days	14,630	42%

Determine the estimated uncollectible bad debt from Envelope Experts using the balance sheet aging of receivables method, and record the year-end adjusting journal entry for bad debt.

EB8. **L0 9.3** Using the following select financial statement information from Mover Supply Depot, compute the accounts receivable turnover ratios for 2018 and 2019 (round answers to two decimal places). What do the outcomes tell a potential investor about Mover Supply Depot if the industry average is 4 times?

MOVER SUPPLY DEPOT		
Year	Net Credit Sales	Ending Accounts Receivable
2017	\$1,230,680	\$321,500
2018	1,477,440	345,700
2019	1,724,400	326,600

EB9. **LO 9.3** Using the following select financial statement information from Mover Supply Depot, compute the number of days' sales in receivables ratios for 2018 and 2019 (round answers to two decimal places). What do the outcomes tell a potential investor about Mover Supply Depot if the competition collects in approximately 65 days?

MOVER SUPPLY DEPOT		
Year	Net Credit Sales	Ending Accounts Receivable
2017	\$1,230,680	\$321,500
2018	1,477,440	345,700
2019	1,724,400	326,600

EB10. **LO 9.3** Starlight Enterprises has net credit sales for 2019 in the amount of \$2,600,325, beginning accounts receivable balance of \$844,260, and an ending accounts receivable balance of \$604,930. Compute the accounts receivable turnover ratio and the number of days' sales in receivables ratio for 2019 (round answers to two decimal places). What do the outcomes tell a potential investor about Starlight Enterprises if the industry average is 1.5 times and the number of days' sales ratio is 175 days?

EB11. **LO 9.4** Outpost Designs uses the balance sheet aging method to account for uncollectible debt on receivables. The following is the past-due category information for outstanding receivable debt for 2019.

	0–30 days past due	31–90 days past due	Over 90 days past due
Accounts receivable amount	\$35,000	\$40,000	\$25,000
Percent uncollectible	10%	22%	35%
Total per category?			
Total uncollectible?			

To manage earnings more favorably, Outpost Designs decided to change past-due categories as follows.

	0–60 days past due	61–120 days past due	Over 120 days past due
Accounts receivable amount	\$50,000	\$35,000	\$15,000
Percent uncollectible	10%	22%	35%
Total per category?			
Total uncollectible?			

Complete the following.

- Complete each table by filling in the blanks.
- Determine the difference between total uncollectible.
- Explain how the new total uncollectible amount affects net income and accounts receivable.

EB12. **LO 9.4** Clovis Enterprises reports \$845,500 in credit sales for 2018 and \$933,000 in 2019. It has a \$758,000 accounts receivable balance at the end of 2018 and \$841,000 at the end of 2019. Clovis uses the income statement method to record bad debt estimation at 4% during 2018. To manage earnings more favorably, Clovis changes bad debt estimation to the balance sheet method at 5% during 2019.

- Determine the bad debt estimation for 2018.
- Determine the bad debt estimation for 2019.
- Describe a benefit to Clovis Enterprises in 2019 as a result of its earnings management.

EB13. **LO 9.4** Fortune Accounting reports \$1,455,000 in credit sales for 2018 and \$1,678,430 in 2019. It has an \$825,000 accounts receivable balance at the end of 2018 and \$756,000 at the end of 2019. Fortune uses the balance sheet method to record bad debt estimation at 7.5% during 2018. To manage earnings more favorably, Fortune changes bad debt estimation to the income statement method at 5.5% during 2019.

- A. Determine the bad debt estimation for 2018.
- B. Determine the bad debt estimation for 2019.
- C. Describe a benefit to Fortune in 2019 as a result of its earnings management.

EB14. **LO 9.6** Anderson Air is a customer of Handler Cleaning Operations. For Anderson Air's latest purchase on January 1, 2018, Handler Cleaning Operations issues a note with a principal amount of \$1,255,000, 6% annual interest rate, and a 24-month maturity date on December 31, 2019. Record the journal entries for Handler Cleaning Operations for the following transactions.

- A. Entry for note issuance
- B. Subsequent interest entry on December 31, 2018
- C. Honored note entry at maturity on December 31, 2019

EB15. **LO 9.6** Rain T-Shirts issued a \$440,600 note on January 1, 2018 to a customer, Larry Potts, in exchange for merchandise. The merchandise had a cost to Rain T-Shirts of \$220,300. The terms of the note are 24-month maturity date on December 31, 2019 at a 4.5% annual interest rate. Larry Potts does not pay on his account and dishonors the note. Record journal entries for Rain T-Shirts for the following transactions.

- A. Initial sale on January 1, 2018
- B. Dishonored note entry on January 1, 2020, assuming interest has not been recognized before note maturity

EB16. **LO 9.6** Element Surfboards issued a \$210,800 note on January 1, 2018 to a customer, Leona Marland, in exchange for merchandise. Terms of the note are 9-month maturity date on October 1, 2018 at a 10.2% annual interest rate. Leona Marland does not pay on her account and dishonors the note. On December 2, 2018, Element Surfboards decides to sell the dishonored note to a collection agency for 30% of its value. Record the journal entries for Element Surfboards for the following transactions.

- A. Initial sale on January 1, 2018
- B. Dishonored note entry on October 1, 2018
- C. Receivable sale on December 2, 2018



Problem Set A

PA1. **LO 9.1** Prepare journal entries for the following transactions from Barrels Warehouse.

Jul. 1	Sold 2,000 barrels with a sales price of \$30 per barrel to customer Luck's Vineyards. Luck's Vineyards paid with cash. The cost for this sale is \$18 per barrel.
Jul. 3	Sold 1,200 barrels with a sales price of \$32 per barrel to customer Paramount Apparel. Paramount paid using its in-house credit account. Terms of the sale are 3/10, n/30. The cost for this sale is \$17 per barrel.
Jul. 5	Sold 1,400 barrels with a sales price of \$31 per barrel to customer Melody Sharehouse. Melody paid using her MoneyPlus credit card. The cost for this sale is \$18 per barrel. MoneyPlus Credit Card Company charges Barrels Warehouse a 2% usage fee based on the total sale per transaction.
Jul. 8	MoneyPlus Credit Card Company made a cash payment in full to Barrels Warehouse for the transaction from July 5, less any usage fees.
Jul. 13	Paramount Apparel paid its account in full with a cash payment, less any discounts.

PA2. **LO 9.1** Prepare journal entries for the following transactions of Dulce Delights.

Apr. 10	Sold 320 ice cream buckets with a sales price of \$12 per bucket to customer Livia Diaz. Livia paid using her in-house credit account; terms 2/10, n/30. The cost for this sale to Dulce Delights is \$4.50 per bucket.
Apr. 13	Sold 290 ice cream buckets with a sales price of \$12.50 per bucket to customer Selene Arnold. Selene paid using her Max credit card. The cost for this sale to Dulce Delights is \$4.50 per bucket. Max Credit Card Company charges Dulce Delights a 5% usage fee based on the total sale per transaction.
Apr. 20	Livia Diaz paid her account in full with a cash payment, less any discounts.
Apr. 25	Max Credit Card Company made a cash payment in full to Dulce Delights for the transaction from April 13, less any usage fees.

PA3. **L0** **9.1** Prepare journal entries for the following transactions from Forest Furniture.

Oct. 3	Sold 2 couches with a sales price of \$2,450 per couch to customer Norman Guzman. Norman Guzman paid with his Draw Plus credit card. The Draw Plus credit card charges Forest Furniture a 3.5% usage fee based on the total sale per transaction. The cost for this sale is \$1,700 per couch.
Oct. 6	Sold 4 end chairs for a total sales price of \$1,250 to April Orozco. April paid in full with cash. The cost of the sale is \$800.
Oct. 9	Sold 18 can lights with a sales price of \$50 per light to customer James Montgomery. James Montgomery paid using his Fund Max credit card. Fund Max charges Forest Furniture a 2.4% usage fee based on the total sale per transaction. The cost for this sale is \$29 per light.
Oct. 12	Draw Plus made a cash payment in full to Forest Furniture for the transaction from Oct 3, less any usage fees.
Oct. 15	Fund Max made a cash payment of 25% of the total due to Forest Furniture for the transaction from October 9th, less any usage fees.
Oct. 25	Fund Max made a cash payment of the remainder due to Forest Furniture for the transaction from October 9, less any usage fees.

PA4. **L0** **9.2** Jars Plus recorded \$861,430 in credit sales for the year and \$488,000 in accounts receivable. The uncollectible percentage is 2.3% for the income statement method, and 3.6% for the balance sheet method.

- Record the year-end adjusting entry for 2018 bad debt using the income statement method.
- Record the year-end adjusting entry for 2018 bad debt using the balance sheet method.
- Assume there was a previous debit balance in Allowance for Doubtful Accounts of \$10,220, record the year-end entry for bad debt using the income statement method, and then the entry using the balance sheet method.
- Assume there was a previous credit balance in Allowance for Doubtful Accounts of \$5,470, record the year-end entry for bad debt using the income statement method, and then the entry using the balance sheet method.

PA5. **L0** **9.2** The following accounts receivable information pertains to Luxury Cruises.

Past-Due Category	Accounts Receivable Total	Percentage Uncollectible
0–30 days	\$1,166,350	15%
31–90 days	577,870	33%
Over 90 days	324,450	48%

- Determine the estimated uncollectible bad debt for Luxury Cruises in 2018 using the balance sheet aging of receivables method.
- Record the year-end 2018 adjusting journal entry for bad debt.
- Assume there was a previous debit balance in Allowance for Doubtful Accounts of \$187,450; record the year-end entry for bad debt, taking this into consideration.
- Assume there was a previous credit balance in Allowance for Doubtful Accounts of \$206,770; record the year-end entry for bad debt, taking this into consideration.
- On January 24, 2019, Luxury Cruises identifies Landon Walker's account as uncollectible in the amount of \$4,650. Record the entry for identification.

PA6. **LO 9.2** Funnel Direct recorded \$1,345,780 in credit sales for the year and \$695,455 in accounts receivable. The uncollectible percentage is 4.4% for the income statement method and 4% for the balance sheet method.

- Record the year-end adjusting entry for 2018 bad debt using the income statement method.
- Record the year-end adjusting entry for 2018 bad debt using the balance sheet method.
- Assume there was a previous credit balance in Allowance for Doubtful Accounts of \$13,888; record the year-end entry for bad debt using the income statement method, and then the entry using the balance sheet method.

PA7. **LO 9.3** Review the select information for Bean Superstore and Legumes Plus (industry competitors), and then complete the following.

- Compute the accounts receivable turnover ratios for each company for 2018 and 2019.
- Compute the number of days' sales in receivables ratios for each company for 2018 and 2019.
- Determine which company is the better investment and why. Round answers to two decimal places.

BEAN SUPERSTORE Comparative Balance Sheet December 31, 2017, 2018, and 2019				LEGUMES PLUS Comparative Balance Sheet December 31, 2017, 2018, and 2019		
	2019	2018	2017	2019	2018	2017
Assets						
Cash	\$345,600	\$330,460	\$300,000	\$407,000	\$386,450	\$356,367
Accounts Receivable	67,000	62,000	59,000	85,430	82,670	79,230
Inventory	145,830	178,011	155,205	128,080	40,036	52,142
Equipment	100,465	101,202	103,085	182,006	23,400	111,701
Total Assets	\$658,895	\$671,673	\$617,290	\$802,516	\$532,556	\$599,440
Liabilities						
Salaries Payable	\$ 90,200	\$ 88,563	\$ 84,209	\$ 95,100	\$ 91,455	\$ 89,467
Accounts Payable	70,000	71,670	69,331	62,430	86,331	87,197
Notes Payable	41,000	50,650	58,250	63,222	67,880	68,312
Equity						
Common Stock	\$ 22,695	\$ 20,990	\$ 19,100	\$ 25,464	\$ 22,090	\$ 22,188
Retained Earnings	435,000	439,800	386,400	556,300	264,800	332,276
Total Liabilities and Equity	\$658,895	\$671,673	\$617,290	\$802,516	\$532,556	\$599,440

BEAN SUPERSTORE Comparative Income Statement Year Ended December 31, 2017, 2018, and 2019				LEGUMES PLUS Comparative Income Statement Year Ended December 31, 2017, 2018, and 2019		
	2019	2018	2017	2019	2018	2017
Net Credit Sales	\$1,000,000	\$984,400	\$875,350	\$1,256,300	\$1,020,570	\$967,478
Cost of Goods Sold	450,000	419,600	388,950	500,000	580,320	465,780
Gross Margin	550,000	564,800	486,400	756,300	440,250	501,698
Expenses	115,000	125,000	100,000	200,000	175,450	169,422
Net Income (Loss)	435,000	439,800	386,400	556,300	264,800	332,276

PA8. **L0** **9.3** The following select financial statement information from Candid Photography.

CANDID PHOTOGRAPHY		
Year	Net Credit Sales	Ending Accounts Receivable
2017	\$2,988,000	\$1,290,450
2018	3,750,860	1,345,600
2019	4,000,350	1,546,550

Compute the accounts receivable turnover ratios and the number of days' sales in receivables ratios for 2018 and 2019 (round answers to two decimal places). What do the outcomes tell a potential investor about Candid Photography if industry average for accounts receivable turnover ratio is 3 times and days' sales in receivables ratio is 150 days?

PA9. **L0** **9.4** Noren Company uses the balance sheet aging method to account for uncollectible debt on receivables. The following is the past-due category information for outstanding receivable debt for 2019.

	0–30 Days Past Due	31–90 Days Past Due	Over 90 Days Past Due
Accounts receivable amount	\$120,000	\$80,000	\$65,500
Percent uncollectible	7%	20%	40%
Total per category?			
Total uncollectible?			

To manage earnings more favorably, Noren Company considers changing the past-due categories as follows.

	0–60 Days Past Due	61–120 Days Past Due	Over 120 Days Past Due
Accounts receivable amount	\$160,000	\$50,500	\$55,000
Percent uncollectible	7%	20%	40%
Total per category?	?	?	?
Total uncollectible?			

- Complete each table by filling in the blanks.
- Determine the difference between totals uncollectible.
- Complete the following 2019 comparative income statements for 2019, showing net income changes as a result of the changes to the balance sheet aging method categories.
- Describe the categories change effect on net income and accounts receivable.

NOREN COMPANY Comparative Income Statements Year Ended December 31, 2019		
	Original Categories	Categories Change
Net Credit Sales	\$1,240,000	\$1,240,000
Cost of Goods Sold	60,000	60,000
Gross Margin	1,180,000	1,180,000
Expenses:		
General and Administrative Expense	300,500	300,500
Bad Debt Expense	?	?
Total Expenses	?	?
Net Income (Loss)	?	?

PA10. **L0** 9.4 Elegant Universal uses the balance sheet aging method to account for uncollectible debt on receivables. The following is the past-due category information for outstanding receivable debt for 2019.

	0–30 Days Past Due	31–90 Days Past Due	Over 90 Days Past Due
Accounts receivable amount	\$1,330,000	\$321,000	\$200,650
Percent uncollectible	8%	24%	35%
Total per category	?	?	?
Total uncollectible?			

To manage earnings more favorably, Elegant Universal considers changing the past-due categories as follows.

	0–60 Days Past Due	61–120 Days Past Due	Over 120 Days Past Due
Accounts receivable amount	\$1,532,000	\$289,550	\$30,100
Percent uncollectible	8%	24%	35%
Total per category	?	?	?
Total uncollectible?			

- Complete each table by filling in the blanks.
- Determine the difference between totals uncollectible.
- Describe the categories change effect on net income and accounts receivable.

PA11. **L0** 9.6 Record journal entries for the following transactions of Telesco Enterprises.

Jan. 1, 2018	Issued a \$330,700 note to customer Abe Willis as terms of a merchandise sale. The merchandise's cost to Telesco is \$120,900. Note contract terms included a 36-month maturity date, and a 4% annual interest rate.
Dec. 31, 2018	Telesco records interest accumulated for 2018.
Dec. 31, 2019	Telesco records interest accumulated for 2019.
Dec. 31, 2020	Abe Willis honors the note and pays in full with cash.

PA12. **L0** 9.6 Record journal entries for the following transactions of Wind Solutions.

Jan. 1, 2018	Issued a \$2,350,100 note to customer Solar Plex as terms of a merchandise sale. The merchandise's cost to Wind Solutions is \$1,002,650. Note contract terms included a 24-month maturity date, and a 2.1% annual interest rate.
Dec. 31, 2018	Wind Solutions records interest accumulated for 2018.
Dec. 31, 2019	Wind Solutions converts Solar Plex's dishonored note into account receivable. This includes accumulated interest for the 24-month period.
Mar. 8, 2020	Wind Solutions sells the outstanding debt from Solar Plex to a collection agency at 25% of the accounts receivable value.

PA13. **L0** 9.6 Record journal entries for the following transactions of Commissary Productions.

Jan. 1, 2018	Issued a \$425,530 note to customer June Solkowski as terms of a merchandise sale. The merchandise's cost to Commissary is \$231,700. Note contract terms included a 36-month maturity date, and a 5% annual interest rate.
Dec. 31, 2018	Commissary records interest accumulated for 2018.
Dec. 31, 2019	Commissary records interest accumulated for 2019.
Dec. 31, 2020	June Stevens honors the note and pays in full with cash.

PA14. **L0** 9.6 Record journal entries for the following transactions of Piano Wholesalers.

Jan. 1, 2018	Issued a \$1,235,650 note to customer Arrowstar as terms of a merchandise sale. The merchandise's cost to Piano Wholesalers is \$602,000. Note contract terms included a 24-month maturity date and a 3.4% annual interest rate.
Dec. 31, 2018	Piano Wholesalers records interest accumulated for 2018.
Dec. 31, 2019	Piano Wholesalers converts Arrowstar's dishonored note into account receivable. This includes accumulated interest for the 24-month period.
Apr. 12, 2020	Piano Wholesalers sells the outstanding debt from Arrowstar to a collection agency at 32% of the accounts receivable value.

PA15. **L0** 9.7 Organics Plus is considering which bad debt estimation method works best for its company. It is deciding between the income statement method, balance sheet method of receivables, and balance sheet aging of receivables method. If it uses the income statement method, bad debt would be estimated at 4% of credit sales. If it were to use the balance sheet method, it would estimate bad debt at 12% of accounts receivable. If it were to use the balance sheet aging of receivables method, it would split its receivables into three categories: 0–30 days past due at 6%, 31–90 days past due at 19%, and over 90 days past due at 26%. There is currently a zero balance, transferred from the prior year's Allowance for Doubtful Accounts. The following information is available from the year-end income statement and balance sheet.

2018 Year-End Totals for Organics Plus	
Credit sales	\$1,850,000
Accounts receivable	600,000

There is also additional information regarding the distribution of accounts receivable by age.

Past-Due Category	Accounts Receivable Total
0–30 days	\$350,000
31–90 days	100,000
Over 90 days	150,000

Prepare the year-end adjusting entry for bad debt, using

- Income statement method
- Balance sheet method of receivables
- Balance sheet aging of receivables method.
- Which method should the company choose, and why?



Problem Set B

PB1. **LO 9.1** Prepare journal entries for the following transactions from Lumber Wholesale.

Aug. 9	Sold 48,320 pounds of lumber with a sales price of \$5.50 per pound to customer Homes Unlimited. Homes Unlimited paid with cash. The cost for this sale is \$1.35 per pound.
Aug. 10	Sold 34,700 pounds of lumber with a sales price of \$6.75 per pound to customer Barry Njegren. Njegren paid using his in-house credit account. Terms of the sale are 4/15, n/35. The cost for this sale is \$1.20 per pound.
Aug. 11	Sold 50,330 pounds of lumber with a sales price of \$4.60 per pound to customer Goodson Houses. Goodson paid using its American credit card. The cost for this sale is \$1.40 per pound. American Credit Card Company charged Lumber Wholesale a 2.5% usage fee based on the total sale per transaction.
Aug. 14	American Credit Card Company made a cash payment in full to Lumber Wholesale for the transaction from August 11, less any usage fees.
Aug. 25	Barry Njegren paid his account in full with a cash payment, less any discounts.

PB2. **LO 9.1** Prepare journal entries for the following transactions of Maritime Memories.

May 2	Sold \$864,920 worth of maritime products to customer Jordan Scott. Jordan paid using his in-house credit account; terms 3/15, n/60. The cost to Maritime Memories for this sale is \$532,187.
May 6	Sold \$567,120 worth of maritime products to customer Joe Hsu. Joe paid using his Longstand credit card. The cost to Maritime Memories is \$321,864. Longstand Credit Card Company charged Maritime Memories a 1.5% usage fee based on the total sale per transaction.
May 16	Jordan Scott paid his account in full with a cash payment, less any discounts.
May 23	Longstand Credit Card Company made a cash payment in full to Maritime Memories for the transaction from May 6, less any usage fees.

PB3. **LO 9.1** Prepare journal entries for the following transactions from School Mart.

Mar. 6	Sold 1,000 pencil packages with a sales price of \$5.72 per package to customer Sonia Norris. Sonia Norris paid with her American credit card. The American credit card charges School Mart a 4.6% usage fee based on the total sale per transaction. The cost for this sale is \$1.27 per package.
Mar. 8	Sold 76 dry erase boards for a total sales price of \$6,535 to Henry Malta. Henry paid in full with cash. The cost of the sale is \$4,308.
Mar. 11	Sold 55 reams of paper with a sales price of \$3.25 per ream to customer Alex Forsun. Alex Forsun paid using his Union credit card. Union charges School Mart a 2% usage fee based on the total sale per transaction. The cost for this sale is \$1.99 per ream.
Mar. 14	American made a cash payment in full to School Mart for the transaction from March 6, less any usage fees.
Mar. 21	Union made a cash payment of 40% of the total due to School Mart for the transaction from March 11, less any usage fees.
Mar. 29	Union made a cash payment of the remainder due to School Mart for the transaction from March 11, less any usage fees.

PB4. **LO 9.2** Bristax Corporation recorded \$1,385,660 in credit sales for the year, and \$732,410 in accounts receivable. The uncollectible percentage is 3.1% for the income statement method and 4.5% for the balance sheet method.

- A. Record the year-end adjusting entry for 2018 bad debt using the income statement method.
- B. Record the year-end adjusting entry for 2018 bad debt using the balance sheet method.
- C. Assume there was a previous debit balance in Allowance for Doubtful Accounts of \$20,550; record the year-end entry for bad debt using the income statement method, and then the entry using the balance sheet method.
- D. Assume there was a previous credit balance in Allowance for Doubtful Accounts of \$17,430; record the year-end entry for bad debt using the income statement method, and then the entry using the balance sheet method.

PB5. **LO 9.2** The following accounts receivable information pertains to Select Distributors.

Past-Due Category	Accounts Receivable Total	Percentage Uncollectible
0–30 days	\$945,620	19%
31–90 days	499,110	35%
Over 90 days	211,960	52%

- A. Determine the estimated uncollectible bad debt for Select Distributors in 2018 using the balance sheet aging of receivables method.
- B. Record the year-end 2018 adjusting journal entry for bad debt.
- C. Assume there was a previous debit balance in Allowance for Doubtful Accounts of \$233,180; record the year-end entry for bad debt, taking this into consideration.
- D. Assume there was a previous credit balance in Allowance for Doubtful Accounts of \$199,440; record the year-end entry for bad debt, taking this into consideration.
- E. On March 21, 2019, Select Distributors identifies Aida Norman's account as uncollectible in the amount of \$10,890. Record the entry for identification.

PB6. **LO 9.2** Ink Records recorded \$2,333,898 in credit sales for the year and \$1,466,990 in accounts receivable. The uncollectible percentage is 3% for the income statement method and 5% for the balance sheet method.

- A. Record the year-end adjusting entry for 2018 bad debt using the income statement method.
- B. Record the year-end adjusting entry for 2018 bad debt using the balance sheet method.
- C. Assume there was a previous credit balance in Allowance for Doubtful Accounts of \$20,254; record the year-end entry for bad debt using the income statement method, and then the entry using the balance sheet method.

PB7. **LO 9.3** Review the select information for Liquor Plaza and Beer Buddies (industry competitors) and complete the following.

- Compute the accounts receivable turnover ratios for each company for 2018 and 2019.
- Compute the number of day's sales in receivables ratios for each company for 2018 and 2019.
- Determine which company is the better investment and why. Round answers to two decimal places.

LIQUOR PLAZA Comparative Balance Sheet December 31, 2017, 2018, and 2019				BEER BUDDIES Comparative Balance Sheet December 31, 2017, 2018, and 2019			
	2019	2018	2017		2019	2018	2017
Assets:							
Cash	\$ 552,932	\$ 544,307	\$520,000		\$384,140	\$322,620	\$ 300,466
Accounts Receivable	300,050	298,450	287,650		365,500	356,000	324,400
Inventory	190,704	209,726	60,301		96,440	72,555	284,428
Equipment	201,101	230,334	84,281		106,412	55,891	302,780
Total Assets:	<u>\$1,244,787</u>	<u>\$1,282,817</u>	<u>\$952,232</u>		<u>\$952,492</u>	<u>\$807,066</u>	<u>\$1,212,074</u>
Liabilities:							
Salaries Payable	\$ 200,801	\$ 188,632	\$184,210		\$232,100	\$212,120	\$ 202,655
Accounts Payable	107,657	113,828	115,222		99,464	101,360	111,111
Notes Payable	95,464	98,272	100,460		88,521	92,208	94,885
Equity:							
Common Stock	\$ 67,435	\$ 64,955	\$ 62,800		\$ 50,000	\$ 50,000	\$ 50,000
Retained Earnings	773,430	817,130	489,540		482,407	351,378	753,423
Total Liabilities and Equity:	<u>\$1,244,787</u>	<u>\$1,282,817</u>	<u>\$952,232</u>		<u>\$952,492</u>	<u>\$807,066</u>	<u>\$1,212,074</u>

LIQUOR PLAZA Comparative Income Statement Year Ended December 31, 2017, 2018, and 2019				BEER BUDDIES Comparative Income Statement Year Ended December 31, 2017, 2018, and 2019			
	2019	2018	2017		2019	2018	2017
Net Credit Sales	\$2,675,430	\$2,310,000	\$1,967,820		\$2,200,770	\$2,020,570	\$2,154,480
Cost of Goods Sold	1,400,000	999,870	989,950		1,268,000	1,243,530	1,000,650
Gross Margin	1,275,430	1,310,130	977,870		932,770	777,040	1,153,830
Expenses	502,000	493,000	488,330		450,363	425,662	400,407
Net Income (Loss)	<u>773,430</u>	<u>817,130</u>	<u>489,540</u>		<u>482,407</u>	<u>351,378</u>	<u>753,423</u>

PB8. **LO 9.3** The following select financial statement information from Vortex Computing.

VORTEX COMPUTING		
Year	Net Credit Sales	Ending Accounts Receivable
2017	\$1,557,200	\$398,000
2018	1,755,310	444,400
2019	1,965,170	500,780

Compute the accounts receivable turnover ratios and the number of days' sales in receivables ratios for 2018 and 2019 (round answers to two decimal places). What do the outcomes tell a potential investor about Vortex Computing if industry average for accounts receivable turnover ratio is 4 times and days' sales in receivables ratio is 85 days?

PB9. **LO 9.4** Elegant Linens uses the balance sheet aging method to account for uncollectible debt on receivables. The following is the past-due category information for outstanding receivable debt for 2019.

	0–30 Days Past Due	31–90 Days Past Due	Over 90 Days Past Due
Accounts receivable amount	\$232,000	\$129,000	\$100,400
Percent uncollectible	8%	17%	31%
Total per category	?	?	?
Total uncollectible?			

To manage earnings more favorably, Elegant Linens considers changing the past-due categories as follows.

	0–60 Days Past Due	61–120 Days Past Due	Over 120 Days Past Due
Accounts receivable amount	\$263,000	\$134,200	\$64,200
Percent uncollectible	8%	17%	31%
Total per category	?	?	?
Total uncollectible?			

- Complete each table by filling in the blanks.
- Determine the difference between total uncollectible.
- Complete the following 2019 comparative income statements for 2019, showing net income changes as a result of the changes to the balance sheet aging method categories.
- Describe the categories change effect on net income and accounts receivable.

ELEGANT LINENS Comparative Income Statements Year Ended December 31, 2019		
	Original Categories	Categories Change
Net Credit Sales	\$1,454,500	\$1,454,500
Cost of goods sold	85,250	85,250
Gross Margin	1,369,250	1,369,250
Expenses:		
General and Administrative Expense	425,000	425,000
Bad Debt Expense	?	?
Total Expenses	?	?
Net Income (Loss)	?	?

PB10. **L0** 9.4 Goods for Less uses the balance sheet aging method to account for uncollectible debt on receivables. The following is the past-due category information for outstanding receivable debt for 2019.

	0–30 Days Past Due	31–90 Days Past Due	Over 90 Days Past Due
Accounts receivable amount	\$1,000,000	\$422,000	\$210,800
Percent uncollectible	9%	31%	52%
Total per category	?	?	?
Total uncollectible?			

To manage earnings more favorably, Goods for Less considers changing the past-due categories as follows.

	0–60 Days Past Due	61–120 Days Past Due	Over 120 Days Past Due
Accounts receivable amount	\$1,245,400	\$200,500	\$186,900
Percent uncollectible	9%	31%	52%
Total per category	?	?	?
Total uncollectible?			

- Complete each table by filling in the blanks.
- Determine the difference between totals uncollectible.
- Describe the categories change effect on net income and accounts receivable.

PB11. **L0** 9.6 Record journal entries for the following transactions of Noreen Turbines.

Jan. 1, 2018	Issued a \$1,800,500 note to customer Axel Premium Metal as terms of a merchandise sale. The merchandise's cost to Noreen is \$760,430. Note contract terms included a 36-month maturity date, and a 3.8% annual interest rate.
Dec. 31, 2018	Noreen Turbines records interest accumulated for 2018.
Dec. 31, 2019	Noreen Turbines records interest accumulated for 2019.
Dec. 31, 2020	Axel Premium Metal honors the note and pays in full with cash.

PB12. **L0** 9.6 Record journal entries for the following transactions of Mesa Construction.

Jan. 1, 2018	Issued a \$1,460,200 note to customer Miramar Industries as terms of a merchandise sale. The merchandise's cost to Mesa Construction is \$812,110. Note contract terms included a 24-month maturity date, and a 3.3% annual interest rate.
Dec. 31, 2018	Mesa Construction records interest accumulated for 2018.
Dec. 31, 2019	Mesa Construction converts Miramar Industries' dishonored note into account receivable. This includes accumulated interest for the 24-month period.
Apr. 4, 2020	Mesa Construction sells the outstanding debt from Miramar Industries to a collection agency at 40% of the accounts receivable value.

PB13. **L0** 9.6 Record journal entries for the following transactions of Graphics & Signs.

Jan. 1, 2018	Issued a \$248,400 note to customer Elliott Thompson as terms of a merchandise sale. The merchandise's cost to Graphics & Signs is \$99,500. Note contract terms included a 36-month maturity date, and a 4.3% annual interest rate.
Dec. 31, 2018	Graphics & Signs records interest accumulated for 2018.
Dec. 31, 2019	Graphics & Signs records interest accumulated for 2019.
Dec. 31, 2020	Elliott Thompson honors the note and pays in full with cash.

PB14. **L0** 9.6 Record journal entries for the following transactions of Trout Masters.

Jan. 1, 2018	Issued a \$390,820 note to customer Fishing Warehouse as terms of a merchandise sale. The merchandise's cost to Trout Masters is \$155,770. Note contract terms included a 24-month maturity date, and a 3% annual interest rate.
Dec. 31, 2018	Trout Masters records interest accumulated for 2018.
Dec. 31, 2019	Trout Masters converts Fishing Warehouse's dishonored note into account receivable. This includes accumulated interest for the 24-month period.
May 6, 2020	Trout Masters sells the outstanding debt from Fishing Warehouse to a collection agency at 40% of the accounts receivable value.

PB15. **L0** 9.7 Shimmer Products is considering which bad debt estimation method works best for its company. It is deciding between the income statement method, balance sheet method of receivables, and balance sheet aging of receivables method. If it uses the income statement method, bad debt would be estimated at 5.6% of credit sales. If it were to use the balance sheet method, it would estimate bad debt at 13.7% percent of accounts receivable. If it were to use the balance sheet aging of receivables method, it would split its receivables into three categories: 0–30 days past due at 5%, 31–90 days past due at 21%, and over 90 days past due at 30%. There is currently a zero balance, transferred from the prior year's Allowance for Doubtful Accounts. The following information is available from the year-end income statement and balance sheet.

2018 Year-End Totals for Shimmer Products	
Credit sales	\$2,410,000
Accounts receivable	950,000

There is also additional information regarding the distribution of accounts receivable by age.

Past-Due Category	Accounts Receivable Total
0–30 days	\$475,000
31–90 days	240,000
Over 90 days	235,000

Prepare the year-end adjusting entry for bad debt, using

- Income statement method
- Balance sheet method of receivables
- Balance sheet aging of receivables method
- Which method should the company choose, and why?



Thought Provokers

TP1. **L0** 9.1 Review the new revenue recognition guidance issued by the Financial Accounting Standards Board <http://www.fasb.org/jsp/FASB/Page/ImageBridgePage&cid=1176169257359> and answer the following questions.

- What is the new standard as of ASC 606? What does that mean to you?
- What are the recommended steps companies should follow to achieve the core principle?
- How does this change current GAAP standards?
- Who is required to adhere to this new standard?

TP2. **L0** 9.2 You run an office supplies chain. You must determine the most appropriate bad debt estimation method to use for financial statement reporting. Your choices are the income statement, balance sheet, and balance sheet aging of receivables methods.

- Research a real competitor in your industry and determine which method the competitor selected. Give a detailed description of the method used and any supporting calculations.
- Create a hypothetical credit sale, an accounts receivable figure for your business, and compute the bad debt estimation using the competitor's method.
- Create the journal entry to record bad debt.
- Compute bad debt using the other two methods and show the journal entry for each.
- What are the benefits and challenges for all of these methods?
- Which method would you choose for your business? Explain why.

TP3. **L0** 9.3 You are considering a \$100,000 investment in one of two publicly traded companies in the same industry. Review the last three annual financial statements (same fiscal year) for two publicly traded companies in the same industry. Based on the information obtained, complete the following.

- A. Compute the accounts receivable turnover ratio (round all answers to two decimal places).
- B. Compute the number of days' sales in receivables ratio for both companies for the two most current years (round all answers to two decimal places).
- C. Describe and interpret the outcomes, stating which company you would invest in and why.
- D. What information is missing that could help you make a more informed decision?

TP4. LO 9.4 You are considering two possible companies for investment purposes. The following data is available for each company.

	Company A	Company B
Net credit sales, Dec. 31, 2019	\$540,000	\$620,000
Net accounts receivable, Dec. 31, 2018	\$120,000	\$145,000
Net accounts receivable, Dec. 31, 2019	\$180,000	\$175,000
Number of days' sales in receivables ratio, 2018	103 days	110 days
Net income, Dec. 31, 2018	\$250,000	\$350,000

Additional Information: Company A: Bad debt estimation percentage using the income statement method is 6%, and the balance sheet method is 10%. The \$230,000 in Other Expenses includes all company expenses except Bad Debt Expense. Company B: Bad debt estimation percentage using the income statement method is 6.5%, and the balance sheet method is 8%. The \$140,000 in Other Expenses includes all company expenses except Bad Debt Expense.

- Compute the number of days' sales in receivables ratio for each company for 2019 and interpret the results (round answers to nearest whole number).
- If Company A changed from the income statement method to the balance sheet method for recognizing bad debt estimation, how would that change net income in 2019? Explain (show calculations).
- If Company B changed from the balance sheet method to the income statement method for recognizing bad debt estimation, how would that change net income in 2019? Explain (show calculations).
- What benefits do each company gain by changing their method of bad debt estimation?
- Which company would you invest in and why? Provide supporting details.

TP5. LO 9.5 You own a construction company and have recently received a contract with the local school district to refurbish one of its elementary schools. You are given an up-front payment from the school district in the amount of \$5 million. The contract terms extend from years 2018 to 2020.

- When would you recognize revenue for this payment?
- What method of accounting would you use for this construction project and why?
- What would be the benefits and challenges with your method selection?
- Give an example of your distribution selection and associated costs of the project (you may estimate based on other industry competitors).
- What might be some benefits and challenges associated with the other method of construction revenue recognition?

TP6. LO 9.6 When a customer is delinquent on paying a notes receivable, your company has the option to continue to attempt collection or sell the debt to a collection agency. Research the benefits and challenges with each of these options and in a short essay, answer the following questions.

- What are the benefits and challenges of continuing to attempt collection yourself?
- What are the benefits and challenges of selling debt to a collection agency?
- If you had a dishonored notes receivable, which option would you select and why?
- Would you weight certain benefits or challenges differently when making your selection? How?

Figure 10.1 Inventory. (credit: modification of “warehouse pallet food” by “jaymethunt”/Pixabay, CC0)

Chapter Outline

- LO 10.1** Describe and Demonstrate the Basic Inventory Valuation Methods and Their Cost Flow Assumptions
- LO 10.2** Calculate the Cost of Goods Sold and Ending Inventory Using the Periodic Method
- LO 10.3** Calculate the Cost of Goods Sold and Ending Inventory Using the Perpetual Method
- LO 10.4** Explain and Demonstrate the Impact of Inventory Valuation Errors on the Income Statement and Balance Sheet
- LO 10.5** Examine the Efficiency of Inventory Management Using Financial Ratios



Why It Matters

Did you ever decide to start a healthy eating plan and meticulously planned your shopping list, including foods for meals, drinks, and snacks? Maybe you stocked your cabinets and fridge with the best healthy foods you could find, including lots of luscious-looking fruit and vegetables, to make sure that you could make tasty and healthy smoothies when you got hungry. Then, at the end of the week, if everything didn't go as you had planned, you may have discovered that a lot of your produce was still uneaten but not very fresh anymore. Stocking up on goods, so that you will have them when you need them, is only a good idea if the goods are used before they become worthless.

Just like with someone whose preparation for healthy eating can backfire in wasted produce, businesses have to balance a fine line between being prepared for any volume of inventory demand that customers request and being careful not to overstock those goods so the company will not be left holding excess inventory they cannot sell. Not having the goods that a customer wants available is bad, of course, but extra inventory is wasteful. That is one reason why inventory accounting is important.

10.1 Describe and Demonstrate the Basic Inventory Valuation Methods and Their Cost Flow Assumptions

Accounting for inventory is a critical function of management. Inventory accounting is significantly complicated by the fact that it is an ongoing process of constant change, in part because (1) most companies offer a large variety of products for sale, (2) product purchases occur at irregular times, (3) products are acquired for differing prices, and (4) inventory acquisitions are based on sales projections, which are always uncertain and often sporadic. Merchandising companies must meticulously account for every individual product that they sell, equipping them with essential information, for decisions such as these:

- What is the quantity of each product that is available to customers?
- When should inventory of each product item be replenished and at what quantity?
- How much should the company charge customers for each product to cover all costs plus profit margin?
- How much of the inventory cost should be allocated toward the units sold (cost of goods sold) during the period?
- How much of the inventory cost should be allocated toward the remaining units (ending inventory) at the end of the period?
- Is each product moving robustly or have some individual inventory items' activity decreased?
- Are some inventory items obsolete?

The company's financial statements report the combined cost of all items sold as an offset to the proceeds from those sales, producing the net number referred to as **gross margin** (or gross profit). This is presented in the first part of the results of operations for the period on the multi-step income statement. The unsold inventory at period end is an asset to the company and is therefore included in the company's financial statements, on the balance sheet, as shown in [Figure 10.2](#). The total cost of all the inventory that remains at period end, reported as **merchandise inventory** on the balance sheet, plus the total cost of the inventory that was sold or otherwise removed (through shrinkage, theft, or other loss), reported as cost of goods sold on the income statement (see [Figure 10.2](#)), represent the entirety of the inventory that the company had to work with during the period, or goods available for sale.

SIERRA SPORTS Balance Sheet (partial) December 31, 2017		SIERRA SPORTS Income Statement (partial) For Year Ended December 31, 2017	
Assets		Revenues	
Current Assets		Total Revenues	\$19,500
Cash	\$21,580	Cost of Goods Sold	9,000
Accounts Receivable	2,000	Gross Profit	10,500
Inventory	60,000		

Figure 10.2 Financial Statement Effects of Inventory Transactions. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Fundamentals of Inventory

Although our discussion will consider inventory issues from the perspective of a retail company, using a resale or merchandising operation, inventory accounting also encompasses recording and reporting of manufacturing operations. In the manufacturing environment, there would be separate inventory calculations for the various process levels of inventory, such as raw materials, work in process, and finished goods. The

manufacturer's finished goods inventory is equivalent to the merchandiser's inventory account in that it includes finished goods that are available for sale.

In merchandising companies, inventory is a company asset that includes beginning inventory plus **purchases**, which include all additions to inventory during the period. Every time the company sells products to customers, they dispose of a portion of the company's inventory asset. **Goods available for sale** refers to the total cost of all inventory that the company had on hand at any time during the period, including beginning inventory and all inventory purchases. These goods were normally either sold to customers during the period (occasionally lost due to spoilage, theft, damage, or other types of shrinkages) and thus reported as cost of goods sold, an expense account on the income statement, or these goods are still in inventory at the end of the period and reported as ending merchandise inventory, an asset account on the balance sheet. As an example, assume that Harry's Auto Parts Store sells oil filters. Suppose that at the end of January 31, 2018, they had 50 oil filters on hand at a cost of \$7 per unit. This means that at the beginning of February, they had 50 units in inventory at a total cost of \$350 ($50 \times \7). During the month, they purchased 20 filters at a cost of \$7, for a total cost of \$140 ($20 \times \$7$). At the end of the month, there were 18 units left in inventory. Therefore, during the month of February, they sold 52 units. [Figure 10.3](#) illustrates how to calculate the goods available for sale and the cost of goods sold.

	Number of Units	Cost per Unit	Total Cost
Beginning Inventory, January 31, 2018	50	\$7	\$350
+ purchases during February 2018	20	\$7	140
Total Goods Available for Sale	70		\$490
– Ending Inventory, February 28, 2018	18	\$7	126
Cost of Goods Sold for February 2018	52		\$364

Figure 10.3 Fundamentals of Inventory Accounting. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Inventory costing is accomplished by one of four specific costing methods: (1) specific identification, (2) first-in, first-out, (3) last-in, first-out, and (4) weighted-average cost methods. All four methods are techniques that allow management to distribute the costs of inventory in a logical and consistent manner, to facilitate matching of costs to offset the related revenue item that is recognized during the period, in accordance with GAAP expense recognition and matching concepts. Note that a company's cost allocation process represents management's chosen method for expensing product costs, based strictly on estimates of the flow of inventory costs, which is unrelated to the actual flow of the physical inventory. Use of a cost allocation strategy eliminates the need for often cost-prohibitive individual tracking of costs of each specific inventory item, for which purchase prices may vary greatly. In this chapter, you will be provided with some background concepts and explanations of terms associated with inventory as well as a basic demonstration of each of the four allocation methods, and then further delineation of the application and nuances of the costing methods.

A critical issue for inventory accounting is the frequency for which inventory values are updated. There are two primary methods used to account for inventory balance timing changes: the periodic inventory method and the perpetual inventory method. These two methods were addressed in depth in [Merchandising Transactions](#).

Periodic Inventory Method

A **periodic inventory system** updates the inventory balances at the end of the reporting period, typically the

end of a month, quarter, or year. At that point, a journal entry is made to adjust the merchandise inventory asset balance to agree with the physical count of inventory, with the corresponding adjustment to the expense account, cost of goods sold. This adjustment shifts the costs of all inventory items that are no longer held by the company to the income statement, where the costs offset the revenue from inventory sales, as reflected by the gross margin. As sales transactions occur throughout the period, the periodic system requires that only the sales entry be recorded because costs will only be updated during end-of-period adjustments when financial statements are prepared. However, any additional goods for sale acquired during the month are recorded as purchases. Following are examples of typical journal entries for periodic transactions. The first is an example entry for an inventory sales transaction when using periodic inventory, and the second records the purchase of additional inventory when using the periodic method. Note: Periodic requires no corresponding cost entry at the time of sale, since the inventory is adjusted only at period end.

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable Sales Revenue	XXX	XXX

A purchase of inventory for sale by a company under the periodic inventory method would necessitate the following journal entry. (This is discussed in more depth in [Merchandising Transactions](#).)

JOURNAL			
Date	Account	Debit	Credit
	Purchases Cash (or Accounts Payable)	XXX	XXX

Perpetual Inventory Method

A **perpetual inventory system** updates the inventory account balance on an ongoing basis, at the time of each individual sale. This is normally accomplished by use of auto-ID technology, such as optical-scan barcode or radio frequency identification (RFID) labels. As transactions occur, the perpetual system requires that every sale is recorded with two entries, first recording the sales transaction as an increase to Accounts Receivable and a decrease to Sales Revenue, and then recording the cost associated with the sale as an increase to Cost of Goods Sold and a decrease to Merchandise Inventory. The journal entries made at the time of sale immediately shift the costs relating to the goods being sold from the merchandise inventory account on the balance sheet to the cost of goods sold account on the income statement. Little or no adjustment is needed to inventory at period end because changes in the inventory balances are recorded as both the sales and purchase transactions occur. Any necessary adjustments to the ending inventory account balances would typically be caused by one of the types of shrinkage you've learned about. These are example entries for an inventory sales transaction when using perpetual inventory updating:

JOURNAL			
Date	Account	Debit	Credit
	Accounts Receivable Sales Revenue	XXX	XXX
	Cost of Goods Sold Merchandise Inventory	XXX	XXX

A purchase of inventory for sale by a company under the perpetual inventory method would necessitate the following journal entry. (Greater detail is provided in [Merchandising Transactions.](#))

JOURNAL			
Date	Account	Debit	Credit
	Inventory	XXX	
	Cash (or Accounts Payable)		XXX

CONTINUING APPLICATION AT WORK

Inventory

As previously discussed, **Gearhead Outfitters** is a retail chain selling outdoor gear and accessories. As such, the company is faced with many possible questions related to inventory. How much inventory should be carried? What products are the most profitable? Which products have the most sales? Which products are obsolete? What timeframe should the company allow for inventory to be replenished? Which products are the most in demand at each location?

In addition to questions related to type, volume, obsolescence, and lead time, there are many issues related to accounting for inventory and the flow of goods. As one of the biggest assets of the company, the way inventory is tracked can have an effect on profit. Which method of accounting—first-in first-out, last-in first out, specific identification, weighted average— provides the most accurate reflection of inventory and cost of goods sold is important in determining gross profit and net income. The method selected affects profits, taxes, and can even change the opinion of potential lenders concerning the financial strength of the company. In choosing a method of accounting for inventory, management should consider many factors, including the accurate reflection of costs, taxes on profits, decision-making about purchases, and what effect a point-of-sale (POS) system may have on tracking inventory.

Gearhead exists to provide a positive shopping experience for its customers. Offering a clear picture of its goods, and maintaining an appealing, timely supply at competitive prices is one way to keep the shopping experience positive. Thus, accounting for inventory plays an instrumental role in management's ability to successfully run a company and deliver the company's promise to customers.

Data for Demonstration of the Four Basic Inventory Valuation Methods

The following dataset will be used to demonstrate the application and analysis of the four methods of inventory accounting.

Company: Spy Who Loves You Corporation

Product: Global Positioning System (GPS) Tracking Device

Description: This product is an economical real-time GPS tracking device, designed for individuals who wish to monitor others' whereabouts. It is marketed to parents of middle school and high school students as a safety measure. Parents benefit by being apprised of the child's location, and the student benefits by not having to constantly check in with parents. Demand for the product has spiked during the current fiscal period, while

supply is limited, causing the selling price to escalate rapidly.

SPY WHO LOVES YOU TRACKER			
	Number of Units	Unit Cost	Sales Price
Beginning Inventory Jul. 1	150	\$21	
Sold Jul. 5	120		\$36
Purchased Jul. 10	225	27	
Sold Jul. 15	180		39
Purchased Jul. 25	210	33	
Ending Inventory Jul. 31	285		

Specific Identification Method

The **specific identification method** refers to tracking the actual cost of the item being sold and is generally used only on expensive items that are highly customized (such as tracking detailed costs for each individual car in automobiles sales) or inherently distinctive (such as tracking origin and cost for each unique stone in diamond sales). This method is too cumbersome for goods of large quantity, especially if there are not significant feature differences in the various inventory items of each product type. However, for purposes of this demonstration, assume that the company sold one specific identifiable unit, which was purchased in the second lot of products, at a cost of \$27.

Three separate lots of goods are purchased:

	Number of Units	Unit Cost
Lot 1	150	\$21
Lot 2*	225	27
Lot 3	210	33

Sales revenue	\$36
- Cost, assuming SI, unit assumed sold from Lot 2*	<u>27</u>
= Gross margin for one unit	9

Note: one unit sold for \$36, using the specific identification (SI) costing method

First-in, First-out (FIFO) Method

The **first-in, first-out method (FIFO)** records costs relating to a sale as if the earliest purchased item would be sold first. However, the physical flow of the units sold under both the periodic and perpetual methods would be the same. Due to the mechanics of the determination of costs of goods sold under the perpetual method, based on the timing of additional purchases of inventory during the accounting period, it is possible that the costs of goods sold might be slightly different for an accounting period. Since FIFO assumes that the first items purchased are sold first, the latest acquisitions would be the items that remain in inventory at the end of the period and would constitute ending inventory.

Three separate lots of goods are purchased:

	Number of Units	Unit Cost
Lot 1*	150	\$21
Lot 2	225	27
Lot 3	210	33

Sales revenue	\$36
- Cost, assuming FIFO, unit assumed sold from Lot 1*	<u>21</u>
= Gross margin for one unit	15

Note: one unit sold for \$36, using the FIFO costing method

Last-in, First-out (LIFO) Method

The **last-in, first out method (LIFO)** records costs relating to a sale as if the latest purchased item would be sold first. As a result, the earliest acquisitions would be the items that remain in inventory at the end of the

period.

Three separate lots of goods are purchased:

	Number of Units	Unit Cost
Lot 1	150	\$21
Lot 2	225	27
Lot 3*	210	33

Sales revenue	\$36
– Cost, assuming LIFO, unit assumed sold from Lot 3*	<u>33</u>
= Gross margin for one unit	3

Note: one unit sold for \$36, using the LIFO costing method

IFRS CONNECTION

Inventory

For many companies, inventory is a significant portion of the company's assets. In 2018, the inventory of **Walmart**, the world's largest international retailer, was 70% of current assets and 21% of total assets. Because inventory also affects income as it is sold through the cost of goods sold account, inventory plays a significant role in the analysis and evaluation of many companies. Ending inventory affects both the balance sheet and the income statement. As you've learned, the ending inventory balance is reflected as a current asset on the balance sheet and the ending inventory balance is used in the calculation of costs of goods sold. Understanding how companies report inventory under US GAAP versus under IFRS is important when comparing companies reporting under the two methods, particularly because of a significant difference between the two methods.

Similarities

- When inventory is purchased, it is accounted for at historical cost and then evaluated at each balance sheet date to adjust to the lower of cost or net realizable value.
- Both IFRS and US GAAP allow FIFO and weighted-average cost flow assumptions as well as specific identification where appropriate and applicable.

Differences

- IFRS does not permit the use of LIFO. This is a major difference between US GAAP and IFRS. The AICPA estimates that roughly 35–40% of all US companies use LIFO, and in some industries, such as oil and gas, the use of LIFO is more prevalent. Because LIFO generates lower taxable income during times of rising prices, it is estimated that eliminating LIFO would generate an estimated \$102 billion in tax revenues in the US for the period 2017–2026. In creating IFRS, the IASB chose to eliminate LIFO, arguing that FIFO more closely matches the flow of goods. In the US, FASB believes the choice between LIFO and FIFO is a business model decision that should be left up to each company. In addition, there was significant pressure by some companies and industries to retain LIFO because of the significant tax liability that would arise for many companies from the elimination of LIFO.

Weighted-Average Cost Method

The **weighted-average cost method** (sometimes referred to as the average cost method) requires a calculation of the average cost of all units of each particular inventory items. The average is obtained by

multiplying the number of units by the cost paid per unit for each lot of goods, then adding the calculated total value of all lots together, and finally dividing the total cost by the total number of units for that product. As a caveat relating to the average cost method, note that a new average cost must be calculated after every change in inventory to reassess the per-unit weighted-average value of the goods. This laborious requirement might make use of the average method cost-prohibitive.

Three separate lots of goods are purchased:

	Number of Units	Unit Cost		
Lot 1	150	\$21	Sales revenue	\$36.00
Lot 2	225	27	– Cost, assuming average cost of units sold from Lots 1, 2, and 3*	<u>27.62</u>
Lot 3	210	33	= Gross margin for one unit	8.38

Note: one unit sold for \$36, using the weighted average costing method

$*[(150 \times \$21) + (225 \times \$27) + (210 \times \$33)]/585 = \27.62 average

Comparing the various costing methods for the sale of one unit in this simple example reveals a significant difference that the choice of cost allocation method can make. Note that the sales price is not affected by the cost assumptions; only the cost amount varies, depending on which method is chosen. [Figure 10.4](#) depicts the different outcomes that the four methods produced.

	Sp ID	FIFO	LIFO	AVG
Sales revenue	36	36	36	36.00
– Cost, under each cost allocation method	<u>27</u>	<u>21</u>	<u>33</u>	<u>27.62</u>
= Gross margin for one unit	9	15	3	8.38

Figure 10.4 Comparison of the Four Costing Methods. One unit sold for \$36. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Once the methods of costing are determined for the company, that methodology would typically be applied repeatedly over the remainder of the company's history to accomplish the generally accepted accounting principle of **consistency** from one period to another. It is possible to change methods if the company finds that a different method more accurately reflects results of operations, but the change requires disclosure in the company's notes to the financial statements, which alerts financial statement users of the impact of the change in methodology. Also, it is important to realize that although the Internal Revenue Service generally allows differing methods of accounting treatment for tax purposes than for financial statement purposes, an exception exists that prohibits the use of LIFO inventory costing on the company tax return unless LIFO is also used for the financial statement costing calculations.

ETHICAL CONSIDERATIONS

Auditors Look for Inventory Fraud

Inventory fraud can be used to book false revenue or to increase the amount of assets to obtain additional lending from a bank or other sources. In the typical chain of accounting events, inventory ultimately becomes an expense item known as cost of goods sold.^[1] In a manipulated accounting system,

a trail of fraudulent transactions can point to accounting misrepresentation in the sales cycle, which may include

- recording fictitious and nonexistent inventory,
- manipulation of inventory counts during a facility audit,
- recording of sales but no recording of purchases, and/or
- fraudulent inventory capitalization,

to list a few.^[2] All these elaborate schemes have the same goal: to improperly manipulate inventory values to support the creation of a fraudulent financial statement. Accountants have an ethical, moral, and legal duty to not commit accounting and financial statement fraud. Auditors have a duty to look for such inventory fraud.

Auditors follow the Statement on Auditing Standards (SAS) No. 99 and AU Section 316 Consideration of Fraud in a Financial Statement Audit when auditing a company's books. Auditors are outside accountants hired to "obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or fraud."^[3] Ultimately, an auditor will prepare an audit report based on the testing of the balances in a company's books, and a review of the company's accounting system. The auditor is to perform "procedures at locations on a surprise or unannounced basis, for example, observing inventory on unexpected dates or at unexpected locations or counting cash on a surprise basis."^[4] Such testing of a company's inventory system is used to catch accounting fraud. It is the responsibility of the accountant to present accurate accounting records to the auditor, and for the auditor to create auditing procedures that reasonably ensure that the inventory balances are free of material misstatements in the accounting balances.

Additional Inventory Issues

Various other issues that affect inventory accounting include consignment sales, transportation and ownership issues, inventory estimation tools, and the effects of inflationary versus deflationary cycles on various methods.

Consignment

Consigned goods refer to merchandise inventory that belongs to a third party but which is displayed for sale by the company. These goods are not owned by the company and thus must not be included on the company's balance sheet nor be used in the company's inventory calculations. The company's profit relating to consigned goods is normally limited to a percentage of the sales proceeds at the time of sale.

For example, assume that you sell your office and your current furniture doesn't match your new building.

1 "Inventory Fraud: Knowledge Is Your First Line of Defense." Weaver. Mar. 27, 2015. <https://weaver.com/blog/inventory-fraud-knowledge-your-first-line-defense>

2 Wells, Joseph T. "Ghost Goods: How to Spot Phantom Inventory." *Journal of Accountancy*. June 1, 2001. <https://www.journalofaccountancy.com/issues/2001/jun/ghostgoodshowtospotphantominventory.html>

3 American Institute of Certified Public Accountants (AICPA). *Consideration of Fraud in a Financial Statement Audit* (AU Section 316). <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-00316.pdf>

4 American Institute of Certified Public Accountants (AICPA). *Consideration of Fraud in a Financial Statement Audit* (AU Section 316). <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-00316.pdf>

One way to dispose of the furniture would be to have a consignment shop sell it. The shop would keep a percentage of the sales revenue and pay you the remaining balance. Assume in this example that the shop will keep one-third of the sales proceeds and pay you the remaining two-thirds balance. If the furniture sells for \$15,000, you would receive \$10,000 and the shop would keep the remaining \$5,000 as its sales commission. A key point to remember is that until the inventory, in this case your office furniture, is sold, you still own it, and it is reported as an asset on your balance sheet and not an asset for the consignment shop. After the sale, the buyer is the owner, so the consignment shop is never the property's owner.

Free on Board (FOB) Shipping and Destination

Transportation costs are commonly assigned to either the buyer or the seller based on the free on board (FOB) terms, as the terms relate to the seller. Transportation costs are part of the responsibilities of the owner of the product, so determining the owner at the shipping point identifies who should pay for the shipping costs. The seller's responsibility and ownership of the goods ends at the point that is listed after the FOB designation. Thus, **FOB shipping point** means that the seller transfers title and responsibility to the buyer at the shipping point, so the buyer would owe the shipping costs. The purchased goods would be recorded on the buyer's balance sheet at this point.

Similarly, **FOB destination** means the seller transfers title and responsibility to the buyer at the destination, so the seller would owe the shipping costs. Ownership of the product is the trigger that mandates that the asset be included on the company's balance sheet. In summary, the goods belong to the seller until they transition to the location following the term FOB, making the seller responsible for everything about the goods to that point, including recording purchased goods on the balance sheet. If something happens to damage or destroy the goods before they reach the FOB location, the seller would be required to replace the product or reverse the sales transaction.

Lower-of-Cost-or-Market (LCM)

Reporting inventory values on the balance sheet using the accounting concept of **conservatism** (which discourages overstatement of net assets and net income) requires inventory to be calculated and adjusted to a value that is the lower of the cost calculated using the company's chosen valuation method or the market value based on the market or replacement value of the inventory items. Thus, if traditional cost calculations produce inventory values that are overstated, the **lower-of-cost-or-market (LCM)** concept requires that the balance in the inventory account should be decreased to the more conservative replacement value rather than be overstated on the balance sheet.

Estimating Inventory Costs: Gross Profit Method and Retail Inventory Method

Sometimes companies have a need to estimate inventory values. These estimates could be needed for interim reports, when physical counts are not taken. The need could be result from a natural disaster that destroys part or all of the inventory or from an error that causes inventory counts to be compromised or omitted. Some specific industries (such as select retail businesses) also regularly use these estimation tools to determine cost of goods sold. Although the method is predictable and simple, it is also less accurate since it is based on estimates rather than actual cost figures.

The **gross profit method** is used to estimate inventory values by applying a standard gross profit percentage to the company's sales totals when a physical count is not possible. The resulting gross profit can then be subtracted from sales, leaving an estimated cost of goods sold. Then the ending inventory can be calculated by

subtracting cost of goods sold from the total goods available for sale. Likewise, the **retail inventory method** estimates the cost of goods sold, much like the gross profit method does, but uses the retail value of the portions of inventory rather than the cost figures used in the gross profit method.

Inflationary Versus Deflationary Cycles

As prices rise (inflationary times), FIFO ending inventory account balances grow larger even when inventory unit counts are constant, while the income statement reflects lower cost of goods sold than the current prices for those goods, which produces higher profits than if the goods were costed with current inventory prices. Conversely, when prices fall (deflationary times), FIFO ending inventory account balances decrease and the income statement reflects higher cost of goods sold and lower profits than if goods were costed at current inventory prices. The effect of inflationary and deflationary cycles on LIFO inventory valuation are the exact opposite of their effects on FIFO inventory valuation.

LINK TO LEARNING

Accounting Coach does a great job in explaining inventory issues (and so many other accounting topics too): Learn more about [inventory and cost of goods sold \(https://openstax.org/l/50inventory\)](https://openstax.org/l/50inventory) on their website.

THINK IT THROUGH

First-in, First-out (FIFO)

Suppose you are the assistant controller for a retail establishment that is an independent bookseller. The company uses manual, periodic inventory updating, using physical counts at year end, and the FIFO method for inventory costing. How would you approach the subject of whether the company should consider switching to computerized perpetual inventory updating? Can you present a persuasive argument for the benefits of perpetual? Explain.

10.2

Calculate the Cost of Goods Sold and Ending Inventory Using the Periodic Method

As you've learned, the periodic inventory system is updated at the end of the period to adjust inventory numbers to match the physical count and provide accurate merchandise inventory values for the balance sheet. The adjustment ensures that only the inventory costs that remain on hand are recorded, and the remainder of the goods available for sale are expensed on the income statement as cost of goods sold. Here we will demonstrate the mechanics used to calculate the ending inventory values using the four cost allocation methods and the periodic inventory system.

Information Relating to All Cost Allocation Methods, but Specific to Periodic Inventory Updating

Let's return to the example of The Spy Who Loves You Corporation to demonstrate the four cost allocation methods, assuming inventory is updated at the end of the period using the periodic system.

Cost Data for Calculations

Company: Spy Who Loves You Corporation

Product: Global Positioning System (GPS) Tracking Device

Description: This product is an economical real-time GPS tracking device, designed for individuals who wish to monitor others' whereabouts. It is being marketed to parents of middle school and high school students as a safety measure. Parents benefit by being apprised of the child's location, and the student benefits by not having to constantly check in with parents. Demand for the product has spiked during the current fiscal period, while supply is limited, causing the selling price to escalate rapidly. Note: For simplicity of demonstration, beginning inventory cost is assumed to be \$21 per unit for all cost assumption methods.

SPY WHO LOVES YOU TRACKER			
	Number of Units	Unit Cost	Sales Price
Beginning Inventory Jul. 1	150	\$21	
Sold Jul. 5	120		\$36
Purchased Jul. 10	225	27	
Sold Jul. 15	180		39
Purchased Jul. 25	210	33	
Ending Inventory Jul. 31	285		

Specific Identification

The specific units assumed to be sold in this period are designated as follows, with the specific inventory distinction being associated with the lot numbers:

- Sold 120 units, all from Lot 1 (beginning inventory), costing \$21 per unit
- Sold 180 units, 20 from Lot 1 (beginning inventory), costing \$21 per unit; 160 from the Lot 2 (July 10 purchase), costing \$27 per unit

The specific identification method of cost allocation directly tracks each of the units purchased and costs them out as they are actually sold. In this demonstration, assume that some sales were made by specifically tracked goods that are part of a lot, as previously stated for this method. So for The Spy Who Loves You, considering the entire period together, note that

- 140 of the 150 units that were purchased for \$21 were sold, leaving 10 of \$21 units remaining
- 160 of the 225 units that were purchased for \$27 were sold, leaving 65 of the \$27 units remaining
- none of the 210 units that were purchased for \$33 were sold, leaving all 210 of the \$33 units remaining

Ending inventory was made up of 10 units at \$21 each, 65 units at \$27 each, and 210 units at \$33 each, for a total specific identification ending inventory value of \$8,895. Subtracting this ending inventory from the \$16,155 total of goods available for sale leaves \$7,260 in cost of goods sold this period.

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, Specific Identification

The specific identification costing assumption tracks inventory items individually, so that when they are sold, the exact cost of the item is used to offset the revenue from the sale. The cost of goods sold, inventory, and gross margin shown in [Figure 10.5](#) were determined from the previously-stated data, particular to specific identification costing.

Cost of Goods Sold		Cost Value	
Beginning Inventory	\$ 3,150	10 units at \$21	\$ 210
+ Purchases	<u>13,005</u>	65 units at \$27	1,755
= Goods Available	16,155	210 units at \$33	<u>6,930</u>
- Ending Inventory	<u>8,895</u>	Total	8,895
Cost of Goods Sold	7,260		

Note: Purchases = $(225 \times \$27) + (210 \times \$33)$

Figure 10.5 Specific Identification Costing Assumption Cost of Goods Sold and Cost Value. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The gross margin, resulting from the specific identification periodic cost allocations of \$7,260, is shown in [Figure 10.6](#).

Gross Margin	
Sales	\$11,340
- Cost of Goods Sold	<u>7,260</u>
= Gross Margin	4,080

$(120 \times \$36) + (180 \times 39)$

Figure 10.6 Specific Identification Periodic Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Calculation for the Ending Inventory Adjustment under Periodic/Specific Identification Methods

Merchandise inventory, before adjustment, had a balance of \$3,150, which was the beginning inventory. Journal entries are not shown, but the following calculations provide the information that would be used in recording the necessary journal entries. The inventory at the end of the period should be \$8,895, requiring an entry to increase merchandise inventory by \$5,745. Cost of goods sold was calculated to be \$7,260, which should be recorded as an expense. The credit entry to balance the adjustment is \$13,005, which is the total amount that was recorded as purchases for the period. This entry distributes the balance in the purchases account between the inventory that was sold (cost of goods sold) and the amount of inventory that remains at period end (merchandise inventory).

First-in, First-out (FIFO)

The first-in, first-out method (FIFO) of cost allocation assumes that the earliest units purchased are also the first units sold. For The Spy Who Loves You, considering the entire period, 300 of the 585 units available for the period were sold, and if the earliest acquisitions are considered sold first, then the units that remain under FIFO are those that were purchased last. Following that logic, ending inventory included 210 units purchased at \$33 and 75 units purchased at \$27 each, for a total FIFO periodic ending inventory value of \$8,955. Subtracting this ending inventory from the \$16,155 total of goods available for sale leaves \$7,200 in cost of

goods sold this period.

FIFO Periodic Ending Inventory Value	
Units Sold (180 + 120) = 300 units	
150 units x \$21	\$3,150
150 units x \$27	<u>4,050</u>
Total Sold equals 300 units	
Cost of Goods Sold	\$7,200
Ending Inventory	
210 units x \$33	6,930
75 units x \$27	<u>2,025</u>
Ending Inventory Value	\$8,955

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, First-in, First-out (FIFO)

The FIFO costing assumption tracks inventory items based on segments or lots of goods that are tracked, in the order that they were acquired, so that when they are sold, the earliest acquired items are used to offset the revenue from the sale. The cost of goods sold, inventory, and gross margin shown in [Figure 10.7](#) were determined from the previously-stated data, particular to FIFO costing.

Cost of Goods Sold		Cost Value	
Beginning Inventory	\$ 3,150	75 units at \$27	\$2,025
+ Purchases	<u>13,005</u>	210 units at \$33	<u>6,930</u>
= Goods Available	16,155	Total	8,955
- Ending Inventory	<u>8,955</u>		
Cost of Goods Sold	7,200		

Note: Purchases = (225 × \$27) + (210 × \$33)

Figure 10.7 FIFO Costing Assumption Cost of Goods Sold and Cost Value. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The gross margin, resulting from the FIFO periodic cost allocations of \$7,200, is shown in [Figure 10.8](#).

Gross Margin	
Sales	\$11,340
- Cost of Goods Sold	<u>7,200</u>
= Gross Margin	4,140

Figure 10.8 FIFO Periodic Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Calculations for Inventory Adjustment, Periodic/First-in, First-out (FIFO)

Beginning merchandise inventory had a balance of \$3,150 before adjustment. The inventory at period end should be \$8,955, requiring an entry to increase merchandise inventory by \$5,895. Journal entries are not shown, but the following calculations provide the information that would be used in recording the necessary journal entries. Cost of goods sold was calculated to be \$7,200, which should be recorded as an expense. The credit entry to balance the adjustment is for \$13,005, which is the total amount that was recorded as purchases for the period. This entry distributes the balance in the purchases account between the inventory that was sold (cost of goods sold) and the amount of inventory that remains at period end (merchandise

inventory).

Last-in, First-out (LIFO)

The last-in, first-out method (LIFO) of cost allocation assumes that the last units purchased are the first units sold. For The Spy Who Loves You, considering the entire period together, 300 of the 585 units available for the period were sold, and if the latest acquisitions are considered sold first, then the units that remain under LIFO are those that were purchased first. Following that logic, ending inventory included 150 units purchased at \$21 and 135 units purchased at \$27 each, for a total LIFO periodic ending inventory value of \$6,795. Subtracting this ending inventory from the \$16,155 total of goods available for sale leaves \$9,360 in cost of goods sold this period.

LIFO Periodic Ending Inventory Value	
Units Sold (210 + 90) = 300 Units	
210 units x \$33	\$6,930
90 units x \$27	<u>2,430</u>
Total Sold equals 300 units	
Cost of Goods Sold	9,360
Ending Inventory	
150 units x \$21	3,150
135 units x \$27	<u>3,645</u>
Ending Inventory Value	\$6,795

It is important to note that these answers can differ when calculated using the perpetual method. When perpetual methodology is utilized, the cost of goods sold and ending inventory are calculated at the time of each sale rather than at the end of the month. For example, in this case, when the first sale of 150 units is made, inventory will be removed and cost computed as of that date from the beginning inventory. The differences in timing as to when cost of goods sold is calculated can alter the order that costs are sequenced.

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, Last-in, First-out (LIFO)

The LIFO costing assumption tracks inventory items based on lots of goods that are tracked, in the order that they were acquired, so that when they are sold, the latest acquired items are used to offset the revenue from the sale. The following cost of goods sold, inventory, and gross margin were determined from the previously-stated data, particular to LIFO costing.

Cost of Goods Sold		Cost Value	
Beginning Inventory	\$ 3,150	150 units at \$21	\$3,150
+ Purchases	<u>13,005</u>	135 units at \$27	<u>3,645</u>
= Goods Available	16,155	Total	<u>6,795</u>
- Ending Inventory	<u>6,795</u>		
Cost of Goods Sold	9,360		

Note: Purchases = (225 × \$27) + (210 × \$33)

Figure 10.9 LIFO Costing Assumption Cost of Goods Sold and Cost Value. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The gross margin, resulting from the LIFO periodic cost allocations of \$9,360, is shown in [Figure 10.10](#).

Gross Margin	
Sales	\$11,340
– Cost of Goods Sold	<u>9,360</u>
= Gross Margin	1,980

Figure 10.10 LIFO Periodic Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Calculations for Inventory Adjustment, Periodic/Last-in, First-out (LIFO)

Beginning merchandise inventory had a balance before adjustment of \$3,150. The inventory at period end should be \$6,795, requiring an entry to increase merchandise inventory by \$3,645. Journal entries are not shown, but the following calculations provide the information that would be used in recording the necessary journal entries. Cost of goods sold was calculated to be \$9,360, which should be recorded as an expense. The credit entry to balance the adjustment is for \$13,005, which is the total amount that was recorded as purchases for the period. This entry distributes the balance in the purchases account between the inventory that was sold (cost of goods sold) and the amount of inventory that remains at period end (merchandise inventory).

Weighted-Average Cost (AVG)

Weighted-average cost allocation requires computation of the average cost of all units in goods available for sale at the time the sale is made. For The Spy Who Loves You, considering the entire period, the weighted-average cost is computed by dividing total cost of goods available for sale (\$16,155) by the total number of available units (585) to get the average cost of \$27.62. Note that 285 of the 585 units available for sale during the period remained in inventory at period end. Following that logic, ending inventory included 285 units at an average cost of \$27.62 for a total AVG periodic ending inventory value of \$7,872. Subtracting this ending inventory from the \$16,155 total of goods available for sale leaves \$8,283 in cost of goods sold this period. It is important to note that final numbers can often differ by one or two cents due to rounding of the calculations. In this case, the cost comes to \$27.6154 but rounds up to the stated cost of \$27.62.

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, Weighted Average (AVG)

The AVG costing assumption tracks inventory items based on lots of goods that are tracked but averages the cost of all units on hand every time an addition is made to inventory so that, when they are sold, the most recently averaged cost items are used to offset the revenue from the sale. The cost of goods sold, inventory, and gross margin shown in [Figure 10.11](#) were determined from the previously-stated data, particular to AVG costing.

Cost of Goods Sold		Cost Value	
Beginning Inventory	\$ 3,150	285 units at \$27.62	\$7,872
+ Purchases	13,005	Total	7,872
= Goods Available	16,155		
- Ending Inventory	7,872		
Cost of Goods Sold	8,283		

Note: Purchases = $(225 \times \$27) + (210 \times \$33)$

Figure 10.11 AVG Costing Assumption Cost of Goods Sold and Cost Value. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Figure 10.12 shows the gross margin resulting from the weighted-average periodic cost allocations of \$8283.

Gross Margin	
Sales	\$11,340
- Cost of Goods Sold	8,283
= Gross Margin	3,057

Figure 10.12 Weighted AVG Periodic Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Journal Entries for Inventory Adjustment, Periodic/Weighted Average

Beginning merchandise inventory had a balance before adjustment of \$3,150. The inventory at period end should be \$7,872, requiring an entry to increase merchandise inventory by \$4,722. Journal entries are not shown, but the following calculations provide the information that would be used in recording the necessary journal entries. Cost of goods sold was calculated to be \$8,283, which should be recorded as an expense. The credit entry to balance the adjustment is for \$13,005, which is the total amount that was recorded as purchases for the period. This entry distributes the balance in the purchases account between the inventory that was sold (cost of goods sold) and the amount of inventory that remains at period end (merchandise inventory).

10.3

Calculate the Cost of Goods Sold and Ending Inventory Using the Perpetual Method

As you've learned, the perpetual inventory system is updated continuously to reflect the current status of inventory on an ongoing basis. Modern sales activity commonly uses electronic identifiers—such as bar codes and RFID technology—to account for inventory as it is purchased, monitored, and sold. Specific identification inventory methods also commonly use a manual form of the perpetual system. Here we'll demonstrate the mechanics implemented when using perpetual inventory systems in inventory accounting, whether those calculations are orchestrated in a laborious manual system or electronically (in the latter, the inventory accounting operates effortlessly behind the scenes but nonetheless utilizes the same perpetual methodology).

CONCEPTS IN PRACTICE

Perpetual Inventory's Advancements through Technology

Perpetual inventory has been seen as the wave of the future for many years. It has grown since the 1970s alongside the development of affordable personal computers. Universal product codes, commonly known as UPC barcodes, have advanced inventory management for large and small retail organizations, allowing real-time inventory counts and reorder capability that increased popularity of the perpetual inventory system. These UPC codes identify specific products but are not specific to the particular batch of goods that were produced. Electronic product codes (EPCs) such as radio frequency identifiers (RFIDs) are essentially an evolved version of UPCs in which a chip/identifier is embedded in the EPC code that matches the goods to the actual batch of product that was produced. This more specific information allows better control, greater accountability, increased efficiency, and overall quality monitoring of goods in inventory. The technology advancements that are available for perpetual inventory systems make it nearly impossible for businesses to choose periodic inventory and forego the competitive advantages that the technology offers.

Information Relating to All Cost Allocation Methods, but Specific to Perpetual Inventory Updating

Let's return to The Spy Who Loves You Corporation data to demonstrate the four cost allocation methods, assuming inventory is updated on an ongoing basis in a perpetual system.

Cost Data for Calculations

Company: Spy Who Loves You Corporation

Product: Global Positioning System (GPS) Tracking Device

Description: This product is an economical real-time GPS tracking device, designed for individuals who wish to monitor others' whereabouts. It is being marketed to parents of middle school and high school students as a safety measure. Parents benefit by being apprised of the child's location, and the student benefits by not having to constantly check in with parents. Demand for the product has spiked during the current fiscal period, while supply is limited, causing the selling price to escalate rapidly. Note: For simplicity of demonstration, beginning inventory cost is assumed to be \$21 per unit for all cost assumption methods.

SPY WHO LOVES YOU TRACKER			
	Number of Units	Unit Cost	Sales Price
Beginning Inventory Jul. 1	150	\$21	
Sold Jul. 5	120		\$36
Purchased Jul. 10	225	27	
Sold Jul. 15	180		39
Purchased Jul. 25	210	33	
Ending Inventory Jul. 31	185		

Calculations for Inventory Purchases and Sales during the Period, Perpetual Inventory Updating

Regardless of which cost assumption is chosen, recording inventory sales using the perpetual method involves

recording both the revenue and the cost from the transaction for each individual sale. As additional inventory is purchased during the period, the cost of those goods is added to the merchandise inventory account. Normally, no significant adjustments are needed at the end of the period (before financial statements are prepared) since the inventory balance is maintained to continually parallel actual counts.

ETHICAL CONSIDERATIONS

Ethical Short-Term Decision Making

When management and executives participate in unethical or fraudulent short-term decision making, it can negatively impact a company on many levels. According to Antonia Chion, Associate Director of the SEC's Division of Enforcement, those who participate in such activities will be held accountable.^[5] For example, in 2015, the Securities and Exchange Commission (SEC) charged two former top executives of OCZ Technology Group Inc. for accounting failures.^[6] The SEC alleged that OCZ's former CEO Ryan Petersen engaged in a scheme to materially inflate OCZ's revenues and gross margins from 2010 to 2012, and that OCZ's former chief financial officer Arthur Knapp participated in certain accounting, disclosure, and internal accounting controls failures.

Petersen and Knapp allegedly participated in channel stuffing, which is the process of recognizing and recording revenue in a current period that actually will be legally earned in one or more future fiscal periods. A common example is to arrange for customers to submit purchase orders in the current year, often with the understanding that if they don't need the additional inventory then they may return the inventory received or cancel the order if delivery has not occurred.^[7] When the intention behind channel stuffing is to mislead investors, it crosses the line into fraudulent practice. This and other unethical short-term accounting decisions made by Petersen and Knapp led to the bankruptcy of the company they were supposed to oversee and resulted in fraud charges from the SEC. Practicing ethical short-term decision making may have prevented both scenarios.

Specific Identification

For demonstration purposes, the specific units assumed to be sold in this period are designated as follows, with the specific inventory distinction being associated with the lot numbers:

- Sold 120 units, all from Lot 1 (beginning inventory), costing \$21 per unit
- Sold 180 units, 20 from Lot 1 (beginning inventory), costing \$21 per unit; 160 from Lot 2 (July 10 purchase), costing \$27 per unit

The specific identification method of cost allocation directly tracks each of the units purchased and costs them out as they are sold. In this demonstration, assume that some sales were made by specifically tracked goods that are part of a lot, as previously stated for this method. For The Spy Who Loves You, the first sale of 120

5 U.S. Securities and Exchange Commission (SEC). "SEC Charges Former Executives with Accounting Fraud and Other Accounting Failures." October 6, 2015. <https://www.sec.gov/news/pressrelease/2015-234.html>

6 SEC v. Ryan Petersen, No. 15-cv-04599 (N.D. Cal. filed October 6, 2015). <https://www.sec.gov/litigation/litreleases/2017/lr23874.htm>

7 George B. Parizek and Madeleine V. Findley. *Charting a Course: Revenue Recognition Practices for Today's Business Environment*. 2008. https://www.sidley.com/-/media/files/publications/2008/10/charting-a-course-revenue-recognition-practices-_/files/view-article/fileattachment/chartingacourse.pdf

units is assumed to be the units from the beginning inventory, which had cost \$21 per unit, bringing the total cost of these units to \$2,520. Once those units were sold, there remained 30 more units of the beginning inventory. The company bought 225 more units for \$27 per unit. The second sale of 180 units consisted of 20 units at \$21 per unit and 160 units at \$27 per unit for a total second-sale cost of \$4,740. Thus, after two sales, there remained 10 units of inventory that had cost the company \$21, and 65 units that had cost the company \$27 each. The last transaction was an additional purchase of 210 units for \$33 per unit. Ending inventory was made up of 10 units at \$21 each, 65 units at \$27 each, and 210 units at \$33 each, for a total specific identification perpetual ending inventory value of \$8,895.

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, Specific Identification

The specific identification costing assumption tracks inventory items individually so that, when they are sold, the exact cost of the item is used to offset the revenue from the sale. The cost of goods sold, inventory, and gross margin shown in [Figure 10.13](#) were determined from the previously-stated data, particular to specific identification costing.

Cost of Goods Purchased				Cost of Goods Sold			Cost of Inventory Remaining		
	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost
Beginning, Jul. 1							150	\$21	\$3,150
Sale, Jul. 5				120	\$21	\$2,520	30	21	630
Purchase, Jul. 10	225	\$27	\$6,075				30	21	630
							225	27	6,075
Sale, Jul. 15				20	21	420	30	21	210
				160	27	4,320	65	27	1,755
Purchase, Jul. 25	210	33	6,930				30	21	210
							65	27	1,755
							210	33	6,930
Total Purchases in Jul.			\$13,005	Total COGS		\$7,260			

Cost Value:	
10 units at \$21	210
65 units at \$27	1,755
210 units at \$33	6,930
Total	8,895

Figure 10.13 Specific Identification Costing Assumption Cost of Goods Sold, Inventory, and Cost Value.
(attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

[Figure 10.14](#) shows the gross margin, resulting from the specific identification perpetual cost allocations of \$7,260.

Gross Margin	
Sales	\$11,340
– Cost of Goods Sold	<u>7,260</u>
= Gross Margin	4,080

$(120 \times \$36) + (180 \times \$39)$

Figure 10.14 Specific Identification Perpetual Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Description of Journal Entries for Inventory Sales, Perpetual, Specific Identification

Journal entries are not shown, but the following discussion provides the information that would be used in recording the necessary journal entries. Each time a product is sold, a revenue entry would be made to record the sales revenue and the corresponding accounts receivable or cash from the sale. Because of the choice to apply perpetual inventory updating, a second entry made at the same time would record the cost of the item based on the actual cost of the items, which would be shifted from merchandise inventory (an asset) to cost of goods sold (an expense).

First-in, First-out (FIFO)

The first-in, first-out method (FIFO) of cost allocation assumes that the earliest units purchased are also the first units sold. For The Spy Who Loves You, using perpetual inventory updating, the first sale of 120 units is assumed to be the units from the beginning inventory, which had cost \$21 per unit, bringing the total cost of these units to \$2,520. Once those units were sold, there remained 30 more units of beginning inventory. The company bought 225 more units for \$27 per unit. At the time of the second sale of 180 units, the FIFO assumption directs the company to cost out the last 30 units of the beginning inventory, plus 150 of the units that had been purchased for \$27. Thus, after two sales, there remained 75 units of inventory that had cost the company \$27 each. The last transaction was an additional purchase of 210 units for \$33 per unit. Ending inventory was made up of 75 units at \$27 each, and 210 units at \$33 each, for a total FIFO perpetual ending inventory value of \$8,955.

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, First-in, First-out (FIFO)

The FIFO costing assumption tracks inventory items based on lots of goods that are tracked, in the order that they were acquired, so that when they are sold the earliest acquired items are used to offset the revenue from the sale. The cost of goods sold, inventory, and gross margin shown in [Figure 10.15](#) were determined from the previously-stated data, particular to perpetual FIFO costing.

Cost of Goods Purchased				Cost of Goods Sold			Cost of Inventory Remaining		
	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost
Beginning, Jul. 1							150	\$21	\$3,150
Sale, Jul. 5				120	\$21	\$2,520	30	21	630
Purchase, Jul. 10	225	\$27	\$6,075				30	21	630
							225	27	6,075
Sale, Jul. 15				30	21	630	–	–	–
				150	27	4,050	75	27	2,025
Purchase, Jul. 25	210	33	6,930				75	27	2,025
							210	33	6,930
Total Purchases in Jul.			\$13,005	Total COGS		\$7,200			

Cost Value:		
75 units at \$27		2,025
210 units at \$33		<u>6,930</u>
Total		8,955

Figure 10.15 FIFO Costing Assumption Cost of Goods Purchased, Cost of Goods Sold, and Cost of Inventory Remaining. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Figure 10.16 shows the gross margin, resulting from the FIFO perpetual cost allocations of \$7,200.

Gross Margin	
Sales	11,340
– Cost of Goods Sold	<u>7,200</u>
= Gross Margin	4,140

Figure 10.16 FIFO Perpetual Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Description of Journal Entries for Inventory Sales, Perpetual, First-in, First-out (FIFO)

Journal entries are not shown, but the following discussion provides the information that would be used in recording the necessary journal entries. Each time a product is sold, a revenue entry would be made to record the sales revenue and the corresponding accounts receivable or cash from the sale. When applying perpetual inventory updating, a second entry made at the same time would record the cost of the item based on FIFO, which would be shifted from merchandise inventory (an asset) to cost of goods sold (an expense).

Last-in, First-out (LIFO)

The last-in, first-out method (LIFO) of cost allocation assumes that the last units purchased are the first units sold. For The Spy Who Loves You, using perpetual inventory updating, the first sale of 120 units is assumed to be the units from the beginning inventory (because this was the only lot of good available, so it represented the last purchased lot), which had cost \$21 per unit, bringing the total cost of these units in the first sale to \$2,520. Once those units were sold, there remained 30 more units of beginning inventory. The company

bought 225 more units for \$27 per unit. At the time of the second sale of 180 units, the LIFO assumption directs the company to cost out the 180 units from the latest purchased units, which had cost \$27 for a total cost on the second sale of \$4,860. Thus, after two sales, there remained 30 units of beginning inventory that had cost the company \$21 each, plus 45 units of the goods purchased for \$27 each. The last transaction was an additional purchase of 210 units for \$33 per unit. Ending inventory was made up of 30 units at \$21 each, 45 units at \$27 each, and 210 units at \$33 each, for a total LIFO perpetual ending inventory value of \$8,775.

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, Last-in, First-out (LIFO)

The LIFO costing assumption tracks inventory items based on lots of goods that are tracked in the order that they were acquired, so that when they are sold, the latest acquired items are used to offset the revenue from the sale. The following cost of goods sold, inventory, and gross margin were determined from the previously-stated data, particular to perpetual, LIFO costing.

Cost of Goods Purchased				Cost of Goods Sold			Cost of Inventory Remaining		
	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost
Beginning, Jul. 1							150	\$21	\$3,150
Sale, Jul. 5				120	\$21	\$2,520	30	21	630
Purchase, Jul. 10	225	\$27	\$6,075				30	21	630
							225	27	6,075
Sale, Jul. 15				180	27	4,860	30	21	630
							45	27	1,215
Purchase, Jul. 25	210	\$33	6,930				30	21	630
							45	27	1,215
							210	33	6,930
Total Purchases in Jul.			\$13,005	Total COGS		\$7,380			

Cost Value:	
30 units at \$21	\$ 630
45 units at \$27	1,215
210 units at \$33	6,930
Total	8,775

Figure 10.17 LIFO Costing Assumption Cost of Goods Purchased, Cost of Goods Sold, and Cost of Inventory Remaining. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

[Figure 10.18](#) shows the gross margin resulting from the LIFO perpetual cost allocations of \$7,380.

Gross Margin	
Sales	11,340
– Cost of Goods Sold	7,380
= Gross Margin	3,960

Figure 10.18 LIFO Perpetual Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Description of Journal Entries for Inventory Sales, Perpetual, Last-in, First-out (LIFO)

Journal entries are not shown, but the following discussion provides the information that would be used in recording the necessary journal entries. Each time a product is sold, a revenue entry would be made to record the sales revenue and the corresponding accounts receivable or cash from the sale. When applying apply perpetual inventory updating, a second entry made at the same time would record the cost of the item based on LIFO, which would be shifted from merchandise inventory (an asset) to cost of goods sold (an expense).

LINK TO LEARNING

Visit this [Amazon inventory video](https://openstax.org/l/50Amazon) for a little insight into some of the inventory challenges experienced by retail giant Amazon (<https://openstax.org/l/50Amazon>) to learn more.

Weighted-Average Cost (AVG)

Weighted-average cost allocation requires computation of the average cost of all units in goods available for sale at the time the sale is made for perpetual inventory calculations. For The Spy Who Loves You, the first sale of 120 units is assumed to be the units from the beginning inventory (because this was the only lot of good available, so the price of these units also represents the average cost), which had cost \$21 per unit, bringing the total cost of these units in the first sale to \$2,520. Once those units were sold, there remained 30 more units of the inventory, which still had a \$21 average cost. The company bought 225 more units for \$27 per unit. Recalculating the average cost, after this purchase, is accomplished by dividing total cost of goods available for sale (which totaled \$6,705 at that point) by the number of units held, which was 255 units, for an average cost of \$26.29 per unit. At the time of the second sale of 180 units, the AVG assumption directs the company to cost out the 180 at \$26.29 for a total cost on the second sale of \$4,732. Thus, after two sales, there remained 75 units at an average cost of \$26.29 each. The last transaction was an additional purchase of 210 units for \$33 per unit. Recalculating the average cost again resulted in an average cost of \$31.24 per unit. Ending inventory was made up of 285 units at \$31.24 each for a total AVG perpetual ending inventory value of \$8,902 (rounded).^[8]

Calculations of Costs of Goods Sold, Ending Inventory, and Gross Margin, Weighted Average (AVG)

The AVG costing assumption tracks inventory items based on lots of goods that are combined and re-averaged after each new acquisition to determine a new average cost per unit so that, when they are sold, the latest averaged cost items are used to offset the revenue from the sale. The cost of goods sold, inventory, and gross margin shown in [Figure 10.19](#) were determined from the previously-stated data, particular to perpetual, AVG costing.

8 Note that there is a \$1 rounding difference due to the rounding of cents inherent in the cost determination chain process.

	Cost of Goods Purchased			Cost of Goods Sold			Cost of Inventory Remaining		
	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost
Beginning							150	\$21.00	\$3,150
Sale				120	\$21.00	\$2,520	30	21.00	630
Purchase	225	\$27.00	\$6,075				255	26.29	6,705
Sale				180	26.29	4,733	75	26.29	1,972
Purchase	210	33.00	6,930				285	31.24	8,902
Total Purchases			\$13,005	Total COGS		\$7,253			

Cost Value:

285 units at \$31.24

\$8,902

Total

8,902

Figure 10.19 AVG Costing Assumption Cost of Goods Purchased, Cost of Goods Sold, and Cost of Inventory Remaining. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

[Figure 10.20](#) shows the gross margin, resulting from the weighted-average perpetual cost allocations of \$7,253.

Gross Margin:

Sales \$11,340

– Cost of Goods Sold 7,253

= Gross Margin 4,087

Figure 10.20 Weighted AVG Perpetual Cost Allocations Gross Margin. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Description of Journal Entries for Inventory Sales, Perpetual, Weighted Average (AVG)

Journal entries are not shown, but the following discussion provides the information that would be used in recording the necessary journal entries. Each time a product is sold, a revenue entry would be made to record the sales revenue and the corresponding accounts receivable or cash from the sale. When applying perpetual inventory updating, a second entry would be made at the same time to record the cost of the item based on the AVG costing assumptions, which would be shifted from merchandise inventory (an asset) to cost of goods sold (an expense).

Comparison of All Four Methods, Perpetual

The outcomes for gross margin, under each of these different cost assumptions, is summarized in [Figure 10.21](#).

	Sp ID	FIFO	LIFO	AVG
Sales Revenue	\$11,340	\$11,340	\$11,340	\$11,340
– Cost	<u>7,260</u>	<u>7,200</u>	<u>7,380</u>	<u>7,253</u>
= Gross Margin	4,080	4,140	3,960	4,087

Figure 10.21 Gross Margin Comparison. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

THINK IT THROUGH

Last-in, First-out (LIFO)

Two-part consideration: 1) Why do you think a company would ever choose to use perpetual LIFO as its costing method? It is clearly more trouble to calculate than other methods and doesn't really align with the natural flow of the merchandise, in most cases. 2) Should the order in which the items are actually sold determine which costs are used to offset sales revenues from those goods? Explain your understanding of these issues.

10.4 Explain and Demonstrate the Impact of Inventory Valuation Errors on the Income Statement and Balance Sheet

Because of the dynamic relationship between cost of goods sold and merchandise inventory, errors in inventory counts have a direct and significant impact on the financial statements of the company. Errors in inventory valuation cause mistaken values to be reported for merchandise inventory and cost of goods sold due to the toggle effect that changes in either one of the two accounts have on the other. As explained, the company has a finite amount of inventory that they can work with during a given period of business operations, such as a year. This limited quantity of goods is known as goods available for sale and is sourced from

1. beginning inventory (unsold goods left over from the previous period's operations); and
2. purchases of additional inventory during the current period.

These available inventory items (goods available for sale) will be handled in one of two ways:

1. be sold to customers (normally) or be lost due to shrinkage, spoilage, or theft (occasionally), and reported as cost of goods sold on the income statement; OR
2. be unsold and held in ending inventory, to be passed into the next period, and reported as merchandise inventory on the balance sheet.

Fundamentals of the Impact of Inventory Valuation Errors on the Income Statement and Balance Sheet

Understanding this interaction between inventory assets (merchandise inventory balances) and inventory expense (cost of goods sold) highlights the impact of errors. Errors in the valuation of ending merchandise inventory, which is on the balance sheet, produce an equivalent corresponding error in the company's cost of

goods sold for the period, which is on the income statement. When cost of goods sold is overstated, inventory and net income are understated. When cost of goods sold is understated, inventory and net income are overstated. Further, an error in ending inventory carries into the next period, since ending inventory of one period becomes the beginning inventory of the next period, causing both the balance sheet and the income statement values to be wrong in year two as well as in the year of the error. Over a two-year period, misstatements of ending inventory will balance themselves out. For example, an overstatement to ending inventory overstates net income, but next year, since ending inventory becomes beginning inventory, it understates net income. So over a two-year period, this corrects itself. However, financial statements are prepared for one period, so all this means is that two years of cost of goods sold are misstated (the first year is overstated/understated, and the second year is understated/overstated.)

In periodic inventory systems, inventory errors commonly arise from careless oversight of physical counts. Another common cause of periodic inventory errors results from management neglecting to take the physical count. Both perpetual and periodic updating inventory systems also face potential errors relating to ownership transfers during transportation (relating to FOB shipping point and FOB destination terms); losses in value due to shrinkage, theft, or obsolescence; and consignment inventory, the goods for which should never be included in the retailer's inventory but should be recorded as an asset of the consignor, who remains the legal owner of the goods until they are sold.

Calculated Income Statement and Balance Sheet Effects for Two Years

Let's return to The Spy Who Loves You Company dataset to demonstrate the effects of an inventory error on the company's balance sheet and income statement. Example 1 (shown in [Figure 10.22](#)) depicts the balance sheet and income statement toggle when no inventory error is present. Example 2 (see [Figure 10.23](#)) shows the balance sheet and income statement inventory toggle, in a case when a \$1,500 understatement error occurred at the end of year 1.

	Balance Sheet Year 1	Income Statement Year 1	Balance Sheet Year 2	Income Statement Year 2
Sales		\$11,340		\$12,474
Beginning Inventory	\$ 3,150		\$ 8,955	
+ Purchases	13,005		8,816	
= Goods Available for Sale	16,155		17,771	
- Ending Inventory	8,955		9,851	
= Cost of Goods Sold		7,200		7,920
Gross Margin		4,140		4,554
All other expenses		3,000		3,000
Net Income		1,140		1,554
<i>Note: Year 2 correctly stated values for Sales, Goods Available, and Ending Inventory were estimated, based on 110% of Year 1's amounts.</i>				

Figure 10.22 Example 1. Assume these values to be correct (no inventory error). This chart shows excerpted values from The Spy Who Loves You Company's financial statements without inventory errors. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

	Balance Sheet Year 1	Income Statement Year 1	Balance Sheet Year 2	Income Statement Year 2
Sales		\$11,340		\$12,474
Beginning Inventory	\$ 3,150		\$ 7,455	
+ Purchases	13,005		8,816	
= Goods Available for Sale	16,155		16,271	
- Ending Inventory				
(understated by \$1,500)	7,455		8,201	
= Cost of Goods Sold		8,700		6,420
Gross Margin		2,640		6,054
All other expenses		3,000		3,000
Net Income		(360)		3,054
Note: Year 2 correctly stated values for Sales, Goods Available, and Ending Inventory were estimated, based on 110% of Year 1's amounts.				

Figure 10.23 Example 2. Assume these values to be incorrect (with inventory error). This chart shows excerpted values from The Spy Who Loves You Company's financial statements with inventory errors. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Comparing the two examples with and without the inventory error highlights the significant effect the error had on the net results reported on the balance sheet and income statements for the two years. Users of financial statements make important business and personal decisions based on the data they receive from the statements and errors of this sort provide those users with faulty information that could negatively affect the quality of their decisions. In these examples, the combined net income was identical for the two years and the error worked itself out at the end of the second year, yet year 1 and year 2 were incorrect and not representative of the true activity of the business for those periods of time. Extreme care should be taken to value inventories accurately.

10.5 Examine the Efficiency of Inventory Management Using Financial Ratios

Inventory is a large investment for many companies so it is important that this asset be managed wisely. Too little inventory means lost sales opportunities, whereas too much inventory means unproductive investment of resources as well as extra costs related to storage, care, and protection of the inventory. Ratio analysis is used to measure how well management is doing at maintaining just the right amount of inventory for the needs of their particular business.

Once calculated, these ratios should be compared to previous years' ratios for the company, direct competitors' ratios, industry ratios, and other industries' ratios. The insights gained from the ratio analysis should be used to augment analysis of the general strength and stability of the company, with the full data available in the annual report, including financial statements and notes to the financial statement.

Fundamentals of Inventory Ratios

Inventory ratio analysis relates to how well the inventory is being managed. Two ratios can be used to assess

how efficiently management is handling inventory. The first ratio, inventory turnover, measures the number of times an average quantity of inventory was bought and sold during the period. The second ratio, number of days' sales in inventory, measures how many days it takes to complete the cycle between buying and selling inventory.

Calculating and Interpreting the Inventory Turnover Ratio

Inventory turnover ratio is computed by dividing cost of goods sold by average inventory. The ratio measures the number of times inventory rotated through the sales cycle for the period. Let's review how this works for The Spy Who Loves You dataset. This example scenario relates to the FIFO periodic cost allocation, using those previously calculated values for year 1 cost of goods sold, beginning inventory, and ending inventory, and assuming a 10% increase in inventory activity for year 2, as shown in [Figure 10.24](#).

	Balance Sheet Year 1	Income Statement Year 1	Balance Sheet Year 2	Income Statement Year 2
Beginning Inventory	\$ 3,150		\$ 8,955	
+ Purchases	13,005		8,816	
= Goods Available for Sale	16,155		17,771	
– Ending Inventory	8,955		9,851	
= Cost of Goods Sold		7,200		7,920
<i>Note: Year 2 values for Sales, Goods Available, and Ending Inventory were estimated, based on 110% of Year 1's amounts.</i>				

Figure 10.24 Excerpts from Financial Statements of The Spy Who Loves You Company. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The inventory turnover ratio is calculated by dividing cost of goods sold by average inventory. The result for the Spy Who Loves You Company indicates that the inventory cycled through the sales cycle 1.19 times in year 1, and 0.84 times in year 2.

Inventory Turnover Ratio	Year 1	Year 2
Cost of Goods Sold	\$7,200	\$7,920
/ Average Inventory*	6,053	9,403
= Inventory Turnover	1.19	0.84
* Average Inventory Year 1 = $(3,150 + 8,955) / 2$; Average Inventory Year 2 = $(8,955 + 9,851) / 2$		

The fact that the year 2 inventory turnover ratio is lower than the year 1 ratio is not a positive trend. This result would alert management that the inventory balance might be too high to be practical for this volume of sales. Comparison should also be made to competitor and industry ratios, while consideration should also be given to other factors affecting the company's financial health as well as the strength of the overall market economy.

Calculating and Interpreting the Days' Sales in Inventory Ratio

Number of days' sales in inventory ratio is computed by dividing average merchandise inventory by the

average daily cost of goods sold. The ratio measures the number of days it would take to clear the remaining inventory. Let's review this using The Spy Who Loves You dataset. The example scenario relates to the FIFO periodic cost allocation, using those previously calculated values for year 1 cost of goods sold, beginning inventory, and ending inventory, and assuming a 10% increase in inventory activity for year 2, as in

Figure 10.25.

	Balance Sheet Year 1	Income Statement Year 1	Balance Sheet Year 2	Income Statement Year 2
Beginning Inventory	\$ 3,150		\$ 8,955	
+ Purchases	13,005		8,816	
= Goods Available for Sale	16,155		17,771	
- Ending Inventory	8,955		9,851	
= Cost of Goods Sold		\$7,200		\$7,920
Note: Year 2 values for Sales, Goods Available, and Ending Inventory were estimated, based on 110% of Year 1's amounts.				

Figure 10.25 Excerpts from Financial Statements of The Spy Who Loves You Company. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

The number of days' sales in inventory ratio is calculated by dividing average inventory by average daily cost of goods sold. The result for the Spy Who Loves You indicates that it would take about 307 days to clear the average inventory held in year 1 and about 433 days to clear the average inventory held in year 2.

Number of Days' Sales in Inventory Ratio	Year 1	Year 2
Average Inventory*	\$ 6,053	\$ 9,403
/ Average Daily Cost of Goods Sold**	19.73	21.70
= Days' Sales in Inventory	306.79	433.32
* Average Inventory Year 1 = $(3,150 + 8,955) / 2$; Average Inventory Year 2 = $(8,955 + 9,851) / 2$ ** Average Daily COGS Year 1 = $(7,200 / 365)$; Average Daily COGS Year 2 = $(7,920 / 365)$		

Year 2's number of days' sales in inventory ratio increased over year 1's ratio results, indicating an unfavorable change. This result would alert management that it is taking much too long to sell the inventory, so reduction in the inventory balance might be appropriate, or as an alternative, increased sales efforts could turn the ratio toward a more positive trend. This ratio is useful to identify cases of obsolescence, which is especially prevalent in an evolving market, such as the technology sector of the economy. As with any ratio, comparison should also be made to competitor and industry ratios, while consideration should also be given to other factors affecting the company's financial health, as well as to the strength of the overall market economy.

LINK TO LEARNING

Check out [Investopedia](https://openstax.org/l/50TurnoverRatio) for help with calculation and analysis of ratios and their discussion about the inventory turnover ratio (<https://openstax.org/l/50TurnoverRatio>) to learn more.



Key Terms

conservatism concept that if there is uncertainty in a potential financial estimate, a company should err on the side of caution and report the most conservative amount

consignment arrangement whereby goods are available to sell by one party, but owned by another party, without transfer of ownership

consistency principle accounting methods applied in a like manner, across multiple periods, allow for contrast and comparison between periods

first-in, first-out method (FIFO) inventory cost allocation method that assumes the earliest acquired inventory items are the first to be sold

FOB destination point transportation terms whereby the seller transfers ownership and financial responsibility at the time of delivery

FOB shipping point transportation terms whereby the seller transfers ownership and financial responsibility at the time of shipment

goods available for sale total of all inventory (beginning inventory plus purchased inventory); will either be sold this period or held in period-end inventory

gross profit net profit from sale of goods; sales revenue minus cost of goods sold

gross profit method inventory estimation tool that uses a company's usual gross profit percentage, related to total sales revenue, to estimate the cost of the ending inventory

inventory turnover ratio computed by dividing cost of goods sold by average inventory; measures number of times inventory rotated through the sales cycle for the period

last-in, first-out method (LIFO) inventory cost allocation method that assumes the latest acquired inventory items are the first to sell

lower-of-cost-or-market (LCM) conservatism-based concept that mandates inventory be reported at the lower of the value of inventory reflected in the general ledger or replacement value

merchandise inventory goods held for sale at a given point in the period

number of days' sales in inventory ratio computed by dividing average merchandise inventory by average daily cost of goods sold; measures number of days it would take to clear remaining inventory

periodic inventory system system that is updated at the end of the period, to match the physical count of goods on hand

perpetual inventory system system that automatically updates and records the inventory account every time a sale or purchase of inventory occurs

purchases new acquisitions of merchandise inventory during the period

retail inventory method inventory estimation tool that uses a company's usual gross profit percentage, related to total sales revenue, to estimate the retail value of the ending inventory, which can then be reduced to an estimated cost figure

specific identification method inventory cost allocation method that traces actual cost of each specific item, whether sold or held in inventory; usually used for customized or differentiated products

weighted-average method inventory cost allocation method that calculates the average value inventory items by weighting each purchase lot's goods available for sale, before dividing by the total number of units of that item



Summary

10.1 Describe and Demonstrate the Basic Inventory Valuation Methods and Their Cost Flow Assumptions

- The total cost of goods available for sale is a combination of the beginning inventory plus new inventory purchases. These costs relating to goods available for sale are included in the ending inventory, reported on the balance sheet, or become part of the cost of goods sold reported on the income statement.
- Merchandise inventory is maintained using either the periodic or the perpetual updating system. Periodic updating is performed at the end of the period only, whereas perpetual updating is an ongoing activity that maintains inventory records that are approximately equal to the actual inventory on hand at any time.
- There are four basic inventory cost flow allocation methods, which are alternative ways to estimate the cost of the units that are sold and the value of the ending inventory. The costing methods are not indicative of the flow of the goods, which often moves in a different order than the flow of the costs.
- Utilizing different cost allocation options results in marked differences in reported cost of goods sold, net income, and inventory balances.

10.2 Calculate the Cost of Goods Sold and Ending Inventory Using the Periodic Method

- The periodic inventory system updates inventory at the end of a fixed accounting period. During the accounting period, inventory records are not changed, and at the end of the period, inventory records are adjusted for what was sold and added during the period.
- Companies using the periodic and perpetual method for inventory updating choose between the basic four cost flow assumption methods, which are first-in, first-out (FIFO); last-in, first-out (LIFO); specific identification (SI); and weighted average (AVG).
- Periodic inventory systems are still used in practice, but the prevalence of their use has greatly diminished, with advances in technology and as prices for inventory management software have significantly decreased.

10.3 Calculate the Cost of Goods Sold and Ending Inventory Using the Perpetual Method

- Perpetual inventory systems maintain inventory balance in the company records in a real-time or slightly delayed, continuously updated state. No significant adjustments are needed at the end of the period, before issuing the financial statements.
- Companies using the perpetual method for inventory updating choose between the basic four cost flow assumption methods, which are first-in, first-out (FIFO); last-in, first-out (LIFO); specific identification (SI); and weighted average (AVG).
- Most modern inventory systems utilize the perpetual inventory system, due to the benefits it offers for efficiency, ease of operation, availability of real-time updating, and accuracy.

10.4 Explain and Demonstrate the Impact of Inventory Valuation Errors on the Income Statement and Balance Sheet

- The value for cost of the goods available for sale is dependent on accurate beginning and ending inventory numbers. Because of the interrelationship between inventory values and cost of goods sold, when the inventory values are incorrect, the associated income statement and balance sheet accounts are also incorrect.
- Inventory errors at the beginning of a reporting period affect only the income statement. Overstatements of beginning inventory result in overstated cost of goods sold and understated net income. Conversely, understatements of beginning inventory result in understated cost of goods sold and overstated net income.
- Inventory errors at the end of a reporting period affect both the income statement and the balance sheet. Overstatements of ending inventory result in understated cost of goods sold, overstated net income, overstated assets, and overstated equity. Conversely, understatements of ending inventory result in overstated cost of goods sold, understated net income, understated assets, and understated equity.

10.5 Examine the Efficiency of Inventory Management Using Financial Ratios

- Inventory ratio analysis tools help management to identify inefficient management practices and pinpoint troublesome scenarios within their inventory operations processes.
- The inventory turnover ratio measures how fast the inventory sells, which can be useful for inter-period comparison as well as comparisons with competitor firms.
- The number of days' sales in inventory ratio indicates how long it takes for inventory to be sold, on average, which can help the firm identify instances of too much or too little inventory, indicating such cases as product obsolescence or excess stocking, or the reverse scenario: insufficient inventory, which could result in customer dissatisfaction and lost sales.



Multiple Choice

1. **LO 10.1** If a company has four lots of products for sale, purchase 1 (earliest) for \$17, purchase 2 (middle) for \$15, purchase 3 (middle) for \$12, and purchase 4 (latest) for \$14, which cost would be assumed to be sold first using LIFO costing?
 - A. \$17
 - B. \$15
 - C. \$12
 - D. \$14
2. **LO 10.1** If a company has three lots of products for sale, purchase 1 (earliest) for \$17, purchase 2 (middle) for \$15, purchase 3 (latest) for \$12, which of the following statements is true?
 - A. This is an inflationary cost pattern.
 - B. This is a deflationary cost pattern.
 - C. The next purchase will cost less than \$12.
 - D. None of these statements can be verified.
3. **LO 10.1** When inventory items are highly specialized, the best inventory costing method is _____.
 - A. specific identification
 - B. first-in, first-out
 - C. last-in, first-out
 - D. weighted average
4. **LO 10.1** If goods are shipped FOB destination, which of the following is true?
 - A. Title to the goods will transfer as soon as the goods are shipped.
 - B. FOB indicates that a price reduction has been applied to the order.
 - C. The seller must pay the shipping.
 - D. The seller and the buyer will each pay 50% of the cost.
5. **LO 10.1** On which financial statement would the merchandise inventory account appear?
 - A. balance sheet
 - B. income statement
 - C. both balance sheet and income statement
 - D. neither balance sheet nor income statement

6. **L0 10.1** When would using the FIFO inventory costing method produce higher inventory account balances than the LIFO method would?
- A. inflationary times
 - B. deflationary times
 - C. always
 - D. never
7. **L0 10.1** Which accounting rule serves as the primary basis for the lower-of-cost-or-market methodology for inventory valuation?
- A. conservatism
 - B. consistency
 - C. optimism
 - D. pessimism
8. **L0 10.1** Which type or types of inventory timing system (periodic or perpetual) requires the user to record two journal entries every time a sale is made.
- A. periodic
 - B. perpetual
 - C. both periodic and perpetual
 - D. neither periodic nor perpetual
9. **L0 10.2** Which of these statements is false?
- A. If cost of goods sold is incorrect, ending inventory is usually incorrect too.
 - B. beginning inventory + purchases = cost of goods sold
 - C. ending inventory + cost of goods sold = goods available for sale
 - D. goods available for sale – beginning inventory = purchases
10. **L0 10.3** Which inventory costing method is almost always done on a perpetual basis?
- A. specific identification
 - B. first-in, first-out
 - C. last-in, first-out
 - D. weighted average
11. **L0 10.3** Which of the following describes features of a perpetual inventory system?
- A. Technology is normally used to record inventory changes.
 - B. Merchandise bought is recorded as purchases.
 - C. An adjusting journal entry is required at year end, to match physical counts to the asset account.
 - D. Inventory is updated at the end of the period.
12. **L0 10.4** Which of the following financial statements would be impacted by a current-year ending inventory error, when using a periodic inventory updating system?
- A. balance sheet
 - B. income statement
 - C. neither statement
 - D. both statements

13. **L0** 10.4 Which of the following would cause periodic ending inventory to be overstated?
- A. Goods held on consignment are omitted from the physical count.
 - B. Goods purchased and delivered, but not yet paid for, are included in the physical count.
 - C. Purchased goods shipped FOB destination and not yet delivered are included in the physical count.
 - D. None of the above
14. **L0** 10.5 Which of the following indicates a positive trend for inventory management?
- A. increasing number of days' sales in inventory ratio
 - B. increasing inventory turnover ratio
 - C. increasing cost of goods sold
 - D. increasing sales revenue



Questions

1. **L0** 10.1 What is meant by the term *gross margin*?
2. **L0** 10.1 Can a business change from one inventory costing method to another any time they wish? Explain.
3. **L0** 10.1 Why do consignment arrangements present a challenge in inventory management? Explain.
4. **L0** 10.1 Explain the difference between the terms *FOB destination* and *FOB shipping point*.
5. **L0** 10.1 When would a company use the specific identification method of inventory cost allocation?
6. **L0** 10.1 Explain why a company might want to utilize the gross profit method or the retail inventory method for inventory valuation.
7. **L0** 10.1 Describe the goal of the lower-of-cost-or-market concept.
8. **L0** 10.1 Describe two separate and distinct ways to calculate goods available for sale.
9. **L0** 10.3 Describe costing inventory using first-in, first-out. Address the different treatment, if any, that must be given for periodic and perpetual inventory updating.
10. **L0** 10.3 Describe costing inventory using last-in, first-out. Address the different treatment, if any, that must be given for periodic and perpetual inventory updating.
11. **L0** 10.3 Describe costing inventory using weighted average. Address the different treatment, if any, that must be given for periodic and perpetual inventory updating.
12. **L0** 10.4 How long does it take an inventory error affecting ending inventory to correct itself in the financial statements? Explain.
13. **L0** 10.4 What type of issues would arise that might cause inventory errors?
14. **L0** 10.5 Explain the difference between the flow of cost and the flow of goods as it relates to inventory.
15. **L0** 10.5 What insights can be gained from inventory ratio analysis, such as inventory turnover ratio and number of days' sales in inventory ratio?



Exercise Set A

EA1. **L0 10.1** Calculate the goods available for sale for Atlantis Company, in units and in dollar amounts, given the following facts about their inventory for the period:

	Number of Units	Cost per Unit
Beginning inventory	140	\$75
Purchased goods during the period	240	77
Sold goods during the period	80	125
Purchased goods during the period	220	80

EA2. **L0 10.1** E Company accepts goods on consignment from R Company and also purchases goods from S Company during the current month. E Company plans to sell the merchandise to customers during the following month. In each of these independent situations, who owns the merchandise at the end of the current month and should therefore include it in their company's ending inventory? Choose E, R, or S.

- Goods ordered from R, delivered and displayed on E's showroom floor at the end of the current month.
- Goods ordered from S, in transit, with shipping terms FOB destination.
- Goods ordered from R, in transit, with no stated shipping terms.
- Goods ordered from S, delivered and displayed on E's showroom floor at the end of the current month, with shipping terms FOB destination.
- Goods ordered from S, in transit, with shipping terms FOB shipping point.

EA3. **L0 10.1** The following information is taken from a company's records. Applying the lower-of-cost-or-market approach, what is the correct value that should be reported on the balance sheet for the inventory?

	Cost per Unit	Market Value per Unit
Inventory item 1 (10 units)	\$36	\$35
Inventory item 2 (25 units)	20	20
Inventory item 3 (12 units)	6	8

EA4. **L0 10.2** Complete the missing piece of information involving the changes in inventory, and their relationship to goods available for sale, for the two years shown:

	2021	2022
Beginning inventory	\$10,000	\$7,000
Purchases	25,000	3,000
Goods available for sale	35,000	
Ending inventory	7,000	
Cost of goods sold		8,500

EA5. **L0 10.2** Akira Company had the following transactions for the month.

	Number of Units	Cost per Unit
Beginning inventory	150	\$10
Purchased Mar. 31	160	12
Purchased Oct. 15	130	15
Ending inventory	50	?

Calculate the ending inventory dollar value for the period for each of the following cost allocation methods, using periodic inventory updating. Provide your calculations.

- A. first-in, first-out (FIFO)
- B. last-in, first-out (LIFO)
- C. weighted average (AVG)

EA6. **L0 10.2** Akira Company had the following transactions for the month.

	Number of Units	Cost per Unit
Beginning inventory	150	\$1,500
Purchased Mar. 31	160	1,920
Purchased Oct. 15	130	1,950
Total goods available for sale	440	5,370
Ending inventory	50	?

Calculate the gross margin for the period for each of the following cost allocation methods, using periodic inventory updating. Assume that all units were sold for \$25 each. Provide your calculations.

- A. first-in, first-out (FIFO)
- B. last-in, first-out (LIFO)
- C. weighted average (AVG)

EA7. **L0 10.2** Prepare journal entries to record the following transactions, assuming periodic inventory updating and first-in, first-out (FIFO) cost allocation.

	Number of Units	Cost per Unit
Jan. 2, purchased merchandise for resale	300	\$21
Jan. 12, purchased merchandise for resale	200	24
Jan. 16, sold merchandise for \$40 per unit	220	

EA8. **L0 10.3** Calculate the cost of goods sold dollar value for A65 Company for the month, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for first-in, first-out (FIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	800	\$50	
Purchased	600	52	
Sold	400		\$80
Sold	350		90
Ending inventory	650		

EA9. **L0 10.3** Calculate the cost of goods sold dollar value for A66 Company for the month, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for last-in, first-out (LIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	800	\$50	
Purchased	600	52	
Sold	400		\$80
Sold	350		90
Ending inventory	650		

EA10. **L0 10.3** Calculate the cost of goods sold dollar value for A67 Company for the month, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for weighted average (AVG).

	Number of Units	Unit Cost	Sales
Beginning inventory	800	\$50	
Purchased	600	52	
Sold	400		\$80
Sold	350		90
Ending inventory	650		

EA11. **L0 10.3** Prepare journal entries to record the following transactions, assuming perpetual inventory updating and first-in, first-out (FIFO) cost allocation. Assume no beginning inventory.

	Number of Units	Unit Cost
Jan. 2, purchased merchandise for resale	300	\$21
Jan. 12, purchased merchandise for resale	200	24
Jan. 16, sold merchandise for \$40 per unit	220	

EA12. **L0 10.3** Prepare Journal entries to record the following transactions, assuming perpetual inventory updating, and last-in, first-out (LIFO) cost allocation. Assume no beginning inventory.

	Number of Units	Unit Cost
Mar. 12, purchased merchandise for resale	5,000	\$ 90
Mar. 15, purchased merchandise for resale	3,500	100
Mar. 16, sold merchandise for \$200 per unit	2,000	

EA13. **L0 10.4** If a group of inventory items costing \$15,000 had been omitted from the year-end inventory count, what impact would the error have on the following inventory calculations? Indicate the effect (and amount) as either (a) none, (b) understated \$____, or (c) overstated \$____.

Inventory Item	None or amount?	Understated or overstated?
Beginning Inventory		
Purchases		
Goods Available for Sale		
Ending Inventory		
Cost of Goods Sold		

Table 10.1

EA14. **L0 10.4** If Wakowski Company's ending inventory was actually \$86,000 but was adjusted at year end to a balance of \$68,000 in error, what would be the impact on the presentation of the balance sheet and income statement for the year that the error occurred, if any?

EA15. **L0 10.4** Shetland Company reported net income on the year-end financial statements of \$125,000. However, errors in inventory were discovered after the reports were issued. If inventory was understated by \$15,000, how much net income did the company actually earn?

EA16. **L0 10.5** Compute Altoona Company's (a) inventory turnover ratio and (b) number of days' sales in inventory ratio, using the following information.

Cost of goods sold	\$722,000
Beginning inventory	53,000
Ending inventory	67,000

EA17. **L0 10.5** Complete the missing pieces of McCarthy Company's inventory calculations and ratios.

Beginning inventory	?
Purchases	\$ 92,000
Goods available for sale	100,500
Ending inventory	9,400
Cost of goods sold	91,100
Turnover ratio	?
Days' sales in inventory	?



Exercise Set B

EB1. **L0 10.1** Calculate the goods available for sale for Soros Company, in units and in \$ (dollar amounts), given the following facts about their inventory for the period.

	Number of Units	Cost per Unit
Beginning inventory	1,100	\$20
Purchased goods during the period	800	20
Sold goods during the period	700	37
Purchased goods during the period	650	21

EB2. **L0 10.1** X Company accepts goods on consignment from C Company, and also purchases goods from P Company during the current month. X Company plans to sell the merchandise to customers during the following month. In each of these independent situations, who owns the merchandise at the end of the current month, and should therefore include it in their company's ending inventory? Choose X, C, or P.

- A. Goods ordered from P, in transit, with shipping terms FOB destination.
- B. Goods ordered from P, in transit, with shipping terms FOB shipping point.
- C. Goods ordered from P, inventory in stock, held in storage until floor space is available.
- D. Goods ordered from C, inventory in stock, set aside for customer pickup and payments to finalize sale.

EB3. **L0 10.1** Considering the following information, and applying the lower-of-cost-or-market approach, what is the correct value that should be reported on the balance sheet for the inventory?

	Cost per unit	Market Value per Unit
Inventory item 1 (20 units)	\$100	\$95
Inventory item 2 (30 units)	75	70
Inventory item 3 (45 units)	50	55

EB4. **L0 10.2** Complete the missing piece of information involving the changes in inventory, and their relationship to goods available for sale, for the two years shown.

	2021	2022
Beginning inventory		\$200,000
Purchases	\$700,000	
Goods available for sale	875,000	388,500
Ending inventory		75,000
Cost of goods sold	675,000	313,500

EB5. **L0 10.2** Bleistine Company had the following transactions for the month.

	Number of Units	Cost per Unit
Beginning inventory	880	\$35
Purchased Jun. 1	750	40
Purchased Nov. 1	800	43
Ending inventory	110	?

Calculate the ending inventory dollar value for each of the following cost allocation methods, using periodic inventory updating. Provide your calculations.

- A. first-in, first-out (FIFO)
- B. last-in, first-out (LIFO)
- C. weighted average (AVG)

EB6. **L0 10.2** Bleistine Company had the following transactions for the month.

	Number of Units	Cost per Unit
Beginning inventory	880	\$30,800
Purchased Jun. 1	750	30,000
Purchased Nov. 1	800	34,400
Total goods available for sale	2,430	95,200
Ending inventory	110	?

Calculate the gross margin for the period for each of the following cost allocation methods, using periodic inventory updating. Assume that all units were sold for \$50 each. Provide your calculations.

- A. first-in, first-out (FIFO)
- B. last-in, first-out (LIFO)
- C. weighted average (AVG)

EB7. **L0 10.2** Prepare journal entries to record the following transactions, assuming periodic inventory updating and first-in, first-out (FIFO) cost allocation.

	Number of Units	Cost per Unit
Nov. 19, purchased merchandise for resale	1,200	\$6
Nov. 22, purchased merchandise for resale	980	5
Nov. 30, sold merchandise for \$10 per unit	850	

EB8. **L0 10.3** Calculate the cost of goods sold dollar value for B65 Company for the month, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for first-in, first-out (FIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	100	\$66	
Purchased	80	75	
Sold	50		\$120
Sold	25		125
Ending inventory	105		

EB9. **L0 10.3** Calculate the cost of goods sold dollar value for B66 Company for the month, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for last-in, first-out (LIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	100	\$66	
Purchased	80	75	
Sold	50		\$120
Sold	25		125
Ending inventory	105		

EB10. **L0 10.3** Calculate the cost of goods sold dollar value for B67 Company for the month, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for weighted average (AVG).

	Number of Units	Unit Cost	Sales
Beginning inventory	100	\$66	
Purchased	80	75	
Sold	50		\$120
Sold	25		125
Ending inventory	105		

EB11. **L0 10.3** Prepare journal entries to record the following transactions, assuming perpetual inventory updating and first-in, first-out (FIFO) cost allocation. Assume no beginning inventory.

	Number of Units	Unit Cost
Nov. 19, purchased merchandise for resale	1,200	\$6
Nov. 22, purchased merchandise for resale	980	5
Nov. 30, sold merchandise for \$10 per unit	850	

EB12. **L0 10.3** Prepare journal entries to record the following transactions, assuming perpetual inventory updating and last-in, first-out (LIFO) cost allocation. Assume no beginning inventory.

	Number of Units	Unit Cost
Mar. 12, purchased merchandise for resale	120	\$52
Mar. 15, purchased merchandise for resale	180	56
Mar. 16, sold merchandise for \$95 per unit	90	

EB13. **L0 10.4** If a group of inventory items costing \$3,200 had been double counted during the year-end inventory count, what impact would the error have on the following inventory calculations? Indicate the effect (and amount) as either (a) none, (b) understated \$____, or (c) overstated \$____.

Inventory Item	None or amount?	Understated or overstated?
Beginning Inventory		
Purchases		
Goods Available for Sale		
Ending Inventory		
Cost of Goods Sold		

Table 10.2

EB14. **L0 10.4** If Barcelona Company's ending inventory was actually \$122,000, but the cost of consigned goods, with a cost value of \$20,000 were accidentally included with the company assets, when making the year-end inventory adjustment, what would be the impact on the presentation of the balance sheet and income statement for the year that the error occurred, if any?

EB15. **L0 10.4** Tanke Company reported net income on the year-end financial statements of \$850,200. However, errors in inventory were discovered after the reports were issued. If inventory was overstated by \$21,000, how much net income did the company actually earn?

EB16. **L0 10.5** Compute Westtown Company's (A) inventory turnover ratio and (B) number of days' sales in inventory ratio, using the following information.

Cost of goods sold	\$156,000
Beginning inventory	14,500
Ending inventory	17,500

EB17. **L0 10.5** Complete the missing pieces of Delgado Company's inventory calculations and ratios.

Beginning inventory	\$ 25,000
Purchases	132,000
Goods available for sale	157,000
Ending inventory	27,000
Cost of goods sold	?
Turnover ratio	5.0
Days' sales in inventory	?



Problem Set A

PA1. LO 10.1 When prices are rising (inflation), which costing method would produce the *highest* value for gross margin? Choose between first-in, first-out (FIFO); last-in, first-out (LIFO); and weighted average (AVG).

Evansville Company had the following transactions for the month.

	Number of Units	Cost per Unit
Purchase	2	\$6,000
Purchase	3	7,000
Purchase	4	7,500

Calculate the gross margin for each of the following cost allocation methods, assuming A62 sold just one unit of these goods for \$10,000. Provide your calculations.

- first-in, first-out (FIFO)
- last-in, first-out (LIFO)
- weighted average (AVG)

PA2. LO 10.2 Trini Company had the following transactions for the month.

	Number of Units	Cost per Unit	Total
Beginning inventory	1,050	\$22	\$ 23,100
Purchased May 31	1,020	23	23,460
Purchased Jul. 15	1,300	26	33,800
Purchased Nov. 1	1,200	27	32,400
Totals (goods available)	4,570		112,760
Ending inventory	900	?	

Calculate the ending inventory dollar value for each of the following cost allocation methods, using periodic inventory updating. Provide your calculations.

- first-in, first-out (FIFO)
- last-in, first-out (LIFO)
- weighted average (AVG)

PA3. LO 10.2 Trini Company had the following transactions for the month.

	Number of Units	Cost per Unit	Total
Beginning inventory	1,050	\$22	\$ 23,100
Purchased May 31	1,020	23	23,460
Purchased Jul. 15	1,300	26	33,800
Purchased Nov. 1	1,200	27	32,400
Totals (goods available for sale)	4,570		112,760
Ending inventory	900	?	

Calculate the cost of goods sold dollar value for the period for each of the following cost allocation methods, using periodic inventory updating. Provide your calculations.

- first-in, first-out (FIFO)
- last-in, first-out (LIFO)
- weighted average (AVG)

PA4. **L0 10.3** Calculate the cost of goods sold dollar value for A74 Company for the sale on March 11, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for (a) first-in, first-out (FIFO); (b) last-in, first-out (LIFO); and (c) weighted average (AVG).

	Number of Units	Unit Cost
Beginning inventory Mar. 1	110	\$87
Purchased Mar. 8	140	89
Sold Mar. 11 for \$120 per unit	95	

PA5. **L0 10.3** Use the first-in, first-out (FIFO) cost allocation method, with perpetual inventory updating, to calculate (a) sales revenue, (b) cost of goods sold, and c) gross margin for A75 Company, considering the following transactions.

	Number of Units	Unit Cost
Beginning inventory	105	\$40
Purchased Mar. 2	150	42
Sold Mar. 31 for \$75 per unit	88	

PA6. **L0 10.3** Use the last-in, first-out (LIFO) cost allocation method, with perpetual inventory updating, to calculate (a) sales revenue, (b) cost of goods sold, and c) gross margin for A75 Company, considering the following transactions.

	Number of Units	Unit Cost
Beginning inventory	105	\$40
Purchased Mar. 2	150	42
Sold Mar. 31 for \$75 per unit	88	

PA7. **L0 10.3** Use the weighted-average (AVG) cost allocation method, with perpetual inventory updating, to calculate (a) sales revenue, (b) cost of goods sold, and c) gross margin for A75 Company, considering the following transactions.

	Number of Units	Unit Cost
Beginning inventory	105	\$40
Purchased Mar. 2	150	42
Sold Mar. 31 for \$75 per unit	88	

PA8. **L0 10.3** Prepare journal entries to record the following transactions, assuming perpetual inventory updating and first-in, first-out (FIFO) cost allocation. Assume no beginning inventory.

	Number of Units	Unit Cost	Sales
Purchased	165	\$21	
Sold	120		\$36
Purchased	225	27	
Sold	180		39
Purchased	210	33	

PA9. **L0 10.3** Calculate a) cost of goods sold, b) ending inventory, and c) gross margin for A76 Company, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for first-in, first-out (FIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	240	\$100	
Sold	160		\$140
Purchased	520	103	
Sold	400		142
Purchased	400	110	
Sold	370		144
Ending inventory	230		

PA10. **L0 10.3** Calculate a) cost of goods sold, b) ending inventory, and c) gross margin for A76 Company, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for last-in, first-out (LIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	240	\$100	
Sold	160		\$140
Purchased	520	103	
Sold	400		142
Purchased	400	110	
Sold	370		144
Ending inventory	230		

PA11. **L0 10.3** Calculate a) cost of goods sold, b) ending inventory, and c) gross margin for A76 Company, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for weighted average (AVG).

	Number of Units	Unit Cost	Sales
Beginning inventory	240	\$100	
Sold	160		\$140
Purchased	520	103	
Sold	400		142
Purchased	400	110	
Sold	370		144
Ending inventory	230		

PA12. **L0 10.3** Compare the calculations for gross margin for A76 Company, based on the results of the perpetual inventory calculations using FIFO, LIFO, and AVG.

PA13. **L0 10.4** Company Elmira reported the following cost of goods sold but later realized that an error had been made in ending inventory for year 2021. The correct inventory amount for 2021 was 32,000. Once the error is corrected, (a) how much is the restated cost of goods sold for 2021? and (b) how much is the restated cost of goods sold for 2022?

	2021	2022
Beginning inventory	\$ 31,000	\$ 27,000
Purchases	185,000	188,000
Goods available for sale	216,000	215,000
Ending inventory	27,000	30,000
Cost of goods sold	189,000	185,000

PA14. **L0 10.4** Assuming a company's year-end inventory were overstated by \$5,000, indicate the effect (overstated/understated/no effect) of the error on the following balance sheet and income statement accounts.

- A. Income Statement: Cost of Goods Sold
- B. Income Statement: Net Income
- C. Balance Sheet: Assets
- D. Balance Sheet: Liabilities
- E. Balance Sheet: Equity

PA15. **L0 10.5** Use the following information relating to Shana Company to calculate the inventory turnover ratio and the number of days' sales in inventory ratio.

	Sales	Cost of Goods Sold	Average Inventory
Year 2021	\$22,000	\$16,500	\$2,400
Year 2022	28,000	21,000	3,000
Year 2023	33,000	24,750	3,500
Year 2024	35,000	26,250	4,000

PA16. **L0 10.5** Use the following information relating to Clover Company to calculate the inventory turnover ratio, gross margin, and the number of days' sales in inventory ratio, for years 2022 and 2023.

	Sales	Cost of Goods Sold	Average Inventory
Year 2021	\$250,000	\$187,500	\$24,000
Year 2022	295,000	221,250	30,000
Year 2023	323,000	242,250	35,000



Problem Set B

PB1. **L0 10.1** When prices are falling (deflation), which costing method would produce the *highest* gross margin for the following? Choose first-in, first-out (FIFO); last-in, first-out (LIFO); or weighted average, assuming that B62 Company had the following transactions for the month.

	Number of Units	Cost per Unit
Purchase	10	\$200
Purchase	20	205
Purchase	<u>10</u>	230
	40	

Calculate the gross margin for each of the following cost allocation methods, assuming B62 sold just one unit of these goods for \$400. Provide your calculations.

- A. first-in, first-out (FIFO)
- B. last-in, first-out (LIFO)
- C. weighted average (AVG)

PB2. **L0 10.2** DeForest Company had the following transactions for the month.

	Number of Units	Cost per Unit	Total
Beginning inventory	500	\$40	\$20,000
Purchased Apr. 30	600	45	27,000
Purchased Aug. 15	650	40	26,000
Purchased Dec. 10	700	35	24,500
Totals (goods available)	2,450		97,500
Ending inventory	550	?	

Calculate the ending inventory dollar value for the period for each of the following cost allocation methods, using periodic inventory updating. Provide your calculations.

- A. first-in, first-out (FIFO)
- B. last-in, first-out (LIFO)
- C. weighted average (AVG)

PB3. **L0 10.2** DeForest Company had the following transactions for the month.

	Number of Units	Cost per Unit	Total
Beginning inventory	500	\$40	\$20,000
Purchased Apr. 30	600	45	27,000
Purchased Aug. 15	650	40	26,000
Purchased Dec. 10	700	35	24,500
Totals (goods available for sale)	2,450		97,500
Ending inventory	550	?	

Calculate the ending inventory dollar value for the period for each of the following cost allocation methods, using periodic inventory updating. Provide your calculations.

- A. first-in, first-out (FIFO)
- B. last-in, first-out (LIFO)
- C. weighted average (AVG)

PB4. **L0 10.3** Calculate the cost of goods sold dollar value for B74 Company for the sale on November 20, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for (a) first-in, first-out (FIFO); (b) last-in, first-out (LIFO); and (c) weighted average (AVG).

	Number of Units	Unit Cost
Beginning inventory Nov. 1	650	\$55
Purchased Nov. 15	500	52
Sold Nov. 20 for \$80 per unit	400	

PB5. **L0 10.3** Use the first-in, first-out method (FIFO) cost allocation method, with perpetual inventory updating, to calculate (a) sales revenue, (b) cost of goods sold, and (c) gross margin for B75 Company, considering the following transactions.

	Number of Units	Unit Cost
Beginning inventory	7,500	\$60
Purchased Sept. 18	8,000	55
Sold Sept. 28 for \$100 per unit	500	

PB6. **L0 10.3** Use the last-in, first-out method (LIFO) cost allocation method, with perpetual inventory updating, to calculate (a) sales revenue, (b) cost of goods sold, and c) gross margin for B75 Company, considering the following transactions.

	Number of Units	Unit Cost
Beginning inventory	7,500	\$60
Purchased Sept. 18	8,000	55
Sold Sept. 28 for \$100 per unit	500	

PB7. **L0 10.3** Use the **weighted-average (AVG)** cost allocation method, with perpetual inventory updating, to calculate (a) sales revenue, (b) cost of goods sold, and c) gross margin for B75 Company, considering the following transactions.

	Number of Units	Unit Cost
Beginning inventory	7,500	\$60
Purchased Sept. 18	8,000	55
Sold Sept. 28 for \$100 per unit	500	

PB8. **L0 10.3** Prepare journal entries to record the following transactions, assuming perpetual inventory updating, and last-in, first-out (LIFO) cost allocation. Assume no beginning inventory.

	Number of Units	Unit Cost	Sales
Purchased	165	\$21	
Sold	120		\$36
Purchased	225	27	
Sold	180		39
Purchased	210	33	

PB9. **L0 10.3** Calculate a) cost of goods sold, b) ending inventory, and c) gross margin for B76 Company, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for first-in, first-out (FIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	420	\$200	
Sold	150		\$401
Purchased	250	205	
Sold	275		421
Purchased	200	215	
Sold	260		441
Ending inventory	185		

PB10. **L0** 10.3 Calculate a) cost of goods sold, b) ending inventory, and c) gross margin for B76 Company, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for last-in, first-out (LIFO).

	Number of Units	Unit Cost	Sales
Beginning inventory	420	\$200	
Sold	150		\$401
Purchased	250	205	
Sold	275		421
Purchased	200	215	
Sold	260		441
Ending inventory	185		

PB11. **L0** 10.3 Calculate a) cost of goods sold, b) ending inventory, and c) gross margin for B76 Company, considering the following transactions under three different cost allocation methods and using perpetual inventory updating. Provide calculations for weighted average (AVG).

	Number of Units	Unit Cost	Sales
Beginning inventory	420	\$200	
Sold	150		\$401
Purchased	250	205	
Sold	275		421
Purchased	200	215	
Sold	260		441
Ending inventory	185		

PB12. **L0** 10.3 Compare the calculations for gross margin for B76 Company, based on the results of the perpetual inventory calculations using FIFO, LIFO, and AVG.

PB13. **L0** 10.4 Company Edgar reported the following cost of goods sold but later realized that an error had been made in ending inventory for year 2021. The correct inventory amount for 2021 was 12,000. Once the error is corrected, (a) how much is the restated cost of goods sold for 2021? and (b) how much is the restated cost of goods sold for 2022?

	2021	2022
Beginning inventory	\$ 11,000	\$ 16,000
Purchases	135,000	140,000
Goods available for sale	146,000	156,000
Ending inventory	16,000	14,000
Cost of goods sold	130,000	142,000

PB14. **L0** 10.4 Assuming a company's year-end inventory were understated by \$16,000, indicate the effect (overstated/understated/no effect) of the error on the following balance sheet and income statement accounts.

- A. Income Statement: Cost of Goods Sold
- B. Income Statement: Net Income
- C. Balance Sheet: Assets
- D. Balance Sheet: Liabilities
- E. Balance Sheet: Equity

PB15. **L0 10.5** Use the following information relating to Singh Company to calculate the inventory turnover ratio and the number of days' sales in inventory ratio.

	Sales	Cost of Goods Sold	Average Inventory
Year 2021	\$12,500	\$ 8,750	\$1,750
Year 2022	14,000	9,800	2,200
Year 2023	19,500	13,650	2,800
Year 2024	20,500	14,350	3,000

PB16. **L0 10.5** Use the following information relating to Medinas Company to calculate the inventory turnover ratio, gross margin, and the number of days' sales in inventory ratio, for years 2022 and 2023.

	Sales	Cost of Goods Sold	Average Inventory
Year 2021	\$ 75,000	\$52,500	\$ 8,000
Year 2022	90,000	63,000	9,500
Year 2023	100,000	70,000	11,000



Thought Provokers

TP1. **L0 10.1** Search the SEC website (<https://www.sec.gov/edgar/searchedgar/companysearch.html>) and locate the latest Form 10-K for a company you would like to analyze. When you are choosing, make sure the company sells a product (has inventory on the balance sheet and cost of goods sold on the income statement). Submit a short memo that states the following:

- The name and ticker symbol of the company you have chosen.
- Answer the following questions from the company's statement of Form 10-K financial statements:
 - What amount of merchandise inventory does the company report on their balance sheet?
 - What amount of cost of goods sold does the company report on their income statement?

Provide the weblink to the company's Form 10-K, to allow accurate verification of your answers.

TP2. **L0 10.2** Assume your company uses the periodic inventory costing method, and the inventory count left out an entire warehouse of goods that were in stock at the end of the year, with a cost value of \$222,000. How will this affect your net income in the current year? How will it affect next year's net income?

TP3. **L0 10.3** Search the internet for recent news items (within the past year) relating to inventory issues. Submit a short memo describing what you found and explaining why it is important to the future of inventory accounting or management. For example, this can be related to technology, bar code, RFID, shipping, supply chain, logistics, or other inventory-related topics that are currently trending. Provide the weblink to the source of your information.

TP4. **L0 10.3** Search the internet for information about the technological breakthrough relating to inventory issues, referred to as the Internet of Things (IoT). How do you think the development of such technology will change the way accountants manage inventory in the future? Provide the weblink to the source or sources of your information.

TP5. LO 10.4 Consider the dilemma you might someday face if you are the CFO of a company that is struggling to satisfy investors, creditors, stockholders, and internal company managers. All of these financial statement users are clamoring for higher profits and more net assets (also known as equity). If at some point, you suddenly found yourself not meeting the internal and external earnings and equity targets that these parties expect, you would probably search for some way to make the financial statements look better. What if your boss, the CEO, suggested that maybe you should make just one simple journal entry to record all the goods that your company is holding on consignment, as if that significant amount of goods were owned by your company? She might say that this action on your part would fix a lot of problems at once, since adding the consigned goods to merchandise inventory would simultaneously increase net assets on the balance sheet *and* increase net income on the income statement (since it would decrease cost of goods sold). How would you respond to this request?

Write a memo, detailing your willingness or not to embrace this suggestion, giving reasons behind your decision. Remember to exercise diplomacy, even if you must dissent from the opinion of a supervisor. Note that the challenge of the assignment is to keep your integrity intact while also keeping your job, if possible.

TP6. LO 10.5 Use a spreadsheet and the following excerpts from Hileah Company's financial information to build a template that automatically calculates (A) inventory turnover and (B) number of days' sales in inventory, for the year 2018.

	12/31/18	12/31/17
Cash	\$10,000	\$14,000
Accounts receivable	22,000	17,000
Merchandise inventory	<u>15,900</u>	<u>14,200</u>
Total assets	47,900	45,200
Accounts payable	4,500	5,500
Common stock	10,000	10,000
Retained earnings	<u>33,400</u>	<u>29,700</u>
Total liabilities and equity	47,900	45,200
Additional information		
Cost of goods sold	177,000	

TP7. LO 10.5 Search the SEC website (<https://www.sec.gov/edgar/searchedgar/companysearch.html>) and locate the latest Form 10-K for a company you would like to analyze. Submit a short memo that states the following:

- The name and ticker symbol of the company you have chosen.
- Describe two items relating to inventory from the company's notes to financial statements:
 - one familiar item that you expected to be in the notes to the financial statement, based on this chapter's coverage; and
 - one unfamiliar item that you did not expect to be in the notes to the financial statements.
- Provide the weblink to the company's Form 10-K, to allow accurate verification of your answers.