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Introduction to Financial Accounting

Adapted for U.S. GAAP

by Henry Dauderis, David Annand, Donna L. Marchand

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Introduction to Financial Accounting

Adapted for U.S. GAAP

by Henry Dauderis, David Annand, Donna L. Marchand

with contributions from Athabasca University

Version 2019 — Revision B

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Chapter 1

Introduction to Financial Accounting

Accounting involves a process of collecting, recording, and reporting a business's economic activities to users. It is often called the language of business because it uses a unique vocabulary to communicate information to decision makers. To understand accounting, we first look at the basic forms of business organizations. The concepts and principles that provide the foundation for financial accounting are then discussed. With an emphasis on the corporate form of business organization, we will examine how we communicate to users of financial information using financial statements. Finally, we will review how financial transactions are analyzed and then reported on financial statements.

Chapter 1 Learning Objectives

LO1 – Define accounting.

LO2 – Identify and describe the forms of business organization.

LO3 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

LO4 – Identify, explain, and prepare the financial statements.

LO5 – Analyze transactions by using the accounting equation.

Concept Self-Check

Use the following as a self-check while working through Chapter 1.

1. What is accounting?
2. What is the difference between internal and external users of accounting information?
3. What is the difference between managerial and financial accounting?
4. What is the difference between a for-profit business organization and a not-for-profit business organization?
5. What are the three types of business organizations?
6. What is a publicly held corporation? A privately held corporation?
7. What does the term *limited liability* mean?

8. Explain how ethics are involved in the practice of accounting.
9. Describe what GAAP refers to.
10. Identify and explain the six qualitative characteristics of GAAP.
11. Describe the accounting assumptions and principles that support the GAAP qualitative characteristics.
12. How is financial information communicated to external users?
13. What are the four financial statements?
14. Which financial statement measures financial performance? Financial position?
15. What information is provided in the statement of cash flows?
16. Explain how retained earnings and dividends are related.
17. What are the three primary components of the balance sheet?
18. Equity consists of what two components?
19. How are assets financed?
20. Identify and explain the three types of activities a business engages in.
21. What are *notes to the financial statements*?
22. What is the accounting equation?
23. What are the distinctions among calendar, interim, and fiscal year ends?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

1.1 Accounting Defined

LO1 – Define accounting.

Accounting is the process of identifying, measuring, recording, and communicating an organization's economic activities to users. Users need information for decision making. **Internal users** of accounting information work for the organization and are responsible for planning, organizing, and operating the entity. The area of accounting known as **managerial accounting** serves the decision-making needs of internal users. External users do not work for the organization and include investors, creditors, labor unions, and customers. **Financial accounting** is the area of accounting that focuses on external reporting and meeting the needs of external users. This book addresses financial accounting. Managerial accounting is covered in other books.

1.2 Business Organizations

LO2 – Identify and describe the forms of business organization.

An **organization** is a group of individuals who come together to pursue a common set of goals and objectives. There are two basic types of business organizations: *for-profit* and *not-for-profit*. A **for-profit business organization** sells products and/or services for profit. A **not-for-profit business organization** serves charitable, religious, scientific or educational purposes. It exists to meet various societal needs and does not have profit as a goal. Regardless of type, all businesses, record, report, and, most importantly, *use* accounting information for making decisions.

This book focuses on for-profit business organizations. There are three common forms of for-profit business organizations — *sole proprietorship*, *partnership*, and *corporation*.

Sole Proprietorship

A **sole proprietorship** is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. This means, for example, that from an income tax perspective, the profits of a sole proprietorship are taxed as part of the owner's personal income tax return. **Unlimited liability** is another characteristic of a sole proprietorship meaning that if the business could not pay its debts, the owner would be responsible even if the business's debts were greater than the owner's personal resources.

Partnership

A **partnership** is a business owned by two or more individuals. Like the sole proprietorship, it is not a separate legal entity and its owners are typically subject to unlimited liability.

Corporation

A **corporation** is a business owned by one or more owners. The owners are known as *stockholders*. A **stockholder** owns shares of stock in the corporation. **Shares** of stock are units of ownership in a corporation. For example, if a corporation has 1,000 shares of stock, there may be three stockholders where one has 700 shares, another has 200 shares, and the third has 100 shares. The number of shares held by a stockholder represents how much of the corporation they own. A corporation can have different types of shares; this topic is discussed in a later chapter. When there is only one type of share, it is usually called **common stock**.

A corporation's stock can be privately held or available for public sale. A corporation that holds its stock privately and does not sell them to the public is known as a **privately held corporation**. Privately held corporations are also referred to as closely held corporations. A corporation that sells its stock publicly, typically on a stock exchange, is called a **publicly held corporation**. Publicly held corporations are also referred to as publicly traded corporations or issuers.

Unlike the sole proprietorship and partnership, a corporation is a separate legal entity. This means, for example, that from an income tax perspective, a corporation files its own tax return. The owners or stockholders of a corporation are not responsible for the corporation's debts so have **limited liability**, meaning that the most they can lose is what they invested in the corporation.

In larger corporations, there can be many stockholders. In these cases, stockholders do not manage a corporation but participate indirectly through the election of a **Board of Directors**. The Board of Directors does not participate in the day-to-day management of the corporation but delegates this responsibility to the officers of the corporation. An example of this delegation of responsibility is illustrated in Figure 1.1.

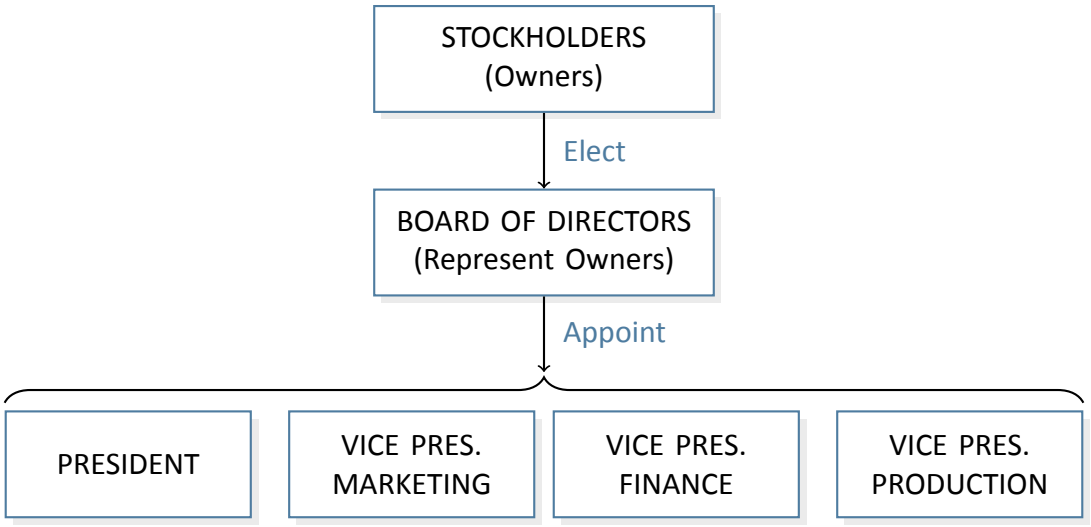


Figure 1.1: Generalized Form of a Corporate Organization

Stockholders usually meet annually to elect a Board of Directors. The Board of Directors meets regularly to review the corporation's operations and to set policies for future operations. Unlike stockholders, directors can be held personally liable if a company fails.

The focus of these chapters will be on the corporate form of business organization. The sole proprietorship and partnership organizations will be discussed in more detail in Chapter 13.

1.3 Generally Accepted Accounting Principles (GAAP)

LO3 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

The goal of accounting is to ensure information provided to decision makers is useful. To be useful, information must be relevant and faithfully represent a business's economic activities. This requires **ethics**, beliefs that help us differentiate right from wrong, in the application of underlying accounting concepts or principles. These underlying accounting concepts or principles are known in the United States as **Generally Accepted Accounting Principles (GAAP)**.

In 1934 Congress created the **Securities and Exchange Commission (SEC)**. The SEC was given broad powers to oversee the financial markets and accounting standard-setting bodies. The SEC recognizes the **Financial Accounting Standards Board (FASB)** as the designated accounting standard-setter for publicly held corporations. The SEC relies on FASB to develop the accounting standards that all publicly held corporations in the United States must follow. The official pronouncements made by FASB are called **Accounting Standards Codification**. These pronouncements are the single source of U.S. GAAP. Outside of the United States many countries have adopted **International Financial Reporting Standards (IFRS)**. IFRS are the accounting standards issued by the **International Accounting Standards Board (IASB)**. ***The focus in this book will be on U.S. GAAP for publicly held corporations.***

Accounting practices are guided by GAAP which are comprised of qualitative characteristics. These characteristics are intended to enhance decision usefulness of information. As already stated, relevance and faithful representation are the primary qualitative characteristics. Comparability, verifiability, timeliness, and understandability are enhancing qualitative characteristics.

Information that possesses the quality of:

- **relevance** has the ability to make a difference in the decision-making process.
- **faithful representation** is complete, neutral, and free from error.
- **comparability** tells users of the information that businesses utilize similar accounting practices.
- **verifiability** means that others are able to confirm that the information faithfully represents the economic activities of the business.
- **timeliness** is available to decision makers in time to be useful.
- **understandability** is clear and concise.

Table 1.1 lists the four basic assumptions that underlie GAAP.

Accounting Assumption	**Explanation/Example**
Economic Entity Assumption	An assumption that all economic events can be identified with a specific economic entity. Requires a distinction between the economic activities of the company and those of the owners. Example: A business owner keeps separate accounting records for business transactions and for personal transactions.
Going Concern Assumption	An assumption that a business will continue to operate indefinitely. Example: All indications are that Business X will continue so it is reported to be a 'going concern'. Business Z is being sued for $20,000,000 and it is certain that it will lose. The $20,000,000 loss will force the business to close. Business Z must not only disclose the lawsuit but it must also indicate that there is a 'going concern' issue.
Time Period Assumption	An assumption that the economic life of a company can be divided into artificial time periods for financial reporting. Example: Business X has selected March 31st as its fiscal year end. The business will report all activities of the business to external users that cover the time period from April 1st to March 31st of the following year.

Accounting Assumption	Explanation/Example
Monetary Unit Assumption	An assumption that the measurement used in reporting to external users is nominal units of money and that no adjustment for inflation or deflation is necessary. Example: Land was purchased in 1940 for $5,000. It is maintained in the accounting records at $5,000 and is not adjusted.

Table 1.1: Accounting Assumptions

Table 1.2 lists the basic recognition, measurement, and disclosure principles that underlie GAAP.

Accounting Principle	Explanation/Example
Revenue Recognition Principle	Requires that revenues be recorded when earned, which is not necessarily when cash is received. Example: A sale occurred on March 5. The customer received the product on March 5 but will pay for it on April 5. The business records the sale on March 5 when the sale occurred even though the cash is not received until April 5.
Matching Principle	Requires that expenses be reported when incurred, which is not necessarily when cash has been paid. Sometimes referred to as the expense recognition principle. Example: Supplies were purchased March 15 for $700. They will be recorded as an asset on March 15 and expensed as they are used.
Historical Cost Principle	Requires that each economic transaction be recorded and based on the acquisition (original) cost. Example: The business purchases a delivery truck advertised for $75,000 and pays $70,000. The truck must be recorded at the cost of $70,000, the amount actually paid.
Full Disclosure Principle	Requires that accounting information communicate sufficient information to allow users to make knowledgeable decisions. Example: A business is applying to the bank for a $1,000,000 loan. The business is being sued for $20,000,000 and it is certain that it will lose. The business must tell the bank about the lawsuit even though the lawsuit has not yet been finalized.

Table 1.2: Accounting Principles

Note: Some of the assumptions and principles discussed above may be challenging to understand because related concepts have not yet been introduced. Therefore, most of these assumptions and principles will be discussed again in more detail in a later chapter.

1.4 Financial Statements

LO4 – Identify, explain, and prepare the financial statements.

Recall that financial accounting focuses on communicating information to external users. That information is communicated using ***financial statements***. There are four financial statements: the income statement, statement of stockholders' equity, balance sheet, and statement of cash flows. Each of these is introduced in the following sections using an example based on a fictitious corporate organization called Big Dog Carworks Corp.

The Income Statement

An **income statement** communicates information about a business's financial performance by summarizing **revenues** less **expenses** over a period of time. Revenues are created when a business provides products or services to a customer in exchange for assets. Assets are resources resulting from past events and from which future economic benefits are expected to result. Examples of assets include cash, equipment, and supplies. Assets will be discussed in more detail later in this chapter. Expenses are the assets that have been used up or the obligations incurred in the course of earning revenues. When revenues are greater than expenses, the difference is called **net income** or **profit**. When expenses are greater than revenue, a **net loss** results.

Consider the following income statement of Big Dog Carworks Corp. (BDCC). This business was started on January 1, 2015 by Bob "Big Dog" Baldwin in order to repair automobiles.

At January 31, the income statement shows total revenues of $10,000 and various expenses totaling $7,800. Net income, the difference between $10,000 of revenues and $7,800 of expenses, equals $2,200.

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2015

The heading shows the name of the entity, the type of financial statement, and the period-in-time date.

Revenues		
Repair revenues		$10,000
Expenses		
Rent expense	$1,600	
Salaries expense	3,500	
Supplies expense	2,000	
Fuel expense	700	
Total expenses		7,800
Net income		$2,200

The net income is transferred to the statement of stockholders' equity.

The Statement of Stockholders' Equity

The **statement of stockholders' equity** provides information about how the balances in common stock and retained earnings changed during the period. **Common stock** is a heading in the stockholders' equity section of the balance sheet and represents how much stockholders have invested. When stockholders buy shares, they are investing in the business. The number of shares they purchase will determine how much of the corporation they own. The type of ownership unit purchased by Big Dog's stockholders is known as common stock. Other types of shares will be discussed in a later chapter. When a corporation sells its shares, the corporation is said to be **issuing shares**.

In the statement of stockholders' equity shown below, common stock and retained earnings balances at January 1 are zero because the corporation started the business on that date. During January, common stock of $10,000 was issued to stockholders so the January 31 balance is $10,000.

Retained earnings is the sum of all net incomes earned by a corporation over its life, less any distributions of these net incomes to stockholders. Distributions of net income to stockholders are called **dividends**. Stockholders generally have the right to share in dividends according to the percentage of their ownership interest. To demonstrate the concept of retained earnings, recall that Big Dog has been in business for one month in which $2,200 of net income was reported. Additionally, $200 of dividends were distributed, so these are subtracted from retained earnings. Big Dog's retained earnings were therefore $2,000 at January 31, 2015 as shown in the statement of stockholders' equity below.

Big Dog Carworks Corp.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

The heading shows the name of the entity, the type of financial statement, and the period-in-time date.

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ -0-	$ -0-	$ -0-
Stock issued	10,000		10,000
Net income		2,200	2,200
Dividends		(200)	(200)
Ending balance	$10,000	$2,000	$12,000

These totals are transferred to the balance sheet at January 31, 2015.

To demonstrate how retained earnings would appear in the next accounting period, let's assume that Big Dog reported a net income of $5,000 for February, 2015 and dividends of $1,000 were given to the stockholder. Based on this information, retained earnings at the end of February would be $6,000, calculated as the $2,000 January 31 balance plus the $5,000 February net income less the $1,000 February dividend. The balance in retained earnings continues to change over time because of additional net incomes/losses and dividends.

The Balance Sheet

The **balance sheet**, or **statement of financial position**, shows a business's assets, liabilities, and equity at a point in time. The balance sheet of Big Dog Carworks Corp. at January 31, 2015 is shown below.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2015

The heading shows the name of the entity, the type of financial statement, and the point-in-time date.

Assets		Liabilities		
Cash	$ 3,700	Accounts payable	$ 700	
Accounts receivable	2,000	Unearned revenue	400	
Prepaid insurance	2,400	Notes payable	6,000	
Equipment	3,000	Total liabilities		$ 7,100
Truck	8,000			
		Equity		
		Common stock	$10,000	
		Retained earnings	2,000	
		Total equity		12,000
Total assets	$19,100	Total liabilities and equity		$19,100

Total assets ($19,100 here) always equal Total liabilities ($7,100) plus Equity ($12,000).

What Is an Asset?

Assets are economic resources that provide future benefits to the business. Examples include cash, accounts receivable, prepaid expenses, equipment, and trucks. **Cash** is coins and currency, usually held in a bank account, and is a financial resource with future benefit because of its purchasing power. **Accounts receivable** represent amounts to be collected in cash in the future for goods sold or services provided to customers on credit. **Prepaid expenses** are assets that are paid in cash in advance and have benefits that apply over future periods. For example, a one-year insurance policy purchased for cash on January 1, 2015 will provide a benefit until December 31, 2015 so is a prepaid asset. The equipment and truck were purchased on January 1, 2015 and will provide benefits for 2015 and beyond so are assets.

What Is a Liability?

A **liability** is an obligation to pay an asset in the future. For example, Big Dog's bank loan represents an obligation to repay cash in the future to the bank. **Accounts payable** are obligations to pay a creditor for goods purchased or services rendered. A **creditor** owns the right to receive payment from an individual or business. **Unearned revenue** represents an advance payment of cash from a customer for Big Dog's services or products to be provided in the future. For example, Big Dog collected cash from a customer in advance for a repair to be done in the future.

What Is Equity?

Equity represents the net assets owned by the owners (the stockholders). **Net assets** are assets minus liabilities. For example, in Big Dog's January 31 balance sheet, net assets are $12,000, calculated as total assets of $19,100 minus total liabilities of $7,100. This means that although there are $19,100 of assets, only $12,000 are owned by the stockholders and the balance, $7,100, are financed by debt. Notice that net assets and total equity are the same value; both are $12,000. Equity consists of common stock and retained earnings. Common stock represents how much the stockholders have invested in the business. Retained earnings is the sum of all net incomes earned by a corporation over its life, less any dividends distributed to stockholders.

In summary, the balance sheet is represented by the equation: Assets = Liabilities + Equity. Assets are the investments held by a business. The liabilities and equity explain how the assets have been financed, or funded. Assets can be financed through liabilities, also known as **debt**, or equity. Equity represents amounts that are owned by the owners, the stockholders, and consists of common stock and retained earnings. Investments made by stockholders, namely common stock, are used to finance assets and/or pay down liabilities. Additionally, retained earnings, comprised of net income less any dividends, also represent a source of financing.

The Statement of Cash Flows (SCF)

Cash is an asset reported on the balance sheet. Ensuring there is sufficient cash to pay expenses and liabilities as they come due is a critical business activity. The **statement of cash flows (SCF)** explains how the balance in cash changed over a period of time by detailing the sources (inflows) and uses (outflows) of cash by type of activity: operating, investing, and financing, as these are the three types of activities a business engages in. **Operating activities** are the day-to-day activities involved in selling products and/or services to generate net income. Examples of operating activities include the purchase and use of supplies, paying employees, fueling equipment, and renting space for the business. **Investing activities** are the buying of assets needed to generate revenues. For example, when an airline purchases airplanes, it is investing in assets required to help it generate revenue. **Financing activities** are the raising of money needed to invest in assets. Financing can involve issuing common stock (receiving cash or other assets in exchange for stock in the corporation) or borrowing. Figure 1.2 summarizes the interrelationships among the three types of business activities.

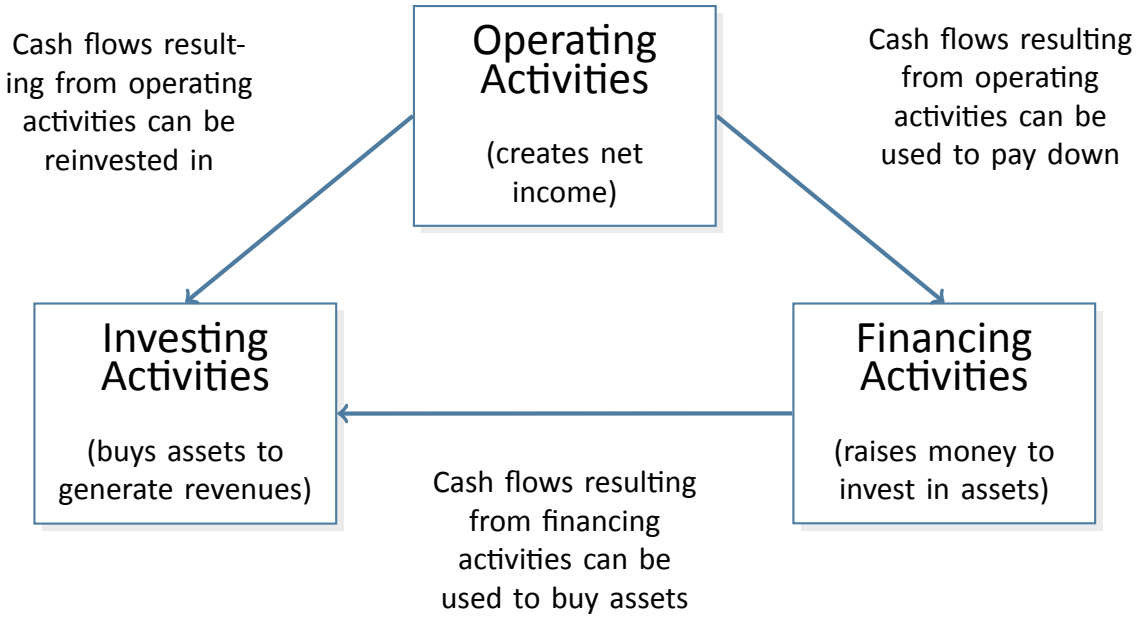


Figure 1.2: Relationships Among the Three Types of Business Activities

The statement of cash flows for Big Dog is shown below.

Big Dog Carworks Corp.
Statement of Cash Flows
For the Month Ended January 31, 2015

The heading shows the name of the entity, the type of financial statement, and the period-in-time date.

Operating activities:		
Net income	$ 2,200	
Adjustments:		
Increase in accounts receivable	(2,000)	
Increase in prepaid insurance	(2,400)	
Increase in accounts payable	700	
Increase in unearned revenues	400	
Net cash used by operating activities		$(1,100)
Investing activities:		
Purchase of equipment	$(3,000)	
Purchase of truck	(3,000)	
Net cash used by investing activities		(6,000)
Financing activities:		
Issued shares of stock	$10,000	
Borrowed from bank	3,000	
Payment on bank loan	(2,000)	
Paid dividends	(200)	
Net cash provided by financing activities		10,800
Net increase in cash		3,700
Cash balance, January 1		-0-
Cash balance, January 31		$3,700

This agrees with the Cash amount shown on the Balance Sheet at January 31, 2015.

The statement of cash flows is useful because cash is one of the most important assets of a corporation. Information about expected future cash flows are therefore important for decision makers. For instance, Big Dog's bank manager needs to determine whether the remaining $6,000 loan can be repaid, and also whether or not to grant a new loan to the corporation if requested. The statement of cash flows helps inform those who make these decisions.

Notes to the Financial Statements

An essential part of financial statements are the notes that accompany them. These notes are generally located at the end of a set of financial statements. The notes provide greater detail about various amounts shown in the financial statements, or provide non-quantitative information that is useful to users. For example, a note may indicate the estimated useful lives of long-lived assets, or loan repayment terms. Examples of note disclosures will be provided later.

1.5 Transaction Analysis and Double-entry Accounting

LO5 – Analyze transactions by using the accounting equation.

The **accounting equation** is foundational to accounting. It shows that the total assets of a business must always equal the total claims against those assets by creditors and owners. The equation is expressed as:

ASSETS	=	LIABILITIES	+	EQUITY
(economic resources owned by an entity)		(creditors' claims on assets)		(owners' claims on assets)

When financial transactions are recorded, combined effects on assets, liabilities, and equity are always exactly offsetting. This is the reason that the balance sheet always balances.

Each economic exchange is referred to as a **financial transaction** — for example, when an organization exchanges cash for land and buildings. Incurring a liability in return for an asset is also a financial transaction. Instead of paying cash for land and buildings, an organization may borrow money from a financial institution. The company must repay this with cash payments in the future. The accounting equation provides a system for processing and summarizing these sorts of transactions.

Accountants view financial transactions as economic events that change components within the accounting equation. These changes are usually triggered by information contained in **source documents** (such as sales invoices and bills from creditors) that can be verified for accuracy.

The accounting equation can be expanded to include all the items listed on the Balance Sheet of Big Dog at January 31, 2015, as follows:

ASSETS					=	LIABILITIES			+	EQUITY	
Cash +	Accounts Receivable +	Prepaid Insurance +	Equipment +	Truck	=	Accounts Payable +	Unearned Revenue +	Notes Payable	+	Common Stock +	Retained Earnings

If one item within the accounting equation is changed, then another item must also be changed to balance it. In this way, the equality of the equation is maintained. For example, if there is an increase in an asset account, then there must be a decrease in another asset or a corresponding increase in a liability or equity account. This equality is the essence of *double-entry accounting*. The equation itself always remains in balance after each transaction. The operation of double-entry accounting is illustrated in the following section, which shows 10 transactions of Big Dog Carworks Corp. for January 2015.

Transaction Number	Date	Description of Transaction	Effect on the Accounting Equation: ASSETS	= LIABILITIES	+ EQUITY
1	Jan.1	Big Dog Carworks Corp. issued 1,000 shares to Bob Baldwin, the owner or shareholder, for $10,000 cash. The asset Cash is increased while the equity item Common stock is also increased. The impact on the equation is:			
		CASH →	+10,000		
		COMMON STOCK →			+10,000
2	Jan.2	Big Dog Carworks Corp. borrowed $3,000 from the bank and deposited the cash into the business's bank account. The asset Cash is increased and the liability Notes payable is also increased. The impact on the equation is:			
		CASH →	+3,000		
		NOTES PAYABLE →		+3,000	
3	Jan.2	The corporation purchased $3,000 of equipment for cash. There is an increase of the asset Equipment and a decrease to another asset, Cash. The impact on the equation is:			
		EQUIPMENT →	+3,000		
		CASH →	-3,000		
4	Jan.2	The corporation purchased a tow truck for $8,000, paying $3,000 cash and incurring an additional bank loan for the balance. The asset Cash is decreased while the asset Truck is increased and the liability Notes payable is also increased. The impact on the equation is:			
		CASH →	-3,000		
		TRUCK →	+8,000		
		NOTES PAYABLE →		+5,000	

Transaction Number	Date	Description of Transaction	Effect on the Accounting Equation: ASSETS	= LIABILITIES	+ EQUITY
5	Jan.5	Big Dog Carworks Corp. paid $2,400 for a one-year insurance policy, effective January 1.			
		Here the asset Prepaid Insurance is increased and the asset Cash is decreased. The impact on the equation is:			
		PREPAID INSURANCE →	+2,400		
		CASH →	-2,400		
		Since the one-year period will not be fully used at January 31 when financial statements are prepared, the insurance cost is considered to be an asset at the payment date. The transaction does not affect liabilities or equity.			
6	Jan.10	The corporation paid $2,000 cash to the bank to reduce the loan outstanding.			
		The asset Cash is decreased and there is a decrease in the liability Notes payable. The impact on the equation is:			
		NOTES PAYABLE ⇢		-2,000	
		CASH →	-2,000		
7	Jan.15	The corporation received $400 as an advance payment from a customer for services to be performed over the next two months as follows: $300 for February, $100 for March.			
		The asset Cash is increased by $400 and a liability, Unearned revenue, is also increased since the revenue will not be earned by the end of January. It will be earned when the work is performed in later months. At January 31, these amounts are repayable to customers if the work is not done (and thus a liability). The impact on the equation is:			
		CASH →	+400		
		UNEARNED REVENUE ⇢		+400	

Transaction Number	Date	Description of Transaction	Effect on the Accounting Equation: ASSETS	= LIABILITIES	+ EQUITY
8	Jan.20	Automobile repairs of $10,000 were made for a customer; $8,000 of repairs were paid in cash and $2,000 of repairs will be paid in the future.			
		Cash and Accounts receivable assets of the corporation increase. The repairs are a revenue; revenue causes an increase in net income and an increase in net income causes an increase in equity. The impact on the equation is:			
		CASH	+8,000		
		ACCOUNTS RECEIVABLE	+2,000		
		REPAIR REVENUE			+10,000
		This activity increases assets and net income.			
9	Jan.31	The corporation paid operating expenses for the month as follows: $1,600 for rent; $3,500 for salaries; and $2,000 for supplies expense. The $700 for truck operating expenses (e.g., oil, gas) was on credit.			
		There is a decrease in the asset Cash. Expenses cause net income to decrease and a decrease in net income causes equity to decrease. There is an increase in the liability Accounts payable. The impact on the equation is:			
		RENT EXPENSE			-1,600
		SALARIES EXPENSE			-3,500
		SUPPLIES EXPENSE			-2,000
		TRUCK OPERATING EXPENSE			-700
		CASH	-7,100		
		ACCOUNTS PAYABLE		+700	
10	Jan.31	Dividends of $200 were paid in cash to the only shareholder, Bob Baldwin.			
		Dividends cause retained earnings to decrease. A decrease in retained earnings will decrease equity. The impact on the equation is:			
		DIVIDENDS			-200
		CASH	-200		

These various transactions can be recorded in the expanded accounting equation as shown below:

	ASSETS					=	LIABILITIES			+	EQUITY	
Trans.	Cash	Acc. Rec.	Prepaid Insur.	Equip.	Truck	=	Acc. Pay.	Unearned Revenue	Notes Pay.	+	Common Stock	Retained Earnings
1.	+10,000										+10,000	
2.	+3,000								+3,000			
3.	-3,000			+3,000								
4.	-3,000				+8,000				+5,000			
5.	-2,400		+2,400									
6.	-2,000								-2,000			
7.	+400							+400				
8.	+8,000	+2,000										+10,000
9.	-7,100						+700					-1,600
												-3,500
												-2,000
												-700
10.	-200											-200
	3,700	2,000	2,400	3,000	8,000	=	700	400	6,000	+	10,000	2,000

These numbers are used to prepare the Income Statement.

Figure 1.3: Transactions Worksheet for January 31, 2015

Transactions in these columns are used to prepare the Statement of Shareholders' Equity.

Column totals are used to prepare the Balance Sheet.

ASSETS = $19,100

LIABILITIES + EQUITY = $19,100

Transactions summary:

1. Issued common stock for $10,000 cash.
2. Received a bank loan for $3,000.
3. Purchased equipment for $3,000 cash.
4. Purchased a truck for $8,000; paid $3,000 cash and incurred a bank loan for the balance.
5. Paid $2,400 for a comprehensive one-year insurance policy effective January 1.
6. Paid $2,000 cash to reduce the bank loan.
7. Received $400 as an advance payment for repair services to be provided over the next two months as follows: $300 for February, $100 for March.
8. Performed repairs for $8,000 cash and $2,000 on credit.
9. Paid a total of $7,100 for operating expenses incurred during the month; also incurred an expense on account for $700.
10. Dividends of $200 were paid in cash to the only stockholder, Bob Baldwin.

The transactions summarized in Figure 1.3 were used to prepare the financial statements described earlier, and reproduced in Figure 1.4 below.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2015

Assets		
Cash	$ 3,700	
Accounts receivable	2,000	
Prepaid insurance	2,400	
Equipment	3,000	
Truck	8,000	
		$19,100
Liabilities		
Accounts payable	$ 700	
Unearned revenue	400	
Notes payable	6,000	7,100
Equity		
Common stock	$10,000	
Retained earnings	2,000	
		12,000
		$19,100

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2015

Revenue		
Repairs		$10,000
Expenses		
Rent	$ 1,600	
Salaries	3,500	
Supplies	2,000	
Truck operation	700	
Total expenses		7,800
Net income		$2,200

The components of equity are shown on the Balance Sheet.

Net Income becomes part of Retained Earnings.

Big Dog Carworks Corp.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ -0-	$ -0-	$ -0-
Shares issued	10,000		10,000
Net income		2,200	2,200
Dividends		(200)	(200)
Ending balance	$10,000	$2,000	$12,000

Figure 1.4: Financial Statements of Big Dog Carworks Corp.

Accounting Time Periods

Financial statements are prepared at regular intervals — usually monthly or quarterly — and at the end of each 12-month period. This 12-month period is called the **fiscal year**. The timing of the financial statements is determined by the needs of management and other users of the financial statements. For instance, financial statements may also be required by outside parties, such as bankers and stockholders. However, accounting information must possess the qualitative

characteristic of timeliness — it must be available to decision makers in time to be useful — which is typically a minimum of once every 12 months.

Accounting reports, called the *annual financial statements*, are prepared at the end of each 12-month period, which is known as the **year-end** of the entity. Some companies' year-ends do not follow the calendar year (year ending December 31). This may be done so that the fiscal year coincides with their *natural year*. A **natural year** ends when business operations are at a low point. For example, a ski resort may have a fiscal year ending in late spring or early summer when business operations have ceased for the season.

Corporations listed on **stock exchanges** are generally required to prepare **interim financial statements**, usually every three months, primarily for the use of stockholders or creditors. Because these types of corporations are large and usually have many owners, users require more up-to-date financial information.

The relationship of the interim and year-end financial statements is illustrated in Figure 1.5.

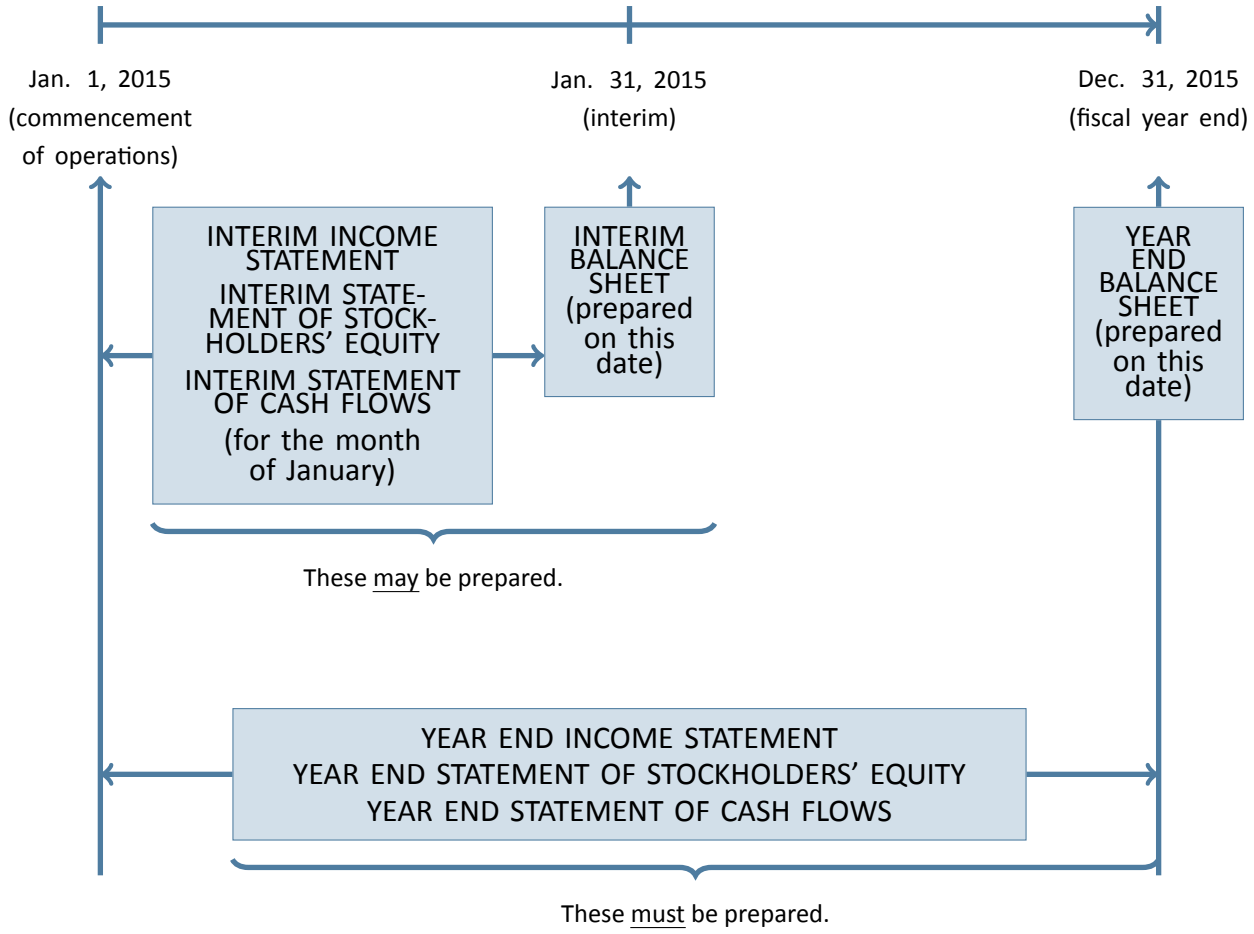


Figure 1.5: Relationship of Interim and Year-end Financial Statements

Summary of Chapter 1 Learning Objectives

LO1 – Define accounting.

Accounting is the process of identifying, measuring, recording, and communicating an organization's economic activities to users for decision making. Internal users work for the organization while external users do not. Managerial accounting serves the decision-making needs of internal users. Financial accounting focuses on external reporting to meet the needs of external users.

LO2 – Identify and describe the forms of business organization.

The three forms of business organizations are a sole proprietorship, partnership, and corporation.

The following chart summarizes the key characteristics of each form of business organization.

Characteristic	Sole Proprietorship	Partnership	Corporation
Separate legal entity	No	No	Yes
Business income is taxed as part of the business	No[1]	No[2]	Yes
Unlimited liability	Yes	Yes	No
One owner permitted	Yes	No	Yes[3]
Board of Directors	No	No	Yes

LO3 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

GAAP are the accounting standards that govern financial accounting and reporting. GAAP must be followed in the United States when a company distributes its financial statements to external users.

LO4 – Identify, explain, and prepare the financial statements.

The four financial statements are: income statement, statement of stockholders' equity, balance sheet, and statement of cash flows. The income statement reports financial performance by detailing revenues less expenses to arrive at net income/loss for the period. The statement of stockholders' equity shows the changes during the period to each of the components of equity: common stock and retained earnings. The balance sheet identifies financial position at a point in time by listing assets, liabilities, and equity. Finally, the statement of cash flows details the sources and

[1] Business income is added to the owner's personal income and the owner pays tax on the sum of the two.
[2] Business income is added to the owner's personal income and the owner pays tax on the sum of the two.
[3] A corporation can have one or more owners.

uses of cash during the period based on the three business activities: operating, investing, and financing.

LO5 – Analyze transactions by using the accounting equation.

The accounting equation, A = L + E, describes the asset investments (the left side of the equation) and the liabilities and equity that financed the assets (the right side of the equation). The accounting equation provides a system for processing and summarizing financial transactions resulting from a business's activities. A financial transaction is an economic exchange between two parties that impacts the accounting equation. The equation must always balance.

Discussion Questions

1. What are generally accepted accounting principles (GAAP)?
2. When is revenue recognized?
3. How does the matching principle more accurately determine the Net Income of a business?
4. What are the qualities that accounting information is expected to have? What are the limitations on the disclosure of useful accounting information?
5. What are assets?
6. To what do the terms *liability* and *equity* refer?
7. Explain the term *financial transaction*. Include an example of a financial transaction as part of your explanation.
8. Identify the three forms of business organization.
9. What is the business entity concept of accounting? Why is it important?
10. What is the general purpose of financial statements? Name the four financial statements?
11. Each financial statement has a title that consists of the name of the financial statement, the name of the business, and a date line. How is the date line on each of the four financial statements the same or different?
12. What is the purpose of an income statement? a balance sheet? How do they interrelate?
13. Define the terms *revenue* and *expense*.
14. What is net income? What information does it convey?
15. What is the purpose of a statement of stockholders' equity? a statement of cash flows?

16. Why are financial statements prepared at regular intervals? Who are the users of these statements?

17. What is the accounting equation?

18. Explain double-entry accounting.

19. What is a year-end? How does the timing of year-end financial statements differ from that of interim financial statements?

20. How does a fiscal year differ from a calendar year?

Exercises

EXERCISE 1–1 (LO1,2,3) Matching

Ethics	Managerial accounting
Financial accounting	Partnership
GAAP	Separate legal entity
Limited liability	Unlimited liability

Required: Match each term in the above alphabetized list to the corresponding description below.

a. _____ The owners pay tax on the business's net income.
b. _____ Accounting standards followed by publicly traded companies in the United States.
c. _____ Rules that guide us in interpreting right from wrong.
d. _____ Accounting aimed at communicating information to external users.
e. _____ Accounting aimed at communicating information to internal users.
f. _____ The business is distinct from its owners.
g. _____ The owner(s) are not responsible for the debts of the business.
h. _____ If the business is unable to pay its debts, the owner(s) are responsible.

EXERCISE 1–2 (LO3) Accounting Assumptions and Principles

Economic entity	Full disclosure	Historical Cost	Revenue Recognition
Time Period	Going concern	Monetary unit	Matching

Required: Identify whether each of the following situations represents a violation or a correct application of GAAP, and which principle is relevant in each instance.

a. A small storage shed was purchased from a home supply store at a discount sale price of $5,000 cash. The clerk recorded the asset at $6,000, which was the regular price.

b. One of the business partners of a small architect firm continually charges the processing of his family vacation photos to the business firm.

c. An owner of a small engineering business, operating as a sole-proprietorship from his home office, also paints and sells watercolor paintings in his spare time. He combines all the transactions in one set of books.

d. ABS Consulting received cash of $6,000 from a new customer for consulting services that ABS is to provide over the next six months. The transaction was recorded as a credit to revenue.

e. Tyler Inc. is being sued and believes they will lose the lawsuit and be required to pay $1,000,000 in fines. The company choses to avoid providing this information to its stockholders until the case has been settled.

f. An owner of a small car repair shop purchased shop supplies for cash of $2,200, which will be used over the next six months. The transaction was recorded as a debit to shop supplies (asset) and will be expensed as they are used.

g. At the end of its current fiscal year Business X would like to show its stockholders an increased value in net income and decides to extend its fiscal year-end by thirty days.

h. XYZ is in deep financial trouble and recently was able to obtain some badly needed cash from an investor who was interested in becoming an equity partner. However, a few days ago, the investor unexpectedly changed the terms of his cash investment in XYZ company from the proposed equity partnership to a long-term loan. XYZ does not disclose this to their bank, who they recently applied to for an increase in their overdraft line-of-credit.

EXERCISE 1–3 (LO4) Calculating Missing Amounts

	Assets	=	Liabilities	+	Equity
a.	50,000	=	20,000	+	?
b.	10,000	=	?	+	1,000
c.	?	=	15,000	+	80,000

Required: Calculate the missing amounts in **a**, **b**, and **c** above. Additionally, answer each of the questions in **d** and **e** below.

d. Assets are financed by debt and equity. The greatest percentage of debt financing is reflected in **a**, **b**, or **c**?

e. The greatest percentage of equity financing is reflected in **a**, **b**, or **c**?

EXERCISE 1–4 (LO4) Calculating Missing Amounts

Required: Calculate the missing amounts for companies *A* to *E*.

	A	*B*	*C*	*D*	*E*
Cash	$3,000	$1,000	$?	$6,000	$2,500
Equipment	8,000	6,000	4,000	7,000	?
Accounts payable	4,000	?	1,500	3,000	4,500
Common stock	2,000	3,000	3,000	4,000	500
Retained earnings	?	1,000	500	?	1,000

EXERCISE 1–5 (LO4) Calculating Missing Amounts

	Assets	=	Liabilities	+	Equity
Balance, Jan. 1, 2015	$50,000		$40,000		?
Balance, Dec. 31, 2015	40,000		20,000		?

Required: Using the information above, calculate net income under each of the following assumptions.

a. During 2015, no common stock was issued and no dividends were declared.

b. During 2015, no common stock was issued and dividends of $5,000 were declared.

c. During 2015, common stock of $12,000 was issued and no dividends were declared.

d. During 2015, common stock of $8,000 was issued and $12,000 of dividends were declared.

EXERCISE 1–6 (LO4) Identifying Assets, Liabilities, Equity Items

Required: Indicate whether each of the following is an asset (A), liability (L), or an equity (E) item.

a. Accounts payable
b. Accounts receivable
c. Notes payable
d. Building
e. Cash
f. Common stock
g. Notes payable
h. Office supplies
i. Prepaid insurance
j. Utilities expense
k. Dividends
l. Interest receivable
m. Retained earnings
n. Interest revenue
o. Interest payable
p. Interest expense
q. Prepaid insurance
r. Insurance expense
s. Insurance revenue
t. Machinery

EXERCISE 1–7 (LO4) Calculating Financial Statement Components

The following information is taken from the records of Jasper Inc. at January 31, 2015, after its first month of operations. Assume no dividends were declared in January.

Cash	$33,000
Accounts receivable	82,000
Unused supplies	2,000
Land	25,000
Building	70,000

Equipment	$30,000
Notes payable	15,000
Accounts payable	27,000
Common stock	?
Net income	40,000

Required:

a. Calculate total assets.

b. Calculate total liabilities.

c. Calculate common stock.

d. Calculate retained earnings.

e. Calculate total equity.

EXERCISE 1–8 (LO4) Net Income, Shares Issued

Accounts receivable	$4,000
Accounts payable	5,000
Cash	1,000
Equipment	8,000
Insurance expense	1,500

Miscellaneous expense	$ 2,500
Office supplies expense	1,000
Service revenue	20,000
Common stock	?
Wages expense	9,000

Required: Using the alphabetized information above for EDW Inc. after its first month of operations, complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

EDW Inc.
Income Statement
Month Ended March 31, 2015

Revenues:		
Service revenue		$
Expenses:		
Wages expense	$	
Miscellaneous expense		
Insurance expense		
Office supplies expense		
Net income		$

EDW Inc.
Statement of Stockholders' Equity
Month Ended March 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$	$	$
Shares issued			
Net income			
Ending balance	$	$	$

EDW Inc.
Balance Sheet
March 31, 2015

Assets		Liabilities		
Cash	$	Accounts payable		$
Accounts receivable				
Equipment		Equity		
		Common stock	$	
		Retained earnings		
		Total equity		
Total assets	$	Total liabilities and equity		$

EXERCISE 1–9 (LO4) Net Income, Dividends

Accounts receivable	$17,000	Machinery	$14,000
Accounts payable	3,000	Notes payable	18,000
Advertising expense	5,000	Retained earnings	6,000
Cash	9,000	Salaries expense	64,000
Dividends	2,000	Service revenue	81,000
Insurance expense	7,000	Common stock	10,000

Required: Algonquin Inc. began operations on August 1, 2013. After its second year, Algonquin Inc.'s accounting system showed the information above. During the second year, no additional shares were issued. Complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

Algonquin Inc.
Income Statement
Year Ended July 31, 2015

Revenues:		
Service revenue		$
Expenses:		
Advertising expense	$	
Insurance expense		
Salaries expense		
Net income		$

Algonquin Inc.
Statement of Stockholders' Equity
Year Ended July 31, 2015

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ 10,000	$ 6,000	$ 16,000
Net income			
Dividends			
Ending balance	$	$	$

Algonquin Inc.
Balance Sheet
July 31, 2015

Assets		Liabilities		
Cash	$	Accounts payable	$	
Accounts receivable		Notes payable		
Machinery		Total liabilities		$
		Equity		
		Common stock	$	
		Retained earnings		
		Total equity		
Total assets	$	Total liabilities and equity		$

EXERCISE 1–10 (LO4) Net Income, Dividends, Shares Issued

Required: Refer to EXERCISE 1–9. Use the same information EXCEPT assume that during the second year, additional shares were issued for cash of $3,000. Complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

Algonquin Inc.
Income Statement
Year Ended July 31, 2015

Revenues:		
Service revenue		$
Expenses:		
Advertising expense	$	
Insurance expense		
Salaries expense		
Net income		$

Algonquin Inc.
Statement of Stockholders' Equity
Year Ended July 31, 2015

	Common Stock	Retained Earnings	Total Equity
Opening balance	$	$	$
Shares issued			
Net income			
Dividends			
Ending balance	$	$	$

Algonquin Inc.
Balance Sheet
July 31, 2015

Assets		Liabilities		
Cash	$	Accounts payable	$	
Accounts receivable		Notes payable		
Machinery		Total liabilities		$
		Equity		
		Common stock	$	
		Retained earnings		
		Total equity		
Total assets	$	Total liabilities and equity		$

EXERCISE 1–11 (LO4) Net Loss

Accounts receivable	$1,600
Cash	6,000
Equipment rental expense	9,400
Fees earned	12,000
Fuel expense	500
Notes payable	18,000
Rent payable	$2,500
Retained earnings	4,000
Common stock	6,400
Truck	22,000
Wages expense	3,400

Required: Wallaby Inc. began operations on February 1, 2014. After its second month, Wallaby Inc.'s accounting system showed the information above. During the second month, no dividends were declared and no additional shares were issued. Complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

Wallaby Inc.
Income Statement
Month Ended March 31, 2015

Revenues:		
Fees earned		$
Expenses:		
Equipment rental expense	$	
Wages expense		
Fuel expense		
Net loss		$

Wallaby Inc.
Statement of Stockholders' Equity
Month Ended March 31, 2015

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ 6,400	$ 4,000	$ 10,400
Net loss			
Ending balance	$	$	$

Wallaby Inc.
Balance Sheet
March 31, 2015

Assets			Liabilities		
Cash		$	Rent payable	$	
Accounts receivable			Notes payable		
Truck			Total Liabilities		$
			Equity		
			Common stock	$	
			Retained Earnings		
			Total equity		
Total assets		$	Total liabilities and equity		$

EXERCISE 1–12 (LO4) Correcting Financial Statements

A junior bookkeeper of Adams Ltd. prepared the following incorrect financial statements at the end of its first month of operations.

Adams Ltd.
Income Statement
For the Month Ended January 31, 2015

Service Revenue		$3,335
Expenses:		
Accounts payable	$300	
Land	1,000	
Miscellaneous expenses	335	1,635
Net income		$1,700

Balance Sheet

Assets		Liabilities and Equity	
Cash	$1,000	Rent expense	$300
Repairs expense	500	Common stock	3,000
Salaries expense	1,000	Retained earnings	1,700
Building	2,500		
	$5,000		$5,000

Required: Prepare a corrected income statement, statement of stockholders' equity, and balance sheet.

EXERCISE 1–13 (LO4) Income Statement

Below are the December 31, 2015, year-end accounts balances for Mitch's Architects Ltd. This is the business's second year of operations.

Cash	$23,000	Common stock	$ 30,400
Accounts receivable	24,000	Retained earnings	5,000
Office supplies inventory	2,000	Consulting fees earned	150,000
Prepaid insurance	7,000	Office rent expense	60,000
Truck	40,000	Salaries and benefits expense	40,000
Office equipment	15,000	Utilities expense	12,000
Accounts payable	30,000	Insurance expense	5,000
Unearned consulting fees	15,000	Supplies and postage expense	2,400

Additional information:

a. Included in the common stock account balance was an additional $10,000 of shares issued during the current year just ended.

b. Included in the retained earnings account balance was dividends paid to the stockholders of $1,000 during the current year just ended.

Required: Use these accounts to prepare an income statement similar to the example illustrated in Section 1.4.

EXERCISE 1–14 (LO4) Statement of Stockholders' Equity

Required: Using the data in EXERCISE 1–13, prepare a statement of stockholders' equity similar to the example illustrated in Section 1.4.

EXERCISE 1–15 (LO4) Balance Sheet

Required: Using the data in EXERCISE 1–13, prepare a balance sheet similar to the example illustrated in Section 1.4.

EXERCISE 1–16 (LO4) Financial Statements with Errors

Below are the May 31, 2015, year-end financial statements for Gillespie Corp., prepared by a summer student. There were no common stock transactions in the year just ended.

Gillespie Corp.
Income Statement
For the Year Ended May 31, 2015

Revenues:	
Service revenue	$382,000
Unearned service revenue	25,000
Rent revenue	90,000
Expenses:	
Warehouse rent expense	100,000
Prepaid advertising	17,000
Salaries and benefits expense	110,000
Dividends	10,000
Utilities expense	42,000
Insurance expense	15,000
Shop supplies expense	6,000
Net income	$197,000

Gillespie Corp.
Statement of Stockholders' Equity
At May 31, 2015

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ 5,000	$140,000	$145,000
Net income		197,000	197,000
Ending balance	$ 5,000	$337,000	$342,000

Gillespie Corp.
Balance Sheet
For the Year Ended May 31, 2015

Assets		Liabilities		
Cash	$ 50,000	Accounts payable	$130,000	
Accounts receivable	85,000			
Office equipment	45,000	Total liabilities		$130,000
Building	240,000	Equity		
Shop supplies	52,000	Common stock	$ 5,000	
		Retained earnings	337,000	
		Total equity		342,000
Total assets	$472,000	Total liabilities and equity		$472,000

Required: Using the data above, prepare a corrected set of financial statements similar to the examples illustrated in Section 1.4.

EXERCISE 1–17 (LO4) Determining Missing Financial Information

Required: Complete the following calculations for each individual company:

a. If ColorMePink Ltd. has a retained earnings opening balance of $50,000 at the beginning of the year, and an ending balance of $40,000 at the end of the year, what would be the net income/loss, if dividends paid were $20,000?

b. If ForksAndSpoons Ltd. has net income of $150,000, dividends paid of $40,000 and a retained earnings ending balance of $130,000, what would be the retained earnings opening balance?

c. If CupsAndSaucers Ltd. has a retained earnings opening balance of $75,000 at the beginning of the year, and an ending balance of $40,000 at the end of the year, what would be the dividends paid, if the net loss was $35,000?

EXERCISE 1–18 (LO4,5) Equity – What Causes it to Change

	Assets	=	Liabilities	+	Equity	
Balances at April 1, 2015	$100,000		$60,000		$40,000	
					?	Shares issued in April
					?	April net income(loss)
					?	Dividends paid in April
Balances at April 30, 2015	$180,000	=	$130,000	+	?	

Required: Using the information provided above, calculate the net income or net loss realized during April under each of the following independent assumptions.

a. No shares were issued in April and no dividends were paid.

b. $50,000 of shares were issued in April and no dividends were paid.

c. No shares were issued in April and $4,000 of dividends were paid in April.

EXERCISE 1–19 (LO4,5) Equity – What Causes it to Change

	Assets	=	Liabilities	+	Equity	
Balances at June 1, 2015	$160,000		$100,000		$60,000	
					?	Shares issued in June
					?	June net income(loss)
					?	Dividends paid in June
Balances at June 30, 2015	$200,000	=	$90,000	+	?	

Required: Using the information provided above, calculate the dividends paid in June under each of the following independent assumptions.

a. In June no shares were issued and a $70,000 net income was earned.

b. $40,000 of shares were issued in June and a $90,000 net income was earned.

c. In June $130,000 of shares were issued and an $80,000 net loss was realized.

EXERCISE 1–20 (LO5) Impact of Transactions on the Accounting Equation

The following list shows the various ways in which the accounting equation might be affected by financial transactions.

	Assets	=	Liabilities	+	Equity
1.	(+)				(+)
2.	(+)		(+)		
3.	(+)(-)				
4.	(-)				(-)
5.	(-)		(-)		
6.			(+)		(-)
7.			(-)		(+)
8.			(+)(-)		
9.					(+)(-)

Required: Match one of the above to each of the following financial transactions. If the description below does not represent a financial transaction, indicate 'NT' for 'No Transaction'. The first one is done as an example.

a.	3	Purchased a truck for cash.
b.		Issued common stock for cash.
c.		Incurred a bank loan as payment for equipment.
d.		Made a deposit for electricity service to be provided to the company in the future.
e.		Paid rent expense.
f.		Signed a new union contract that provides for increased wages in the future.
g.		Wrote a letter of complaint to the State Governor about a mail strike and hired a messenger service to deliver letters
h.		Received a collect telegram from the State Governor; paid the messenger.
i.		Billed customers for services performed.
j.		Made a cash payment to satisfy an outstanding obligation.
k.		Received a payment of cash in satisfaction of an amount owed by a customer.
l.		Collected cash from a customer for services rendered.
m.		Paid cash for truck operation expenses.
n.		Made a monthly payment on the bank loan; this payment included a payment on part of the loan and also an amount of interest expense. (*Hint*: This transaction affects more than two parts of the accounting equation.)
o.		Issued shares in the company to pay off a loan.

Problems

PROBLEM 1–1 (LO4,5) Preparing Financial Statements

Following are the asset, liability, and equity items of Dumont Inc. at January 31, 2015, after its first month of operations.

ASSETS		=	LIABILITIES		+	EQUITY	
Cash	$1,300		Notes payable	$8,000		Common stock	$2,000
Accounts receivable	2,400		Accounts payable	1,000		Service revenue	7,500
Prepaid expenses	550					Advertising expense	500
Unused supplies	750					Commissions expense	720
Truck	9,000					Insurance expense	50
						Interest expense	80
						Rent expense	400
						Supplies expense	100
						Telephone expense	150
						Wages expense	2,500

Required:

1. Prepare an income statement and statement of stockholders' equity for Dumont's first month ended January 31, 2015.
2. Prepare a balance sheet at January 31, 2015.

PROBLEM 1–2 (LO4) Preparing Financial Statements

Laberge Sheathing Inc. began operations on January 1, 2015. The office manager, inexperienced in accounting, prepared the following statement for the business's most recent month ended August 31, 2015.

Laberge Sheathing Inc.
Financial Statement
Month Ended August 31, 2015

Cash	$400	Accounts payable	$7,800
Accounts receivable	3,800	Common stock	3,200
Unused supplies	100	Service revenue	2,000
Equipment	8,700	Retained earnings	4,000
Advertising expense	300		
Interest expense	500		
Maintenance expense	475		
Supplies used	125		
Wages expense	2,600		
	$17,000		$17,000

Required:

1. Prepare an income statement and statement of stockholders' equity for the month ended August 31, 2015, and a balance sheet at August 31, 2015. No shares were issued in August.
2. Using the information from the balance sheet completed in Part 1, calculate the percentage of assets financed by equity.

PROBLEM 1–3 (LO5) Transaction Analysis

The following transactions of Larson Services Inc. occurred during August 2015, its first month of operations.

Aug.	1	Issued common stock for $3,000 cash
	1	Borrowed $10,000 cash from the bank
	1	Paid $8,000 cash for a used truck
	3	Signed a contract with a customer to do a $15,000 job beginning in November
	4	Paid $600 for a one-year truck insurance policy effective August 1
	5	Collected fees of $2,000 for work to be performed in September
	7	Billed a client $5,000 for services performed today
	9	Paid $250 for supplies purchased and used today
	12	Purchased $500 of supplies on credit
	15	Collected $1,000 of the amount billed August 7
	16	Paid $200 for advertising in The News that ran the first two weeks of August
	20	Paid $250 of the amount owing regarding the credit purchase of August 12
	25	Paid the following expenses: rent for August, $350; salaries, $2,150; telephone, $50; truck operation, $250
	28	Called clients for payment of the balances owing from August 7
	31	Billed a client $6,000 for services performed today
	31	$500 of the amount collected on August 5 has been earned as of today

Required:

1. Create a table like the one below by copying the headings shown.

ASSETS					=	LIABILITIES			+	EQUITY	
Cash	Acct. Rec.	Ppd. Exp.	Unused Supplies	Truck	=	Acct. Pay.	Unearned Revenue	Notes Pay.	+	Common Stock	Retained Earnings

2. Use additions and subtractions in the table created in Part 1 to show the effects of the August transactions. For non-transactions that do not impact the accounting equation items (such as August 3), indicate 'NE' for 'No Effect'.

3. Total each column and prove the accounting equation balances.

PROBLEM 1–4 (LO4) Preparing Financial Statements

Required: Refer to your answer for Problem 1–3. Prepare an income statement and a statement of stockholders' equity for the month ended August 31, 2015. Label the revenue earned as Fees Earned. Prepare a balance sheet at August 31, 2015.

PROBLEM 1–5 (LO5) Transaction Analysis and Table

The following transactions occurred for Olivier Bondar Ltd., an restaurant management consulting service, during May, 2016:

May 1	Received a check in the amount of $5,000 from TUV Restaurant Ltd., for a restaurant food cleanliness assessment to be conducted in June.
May 1	Paid $5,000 for office rent for the month of May.
May 2	Purchased office supplies for $3,000 on account.
May 3	Completed a consultation project for McDanny's Restaurant and billed them $27,000 for the work.
May 4	Purchased a laptop computer for $3,000 in exchange for a note payable due in 45 days.
May 5	Olivier Bondar was a little short on cash, so the manager made an application for a bank loan in the amount of $20,000. It is expected that the bank will make their decision regarding the loan next week.
May 6	Received an invoice from the utilities company for electricity in the amount of $300.
May 10	Bank approved the loan and deposited $20,000 into Olivier Bondar's bank account. First loan payment is due on June 10.
May 11	Paid for several invoices outstanding from April for goods and services received for a total of $8,000. The breakdown of the invoice costs are: telephone expense $500; advertising expense $3,000; office furniture $2,000; office supplies $2,500.
May 13	Paid employee salaries owing from May 1 to May 13 in the amount of $3,000.
May 14	Completed consulting work for a client and invoiced $18,000.
May 15	Received $25,000 cash for work done and invoiced in April.
May 18	Hired a new employee who will begin work on May 25. Salary will be $2,500 every two weeks.
May 21	Placed an order request for new shelving for the office. Catalogue price is $2,500.
May 27	Paid employee salaries owing from May 14 to May 27 in the amount of $3,500.
May 29	The bookkeeper was going to be away for two weeks, so the June rent of $5,000 was paid.
May 31	Reimbursed $50 in cash to an employee for use of his personal vehicle for company business on May 20.
May 31	Shelving unit ordered on May 21 was delivered and installed. Total cost was $3,000, including labor.

Required: Create a table with the following column headings and opening balances. Below the opening balance, number each row from 1 to 18:

	Cash	Accounts receivable	Office supplies	Prepaid expenses	Office furniture	Equipment	Accounts payable	Unearned revenue	Note payable	Common stock	Retained earnings
Open Bal	+10,000	+25,000	+2,000	0	+15,000	+25,000	+35,000	0	0	+8,000	+34,000
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
Bal											

Using the table as shown in Figure 1.3 of the text, complete the table for the 18 items listed in May and total each column. If any of the items are not to be recorded, leave the row blank.

PROBLEM 1–6 (LO5) Transaction Analysis and Table

Required: Using the data from the table in PROBLEM 1–5, prepare the balance sheet as at May 31, 2016.

Chapter 2

The Accounting Process

Chapter 2 looks more closely at asset, liability, and equity accounts and how they are affected by double-entry accounting, namely, debits and credits. The transactions introduced in Chapter 1 for Big Dog Carworks Corp. are used to explain debit and credit analysis. The preparation of a trial balance will be introduced. Additionally, this chapter will demonstrate how transactions are recorded in a general journal and posted to a general ledger. Finally, the concept of the accounting cycle is presented.

Chapter 2 Learning Objectives

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

LO2 – Analyze transactions using double-entry accounting.

LO3 – Prepare a trial balance and explain its use.

LO4 – Record transactions in a general journal and post in a general ledger.

LO5 – Define the accounting cycle.

Concept Self-Check

Use the following as a self-check while working through Chapter 2.

1. What is an asset?
2. What is a liability?
3. What are the different types of equity accounts?
4. What is retained earnings?
5. How are retained earnings and revenues related?
6. Why are T-accounts used in accounting?
7. How do debits and credits impact the T-account?
8. What is a chart of accounts?

9. Are increases in equity recorded as a debit or credit?
10. Are decreases in equity recorded as a debit or credit?
11. Does issuing shares and revenues cause equity to increase or decrease?
12. Are increases in the common stock account recorded as a debit or credit?
13. Are increases in revenue accounts recorded as debits or credits?
14. Do dividends and expenses cause equity to increase or decrease?
15. Are increases in the dividend account recorded as a debit or credit?
16. Are increases in expense accounts recorded as debits or credits?
17. How is a trial balance useful?
18. What is the difference between a general journal and a general ledger?
19. Explain the posting process.
20. What is the accounting cycle?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

2.1 Accounts

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

Chapter 1 reviewed the analysis of financial transactions and the resulting impact on the accounting equation. We now expand that discussion by introducing the way transaction is recorded in an *account*. An **account** accumulates detailed information regarding the increases and decreases in a specific asset, liability, or equity item. Accounts are maintained in a **ledger** also referred to as the **books**. We now review and expand our understanding of asset, liability, and equity accounts.

Asset Accounts

Recall that assets are resources that have future economic benefits for the business. The primary purpose of assets is that they be used in day-to-day operating activities in order to generate revenue either directly or indirectly. A separate account is established for each asset. Examples of asset accounts are reviewed below.

- **Cash** has future purchasing power. Coins, currency, checks, and bank account balances are examples of cash.
- **Accounts receivable** occur when products or services are sold on account or on credit. When a sale occurs on account or on credit, the customer has not paid cash but promises to pay in the future.
- **Notes receivable** are a promise to pay an amount on a specific future date plus a predetermined amount of interest.
- **Office supplies** are supplies to be used in the future. If the supplies are used before the end of the accounting period, they are an expense instead of an asset.
- **Merchandise inventory** are items to be sold in the future.
- **Prepaid insurance** represents an amount paid in advance for insurance. The prepaid insurance will be used in the future.
- **Prepaid rent** represents an amount paid in advance for rent. The prepaid rent will be used in the future.
- **Land** cost must be in a separate account from any building that might be on the land. Land is used over future periods.
- **Buildings** indirectly help a business generate revenue over future accounting periods since they provide space for day-to-day operating activities.

Liability Accounts

As explained in Chapter 1, a liability is an obligation to pay for an asset in the future. The primary purpose of liabilities is to finance investing activities that include the purchase of assets like land, buildings, and equipment. Liabilities are also used to finance operating activities involving, for example, accounts payable, unearned revenues, and wages payable. A separate account is created for each liability. Examples of liability accounts are reviewed below.

- **Accounts payable** are debts owed to creditors for goods purchased or services received as a result of day-to-day operating activities. An example of a service received on credit might be a plumber billing the business for a repair.
- **Wages payable** are wages owed to employees for work performed.
- **Short-term notes payable** are a debt owed to a bank or other creditor that is normally paid within one year. Notes payable are different than accounts payable in that notes involve interest.
- **Long-term notes payable** are a debt owed to a bank or other creditor that is normally paid beyond one year. Like short-term notes, long-term notes involve interest.

- **Unearned revenues** are payments received in advance of the product or service being provided. In other words, the business owes a customer the product/service.

Equity Accounts

Chapter 1 explained that equity represents the net assets owned by the owners of a business. In a corporation, the owners are called stockholders. Equity is traditionally one of the more challenging concepts to understand in introductory financial accounting. The difficulty stems from there being different types of equity accounts: common stock, retained earnings, dividends, revenues, and expenses. Common stock represents the investments made by owners into the business and causes equity to increase. Retained earnings is the sum of all net incomes earned over the life of the corporation to date, less any dividends distributed to stockholders over the same time period. Therefore, the Retained Earnings account includes revenues, which cause equity to increase, along with expenses and dividends, which cause equity to decrease. Figure 2.1 summarizes equity accounts.

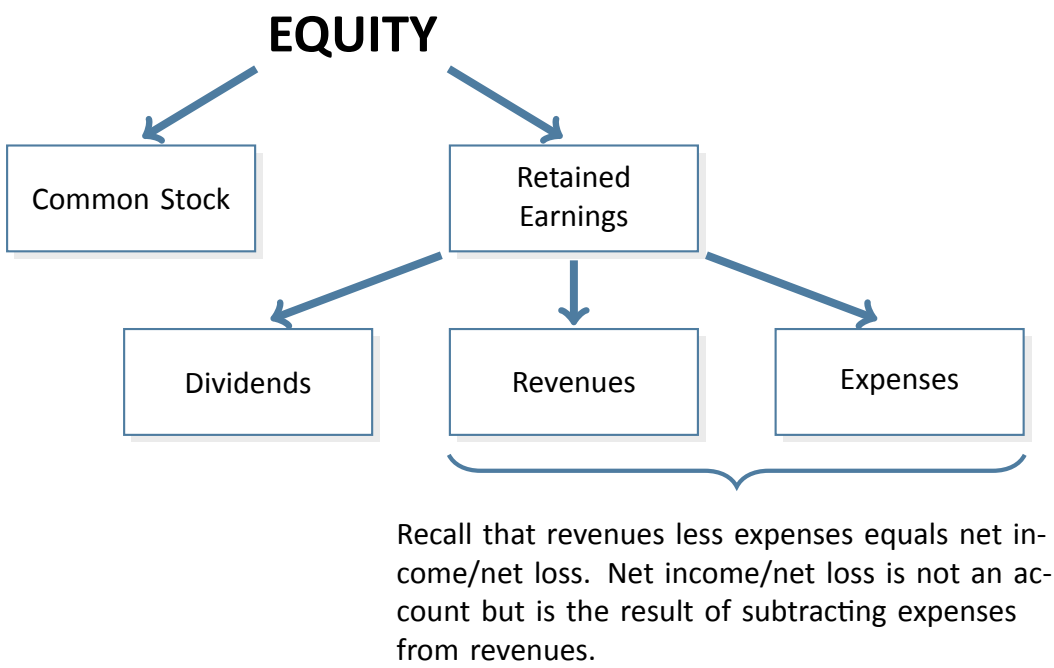


Figure 2.1: Composition of Equity Accounts

T-accounts

A simplified account, called a **T-account**, is often used as a teaching/learning tool to show increases and decreases in an account. It is called a T-account because it resembles the letter *T*. As shown in the T-account below, the left side records **debit** entries and the right side records **credit** entries.

Account Name	
Debit (always on left)	Credit (always on right)

The *type* of account determines whether an increase or a decrease in a particular transaction is represented by a debit or credit. For financial transactions that affect *assets*, *dividends*, and *expenses*, increases are recorded by debits and decreases by credits. This guideline is shown in the following T-account.

Assets, Dividends, Expenses	
Debits are always increases	Credits are always decreases

For financial transactions that affect *liabilities, common stock*, and *revenues*, increases are recorded by credits and decreases by debits, as follows:

Liabilities, Revenues, Common Stock	
Debits are always decreases	Credits are always increases

Another way to illustrate the debit and credit rules is based on the accounting equation. Remember that dividends, expenses, revenues, and common stock are equity accounts.

	Assets	=	Liabilities	+	Equity
Increases are recorded as:	Debits		Credits		Credits[1]
Decreases are recorded as:	Credits		Debits		Debits[2]

[1]Revenues and the issuance of common stock are equity accounts. They cause equity to increase so increases in these account types are recorded as credits.

[2]Expenses, and Dividends are equity accounts. They cause equity to decrease. Decreases in equity are always recorded as debits so as expenses and dividends are realized, they are debited.

The following summary shows how debits and credits are used to record increases and decreases in various types of accounts.

ASSETS	LIABILITIES
DIVIDENDS	COMMON STOCK
EXPENSES	REVENUE
Increases are DEBITED.	Increases are CREDITED.
Decreases are CREDITED.	Decreases are DEBITED.

This summary will be used in a later section to illustrate the recording of debits and credits regarding the transactions of Big Dog Carworks Corp. introduced in Chapter 1.

The **account balance** is determined by adding and subtracting the increases and decreases in an account. Two assumed examples are presented below.

Cash

	10,000	3,000
	3,000	3,000
	400	2,400
	8,000	2,000
		7,100
		200
Balance	3,700	

Accounts Payable

700	5,000	
	4,300	Balance

The $3,700 debit balance in the Cash account was calculated by adding all the debits and subtracting the sum of the credits. The $3,700 is recorded on the debit side of the T-account because the debits are greater than the credits. In Accounts Payable, the balance is a $4,300 credit calculated by subtracting the debits from the credits.

Notice that Cash shows a debit balance while Accounts Payable shows a credit balance. The Cash account is an asset so its *normal balance* is a debit. A **normal balance** is the side on which increases occur. Accounts Payable is a liability and because liabilities increase with credits, the normal balance in Accounts Payable is a credit as shown in the T-account above.

Chart of Accounts

A business will create a list of accounts called a **chart of accounts** where each account is assigned both a name and a number. A common practice is to have the accounts arranged in a manner that is compatible with the order of their use in financial statements. For instance, Asset accounts begin with the digit '1', Liability accounts with the digit '2'. Each business will have a unique chart of accounts that corresponds to its specific needs. Big Dog Carworks Corp. uses the following numbering system for its accounts:

100-199	Asset accounts
200-299	Liability accounts
300-399	Common stock, retained earnings, and dividend accounts
500-599	Revenue accounts
600-699	Expense accounts

2.2 Transaction Analysis Using Accounts

LO2 – Analyze transactions using double-entry accounting.

In Chapter 1, transactions for Big Dog Carworks Corp. were analyzed to determine the change in each item of the accounting equation. In this next section, these same transactions will be used to demonstrate double-entry accounting. **Double-entry accounting** means each transaction is recorded in at least two accounts where the total debits ALWAYS equal the total credits. As a result of double-entry accounting, the sum of all the debit balance accounts in the ledger must equal the sum of all the credit balance accounts. The rule that debits = credits is rooted in the accounting equation:

	ASSETS	**=**	**LIABILITIES**	**+**	**EQUITY**[3]
Increases are:	Debits		Credits		Credits
Decreases are:	Credits		Debits		Debits

Illustrative Problem—Double-Entry Accounting and the Use of Accounts

In this section, the following debit and credit summary will be used to record the transactions of Big Dog Carworks Corp. into T-accounts.

ASSETS	LIABILITIES
DIVIDENDS	COMMON STOCK
EXPENSES	REVENUE
Increases are DEBITED.	Increases are CREDITED.
Decreases are CREDITED.	Decreases are DEBITED.

Transaction 1

Jan. 1 – Big Dog Carworks Corp. issued 1,000 shares to Bob Baldwin, a stockholder, for a total of $10,000 cash.

[3]The issuance of common stock and revenues cause equity to increase; as indicated above, increases in equity are recorded as credits. Dividends and expenses cause equity to decrease; decreases in equity are recorded as debits.

Analysis:

Debit: An asset account, Cash, is increased resulting in a debit.

Cash	
10,000	

Credit: Common Stock, an equity account, is increased resulting in a credit.*

Common Stock	
	10,000

**Note: An alternate analysis would be that the issuance of shares causes equity to increase and increases in equity are always recorded as a credit.*

Transaction 2

Jan. 2 – Borrowed $3,000 from the bank.

Analysis:

Debit: An asset account, Cash, is increased resulting in a debit.

Cash	
3,000	

Credit: A liability account, Notes Payable, is increased resulting in a credit.

Notes Payable	
	3,000

Transaction 3

Jan. 3 – Equipment is purchased for $3,000 cash.

Analysis:

Debit: One asset is acquired in exchange for another asset. An asset account, Equipment, is increased resulting in a debit.

Equipment	
3,000	

Credit: The account, Cash, also an asset, is decreased resulting in a credit.

Cash	
	3,000

Transaction 4

Jan. 3 – A truck was purchased for $8,000; Big Dog paid $3,000 cash and incurred a $5,000 bank loan for the balance.

Analysis:

Debit: An asset account, Truck, is increased resulting in a debit.

Truck	
8,000	

Credit: An asset account, Cash, is decreased resulting in a credit.

Cash	
	3,000

Credit: A liability account, Notes Payable, is increased resulting in a credit.

Notes Payable	
	5,000

Note: Transaction 4 involves one debit and two credits. Notice that the total debit of $8,000 equals the total credits of $8,000 which satisfies the double-entry accounting rule requiring that debits ALWAYS equal credits.

Transaction 5

Jan. 5 – Big Dog Carworks Corp. paid $2,400 cash for a one-year insurance policy, effective January 1.

Analysis:

Debit: An asset account, Prepaid Insurance, is increased resulting in a debit. Because the insurance provides future benefit, it is recorded as an asset until it is used.

Prepaid Insurance	
2,400	

Credit: Payment of the insurance results in a decrease in the asset account, Cash, resulting in a credit.

Cash	
	2,400

Transaction 6

Jan. 10 – The corporation paid $2,000 cash to reduce the bank loan.

Analysis:

Debit: This payment decreases the liability, Notes Payable, resulting in a debit.

Notes Payable	
2,000	

Credit: The payment also decreases the asset, Cash, resulting in a credit.

Cash	
	2,000

Transaction 7

Jan. 15 – The corporation received an advance payment of $400 for repair services to be performed as follows: $300 in February and $100 in March.

Analysis:

Debit: An asset, Cash, is increased at the time the cash is received resulting in a debit.

Cash	
400	

Credit: Since the revenue relating to this cash receipt is not earned as of this date, a liability account, Unearned Repair Revenue, is credited because Big Dog 'owes' the customer $400 of work.

Unearned Repair Revenue	
	400

Transaction 8

Jan. 31 – A total of $10,000 of automotive repair services is performed for a customer who paid $8,000 cash. The remaining $2,000 will be paid in 30 days.

Analysis:

Debit: An asset, Cash, is increased resulting in a debit.

Cash	
8,000	

Debit: An asset, Accounts Receivable, is increased resulting in a debit.

Accounts Receivable	
2,000	

Credit: An equity, Repair Revenue, is increased resulting in a credit.

Repair Revenue	
	10,000

Transaction 9

Jan. 31 – Operating expenses of $7,100 were paid in cash: Rent expense, $1,600; salaries expense, $3,500; and supplies expense of $2,000. $700 for truck operating expenses (e.g., oil, gas) were incurred on credit.

Analysis:

Debit: This transaction increases four expense accounts resulting in a debit to each.

Rent Expense	
1,600	

Salaries Expense	
3,500	

Supplies Expense	
2,000	

Truck Operating Expense	
700	

Note: Each expense is recorded in an individual account.

Credit: An asset, Cash, is decreased resulting in a credit.

Cash	
	7,100

Credit: A liability, Accounts Payable, is increased resulting in a credit.

Accounts Payable	
	700

Transaction 10

Jan. 31 – Dividends of $200 were paid in cash to the only stockholder, Bob Baldwin.

Analysis:

Debit: Dividends, an equity account, is increased resulting in a debit.

Dividends	
200	

Note: An alternate analysis would be that dividends cause equity to decrease and that decreases in equity are always recorded as a debit.

Credit: An asset, Cash is decreased resulting in a credit.

Cash	
	200

After the January transactions of Big Dog Carworks Corp. have been recorded in the T-accounts, each account is totaled and the difference between the debit balance and the credit balance is calculated, as shown in the following diagram. The numbers in parentheses refer to the transaction numbers used in the preceding section. To prove that the accounting equation is in balance, the account balances for each of assets, liabilities, and equity are added. Notice that total assets of $19,100 equal the sum of total liabilities of $7,100 plus equity of $12,000.

ASSETS

Cash

(1)	10,000	(3)	3,000
(2)	3,000	(4)	3,000
(7)	400	(5)	2,400
(8)	8,000	(6)	2,000
		(9)	7,100
		(10)	200
Bal.	3,700		

Accounts Receivable

(8)	2,000		

Prepaid Insurance

(5)	2,400		

Equipment

(3)	3,000		

Truck

(4)	8,000		

LIABILITIES

Notes Payable

(6)	2,000	(2)	3,000
		(4)	5,000
		Bal.	6,000

Accounts Payable

		(9)	700

Unearned Repair Revenue

		(7)	400

EQUITY

Common Stock

		(1)	10,000

Dividends

(10)	200		

Repair Revenue

		(8)	10,000

Rent Expense

(9)	1,600		

Salaries Expense

(9)	3,500		

Supplies Expense

(9)	2,000		

Truck Operation Expense

(9)	700		

19,100[1] = 7,100[2] + 12,000[3]

1. 3,700 + 2,000 + 2,400 + 3,000 + 8,000 = 19,100
2. 6,000 + 700 + 400 = 7,100
3. 10,000 - 200 + 10,000 - 1,600 - 3,500 - 2,000 - 700 = 12,000

2.3 The Trial Balance

LO3 – Prepare a trial balance and explain its use.

To help prove that the accounting equation is in balance, a trial balance is normally prepared instead of the T-account listing shown in the previous section. A **trial balance** is an internal report that lists all the account balances at a point in time. The total debits must equal total credits on the trial balance. The form and content of a trial balance is illustrated below, using the account numbers, account names, and account balances of Big Dog Carworks Corp. at January 31, 2015. Assume that the account numbers are those assigned by the business.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2015

Acct. No.	*Account*	*Debit*	*Credit*
101	Cash	$3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		$27,100	$27,100

Double-entry accounting requires that debits equal credits. The trial balance establishes that this equality exists for Big Dog but it does not ensure that each item has been recorded in the proper account. Neither does the trial balance ensure that all items that should have been entered have been entered. In addition, a transaction may be recorded twice. Any or all of these errors could occur and the trial balance would still balance. Nevertheless, a trial balance provides a useful mathematical check before preparing financial statements.

Preparation of Financial Statements

Financial statements for the one-month period ended January 31, 2015 can now be prepared from the trial balance figures. First, an income statement is prepared.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2015

Acct. No.	*Account*	*Debit*	*Credit*
101	Cash	$ 3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		$27,100	$27,100

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2015

Revenues		
Repair revenue		$10,000
Expenses		
Salaries expense	$ 3,500	
Supplies expense	2,000	
Rent expense	1,600	
Truck operation expense	700	
Total expenses		7,800
Net income		$ 2,200

Common Stock and Dividends are transferred to the Statement of Stockholders' Equity. Dividends is part of Retained Earnings because it is a distribution of Net Income.

Net Income is transferred to the Statement of Stockholders' Equity as part of Retained Earnings.

Big Dog Carworks Corp.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Balance at beginning of period	$ -0-	$ -0-	$ -0-
Issued shares of stock	10,000		10,000
Net income		2,200	2,200
Dividends		(200)	(200)
Ending balance	$10,000	$2,000	$12,000

The asset and liability accounts from the trial balance and the ending balances for common stock and retained earnings on the statement of stockholders' equity are used to prepare the balance sheet.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2015

Acct. No.	*Account*	*Debit*	*Credit*
101	Cash	$ 3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		$27,100	$27,100

These accounts are used to prepare the Balance Sheet.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2015

Assets		
Cash	$ 3,700	
Accounts receivable	2,000	
Prepaid insurance	2,400	
Equipment	3,000	
Truck	8,000	
Total assets		$19,100
Liabilities		
Accounts payable	$ 700	
Unearned repair revenue	400	
Notes payable	6,000	
Total liabilities		$ 7,100
Equity		
Common stock	$10,000	
Retained earnings	2,000	
Total equity		12,000
Total liabilities and equity		$19,100

The Common Stock and Retained Earnings balances are transferred to the Balance Sheet from the Statement of Stockholders' Equity

NOTE: Pay attention to the links between financial statements.

The income statement is linked to the statement of stockholders' equity: Revenues and expenses are reported on the income statement to show the details of net income. Because net income causes equity to change, it is then reported on the statement of stockholders' equity.

The statement of stockholders' equity is linked to the balance sheet: The statement of stockholders' equity shows the details of how equity changed during the accounting period. The balances for common stock and retained earnings that appear on the statement of stockholders' equity are transferred to the equity section of the balance sheet.

The balance sheet SUMMARIZES equity by showing only account balances for common stock and retained earnings. To obtain the details regarding these equity accounts, we must look at the income statement and the statement of stockholders' equity.

2.4 Using Formal Accounting Records

LO4 – Record transactions in a general journal and post in a general ledger.

The preceding analysis of financial transactions used T-accounts to record debits and credits. T-accounts will continue to be used for illustrative purposes throughout this book. In actual practice, financial transactions are recorded in a general journal.

A **general journal**, or just **journal**, is a document that is used to chronologically record a business's debit and credit transactions (see Figure 2.2). It is often referred to as the *book of original entry*. **Journalizing** is the process of recording a financial transaction in the journal. The resulting debit and credit entry recorded in the journal is called a **journal entry**.

A **general ledger**, or just **ledger**, is a record that contains all of a business's accounts. **Posting** is the process of transferring amounts from the journal to the matching ledger accounts. Because amounts recorded in the journal eventually end up in a ledger account, the ledger is sometimes referred to as a *book of final entry*.

Recording Transactions in the General Journal

Each transaction is first recorded in the journal. The January transactions of Big Dog Carworks Corp. are recorded in its journal as shown in Figure 2.2. The journalizing procedure follows these steps (refer to Figure 2.2 for corresponding numbers):

1. The year is recorded at the top and the month is entered on the first line of page 1. This information is repeated only on each new journal page used to record transactions.
2. The date of the first transaction is entered in the second column, on the first line. The day of each transaction is always recorded in this second column.
3. The name of the account to be debited is entered in the description column on the first line. By convention, accounts to be debited are usually recorded before accounts to be credited. The column titled 'R' (for Reference) indicates the number given to the account in the General Ledger. For example, the account number for Cash is 101. The amount of the debit is recorded in the debit column. A dash is often used by accountants in place of .00.
4. The name of the account to be credited is on the second line of the description column and is indented. Accounts to be credited are always indented in this way in the journal. The amount of the credit is recorded in the credit column. Again, a dash may be used in place of .00.
5. An explanation of the transaction is entered in the description column on the next line. It is not indented.

6. A line is usually skipped after each journal entry to separate individual journal entries and the date of the next entry recorded. It is unnecessary to repeat the month if it is unchanged from that recorded at the top of the page.

This entry tells us to:

- Post $10,000 to the debit side of the Cash account (increasing Cash by $10,000), and

- Post $10,000 to the credit side of the Common stock account (increasing this account by $10,000).

GENERAL JOURNAL — Page 1

Date 2015		Description	R	Debit	Credit
Jan.	1	Cash	101	10000-	
		Common Stock	320		10000-
		To record the issuance of common stock.			
	2	Cash	101	3000-	
		Notes Payable	201		3000-
		To record receipt of a bank loan.			
	2	Equipment	183	3000-	
		Cash	101		3000-
		To record the purchase of equipment for cash.			
	3	Truck	184	8000-	
		Notes Payable	201		5000-
		Cash	101		3000-
		To record the purchase of a tow truck; paid cash and incurred additional bank loan.			
	5	Prepaid Insurance	161	2400-	
		Cash	101		2400-
		To record payment for a one-year insurance policy.			
	10	Notes Payable	201	2000-	
		Cash	101		2000-
		To record payment on bank loan.			
	15	Cash	101	400-	
		Unearned Repair Revenue	247		400-
		To record receipt of payment for services not performed: $300 for February, $100 for March.			
	31	Cash	101	8000-	
		Accounts Receivable	110	2000-	
		Repair Revenue	450		10000-
		To record repaid revenue earned in January.			
	31	Rent Expense	654	1600-	
		Salaries Expense	656	3500-	
		Supplies Expense	668	2000-	
		Truck Operation Expense	670	700-	
		Cash	101		7100-
		Accounts Payable	210		700-
		To record cash payment of expenses for the month.			
	31	Dividends	330	200-	
		Cash	101		200-
		To record distribution of dividends.			

Figure 2.2: General Journal Transactions for BDCC in January

Most of Big Dog's entries have one debit and credit. An entry can also have more than one debit

or credit, in which case it is referred to as a **compound entry**. The entry dated January 3 is an example of a compound entry.

Posting Transactions to the General Ledger

The **ledger account** is a formal variation of the T-account. The ledger accounts shown in Figure 2.3 are similar to what is used in electronic/digital accounting programs. Ledger accounts are kept in the general ledger. Debits and credits recorded in the journal are posted to appropriate ledger accounts so that the details and balance for each account can be found easily. Figure 2.3 uses the first transaction of Big Dog Carworks Corp. to illustrate how to post amounts and record other information.

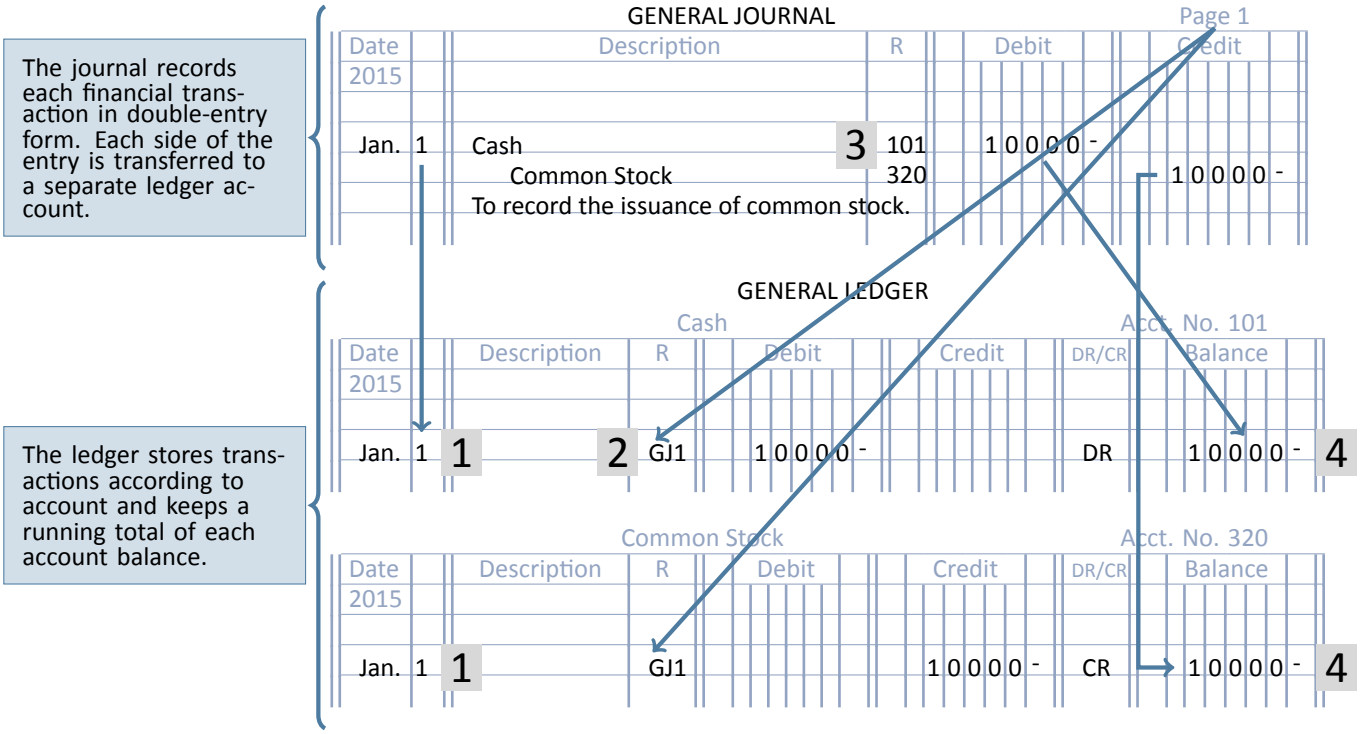


Figure 2.3: Illustration of a Transaction Posted to Two Accounts in the General Ledger

1. The date and amount are posted to the appropriate ledger account. Here the entry debiting Cash is posted from the journal to the Cash ledger account. The entry crediting the common stock account is then posted from the journal to the common stock ledger account.

2. The journal page number is recorded in the reference (R) column of each ledger account as a cross reference. In this case, the posting has been made from general journal page 1; the reference is recorded as GJ1.

3. The appropriate ledger account number is recorded in the reference (R) column of the journal to indicate the posting has been made to that particular account. Here the entry debit-

ing Cash has been posted to Account No. 101. The entry crediting common stock has been posted to Account No. 320.

4. After posting the entry, a balance is calculated in the Balance column. A notation is recorded in the column to the left of the Balance column indicating whether the balance is a debit or credit. A brief description can be entered in the Description column but this is generally not necessary since the journal includes a detailed description for each journal entry.

This manual process of recording, posting, summarizing, and preparing financial statements is cumbersome and time-consuming. In virtually all businesses, the use of accounting software automates much of the process. In this and subsequent chapters, either the T-account or the ledger account can be used in working through exercises and problems. Both formats are used to explain and illustrate concepts in subsequent chapters.

2.5 The Accounting Cycle

LO5 – Define the accounting cycle.

In the preceding sections, the January transactions of Big Dog Carworks Corp. were used to demonstrate the steps performed to convert economic data into financial information. This conversion was carried out in accordance with the basic double-entry accounting model. These steps are summarized in Figure 2.4.

Step 1: Transactions are analyzed and journalized.
Journalizing consists of analyzing transactions as they occur to see how they affect the accounting equation. Then, the transactions are recorded chronologically in the general journal.

Step 2: Transactions are summarized by account.
Posting consists of transferring debits and credits from the general journal to the appropriate general ledger accounts.

Step 3: The equality of debits and credits is proved.
A trial balance is prepared, listing account numbers and names along with account balances to prove the equality of the debits and credits.

Step 4: The summarized transactions are communicated.
Preparing the financial statements consists of using the balances listed in the columns of the trial balance to prepare the income statement, statement of stockholders' equity, and balance sheet.

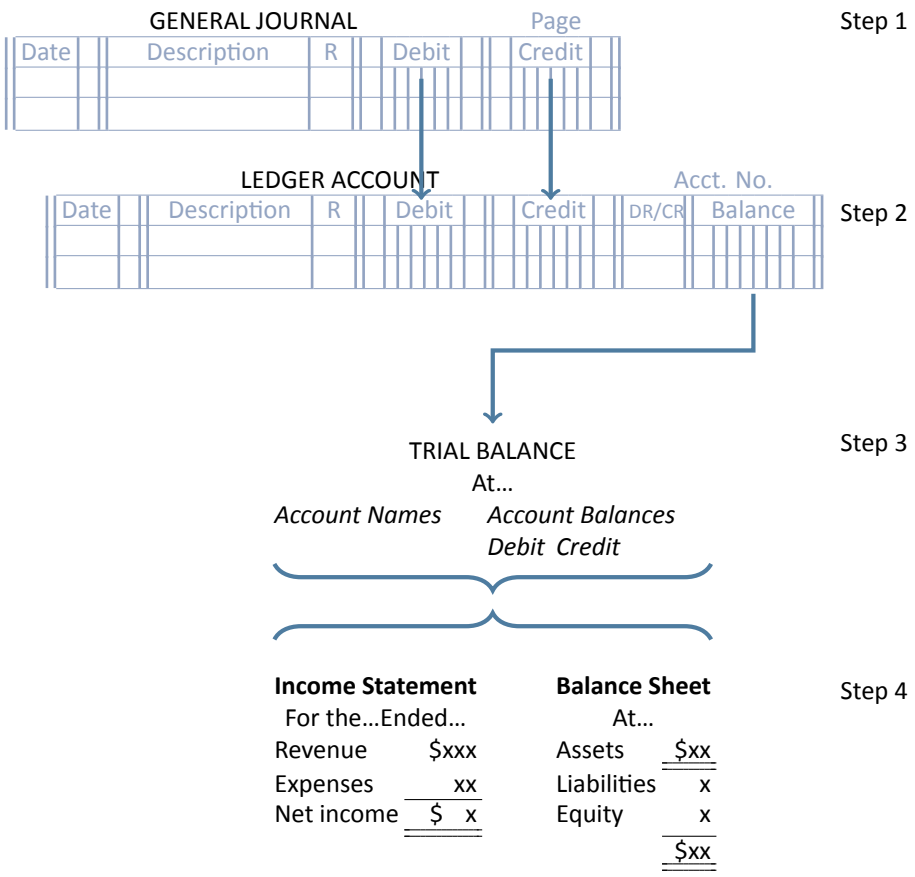


Figure 2.4: Illustrating the Steps in the Accounting Cycle

The sequence just described, beginning with the journalizing of the transactions and ending with the communication of financial information in financial statements, is commonly referred to as the **accounting cycle**. There are additional steps involved in the accounting cycle and these will be introduced in Chapter 3.

Summary of Chapter 2 Learning Objectives

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

Assets are resources that have future economic benefits such as cash, receivables, prepaids, and machinery. Increases in assets are recorded as debits and decreases as credits. Liabilities represent an obligation to pay an asset in the future and include payables and unearned revenues. Increases in liabilities are recorded as credits and decreases as debits. Equity represents the net assets owned by the owners and includes common stock, retained earnings, dividends, revenues, and expenses. Increases in equity, caused by the issuance of shares of stock and revenues, are

recorded as credits, and decreases in equity, caused by dividends and expenses, are recorded as debits. The following summary can be used to show how debits and credits impact the types of accounts.

LO2 – Analyze transactions using double-entry accounting.

Double-entry accounting requires that each transaction be recorded in at least two accounts where the total debits always equal the total credits. The double-entry accounting rule is rooted in the accounting equation: Assets = Liabilities + Equity.

LO3 – Prepare a trial balance and explain its use.

To help prove the accounting equation is in balance, a trial balance is prepared. The trial balance is an internal report that lists all the account balances at a point in time. The total debits must equal total credits on the trial balance. The trial balance is used in the preparation of financial statements.

LO4 – Record transactions in a general journal and post in a general ledger.

The recording of financial transactions was introduced in this chapter using T-accounts, an illustrative tool. A business actually records transactions in a general journal, a document which chronologically lists each debit and credit journal entry. To summarize the debit and credit entries by account, the entries in the general journal are posted (or transferred) to the general ledger. The account balances in the general ledger are used to prepare the trial balance.

LO5 – Define the accounting cycle.

Analyzing transactions, journalizing them in the general journal, posting from the general journal into the general ledger, preparing the trial balance, and generating financial statements are steps followed each accounting period. These steps form the core of the accounting cycle. Additional steps involved in the accounting cycle will be introduced in Chapter 3.

Discussion Questions

1. Why is the use of a transactions worksheet impractical in actual practice?
2. What is an ‘account’? How are debits and credits used to record transactions?

3. Some tend to associate “good” and “bad” or “increase” and “decrease” with credits and debits. Is this a valid association? Explain.
4. The pattern of recording increases as debits and decreases as credits is common to asset and expense accounts. Provide an example.
5. The pattern of recording increases and credits and decreases as debits is common to liabilities, equity, and revenue accounts. Provide an example.
6. Summary of rules for using Debit and Credits:
7. What is a Trial Balance? Why is it prepared?
8. How is a Trial Balance used to prepare financial statements?
9. A General Journal is often called a book of original entry. Why?
10. The positioning of a debit-credit entry in the General Journal is similar in some respects to instructions written in a computer program. Explain, using an example.
11. What is a General Ledger? Why is it prepared?
12. What is a Chart of Accounts? How are the accounts generally arranged and why?
13. List the steps in the accounting cycle.

Exercises

EXERCISE 2–1 (LO1) Accounts

Below is a list of various accounts:

a.	b.				
		Unearned consulting fees			Vehicles
		Prepaid insurance			Depreciation expense
		Office supplies			Interest income
		Notes receivable			Interest expense
		Insurance fee revenue			Furniture
		Unearned insurance fee revenue			Utilities payable
		Salary and benefits expense			Unearned rent revenue
		Small tools and supplies			Retained earnings
		Service fees earned			Salaries and benefits payable
		Service fees revenue			Compensation expense
		Notes payable			Interest earned
		Buildings			Meals and mileage expense
		Rent payable			Unearned service fees
		Common stock			Equipment

Required:

a. Identify each account as either an asset (A), liability (L), equity (E), revenue (R), or expense (E).

b. Identify whether the normal balance of each account is a debit (DR) or credit (CR).

EXERCISE 2–2 (LO1) Accounts

Required: Using the list from EXERCISE 2–1, identify if a debit or credit is needed to decrease the normal balance of each account.

EXERCISE 2–3 (LO2)

Required: Record the debit and credit for each of the following transactions (transaction 1 is done for you):

	Assets		Liabilities		Equity	
	Debit (increase)	*Credit* (decrease)	*Debit* (decrease)	*Credit* (increase)	*Debit* (decrease)	*Credit* (increase)
1. Purchased a $10,000 truck on credit.	10,000			10,000		
2. Borrowed $5,000 cash from the bank.						
3. Paid $2,000 of the bank loan in cash.						
4. Paid $600 in advance for a one-year insurance policy.						
5. Received $500 in advance from a renter for next month's rental of office space.						

EXERCISE 2–4 (LO2)

Required: Record the debit and credit in the appropriate account for each of the following transactions (transaction 1 is done for you):

	Debit	*Credit*
1. Issued common stock for cash.	Cash	Common stock
2. Purchased equipment on credit.		
3. Paid for a one-year insurance policy.		
4. Billed a customer for repairs completed today.		
5. Paid this month's rent.		
6. Collected the amount billed in transaction 4 above.		
7. Collected cash for repairs completed today.		
8. Paid for the equipment purchased in transaction 2 above.		
9. Signed a union contract.		
10. Collected cash for repairs to be made for customers next month.		
11. Transferred this month's portion of prepaid insurance that was used to Insurance Expense.		

EXERCISE 2–5 (LO2) Using T-accounts

Below are various transactions for the month of August, 2016, for BOLA Co. This is their first month of operations.

1. Issued common stock in exchange for $13,000 cash.
2. Received an invoice from the utilities company for electricity in the amount of $200.
3. Bank approved a loan and deposited $10,000 into the company's bank account.

4. Paid employee salaries in the amount of $2,000.
5. Received repair services worth $5,000 from a supplier in exchange for a note due in thirty days.
6. Completed $7,000 of service work for a customer on account.
7. Purchased $1,000 of equipment, paying cash.
8. Rent of $5,000 cash was paid for the current month's rent.
9. Made a payment of $1,500 cash as a loan payment regarding item (3). The payment covered $150 for interest expense and the balance of the cash payment was to reduce the loan balance owing.
10. Reimbursed $25 in cash to an employee for use of his personal vehicle for company business for a business trip earlier that day.
11. Received a cash of $5,000 regarding the service work for item (6).
12. Vehicle worth $30,000 purchased in exchange for $10,000 cash and $20,000 note due in six months.
13. Paid the full amount of the utilities invoice regarding item (2).
14. Purchased $3,000 of furniture on account.
15. Completed $2,000 of service work for a customer and collected cash.
16. Received a check in the amount of $2,000 from a customer for service work to be done in two months.
17. Purchased office supplies for $3,000 on account.
18. Completed a project for a customer and billed them $8,000 for the service work.
19. Purchased a laptop computer for $2,500 in exchange for a note payable.
20. September rent of $5,000 was paid two weeks in advance, on August 15.

Required: Create a separate T-account for each asset, liability, equity, revenue and expense account affected by the transactions above. Record the various transactions debits and credits into the applicable T-account (similar to the two T-accounts shown in Section 2.1, under the heading T-accounts, for Cash and Accounts payable). Calculate and record the ending balance for each T-account. (Hint: Include the reference to the transaction number for each item in the T-accounts, to make it easier to review later, if the accounts contain any errors.)

EXERCISE 2–6 (LO3) Preparing a Trial Balance

Required: Using the T-accounts prepared in EXERCISE 2–5, prepare an August 31, 2016, trial balance for the company based on the balances in the T-accounts.

EXERCISE 2–7 (LO3) Preparing Financial Statements

Required: Using the trial balance in EXERCISE 2–6, prepare the August 31, 2016, income statement, statement of stockholders' equity and the balance sheet for the company based on the balances in the T-accounts.

EXERCISE 2–8 (LO2)

Required: Post the following transactions to the appropriate accounts:

(1) Issued common stock for $5,000 cash (posted as an example).

(2) Paid $900 in advance for three months' rent, $300 for each month.

(3) Billed $1,500 to customers for repairs completed today.

(4) Purchased on credit $2,000 of supplies to be used next month.

(5) Borrowed $7,500 from the bank.

(6) Collected $500 for the amount billed in transaction (3).

(7) Received a $200 bill for electricity used to date (the bill will be paid next month).

(8) Repaid $2,500 of the bank loan.

(9) Used $800 of the supplies purchased in transaction (4).

(10) Paid $2,000 for the supplies purchased in transaction (4).

(11) Recorded the use of one month of the rent paid for in transaction (2).

Cash		Bank Loan		Common Stock		Repair Revenue	
(1) 5,000					(1) 5,000		

Accounts Receivable		Accounts Payable		Electricity Expense	

Prepaid Rent		Rent Expense	

Supplies		Supplies Expense	

EXERCISE 2–9 (LO3)

The following Trial Balance was prepared from the books of Cross Corporation at its year-end, December 31, 2015. After the company's bookkeeper left, the office staff was unable to balance the accounts or place them in their proper order. Individual account balances are correct, but debits may be incorrectly recorded as credits and vice-versa.

Account Title	*Account Balances*	
	Debits	*Credits*
Cash	$120,400	
Commissions earned	5,000	
Common stock		$170,000
Accounts payable	30,000	
Insurance expense	100	
Land		8,000
Building		120,000
Rent expense		1,000
Accounts receivable		26,000
Unused supplies	6,000	
Supplies expense		300
Loan payable		80,000
Salaries expense		3,000
Telephone expense	200	
Totals	$161,700	$408,300

Required: Prepare a corrected Trial Balance showing the accounts in proper order and balances in the correct column. List expenses in alphabetical order. Total the columns and ensure total debits equal total credits.

EXERCISE 2–10 (LO4)

Required: Prepare journal entries for each of the following transactions:

(a) Issued common stock for $3,000 cash.

(b) Purchased $2,000 of equipment on credit.

(c) Paid $400 cash for this month's rent.

(d) Purchased on credit $4,000 of supplies to be used next month.

(e) Billed $2,500 to customers for repairs made to date.

(f) Paid cash for one-half of the amount owing in transaction (d).

(g) Collected $500 of the amount billed in transaction (e).

(h) Sold one-half of the equipment purchased in transaction 2 above for $1,000 in cash.

EXERCISE 2–11 (LO2,4)

Required: Prepare the journal entries and likely descriptions of the eleven transactions that were posted to the following General Ledger accounts for the month ended January 31, 2015. Do not include amounts. For instance, the first entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		XX	
	Common stock			XX
	(1) To record issuance of common stock			

Cash	
1	2
3	5
8	10
11	

Notes Payable	
	11

Common Stock	
	1

Repair Revenue	
	3
	4

Accounts Receivable	
4	

Accounts Payable	
10	2
	6
	7

Electricity Expense	
9	

Prepaid Expense	
5	9

Rent Expense	
7	

Unused Supplies	
2	8

Supplies Expense	
6	

EXERCISE 2–12 (LO2,3,4)

The following journal entries were prepared for Elgert Corporation for its first month of operation, January 2015.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 1	Cash		10,000	
	Common stock			10,000
	To record the issuance of common stock.			
5	Rent expense		200	
	Cash			200
	To record the payment of rent for the month.			
9	Unused supplies		4,000	
	Cash			4,000
	To record the purchase of supplies.			
11	Cash		1,300	
	Service revenue			1,300
	To record service revenue earned.			
28	Truck operation expense		450	
	Accounts payable			450
	To record truck repairs.			
30	Salaries expense		1,800	
	Cash			1,800
	To record payment of salaries for the month.			
31	Accounts receivable		1,600	
	Service revenue			1,600
	To record service revenue earned during the month.			
31	Supplies expense		200	
	Unused supplies			200
	To record supplies used during the month.			

Required:

a. Prepare necessary General Ledger T-accounts and post the transactions.

b. Prepare a Trial Balance at January 31, 2015.

c. Prepare an Income Statement and Statement of Stockholders' Equity for the month ended January 31, 2015 and a Balance Sheet at January 31, 2015.

EXERCISE 2–13 (LO4) Correcting Errors in Journal Entries

Below are transactions that contain errors in the journal entry.

1. Received an invoice from a supplier for advertising in the amount of $150.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Advertising expense		1,500	
	Cash			1,500

2. Paid employee salaries in the amount of $2,200.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		2,200	
	Salaries expense			2,200

3. Received repair services worth $1,500 from a supplier in exchange for a note due in sixty days.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid repairs		1,500	
	Note payable			1,500

4. Received $5,000 from a customer for work to be completed the following month.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts receivable		5,000	
	Revenue			5,000

5. Rent of $5,000 cash was paid for the current month's rent.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		500	
	Rent expense			500

6. Received a check in the amount of $4,000 from a customer for service work to be started in three months.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		4,000	
	Revenue			4,000

7. Completed a project for a customer and billed them $8,000 for the service work.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts payable		8,000	
	Revenue			8,000

8. Rent of $10,000 for the next six months was paid in advance.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Rent expense		10,000	
	Cash			10,000

Required: Record the correcting journal entries. (Hint: One method is to reverse the incorrect entry and record the correct entry and a second method is to record the correcting amounts to the applicable accounts only.)

Problems

PROBLEM 2–1 (LO3)

The following account balances are taken from the records of Fox Creek Service Limited at October 31, 2015 after its first year of operation:

Accounts payable	$9,000	Insurance expense	$ 500
Accounts receivable	6,000	Repair revenue	19,000
Advertising expense	2,200	Supplies expense	800
Notes payable	5,000	Telephone expense	250
Cash	1,000	Truck	9,000
Common stock	2,000	Truck operation	
Commissions expense	4,500	Expense	1,250
Equipment	7,000	Wages expense	4,000
		Wages payable	1,500

Required:

1. Prepare a Trial Balance at October 31, 2015.
2. Prepare an Income Statement and Statement of Stockholders' Equity for the year ended October 31, 2015.
3. Prepare a Balance Sheet at October 31, 2015.

PROBLEM 2–2 (LO1,2,3,4)

The following ledger accounts were prepared for Davidson Tool Rentals Corporation during the first month of operation ending May 31, 2015. No journal entries were prepared in support of the amounts recorded in the ledger accounts.

Cash			101
May 1	5,000	May 11	1,000
6	2,000	16	500
10	1,500	20	300
15	1,200	22	600
21	800	28	400
		29	3,500

Accounts Receivable			110
May 5	3,000	May 10	1,500
18	2,500	15	1,200

Prepaid Advertising			160
May 16	500	May 31	250

Unused Supplies			173
May 20	300	May 30	100

Equipment			183
May 11	2,000	May 21	800

Accounts Payable			210
May 22	600	May 11	1,000
		23	150
		24	1,100

Common Stock			320
		May 1	5,000

Service Revenue			470
		May 5	3,000
		6	2,000
		18	2,500

Advertising Expense			610
May 31	250		

Commissions Expense			615
May 24	1,100		

Rent Expense			654
May 28	400		

Salaries Expense			656
May 29	3,500		

Supplies Expense			668
May 30	100		

Telephone Expense			669
May 23	150		

Required:

1. Reconstruct the transactions that occurred during the month and prepare journal entries to record these transactions, including appropriate descriptions. Include accounts numbers (Reference) using the Chart of Accounts provided. Calculate the balance in each account.

2. Total the transactions in each T-account above. Prepare a Trial Balance in proper order (list assets, liabilities, equity, revenue, then expenses) at May 31, 2015.

PROBLEM 2–3 (LO1,2,4)

The following balances appeared in the General Ledger of Fenton Table Rentals Corporation at April 1, 2015.

Cash	$1,400	Accounts payable	$2,000
Accounts receivable	3,600	Common stock	4,350
Prepaid rent	1,000		
Unused supplies	350		

The following transactions occurred during April:

(a) Collected $2,000 cash owed by a customer.

(b) Billed $3,000 to customers for tables rented to date.

(c) Paid the following expenses: advertising, $300; salaries, $2,000; telephone, $100.

(d) Paid half of the accounts payable owing at April 1.

(e) Received a $500 bill for April truck repair expenses.

(f) Collected $2,500 owed by a customer.

(g) Billed $1,500 to customers for tables rented to date.

(h) Transferred $500 of prepaid rent to rent expense.

(i) Counted $200 of supplies on hand at April 30; recorded the amount used as an expense.

Required: Prepare journal entries to record the April transactions.

PROBLEM 2–4 (LO1,2,4)

The following transactions occurred in Thorn Accounting Services Inc. during August 2015, its first month of operation.

Aug. 1	Issued common stock for $3,000 cash.
1	Borrowed $10,000 cash from the bank.
1	Paid $8,000 cash for a used truck.
4	Paid $600 for a one-year truck insurance policy effective August 1.
5	Collected $2,000 fees in cash from a client for work performed today (recorded as Fees Earned).
7	Billed $5,000 fees to clients for services performed to date (recorded as Fees Earned).
9	Paid $250 for supplies used to date.
12	Purchased $500 of supplies on credit (recorded as Unused Supplies).
15	Collected $1,000 of the amount billed on August 7.
16	Paid $200 for advertising in The News during the first two weeks of August.
20	Paid half of the amount owing for the supplies purchased on August 12.
25	Paid cash for the following expenses: rent for August, $350; salaries, $2,150; telephone, $50; truck repairs, $250.
28	Called clients for payment of the balance owing from August 7.
29	Billed $6,000 of fees to clients for services performed to date (recorded as Fees Earned).
31	Transferred the amount of August's truck insurance ($50) to Insurance Expense.
31	Counted $100 of supplies still on hand (recorded the amount used as Supplies Expense).

Required: Prepare journal entries to record the August transactions.

PROBLEM 2–5 (LO4) Challenge Question – Errors in the Trial Balance

Below is the trial balance for Cushio Corp. which contains a number of errors:

Cushio Corp.
Trial Balance
At August 31, 2016

	Incorrect	
	Debit	Credit
Cash	$102,000	
Accounts receivable	59,730	
Prepaid expenses	2,000	
Office supplies inventory	5,500	
Equipment	115,000	
Accounts payable		$ 74,500
Unearned revenue		50,000
Common stock		25,000
Retained earnings		50,500
Revenue		245,000
Repairs expense	1,000	
Rent expense	25,000	
Advertising expense	24,500	
Salaries expense	115,000	
	$449,730	$445,000

The following errors were discovered:

1. Cushio collected $5,000 from a customer and posted a debit to Cash but did not post a credit entry to accounts receivable.
2. Cushio completed service work for a customer for $5,000 and debited accounts receivable but credited unearned revenue.
3. Cushio received cash of $583 from a customer as payment on account and debited cash for $583, but incorrectly credited accounts receivable for $853.
4. Cushio did not post an invoice of $500 received for repairs.
5. Cushio purchased equipment for $5,000 on account and posted the transaction as a debit to accounts payable and a credit to equipment.
6. Cushio purchased advertising services for cash of $6,000 that will be published in the newspapers over the next six months. This transaction was posted as a debit to advertising expense and a credit to cash for $6,000.

Required: Prepare a corrected trial balance. (Hint: Using T-accounts would be helpful.)

PROBLEM 2–6 (LO4) Challenge Question – Transactions, Trial Balance, and Financial Statements

Stellar Services Ltd. is an engineering firm that provides electrical engineering consulting services to various clients. Below are the account balances in its General Ledger as at December 31, 2015 which is its first month of operations. All accounts have normal balances as explained in the text.

Stellar Services Ltd.
Trial Balance
At December 31, 2015

Cash	$150,000
Accounts receivable	85,000
Office supplies	7,000
Prepaid expenses	–
Office equipment	–
Furniture	15,000
Equipment	45,000
Vehicle	19,000
Building/warehouse	–
Land	–
Accounts payable	115,000
Unearned service revenue	–
Notes payable	20,000
Common stock	108,000
Retained earnings	90,000
Service revenue	25,000
Salaries expense	32,000
Utilities expense	4,500
Repairs expense	500

Listed below are activities for Stellar Services Ltd. for the month of January, 2016:

a. Stellar ordered $3,500 in new software from a software supplier. It will be paid when it is ready to install in three weeks.

b. Paid $12,000 for a two-year insurance policy to begin February 1, 2016.

c. Paid one half of the outstanding accounts payable.

d. Hired a new employee who will start up February 1, 2016. His salary will be $2,500 every two weeks.

e. Received cash of $200,000 from a client for a $1,000,000 consulting contract. Work will commence in April.

f. Booked a conference room at a hotel for a presentation to potential customers scheduled for February 15. The $600 rental fee will be paid February 1.

g. Met with a client's lawyer about a fire that destroyed a portion of the client's building. The client is planning to sue Stellar for $300,000 based on some previous consulting services Stellar provided to the client.

h. Completed four electrical inspections today on credit for $3,000 each.

i. Collected from two of the credit customers from item h.

j. Received $20,000 from a client in partial payment for services to be provided next year.

k. Borrowed $150,000 from their bank by signing a note payable due on August 31, 2017.

l. John Stellar invested $30,000 cash and engineering equipment with a fair value of $10,000 in exchange for common stock.

m. Stellar rented some additional office space and paid $18,000 for the next six month's rent.

n. Purchased land and a small warehouse for $50,000 cash and a long-term note payable for the balance. The land was valued at $250,000 and the warehouse at $60,000.

o. Signed an agreement with a supplier for equipment rental for a special project to begin on February 23, 2016. A deposit for $300 is to be paid on February 1.

p. Completed $30,000 of services for a client which is payable in 30 days.

q. Purchased $8,000 of equipment for $5,000 cash and a trade-in of some old equipment that originally was recorded at $3,000.

r. Paid $1,000 in cash dividends.

s. Refunded the client $2,000 due to a complaint about the consulting services provided in item i.

t. Paid salaries of $35,000.

u. Received a bill for water and electricity in the amount of $1,800 for January, which will be paid on February 15.

v. Purchased some office equipment for $5,000 and office supplies for $2,000 on account.

w. Placed an order with a supplier for $10,000 of drafting supplies to be delivered February 10. This must be paid by February 25.

Required:

1. Prepare all required journal entries for January.
2. Prepare the income statement, the statement of stockholders' equity and the balance sheet as at January 31, 2016. (Hint: Using T-accounts would be helpful.)

Chapter 3

Financial Accounting and Adjusting Entries

Chapters 1 and 2 described the recording and reporting of economic transactions in detail. However, the account balances used to prepare the financial statements in these previous chapters did not necessarily reflect correct amounts. Chapter 3 introduces the concept of adjusting entries and how these satisfy the matching principle, ensuring revenues and expenses are reported in the correct accounting period. The preparation of an adjusted trial balance is discussed, as well as its use in completing financial statements. At the end of the accounting period, after financial statements have been prepared, it is necessary to close temporary accounts to retained earnings. This process is introduced in this chapter, as is the preparation of a post-closing trial balance. The accounting cycle, the steps performed each accounting period that result in financial statements, is also reviewed.

Chapter 3 Learning Objectives

LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

LO2 – Explain the use of and prepare the adjusting entries required for prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

LO3 – Prepare an adjusted trial balance and explain its use.

LO4 – Use an adjusted trial balance to prepare financial statements.

LO5 – Identify and explain the steps in the accounting cycle.

LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

Concept Self-Check

Use the following as a self-check while working through Chapter 3.

1. What is the GAAP principle of timeliness?
2. What is the GAAP principle of matching?
3. What is the GAAP principle of revenue recognition?
4. What are adjusting entries and when are they journalized?

5. What are the four types of adjustments?
6. Why is an adjusted trial balance prepared?
7. How is the unadjusted trial balance different from the adjusted trial balance?
8. What are the four closing entries and why are they journalized?
9. Why is the Dividends account not closed to the income summary?
10. When is a post-closing trial balance prepared?
11. How is a post-closing trial balance different from an adjusted trial balance?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

3.1 The Operating Cycle

LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

Financial transactions occur continuously during an accounting period as part of a sequence of operating activities. For Big Dog Carworks Corp., this sequence of operating activities takes the following form:

1. Operations begin with some cash on hand.
2. Cash is used to purchase supplies and to pay expenses.
3. Revenue is earned as repair services are completed for customers.
4. Cash is collected from customers.

This cash-to-cash sequence of transactions is commonly referred to as an **operating cycle** and is illustrated in Figure 3.1.

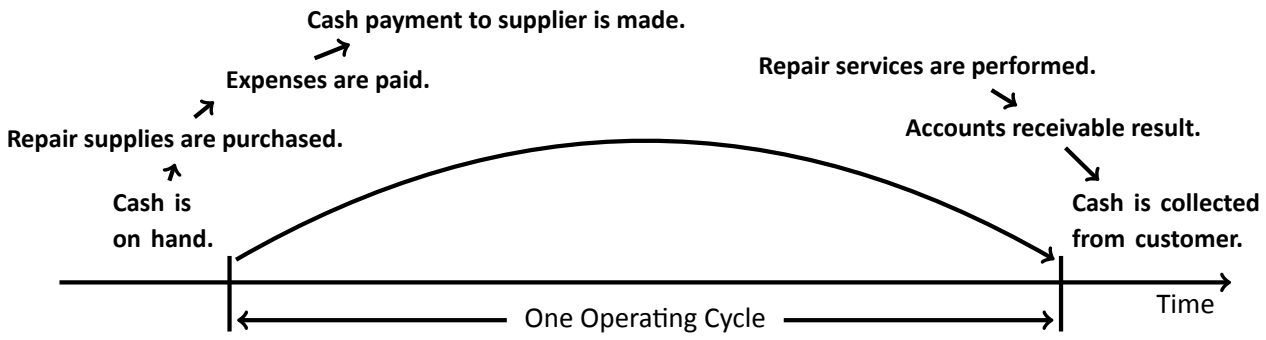


Figure 3.1: One Operating Cycle

Depending on the type of business, an operating cycle can vary in duration from short, such as one week (e.g., a grocery store) to much longer, such as one year (e.g., a car dealership). Therefore, an annual accounting period could involve multiple operating cycles as shown in Figure 3.2.

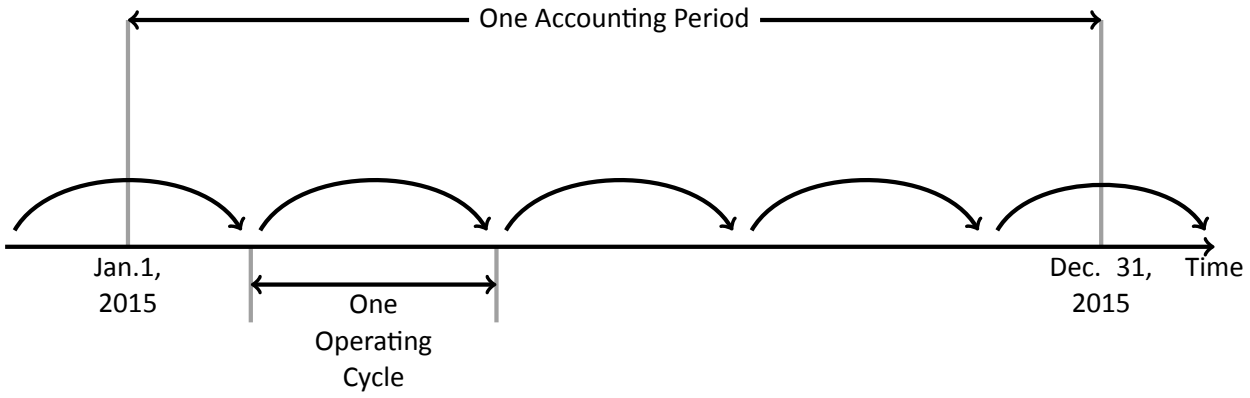


Figure 3.2: Operating Cycles Within an Annual Accounting Period

Notice that not all of the operating cycles in Figure 3.2 are completed within the accounting period. Since financial statements are prepared at specific time intervals to meet the GAAP requirement of timeliness, it is necessary to consider how to record and report transactions related to the accounting period's incomplete operating cycles. Two GAAP requirements — recognition and matching — provide guidance in this area, and are the topic of the next sections.

Recognition Principle in More Detail

The two basic accounting principles that determine when revenues and expenses are recorded under accrual basis accounting are the **revenue recognition principle** and the **expense recognition principle** (also called the matching principle).

Revenue Recognition Illustrated

Revenue recognition is the process of recording revenue in the accounting period in which it was earned; this is not necessarily when cash is received. Most corporations assume that revenue has been earned at an objectively-determined point in the accounting cycle. For instance, it is often convenient to recognize revenue at the point when a sales invoice has been sent to a customer and the related goods have been received or services performed. This point can occur before receipt of cash from a customer, creating an asset called *Accounts Receivable* and resulting in the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		XX	
	Revenue R+ SE+			XX
	To record revenue earned on account.			

When cash payment is later received, the asset *Accounts Receivable* is exchanged for the asset *Cash* and the following entry is made:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		XX	
	Accounts Receivable (A)			XX
	To record cash received from credit customer.			

Revenue is recognized in the first entry (the credit to revenue), prior to the receipt of cash. The second entry has no effect on revenue.

When cash is received at the same time that revenue is recognized, the following entry is made:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		XX	
	Revenue R+ SE+			XX
	To record cash received from customer.			

When a cash deposit or advance payment is obtained ***before*** revenue is earned, a liability called Unearned Revenue is recorded as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		XX	
	Unearned Revenue L+			XX
	To record cash received from customer for work to be done in the future.			

Revenue is ***not*** recognized until the services have been performed. At that time, the following entry is made:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Unearned Revenue (L)		XX	
	Revenue R+ SE+			XX
	To record the earned portion of Unearned Revenue.			

The preceding entry reduces the unearned revenue account by the amount of revenue earned.

The matching of revenue to a particular time period, regardless of when cash is received, is an example of *accrual accounting*. **Accrual accounting** is the process of recognizing revenues when earned and expenses when incurred regardless of when cash is exchanged; it forms the basis of GAAP. Recognition of expenses is discussed in the next section.

Expense Recognition Illustrated

In a business, costs are incurred continuously. To review, a cost is recorded as an *asset* if it will be incurred in producing revenue in future accounting periods. A cost is recorded as an *expense* if it will be used or consumed during the current period to earn revenue. This distinction between types of cost outlays is illustrated in Figure 3.3.

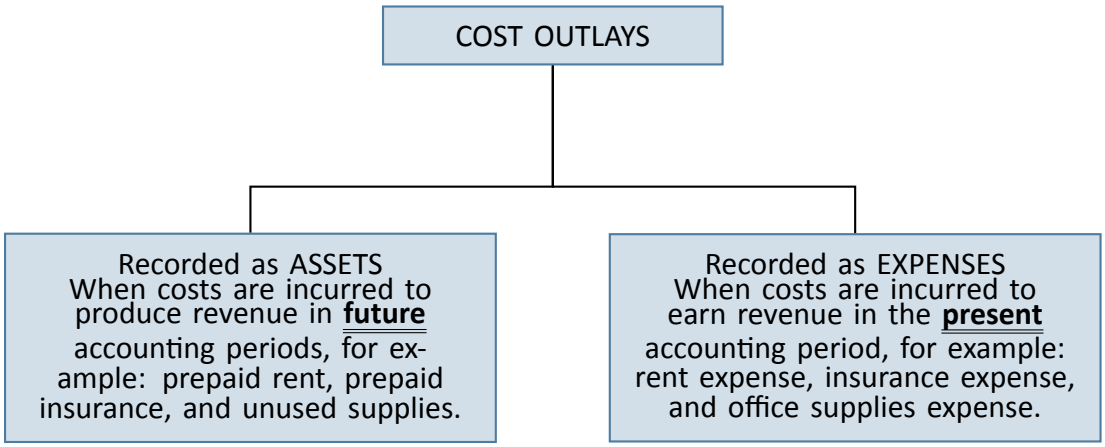


Figure 3.3: The Interrelationship Between Assets and Expense

In the previous section regarding revenue recognition, journal entries illustrated three scenarios where *revenue* was recognized before, at the same time as, and after cash was received. Similarly, expenses can be incurred before, at the same time as, or after cash is paid out. An example of when expenses are incurred before cash is paid occurs when the utilities expense for January is not paid until February. In this case, an *account payable* is created in January as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Utilities Expense E+ (SE)		XX	
	Accounts Payable (or Utilities Payable) L+			XX
	To record January utilities expense to be paid in February.			

The utilities expense is reported in the January income statement.

When the January utilities are paid in February, the following is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (or Utilities Payable) (L)		XX	
	Cash (A)			XX
	To record payment in February of utilities used in January.			

The preceding entry has no effect on expenses reported on the February income statement.

Expenses can also be recorded at the same time that cash is paid. For example, if salaries for January are paid on January 31, the entry on January 31 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries Expense E+ (SE)		XX	
	Cash (A)			XX
	To record payment of January salaries.			

As a result of this entry, salaries expense is reported on the January income statement when cash is paid.

Finally, a cash payment can be made ***before*** the expense is incurred, such as insurance paid in advance. A prepayment of insurance creates an asset *Prepaid Insurance* and is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid Insurance A+		XX	
	Cash (A)			XX
	To record payment of insurance in advance.			

As the prepaid insurance is used, it is appropriate to report an expense on the income statement by recording the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Insurance Expense E+ (SE)		XX	
	Prepaid Insurance (A)			XX
	To record the use of Prepaid Insurance.			

The preceding examples illustrate how to *match* expenses to the appropriate accounting period. The **matching principle** requires that expenses be reported in the same period as the revenues they helped generate. That is, expenses are reported on the income statement: a) when related revenue is recognized, or b) during the appropriate time period, regardless of when cash is paid.

To ensure the recognition and matching of revenues and expenses to the correct accounting period, account balances must be reviewed and adjusted prior to the preparation of financial statements. This is the topic of the next section.

3.2 Adjusting Entries

LO2 – Explain the use of and prepare the adjusting entries required for deferred expenses, deferred revenues, accrued revenues, and accrued expenses.

At the end of an accounting period, before financial statements can be prepared, the accounts must be reviewed for potential adjustments. This review is done by using the *unadjusted trial balance*. The **unadjusted trial balance** is a trial balance where the accounts have not yet been adjusted. The trial balance of Big Dog Carworks Corp. at January 31 was prepared in Chapter 2 and appears in Figure 3.4 below. It is an unadjusted trial balance because the accounts have not yet been updated for adjustments. We will use this trial balance to illustrate how adjustments are identified and recorded.

Big Dog Carworks Corp.
Unadjusted Trial Balance
At January 31, 2015

Acct.	*Account*	*Debit*	*Credit*
101	Cash	$3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		$27,100	$27,100

Figure 3.4: Unadjusted Trial Balance of Big Dog Carworks Corp. at January 31, 2015

Adjustments are recorded with *adjusting entries*. The purpose of **adjusting entries** is to ensure both the balance sheet and the income statement faithfully represent the account balances for the accounting period. Adjusting entries help satisfy the matching principle. There are four types of adjusting entries as shown in Figure 3.5, each of which will be discussed in the following sections.

Adjust for deferred expenses[1]	Adjust for deferred revenues[2]	Adjust for accrued revenues[3]	Adjust for accrued expenses[4]

1. A **deferred expense** is an asset created when a payment has been made before the cost has been incurred.
2. A **deferred revenue** is a liability created when a payment has been received before the product or service has been provided.
3. An **accrued revenue** is a revenue that has been earned but has not been collected or recorded.
4. An **accrued expense** is an expense that has been incurred but has not yet been paid or recorded.

Figure 3.5: Four Types of Adjusting Entries

Adjusting Deferred Expense Accounts

A **deferred expense** is created when cash is paid in advance of an expense being recognized. The cash outflow creates an asset that will be expensed in the future as the asset is used up.

Refer to Figure 3.4 which shows an unadjusted balance in the asset account prepaid insurance of $2,400. Recall from Chapter 2 that Big Dog paid for a 12-month insurance policy that went into effect on January 1 (transaction 5).

The unadjusted trial balance shows the following balance in the Prepaid Insurance account:

Prepaid Insurance	
2,400	

The balance resulted when the journal entry below was recorded:

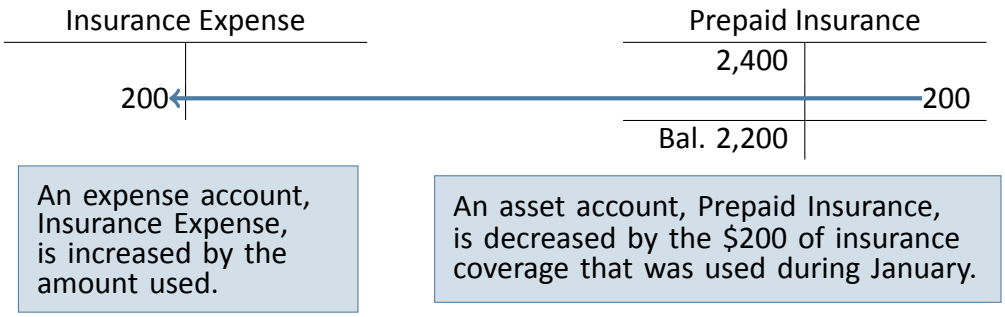
Prepaid Insurance	2,400	
Cash		2,400

At January 31, one month or $200 of the policy has expired (been used up) calculated as $2,400/12 months = $200.

The adjusting entry on January 31 to transfer $200 out of prepaid insurance and into insurance expense is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Insurance Expense E+ (SE)		200	
	Prepaid Insurance (A)			200
	To adjust for the use of one month of Prepaid Insurance.			

As shown below, the balance remaining in the Prepaid Insurance account is $2,200 after the adjusting entry is posted. The $2,200 balance represents the unexpired asset that will benefit future periods, namely, the 11 months from February to December, 2015. The $200 transferred out of prepaid insurance is posted as a debit to the Insurance Expense account to show how much insurance has been used during January.



If the adjustment was not recorded, assets on the balance sheet would be overstated by $200 and expenses would be understated by the same amount on the income statement.

Adjusting Deferred Expense Accounts – Plant and Equipment

Plant and equipment assets, also known as long-lived assets, are expected to help generate revenues over the current and future accounting periods because they are used to produce goods, supply services, or used for administrative purposes. The truck and equipment purchased by Big Dog Carworks Corp. in January are examples of plant and equipment assets that provide economic benefits for more than one accounting period. Because plant and equipment assets are useful for more than one accounting period, their cost must be spread over the time they are used. This is done to satisfy the matching principle. For example, the $100,000 cost of a machine expected to be used over five years is not expensed entirely in the year of purchase because this would cause expenses to be overstated in Year 1 and understated in Years 2, 3, 4, and 5. Therefore, the $100,000 cost must be spread over the asset's five-year life.

The process of allocating the cost of a plant and equipment asset over the period of time it is expected to be used is called **depreciation**. The amount of depreciation is calculated using the actual cost and an estimate of the asset's *useful life* and *residual value*. The **useful life** of a plant and equipment asset is an estimate of how long it will actually be used by the business regardless of how long the asset is expected to last. For example, a car might have a manufacturer's suggested life of 10 years but a business may have a policy of keeping cars for only 2 years. The useful life

for depreciation purposes would therefore be 2 years and not 10 years. The **residual value** is an estimate of what the plant and equipment asset will be sold for when it is no longer used by a business. Residual value can be zero. There are different formulas for calculating depreciation. We will use the **straight-line method of depreciation**:

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}}$$

The cost less estimated residual value is the total **depreciable cost** of the asset. The straight-line method allocates the depreciable cost equally over the asset's estimated useful life. When recording depreciation expense, our initial instinct is to debit depreciation expense and credit the Plant and Equipment asset account in the same way prepaids were adjusted with a debit to an expense and a credit to the Prepaid asset account. However, crediting the Plant and Equipment asset account is incorrect. Instead, a *contra account* called *accumulated depreciation* must be credited. A **contra account** is an account that is related to another account and typically has an opposite normal balance that is subtracted from the balance of its related account on the financial statements. **Accumulated depreciation** records the amount of the asset's cost that has been expensed since it was put into use. Accumulated depreciation has a normal credit balance that is subtracted from a Plant and Equipment asset account on the balance sheet.

Initially, the concept of crediting Accumulated Depreciation may be confusing because of how we learned to adjust prepaids (debit an expense and credit the prepaid). Remember that prepaids actually get used up and disappear over time. The Plant and Equipment asset account is not credited because, unlike a prepaid, a truck or building does not get used up and disappear. The goal in recording depreciation is to match the cost of the asset to the revenues it helped generate. For example, a $50,000 truck that is expected to be used by a business for 4 years will have its cost spread over 4 years. After 4 years, the asset will likely be sold (journal entries related to the sale of plant and equipment assets are discussed in Chapter 8).

The adjusting journal entry to record depreciation is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense E+ (SE)		XX	
	Accumulated Depreciation XA+ (A) . . .			XX
	To adjust for depreciation.			

Subtracting the accumulated depreciation account balance from the Plant and Equipment asset account balance equals the **carrying amount** or **net book value** of the plant and equipment asset that is reported on the balance sheet.

Let's work through two examples to demonstrate depreciation adjustments. Big Dog Carworks Corp.'s January 31, 2015 unadjusted trial balance showed the following two plant and equipment assets:

Big Dog Carworks Corp.
Unadjusted Trial Balance
At January 31, 2015

Acct.	*Account*	*Debit*	*Credit*
183	Equipment	3,000	
184	Truck	8,000	

The equipment was purchased for $3,000.

The Equipment general ledger account appears as follows:

Equipment	
3,000	

The balance resulted when this journal entry was recorded:

Equipment	3,000	
Cash		3,000

The equipment was recorded as a plant and equipment asset because it has an estimated useful life greater than 1 year. Assume its actual useful life is 10 years (120 months) and the equipment is estimated to be worth $0 at the end of its useful life (residual value of $0).

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}} = \frac{\$3{,}000 - \$0}{120 \text{ months}} = \$25/\text{month}$$

Note that depreciation is always rounded to the nearest whole dollar. This is because depreciation is based on estimates — an estimated residual value and an estimated useful life; it is not exact. The following adjusting journal entry is made on January 31:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Depreciation Expense, Equipment E+ (SE)		25	
	Accumulated Depreciation, Equipment XA+ (A)			25
	To adjust for one month of depreciation on the equipment.			

When the adjusting entry is posted, the accounts appear as follows:

Equipment	
3,000	

Accumulated Depreciation – Equipment	
	25

Depreciation Expense – Equipment	
25	

The Equipment account remains unchanged by the adjusting entry.

A contra account, Accumulated Depreciation, is increased by $25.

Depreciation Expense is increased by $25, the amount of the equipment's cost that has been allocated to expense.

For financial statement reporting, the asset and contra asset accounts are combined. The net book value of the equipment on the balance sheet is shown as $2,975 ($3,000 – $25).

BDCC also shows a truck for $8,000 on the January 31, 2015 unadjusted trial balance.

The Truck general ledger accounts appears as:

Truck	
8,000	

The journal entry to record the purchase of the truck was:

Truck	8,000	
Notes payable		5,000
Cash		3,000

Assume the truck has an estimated useful life of 80 months and a zero estimated residual value. At January 31, one month of the truck cost has expired since it was put into operation in January. Using the straight-line method, depreciation is calculated as:

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}} = \frac{\$8{,}000 - \$0}{80 \text{ months}} = \$100/\text{month}$$

The adjusting entry recorded on January 31 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Depreciation Expense, Truck E+ (SE)		100	
	Accumulated Depreciation, Truck XA+ (A)			100
	To adjust for one month of depreciation on the truck.			

When the adjusting entry is posted, the accounts appear as follows:

Truck	
8,000	

Accumulated Depreciation – Truck	
	100

Depreciation Expense – Truck	
100	

The Truck account remains unchanged by the adjusting entry.

A contra account, Accumulated Depreciation, is increased by $100.

Depreciation Expense is increased by $100, the amount of the truck's cost that has been allocated to expense.

For financial statement reporting, the asset and contra asset accounts are combined. The net book value of the truck on the balance sheet is shown as $7,900 ($8,000 – $100).

If depreciation adjustments are not recorded, assets on the balance sheet would be overstated. Additionally, expenses would be understated on the income statement causing net income to be overstated. If net income is overstated, retained earnings on the balance sheet would also be overstated.

It is important to note that land is a long-lived asset. However, it is ***not depreciated*** because it does not get used up over time. Therefore, land is often referred to as a non-depreciable asset.

Adjusting Deferred Revenue Accounts

On January 15, Big Dog received a $400 cash payment in advance of services being performed: $300 for January and $100 for February.

The unadjusted trial balance shows the following in the Unearned Repair Revenue account:

Unearned Repair Revenue	
	400

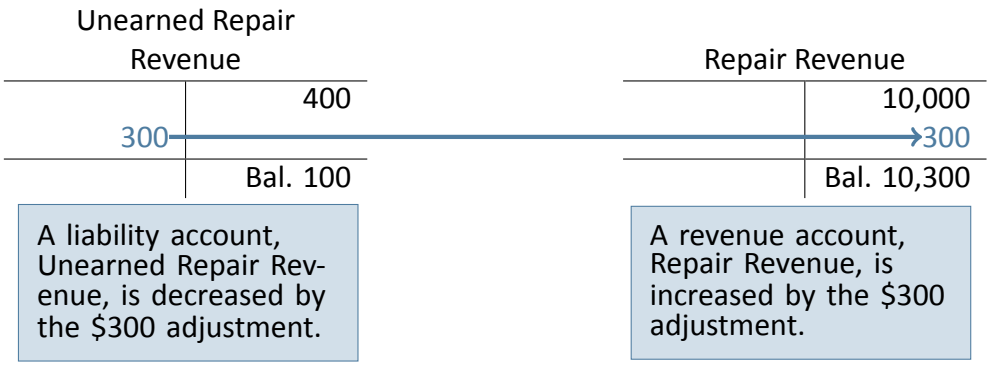
The receipt of the $400 advance payment was recorded as follows:

Cash	400	
Unearned Repair Rev.		400

This advance payment was originally recorded as unearned, since the cash was received ***before*** repair services were performed. At January 31, $300 of the $400 unearned amount has been earned. Therefore, $300 must be transferred from unearned repair revenue into repair revenue. The adjusting entry at January 31 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Unearned Repair Revenue (L)		300	
	Repair Revenue R+ SE+			300
	To adjust for repair revenue earned.			

After posting the adjustment, the $100 remaining balance in unearned repair revenue ($400 – $300) represents the amount at the end of January that will be earned in February.



If the adjustment was not recorded, unearned repair revenue would be overstated (too high) by $300 causing liabilities on the balance sheet to be overstated. Additionally, revenue would be understated (too low) by $300 on the income statement if the adjustment was not recorded.

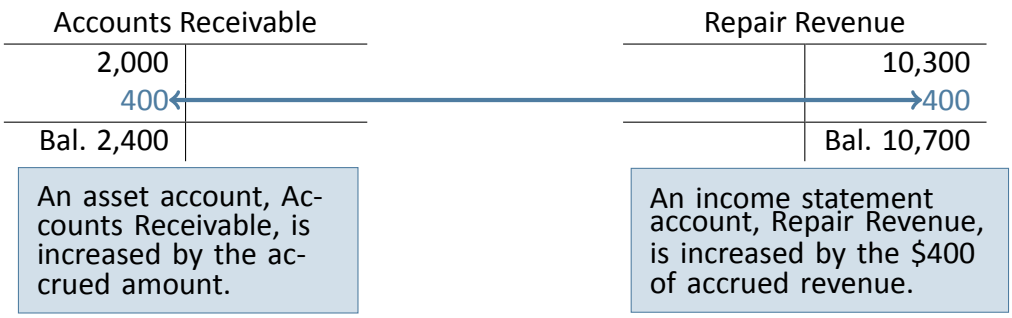
Adjusting Accrued Revenue Accounts

Accrued revenues are revenues that have been earned but not yet collected or recorded. For example, a bank has numerous notes receivable. Interest is earned on the notes receivable as time passes. At the end of an accounting period, there would be interest receivable where the interest has been earned but not collected or recorded. The adjusting entry for accrued revenues is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Receivable A+		XXX	
	Revenue R+ SE+			XXX
	To adjust for accrued revenue.			

For Big Dog Carworks Corp., assume that on January 31, $400 of repair work was completed for a client but it had not yet been collected or recorded. BDCC must record the following adjusting entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Accounts Receivable A+.		400	
	Repair Revenue R+ SE+			400
	To adjust for accrued revenue.			



If the adjustment was not recorded, assets on the balance sheet would be understated by $400 and revenues would be understated by the same amount on the income statement.

Adjusting Accrued Expense Accounts

Accrued expenses are expenses that have been incurred but not yet paid or recorded. For example, a utility bill received at the end of the accounting period is likely not payable for 2–3 weeks. Utilities for the period have been used but have not yet been paid or recorded. The adjusting entry for accrued expenses is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Expense E+ (SE)		XXX	
	Payable L+			XXX
	To adjust for accrued expense.			

Accruing Interest Expense

For Big Dog Carworks Corp., the January 31, 2015 unadjusted trial balance shows a $6,000 bank loan balance. Assume it is a 4%, 60-day bank loan[1]. It was dated January 3 which means that on January 31, 28 days of interest have accrued (January 31 less January 3 = 28 days) as shown in Figure 3.6.

[1]The maturity date is March 4, 2015 calculated as: January 31 less January 3 = 28 days + 28 days in February = 56 days + 4 days = March 4.

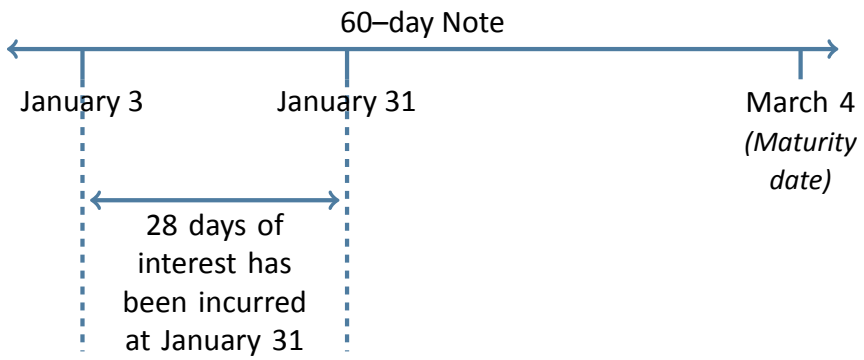


Figure 3.6: Interest Incurred During an Accounting Period

The formula for calculating interest when the term is expressed in days is:

$$\text{Interest} = \text{Principal} \times \text{Interest rate} \times \frac{\text{Elapsed time in days}}{360}$$

The interest expense accrued at January 31 is calculated as:

$$\text{Interest} = \$6{,}000 \times 0.04 \times \frac{28}{360} = \$19 \text{ (rounded to nearest whole dollar)}$$

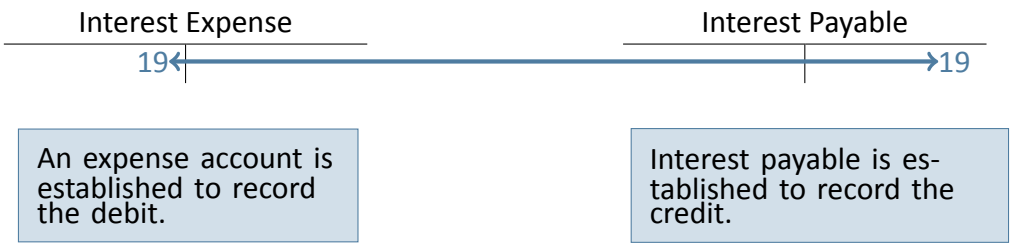
Interest is normally expressed as an annual rate. Therefore, the 28 days must be divided by 360 days assuming a 360-day year. Normally all interest calculations in this textbook are rounded to two decimal places. However, for simplicity of demonstrations in this chapter, we will round to the nearest whole dollar.

BDCC's adjusting entry on January 31 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Interest Expense E+ (SE)		19	
	Interest Payable L+			19
	To adjust for accrued interest; $6,000 X 4% X 28/360 = $18.67 (rounded to $19 for illustrative purposes in this chapter).			

This adjusting entry enables BDCC to include the interest expense on the January income statement even though the payment has not yet been made. The entry creates a payable that will be reported as a liability on the balance sheet at January 31.

When the adjusting entry is posted, the accounts appear as:



On February 28, interest will again be accrued and recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb 28	Interest Expense E+ (SE)		19	
	Interest Payable L+			19
	To adjust for accrued interest; $6,000 X 4% X 28/360 = $18.67 (rounded to $19 for illustrative purposes in this chapter).			

On March 4 when the bank loan matures, Big Dog will pay the interest and principal and record the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar 4	Interest Expense E+ (SE)		3	
	Interest Payable L+		38	
	Notes Payable L+		6,000	
	Cash (A)			6041
	To record payment of the bank loan and interest; interest expense for March is $6,000 X 4% X 4/360 = $2.67 (rounded to $3 for illustrative purposes in this chapter).			

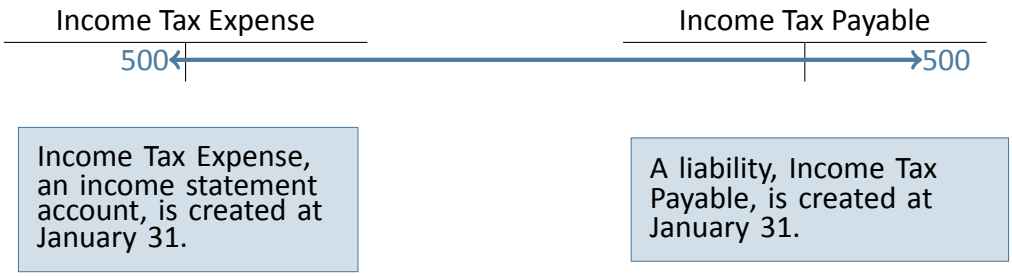
The $38 debit to interest payable will cause the Interest Payable account to go to zero since the liability no longer exists once the cash is paid. Notice that the total interest expense recorded on the bank loan was $41 — $19 expensed in January, $19 expensed in February, and $3 expensed in March. The interest expense was matched to the life of the bank loan.

Accruing Income Tax Expense

Another adjustment that is required for Big Dog Carworks Corp. involves the recording of corporate income taxes. In most jurisdictions, a corporation is taxed as an entity separate from its shareholders. For simplicity, assume BDCC's income tax due for January 2015 is $500. The adjusting entry is at January 31:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Income Tax Expense E+ (SE)		500	
	Income Tax Payable L+.			500
	To adjust for January accrued income tax.			

When the adjusting entry is posted, the accounts appear as follows:



The above adjusting entry enables the company to match the income tax expense accrued in January to the income earned during the same month.

The four types of adjustments discussed in the previous paragraphs are summarized in Figure 3.7.

Each of the four types of adjusting entries either debits an expense or credits a revenue.

DEFERRED EXPENSE:
If cash was paid before the cost was incurred and the cost has now been incurred, the adjusting entry is:

Expense +E (SE)	XX	
Asset (A)		XX

DEFERRED REVENUE:
If cash was received before being earned and the cash has now been earned, the adjusting entry is:

Unearned Revenue (L)	XX	
Revenue R+ SE+		XX

ACCRUED EXPENSE:
If an expense has been incurred but has yet to be paid, the adjusting entry is:

Expense +E (SE)	XX	
Payable L+		XX

ACCRUED REVENUE:
If revenue has been earned but the cash has yet to be received, the adjusting entry is:

Receivable A+	XX	
Revenue R+ SE+		XX

1. A **deferred expense** is an asset created when a payment has been made before the cost has been incurred.
2. A **deferred revenue** is a liability created when a payment has been received before the product or service has been provided.
3. An **accrued revenue** is a revenue that has been earned but has not been collected or recorded.
4. An **accrued expense** is an expense that has been incurred but has not yet been paid or recorded.

Figure 3.7: Summary of the Four Types of Adjusting Entries

3.3 The Adjusted Trial Balance

LO3 – Prepare an adjusted trial balance and explain its use.

In the last section, adjusting entries were recorded and posted. As a result, some account balances reported on the January 31, 2015 unadjusted trial balance in Figure 2 have changed. Recall that an unadjusted trial balance reports account balances *before* adjusting entries have been recorded and posted. An **adjusted trial balance** reports account balances *after* adjusting entries have been recorded and posted. Figure 3.8 shows the adjusted trial balance for BDCC at January 31, 2015.

In Chapters 1 and 2, the preparation of financial statements was demonstrated using BDCC's *unadjusted* trial balance. We now know that an adjusted trial balance must be used to prepare financial statements.

Big Dog Carworks Corp.
Adjusted Trial Balance
At January 31, 2015

	Account Balance	
Account	*Debit*	*Credit*
Cash	$3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accumulated depreciation – equipment		$ 25
Truck	8,000	
Accumulated depreciation – truck		100
Accounts payable		700
Income tax payable		500
Interest payable		19
Unearned repair revenue		100
Notes payable		6,000
Common stock		10,000
Dividends	200	
Repair revenue		10,700
Depreciation expense – equipment	25	
Depreciation expense – truck	100	
Rent expense	1,600	
Insurance expense	200	
Interest expense	19	
Salaries expense	3,500	
Supplies expense	2,000	
Truck operation expense	700	
Income tax expense	500	
Total debits and credits	$28,144	$28,144

Figure 3.8: BDCC's January 31, 2015 Adjusted Trial Balance

3.4 Using the Adjusted Trial Balance to Prepare Financial Statements

LO4 – Use an adjusted trial balance to prepare financial statements.

In the last section, we saw that the adjusted trial balance is prepared after journalizing and posting the adjusting entries. This section shows how financial statements are prepared using the adjusted trial balance.

Big Dog Carworks Corp.
Adjusted Trial Balance
January 31, 2015

Account	*Account Balance* *Debit*	*Credit*
Cash	$ 3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accumulated depreciation – equipment		$ 25
Truck	8,000	
Accumulated depreciation – truck		100
Accounts payable		700
Unearned revenue		100
Interest payable		19
Income tax payable		500
Notes payable		6,000
Common stock		10,000
Dividends	200	
Repair revenue		10,700
Depreciation expense – equipment	25	
Depreciation expense – truck	100	
Rent expense	1,600	
Insurance expense	200	
Interest expense	19	
Salaries expense	3,500	
Supplies expense	2,000	
Truck operation expense	700	
Income tax expense	500	
Total debits and credits	$28,144	$28,144

Asset accounts, liability accounts, and the equity accounts from the statement of stockholders' equity are used to prepare the balance sheet.

Common stock, dividends, and the net income/loss from the income statement are used to prepare the statement of stockholders' equity.

Revenue and expense accounts are used to prepare the income statement.

Figure 3.9: BDCC's January 31, 2015 Adjusted Trial Balance and Links Among Financial Statements

The income statement is prepared first, followed by the statement of stockholder's equity as shown below.

Big Dog Carworks Corp.
Adjusted Trial Balance
At January 31, 2015

Account	*Debit*	*Credit*
Cash	$ 3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accum. dep. – equipment		$ 25
Truck	8,000	
Accum. dep. – truck		100
Accounts payable		700
Unearned revenue		100
Interest payable		19
Income tax payable		500
Notes payable		6,000
Common stock		10,000
Dividends	200	
Repair revenue		10,700
Dep. expense – equipment	25	
Dep. expense – truck	100	
Rent expense	1,600	
Insurance expense	200	
Interest expense	19	
Salaries expense	3,500	
Supplies expense	2,000	
Truck operation expense	700	
Income tax expense	500	
	$28,144	$28,144

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2015

Revenues		
Repair revenue		$10,700
Expenses		
Salaries expense	$ 3,500	
Supplies expense	2,000	
Rent expense	1,600	
Truck operation expense	700	
Insurance expense	200	
Dep. expense – truck	100	
Dep. expense – equipment	25	
Interest expense	19	
Income tax expense	500	
Total expenses		8,644
Net income		$2,056

Net Income is transferred to the Statement of Stockholders' Equity as part of Retained Earnings.

Big Dog Carworks Corp.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common stock	*Retained earnings*	*Total equity*
Balance at beginning of period	$ -0-	$ -0-	$ -0-
Stock issued	10,000		10,000
Dividends		(200)	(200)
Net income		2,056	2,056
Balance at end of period	$10,000	$1,856	$11,856

Common Stock and Dividends are transferred to the Statement of Stockholders' Equity. Dividends is part of Retained Earnings because it is a distribution of Net Income.

The balance sheet can be prepared once the statement of stockholder's equity is complete.

These accounts are used to prepare the Balance Sheet.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2015

Account	*Debit*	*Credit*
Cash	$ 3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accum. dep. – equipment		$ 25
Truck	8,000	
Accum. dep. – truck		100
Accounts payable		700
Unearned revenue		100
Interest payable		19
Income tax payable		500
Notes payable		6,000
Common stock		10,000
Dividends	200	
Repair revenue		10,700
Dep. expense – equipment	25	
Dep. expense – truck	100	
Rent expense	1,600	
Insurance expense	200	
Interest expense	19	
Salaries expense	3,500	
Supplies expense	2,000	
Truck operation expense	700	
Income tax expense	500	
	$28,144	$28,144

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2015

Assets		
Cash		$ 3,700
Accounts receivable		2,400
Prepaid insurance		2,200
Equipment	$3,000	
Less: Accum. dep.	25	2,975
Truck	$8,000	
Less: Accum. dep.	100	7,900
Total assets		$19,175
Liabilities		
Accounts payable		$ 700
Unearned revenue		100
Interest payable		19
Income tax payable		500
Notes payable		6,000
Total liabilities		$7,319
Equity		
Common stock	$10,000	
Retained earnings	1,856	
Total equity		11,856
Total liabilities and equity		$19,175

The Common Stock and Retained Earnings balances are transferred to the balance sheet from the statement of stockholders' equity.

Notice how accumulated depreciation is shown on the balance sheet.

3.5 The Accounting Cycle

LO5 – Identify and explain the steps in the accounting cycle.

The concept of the accounting cycle was introduced in Chapter 2. The accounting cycle consists of the steps followed each accounting period to prepare financial statements. These eight steps are:

Step 1: Transactions are analyzed and recorded in the general journal

Step 2: The journal entries in the general journal are posted to accounts in the general ledger

Step 3: An unadjusted trial balance is prepared to ensure total debits equal total credits

Step 4: The unadjusted account balances are analyzed and adjusting entries are journalized in the general journal and posted to the general ledger

Step 5: An adjusted trial balance is prepared to prove the equality of debits and credits

Step 6: The adjusted trial balance is used to prepare financial statements

Step 7: Closing entries are journalized and posted

Step 8: Prepare a post-closing trial balance

Steps 1 through 6 were introduced in this and the preceding chapters. Steps 7 and 8 are discussed in the next section.

3.6 The Closing Process

LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

At the end of a fiscal year, after financial statements have been prepared, the revenue, expense, and dividend account balances must be zeroed so that they can begin to accumulate amounts belonging to the new fiscal year. To accomplish this, *closing entries* are journalized and posted. **Closing entries** transfer each revenue and expense account balance, as well as any balance in the Dividend account, into retained earnings. Revenues, expenses, and dividends are therefore referred to as **temporary accounts** because their balances are zeroed at the end of each accounting period. Balance sheet accounts, such as retained earnings, are **permanent accounts** because they have a continuing balance from one fiscal year to the next. The closing process transfers temporary account balances into a permanent account, namely retained earnings. The four entries in the closing process are detailed below.

Entry 1: Close the revenue accounts to the income summary account

A single compound closing entry is used to transfer revenue account balances to the *income summary account*. The **income summary** is a checkpoint: once all revenue and expense account balances are transferred/closed to the income summary, the balance in the Income Summary account must be equal to the net income/loss reported on the income statement. If not, the revenues and expenses were not closed correctly.

Entry 2: Close the expense accounts to the Income Summary account

The expense accounts are closed in one compound closing journal entry to the Income Summary account. All expense accounts with a debit balance are credited to bring them to zero. Their balances are transferred to the Income Summary account as an offsetting debit.

After entries 1 and 2 above are posted to the Income Summary account, the balance in the income summary must be compared to the net income/loss reported on the income statement. If the income summary balance does not match the net income/loss reported on the income statement, the revenues and/or expenses were not closed correctly.

Entry 3: Close the income summary to retained earnings

The Income Summary account is closed to the Retained Earnings account. This procedure transfers the balance in the income summary to retained earnings. Again, the amount closed from the income summary to retained earnings must always equal the net income/loss as reported on the income statement.

Note that the Dividend account is **not** closed to the Income Summary account because dividends is not an income statement account. The dividend account is closed in Entry 4.

Entry 4: Close dividends to retained earnings

The Dividend account is closed to the Retained Earnings account. This results in transferring the balance in dividends, a temporary account, to retained earnings, a permanent account.

The balance in the Income Summary account is transferred to retained earnings because the net income (or net loss) belongs to the stockholders. The closing entries for Big Dog Carworks Corp. are shown in Figure 3.10.

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Date 2015	Description	R	Debit	Credit
	Closing Entries			
Jan. 31	Repair Revenue		10700 -	
	Income Summary			10700 -
	To close the revenue account balance.			
	Income Summary		8644 -	
	Depreciation expense – equipment			25 -
	Depreciation expense – truck			100 -
	Income tax expense			500 -
	Insurance expense			200 -
	Interest expense			19 -
	Rent expense			1600 -
	Salaries expense			3500 -
	Supplies expense			2000 -
	Truck operation expense			700 -
	To close expense account balances.			
	Income Summary		2056 -	
	Retained earnings			2056 -
	To close income summary to retained earnings.			
	Retained Earnings		200 -	
	Dividends			200 -
	To close dividends to retained earnings.			

Figure 3.10: Closing Entries

Posting the Closing Entries to the General Ledger

When entries 1 and 2 are posted to the general ledger, the balances in all revenue and expense accounts are transferred to the Income Summary account. The transfer of these balances is shown in Figure 3.11. Notice that a zero balance results for each revenue and expense account after the closing entries are posted, and there is a $2,056 credit balance in the income summary. The income summary balance agrees to the net income reported on the income statement.

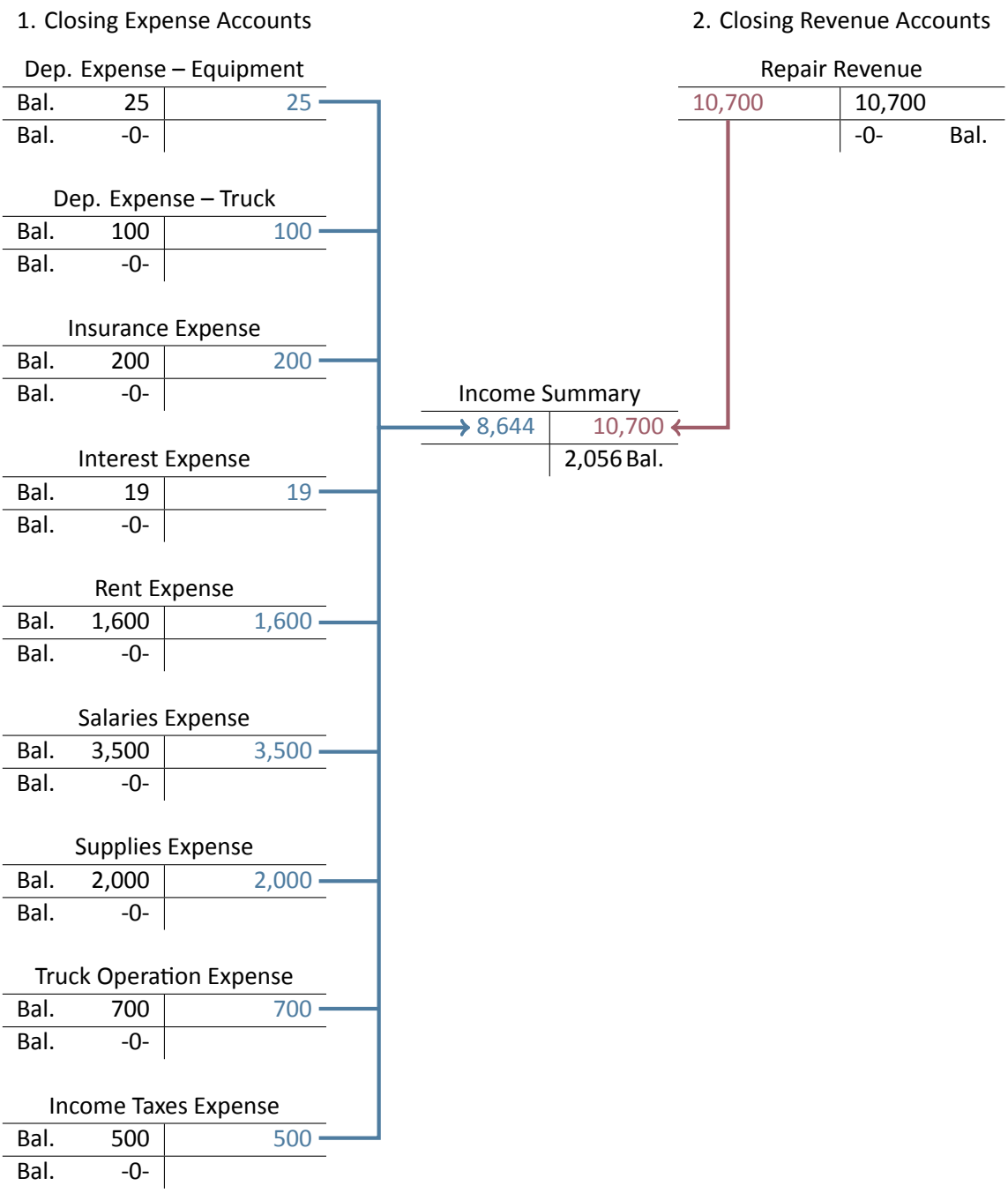


Figure 3.11: Closing Revenue and Expense Accounts

When the income summary is closed to retained earnings in the third closing entry, the $2,056 credit balance in the income summary account is transferred into retained earnings as shown in Figure 3.12. As a result, the income summary is left with a zero balance.

3. Closing the Income Summary Account

Figure 3.12: Closing the Income Summary Account

This example demonstrated closing entries when there was a net income. When there is a net loss, the Income Summary account will have a debit balance after revenues and expenses have been closed. To close the Income Summary account when there is a net loss, the following closing entry is required:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Retained Earnings		XX	
	Income Summary			XX
	To close the net loss, a debit balance in the income summary, to retained earnings.			

Finally, when dividends is closed to retained earnings in the fourth closing entry, the $200 debit balance in the Dividends account is transferred into retained earnings as shown in Figure 3.13. After the closing entry is posted, the Dividends account is left with a zero balance and retained earnings is left with a credit balance of $1,856. Notice that the $1,856 must agree to the retained earnings balance calculated on the statement of shareholders' equity.

4. Closing the Dividends Account

Figure 3.13: Closing the Dividends Account

The Post–Closing Trial Balance

A **post-closing trial balance** is prepared immediately following the posting of closing entries. The purpose is to ensure that the debits and credits in the general ledger are equal and that all temporary accounts have been closed. The post-closing trial balance for Big Dog Carworks Corp. appears below.

Big Dog Carworks Corp.
Post-Closing Trial Balance
January 31, 2015

Account	*Account Balance* *Debit*	*Credit*
Cash	$ 3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accumulated depreciation – equipment		$ 25
Truck	8,000	
Accumulated depreciation – truck		100
Accounts payable		700
Unearned revenue		100
Interest payable		19
Income tax payable		500
Notes payable		6,000
Common stock		10,000
Retained earnings		1,856
Total debits and credits	$19,300	$19,300

Only permanent accounts remain.

Note that only balance sheet accounts, the permanent accounts, have balances and are carried forward to the next accounting year. All temporary accounts begin the new fiscal year with a zero balance, so they can be used to accumulate amounts belonging to the new time period.

Summary of Chapter 3 Learning Objectives

LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

Financial statements must be prepared in a timely manner, at minimum, once per fiscal year. For statements to reflect activities accurately, revenues and expenses must be recognized and reported in the appropriate accounting period. In order to achieve this type of matching, adjusting entries need to be prepared.

LO2 – Explain the use of and prepare the adjusting entries required for deferred expenses, deferred revenues, accrued revenues, and accrued expenses.

Adjusting entries are prepared at the end of an accounting period. They allocate revenues and expenses to the appropriate accounting period regardless of when cash was received/paid. The four types of adjustments are:

Expense E+ (SE)	XX	
Asset (A)		XX
To adjust for deferred expense.		

Receivable A+	XX	
Revenue R+ SE+		XX
To adjust for accrued revenue.		

Unearned Revenue (L)	XX	
Revenue R+ SE+		XX
To adjust for deferred revenue.		

Expense E+ (SE)	XX	
Payable L+		XX
To adjust for accrued expense.		

LO3 – Prepare an adjusted trial balance and explain its use.

The adjusted trial balance is prepared using the account balances in the general ledger after adjusting entries have been posted. Debits must equal credits. The adjusted trial balance is used to prepare the financial statements.

LO4 – Use an adjusted trial balance to prepare financial statements.

Financial statements are prepared based on adjusted account balances.

LO5 – Identify and explain the steps in the accounting cycle.

The steps in the accounting cycle are followed each accounting period in the recording and reporting of financial transactions. The steps are:

1. Transactions are analyzed and recorded in the general journal.
2. The journal entries in the general journal are posted to accounts in the general ledger.
3. An unadjusted trial balance is prepared to ensure total debits equal total credits.
4. The unadjusted account balances are analyzed, and adjusting entries are journalized in the general journal and posted to the general ledger.
5. An adjusted trial balance is prepared to prove the equality of debits and credits.
6. The adjusted trial balance is used to prepare financial statements.
7. Closing entries are journalized and posted.
8. Prepare a post-closing trial balance.

LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

After the financial statements have been prepared, the temporary account balances (revenues, expenses, and dividends) are transferred to retained earnings, a permanent account, via closing entries. The result is that the temporary accounts will have a zero balance and will be ready to accumulate transactions for the next accounting period. The four closing entries are:

Revenue	XX	
Income Summary		XX
To close each revenue to the income summary.		

Income Summary	XX	
Expense		XX
To close each expense to the income summary.		

Income Summary	XX	
Retained Earnings		XX
To close a net income in income summary to retained earnings.		

OR

Retained Earnings	XX	
Income Summary		XX
To close a net loss in income summary to retained earnings.		

Retained Earnings	XX	
Dividends		XX
To close dividends to retained earnings.		

The post-closing trial balance is prepared after the closing entries have been posted to the general ledger. The post-closing trial balance will contain only permanent accounts because all the temporary accounts have been closed.

Discussion Questions

1. Explain the sequence of financial transactions that occur continuously during an accounting time period. What is this sequence of activities called?
2. Do you have to wait until the operating cycle is complete before you can measure income using the accrual basis of accounting?
3. What is the relationship between the matching concept and accrual accounting? Are revenues matched to expenses, or are expenses matched to revenues? Does it matter one way or the other?
4. What is the impact of the going concern concept on accrual accounting?
5. Identify the different categories of expenses.

6. What are adjusting entries and why are they required?
7. Why are asset accounts like Prepaid Insurance adjusted? How are they adjusted?
8. How are asset accounts like plant and equipment adjusted?
9. What is a *contra account* and why is it used?
10. How are liability accounts like Unearned Repair Revenue adjusted?
11. Explain the terms *deferrals* and *accruals*. Give examples of items that defer and accrue.
12. Why is an adjusted trial balance prepared?
13. How is the adjusted trial balance used to prepare financial statements?
14. List the eight steps in the accounting cycle.
15. Which steps in the accounting cycle occur continuously throughout the accounting period?
16. Which steps in the accounting cycle occur only at the end of the accounting period? Explain how they differ from the other steps.
17. Give examples of revenue, expense, asset, and liability adjustments.
18. In general, income statement accounts accumulate amounts for a time period not exceeding one year. Why is this done?
19. Identify which types of general ledger accounts are temporary and which are permanent.
20. What is the income summary account and what is its purpose?
21. What is a post-closing trial balance and why is it prepared?

Exercises

EXERCISE 3–1 (LO1,2) Adjusting Entries

The following are account balances of Graham Corporation:

Account Title	*Amount in Unadjusted Trial Balance*	*Balance after Adjustment*
Interest receivable	$ -0-	$110
Prepaid insurance	1,800	600
Interest payable	-0-	90
Salaries payable	-0-	450
Unearned rent	700	200

Required:

a. Enter the unadjusted balance for each account in the following T-accounts: Interest Receivable, Prepaid Insurance, Interest Payable, Salaries Payable, Unearned Rent, Interest Earned, Rent Earned, Insurance Expense, Interest Expense, and Salaries Expense.

b. Reconstruct the adjusting entry that must have been recorded for each account.

c. Post these adjusting entries and agree ending balances in each T-account to the adjusted balances above.

d. List revenue and expense amounts for the period.

EXERCISE 3–2 (LO1,2) Adjusting Entries

The trial balance of Lauer Corporation at December 31, 2015 follows, before and after the posting of adjusting entries.

	Trial Balance		*Adjustments*		*Adjusted Trial Balance*	
	Dr.	*Cr.*	*Dr.*	*Cr.*	*Dr.*	*Cr.*
Cash	$4,000				$4,000	
Accounts receivable	5,000				5,000	
Prepaid insurance	3,600				3,300	
Prepaid rent	1,000				500	
Truck	6,000				6,000	
Accumulated depreciation		$ -0-				$1,500
Accounts payable		7,000				7,400
Salaries payable						1,000
Unearned rent		1,200				600
Common stock		2,700				2,700
Revenue		25,000				25,000
Rent earned						600
Advertising expense	700				700	
Commissions expense	2,000				2,000	
Depreciation expense					1,500	
Insurance expense					300	
Rent expense	5,500				6,000	
Salaries expense	8,000				9,000	
Interest expense	100				500	
Totals	$35,900	$35,900			$38,800	$38,800

Required:

a. Indicate in the "Adjustments" column the debit or credit difference between the unadjusted trial balance and the adjusted trial balance.

b. Prepare in general journal format the adjusting entries that have been recorded. Include descriptions.

EXERCISE 3–3 (LO1,2) Adjusting Entries

The following data are taken from an unadjusted trial balance at December 31, 2015:

Prepaid rent	$ 600
Office supplies	700
Income taxes payable	-0-
Unearned commissions	1,500
Salaries expense	5,000

Additional Information:

(a) The prepaid rent consisted of a payment for three months' rent at $200 per month for December 2015, January 2016, and February 2016.

(b) Office supplies on hand at December 31, 2015 amounted to $300.

(c) The estimated income taxes for 2015 are $5,000.

(d) All but $500 in the Unearned Commissions account has been earned in 2015.

(e) Salaries for the last three days of December amounting to $300 have not yet been recorded.

Required:

a. Prepare all necessary adjusting entries in general journal format.

b. Calculate the cumulative financial impact on assets, liabilities, equity, revenue and expense if these adjusting entries are not made.

EXERCISE 3–4 (LO1,2) Adjusting Entries

The following are general ledger accounts extracted from the records of Bernard Inc. at December 31, 2015, its year-end ('Bal' = unadjusted balance):

Prepaid Advertising	
Bal. 1,000	500

Unused Supplies	
Bal. 750	400

Equipment	
Bal. 21,750	

Acc. Dep'n – Equipment	
	Bal. 1,500
	250

Accounts Payable	
	Bal. 15,000
	200
	100
	400
	800

Salaries Payable	
	700

Unearned Subscriptions	
5,000	Bal. 10,000

Common Stock	
	Bal. 8,000

Subscription Revenue	
	5,000

Advertising Expense	
500	

Commissions Expense	
800	

Dep'n Expense – Equipment	
250	

Maintenance Expense	
200	

Salaries Expense	
Bal. 9,500	
700	

Supplies Expense	
Bal. 2,500	
400	

Telephone Expense	
100	

Utilities Expense	
400	

Required: Prepare in general journal format the adjusting entries that were posted. Include plausible descriptions/narratives for each adjustment.

EXERCISE 3–5 (LO1,2) Adjusting Entries

The following unadjusted accounts are extracted from the general ledger of A Corp. at December 31, 2015:

Truck		Depreciation Expense – Truck		Acc. Dep'n – Truck	
10,000		1,300			1,300

Additional Information: The truck was purchased January 1, 2015. It has an estimated useful life of 4 years.

Required: Prepare the needed adjusting entry at December 31, 2015.

EXERCISE 3–6 (LO1,2) Adjusting Entries

The following unadjusted accounts are taken from the records of B Corp. at December 31, 2015:

Notes Payable		Interest Expense		Interest Payable	
	12,000	1,100			100

Additional Information: The bank loan was received on January 1, 2015. It bears interest at 10% annual rate.

Required: Prepare the adjusting entry at December 31, 2015.

EXERCISE 3–7 (LO1,2) Adjusting Entries

The following general ledger accounts and additional information are taken from the records of Wolfe Corporation at the end of its fiscal year, December 31, 2015.

Cash *101*		Unused Supplies *173*		Advertising Exp. *610*	
Bal. 2,700		Bal. 700		Bal. 200	

Accounts Receivable *110*		Common Stock *320*		Salaries Expense *656*	
Bal. 2,000			Bal. 3,800	Bal. 4,500	

Prepaid Insurance *161*		Repair Revenue *450*		Telephone Expense *669*	
Bal. 1,200			Bal. 7,750	Bal. 250	

Additional Information:

(a) The prepaid insurance is for a one-year policy, effective July 1, 2015.

(b) A physical count indicated that $500 of supplies is still on hand.

(c) A $50 December telephone bill has been received but not yet recorded.

Required: Record all necessary adjusting entries in general journal format.

EXERCISE 3–8 (LO2) Adjusting Entries

Below are descriptions of various monthly adjusting entries:

1. Adjusting entry for revenue earned but not yet billed to the customer.
2. Adjusting entry for cash received from a customer for revenue not yet earned.
3. Adjusting entry for revenue earned that was originally received as cash in advance in the previous month.
4. Adjusting entry for services received from a supplier, but not yet paid.
5. Adjusting entry for cash paid to a supplier for repair services not yet received.
6. Adjusting entry for repair services received that was originally paid as cash in advance to the supplier in the previous month.
7. Adjusting entry for salaries earned by employees, but not yet paid.
8. Adjusting entry for annual depreciation expense for equipment.

Required: For each description above, identify the likely journal entry debit and credit account.

EXERCISE 3–9 (LO2) Adjusting Entries

Turner Empire Co. employs 65 employees. The employees are paid every Monday for work done from the previous Monday to the end-of-business on Friday, or a 5-day work week. Each employee earns $80 per day.

Required:

1. Calculate the total weekly payroll cost and the salary adjustment at March 31, 2016.
2. Prepare the adjusting entry at March 31, 2016.
3. Prepare the subsequent cash entry on April 4, 2016.

EXERCISE 3–10 (LO1,2,3) Adjusting Entries

Below is a trial balance for Quertin Quick Fix Ltd. at October 31, 2016 with three sets of debit/credit columns. The first set is before the October month-end adjusting entries, and the third column is after the October month-end adjusting entries.

Quertin Quick Fix Ltd.
Trial Balance
At October 31, 2016

	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance	
	Debit	Credit	Debit	Credit	Debit	Credit
Cash	$ 80,000				$118,700	
Accounts receivable	325,000				395,000	
Office supplies	5,000				5,000	
Prepaid expenses	15,000				16,300	
Equipment	150,000				150,000	
Accumulated depreciation, equipment	1,500					$ 2,500
Land	150,000				150,000	
Accounts payable		$225,000				225,500
Accrued salaries payable		5,000				9,500
Unearned service revenue		10,000				50,000
Notes payable		210,000				210,000
Common stock		10,000				10,000
Retained earnings		37,800				37,800
Service revenue		300,000				370,000
Advertising expense	1,500				1,500	
Depreciation expense	800				1,800	
Maintenance service expenses	1,000				1,000	
Rent expense	14,000				14,000	
Salaries expense	45,000				49,500	
Utilities expense	12,000				12,500	
	$799,300	$799,300			$915,300	$915,300

Required: Determine the differences for all the account balances and identify the most likely adjusting entries that would have been recorded in October to correspond to these differences.

EXERCISE 3–11 (LO3) Prepare an Adjusted Trial Balance

After Bernard Inc. completed its first year of operations on December 31, 2015, the following adjusted account balances appeared in the general ledger.

Prepaid Advertising	
1,000	

Supplies	
750	

Equipment	
21,750	

Acc. Dep'n – Equipment	
	1,500

Accounts Payable	
	13,250

Salaries Payable	
	700

Unearned Subscriptions	
	10,000

Common Stock	
	8,000

Subscription Revenue	
	5,000

Advertising Expense	
500	

Commissions Expense	
800	

Dep'n Expense – Equipment	
250	

Maintenance Expense	
200	

Salaries Expense	
10,200	

Supplies Expense	
2,500	

Telephone Expense	
100	

Utilities Expense	
400	

Required: Prepare an adjusted trial balance at December 31, 2015.

EXERCISE 3–12 (LO6) Closing Entries

Below is the alphabetized adjusted trial balance for Quefort Ltd. as at September 30, 2016:

	Debit	Credit
Accounts payable		$ 23,250
Accounts receivable	$106,800	
Accrued salaries payable		8,700
Accumulated depreciation, building		200
Accumulated depreciation, equipment		3,200
Advertising expense	4,050	
Building	111,000	
Cash	87,300	
Cash dividends	5,000	
Depreciation expense	2,380	
Equipment	15,000	
Income tax expense	4,500	
Income taxes payable		4,500
Insurance expense	3,700	
Interest expense	150	
Interest payable		150
Notes payable		30,000
Office supplies	1,800	
Prepaid insurance	12,790	
Rent expense	22,500	
Repair expense	7,800	
Retained earnings		65,470
Salaries expense	41,700	
Service revenue		276,000
Common stock		1,500
Shop supplies expense	750	
Unearned service revenue		37,500
Utilities expense	23,250	
	$450,470	$450,470

Required: Prepare the closing entries.

EXERCISE 3–13 (LO6) Prepare Closing Entries and a Post-Closing Trial Balance

The following alphabetized adjusted trial balance information is available for Willis Inc. at December 31, 2015. Assume all accounts have normal balances.

Accounts payable	$ 4,400
Accounts receivable	3,600
Accumulated depreciation – machinery	2,800
Accumulated depreciation – warehouse	8,000
Cash	12,000
Commissions earned	20,000
Common stock	52,100
Depreciation expense – machinery	900
Depreciation expense – warehouse	1,200
Dividends	14,000
Insurance expense	1,800
Interest expense	2,365
Interest payable	1,200
Land	15,000
Machinery	20,000
Notes payable	47,600
Retained earnings	36,000
Salaries expense	33,475
Salaries payable	1,970
Subscriptions revenue	17,630
Supplies	2,500
Supplies expense	15,800
Unearned fees	800
Utilities expense	2,860
Warehouse	67,000

Required: Prepare closing entries and a post-closing trial balance.

Problems

PROBLEM 3–1 (LO1,2) Adjusting Entries

The following unrelated accounts are extracted from the records of Meekins Limited at December 31, its fiscal year-end:

		Balance	
		Unadjusted	*Adjusted*
(a)	Prepaid rent	$ 900	$ 600
(b)	Wages payable	500	700
(c)	Income taxes payable	-0-	1,000
(d)	Unearned commissions revenue	4,000	3,000
(e)	Other unearned revenue	25,000	20,000
(f)	Advertising expense	5,000	3,500
(g)	Depreciation expense – equipment	-0-	500
(h)	Supplies expense	850	625
(i)	Truck operation expense	4,000	4,500

Required: For each of the above unrelated accounts, prepare the most likely adjusting entry including plausible description/narrative.

PROBLEM 3–2 (LO1,2) Adjusting Entries

The unadjusted trial balance of Lukas Films Corporation includes the following account balances at December 31, 2015, its fiscal year-end. Assume all accounts have normal debit or credit balances as applicable.

Prepaid rent	$ 1,500
Unused supplies	-0-
Equipment	2,400
Unearned advertising revenue	1,000
Insurance expense	900
Supplies expense	600
Telephone expense	825
Wages expense	15,000

The following information applies at December 31:

a. A physical count of supplies indicates that $100 of supplies have not yet been used at December 31.

b. A $75 telephone bill for December has been received but not recorded.

c. One day of wages amounting to $125 remains unpaid and unrecorded at December 31; the amount will be included with the first Friday payment in January.

d. The equipment was purchased December 1; it is expected to last 2 years. No depreciation has yet been recorded.

e. The prepaid rent is for three months: December 2015, January 2016, and February 2016.

f. Half of the unearned advertising has been earned at December 31.

g. The $900 balance in Insurance Expense is for a one-year policy, effective August 1, 2015.

Required: Prepare all necessary adjusting entries at December 31, 2015. Descriptions are not needed.

PROBLEM 3–3 (LO1,2) Adjusting Entries

The unadjusted trial balance of Mighty Fine Services Inc. includes the following account balances at December 31, 2015, its fiscal year-end. No adjustments have been recorded. Assume all accounts have normal debit or credit balances.

Notes receivable	$10,000
Prepaid rent	-0-
Prepaid insurance	600
Unused supplies	500
Notes payable	5,000
Subscription revenue	9,000
Rent expense	3,900
Truck operation expense	4,000

The following information applies to the fiscal year-end:

(a) Accrued interest of $250 has not yet been recorded on the Notes Receivable.

(b) The $600 prepaid insurance is for a one-year policy, effective September 1, 2015.

(c) A physical count indicates that $300 of supplies is still on hand at December 31.

(d) Interest on the bank loan is paid on the fifteenth day of each month; the unrecorded interest for the last 15 days of December amounts to $25.

(e) The Subscription Revenue account consists of one $9,000 cash receipt for a 6-month subscription to the corporation's Computer Trends report; the subscription period began December 1, 2015.

(f) Three days of salary amounting to $300 remain unpaid and unrecorded at December 31.

(g) The rent expense account should reflect 12 months of rent. The monthly rent expense is $300.

(h) A bill for December truck operation expense has not yet been received; an amount of $400 is owed.

Required: Prepare all necessary adjusting entries at December 31, 2015. Descriptions are not needed.

PROBLEM 3–4 (LO1,2) Adjusting Entries

The following accounts are taken from the records of Bill Pitt Corp. at the end of its first 12 months of operations ended December 31, 2015, prior to any adjustments.

In addition to the balances in each set of accounts, additional data are provided for adjustment purposes if applicable. Treat each set of accounts independently of the others.

Truck		Depreciation Expense – Truck		Acc. Dep'n – Truck	
6,000		600			600

(a) Additional information: The truck was purchased July 1; it has an estimated useful life of 4 years.

Cash		Unearned Rent		Rent Earned	
600			-0-		600

(b) Additional information: A part of the office was sublet during the entire 12 months for $50 per month.

Unused Supplies		Supplies Expense	
		1,250	

(c) Additional information: A physical inventory indicated $300 of supplies still on hand at December 31.

Prepaid Rent	
1,200	

Rent Expense	
4,400	

(d) Additional information: The monthly rent is $400.

Wages Expense	
6,000	

Wages Payable	
	-0-

(e) Additional information: Unrecorded wages at December 31 amount to $250.

Notes Payable	
	8,000

Interest Expense	
600	

Interest Payable	
	100

(f) Additional information: The bank loan bears interest at 10 per cent. The money was borrowed on January 1, 2015.

Cash	
	1,000

Utilities Expense	
1,200	

Utilities Payable	
	200

(g) Additional information: The December bill has not yet been received or any accrual made; the amount owing at December 31 is estimated to be another $150.

Cash	
	1,200

Prepaid Insurance	
600	

Insurance Expense	
600	

(h) Additional information: A $1,200 one-year insurance policy had been purchased effective February 1, 2015; there is no other insurance policy in effect.

Unearned Rent Revenue	
	900

Rent Earned	
	-0-

(i) Additional information: The Unearned Rent Revenue balance applies to three months: November 2015, December 2015, and January 2016. $600 of the $900 has been earned as at December 31, 2015.

Cash	
25,200	

Other Unearned Revenue	
	-0-

Commissions Earned	
	25,200

(j) Additional information: $2,000 of the total $25,200 balance in commission revenue has not been earned at December 31, 2015.

Required: Prepare all necessary adjusting entries. Include descriptions/narratives.

PROBLEM 3–5 (LO1,2,3) Adjusting Accounts

Roth Contractors Corporation was incorporated on December 1, 2015 and had the following transactions during December:

Part A

(a) Issued common stock for $5,000 cash.

(b) Paid $1,200 for three months' rent: December 2015; January and February 2016.

(c) Purchased a used truck for $10,000 on credit (recorded as an account payable).

(d) Purchased $1,000 of supplies on credit. These are expected to be used during the month (recorded as expense).

(e) Paid $1,800 for a one-year truck insurance policy, effective December 1.

(f) Billed a customer $4,500 for work completed to date.

(g) Collected $800 for work completed to date.

(h) Paid the following expenses: advertising, $350; interest, $100; telephone, $75; truck operation, $425; wages, $2,500.

(i) Collected $2,000 of the amount billed in (f) above.

(j) Billed customers $6,500 for work completed to date.

(k) Signed a $9,000 contract for work to be performed in January.

(l) Paid the following expenses: advertising, $200; interest, $150; truck operation, $375; wages, $2,500.

(m) Collected a $2,000 advance on work to be done in January (the policy of the corporation is to record such advances as revenue at the time they are received).

(n) Received a bill for $100 for electricity used during the month (recorded as utilities expense).

Required:

1. Open general ledger T-accounts for the following: Cash (101), Accounts Receivable (110), Prepaid Insurance (161), Prepaid Rent (162), Truck (184), Accounts Payable (210), Common Stock (320), Repair Revenue (450), Advertising Expense (610), Interest Expense (632), Supplies Expense (668), Telephone Expense (669), Truck Operation Expense (670), Utilities Expense (676), and Wages Expense (677).

2. Prepare journal entries to record the December transactions. Descriptions are not needed.
3. Post the entries to general ledger T-accounts.

Part B

At December 31, the following information is made available for the preparation of adjusting entries.

(o) One month of the Prepaid Insurance has expired.

(p) The December portion of the December 1 rent payment has expired.

(q) A physical count indicates that $350 of supplies is still on hand.

(r) The amount collected in transaction (m) is unearned at December 31.

(s) Three days of wages for December 29, 30, and 31 are unpaid; the unpaid amount of $1,500 will be included in the first Friday wages payment in January.

(t) The truck has an estimated useful life of 4 years.

Required:

4. Open additional general ledger T-accounts for the following: Supplies (173), Accumulated Depreciation – Truck (194), Wages Payable (237), Unearned Revenue (249), Depreciation Expense – Truck (624), Insurance Expense (631), and Rent Expense (654).
5. Prepare all necessary adjusting entries. Omit descriptions.
6. Post the entries to general ledger T-accounts and calculate balances.
7. Prepare an adjusted trial balance at December 31, 2015.

PROBLEM 3–6 (LO6) Closing Accounts

Required:

1. Using the adjusted trial balance answer from Problem 3–5, journalize the appropriate closing entries (create additional accounts if required).
2. Prepare a post-closing trial balance.

PROBLEM 3–7 (LO1,2,3,4,5,6) Comprehensive Accounting Cycle Review Problem

The unadjusted trial balance of Packer Corporation showed the following balances at the end of its first 12-month fiscal year ended August 31, 2015:

	Balance	
	Debits	*Credits*
Cash	$12,000	
Accounts receivable	3,600	
Prepaid insurance	-0-	
Supplies	2,500	
Land	15,000	
Building	60,000	
Furniture	3,000	
Equipment	20,000	
Accumulated depreciation – building		$ -0-
Accumulated depreciation – equipment		-0-
Accumulated depreciation – furniture		-0-
Accounts payable		4,400
Salaries payable		-0-
Interest payable		-0-
Unearned commissions revenue		1,200
Unearned subscriptions revenue		800
Notes payable		47,600
Common stock		52,100
Retained earnings		-0-
Income summary		-0-
Commissions earned		37,900
Subscriptions revenue		32,700
Advertising expense	4,300	
Depreciation expense – building	-0-	
Depreciation expense – equipment	-0-	
Depreciation expense – furniture	-0-	
Insurance expense	1,800	
Interest expense	2,365	
Salaries expense	33,475	
Supplies expense	15,800	
Utilities expense	2,860	
Totals	$176,700	$176,700

At the end of August, the following additional information is available:

(a) The company's insurance coverage is provided by a single comprehensive 12-month policy

that began on March 1, 2015.

(b) Supplies on hand total $2,850.

(c) The building has an estimated useful life of 50 years.

(d) The furniture has an estimated useful life of ten years.

(e) The equipment has an estimated useful life of 20 years.

(f) Interest of $208 on the bank loan for the month of August will be paid on September 1, when the regular $350 payment is made.

(g) A review of the unadjusted balance in the unearned commissions revenue account indicates the unearned balance should be $450.

(h) A review of the unadjusted balance in the subscription revenue account reveals that $2,000 has not been earned.

(i) Salaries that have been earned by employees in August but are not due to be paid to them until the next payday (in September) amount to $325.

Required:

1. Set up necessary general ledger T-accounts and record their unadjusted balances. Create and assign account numbers that you deem appropriate.
2. Prepare the adjusting entries. Descriptions are not needed.
3. Post the adjusting entries to the general ledger T-accounts and calculate balances.
4. Prepare an adjusted trial balance at August 31, 2015.
5. Prepare an income statement and balance sheet.
6. Prepare and post the closing entries.
7. Prepare a post-closing trial balance.

PROBLEM 3–8 (LO1,2,3) Challenge Question – Adjusting Entries

Below is an unadjusted trial balance for Smith and Smith Co., at June 30, 2016.

Smith and Smith Co.
Unadjusted Trial Balance
At June 30, 2016

	Debit	Credit
Cash	$ 50,400	
Accounts receivable	25,000	
Shop supplies	1,500	
Prepaid insurance expense	4,500	
Prepaid advertising expense	2,000	
Prepaid rent expense	–	
Building	74,000	
Accumulated depreciation, building		$ –
Equipment	10,000	
Accumulated depreciation, equipment		2,000
Accounts payable		12,000
Accrued salaries payable		15,500
Interest payable		–
Income taxes payable		–
Notes payable		20,000
Unearned service revenue		30,000
Common stock		1,000
Retained earnings		24,900
Service revenue		125,000
Salaries expense	22,000	
Insurance expense	–	
Interest expense	–	
Shop supplies expense	200	
Advertising expense	2,200	
Depreciation expense	1,400	
Maintenance service expense	5,200	
Rent expense	20,000	
Income tax expense	–	
Utilities expense	12,000	
	$230,400	$230,400

Additional information for June not yet recorded:

a. Unbilled and uncollected work to June 30 totals $45,000.

b. An analysis of prepaid advertising shows that $500 of the balance was consumed.

c. A shop supplies count on June 30 shows that $1,200 are on hand.

d. Equipment has an estimated useful life of ten years and an estimated residual value of $500.

e. The records show that fifty percent of the work, for a $10,000 fee received in advance from a customer and recorded last month, is now completed.

f. Salaries of $5,800 for employees for work done to the end of June has not been paid.

g. Utilities invoice for services to June 22 totals $3,500.

h. Accrued revenues of $7,800 previously recorded to accounts receivable were collected.

i. A building was purchased at the end of May. Its estimated useful life is fifty years and has an estimated residual value of $10,000.

j. Rent expense of $5,000 cash for July has been paid and recorded directly to rent expense.

k. Interest for the 6% note payable has not yet been recorded for June.

l. Income taxes of $3,000 is owing but not yet paid.

m. Unrecorded and uncollected service revenue of $9,000 has been earned.

n. A two year, $1,800 insurance policy was purchased on June 1 and recorded to prepaid insurance expense.

o. The prior balance in the unadjusted prepaid insurance account (excluding the insurance in item n. above), shows that $300 of that balance is not yet used.

Required:

1. Prepare the adjusting and correcting entries for June.
2. Prepare an adjusted trial balance at June 30, 2016.

PROBLEM 3–9 (LO4) Challenge Question – Preparation of Financial Statements

Using the adjusted trial balance in PROBLEM 3–8 above:

Required: Prepare an income statement, statement of stockholder's equity and a balance sheet as at June 30, 2016. (Hint: For the balance sheet, also include a subtotal for each asset's book value).

PROBLEM 3–10 (LO6) Closing Entries and Post-Closing Trial Balance

Required: Using the adjusted trial balance in PROBLEM 3–8 above:

a. Assuming that June 30, 2016, is the year-end, prepare the closing journal entries.

b. Prepare a post-closing trial balance at June 30, 2016.

Chapter 4

The Classified Balance Sheet and Related Disclosures

Chapters 1 through 3 discussed and illustrated the steps in the accounting cycle. They also discussed the concepts, assumptions, and procedures that provide a framework for financial accounting as a whole. Chapter 4 expands upon the content and presentation of financial statements. It reinforces what has been learned in previous chapters and introduces the classification or grouping of accounts on the balance sheet. Chapter 4 expands on notes to the financial statements, the auditor's report, and the management's responsibility report which are all integral to meeting disclosure requirements.

Chapter 4 Learning Objectives

LO1 – Explain the importance of and challenges related to basic financial statement disclosure.

LO2 – Explain and prepare a classified balance sheet.

LO3 – Explain the purpose and content of notes to financial statements.

LO4 – Explain the purpose and content of the auditor's report.

LO5 – Explain the purpose and content of the report that describes management's responsibility for internal control.

Concept Self-Check

Use the following as a self-check while working through Chapter 4.

1. What shapes and limits an accountant's measurement of wealth?
2. Are financial statements primarily intended for internal or external users?
3. What is a classified balance sheet?
4. What are the classifications within a classified balance sheet?
5. What are current assets?
6. What are non-current assets?
7. What are current liabilities?

8. What are long-term liabilities?
9. What is the current-portion of a long-term liability?
10. What is the purpose and content of the notes to the financial statements?
11. What is the purpose and content of the auditor's report?
12. What is the purpose and content of the report that describes management's responsibility for internal control?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

4.1 Financial Statement Disclosure Decisions

LO1 – Explain the importance of and challenges related to basic financial statement disclosure.

Financial statements communicate information, with a focus on the needs of financial statement users such as a company's investors and creditors. Accounting information should make it easier for management to allocate resources and for shareholders to evaluate management. A key objective of financial statements is to fairly present the entity's economic resources, obligations, equity, and financial performance.

Fulfilling these objectives is challenging. Accountants must make a number of subjective decisions about how to apply generally accepted accounting principles. For example, they must decide how to measure wealth and how to apply recognition criteria. They must also make practical cost-benefit decisions about how much information is useful to disclose. Some of these decisions are discussed in the following section.

Making Accounting Measurements

Economists often define wealth as an increase or decrease in the entity's ability to purchase goods and services. Accountants use a more specific measurement — they consider only increases and decreases resulting from actual transactions. If a transaction has not taken place, they do not record a change in wealth.

The accountant's measurement of wealth is shaped and limited by the generally accepted accounting principles and assumptions introduced and discussed in Chapter 1, including historical

cost, the monetary unit, and going concern. These principles and assumptions mean that accountants record transactions at the acquisition price, they assume the monetary currency retains its purchasing power and changes in market values of assets are generally not recorded, and the entity is expected to continue operating into the foreseeable future respectively.

Economists, on the other hand, do recognize changes in market value. For example, if an entity purchased land for $100,000 that subsequently increased in value to $125,000, economists would recognize a $25,000 increase in wealth. Generally Accepted Accounting Principles (GAAP) generally do not recognize this increase until the entity actually disposes of the asset; accountants would continue to value the land at its $100,000 acquisition cost. This practice is based on the application of the historical cost principle, which is a part of GAAP.

Economic wealth is also affected by changes in the purchasing power of the dollar. For example, if the entity has cash of $50,000 at the beginning of a time period and purchasing power drops by 10% because of inflation, the entity has lost wealth because the $50,000 can purchase only $45,000 of goods and services. Conversely, the entity gains wealth if purchasing power increases by 10%. In this case, the same $50,000 can purchase $55,000 worth of goods and services. However, accountants do not record any changes because the monetary unit principle assumes that the currency unit is a stable measure.

Qualities of Accounting Information

Financial statements are focused primarily on the needs of external users. To provide information to these users, accountants make cost-benefit judgments. They use materiality considerations to decide how particular items of information should be recorded and disclosed. Accountants build limitations into the process of identifying whether an expenditure should be expensed or recorded as an asset. For example, a business might have a materiality policy for the purchase of office equipment whereby anything costing $100 or less is expensed immediately instead of recorded as an asset. In this type of situation, purchases of $100 or less are recorded as an expense instead of an asset to avoid having to record depreciation expense, a cost-benefit consideration that will not impact decisions made by external users of the business's financial statements. Another company determined limitation example is to expense immediately unless the asset has a useful life (the period of time the company expects to use the asset) of one year or greater.

Accountants must also make decisions based on whether information is useful. Is it comparable to prior periods? Is it verifiable? Is it presented with clarity and conciseness to make it understandable? Readers' perception of the usefulness of accounting information is determined by how well those who prepare financial statements address these qualitative considerations.

4.2 Classified Balance Sheet

LO2 – Explain and prepare a classified balance sheet.

The accounting cycle and double-entry accounting have been the focus of the preceding chapters. This chapter focuses on the presentation of financial statements, including how financial information is *classified* (the way accounts are grouped) and what is disclosed.

A common order for the presentation of financial statements is:

1. Balance sheet
2. Income statement
3. Statement of stockholders' equity
4. Statement of cash flows
5. Notes to the financial statements

Note that this is not the same order in which the financial statements are prepared which was discussed in Chapter 2.

In addition, the financial statements are often accompanied by an auditor's report and a management's responsibilities section that asserts the responsibility of management for the information contained in the financial statements as well as an evaluation of the internal control procedures of the company. Each of these items will be discussed below. Financial statement information must be disclosed for the most recent year with the prior year for comparison.

Because external users of financial statements have no access to the entity's accounting records, it is important that financial statements be organized in a manner that is easy to understand. Thus, financial data are grouped into useful, similar categories within *classified financial statements*, as discussed below.

The Classified Balance Sheet

A **classified balance sheet** organizes the asset and liability accounts into categories. The previous chapters used an **unclassified balance sheet** which included only three broad account groupings: assets, liabilities, and equity. The classification of asset and liability accounts into meaningful categories is designed to facilitate the analysis of balance sheet information by external users. Assets and liabilities are classified as either *current* or *non-current*. Another common term for *non-current* is *long-term*. Non-current assets, also referred to as long-term assets, can be classified further into *long-term investments*; *property, plant and equipment*, *intangible assets*, and *other assets*. The asset and liability classifications are summarized below:

Assets	Liabilities
Current assets	**Current liaibilities**
Long-term assets:	**Long-term liabilities**
Long-term investments	
Property, plant, & equipment	
Intangible assets	
Other assets	

Current Assets

Current assets are those resources that the entity expects to convert to cash, or to consume during the next year or within the operating cycle of the entity, whichever is longer. Examples of current assets include:

- cash, comprising paper currency and coins, deposits at banks, checks, and money orders.
- short-term investments, the investment of cash that will not be needed immediately, in short-term, interest-bearing notes that are easily convertible into cash.
- accounts receivable that are due to be collected within one year.
- notes receivable, usually formalized account receivables — written promises to pay specified amounts with interest, and due to be collected within one year.
- merchandise inventory that is expected to be sold within one year.

The current asset category also includes accounts whose future benefits are expected to expire in a short period of time. These are not expected to be converted into cash, and include:

- prepaid expenses that will expire within the next year, usually consisting of advance payments for insurance, rent, and other similar items.
- supplies on hand at the end of an accounting year that will be used during the next year.

On the balance sheet, current assets are normally reported before non-current assets. They are listed by decreasing levels of **liquidity** — their ability to be converted into cash. Therefore, cash appears first under the current asset heading since it is already liquid.

Non-current Assets

Non-current assets are assets that will be useful for more than one year; they are sometimes referred to as **long-lived assets**. Non-current assets include property, plant, and equipment (PPE) items used in the operations of the business. Some examples of PPE are: a) land, b) buildings, c) equipment, and d) motor vehicles such as trucks.

Other types of non-current assets include long-term investments and intangible assets. **Long-term investments** are held for more than one year or the operating cycle and include long-term notes receivable and investments in shares and bonds. **Intangible assets** are resources that do not have a physical form and whose value comes from the rights held by the owner. They are used over the long term to produce or sell products and services and include copyrights, patents, trademarks, and franchises. **Other assets** are resources that are not reported in the other major balance sheet categories such as bond issue costs which are discussed in Chapter 9.

Current Liabilities

Current liabilities are obligations that must be paid within the next 12 months or within the entity's next operating cycle, whichever is longer. They are shown first in the liabilities section of the balance sheet and generally listed in order of **maturity** (their due dates). The order of liabilities is not as structured as that of assets and may vary somewhat from company to company. Examples of current liabilities include:

- accounts payable
- unearned revenue
- accrued liabilities such as interest payable and wages payable
- income taxes payable.
- notes payable (bank loans) that are due within the next 12 months
- the current portion of long-term liabilities

The **current portion of long-term liabilites** is the principal amount of a long-term liability that is to be paid within the next 12 months. For example, assume a $24,000 note payable issued on January 1, 2015 where principal is repaid at the rate of $1,000 per month over two years. The current portion of this note on the January 31, 2015 balance sheet would be $12,000 (calculated as 12 months X $1,000/month). The remaining principal would be reported on the balance sheet as a long-term liability.

Non-Current or Long-Term Liabilities

Non-current liabilities, also referred to as long-term liabilities, are borrowings that do not require repayment for more than one year, such as the long-term portion of a bank loan or a mortgage. A **mortgage** is a liability that is secured by real estate.

Equity

The equity section of the classified balance sheet consists of two major accounts: common stock and retained earnings.

The following illustrates the presentation of Big Dog Carworks Corp.'s classified balance sheet after several years of operation.

Big Dog Carworks Corp.
Balance Sheet
At December 31, 2018

Assets	*2018*	*2017*	*Liabilities*	*2018*	*2017*
Current assets			*Current liabilities*		
Cash	$ 10,800	$ 12,000	Accounts payable	$ 24,000	$ 22,000
Accounts receivable	26,000	24,000	Income taxes payable	15,000	10,000
Merchandise inventories	120,000	100,000	Current portion of long-term notes	39,000	82,250
Prepaid expenses	1,200	570	Total current liabilities	$ 78,000	$114,250
Total current assets	$158,000	$136,570			
Property, plant, and equipment (Note 4)	126,645	10,430			
			Long-term liabilities		
			Notes payable (Note 5)	163,145	-0-
			Total liabilities	$241,145	$114,250
			Equity		
			Common stock (Note 6)	$ 11,000	$ 11,000
			Retained earnings	32,500	21,750
			Total equity	43,500	32,750
Total assets	$284,645	$147,000	Total liabilities and equity	$284,645	$147,000

Notes are included at the end of the financial statements. Among other purposes, they provide details about a particular category on the balance sheet or income statement.

The balance sheet can be presented in the **account form** balance sheet, as shown above where liabilities and equities are presented to the right of the assets. An alternative is the **report form** balance sheet where liabilities and equity are presented below the assets. Publicly traded financial statements are presented in report form.

The Classified Income Statement

Recall that the income statement summarizes a company's revenues less expenses over a period of time. An income statement for BDCC was presented in Chapter 1 as copied below.

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2015

Revenues		
Repair revenues		$10,000
Expenses		
Rent expense	$1,600	
Salaries expense	3,500	
Supplies expense	2,000	
Fuel expense	700	
Total expenses		7,800
Net income		$2,200

The format used above was sufficient to disclose relevant financial information for Big Dog's simple start-up operations. Like the classified balance sheet, an income statement can be classified as well as prepared with comparative information. The classified income statement will be discussed in detail in Chapter 5.

Regardless of the type of financial statement, any items that are *material* must be disclosed separately so users will not otherwise be misled. Materiality is a matter for judgment. Office supplies of $2,000 per month used by BDCC in January 2015 might be a material amount and therefore disclosed as a separate item on the income statement for the month ended January 31, 2015. If annual revenues grew to $1 million, $2,000 per month for supplies might be considered immaterial. These expenditures would then be grouped with other similar items and disclosed as a single amount.

4.3 Notes to Financial Statements

LO3 – Explain the purpose and content of notes to financial statements.

As an integral part of its financial statements, a company provides *notes to the financial statements*. In accordance with the disclosure principle, **notes to the financial statements** provide relevant details that are not included in the body of the financial statements. For instance, details about property, plant, and equipment are shown in Note 4 in the following sample notes to the financial statements. The notes help external users understand and analyze the financial statements.

Although a detailed discussion of disclosures that might be included as part of the notes is beyond the scope of an introductory financial accounting course, a simplified example of note disclosure is shown below for Big Dog Carworks Corp.

Big Dog Carworks Corp.
Notes to the Financial Statements
For the Year Ended December 31, 2018

1. Business operations
   The principal activity of Big Dog Carworks Corp. is the servicing and repair of vehicles.

2. Summary of Significant Accounting Policies
   The financial statements have been prepared using the significant accounting policies and measurement bases summarized below.

   (a) Use of Estimates

   The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires the Company's management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may be substantially different.

   (b) Property, Plant, and Equipment

   Property, plant, and equipment are stated at cost. Expenditures for repairs and maintenance are expensed as incurred. Depreciation is computed using the straight-line method based upon the estimated useful lives of the underlying assets as follows:

   - Buildings: 25 years
   - Equipment: 10 years
   - Truck: 5 years

   (c) Income Taxes

   Current income tax liabilities comprise those obligations to fiscal authorities relating to the current or prior reporting periods that are unpaid at the reporting date. Calculation of current taxes is based on tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period.

   (d) Revenue Recognition

   The Company recognizes revenue on service sales when there is a transfer of promised goods or services to customers in the amount it expects to receive.

   (e) Operating Expenses

   Operating expenses are recognized in the income statement upon utilization of the service or at the date of their origin.

   (f) Borrowing Costs

   Borrowing costs directly attributable to the acquisition, construction, or production of property, plant, and equipment are capitalized during the period of time that is necessary to complete and prepare the asset for its intended use or sale. Other borrowing costs are expensed in the period in which they are incurred and reported as interest expense.

   (g) Common Stock

   Common stock represents the nominal value of shares that have been issued.

3. Property, plant, and equipment

   Details of the company's property, plant, and equipment and their carrying amounts at December 31 are as follows:

	2018					2017
	Land	*Building*	*Equip.*	*Truck*	*Total*	*Total*
Gross Carrying Amount						
Balance, January 1	$ -0-	$ -0-	$3,000	$8,000	$ 11,000	$11,000
Additions	30,000	90,000			120,000	
Balance, January 31	30,000	90,000	3,000	8,000	131,000	11,000
Depreciation						
Balance, January 1		-0-	90	480	570	285
Depreciation for year		3,500	45	240	3,785	285
Balance, December 31		3,500	135	720	4,355	570
Carrying Amount						
December 31	$30,000	$86,500	$2,865	$7,280	$126,645	$ 10,430

These amounts agree to the amount of PPE shown in the assets section of BDCC's balance sheet.

4. Borrowings

   Borrowings include the following financial liabilities measured at cost:

	Current		Non-Current	
	2018	2017	2018	2017
Demand bank loan	$ 20,000	$ 52,250	$ -0-	$ -0-
Subordinated shareholder loan	13,762	30,000	-0-	-0-
Mortgage	5,238	-0-	163,145	-0-
Total carrying amount	$39,000	$82,250	$163,145	$ -0-

The bank loan is due on demand and bears interest at 6% per year. It is secured by accounts receivable and inventories of the company.

The shareholder loan is due on demand, non-interest bearing, and unsecured.

The mortgage is payable to First Bank of Capitalville. It bears interest at 5% per year and is amortized over 25 years. Monthly payments including interest are $960. It is secured by land and buildings owned by the company. The terms of the mortgage will be re-negotiated in 2021.

5. Common stock

The common stock of Big Dog Carworks Corp. consists of fully-paid common shares with a stated value of $1 each. All shares are eligible to receive dividends, have their capital repaid, and represent one vote at the annual shareholders' meeting. There were no shares issued during 2017 or 2018.

4.4 Auditor's Report

LO4 – Explain the purpose and content of the auditor's report.

Financial statements are often accompanied by an auditor's report. An **audit** is an external examination of a company's financial statement information and its system of *internal controls*.

Internal controls are the procedures or policies put in place by management to safeguard assets, increase efficiency, promote accountability, and prevent fraudulent behavior. An audit seeks not certainty, but reasonable assurance that the financial statement information is not materially misstated.

The auditor's report is a structured statement issued by an independent examiner, a professional accountant, who is contracted by the company to report the audit's findings to the company's board of directors and its shareholders. An audit report provides some assurance to present and potential investors and creditors that the company's financial statements are trustworthy. Therefore, it is a useful means to reduce the risk of their financial decisions.

An example of an unqualified auditor's report for BDCC is shown below, along with a brief description of each component. Put in simple terms, an **unqualified auditor's report** indicates that the financial statements are truthful and a **qualified auditor's report** is one that indicates the financial statements are not or may not be truthful.

The auditors' independence is stated.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The audit report is addressed to the board and the shareholders.

To the Shareholders and the Board of Directors of Big Dog Carworks Corp.

Opinion on the Financial Statements

The opinion must be included in the first section of the report and must state the financial statements were audited.

We have audited the accompanying balance sheets of Big Dog Carworks Corp. as of December 31, 2018 and 2017, and the related statements of income, of stockholders' equity, and cash flows for each of the three years in the periods ended December 31, 2018, including related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated March 16, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

Clarifies the auditors' role and needs to affirm auditor independence.

The Company's management is responsible for these financial statements. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and preforming procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provides a reasonable basis for our opinion.

CPA Firm LLP (signed)

Required statement containing the year the auditor (firm) began serving consecutively as the company's auditor.

We have served as the Company's auditor since 2015.

City, State
March 16, 2018

4.5 Management's Responsibility for Internal Control

LO5 – Explain the purpose and content of the report that describes management's responsibility for internal control.

Management is responsible for demonstrating that the internal controls of a company are effective. The Securities and Exchange Commission (SEC) requires management to:

- Provide a report on internal control
- Accept responsibility for the effectiveness of their internal control
- Evaluate the effectiveness of their internal control utilizing suitable control criteria
- Support management's evaluation of internal control with sufficient evidence

When Management files their annual report (Form 10-K) with the SEC that includes the auditors' opinion it must also include a management report on internal control. The SEC doesn't require exact wording but it must include the following:

- A statement that it is management's responsibility to establish and maintain adequate internal control
- Identify the framework followed by management for evaluating internal control
- Include management's assessment of the company's effectiveness regarding internal control over financial reporting as of the end of the most recent fiscal period and include a statement as to whether internal control over financial reporting is effective
- Include a statement that the company's auditors have issued an audit report on management's assessment

Summary of Chapter 4 Learning Objectives

LO1 – Explain the importance of and challenges related to basic financial statement disclosure.

The objective of financial statements is to communicate information to meet the needs of external users. In addition to recording and reporting verifiable financial information, accountants make decisions regarding how to measure transactions. Applying GAAP can present challenges when judgment must be applied as in the case of cost-benefit decisions and materiality.

LO2 – Explain and prepare a classified balance sheet.

A classified balance sheet groups assets and liabilities as follows:

Assets:	**Liabilities:**
Current assets	Current liabilities
Non-current assets: • Long-term investments • Property, plant, & equipment • Intangible assets • Other assets	Non-current or long-term liabilities

Current assets are those that are used within one year or one operating cycle, whichever is longer, and include cash, accounts receivables, and supplies. Non-current assets are used beyond one year or one operating cycle. There are four types of non-current assets: property, plant, and equipment (PPE), long-term investments, intangible assets, and other assets. Long-term investments include investments in shares and bonds. Intangible assets are rights held by the owner and do not have a physical substance; they include copyrights, patents, franchises, and trademarks. Current liabilities must be paid within one year or one operating cycle, whichever is longer. Long-term liabilities are paid beyond one year or one operating cycle. Income statements are also classified (discussed in Chapter 5).

LO3 – Explain the purpose and content of notes to financial statements.

In accordance with the GAAP principle of full disclosure, relevant details not contained in the body of financial statements are included in the accompanying notes to financial statements. Notes would include a summary of accounting policies, details regarding property, plant, and equipment assets, and specifics about liabilities such as the interest rates and repayment terms.

LO4 – Explain the purpose and content of the auditor's report.

An audit as it relates to the auditor's report is an external examination of a company's financial statement information and its system of internal controls. Internal controls are the processes instituted by management of a company to direct, monitor, and measure the accomplishment of its objectives including the prevention and detection of fraud and error. The auditor's report provides some assurance that the financial statements are trustworthy. In simple terms, an unqualified auditor's report indicates that the financial statements are truthful and a qualified auditor's report is one that indicates the financial statements are not or may not be truthful.

LO5 – Explain the purpose and content of the report that describes management's report on internal controls.

This report makes a statement describing management's responsibility for establishing and maintaining adequate internal control.

Discussion Questions

Refer to the Big Dog Carworks Corp. financial statements for the year ended December 31, 2018 and other information included in this chapter to answer the following questions.

1. Identify the economic resources of Big Dog Carworks Corp. in its financial statements.
2. What comprises the financial statements of BDCC?
3. Why does BDCC prepare financial statements?
4. From the balance sheet at December 31, 2018 extract the appropriate amounts to complete the following accounting equation:

   ASSETS = LIABILITIES + EQUITY
5. If ASSETS − LIABILITIES = NET ASSETS, how much is net assets at December 31, 2018? Is net assets synonymous with equity?
6. What types of assets are reported by Big Dog Carworks Corp.? What types of liabilities?
7. What kind of assumptions is made by Big Dog Carworks Corp. about asset capitalization? Over what periods of time are assets being amortized?
8. What adjustments might management make to the financial information when preparing the annual financial statements? Consider the following categories:

   a. Current asset accounts.

   b. Non-current asset accounts.

   c. Current liability accounts.

   d. Non-current liability accounts.

   Indicate several examples in each category. Use the BDCC balance sheet and notes 3 and 5 for ideas.
9. What are the advantages of using a classified balance sheet? Why are current accounts shown before non-current ones on BDCC's balance sheet?

10. How does Big Dog Carworks Corp. make it easier to compare information from one time period to another?

11. Who is the auditor of BDCC? What does the auditor's report tell you about BDCC's financial statements? Does it raise any concerns?

12. What does the auditor's report indicate about the application of generally accepted accounting principles in BDCC's financial statements?

13. Do the financial statements belong to management? the auditor? the board of directors? shareholders?

14. What is BDCC management's responsibility with respect to the company's internal control?

Exercises

EXERCISE 4–1 (LO2) Classified Balance Sheet

The following accounts and account balances are taken from the records of Joyes Enterprises Ltd. at December 31, 2016, its fiscal year-end.

	Dr.	*Cr.*
Accounts receivable	$8,000	
Accounts payable		$7,000
Accumulated depreciation – buildings		1,000
Accumulated depreciation – equipment		4,000
Notes payable (due 2017)		5000
Buildings	25,000	
Cash	2,000	
Dividends declared	1,000	
Equipment	20,000	
Income tax payable		3,000
Land	5,000	
Merchandise inventory	19,000	
Mortgage payable (due 2019)		5,000
Prepaid insurance	1,000	
Common stock		48,000
Retained earnings, Jan. 1 2016	-0-	2,000
Totals	$81,000	$75,000
Net Income	-0-	6,000
Totals	-0-	-0-

Required:

a. Using the above information, prepare a classified balance sheet.

b. Does Joyes Enterprises Ltd. have sufficient resources to meet its obligations in the upcoming year?

c. Calculate the proportion of shareholders' to creditors' claims on the assets of Joyes.

EXERCISE 4–2 (LO2,3) Classified Balance Sheet

The following balance sheet was prepared for Abbey Limited:

Abbey Limited
Balance Sheet
As at November 30, 2015

Assets			*Liabilities*		
Current			*Current*		
Cash	$1,000		Accounts payable	$5,600	
Accounts receivable	6,000		Notes payable (due 2016)	2,000	
Building	12,000		Notes payable (due 2022)	1,000	
Merchandise inventory	3,000		Total current liabilities		$8,600
Total current assets		$22,000			
Non-current			*Non-current*		
Short-term investments	3,000		Mortgage payable (due 2023)	7,000	
Equipment	1,500		Retained earnings	1,000	
Unused office supplies	100		Salaries payable	250	
Truck	1,350		Total non-current liabilities		8,250
Total non-current assets		5,950	Total liabilities		16,850
			Equity		
			Common stock		11,100
Total assets		$27,950	Total liabilities and assets		$27,950

Required:

a. Identify the errors that exist in the balance sheet of Abbey Limited and why you consider this information incorrect.

b. Prepare a corrected, classified balance sheet.

c. Based on the balance sheet categories, what additional information should be disclosed in the notes to the financial statements?

EXERCISE 4–3 (LO2,3) Accounts Classifications

Below are various accounts:

	Land used in the normal course of business operations		Accrued salaries payable
	Notes payable, due in four months		Prepaid advertising
	Truck		Advertising expense
	Land held for investment		Unearned revenue
	Copyright		Service revenue
	Accounts payable		Cash
	Cash dividends		Mortgage payable, due in fifteen years
	Building		Mortgage payable, due in six months
	Furniture		Common stock
	Accounts receivable, from customer sales		Shop supplies
	Franchise		Accumulated depreciation, building
	Utilities expense		Depreciation expense
	Utilities payable		Office supplies

Required: Classify each account as one of the following:

1. current asset
2. long-term investment
3. property, plant and equipment
4. intangible asset
5. current liability
6. long-term liability
7. equity
8. not reported on the balance sheet

EXERCISE 4–4 (LO2) Preparing Closing Entries, Balance Sheet and Post-closing Trial balance

Below are the December 31, 2016, year-end accounts balances for Abled Appliance Repair Ltd. This is the business's third year of operations.

Cash	$80,000	Common stock	$1,000
Accounts receivable	66,000	Retained earnings	116,600
Office supplies inventory	2,000	Revenue	35,000
Prepaid insurance	5,000	Rent expense	3,000
Land	20,000	Salaries expense	8,000
Office equipment	10,000	Utilities expense	500
Accumulated depreciation, office equipment	2,000	Travel expense	1,500
Accounts payable	35,000	Insurance expense	600
Unearned consulting fees	10,000	Supplies and postage expense	3,000

Required:

a. Prepare the closing entries.

b. Prepare a classified balance sheet.

c. Prepare a post-closing trial balance.

EXERCISE 4–5 (LO2) Classified Balance Sheet

Below is the post-closing trial balance for Mystery Company Ltd. All accounts have normal balances.

Mystery Company Ltd.
Trial Balance
November 30, 2016

Accounts payable	$ 95,960
Accounts receivable	99,520
Accrued salaries payable	58,580
Accumulated depreciation, building	43,530
Accumulated depreciation, vehicle	8,650
Building	270,000
Cash	150,650
Copyright	51,600
Current portion of long-term debt	72,000
Income taxes payable	32,500
Interest payable	12,000
Notes payable, due 2025	145,000
Office supplies	1,300
Prepaid insurance expense	10,000
Prepaid rent expense	12,000
Retained earnings	74,850
Common stock	??
Unearned revenue	150,000
Vehicle	108,000

Required: Prepare a classified balance sheet.

EXERCISE 4–6 (LO2) Classified Balance Sheet

Below is the adjusted trial balance for Hitalle Heights Corp. All accounts have normal balances.

Hitalle Heights Corp.
Trial Balance
May 31, 2016

Accounts payable	$ 13,020
Accounts receivable	59,808
Accrued salaries and benefits payable	4,872
Accumulated depreciation, furniture	1,792
Cash	8,888
Cash dividends	2,800
Depreciation expense	1,333
Furniture	8,400
Income tax expense	2,520
Income taxes payable	3,320
Insurance expense	2,072
Interest expense	84
Interest payable	224
Land	58,048
Notes payable (long-term)	16,800
Shop supplies	1,008
Prepaid insurance expense	7,162
Rent expense	12,600
Travel expense	840
Retained earnings	192,355
Revenue	94,000
Salaries expense	23,352
Common stock	840
Shop supplies expense	420
Franchise	155,868
Unearned revenue	21,000
Utilities expense	3,020

Additional information:

The bank loan will be reduced by $5,200 next year.

There were 200 additional shares issued during the year for $200.

Required: Prepare a classified balance sheet and a statement of shareholders' equity for May 31, 2016.

Problems

PROBLEM 4–1 (LO2) Classified Balance Sheet

The following list of accounts is taken from the records of the Norman Company Ltd. at December 31, 2015:

Account Title	*Balance*
Accounts payable	$125
Accounts receivable	138
Building	400
Cash	250
Common stock	400
Equipment	140
Land	115
Mortgage payable (due 2022)	280
Notes payable, due within 90 days	110
Notes receivable, due within 90 days	18
Prepaid insurance	12
Retained earnings	214
Salaries payable	14
Unused office supplies	70

Required: Prepare a classified balance sheet.

PROBLEM 4–2 (LO2) Classified Balance Sheet

The following adjusted trial balance has been extracted from the records of Dark Edge Sports Inc. at December 31, 2015, its second fiscal year-end.

	Account Balances	
	Dr.	*Cr.*
Accounts payable		$8,350
Accounts receivable	$18,700	
Accumulated depreciation – equipment		2,000
Advertising expense	7,200	
Notes payable, due May 31, 2016		10,000
Cash	1,500	
Depreciation expense	1,100	
Dividends	600	
Equipment	12,500	
Income taxes expense	2,300	
Income taxes payable		4,600
Insurance expense	1,200	
Interest and bank fees	1,300	
Prepaid insurance	1,300	
Prepaid rent	600	
Retained earnings		2,000
Rent expense	17,950	
Revenue		80,000
Salaries expense	39,000	
Common stock		3,000
Telephone expense	1,100	
Utilities expense	3,600	
Totals	$109,950	$109,950

Note: No shares were issued during 2015.

Required:

1. Calculate net income for year ended December 31, 2015.
2. Prepare a statement of shareholders' equity for the year ended December 31, 2015.
3. Prepare a classified balance sheet at December 31, 2015.
4. By what amounts do total current liabilities exceed total current assets (working capital) at December 31, 2015?
5. Assume a $5,000 bank loan is received, payable in six months. Will this improve the negative working capital situation calculated in (4) above? Calculate the effect on your answer to (4) above?
6. As the bank manager, what questions might you raise regarding the loan?

PROBLEM 4–3 (LO2) Closing Entries and Financial Statements

Below is the adjusted trial balance with accounts in alphabetical order for MayBee Services Ltd. All accounts have normal balances.

MayBee Services Ltd.
Trial Balance
At June 30, 2016

Accounts payable	$ 32,550
Accounts receivable	149,520
Accrued salaries payable	12,180
Accumulated depreciation, building	280
Accumulated depreciation, equipment	4,480
Advertising expense	5,670
Building	145,400
Cash	122,220
Cash dividends	7,000
Depreciation expense	3,332
Equipment	21,000
Income tax expense	6,300
Income taxes payable	6,300
Insurance expense	5,180
Interest expense	210
Interest payable	210
Notes payable, due 2018	42,000
Office supplies	2,520
Prepaid insurance expense	17,906
Rent expense	31,500
Repairs expense	10,920
Retained earnings	343,058
Revenue	135,000
Salaries expense	58,380
Common stock	2,100
Shop supplies expense	1,050
Trademark	10,000
Unearned revenue	52,500
Utilities expense	32,550

Additional Information: For the note payable, its account balance will be reduced by $14,000 as at June 30, 2017.

Required:

1. Prepare the closing entries.
2. Prepare a classified balance sheet.
3. Prepare a post-closing trial balance.

PROBLEM 4–4 (LO2) Challenge Question – Closing Entries and Financial Statements

Below is the unadjusted trial balance with accounts in alphabetical order for Jennette Ltd. All accounts have normal balances.

Jennette Ltd.
Unadjusted Trial Balance
At September 30, 2016

Accounts payable	$ 39,983
Accounts receivable	321,468
Accrued salaries payable	21,909
Accumulated depreciation, building	9,632
Accumulated depreciation, vehicle	602
Advertising expense	12,191
Building	312,610
Cash	262,773
Cash dividends	15,050
Copyright	21,500
Depreciation expense	7,164
Income tax expense	13,545
Income taxes payable	13,545
Insurance expense	11,137
Interest expense	452
Interest payable	4,730
Mortgage payable, due 2019	90,300
Office supplies	5,418
Prepaid insurance expense	8,498
Rent expense	67,725
Repairs expense	23,478
Retained earnings	737,575
Revenue	290,250
Salaries expense	155,517
Common stock	4,515
Shop supplies expense	2,259
Unearned revenue	112,875
Utilities expense	39,981
Vehicle	45,150

Additional information:

Adjustments not yet recorded are:

1. Revenue earned but not yet billed is $20,000.
2. Depreciation expense for the vehicle is $3,000.
3. The building's estimated residual value is $100,000 and its estimated useful life is 25 years.
4. Salaries not yet paid are $2,500.

5. Revenue that was paid in cash as an advance of $50,000 is now earned.
6. Rent for October 2016 of $5,150 was paid and recorded to rent expense.
7. One-half of the prepaid insurance is has now been used.

Mortgage payments for the next fiscal year will total $36,000, which includes interest expense of $6,000.

Required:

1. Update all the account balances with appropriate adjusting entries based on the six missing adjustments above. (Hint: Use a trial balance format with adjusting entry columns.)
2. Prepare an adjusted trial balance.
3. Prepare a classified balance sheet.

Chapter 5

Accounting for the Sale of Goods

To this point, examples of business operations have involved the sale of services. This chapter introduces business operations based on the purchase and resale of goods. For example, Sullivan Tire and Walmart each purchase and resell goods — such businesses are known as merchandisers. The accounting transactions for merchandising companies differ from those of service-based businesses. Chapter 5 covers accounting for transactions of sales of goods on credit and related cash collections by merchandising firms, and transactions involving purchases and payments for goods sold in the normal course of business activities.

Chapter 5 Learning Objectives

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

LO2 – Analyze and record purchase transactions for a merchandiser.

LO3 – Analyze and record sales transactions for a merchandiser.

LO4 – Record adjustments to merchandise inventory.

LO5 – Explain and prepare a classified multiple-step income statement for a merchandiser.

LO6 – Explain the closing process for a merchandiser.

LO7 – Explain and identify the entries regarding purchase and sales transactions in a periodic inventory system.

Concept Self-Check

Use the following questions as a self-check while working through Chapter 5.

1. What is gross profit and how is it calculated?
2. How is a merchandiser different from a service company?
3. What is a perpetual inventory system?
4. How is the purchase of merchandise inventory on credit recorded in a perpetual system?

5. How is a purchase return recorded in a perpetual system?
6. What does the credit term of "1/15, n/30" mean?
7. How is a purchase discount recorded in a perpetual system?
8. How is the sale of merchandise inventory on credit recorded in a perpetual system?
9. How is a sales return that is restored to inventory recorded versus a sales return that is not restored to inventory (assuming a perpetual inventory system)?
10. What is a sales discount and how is it recorded in a perpetual inventory system?
11. Why does merchandise inventory need to be adjusted at the end of the accounting period and how is this done in a perpetual inventory system?
12. What types of transactions affect merchandise inventory in a perpetual inventory system?
13. How are the closing entries for a merchandiser using a perpetual inventory system different than for a service company?
14. When reporting expenses on an income statement, how is the function of an expense reported versus the nature of an expense?
15. On a classified multiple-step income statement, what is reported under the heading 'Other revenues and expenses' and why?
16. What is the periodic inventory system?
17. How is cost of goods sold calculated under the periodic inventory system?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

5.1 The Basics of Merchandising

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

A merchandising company, or merchandiser, differs in several basic ways from a company that provides services. First, a merchandiser purchases and then sells goods whereas a service company sells services. For example, a car dealership is a merchandiser that sells cars while an airline is a service company that sells air travel. Because merchandising involves the purchase and then the resale of goods, an expense called **cost of goods sold** results. Cost of goods sold is the cost of the actual goods sold. For example, the cost of goods sold for a car dealership would be the cost of the cars purchased from manufacturers and then resold to customers. A service company does not have an expense called cost of goods sold since it does not sell goods. Because a merchandiser has cost of goods sold expense and a service business does not, the income statement for a merchandiser includes different details. A merchandising income statement highlights cost of goods sold by showing the difference between sales revenue and cost of goods sold called **gross profit** or **gross margin**. The basic income statement differences between a service business and a merchandiser are illustrated in Figure 5.1.

Service Company	***Merchandising Company***
Revenues	Sales
	Less: Cost of Goods Sold
	Equals: Gross Profit
Less: Expenses	*Less*: Expenses
Equals: Net Income	*Equals*: Net Income

Figure 5.1: Differences Between the Income Statements of Service and Merchandising Companies

Assume that Excel Cars Corporation decides to go into the business of buying used vehicles from a supplier and reselling these to customers. If Excel purchases a vehicle for $3,000 and then sells it for $4,000, the gross profit would be $1,000, as follows:

Sales	$	4,000
Cost of Goods Sold		3,000
Gross Profit	$	1,000

The word "gross" is used by accountants to indicate that other expenses incurred in running the business must still be deducted from this amount before net income is calculated. In other words, gross profit represents the amount of sales revenue that remains to pay expenses after the cost of the goods sold is deducted.

A **gross profit percentage** can be calculated to express the relationship of gross profit to sales. The sale of the vehicle that cost $3,000 results in a 25% gross profit percentage ($1,000/4,000). That is, for every $1 of sales, the company has $.25 left to cover other expenses after deducting cost of goods sold. Readers of financial statements use this percentage as a means to evaluate the performance of one company against other companies in the same industry, or in the same company from year to year. Small fluctuations in the gross profit percentage can have significant effects on the financial performance of a company because the amount of sales and cost of goods sold are often very large in comparison to other income statement items.

Another difference between a service company and a merchandiser relates to the balance sheet. A merchandiser purchases goods for resale. Goods held for resale by a merchandiser are called **merchandise inventory** and are reported as an asset on the balance sheet. A service company would not normally have merchandise inventory.

Inventory Systems

There are two types of ways in which inventory is managed: perpetual inventory system or periodic inventory system. In a **perpetual inventory system**, the merchandise inventory account and cost of goods sold account are updated immediately when transactions occur. In a perpetual system, as merchandise inventory is purchased, it is debited to the merchandise inventory account. As inventory is sold to customers, the cost of the inventory sold is removed from the merchandise inventory account and debited to the cost of goods sold account. A perpetual system means that account balances are known on a real-time basis. This chapter focuses on the perpetual system.

Some businesses still use a **periodic inventory system** in which the purchase of merchandise inventory is debited to a temporary account called Purchases. At the end of the accounting period, inventory is counted (known as a **physical count)** and the merchandise inventory account is updated and cost of goods sold is calculated. In a periodic inventory system, the real-time balances in merchandise inventory and cost of goods sold are not known. It should be noted that even in a perpetual system a physical count must be performed at the end of the accounting period to record differences between the actual inventory on hand and the account balance. The entry to record this difference is discussed later in this chapter. The periodic system is discussed in greater detail in the appendix to this chapter.

5.2 The Purchase and Payment of Merchandise Inventory (Perpetual)

LO2 – Analyze and record purchase transactions for a merchandiser.

As introduced in Chapter 3, a company's operating cycle includes purchases *on account* or *on credit* and is highlighted in Figure 5.2.

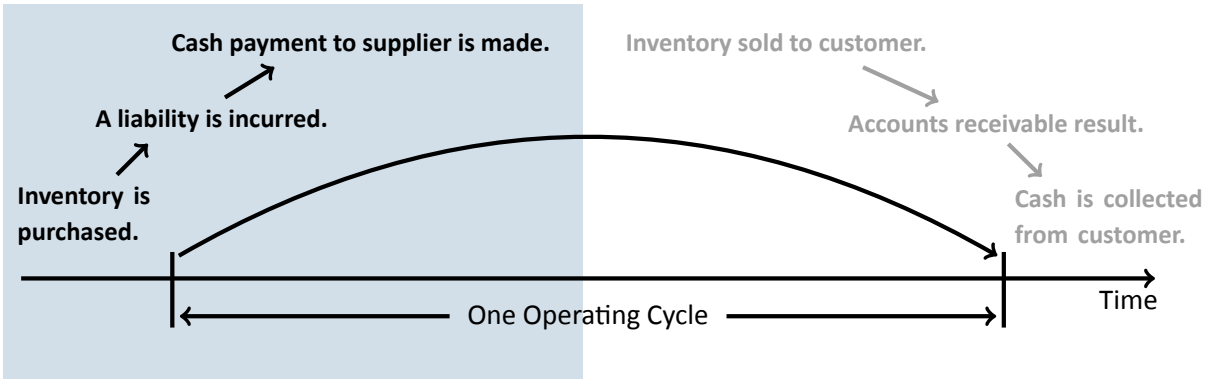


Figure 5.2: Purchase and Payment Portion of the Operating Cycle

Recording the Purchase of Merchandise Inventory (Perpetual)

When merchandise inventory is purchased, the cost is recorded in a Merchandise Inventory general ledger account. An account payable results when the merchandise inventory is acquired but will not be paid in cash until a later date. For example, recall the vehicle purchased on account by Excel for $3,000. The journal entry and general ledger T-account effects would be as follows.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		3,000	
	Accounts Payable L+			3,000
	To record the purchase of merchandise inventory on account.			

In addition to the purchase of merchandise inventory, there are other activities that affect the Merchandise Inventory account. For instance, merchandise may occasionally be returned to a supplier or damaged in transit, or discounts may be earned for prompt cash payment. These transactions result in the reduction of amounts due to the supplier and the costs of inventory. The purchase of merchandise inventory may also involve the payment of transportation and handling

costs. These are all costs necessary to prepare inventory for sale, and all such costs are included in the Merchandise Inventory account. These costs are discussed in the following sections.

Purchase Returns and Allowances (Perpetual)

Assume that the vehicle purchased by Excel turned out to be the wrong color. The supplier was contacted and agreed to reduce the price by $300 to $2,700. This is an example of a **purchase returns and allowances** adjustment. The amount of the allowance, or reduction, is recorded as a credit to the Merchandise Inventory account, as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		300	
	Merchandise Inventory (A).			300
	To record purchase allowance; incorrect color.			

Note that the cost of the vehicle has been reduced to $2,700 ($3,000 – 300) as has the amount owing to the supplier. Again, the perpetual inventory system records changes in the Merchandise Inventory account each time a relevant transaction occurs.

Purchase Discounts (Perpetual)

Purchase discounts affect the purchase price of merchandise if payment is made within a time period specified in the supplier's invoice. For example, if the terms on the $3,000 invoice for one vehicle received by Excel indicates "1/15, n/45", this means that the $3,000 must be paid within 45 days ('n' = net). However, if cash payment is made by Excel within 15 days, the purchase price will be reduced by 1%.

Assuming the amount is paid within 15 days, the supplier's terms entitle Excel to deduct $27 [($3,000 - $300) = $2,700 x 1% = $27]. The payment to the supplier would be recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		2,700	
	Merchandise Inventory (A).			27
	Cash (A)			2,673
	To record payment on account within the discount period.			

The cost of the vehicle in Excel's inventory records is now $2,673 ($3,000 – 300 – 27). If payment is made after the discount period, $2,700 of cash is paid and the entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable L+		2,700	
	Cash (A)			2,700
	To record payment of account; no purchase discount applied.			

Trade discounts are similar to purchase discounts. A supplier advertises a **list price** which is the normal selling price of its goods to merchandisers. **Trade discounts** are given by suppliers to merchandisers that buy a large quantity of goods. For instance, assume a supplier offers a 10% trade discount on purchases of 1,000 units or more where the list price is $1/unit. If Beta Merchandiser Corp. buys 1,000 units on account, the entry in Beta's records would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		900	
	Accounts Payable L+			900
	To record purchase on account; 10% trade discount ($1,000 – 10% = $900).			

Note that the net amount (list price less trade discount) is recorded.

Transportation

Costs to transport goods from the supplier to the seller must also be considered when recording the cost of merchandise inventory. The shipping terms on the invoice identify the point at which ownership of the inventory transfers from the supplier to the purchaser. When the terms are **FOB shipping point**, ownership transfers at the 'shipping point' so the purchaser is responsible for transportation costs. **FOB destination** indicates that ownership transfers at the 'destination point' so the seller is responsible for transportation costs. FOB is the abbreviation for "free on board."

Assume that Excel's supplier sells with terms of FOB shipping point indicating that transportation costs are Excel's responsibility. If the cost of shipping is $125 and this amount was paid in cash to the truck driver at time of delivery, the entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		125	
	Cash (A)			125
	To record shipping costs on inventory purchased.			

The cost of the vehicle in the Excel Merchandise Inventory account is now $2,798 (calculated as $3,000 original cost - $300 allowance - $27 discount + $125 shipping). It is important to note that

Excel's transportation costs to deliver goods to customers are recorded as *delivery expenses* and ***do not*** affect the Merchandise Inventory account.

The next section describes how the sale of merchandise is recorded as well as the related costs of items sold.

5.3 Merchandise Inventory: Sales and Collection (Perpetual)

LO3 – Analyze and record sales transactions for a merchandiser.

In addition to purchases on account, a merchandising company's operating cycle includes the sale of merchandise inventory *on account* or *on credit* as highlighted in Figure 5.3.

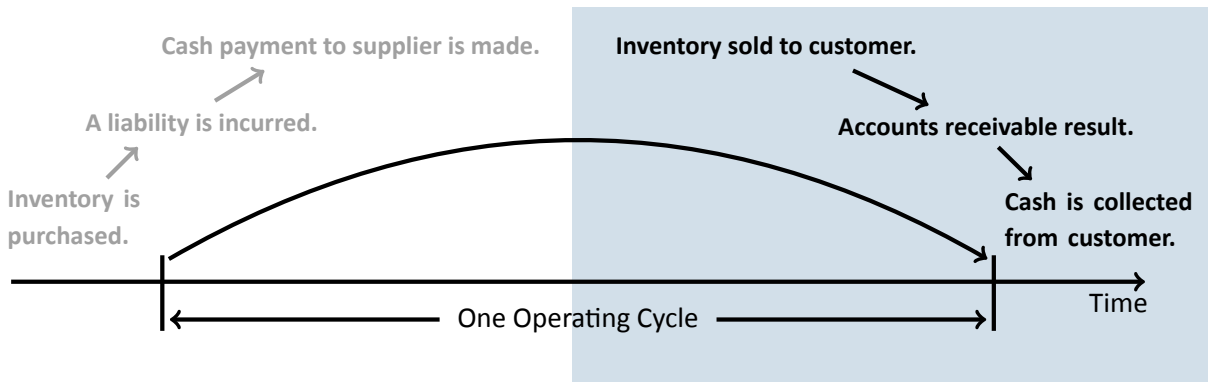


Figure 5.3: Sales and Collection Portion of the Operating Cycle

There are some slight recording differences when revenue is earned in a merchandising company. These are discussed below.

Recording the Sale of Merchandise Inventory (Perpetual)

The sale of merchandise inventory is recorded with two entries:

1. recording the sale by debiting Cash or Accounts Receivable and crediting Sales, and
2. recording the cost of the sale by debiting Cost of Goods Sold and crediting Merchandise Inventory.

Assume the vehicle purchased by Excel is sold for $4,000 on account. Recall that the cost of this vehicle in the Excel Merchandise Inventory account is $2,798, as shown below.

The entries to record the sale of the merchandise inventory are:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		4,000	
	Sales R+ SE+			4,000
	To record the sale of merchandise on account.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		2,798	
	Merchandise Inventory (A)			2,798
	To record the cost of the sale.			

The first entry records the sales revenue. The second entry is required to reduce the Merchandise Inventory account and transfer the cost of the inventory sold to the Cost of Goods Sold account. The second entry ensures that both the Merchandise Inventory account and Cost of Goods Sold account are up to date.

Sales Returns and Allowances

When merchandise inventory that has been sold is returned to the merchandiser by the customer, a **sales return and allowance** is recorded. For example, assume some damage occurs to the merchandise inventory sold by Excel while it is being delivered to the customer. Excel gives the customer a *sales allowance* by agreeing to reduce the amount owing by $100. The entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR+ (R) (SE)		100	
	Accounts Receivable (A)			100
	To record allowance for damage to merchandise inventory during delivery.			

Accounts receivable is credited because the original sale was made on account and has not yet been paid. The amount owing from the customer is reduced to $3,900. If the $3,900 had already been paid, a credit would be made to Cash and $100 refunded to the customer. The Sales Returns and Allowances account is a contra revenue account and is therefore ***deducted*** from Sales when preparing the income statement.

If goods are returned by a customer, a *sales return* occurs. The related sales and cost of goods sold recorded on the income statement are reversed and the goods are returned to inventory. For example, assume Max Corporation sells a plastic container for $3 that it purchased for $1. The dual entry at the time of sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		3	
	Sales R+ SE+			3
	To record sale on credit.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		1	
	Merchandise Inventory (A)			1
	To record the cost of the sale.			

If the customer returns the container and the merchandise is restored to inventory, the dual journal entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR (R) (SE) .		3	
	Accounts Receivable (A)			3
	To record sales return.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		1	
	Cost of Goods Sold (E) SE+			1
	To record sales return being restored to inventory.			

The use of a contra account to record sales returns and allowances permits management to track the amount of returned and damaged items.

Sales Discounts

Another contra revenue account, **Sales Discounts**, records reductions in sales amounts when a customer pays within a certain time period. For example, assume Excel Cars Corporation offers sales terms of "2/10, n/30." This means that the amount owed must be paid by the customer within 30 days ('n' = net); however, if the customer chooses to pay within 10 days, a 2% discount may be deducted from the amount owing.

Consider the sale of the vehicle for $3,900 ($4,000 less the $100 allowance for damage). Payment within 10 days entitles the customer to a $78 discount ($3,900 x 2% = $78). If payment is made within the discount period, Excel receives $3,822 cash ($3,900 - 78) and prepares the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		3,822	
	Sales Discounts XR (R) (SE)		78	
	Accounts Receivable (A)			3,900
	To record payment on account and sales discount applied.			

This entry reduces the accounts receivable amount to zero which is the desired result. If payment is not made within the discount period, the customer pays the full amount owing of $3,900.

As was the case for Sales Returns and Allowances, the balance in the Sales Discounts account is deducted from Sales on the income statement to arrive at Net Sales. Merchandisers often report only the net sales amount on the income statement. Details from sales returns and allowances, and sales discounts, are often omitted because they are immaterial in amount relative to total sales. However, as already stated, separate general ledger accounts for each of sales returns and allowances, and sales discounts, are useful in helping management identify potential problems that require investigation.

5.4 Adjustments to Merchandise Inventory (Perpetual)

LO4 – Record adjustments to merchandise inventory.

To verify that the actual amount of merchandise inventory on hand is consistent with the balance recorded in the accounting records, a physical inventory count must be performed at the end of the accounting period. When a physical count of inventory is conducted, the costs attached to these inventory items are totaled. This total is compared to the Merchandise Inventory account balance in the general ledger. Any discrepancy is called **shrinkage**. Theft and deterioration of merchandise inventory are the most common causes of shrinkage.

The adjusting entry to record shrinkage is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		XX	
	Merchandise Inventory (A)			XX
	To adjust for shrinkage.			

Summary of Merchandising Transactions

As the preceding sections have illustrated, there are a number of entries which are unique to a merchandiser. These are summarized below (assume all transactions were on account):

(a) To record the purchase of merchandise inventory from a supplier:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		XX	
	Accounts Payable L+			XX

(b) To record purchase return and allowances:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		XX	
	Merchandise Inventory (A).			XX

(c) To record purchase discounts:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		XX	
	Merchandise Inventory (A).			XX

(d) To record shipping costs from supplier to merchandiser:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		XX	
	Accounts Payable L+			XX

(e) To record sale of merchandise inventory and cost of the sale:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+.		XX	
	Sales R+ SE+.			XX

AND

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		XX	
	Merchandise Inventory (A).			XX

(f) To record sales returns restored to inventory:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR+ (R) (SE)		XX	
	Accounts Receivable (A)			XX

AND

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		XX	
	Cost of Goods Sold (E) SE+			XX

(g) To record sales returns and allowances (where returns are not restored to inventory):

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR+ (R) (SE)		XX	
	Accounts Receivable (A)			XX

(h) To record discounts:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Discounts XR+ (R) (SE)		XX	
	Cash A+		XX	
	Accounts Receivable (A)			XX

(i) To record adjustment for shrinkage at the end of the accounting period:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		XX	
	Merchandise Inventory (A).			XX

5.5 Merchandising Income Statement

LO5 – Explain and prepare a classified multiple-step income statement for a merchandiser.

Businesses are required to show expenses on the income statement based on either the *nature* or the *function* of the expense. The **nature of an expense** is determined by its basic characteristics (what it is). For example, when expenses are listed on the income statement as interest, depreciation, income tax, or wages, this identifies the nature of each expense. In contrast, the **function of an expense** describes the grouping of expenses based on their purpose (what they relate to). For example, an income statement that shows cost of goods sold, selling expenses, and general and administrative expenses has grouped expenses by their function. When expenses are grouped by function, additional information must be disclosed to show the nature of expenses within each group. The **full disclosure principle** is the generally accepted accounting principle that requires financial statements to report all relevant information about the operations and financial position of the entity. Information that is relevant but not included in the body of the statements is provided in the notes to the financial statements.

A merchandising income statement can be prepared in different formats. For this course, only one format will be introduced — the classified multiple-step format. This format is generally used for internal reporting because of the detail it includes. An example of a classified multiple-step income statement is shown below using assumed data for XYZ Inc. for its month ended December 31, 2015.

XYZ Inc.
Income Statement
Month Ended December 31, 2015

Sales			$100,000
Less: Sales discounts		$1,000	
Sales returns and allowances		500	1,500
Net sales			$98,500
Cost of goods sold			50,000
Gross profit from sales			$48,500
Operating expenses:			
Selling expenses:			
Sales salaries expense	$11,000		
Rent expense, selling space	9,000		
Advertising expense	5,000		
Depreciation expense, store equipment	3,000		
Total selling expenses		$28,000	
General and administrative expenses:			
Office salaries expense	$9,000		
Rent expense, office space	3,000		
Office supplies expense	1,500		
Depreciation expense, office equipment	1,000		
Insurance expense	1,000		
Total general and administrative expenses		15,500	
Total operating expenses			43,500
Income from operations			$5,000
Other revenues and expenses:			
Rent revenue		$12,000	
Interest expense		1,500	10,500
Income before tax			$15,500
Income tax expense			3,000
Net income			$12,500

Notice that the classified multiple-step income statement shows expenses by both function and nature. The broad categories that show expenses by function include operating expenses, selling expenses, and general and administrative expenses. Within each category, the nature of expenses is disclosed including sales salaries, advertising, depreciation, supplies, and insurance. Notice that Rent Expense has been divided between two groupings because it applies to more than one category or function.

The normal operating activity for XYZ Inc. is merchandising. Revenues and expenses that are not part of normal operating activities are listed under Other Revenues and Expenses. XYZ Inc. shows Rent Revenue under Other Revenues and Expenses because this type of revenue is not part of its merchandising operations. Interest earned, dividends earned, and gains/loss on the sale of property, plant, and equipment are other examples of revenues not related to merchandising operations. XYZ Inc. deducts Interest Expense under Other Revenues and Expenses. Interest expense does not result from operating activities; it is a financing activity because it is associated with the borrowing of money. Another example of a non-operating expense is losses on the sale of property, plant, and equipment. Income tax expense is a government requirement so it is shown separately. Notice that income tax expense follows the subtotal 'Income before tax'.

5.6 Closing Entries for a Merchandiser

LO6 – Explain the closing process for a merchandiser.

The process of recording closing entries for service companies was illustrated in Chapter 3. The closing procedure for merchandising companies is the same as for service companies — all income statement accounts are transferred to the Income Summary account, the Income Summary is closed to Retained Earnings, and Dividends are closed to Retained Earnings.

When preparing closing entries for a merchandiser, the income statement accounts unique for merchandisers need to be considered — Sales, Sales Discounts, Sales Returns and Allowances, and Cost of Goods Sold. Sales is a revenue account so has a normal credit balance. To close Sales, it must be debited with a corresponding credit to the income summary. Sales Discounts and Sales Returns and Allowances are both contra revenue accounts so each has a normal debit balance. Cost of Goods Sold has a normal debit balance because it is an expense. To close these debit balance accounts, a credit is required with a corresponding debit to the income summary.

5.7 Appendix A: The Periodic Inventory System

LO7 – Explain and identify the entries regarding purchase and sales transactions in a periodic inventory system.

The perpetual inventory system maintains a continuous, real-time balance in both Merchandise Inventory, a balance sheet account, and Cost of Goods Sold, an income statement account. As a result, the Merchandise inventory general ledger account balance should always equal the value of physical inventory on hand at any point in time. Additionally, the Cost of Goods Sold general ledger account balance should always equal the total cost of merchandise inventory sold for the accounting period. The accounts should perpetually agree; hence the name. An alternate system is considered below, called the *periodic* inventory system.

Description of the Periodic Inventory System

The periodic inventory system does not maintain a constantly-updated merchandise inventory balance. Instead, ending inventory is determined by a physical count and valued at the end of an accounting period. The change in inventory is recorded only periodically. Additionally, a Cost of Goods Sold account is not maintained in a periodic system. Instead, cost of goods sold is calculated at the end of the accounting period.

When goods are purchased using the periodic inventory system, the cost of merchandise is recorded in a **Purchases** account in the general ledger, rather than in the Merchandise Inventory account as is done under the perpetual inventory system. The Purchases account is an income statement account that accumulates the cost of merchandise acquired for resale.

The journal entry, assuming a purchase of merchandise on credit, is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Purchases A+		XX	
	Accounts Payable L+			XX

Purchase Returns and Allowances (Periodic)

Under the periodic inventory system, any purchase returns or purchase allowances are accumulated in a separate account called **Purchase Returns and Allowances**, an income statement account, and recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable L+		XX	
	Purchase Returns and Allowances XE+ (E) SE+			XX

Purchase Returns and Allowances is a contra expense account and the balance is deducted from Purchases when calculating cost of goods sold on the income statement.

Purchase Discounts (Periodic)

Another contra expense account, **Purchase Discounts**, accumulates reductions in the purchase price of merchandise if payment is made within a time period specified in the supplier's invoice and recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		XX	
	Purchase Discounts XE+ (E) SE+			XX

Transportation (Periodic)

Under the periodic inventory system, an income statement account called **Transportation-in** is used to accumulate transportation or freight charges on merchandise purchased for resale. The Transportation-in account is used in calculating the cost of goods sold on the income statement. It is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Transportation-In E+		XX	
	Cash (A) or Accounts Payable L+			XX

At the end of the accounting period, cost of goods sold must be calculated which requires that the balance in Merchandise Inventory be determined. To determine the end of the period balance in Merchandise Inventory, a physical count of inventory is performed. The total value of the inventory as identified by the physical count becomes the ending balance in Merchandise Inventory. Cost of goods sold can then be calculated as follows:

Beginning Balance of Merchandise Inventory	XX
Plus: Net Cost of Goods Purchased*	XX
Less: Ending Balance of Merchandise Inventory	XX
Equals: Cost of Goods Sold	XX

*Net Cost of Goods Purchased is calculated as:

Purchases	XX
Less: Purchase Returns and Allowances	XX
Less: Purchase Discounts	XX
Equals: Net Purchases	XX
Add: Transportation-In	XX
Equals: Net Cost of Goods Purchased	XX

Closing Entries (Periodic)

In the perpetual inventory system, the Merchandise Inventory account is continuously updated and is adjusted at the end of the accounting period based on a physical inventory count. In the periodic inventory system, the balance in Merchandise Inventory does not change during the accounting period. As a result, at the end of the accounting period, the balance in Merchandise Inventory in a periodic system is the beginning balance. In order for the Merchandise Inventory account to reflect the ending balance as determined by the physical inventory count, the beginning inventory balance must be removed by crediting Merchandise Inventory, and the ending inventory balance entered by debiting it. This is accomplished as part of the closing process. Closing entries for a merchandiser that uses a periodic inventory system are illustrated below using the adjusted trial balance information for Norva Inc.

Norva Inc.
Adjusted Trial Balance
At December 31, 2015

	Debits	Credits
Cash	$15,000	
Merchandise inventory	1,000	
Accounts payable		$ 5,000
Common shares		8,000
Dividends	500	
Retained earnings		3,500
Sales		13,400
Sales discounts	200	
Purchases	5,000	
Purchase returns & allowances		800
Salaries expense	7,000	
Advertising expense	2,000	
Totals	$30,700	$30,700

Other information: The ending balance in merchandise inventory is $2,000 based on a physical count.

Step 1: Close debit balance income statement accounts plus beginning merchandise inventory:

Income Summary	15,200	
Merchandise Inventory		1,000
Sales Discounts		200
Purchases		5,000
Salaries Expense		7,000
Advertising Expense		2,000

Step 2: Close credit balance income statement accounts plus ending merchandise inventory:

Merchandise Inventory	2,000	
Sales	13,400	
Purchase Returns & Allowances	800	
Income Summary		16,200

Step 3: Close income summary to retained earnings:

Income Summary	1,000	
Retained Earnings		1,000

Step 4: Close dividends to retained earnings:

Retained Earnings	500	
Dividends		500

When the closing entries above are posted and a post-closing trial balance prepared as shown below, notice that the Merchandise Inventory account reflects the correct balance based on the physical inventory count.

Norva Inc.
Adjusted Trial Balance
At December 31, 2015

	Debits	Credits
Cash	$15,000	
Merchandise inventory	2,000	
Accounts payable		$ 5,000
Common shares		8,000
Retained earnings		4,000
Totals	$17,000	$17,000

Summary of Chapter 5 Learning Objectives

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

Merchandisers buy and resell products. Merchandise inventory, an asset, is purchased from suppliers and resold to customers to generate sales revenue. The cost of the merchandise inventory sold is an expense called cost of goods sold. The profit realized on the sale of merchandise inventory before considering any other expenses is called gross profit. Gross profit may be expressed as a dollar amount or as a percentage. To track merchandise inventory and cost of goods sold in real time, a perpetual inventory system is used; the balance in each of Merchandise Inventory and Cost of Goods Sold is always up-to-date. In a periodic inventory system, a physical count of the inventory must be performed in order to determine the balance in Merchandise Inventory and Cost of Goods Sold.

LO2 – Analyze and record purchase transactions for a merchandiser.

In a perpetual inventory system, a merchandiser debits Merchandise Inventory regarding the purchase of merchandise for resale from a supplier. Any purchase returns and allowances or purchase discounts are credited to Merchandise Inventory as they occur to keep the accounts up-to-date.

LO3 – Analyze and record sales transactions for a merchandiser.

In a perpetual inventory system, a merchandiser records two entries at the time of sale: one to record the sale and a second to record the cost of the sale. Sales returns that are returned to inventory also require two entries: one to reverse the sale by debiting a sales returns and allowances account and a second to restore the merchandise to inventory by debiting Merchandise Inventory and crediting Cost of Goods Sold. Sales returns not restored to inventory as well as sales allowances are recorded with one entry: debit sales returns and allowances and credit cash or accounts receivable. Sales discounts are recorded when a credit customer submits their payment within the discount period specified.

LO4 – Record adjustments to merchandise inventory.

A physical count of merchandise inventory is performed and the total compared to the general ledger balance of Merchandise Inventory. Discrepancies are recorded as an adjusting entry that debits cost of goods sold and credits Merchandise Inventory.

LO5 – Explain and prepare a classified multiple-step income statement for a merchandiser.

A classified multiple-step income statement for a merchandiser is for internal use because of the detail provided. Sales, less sales returns and allowances and sales discounts, results in net sales. Net sales less cost of goods sold equals gross profit. Expenses are shown based on both their function and nature. The functional or group headings are: operating expenses, selling expenses, and general and administrative expenses. Within each grouping, the nature of expenses is detailed including: depreciation, salaries, advertising, wages, and insurance. A specific expense can be divided between groupings.

LO6 – Explain the closing process for a merchandiser.

The steps in preparing closing entries for a merchandiser are the same as for a service company. The difference is that a merchandiser will need to close income statement accounts unique to merchandising such as: Sales, Sales Returns and Allowances, Sales Discounts, and Cost of Goods Sold.

LO7 – Explain and identify the entries regarding purchase and sales transactions in a periodic inventory system.

A periodic inventory system maintains a Merchandise Inventory account but does not have a Cost of Goods Sold account. The Merchandise Inventory account is updated at the end of the accounting period as a result of a physical inventory count. Because a merchandiser using a period system does not use a Merchandise Inventory account to record purchase or sales transactions during the accounting period, it maintains accounts that are different than under a perpetual system, namely, Purchases, Purchase Returns and Allowances, Purchase Discounts, and Transportation-in.

Discussion Questions

1. How does the income statement prepared for a company that sells goods differ from that prepared for a service business?
2. How is gross profit calculated? What relationships do the gross profit and gross profit percentage calculations express? Explain, using an example.
3. What are some common types of transactions that are recorded in the merchandise Inventory account?
4. Contrast and explain the sales and collection cycle and the purchase and payment cycle.

5. What contra accounts are used in conjunction with sales? What are their functions?
6. (Appendix) Compare the perpetual and periodic inventory systems. What are some advantages of each?

Exercises

EXERCISE 5–1 (LO1)

Consider the following information of Jones Corporation over four years:

	2014	*2013*	*2012*	*2011*
Sales	$10,000	$9,000	$?	$7,000
Cost of Goods Sold	?	6,840	6,160	?
Gross Profit	2,500	?	1,840	?
Gross Profit Percentage	?	?	?	22%

Required:

a. Calculate the missing amounts for each year.

b. What does this information indicate about the company?

EXERCISE 5–2 (LO2)

Reber Corp. uses the perpetual inventory system. Its transactions during July 2015 are as follows:

July 6	Purchased $600 of merchandise on account from Hobson Corporation for terms 1/10, net/30.
9	Returned $200 of defective merchandise.
15	Paid the amount owing to Hobson.

Required: Prepare journal entries to record the above transactions for Reber Corp.

EXERCISE 5–3 (LO2,3,4)

Horne Inc. and Sperling Renovations Ltd. both sell goods and use the perpetual inventory system. Horne Inc. had $3,000 of merchandise inventory at the start of its fiscal year, January 1, 2015. During the 2015, Horne Inc. had the following transactions:

May 5	Horne sold $4,000 of merchandise on account to Sperling Renovations Ltd., terms 2/10, net/30. Cost of merchandise to Horne from its supplier was $2,500.
7	Sperling returned $500 of merchandise received in error which Horne returned to inventory; Horne issued a credit memo. Cost of merchandise to Horne was $300.
15	Horne received the amount due from Sperling Renovations Ltd.

A physical count and valuation of Horne's Merchandise Inventory at May 31, the fiscal year-end, showed $700 of goods on hand.

Required: Prepare journal entries to record the above transactions and adjustment:

a. In the records of Horne Inc.

b. In the records of Sperling Renovations Ltd.

EXERCISE 5–4 (LO2,3) Recording Purchase and Sales Transactions

Below are transactions for March, 2016 for AngieJ Ltd.:

March 1	Purchased $25,000 of merchandise on account for terms 2/10, n/30.
March 3	Sold merchandise to a customer for $5,000 for terms 1/10, n/30. (Cost $2,600)
March 4	Customer from March 3 returned $200 of some unsuitable goods which were returned to inventory. (Cost $100)
March 5	Purchased $15,000 of merchandise from a supplier for cash and arranged for shipping, fob shipping point.
March 6	Paid $200 for shipping on the March 5 purchase.
March 7	Contacted the supplier from March 5 regarding $2,000 of merchandise with some minor damages. Supplier agreed to reduce the price and offered an allowance of $500 cash, which was accepted.
March 8	Sold $25,000 of merchandise for terms 1.5/10, n/30. (Cost $13,000). Agreed to pay shipping costs for the goods sold to the customer.
March 9	Shipped the goods sold on March 8 to customer, fob destination for $500 cash. (Hint: Shipping costs paid to ship merchandise sold to a customer is an operating expense.)
March 11	Paid for fifty percent of the March 1 purchase to the supplier.
March 13	Collected the account owing from the customer from March 3.
March 15	Purchased office supplies on account for $540 for terms 1/10, n/30.
March 18	Ordered merchandise inventory from a supplier totaling $15,000. Goods to be shipped on April 10, fob shipping point.
March 20	Collected $6,010 cash from an account owing from two months ago. The early payment discount had expired.

March 25	Paid for the March 15 purchase.
March 27	Sold $12,500 of merchandise inventory for cash (Cost $5,000).
March 31	Paid the remaining of the amount owing from the March 1 purchase.

Required: Prepare the journal entries, if any, for AngieJ Ltd.

EXERCISE 5–5 (LO2,3) Recording Purchase and Sales Transactions

Below are the April, 2016 sales for Beautort Corp.

April 1	Purchased $15,000 of merchandise for cash.
April 3	Sold merchandise to a customer for $8,000 cash. (Cost $4,600)
April 5	Purchased $10,000 of merchandise from a supplier for terms 1/10, n/30.
April 7	Returned $2,000 of damaged merchandise inventory from April 5 back to the supplier. Supplier will repair the items and return them to their own inventory.
April 8	Sold $8,000 of merchandise for terms 2/10, n/30. (Cost $4,000). Agreed to pay shipping costs for the goods sold to the customer.
April 9	Shipped the goods sold on April 8 to customer, fob shipping point for $500 cash. (Hint: Shipping costs paid to ship merchandise sold to a customer is not an inventory cost.)
April 10	Customer from April 3 returned $1,000 of unsuitable goods which were returned to inventory. (Cost $400). Amount paid was refunded.
April 10	Agreed to give customer from April 8 sale a sales allowance of $200.
April 12	Purchased inventory on account for $22,000 for terms 1/10, n/30.
April 15	Paid amount owing for purchases on April 5.
April 16	Paid $600 for shipping on the April 12 purchase.
April 18	Collected $5,000 cash, net of discount, for the customer account owing from April 8.
April 27	Paid for the April 12 purchase.
April 27	Sold $20,000 of merchandise inventory for cash (Cost $10,000).

Required: Prepare the journal entries, if any, for Beautort Corp. Round final entry amounts to the nearest whole dollar.

EXERCISE 5–6 (LO5)

The following information is taken from the records of Smith Corp. for the year ended June 30, 2015:

Advertising expense	$ 1,500
Commissions expense	4,000
Cost of goods sold	50,000
Delivery expense	500
Depreciation expense – equipment	500
Insurance expense	1,000
Office salaries expense	3,000
Rent expense – office	1,000
Rent expense – store	1,500
Sales salaries expense	2,000
Sales	72,000
Sales returns and allowances	2,000

Required:

a. Prepare a classified multi-step income statement for the year ended June 30, 2015. Assume an income tax rate of 20%.

b. Compute the gross profit percentage, rounding to two decimal places.

EXERCISE 5–7 (LO4) Calculating Inventory and Cost of Goods Sold

Below is a table that contains two important calculations that link together to determine net income/(loss):

Inventory, opening balance	$ 10,000	$ 53,000	?	168,540	50,562
Plus: purchases	30,000	?	1,685,400	?	?
Total goods available for sale	?	212,000	2,247,200	?	657,306
Less: ending inventory	15,000	?	842,700	556,180	100,000
Cost of goods sold	?	132,500	?	?	?
Sales	?	240,000	1,600,000	900,000	?
Less: cost of goods sold	?	?	?	?	?
Gross profit	30,000	?	?	276,400	142,694
Less: operating expenses	12,000	?	275,000	?	?
Net income/(loss)	?	43,900	?	26,400	(2,306)
Gross profit/sales (%)	?	?	?	?	?

Required: Calculate the missing account balances using the relationships between these accounts. Percentage can be rounded to the nearest two decimal places.

EXERCISE 5–8 (LO6)

Refer to the information in EXERCISE 5–6.

Required:

a. Prepare all closing entries. Assume cash dividends totaling $2,000 were declared during the year and recorded as a debit to Dividends Declared and a credit to Cash.

b. Calculate the June 30, 2015 post-closing balance in Retained Earnings assuming a beginning balance of $18,000.

EXERCISE 5–9 (LO7 Appendix)

Consider the information for each of the following four companies.

	A	*B*	*C*	*D*
Opening Inventory	$?	$ 184	$ 112	$ 750
Purchases	1415	?	840	5,860
Transportation-In	25	6	15	?
Cost of Goods Available for Sale	1,940	534	?	6,620
Ending Inventory	340	200	135	?
Cost of Goods Sold	?	?	?	5,740

Required: Calculate the missing amounts.

EXERCISE 5–10 (LO7 Appendix)

The following data pertain to Pauling Inc.

Opening Inventory	$ 375
Purchases	2930
Purchases Discounts	5
Purchases Returns and Allowances	20
Transportation-In	105

Ending inventory amounts to $440.

Required: Calculate cost of goods sold.

EXERCISE 5–11 (LO7 Appendix)

The following information is taken from the records of four different companies in the same industry:

	A	*B*	*C*	*D*
Sales	$300	$150	$?	$ 90
Opening Inventory	?	40	40	12
Purchases	240	?	?	63
Cost of Goods Available for Sale	320	?	190	?
Ending Inventory	?	(60)	(60)	(15)
Cost of Goods Sold	?	100	130	60
Gross Profit	$100	$?	$ 65	$?
Gross Profit percentage	?	?	?	?

Required:

a. Calculate the missing amounts.

b. Which company seems to be performing best? Why?

Problems

PROBLEM 5–1 (LO1,2,3,4)

Salem Corp. was incorporated on July 2, 2015 to operate a merchandising business. It uses the perpetual inventory system. All its sales are on account with terms: 2/10, n/30. Its transactions during July 2015 are as follows:

July 2 Issued common stock for $5,000 cash.
2 Purchased $3,500 merchandise on account from Blic Pens Ltd. for terms 2/10, n/30.
2 Sold $2,000 of merchandise on account to Spellman Chair Rentals Inc. (Cost to Salem: $1,200).
3 Paid Sayer Holdings Corp. $500 for July rent.
5 Paid Easton Furniture Ltd. $1,000 for equipment.
8 Collected $200 for a cash sale made today to Ethan Matthews Furniture Ltd. (Cost: $120).

8 Purchased $2,000 merchandise on account from Shaw Distributors Inc. for terms 2/15, n/30.
9 Received the amount due from Spellman Chair Rentals Inc. for the July 2 sale.
10 Paid Blic Pens Ltd. for the July 2 purchase.
10 Purchased $200 of merchandise on account from Peel Products Inc. for terms n/30.
15 Sold $2,000 of merchandise on account to Eagle Products Corp. (Cost: $1,300).
15 Purchased $1,500 of merchandise on account from Bevan Door Inc. for terms 2/10, n/30.
15 Received a memo from Shaw Distributors Inc. to reduce accounts payable by $100 for defective merchandise included in the July 8 purchase.
16 Eagle Products Corp. returned $200 of defective merchandise which was scrapped (Cost to Salem: $150).
20 Sold $3,500 of merchandise on account to Aspen Promotions Ltd. (Cost: $2,700).
20 Paid Shaw Distributors Inc. for half the purchase made July 8.
24 Received half the amount due from Eagle Products Corp. in partial payment for the July 15 sale.
24 Paid Bevan Doors Ltd. for the purchase made July 15.
26 Sold $600 merchandise on account to Longbeach Sales Ltd. (Cost: $400).
26 Purchased $800 of merchandise on account from Silverman Co. for terms 2/10, n/30.
31 Paid Speedy Transport Co. $350 for transportation to Salem's warehouse during the month (all purchases are fob shipping point).

Required:

1. Prepare journal entries to record the July transactions. Include general ledger account numbers and a brief description.

2. Calculate the unadjusted ending balance in merchandise inventory.

3. Assume the merchandise inventory is counted at July 31 and assigned a total cost of $2,400. Prepare the July 31 adjusting entry.

PROBLEM 5–2 (LO1,5,6)

The following closing entries were prepared for Whirlybird Products Inc. at December 31, 2015, the end of its fiscal year.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Sales		37,800	
	Income summary			37,800
	Income summary		32,800	
	Cost of goods sold			26,800
	Sales returns and allowances			690
	Sales discounts			310
	Salaries expenses			5,000
31	Income summary		5,000	
	Retained earnings			5,000

Required: Calculate gross profit.

PROBLEM 5–3 (LO1,5,6)

The following alphabetized adjusted trial balance has been extracted from the records of Acme Automotive Inc. at December 31, 2015, its third fiscal year-end. All accounts have a normal balance.

Accounts payable	9,000
Accounts receivable	15,000
Accumulated depreciation – equipment	36,000
Advertising expense	14,000
Bank loan (long-term note)	14,000
Cash	2,000
Commissions expense	29,000
Cost of goods sold	126,000
Delivery expense	14,800
Depreciation expense	12,000
Dividends	11,000
Equipment	120,000
Income taxes expense	4,200
Income taxes eayable	4,200
Insurance expense	10,400
Interest expense	840
Merchandise inventory	26,000
Office supplies expense	3,100
Rent expense	32,400
Rent revenue	19,200
Retained earnings	12,440
Sales	310,000
Sales discounts	1,300
Sales returns and allowances	2,900

Sales salaries expense	26,400
Common stock	70,000
Supplies	3,200
Telephone expense	1,800
Utilities expense	4,200
Wages expense – office	14,300

Required:

1. Prepare a classified multi-step income statement and statement of stockholders' equity for the year ended December 31, 2015. Assume 40% of the Rent Expense is allocated to general and administrative expenses with the remainder allocated to selling expenses. Additionally, assume that $20,000 of shares were issued during the year ended December 31, 2015.
2. Prepare closing entries.

PROBLEM 5–4 (LO1,2,3,4) Challenge Question – Pulling It All Together

Calculating Purchases, Inventory Shrinkage, Net Sales, Cost Goods Sold, Gross Profit, and Net Income/(Loss)

The information below is a summary of the merchandise inventory and sales transactions for 2016.

Total cost of purchases	$250,000
Total sales	580,000
Purchases shipping costs	500
Merchandise inventory, opening balance	55,000
Purchase discounts	3,500
Sales discounts	200
Total sales returns to inventory	100
Merchandise inventory, closing GL balance	90,000
Merchandise inventory, physical inventory count	88,500
Sales allowances	600
Operating expenses	250,000
Sales returns	200
Purchase returns and allowances	200
Net purchases	?
Inventory shrinkage adjustment amount	?
Cost of goods sold	?
Net sales	?
Gross profit	?
Net income/(loss)	?
Gross profit ratio	?

Required: Calculate and fill in the blanks. (Hint: Refer to the merchandising company illustration in Section 5.1 and the T-account summary illustrations for inventory and cost of goods sold at the end of Section 5.4.)

PROBLEM 5–5 (LO1,2,3,5,6) Preparing a Classified Multiple-step Income Statement and Closing Entries

Below is the adjusted trial balance presented in alphabetical order for Turret Retail Ltd., for 2016. Their year-end is December 31.

Turret Retail Ltd.
Trial Balance
At December 31, 2016

Accounts payable		$ 31,250
Accounts receivable	$140,000	
Accrued salaries and benefits payable		12,000
Accumulated depreciation, furniture		4,300
Cash	21,000	
Cash dividends	10,000	
Cost of goods sold	240,000	
Bank loan payable (long-term note)		40,320
Depreciation expense	3,200	
Copyright	20,000	
Furniture	20,000	
Income tax expense	2,028	
Income taxes payable		8,000
Insurance expense	5,000	
Interest expense	200	
Interest payable		550
Land	140,000	
Merchandise inventory	120,000	
Prepaid insurance expense	6,000	
Rent expense	30,240	
Rental income		6,000
Retained earnings		307,748
Salaries expense	57,000	
Sales		360,000
Sales discounts	3,600	
Sales returns and allowances	9,600	
Common stock		20,000
Shop supplies expense	2,400	
Shop supplies expense	1,000	
Travel expense	2,100	
Unearned revenue		50,500
Utilities expense	7,300	
	$840,668	$840,668

Required:

1. Prepare a classified multiple-step income statement in good form, reporting operating expenses by nature, for the year ended December 31, 2016.

2. Prepare the closing entries for the year-ended December 31, 2016.
3. Calculate the gross profit ratio to two decimal places and comment on what this ratio means.

PROBLEM 5–6 (LO1,2,3,4,5) Challenge Question – Preparing Adjusting Entries and a Classified Multiple-step Income Statement

Below are the unadjusted accounts balances for Yuba Yabi Enterprises Ltd., for the year ended March 31, 2017. All account balances are normal. Yuba Yabi's business involves selling frozen food to restaurants as well as providing consulting services to assist restaurant businesses with their daily operations.

Yuba Yabi Enterprises Ltd.
Unadjusted Trial Balance
March 31, 2017

Accounts payable	68,750
Accounts receivable	308,000
Accrued salaries and benefits payable	26,400
Accumulated depreciation, furniture	9,460
Cash	46,200
Cash dividends	22,000
Cost of goods sold	528,000
Advertising expense	9,900
Bank loan payable (long-term note)	88,704
Depreciation expense	7,040
Copyright	44,000
Franchise	66,000
Furniture	44,000
Income tax expense	-
Income taxes payable	17,600
Insurance expense	11,000
Interest expense	440
Interest payable	1,210
Land	308,000
Merchandise inventory	264,000
Prepaid insurance expense	13,200
Prepaid advertising expense	8,800
Rent expense	66,528
Rental income	13,200
Retained earnings	265,364
Salaries expense	125,400
Sales	792,000
Sales discounts	7,920
Sales returns and allowances	21,120
Service revenue	495,000
Common stock	44,000
Shop supplies	8,360
Shop supplies expense	2,200
Travel expense	4,620
Unearned service revenue	111,100
Utilities expense	16,060

Additional information:

The following are adjusting entries that have not yet been recorded:

Accrued salaries	$12,000
Accrued interest on the bank loan	5,600
Inventory shrinkage	7,800
Prepaid insurance expense	5,000 has expired
Prepaid advertising expense	no change
Unearned revenue	30,000 has been earned
Income tax rate	30%

Required:

1. Update the affected accounts by the adjustments, if any. Round all adjustments to the nearest whole dollar.
2. Prepare a classified multiple-step income statement in good form for the year ended March 31, 2017.

Chapter 6

Assigning Costs to Merchandise

Recording transactions related to the purchase and sale of merchandise inventory was introduced and discussed in Chapter 5. This chapter reviews how the cost of goods sold is calculated using inventory costs and cost flow assumptions. Additionally, issues related to merchandise inventory that remains on hand at the end of an accounting period are also explored.

Chapter 6 Learning Objectives

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — perpetual.

LO2 – Explain the impact on financial statements of inventory cost flows and errors.

LO3 – Explain and calculate lower of cost and net realizable value and lower of cost or market inventory adjustments.

LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

LO5 – Explain and calculate merchandise inventory turnover.

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — periodic.

Concept Self-Check

Use the following as a self-check while working through Chapter 6

1. What are the four inventory costing methods that can be used in perpetual inventory systems?
2. What impact does the use of different inventory costing methods have on financial statements?
3. What is the meaning of the term *lower of cost and net realizable value*, and how is it calculated?

4. What is the meaning of the term *lower of cost or market*, and how is it calculated?
5. What is the effect on net income of an error in ending inventory values?
6. What methods are used to estimate ending inventory?
7. What ratio can be used to evaluate the liquidity of merchandise inventory?
8. What are the four inventory costing methods that can be used in a periodic inventory system?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

6.1 Inventory Costing Methods

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — perpetual.

Determining the cost of each unit of inventory, and thus the total cost of ending inventory on the balance sheet, can be challenging. Why? We know from Chapter 5 that the cost of inventory can be affected by discounts, returns, transportation costs, and shrinkage. Additionally, the purchase cost of an inventory item can be different from one purchase to the next. For example, the cost of coffee beans could be $5.00 a pound in October and $7.00 a pound in November. Finally, some types of inventory flow into and out of the warehouse in a specific sequence, while others do not. For example, milk would need to be managed so that the oldest milk is sold first. In contrast, a car dealership has no control over which vehicles are sold because customers make specific choices based on what is available. So how is the cost of a unit in merchandise inventory determined? There are several methods that can be used. Each method may result in a different cost, as described in the following sections.

Assume a company sells only one product and uses the perpetual inventory system. It has no beginning inventory at June 1, 2015. The company purchased five units during June as shown in Figure 6.1.

	Purchase Transaction	
Date	*Number of units*	*Price per unit*
June 1	1	$1
5	1	2
7	1	3
21	1	4
28	1	5
	5	$15

Figure 6.1: June Purchases and Purchase Price per Unit

At June 28, there are 5 units in inventory with a total cost of $15 ($1 + $2 + $3 + $4 + $5). Assume four units are sold June 30 for $10 each on account. The cost of the four units sold could be determined based on identifying the cost associated with the specific units sold, the actual physical flow of goods. For example, a car dealership will need to track the cost of each vehicle purchased and sold. Alternatively, rather than identifying specific costs per unit a cost flow assumption can be used to determine costs. For example, if large quantities of low dollar value items are in inventory, such as pencils or hammers, an average cost might be used to calculate cost of goods sold. A business may choose one of four methods to calculate cost of goods and the resulting ending inventory value. These methods are: specific identification, FIFO, LIFO, and weighted average, and are discussed in the next sections.

Specific Identification

Under **specific identification**, each inventory item that is sold is matched with its purchase cost. This method is most practical when inventory consists of relatively few, expensive items, particularly when individual units can be identified with serial numbers — for example, motor vehicles.

Assume the four units sold on June 30 are those purchased on June 1, 5, 7, and 28. The fourth unit purchased on June 21 remains in ending inventory. Cost of goods sold would total $11 ($1 + $2 + $3 + $5). Sales would total $40 (4 units @ $10 per unit). As a result, gross profit would be $29 ($40 – $11). Ending inventory would be $4, the cost of the unit purchased on June 21.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6.2 would show:

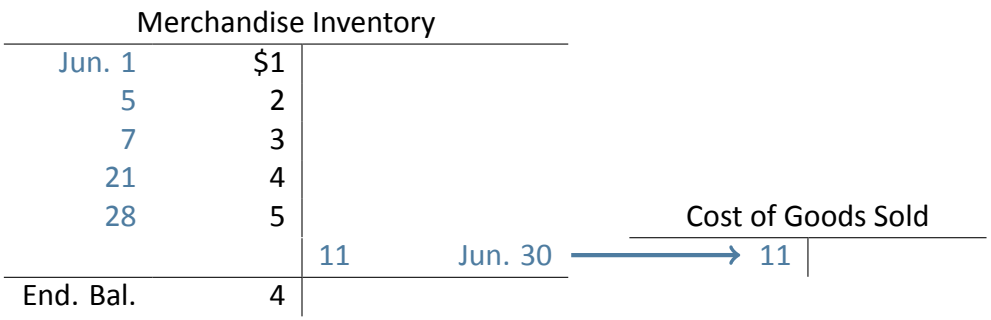


Figure 6.2: Cost of Goods Sold using Specific Identification

The entry to record the June 30 sale on account would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		40	
	Sales R+ SE+			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold E+ (SE)		11	
	Merchandise Inventory (A)			11
	To record the cost of the sale.			

It is not possible to use specific identification when inventory consists of a large number of similar inexpensive items that cannot be easily differentiated. Consequently, a method of assigning costs to inventory items based on an **assumed** flow of goods can be adopted. Three such generally accepted methods, known as cost flow assumptions, are discussed next.

The First-in, First-out (FIFO) Cost Flow Assumption

First-in, first-out (FIFO) assumes that the first goods purchased are the first ones sold. Any industry that faces rising prices and wants to maintain a strong balance sheet to qualify for loans or satisfy investors can make a case for utilizing FIFO accounting. When costs are rising FIFO will result in a higher ending inventory valuation on the balance sheet, higher profits, higher taxes, and decreased cash flow.

Using the information from the previous example, the first four units purchased are assumed to be the first four units sold under FIFO. The cost of the four units sold is $10 ($1 + $2 + $3 + $4). Sales still equal $40, so gross profit under FIFO is $30 ($40 – $10). The cost of the one remaining unit in ending inventory would be the cost of the fifth unit purchased ($5).

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6.3 would show:

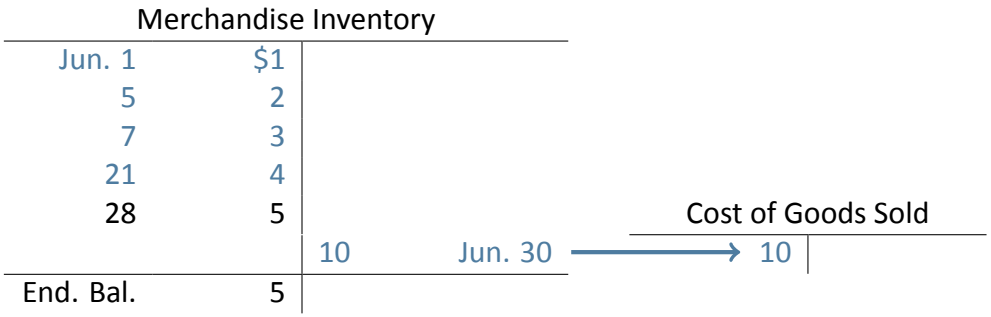


Figure 6.3: Cost of Goods Sold using FIFO

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable		40	
	Sales			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold		10	
	Merchandise Inventory			10
	To record the cost of the sale.			

The Last-in, First-out (LIFO) Cost Flow Assumption

Last-in, first-out (LIFO) assumes that the last goods purchased are the first ones sold. Any industry that faces rising prices and wants a tax advantage can make a case for utilizing LIFO accounting. When costs are rising LIFO will result in a lower ending inventory valuation on the balance sheet, lower profits, lower taxes, and increased cash flow. Although U.S. GAAP accepts the use of LIFO for financial reporting purposes International Financial Reporting Standards (IFRS) does not.

Using the information from the previous example, under the periodic method the last four units purchased are assumed to be the first four units sold under LIFO during the month of June. The cost of the four units sold is $14 ($5 + $4 + $3 + $2). Sales still equal $40, so gross profit under LIFO is $26 ($40 – $14). The cost of the one remaining unit in ending inventory would be the cost of the first unit purchased ($1).

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6.4 would show:

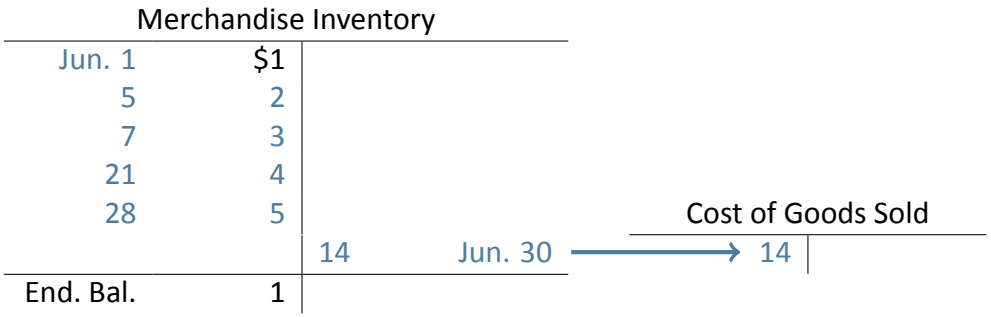


Figure 6.4: Cost of Goods Sold using LIFO

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		40	
	Sales R+ SE+			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold E+ (SE)		14	
	Merchandise Inventory (A)			14
	To record the cost of the sale.			

The Weighted Average Cost Flow Assumption

A **weighted average** cost flow is assumed when goods purchased on different dates are mixed with each other. The weighted average cost assumption is popular in practice because it is easy to calculate. It is also suitable when inventory is held in common storage facilities — for example, when several crude oil shipments are stored in one large holding tank. To calculate a weighted average, the total cost of all purchases of a particular inventory type is divided by the number of units purchased.

To calculate the weighted average cost in our example, the purchase prices for all five units are totaled ($1 + $2 + $3 + $4 + $5 = $15) and divided by the total number of units purchased (5). The weighted average cost for each unit is $3 ($15 / 5 units). The weighted average cost of goods sold would be $12 (4 units @ $3 per unit). Sales still equal $40 resulting in a gross profit under weighted average of $28 ($40 – $12). The cost of the one remaining unit in ending inventory is $3.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6.5 are:

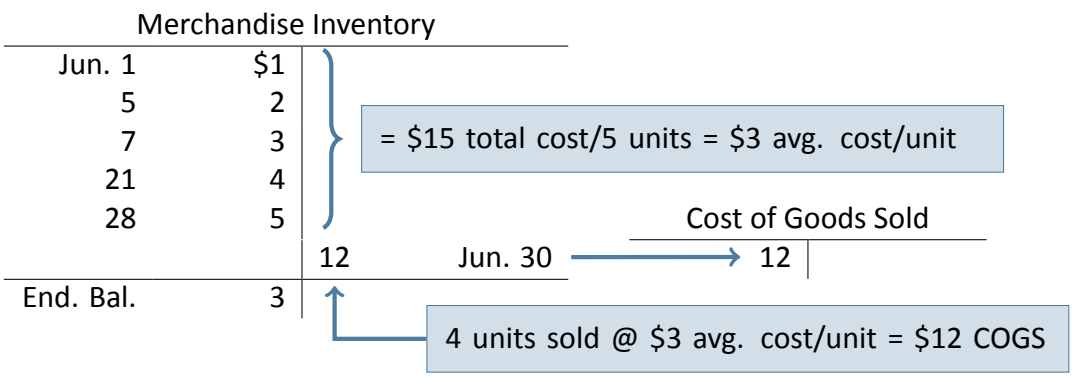


Figure 6.5: Cost of Goods Sold using Weighted Average

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		40	
	Sales R+ SE+			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold E+ (SE)		12	
	Merchandise Inventory (A)			12
	To record the cost of the sale.			

Cost Flow Methods: A Comprehensive Example

Recall that under the perpetual inventory system, cost of goods sold is calculated and recorded in the accounting system at the time when sales are recorded. In our simplified example, all sales occurred on June 30 after all inventory had been purchased. In reality, the purchase and sale of merchandise is continuous. To demonstrate the calculations when purchases and sales occur continuously throughout the accounting period, let's review a more comprehensive example.

Assume the same example as above, except that sales of units occur as follows during June:

Date	*Number of Units Sold*
June 3	1
8	1
23	1
29	1

To help with the calculation of cost of goods sold, an *inventory record card* will be used to track the individual transactions. This card records information about purchases such as the date, number of units purchased, and purchase cost per unit. It also records cost of goods sold information: the date of sale, number of units sold, and the cost of each unit sold. Finally, the card records the

balance of units on hand, the cost of each unit held, and the total cost of the units on hand. A partially-completed inventory record card is shown in Figure 6.6 below:

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	**Units**	**Cost/Unit**	**Total $**	**Units**	**Cost/Unit**	**Total $**	**Units**	**Cost/Unit**	**Total $**
June 1	**1**						**1**		
3				**1**			**0**		
5	**1**						**1**		
7	**1**						**2**		
8				**1**			**1**		
21	**1**						**2**		
23				**1**			**1**		
28	**1**						**2**		
29				**1**			**1**		

Ending Inventory is 1 unit.

Figure 6.6: Inventory Record Card

In Figure 6.6, the inventory at the end of the accounting period is one unit. This is the number of units on hand according to the accounting records. A *physical* inventory count must still be done, generally at the end of the fiscal year, to verify the quantities actually on hand. As discussed in Chapter 5, any discrepancies identified by the physical inventory count are adjusted for as shrinkage.

As purchases and sales are made, costs are assigned to the goods using the chosen costing method. This information is used to calculate the cost of goods sold amount for each sales transaction at the time of sale. These costs will vary depending on the inventory costing method used. As we will see in the next sections, the cost of sales may also vary depending on *when* sales occur.

Comprehensive Example—Specific Identification

To apply specific identification, we need information about which units were sold on each date. Assume that specific units were sold as detailed below.

Date of Sale	Specific Units Sold
June 3	The unit sold on June 3 was purchased on June 1
8	The unit sold on June 8 was purchased on June 7
23	The unit sold on June 23 was purchased on June 5
29	The unit sold on June 29 was purchased on June 28

Using the information above to apply specific identification, the resulting inventory record card appears in Figure 6.7.

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	Units	Cost/Unit	Total $	Units	Cost/Unit	Total $	Units	Cost/Unit	Total $
June 1	1	$1	$1				1	$1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	$2	$2
7	1	$3	$3				2	1@$2 1@$3	$5
8				1	$3	$3	1	$2	$2
21	1	$4	$4				2	1@$2 1@$4	$6
23				1	$2	$2	1	$4	$4
28	1	$5	$5				2	1@$4 1@$5	$9
29				1	$5	$5	1	$4	$4

Figure 6.7: Inventory Record Card using Specific Identification

Notice in Figure 6.8 that the number of units sold plus the units in ending inventory equals the total units that were available for sale. This will always be true regardless of which inventory costing method is used.

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	Units	Cost/Unit	Total $	Units	Cost/Unit	Total $	Units	Cost/Unit	Total $
June 1	1	$1	$1				1	$1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	$2	$2
7	1	$3	$3				2	1@$2 1@$3	$5
8				1	$3	$3	1	$2	$2
21	1	$4	$4				2	1@$2 1@$4	$6
23				1	$2	$2	1	$4	$4
28	1	$5	$5				2	1@$4 1@$5	$9
29				1	$5	$5	1	$4	$4

Total number of units available for sale: **5 units** = Total number of units sold: **4 units** + Total number of units in ending inventory: **1 unit**

Figure 6.8: Total Units Sold plus Total Units in Ending Inventory equals Total Units Available for Sale (Specific Identification)

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	**Units**	**Cost/Unit**	**Total $**	**Units**	**Cost/Unit**	**Total $**	**Units**	**Cost/Unit**	**Total $**
June 1	**1**	**$1**	**$1**				**1**	**$1**	**$1**
3				**1**	**$1**	**$1**	**0**	**$0**	**$0**
5	**1**	**$2**	**$2**				**1**	**$2**	**$2**
7	**1**	**$3**	**$3**				**2**	**1@$2** **1@$3**	**$5**
8				**1**	**$3**	**$3**	**1**	**$2**	**$2**
21	**1**	**$4**	**$4**				**2**	**1@$2** **1@$4**	**$6**
23				**1**	**$2**	**$2**	**1**	**$4**	**$4**
28	**1**	**$5**	**$5**				**2**	**1@$4** **1@$5**	**$9**
29				**1**	**$5**	**$5**	**1**	**$4**	**$4**

Total cost of goods available for sale: **$15** = Total cost of goods sold: **$11** + Total cost of ending inventory: **$4**

Figure 6.9: Total Cost of Goods Sold plus Total Cost of Units in Ending Inventory equals Total Cost of Goods Available for Sale (Specific Identification)

Figure 6.9 highlights the relationship in which total cost of goods sold plus total cost of ending inventory equals total cost of goods available for sale. This relationship will always be true for each of specific identification, FIFO, LIFO, and weighted average.

Comprehensive Example—FIFO (Perpetual)

Using the same information, we now apply the FIFO cost flow assumption as shown in Figure 6.10.

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	Units	Cost/Unit	Total $	Units	Cost/Unit	Total $	Units	Cost/Unit	Total $
June 1	1	$1	$1				1	$1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	$2	$2
7	1	$3	$3				2	1@$2 1@$3	$5
8				1	$2	$2	1	$3	$3
21	1	$4	$4				2	1@$3 1@$4	$7
23				1	$3	$3	1	$4	$4
28	1	$5	$5				2	1@$4 1@$5	$9
29				1	$4	$4	1	$5	$5

Figure 6.10: Inventory Record Card using FIFO (Perpetual)

When calculating the cost of the units sold in FIFO, the oldest unit in inventory will always be the first unit removed. For example, in Figure 6.10, on June 8, one unit is sold when the previous balance in inventory consisted of 2 units: 1 unit purchased on June 5 that cost $2 and 1 unit purchased on June 7 that cost $3. Because the unit costing $2 was in inventory first (before the June 7 unit costing $3), the cost assigned to the unit sold on June 8 is $2. Under FIFO, the first units into inventory are assumed to be the first units removed from inventory when calculating cost of goods sold. Therefore, under FIFO, ending inventory will always be the most recent units purchased. In Figure 6.10, there is one unit in ending inventory and it is assigned the $5 cost of the most recent purchase which was made on June 28.

The information in Figure 6.10 is repeated in Figure 6.11 to reinforce that goods available for sale equals the sum of goods sold and ending inventory.

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	**Units**	**Cost/Unit**	**Total $**	**Units**	**Cost/Unit**	**Total $**	**Units**	**Cost/Unit**	**Total $**
June 1	**1**	**$1**	**$1**				**1**	**$1**	**$1**
3				**1**	**$1**	**$1**	**0**	**$0**	**$0**
5	**1**	**$2**	**$2**				**1**	**$2**	**$2**
7	**1**	**$3**	**$3**				**2**	**1@$2** **1@$3**	**$5**
8				**1**	**$2**	**$2**	**1**	**$3**	**$3**
21	**1**	**$4**	**$4**				**2**	**1@$3** **1@$4**	**$7**
23				**1**	**$3**	**$3**	**1**	**$4**	**$4**
28	**1**	**$5**	**$5**				**2**	**1@$4** **1@$5**	**$9**
29				**1**	**$4**	**$4**	**1**	**$5**	**$5**

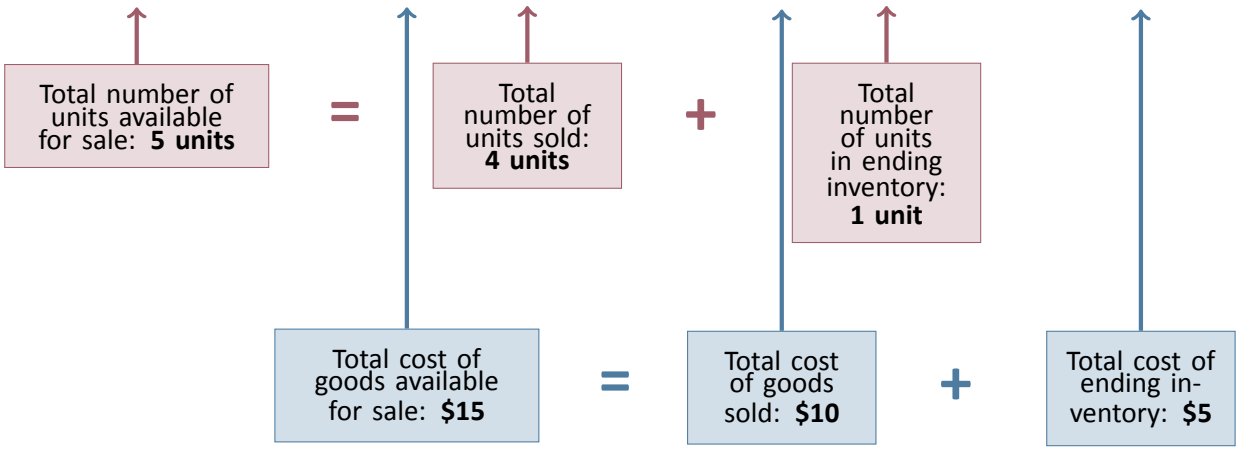


Figure 6.11: Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (FIFO Perpetual)

Comprehensive Example—LIFO (Perpetual)

Using the same information, we now apply the LIFO cost flow assumption as shown in Figure 6.12.

	Purchases			Cost of Goods Sold – LIFO			Balance in Inventory		
Date	Units Purchased	Cost/ Unit	Total Cost	Units Sold	Cost/ Unit	Total Cost	Units Available for Sale	Cost/ Unit	Total Value in Inventory
June 1	1	$1	$1				1	1 unit @ $1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	1 unit @ $2	$2
7	1	$3	$3				2	1 unit @ $2 1 unit @ $3	$5
8				1	$3	$3	1	1 unit @ $2	$2
21	1	$4	$4				2	1 unit @ $2 1 unit @ $4	$6
23				1	$4	$4	1	1 unit @ $2	$2
28	1	$5	$5				2	1 unit @ $2 1 unit @ $5	$7
29				1	$5	$5	1	1 unit @ $2	$2

Figure 6.12: Inventory Record Card using LIFO (Perpetual)

When calculating the cost of the units sold in LIFO, the newest unit in inventory will always be the first unit removed. For example, in Figure 6.12, on June 8, one unit is sold when the previous balance in inventory consisted of 2 units: 1 unit purchased on June 5 that cost $2 and 1 unit purchased on June 7 that cost $3. Because the unit costing $3 was the newest inventory (purchased after the June 5 unit costing $2), the cost assigned to the unit sold on June 8 is $3. Under LIFO, the newest units into inventory are assumed to be the first units removed from inventory when calculating cost of goods sold. Therefore, under LIFO, ending inventory will always be the oldest units purchased. In Figure 6.12, there is one unit in ending inventory and it is assigned the $2 cost of the oldest purchase which was made on June 5.

The information in Figure 6.12 is repeated in Figure 6.13 to reinforce that goods available for sale equals the sum of goods sold and ending inventory.

	Purchases			Cost of Goods Sold – LIFO			Balance in Inventory		
Date	Units Purchased	Cost/ Unit	Total Cost	Units Sold	Cost/ Unit	Total Cost	Units Available for Sale	Cost/ Unit	Total Value in Inventory
June 1	1	$1	$1				1	1 unit @ $1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	1 unit @ $2	$2
7	1	$3	$3				2	1 unit @ $2 1 unit @ $3	$5
8				1	$3	$3	1	1 unit @ $2	$2
21	1	$4	$4				2	1 unit @ $2 1 unit @ $4	$6
23				1	$4	$4	1	1 unit @ $2	$2
28	1	$5	$5				2	1 unit @ $2 1 unit @ $5	$7
29				1	$5	$5	1	1 unit @ $2	$2

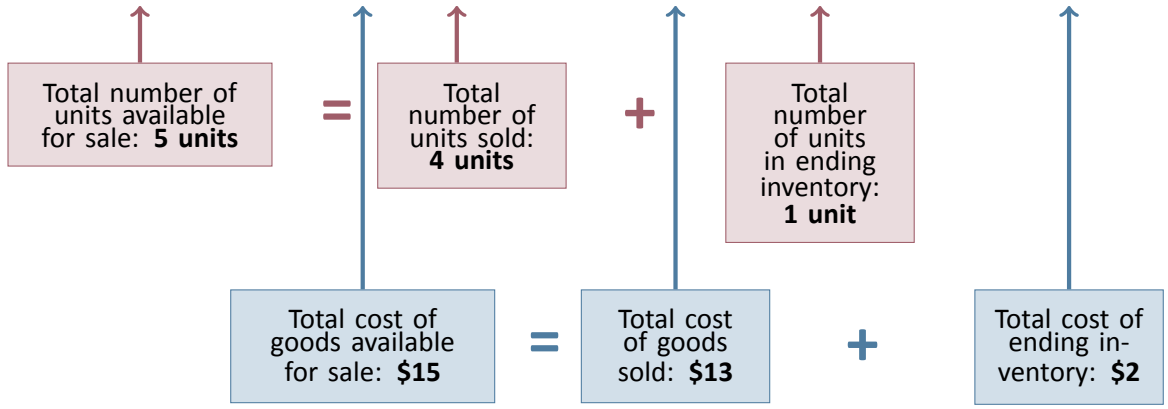


Figure 6.13: Total Units Sold plus Total Units in Ending Inventory equals Total Units Available for Sale

Comprehensive Example—Weighted Average (Perpetual)

The inventory record card transactions using weighted average costing are detailed in Figure 6.14. ***For consistency, all weighted average calculations will be rounded to two decimal places.*** When a perpetual inventory system is used, the weighted average is calculated each time a purchase is

made. For example, after the June 7 purchase, the balance in inventory is 2 units with a total cost of $5.00 (1 unit at $2 + 1 unit at $3) resulting in an average cost per unit of $2.50 ($5 / 2 units = $2). When a sale occurs, the cost of the sale is based on the most recent average cost per unit. For example, the cost of the sale on June 3 uses the $1 average cost per unit from June 1 while the cost of the sale on June 8 uses the $2.50 average cost per unit from June 7.

	Purchases			Cost of Goods Sold – Weighted Average			Balance in Inventory		
Date	Units	Cost/ Unit	Total Cost	Units	Cost/ Unit	Total Cost	Units for Sale	Avgerage Cost/ Unit	Total Cost
June 1	1	$1	$1				1	1 unit @ $1.00	$1.00
3				1	$1.00	$1.00	–		$0.00
5	1	$2	$2				1	1 unit @ $2.00	$2.00
7	1	$3	$3				2	1 unit @ $2.00 + 1 unit @ $3.00 = $5.00/2 units = $2.50 per unit	$5.00
8				1	$2.50	$2.50	1	1 unit @ $2.50	$2.50
21	1	$4	$4				2	1 unit @ $2.50 + 1 unit @ $4.00 = $6.50/2 units = $3.25 per unit	$6.50
23				1	$3.25	$3.25	1	1 unit @ $3.25	$3.25
28	1	$5	$5				2	1 unit @ $3.25 + 1 unit @ $5.00 = $8.25/2 units = $4.13 per unit	$8.25
29				1	$4.13	$4.13	1	1 unit @ $4.12	$4.12

Figure 6.14: Inventory Record Card using Weighted Average Costing (Perpetual)

A common error made by students when applying weighted average occurs when the unit costs are rounded. For example, on June 28, the average cost per unit is rounded to $4.13 ($8.25 ÷ 2 units = $4.125/unit rounded to $4.13). On June 29, the cost of the unit sold is $4.13, the June 28 average cost per unit. Care must be taken to recognize that the total remaining balance in inventory after the June 29 sale is $4.12, calculated as the June 28 ending inventory total dollar amount of $8.25 less the June 29 total cost of goods sold of $4.13. Students will often incorrectly use the average cost per unit, in this case $4.13, to calculate the ending inventory balance. Remember that the cost of goods sold plus the balance in inventory must equal the goods available for sale as highlighted in Figure 6.15.

	Purchases			Cost of Goods Sold – Weighted Average			Balance in Inventory		
Date	Units	Cost/ Unit	Total Cost	Units	Cost/ Unit	Total Cost	Units for Sale	Avgerage Cost/ Unit	Total Cost
June 1	1	$1	$1				1	1 unit @ $1.00	$1.00
3				1	$1.00	$1.00	–		$0.00
5	1	$2	$2				1	1 unit @ $2.00	$2.00
7	1	$3	$3				2	1 unit @ $2.00 + 1 unit @ $3.00 = $5.00/2 units = $2.50 per unit	$5.00
8				1	$2.50	$2.50	1	1 unit @ $2.50	$2.50
21	1	$4	$4				2	1 unit @ $2.50 + 1 unit @ $4.00 = $6.50/2 units = $3.25 per unit	$6.50
23				1	$3.25	$3.25	1	1 unit @ $3.25	$3.25
28	1	$5	$5				2	1 unit @ $3.25 + 1 unit @ $5.00 = $8.25/2 units $4.13 per unit	$8.25
29				1	$4.13	$4.13	1	1 unit @ $4.12	$4.12

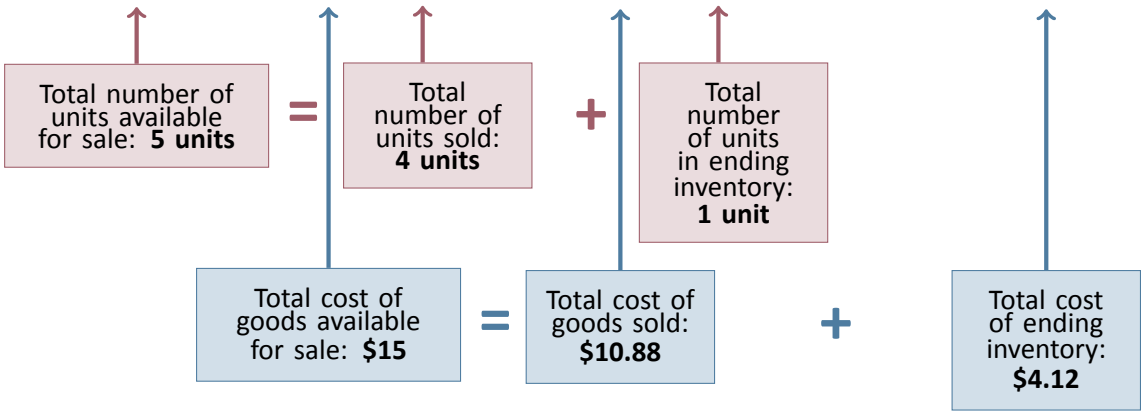


Figure 6.15: Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (Weighted Average Perpetual)

Figure 6.16 compares the results of the four costing methods. Goods available for sale, units sold, and units in ending inventory are the same regardless of which method is used. However, because each costing method allocates the cost of goods available for sale in a particular way, the cost of goods sold and ending inventory values are different for each method.

Costing Method	Total Cost of Goods for Sale	Total Units Available for Sale	Total Cost of Goods Sold	Total Units Sold	Total Cost of Ending Inventory	Total Units in Ending Inventory
Specific Identification	$15.00	5	$11.00	4	$4.00	1
FIFO	$15.00	5	$10.00	4	$5.00	1
LIFO	$15.00	5	$13.00	4	$2.00	1
Weighted Average	$15.00	5	$10.88	4	$4.12	1

Figure 6.16: Comparing Specific Identification, FIFO, LIFO, and Weighted Average

Journal Entries

In Chapter 5 the journal entries to record the sale of merchandise were introduced. Chapter 5 showed how the dollar value included in these journal entries is determined. We now know that the information in the inventory record is used to prepare the journal entries in the general journal. For example, the credit sale on June 23 using weighted average costing would be recorded as follows (refer to Figure 6.14).

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		10.00	
	Sales R+ SE+			10.00
	To record credit sale at a selling price of $10 per unit.			
	Cost of Goods Sold E+ SE+		3.25	
	Merchandise Inventory (A)			3.25
	To record the cost of the sale.			

Perpetual inventory incorporates an internal control feature that is lost under the periodic inventory method. Losses resulting from theft and error can easily be determined when the actual quantity of goods on hand is counted and compared with the quantities shown in the inventory records as being on hand. It may seem that this advantage is offset by the time and expense required to continuously update inventory records, particularly where there are thousands of different items of various sizes on hand. However, computerization makes this record keeping easier and less expensive because the inventory accounting system can be tied in to the sales system so that inventory is updated whenever a sale is recorded.

Inventory Record Card

In a company such as a large drugstore or hardware chain, inventory consists of thousands of different products. For businesses that carry large volumes of many inventory types, the general ledger merchandise inventory account contains only summarized transactions of the purchases

and sales. The detailed transactions for each type of inventory would be recorded in the underlying inventory record cards. The inventory record card is an example of a *subsidiary ledger*, more commonly called a *subledger*. The **merchandise inventory subledger** provides a detailed listing of type, amount, and total cost of all types of inventory held at a particular point in time. The sum of the balances on each inventory record card in the subledger would always equal the ending amount recorded in the Merchandise Inventory general ledger account. So a subledger contains the detail for each product in inventory while the general ledger account shows only a summary. In this way, the general ledger information is streamlined while allowing for detail to be available through the subledger. There are other types of subledgers: the accounts receivable subledger and the accounts payable subledger. These will be introduced in a subsequent chapter.

6.2 Financial Statement Impact of Different Inventory Cost Flows

LO2 – Explain the impact of inventory cost flows and errors.

When purchase costs are increasing, as in a period of inflation (or decreasing, as in a period of deflation), each cost flow assumption results in a different value for cost of goods sold and the resulting ending inventory, gross profit, and net income.

Using information from the preceding comprehensive example, the effects of each cost flow assumption on net income and ending inventory are shown in Figure 6.17.

	Spec. Ident.	*FIFO*	*LIFO*	*Wtd. Avg.*
Sales	$ 40.00	$ 40.00	$ 40.00	$ 40.00
Cost of goods sold	11.00	10.00	13.00	10.88
Gross profit	$ 29.00	$ 30.00	$ 27.00	$ 29.12
Ending inventory (on the balance sheet)	$ 4.00	$ 5.00	$ 2.00	$ 4.12

Figure 6.17: Effects of Different Cost Flow Assumptions

FIFO *maximizes* net income and ending inventory amounts when purchase costs are rising. FIFO *minimizes* net income and ending inventory amounts when purchase costs are decreasing. LIFO *minimizes* net income and ending inventory when purchase costs are rising and *maximizes* net income and ending inventory when purchases costs are decreasing.

Because different costing methods can affect the financial statements, GAAP requires that the methods adopted by a company be disclosed in its financial statements (full disclosure principle). Additionally, GAAP requires that once a method is adopted, it be used every accounting period thereafter (consistency principle) unless there is a justifiable reason to change. A business that has a variety of inventory items may choose a different costing method for each item. For ex-

ample, Walmart might use weighted average to account for its sporting goods items and specific identification for each of its various major appliances.

Effect of Inventory Errors on the Financial Statements

There are two components necessary to determine the inventory value disclosed on a corporation's balance sheet. The first component involves calculating the quantity of inventory on hand at the end of an accounting period by performing a physical inventory count. The second requirement involves assigning the most appropriate cost to this quantity of inventory.

An error in calculating either the quantity or the cost of ending inventory will misstate reported income for two time periods. Assume merchandise inventory at December 31, 2019, 2020, and 2021 was reported as $2,000 and that merchandise purchases during each of 2020 and 2021 were $20,000. There were no other expenditures. Assume further that sales each year amounted to $30,000 with cost of goods sold of $20,000 resulting in gross profit of $10,000. These transactions are summarized below.

Merchandise Inventory			
Beg. Bal.	2,000		
2020 Purch.	20,000	20,000	2020 COGS
2020 Bal.	2,000		
2021 Purch.	20,000	20,000	2021 COGS
2021 Bal.	2,000		

	2020	*2021*
Sales	$30,000	$30,000
COGS	20,000	20,000
Gross profit	$10,000	$10,000

Assume now that ending inventory was misstated at December 31, 2020. Instead of the $2,000 that was reported, the correct value should have been $1,000. The effect of this error was to understate cost of goods sold on the income statement — cost of goods sold should have been $21,000 in 2020 as shown below instead of $20,000 as originally reported above. Because of the 2020 error, the 2021 beginning inventory was incorrectly reported above as $2,000 and should have been $1,000 as shown below. This caused the 2021 gross profit to be understated by $1,000 — cost of goods sold in 2021 should have been $19,000 as illustrated below but was originally reported above as $20,000.

Merchandise Inventory			
Beg. Bal.	2,000		
2020 Purch.	20,000	20,000	2020 COGS
		1,000	Inv. Adj.
2020 Bal.	**1,000**		
2021 Purch.	20,000		
Inv. Adj.	1,000	20,000	2021 COGS
2021 Bal.	2,000		

	2020	*2021*
Sales	$30,000	$30,000
COGS	21,000	19,000
Gross Profit	$ 9,000	$11,000

Ending inventory is incorrectly stated.

As can be seen, income is misstated in both 2020 and 2021 because cost of goods sold in both years is affected by the adjustment to ending inventory needed at the end of 2020 and 2021. The opposite effects occur when inventory is understated at the end of an accounting period.

An error in ending inventory is offset in the next year because one year's ending inventory becomes the next year's beginning inventory. This process can be illustrated by comparing gross profits for 2020 and 2021 in the above example. The sum of both years' gross profits is the same.

	Overstated Inventory	*Correct Inventory*
Gross profit for 2020	$10,000	$ 9,000
Gross profit for 2021	10,000	11,000
Total	$20,000	$20,000

6.3 Lower of Cost and Net Realizable Value (LCNRV) and Lower of Cost or Market (LCM)

LO3 – Explain and calculate lower of cost and net realizable and lower of cost or market value inventory adjustments.

In addition to the adjusting entry to record the shrinkage of merchandise inventory (discussed in Chapter 5), there is an additional adjusting entry to be considered at the end of the accounting period when calculating cost of goods sold and ending inventory values for the financial statements. Initially inventory is recorded at its purchase price (less any purchase discounts) plus transportation-in, insurance while in transit, and any other expenditure made by the purchaser to get the merchandise to the place of business and ready for sale. However, due to the conservatism principle, GAAP requires companies using FIFO, weighted average, or any method other than LIFO to report inventory using the lower of cost and net realizable value (LCNRV) approach. This requires companies to compare inventory at cost to inventory at net realizable value (NRV) and then value inventory at the lower of the two. **Net realizable value** is the estimated selling price less any costs to complete, dispose of, or transport inventory. This requirement adheres to the conservatism principle by removing the possibility of overstating the value of inventory.

As an example, a change in consumer demand may mean that inventories become obsolete and need to be reduced in value below the purchase cost. This often occurs in the electronics industry as new and more popular products are introduced.

The lower of cost and net realizable value can be applied to individual inventory items, groups of similar items, or the entire inventory. Figure 6.18 below provides an example.

			LCNRV	
	Total Cost	*Total NRV*	*Unit Basis*	*Group Basis*
White paper	$1,250	$1,200	$1,200	
Coloured paper	1,400	1,500	1,400	
Total	$2,650	$2,700	$2,600	$2,650
Ending inventory (LCNRV)			$2,600	$2,650

Figure 6.18: LCNRV Calculations

Depending on the calculation used, the valuation of ending inventory will be either $2,600 or $2,650. Under the unit basis, the lower of cost and net realizable value is selected for each item: $1,200 for white paper and $1,400 for colored paper, for a total LCNRV of $2,600. Because the LCNRV is lower than cost, an adjusting entry must be recorded as follows.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		50	
	Merchandise Inventory (A)			50
	To adjust inventory to reflect its LCNRV.			

The purpose of the adjusting entry is to ensure that inventory is not overstated on the balance sheet and that income is not overstated on the income statement. Note that this is just a timing difference. Cost of goods sold would increase in the current period but it will result in a decrease in cost of goods sold in the following period assuming the inventory is sold.

Effect of the Write-Down	Current Period	Next Period[1]
Cost of goods sold	Increase $50	Decrease $50
Pretax income	Decrease $50	Increase $50
Ending inventory on the balance sheet	Decrease $50	No Effect

If white paper and colored paper are considered a similar group, the calculations in Figure 6.18 above show they have a combined cost of $2,650 and a combined net realizable value of $2,700. LCNRV would therefore be $2,650. In this case, the cost is equal to the LCNRV so no adjusting entry would be required if applying LCNRV on a group basis.

Companies that use LIFO must report inventory using the lower of cost or market (LCM) approach. **Market** is defined as the current replacement cost of inventory. The market cost should not be greater than the net realizable value, the estimated selling price less any estimated costs to sell, (called the "ceiling") and should not be less than the net realizable value reduced by an allowance for a normal profit margin (called the "floor"). If the replacement cost is between the ceiling and

[1] the result next period assuming the inventory that was previously written down has now been sold

the floor, the replacement cost is considered to be market. If the replacement cost is above the ceiling, the ceiling is considered to be market. If the replacement cost is below the floor, the floor is considered to be market. Whichever cost is determined to be market, this cost is used to compare to the cost of inventory. The lower of the two costs determines the value of inventory. Just like LCNRV it can be applied individually, to similar groups, or the entire inventory. Figure 6.19 below provides an example on an individual basis.

Unit	Cost (C)	Replacement Cost (RC)	NRV-Ceiling (NRV)*	Floor (F)**	Market (M) (Middle of RC, NRV, F)	LCM*** (Lower of C or M)
A	$5,000	$5,500	$8,500	$6,500	$6,500	$5,000
B	$10,000	$9,700	$9,000	$6,600	$9,000	$9,000

Figure 6.19: LCM Calculations

* Estimated selling price less estimated selling costs = NRV-Ceiling
** NRV-Ceiling less normal profit margin = Floor

Example – Unit A Calculation:
* $10,000 estimated selling price – $1,500 estimated selling costs = $8,500 NRV-Ceiling
** $8,500 NRV-Ceiling – $2,000 profit margin (20% of estimated selling price) = $6,500 Floor
*** $5,000 Cost compared to $6,500 Market = $5,000 LCM (what inventory should be valued at)

6.4 Estimating the Balance in Merchandise Inventory

LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

A physical inventory count determines the quantity of items on hand. When costs are assigned to these items and these individual costs are added, a total inventory amount is calculated. Is this dollar amount correct? Should it be larger? How can one tell if the physical count is accurate? Being able to estimate this amount provides a check on the reasonableness of the physical count and valuation.

The two methods used to estimate the inventory dollar amount are the *gross profit method* and the *retail inventory method*. Both methods are based on a calculation of the gross profit percentage in the income statement. Assume the following information:

Sales		$15,000	100%
Cost of Goods Sold:			
Beginning Inventory	$ 4,000		
Purchases	12,000		
Cost of Goods Available for Sale	16,000		
Less: Ending Inventory	(6,000)		
Cost of Goods Sold		10,000	67%
Gross Profit		$ 5,000	33%

The gross profit percentage, rounded to the nearest whole percent, is 33% ($5,000/15,000). This means that for each dollar of sales, an average of $.33 is left to cover other expenses after deducting cost of goods sold.

Estimating ending inventory requires an understanding of the relationship of ending inventory with cost of goods sold. Review the following cost of goods sold calculations.

Cost of Goods Sold:	
Beginning Inventory	$ 4,000
Purchases	12,000
Cost of Goods Available for Sale	$16,000
Less: Estimated Ending Inventory	?
Cost of Goods Sold	$10,000

How much of the $16,000 of goods that the company had available to sell is still not sold at December 31 (in other words, what is ending inventory)? You can calculate this as:

Available for sale	$16,000
Less inventory that was sold	10,000
Equals what must still be on hand	$ 6,000

Cost of Goods Sold:	
Beginning Inventory	$ 4,000
Purchases	12,000
Cost of Goods Available for Sale	$16,000
Less: Estimated Ending Inventory	6,000
Cost of Goods Sold	?

How much of the $16,000 of goods that were available to be sold have been sold? You use the dollar amount of ending inventory to calculate this, as:

Available for sale	$16,000
Less inventory on hand	6,000
Equals what must have been sold	$10,000

The sum of cost of goods sold and ending inventory is always equal to cost of goods available for sale. Knowing any two of these amounts enables the third amount to be calculated. Understanding this relationship is the key to estimating inventory using either the gross profit or retail inventory methods, discussed below.

Gross Profit Method

The **gross profit method** of estimating ending inventory assumes that the percentage of gross profit on sales remains approximately the same from period to period. Therefore, if the gross profit percentage is known, the dollar amount of ending inventory can be estimated. First, gross profit is estimated by applying the gross profit percentage to sales. From this, cost of goods sold can be derived, namely the difference between sales and gross profit. Cost of goods available for sale can be determined from the accounting records (beginning inventory + purchases). The difference between cost of goods available for sale and cost of goods sold is the estimated value of ending inventory.

To demonstrate, assume that Pete's Products Ltd. has an average gross profit percentage of 40%. If beginning inventory at January 1, 2019 was $200, sales for the six months ended June 30, 2019 were $2,000, and inventory purchased during the six months ended June 30, 2019 was $1,100, the cost of goods sold and ending inventory can be estimated as follows.

	Six Months Ended June 30, 2019	
Sales (given)		$2,000
Cost of Goods Sold:		
Beginning Inventory (given)	$ 200	
Purchases (given)	1,100	
Cost of Goods Available for Sale	1,300	
Less: Estimated Ending Inventory	(100)	
Cost of Goods Sold		1,200
Gross Profit		$ 800

Step 3: Ending inventory can be estimated ($1,300-1,200=100).

Step 2: Cost of goods sold can be derived ($2,000-800=$1,200).

Step 1: Gross profit is estimated at $800 ($2,000 x 40%).

The estimated ending inventory at June 30 must be $100—the difference between the cost of goods available for sale and cost of goods sold.

The gross profit method of estimating inventory is useful in situations when goods have been stolen or destroyed by fire or when it is not cost-effective to make a physical inventory count. This method has limitations in that the gross profit ratio may differ from period to period and

additionally it doesn't take into account theft or spoilage of inventory. For these reasons the gross profit method is not acceptable for preparing annual financial statements.

Retail Inventory Method

The **retail inventory method** is another way to estimate cost of goods sold and ending inventory. It can be used when items are consistently valued at a known percentage of cost, known as a *mark-up*. A **mark-up** is the ratio of retail value (or selling price) to cost. For example, if an inventory item had a retail value of $12 and a cost of $10, then it was marked up to 120% (12/10 x 100). Mark-ups are commonly used in clothing stores.

To apply the retail inventory method using the mark-up percentage, the cost of goods available for sale is first converted to its retail value (the selling price). To do this, the mark-up (ratio of retail to cost) must be known. Assume the same information as above for Pete's Products Ltd., except that now every item in the store is marked up to 160% of its purchase price. That is, if an item is purchased for $100, it is sold for $160. Based on this, beginning inventory, purchases, and cost of goods available can be restated at retail. Cost of goods sold can then be valued at retail, meaning that it will equal sales for the period. From this, ending inventory at retail can be determined and then converted back to cost using the mark-up. These steps are illustrated below.

Step 1: Beginning inventory and purchases are restated at retail by multiplying the cost x 160%.
$200 x 160% = $320
$1,100 x 160% = $1,760

Step 4: Ending inventory is restated at cost by dividing by 160%. Ending inventory of $80 at retail is divided by 160% to get ending inventory at cost of $50.

Six Months Ended June 30, 2019

	At Retail	*At Cost*
Cost of Goods Sold:		
Beginning Inventory (from records)	$ 320	$ 200
Purchases (from records)	1,760	1,100
Cost of Goods Available for Sale	2,080	1,300
Less: Estimated Ending Inventory	(80)	(50)
Cost of Goods Sold	2,000	1,250

Step 3: Ending inventory can be derived by taking cost of goods available for sale at retail and subtracting sales at retail ($2,080-2,000=$80).

Step 2a: Cost of goods sold at retail is Sales of $2,000 which was given. Restating sales to cost requires dividing $2,000 by 160% ($2,000÷160%=$1,250).

Step 2b: Instead of continuing to Steps 3 and 4, ending inventory at cost could be calculated at this point by taking cost of goods available for sale of $1,300 and subtracting cost of goods sold of $1,250. Ending inventory at retail could then be calculated by multiplying ending inventory at cost of $50 x 160%.

The retail inventory method of estimating ending inventory is easy to calculate and produces a relatively accurate cost of ending inventory, provided that no change in the average mark-up has occurred during the period. Unlike the gross profit method the retail inventory method is allowed for annual financial reporting purposes.

6.5 Appendix A: Ratio Analysis—Merchandise Inventory Turnover

LO5 – Explain and calculate merchandise inventory turnover.

To help determine how quickly a company is able to sell its inventory, the **merchandise inventory turnover** can be calculated as:

Cost of Goods Sold ÷ Average Merchandise Inventory

The average merchandise inventory is the beginning inventory plus the ending inventory divided by two. For example, assume Company A had cost of goods sold of $3,000; beginning merchandise inventory of $500; and ending inventory of $700. The merchandise inventory turnover would be 5, calculated as:

Cost of Goods Sold	÷	Average Merchandise Inventory
$3,000	÷	($500+$700)/2)

The '5' means that Company A sold its inventory 5 times during the year. In contrast, assume Company B had cost of goods sold of $3,000; beginning merchandise inventory of $1,000; and ending inventory of $1,400. The merchandise inventory turnover would be 2.50 calculated as:

Cost of Goods Sold	÷	Average Merchandise Inventory
$3,000	÷	($1,000+$1,400)/2)

The '2.5' means that Company B sold its inventory 2.5 times during the year which is much slower than Company A. The faster a business sells its inventory, the better, because high turnover positively affects *liquidity*. **Liquidity** is the ability to convert assets, such as merchandise inventory, into cash. Therefore, Company A's merchandise turnover is more favorable than Company B's.

6.6 Appendix B: Inventory Costing Methods Under the Periodic System

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — periodic.

Recall from Chapter 5 that the periodic inventory system does not maintain detailed records to calculate cost of goods sold each time a sale is made. Rather, when a sale is made, the following entry is made:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		XX	
	Sales R+ SE+			XX
	To record a credit sale.			

No entry is made to record cost of goods sold and to reduce Merchandise Inventory, as is done under the perpetual inventory system. Instead, all purchases are expenses and are recorded in the general ledger account "Purchases." A physical inventory count is conducted at year-end. An amount for ending inventory is calculated based on this count and the valuation of the items in inventory, and cost of goods sold is calculated in the income statement based on this total amount. The income statement format is:

Sales		$10,000
Cost of Goods Sold:		
Beginning Inventory	$ 1,000	
Purchases	5,000	
Goods Available for Sale	6,000	
Less: Ending Inventory	(2,000)	
Cost of Goods Sold		4,000
Gross Profit		$6,000

Even under the periodic inventory system, however, inventory costing methods need to be made (specific identification, FIFO, LIFO, weighted average). Further, different inventory costing methods produce different cost of goods sold and ending inventory values, just as they did under the perpetual inventory system. These effects have been explained earlier in this chapter. *Under the periodic inventory system, cost of goods sold and ending inventory values are determined as if the sales for the period all take place at the end of the period.* These calculations were demonstrated in our earliest example in this chapter.

Our original example using units assumed there was no beginning inventory at June 1, 2015 and that purchases were made as follows.

	Purchase Transaction	
Date	*Number of units*	*Price per unit*
June 1	1	$1
5	1	2
7	1	3
21	1	4
28	1	5
	5	$15

When recorded in the general ledger T-account "Purchases" (an income statement account), these transactions would be recorded as follows.

Purchases		No. 570
Jun. 1	$1	
5	2	
7	3	
21	4	
28	5	

Sales of four units are all assumed to take place on June 30. Ending inventory would then be counted at the end of the day on June 30. One unit should be on hand. It would be valued as follows under the various inventory costing methods, as discussed in the first part of the chapter:

Specific identification	$4
FIFO	$5
LIFO	$1
Weighted average	$3

These values would be used to calculate cost of goods sold and gross profit on the income statement, as shown in Figure 6.20 below:

	Spec. Ident.	*FIFO*	*LIFO*	*Wtd. Avg.*
Sales	$40	$40	$40	$40
Cost of Goods Sold:				
Beginning Inventory	-0-	-0-	-0-	-0-
Purchases	15	15	15	15
Goods Available for Sale	15	15	15	15
Less: Ending Inventory	(4)	(5)	(1)	(3)
Cost of Goods Sold	11	10	14	12
Gross Profit and Net Income	$29	$30	$26	$28
Ending Inventory (Balance Sheet)	$ 4	$ 5	$ 1	$ 3

Figure 6.20: Effects of Different Cost Flow Assumptions: Periodic Inventory System

Note that the results for specific identification and FIFO periodic inventory method are the same as those calculated using the perpetual inventory method. See specific identification perpetual (Figure 6.9), and FIFO perpetual (Figure 6.11). Also note that the results for LIFO and weighted average periodic inventory method are not the same as those calculated using the perpetual inventory method. See LIFO perpetual (Figure 6.13) and weighted average perpetual (Figure 6.15).

Recall that the periodic method will require an adjusting entry at the end of the accounting period in order to update the ending balance in inventory and the cost of goods sold account to their actual balances. The entry to adjust inventory and cost of goods sold to their actual balances under each inventory periodic costing method would be as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Inventory (ending balance) A+		XX	
	Purchase returns and allowances XE+ (E) SE+		XX	
	Cost of goods sold E+ (SE)		XX	
	Purchases (A)			XX
	Inventory (beginning balance) (A)			XX
	To adjust inventory to the correct balance when using the periodic inventory method.			

Summary of Chapter 6 Learning Objectives

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — perpetual.

Cost of goods available for sale must be allocated between cost of goods sold and ending inventory using a costing method. Specific identification allocates cost to units sold by using the actual cost of the specific unit sold. FIFO (first-in first-out) allocates cost to units sold by assuming the units sold were the oldest units in inventory. LIFO (last-in first-out) allocates cost to units sold by assuming the units sold were the newest units in inventory. Weighted average allocates cost to units sold by calculating a weighted average cost per unit at the time of sale.

LO2 – Explain the impact on financial statements of inventory cost flows and errors.

As purchase prices change, particular inventory methods will assign different cost of goods sold and resulting ending inventory to the financial statements. Specific identification achieves the exact matching of revenues and costs while weighted average accomplishes an averaging of price changes, or smoothing. The use of FIFO results in the current cost of inventory appearing on the

balance sheet in ending inventory. The use of LIFO results in the oldest cost of inventory appearing on the balance sheet in ending inventory. The cost flow method in use must be disclosed in the notes to the financial statements and be applied consistently from period to period. An error in ending inventory in one period impacts the balance sheet (inventory and equity) and the income statement (COGS and net income) for that accounting period and the next. However, inventory errors in one period reverse themselves in the next.

LO3 – Explain and calculate lower of cost and net realizable value and lower of cost or market inventory adjustments.

Inventory must be evaluated, at minimum, each accounting period to determine whether the net realizable value (NRV) is lower than cost, known as the lower of cost and net realizable value (LCNRV) of inventory. An adjustment is made if the NRV is lower than cost. LCNRV is used for FIFO, weighted average, and any method other than LIFO. Companies that use LIFO must use the lower of cost or market approach to evaluate inventory. This is a two-step process that first determines market (replacement cost) and then compares market to cost. The lower of the two costs determines inventory valuation. Both of these approaches can be applied to individual units, groups of similar items, or entire inventory.

LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

Estimating inventory using the gross profit method requires that estimated cost of goods sold be calculated by, first, multiplying net sales by the gross profit ratio. Estimated ending inventory at cost is then arrived at by taking goods available for sale at cost less the estimated cost of goods sold. To apply the retail inventory method, three calculations are required:

- retail value of goods available for sale less retail value of net sales equals retail value of ending inventory,
- goods available for sale at cost divided by retail value of goods available for sale equals cost to retail ratio, and
- retail value of ending inventory multiplied by the cost to retail ratio equals estimated cost of ending inventory.

LO5 – Explain and calculate merchandise inventory turnover.

The merchandise turnover is a liquidity ratio that measures how quickly inventory is sold. It is calculated as: COGS/Average Merchandise Inventory. Average merchandise inventory is the beginning inventory balance plus the ending inventory balance divided by two.

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — periodic.

Periodic systems assign cost of goods available for sale to cost of goods sold and ending inventory at the end of the accounting period. Specific identification and FIFO give identical results in each of periodic and perpetual. LIFO and the weighted average cost, periodic, will differ from its perpetual counterpart because in periodic, the average cost per unit is calculated at the end of the accounting period based on total goods that were available for sale.

Discussion Questions

1. Explain the importance of maintaining appropriate inventory levels for
   - **a.** management; and
   - **b.** investors and creditors.
2. What aspects of accounting for inventory on financial statements would be of interest to accountants?
3. What types of costs are included in the cost of inventory?
4. How does a flow of goods differ from a flow of costs? Do generally accepted accounting principles require that the flow of costs be similar to the physical movement of goods? Explain.
5. What two factors are considered when costing merchandise for financial statement purposes? Which of these factors is most difficult to determine? Why?
6. Why is consistency in inventory valuation necessary? Does the application of the consistency principle preclude a change from weighted average to FIFO or LIFO? Explain.
7. The ending inventory of CBCA Inc. is overstated by $5,000 at December 31, 2018. What is the effect on 2018 net income? What is the effect on 2019 net income assuming that no other inventory errors have occurred during 2019?
8. When should inventory be valued at less than cost?
9. What is the primary reason for the use of the LCNRV method and the LCM method of inventory valuation? What does the term net *realizable value* mean? What does the term *market* mean?
10. When inventory is valued at LCNRV or LCM, what does cost refer to?
11. What inventory cost flow assumptions are permissible under GAAP?

12. Why is estimating inventory useful?
13. How does the estimation of ending inventory differ between the gross profit method and the retail inventory method? Use examples to illustrate.
14. When is the use of the gross profit method particularly useful?
15. Does the retail inventory method assume any particular inventory cost flow assumption?

Exercises

EXERCISE 6–1 (LO1)

Laplante Inc. uses the perpetual inventory system. The following transactions took place during January 2021.

Date		*Units*	*Unit Cost*
Jan 1	Beginning Inventory	100	$1
7	Purchase #1	10	2
9	Sale #1	80	
21	Purchase #2	20	3
24	Sale #2	40	

Required: Using the table below, calculate cost of goods sold for the January 9 and 24 sales, and ending inventory using the FIFO and LIFO cost flow assumptions.

		Purchased (Sold)			*Balance*				
Date		*Units*	*Unit Cost*	*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan 1	Beginning Inventory				100	×	$1	=	$100
7	Purchase #1								
9	Sale #1								
21	Purchase #2								
24	Sale #2								

EXERCISE 6–2 (LO1)

Using the information from EXERCISE 6–1, calculate the cost of goods sold for the January 9 and 24 sales, and ending inventory using the Specific Identification cost flow assumption. Assume that:

i. on January 9, the specific units sold were 72 units from beginning inventory and 8 units from the January 7 purchase and

ii. the specific units sold on January 24 were 23 units from beginning inventory and 17 units from the January 21 purchase.

EXERCISE 6–3 (LO1)

ABBA uses the weighted average inventory cost flow assumption under the perpetual inventory system. The following transactions took place in January 2018.

Date		*Units*	*Unit Selling Price/ Cost*
Jan 1	Beginning Inventory	2,000	$0.50
5	Sale #1	1,200	5.00
6	Purchase #1	1,000	2.00
10	Purchase #2	500	1.00
16	Sale #2	2,000	6.00
21	Purchase #3	1,000	2.50

All sales are made on account. Round all per unit costs to two decimal places.

Required:

a. Record the journal entry for the January 5 sale. Show calculations for cost of goods sold.

b. Record the journal entry for the January 16 sale. Show calculations for cost of goods sold.

c. Calculate ending inventory in units, cost per unit, and total cost.

EXERCISE 6–4 (LO2)

Listed below are common accounting errors.

	2016 Statements				2017 Statements			
Errors	*Beginning Invent.*	*Ending Invent.*	*2016 Total Assets*	*2016 Net Income*	*Beginning Invent.*	*Ending Invent.*	*2017 Total Assets*	*2017 Net Income*
1. Goods purchased in 2016 were included in the December 31, 2016 inventory, but the transaction was not recorded until early 2017.	N/E							
2. Goods purchased in 2017 were included in December 31, 2016 inventory, and the transaction was recorded in 2016.	N/E							

Required: Use N/E (No Effect), O (Overstated), or U (Understated) to indicate the effect of each error on the company's financial statements for the years ended December 31, 2016 and December 31, 2017. The beginning inventory for the 2016 statements is done.

EXERCISE 6–5 (LO2)

Partial income statements of Lilydale Products Inc. are reproduced below:

	2021	*2022*	*2023*
Sales	$30,000	$40,000	$50,000
Cost of Goods Sold	20,000	23,000	25,000
Gross Profit	$10,000	$17,000	$25,000

Required:

a. Calculate the impact of the two errors listed below on the gross profit calculated for the three years:

i. The 2021 ending inventory was understated by $2,000.

ii. The 2023 ending inventory was overstated by $5,000.

b. What is the impact of these errors on Total Assets?

EXERCISE 6–6 (LO3)

Erndale Products Ltd. has the following items in inventory at year-end:

Item	*Units*	*Cost/Unit*	*NRV/Unit*
X	2	$50	$60
Y	3	150	75
Z	4	25	20

Required: Calculate the cost of ending inventory using LCNRV on

a. A unit-by-unit basis

b. A group inventory basis.

EXERCISE 6–7 (LO4)

Windy City Insurance Ltd. has received a fire-loss claim of $45,000 from Balton Corp. A fire destroyed Balton's inventory on May 25, 2015. Balton has an average gross profit of 35%. You have obtained the following information:

Inventory, May 1, 2015	$ 80,000
Purchases, May 1 - May 25	150,000
Sales, May 1 - May 25	300,000

Required:

a. Calculate the estimated amount of inventory lost in the fire.

b. How reasonable is Balton's claim?

EXERCISE 6–8 (LO5)

The following account balances for Cost of Goods Sold and Merchandise Inventory were extracted from Able Corp.'s accounting records:

	2025	*2024*	*2023*	*2022*	*2021*
Cost of Goods Sold	370,000	400,000	420,000	440,000	450,000
Merchandise Inventory	120,000	111,250	88,750	111,250	88,750

Required:

a. Calculate the Merchandise Inventory Turnover for each of the years 2022 to 2025.

b. Is the change in Able Corp.'s Merchandise Inventory Turnover ratio favorable or unfavorable? Explain.

Problems

PROBLEM 6–1 (LO1)

Southern Cross Company Limited made the following purchases and sales of Products A and B during the year ended December 31, 2020:

Product A

		Units	*Unit Cost/ Selling Price*
Jan. 07	Purchase #1	8,000	$12.00
Mar. 30	Sale #1	9,000	16.00
May 10	Purchase #2	12,000	12.10
Jul. 04	Sale #2	14,000	17.00

Product B

		Units	*Unit Cost/ Selling Price*
Jan. 13	Purchase #1	5,000	$13.81
Jul. 15	Sale #1	1,000	20.00
Oct. 23	Purchase #2	7,000	14.21
Dec. 14	Sale #2	8,000	21.00

Beginning inventory at January 1 amounted to 4,000 units at $11.90 per unit for Product A and 2,000 units at $13.26 per unit for Product B.

Required:

1. Prepare inventory record cards for Products A and B for the year using the weighted average inventory cost flow assumption.
2. Calculate total cost of ending inventory at December 31, 2020.
3. Calculate the gross profit percentage earned on the sale of
   i. Product A in 2020 and
   ii. Product B in 2020.

PROBLEM 6–2 (LO1) Challenge Question – Assigning Costs to Inventory

Below are various inventory related transactions:

Jan 1	Inventory, beginning	500 units	@	$10	=	$5,000
4	Sale	100 units	@	$20	=	2,000
6	Purchase	200 units	@	$11	=	2,200
8	Purchase return (from Jan 6 purchase)	(10) units	@	$11	=	(110)
9	Sale	200 units	@	$22	=	4,400
10	Sales return from customer from Jan 4 sale (returned to inventory)	(15) units	@	$22	=	(330)
15	Sale	150 units	@	$23	=	3,450
17	Purchase	300 units	@	$9	=	2,700
19	Sales return from customer from Jan 15 sale (beyond repair, disposed)	(2) units		$23	=	(46)
20	Sale	400 units	@	$21	=	2,100

Required:

1. Complete an inventory record card (schedule) the same as the example shown in Figure 6.11 of the text and with totals at the bottom. Assume that the FIFO method was used.
2. Complete an inventory record card (schedule) the same as the example shown in Figure 6.13 of the text and with totals at the bottom. Assume that the LIFO method was used.
3. Calculate the gross profit and the gross profit percentage under both FIFO and LIFO.
4. What is the ending inventory balance at January 20, 2016 under both FIFO and LIFO?

PROBLEM 6–3 (LO1) Assigning Costs to Inventory

Below are various inventory related transactions:

Purchases:

Feb 1	Beginning inventory	75 units @ $12
Feb 7	Purchase	300 units @ $11
Feb 14	Purchase return from Feb 7	10 units @ $11
Feb 19	Purchase	400 units @ $9

Sales Price: $24.00

Units Sold:

Feb 5	70 units
Feb 12	180 units
Feb 17	100 units
Feb 23	80 units

Required:

1. Complete an inventory record card (schedule) the same as the example shown in Figure 6.15 of the text and with totals at the bottom. Assume that a weighted average cost method was used. Round unit costs to the nearest two decimals.
2. Calculate the gross profit and the gross profit percentage.
3. What is the ending inventory balance at February 23, 2016?

PROBLEM 6–4 (LO2) Inventory Errors

The following table shows the following financial data for AAA Ltd. for the year ended December 31, 2016:

Financial Data
For the year ended December 31, 2016

	2015	**2016**
Cost of goods sold	$ 500,000	$ 660,000
Net income	250,000	350,000
Total assets	1,500,000	1,400,000
Equity	1,400,000	1,300,000

The following errors were made:

The inventory count for 2015 was overstated by $45,000.

Required: Calculate the corrected cost of goods sold, net income, total assets and equity for 2015 and 2016.

PROBLEM 6–5 (LO2) Inventory Errors

Using the data from PROBLEM 6–4, the following table shows the following financial data for AAA Ltd. for the year ended December 31, 2016:

Financial Data
For the year ended December 31, 2016

	2015	**2016**
Cost of goods sold	$ 500,000	$ 660,000
Net income	250,000	350,000
Total assets	1,500,000	1,400,000
Equity	1,400,000	1,300,000

The following errors were made:

The inventory count for 2015 was understated by $30,000.

Required: Calculate the corrected cost of goods sold, net income, total assets and equity for 2015 and 2016.

PROBLEM 6–6 (LO3) Lower of Cost and Net Realizable Value

Below are the inventory details for Almac Flooring Ltd.:

Ceramic Wall Tiles:	# of Units	Cost/Unit	NRV/Unit
White	1,025	5.00	6.00
Black	875	4.50	4.25
Slate	645	7.00	7.11
Beige	325	2.00	2.25
Marble Flooring:			
Cordoba	10,000	9.25	9.35
Carrerra	12,000	10.50	10.50
Maricha	8,000	11.50	11.45
Shower Waterproofing:			
Novo	10,035	9.85	9.50
Deetra	9.86	6.75	7.15

Required:

1. Calculate the LCNRV for each group.
2. Calculate the LCNRV for each individual product.
3. Prepare the adjusting entries if any for parts (1) and (2).

PROBLEM 6–7 (LO4) Estimating Inventory and Valuation – Gross Profit Method

Varane Ltd. is required to submit an interim financial statement to their bank as part of the line-of-credit monitoring process. Below is information regarding their first quarter business for 2017:

Ending inventory from the previous year	$420,364
Purchases	1,323,280
Purchase returns	18,270
Transportation-in	9,660
Freight-out	2,300
Sales	1,667,610
Sales returns	13,230
Operating expenses	130,500
3-year rolling average gross profit	34%
Income tax rate	30%

Required:

1. Prepare a schedule of calculations to estimate the company's ending inventory at the end of the quarter using the gross profit method.
2. Prepare a multiple-step income statement for the first quarter ending March 31, 2017.

PROBLEM 6–8 (LO4) Estimating Inventory and Valuation – Retail Inventory Method

Ceabane Ltd. is required to submit an interim financial statement to their creditors. Below is information regarding their first six months for 2017:

	At Cost	At Retail
Ending inventory from the previous year	$659,890	$1,298,010
Purchases	4,660,362	8,958,180
Purchase returns	73,920	167,090
Sales		7,693,980
Sales returns		62,440
Additional information:		
Operating expenses	$1,500,000	
Income tax rate	30%	

Required:

1. Prepare a schedule of calculations to estimate the company's ending inventory at the end of the quarter using the retail inventory method.
2. Prepare a multiple-step income statement for the first six months ending June 30, 2017.

PROBLEM 6–9 (LO2) Inventory Errors

Partial income statements of Schneider Products Inc. are reproduced below:

	2016	*2017*
Sales	$50,000	$50,000
Cost of Goods Sold	20,000	23,000
Gross Profit	$30,000	$27,000

The 2016 ending inventory was overstated by $2,000 during the physical count. The 2017 physical inventory count was done properly.

Required:

1. Calculate the impact of this error on the gross profit calculated for 2016 and 2017.
2. What is the impact of this error on total assets at the end of 2016 and 2017? Net assets?

PROBLEM 6–10 (LO3) Lower of Cost and Net Realizable Value

Reflex Corporation sells three products. The inventory valuation of these products is shown below for years 2017 and 2018.

	2017			*2018*		
	Cost	*NRV*	*Unit Basis (LCNRV)*	*Cost*	*NRV*	*Unit Basis (LCNRV)*
Product X	$14,000	$15,000	?	$15,000	$16,000	?
Product Y	12,500	12,000	?	12,000	11,500	?
Product Z	11,000	11,500	?	10,500	10,000	?
Total	?	?	?	?	?	?

Required: If Reflex values its inventory using LCNRV/unit basis, complete the 2017 and 2018 cost, net realizable value, and LCNRV calculations.

PROBLEM 6–11 (LO3) Lower of Cost or Market

Drake Medical Supply uses LIFO as their inventory costing method. Data related to their inventories are presented below:

	Surgical Equipment	**Surgical Supplies**	**Lab Equipment**	**Lab Supplies**
Selling price	$260	$120	$340	$165
Cost	170	90	250	162
Replacement cost	240	80	235	158
Costs to sell	30	5	25	10
Normal profit ratio	30%	30%	30%	20%

Required: In applying the lower of cost or market rule, determine what the inventory value of surgical equipment should be.

Chapter 7

Cash and Receivables

This chapter focuses on the current assets of cash and receivables. Internal control over cash involves processes and procedures that include the use of a petty cash fund and the preparation of a bank reconciliation. Receivables can be determined to be uncollectible. To match the cost of uncollectible accounts and the related revenue, uncollectible accounts, more commonly referred to as bad debts, must be estimated. Bad debts are accounted for using the allowance approach, applied using either the income statement method or balance sheet method. When uncollectible accounts are specifically identified, they are written off. Write-offs can be subsequently recovered. The journalizing of short-term notes receivable and related interest revenue is also discussed in this chapter. To help in the analysis of cash and receivables, two ratios are introduced: the acid-test and accounts receivable turnover.

Chapter 7 Learning Objectives

LO1 – Define the fraud triangle. Define internal control and explain how it is applied to cash.

LO2 – Explain and journalize petty cash transactions.

LO3 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

LO5 – Explain and record a short-term notes receivable as well as calculate related interest.

LO6 – Explain and calculate the acid-test ratio.

LO7 – Explain and calculate the accounts receivable turnover.

Concept Self-Check

Use the following as a self-check while working through Chapter 7.

1. What constitutes a good system of control over cash?
2. What is a petty cash system and how is it used to control cash?
3. How is petty cash reported on the balance sheet?

4. How does the preparation of a bank reconciliation facilitate control over cash?
5. What are the steps in preparing a bank reconciliation?
6. How does the estimation of uncollectible accounts receivable address the GAAP of matching?
7. How are uncollectible accounts disclosed on financial statements?
8. What are the different methods used for estimating uncollectible accounts receivable?
9. How is aging of accounts receivable used in estimating uncollectible accounts?
10. How are notes receivable recorded?
11. What is the acid-test ratio and how is it calculated?
12. How is the accounts receivable turnover calculated and what does it mean?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

7.1 Internal Control

LO1 – Define the fraud triangle. Define internal control and explain how it is applied to cash.

Assets are the lifeblood of a company. As such, they must be protected. This duty falls to managers of a company. The policies and procedures implemented by management to protect assets are collectively referred to as **internal controls**. An effective internal control program not only protects assets, but also aids in accurate record-keeping, produces financial statement information in a timely manner, ensures compliance with laws and regulations, and promotes efficient operations. Effective internal control procedures ensure that adequate records are maintained, transactions are authorized, duties among employees are divided between record-keeping functions and control of assets, and employees' work is checked by others. The use of electronic record-keeping systems does not decrease the need for good internal controls.

The effectiveness of internal controls is limited by human error and fraud. Human error can occur because of negligence or mistakes. Fraud is the intentional decision to circumvent internal control systems for personal gain. Three conditions are necessary for financial statement fraud to occur: incentive, opportunity, and the ability to rationalize the fraud. Antifraud experts refer to this as the **fraud triangle**.

Internal controls take many forms. Some are broadly based, like mandatory employee drug testing, video surveillance, and scrutiny of company email systems. Others are specific to a particular type of asset or process. For instance, internal controls need to be applied to a company's accounting system to ensure that transactions are processed efficiently and correctly to produce reliable records in a timely manner. Procedures should be documented to promote good record-keeping, and employees need to be trained in the application of internal control procedures.

Financial statements prepared according to generally accepted accounting principles are useful not only to external users in evaluating the financial performance and financial position of the company, but also for internal decision making. There are various internal control mechanisms that aid in the production of timely and useful financial information. For instance, using a chart of accounts is necessary to ensure transactions are recorded in the appropriate account. As an example, expenses are classified and recorded in applicable expense accounts, then summarized and evaluated against those of a prior year.

The design of accounting records and documents is another important means to provide financial information. Financial data is entered and summarized in records and transmitted by documents. A good system of internal control requires that these records and documents be prepared at the time a transaction takes place or as soon as possible afterwards, since they become less credible and the possibility of error increases with the passage of time. The documents should also be consecutively pre-numbered, to indicate whether there may be missing documents.

Internal control also promotes the protection of assets. Cash is particularly vulnerable to misuse. A good system of internal control for cash should provide adequate procedures for protecting cash receipts and cash payments (commonly referred to as cash disbursements). Procedures to achieve control over cash vary from company to company and depend upon such variables as company size, number of employees, and cash sources. However, effective cash control generally requires the following:

- Separation of duties: People responsible for handling cash should not be responsible for maintaining cash records. By separating the custodial and record-keeping duties, theft of cash is less likely.
- Same-day deposits: All cash receipts should be deposited daily in the company's bank account. This prevents theft and personal use of the money before deposit.
- Payments made using non-cash means: Checks or electronic funds transfer (EFT) provide a separate external record to verify cash disbursements. For example, many businesses pay their employees using electronic funds transfer because it is more secure and efficient than using cash or even checks.

Two forms of internal control over cash will be discussed in this chapter: the use of a petty cash account and the preparation of bank reconciliations.

7.2 Petty Cash

LO2 – Explain and journalize petty cash transactions.

The payment of small amounts by check may be inconvenient and costly. For example, using cash to pay for postage on an incoming package might be less than the total processing cost of a check. A small amount of cash kept on hand to pay for small, infrequent expenses is referred to as a **petty cash fund**.

Establishing and Reimbursing the Petty Cash Fund

To set up the petty cash fund, a check is prepared for the amount of the fund. The custodian of the fund cashes the check and places the coins and currency in a locked box. Responsibility for the petty cash fund should be delegated to only one person, who should be held accountable for its contents. Cash payments are made by this petty cash custodian out of the fund as required when supported by receipts. When the amount of cash has been reduced to a pre-determined level, the receipts are compiled and submitted for entry into the accounting system. A check is then issued to reimburse the petty cash fund. At any given time, the petty cash amount should consist of cash and supporting receipts, all totaling the petty cash fund amount. To demonstrate the management of a petty cash fund, assume that a $200 check is issued for the purpose of establishing a petty cash fund.

The journal entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Petty Cash A+		200	
	Cash (A)			200
	To establish the $200 petty cash fund.			

Petty Cash is a current asset account. When reporting Cash on the financial statements, the balances in Petty Cash and Cash are reported separately.

Assume the petty cash custodian has receipts totaling $190 and $10 in coin and currency remaining in the petty cash box. The receipts consist of the following: delivery charges $100, $35 for postage, and office supplies of $55. The petty cash custodian submits the receipts to the accountant who records the following entry and issues a check for $190.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		100	
	Postage Expense E+ (SE)		35	
	Office Supplies Expense[1] E+ (SE)		55	
	Cash (A)			190
	To reimburse the petty cash fund.			

The petty cash receipts should be cancelled at the time of reimbursement in order to prevent their reuse for duplicate reimbursements. The petty cash custodian cashes the $190 check. The $190 plus the $10 of coin and currency in the locked box immediately prior to reimbursement equals the $200 total required in the petty cash fund.

Sometimes, the receipts plus the coin and currency in the petty cash locked box do not equal the required petty cash balance. To demonstrate, assume the same information above except that the coin and currency remaining in the petty cash locked box was $8. This amount plus the receipts for $190 equals $198 and not $200, indicating a shortage in the petty cash box. The entry at the time of reimbursement reflects the shortage and is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		100	
	Postage Expense E+ (SE)		35	
	Office Supplies Expense E+ (SE)		55	
	Cash Over/Short Expense E+ (SE)		2	
	Cash (A)			192
	To reimburse the petty cash fund and account for the $2.00 shortage.			

Notice that the $192 credit to Cash plus the $8 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $200 required total in the petty cash fund.

Assume, instead, that the coin and currency in the petty cash locked box was $14. This amount plus the receipts for $190 equals $204 and not $200, indicating an overage in the petty cash box. The entry at the time of reimbursement reflects the overage and is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		100	
	Postage Expense E+ (SE)		35	
	Office Supplies Expense E+ (SE)		55	
	Cash Over/Short Expense R+ SE+			4
	Cash (A)			186
	To reimburse the petty cash fund and account for the $4.00 overage.			

Again, notice that the $186 credit to Cash plus the $14 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $200 required total in the petty cash fund.

What happens if the petty cash custodian finds that the fund is rarely used? In such a case, the size of the fund should be decreased to reduce the risk of theft. To demonstrate, assume the petty cash custodian has receipts totaling $110 and $90 in coin and currency remaining in the petty cash

[1] An expense is debited instead of Office Supplies, an asset, because the need to purchase supplies through petty cash assumes the immediate use of the items.

box. The receipts consist of the following: delivery charges $80 and postage $30. The petty cash custodian submits the receipts to the accountant and requests that the petty cash fund be reduced by $75. The following entry is recorded and a check for $35 is issued.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		80	
	Postage Expense E+ (SE)		30	
	Petty Cash (A)			75
	Cash (A)			35
	To reimburse the petty cash fund and reduce it by $75.			

The $35 credit to Cash plus the $90 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $125 new balance in the petty cash fund ($200 original balance less the $75 reduction).

In cases when the size of the petty cash fund is too small, the petty cash custodian could request an increase in the size of the petty cash fund at the time of reimbursement. Care should be taken to ensure that the size of the petty cash fund is not so large as to become a potential theft issue. Additionally, if a petty cash fund is too large, it may be an indicator that transactions that should be paid by check are not being processed in accordance with company policy. Remember that the purpose of the petty cash fund is to pay for infrequent expenses; day-to-day items should not go through petty cash.

7.3 Cash Collections and Payments

LO3 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

The widespread use of banks facilitates cash transactions between entities and provides a safeguard for the cash assets being exchanged. This involvement of banks as intermediaries between entities has accounting implications. At any point in time, the cash balance in the accounting records of a particular company usually differs from the bank cash balance of that company. The difference is usually because some cash transactions recorded in the accounting records have not yet been recorded by the bank and, conversely, some cash transactions recorded by the bank have not yet been recorded in the company's accounting records.

The use of a bank reconciliation is one method of internal control over cash. The reconciliation process brings into agreement the company's accounting records for cash and the **bank statement** issued by the company's bank. A bank reconciliation explains the difference between the balances reported by the company and by the bank on a given date.

A bank reconciliation proves the accuracy of both the company's and the bank's records, and reveals any errors made by either party. The bank reconciliation is a tool that can help detect at-

tempts at theft and manipulation of records. The preparation of a bank reconciliation is discussed in the following section.

The Bank Reconciliation

The bank reconciliation is a report prepared by a company at a point in time. It identifies discrepancies between the cash balance reported on the bank statement and the cash balance reported in a business's Cash account in the general ledger, more commonly referred to as the *books*. These discrepancies are known as *reconciling items* and are added or subtracted to either the book balance or bank balance of cash. Each of the reconciling items is added or subtracted to the business's cash balance. The business's cash balance will change as a result of the reconciling items. The cash balance prior to reconciliation is called the *unreconciled* cash balance. The balance after adding and subtracting the reconciling items is called the *reconciled* cash balance. The following is a list of potential reconciling items and their impact on the bank reconciliation.

Book reconciling items	*Bank reconciling items*
Collection of notes receivable (added)	Outstanding deposits (added)
NSF checks (subtracted)	Outstanding checks (subtracted)
Bank charges (subtracted)	
Book errors (added or subtracted, depending on the nature of the error)	Bank errors (added or subtracted, depending on the nature of the error)

Book Reconciling Items

The collection of notes receivable may be made by a bank on behalf of the company. These collections are often unknown to the company until they appear as an addition on the bank statement, and so cause the general ledger cash account to be understated. As a result, the collection of a notes receivable is added to the unreconciled book balance of cash on the bank reconciliation.

Checks returned to the bank because there were not sufficient funds (NSF) to cover them appear on the bank statement as a reduction of cash. The company must then request that the customer pay the amount again. As a result, the general ledger cash account is overstated by the amount of the NSF check. NSF checks must therefore be subtracted from the unreconciled book balance of cash on the bank reconciliation to reconcile cash.

Checks received by a company and deposited into its bank account may be returned by the customer's bank for a number of reasons (e.g., the check was issued too long ago, known as a stale-dated check, an unsigned or illegible check, or the check shows the wrong account number). Returned checks cause the general ledger cash account to be overstated. These checks are therefore subtracted on the bank statement, and must be deducted from the unreconciled book balance of cash on the bank reconciliation.

Bank service charges are deducted from the customer's bank account. Since the service charges have not yet been recorded by the company, the general ledger cash account is overstated. There-

fore, service charges are subtracted from the unreconciled book balance of cash on the bank reconciliation.

A business may incorrectly record journal entries involving cash. For instance, a deposit or check may be recorded for the wrong amount in the company records. These errors are often detected when amounts recorded by the company are compared to the bank statement. Depending on the nature of the error, it will be either added to or subtracted from the unreconciled book balance of cash on the bank reconciliation. For example, if the company recorded a check as $520 when the correct amount of the check was $250, the $270 difference would be added to the unreconciled book balance of cash on the bank reconciliation. Why? Because the cash balance reported on the books is understated by $270 as a result of the error. As another example, if the company recorded a deposit as $520 when the correct amount of the deposit was $250, the $270 difference would be subtracted from the unreconciled book balance of cash on the bank reconciliation. Why? Because the cash balance reported on the books is overstated by $270 as a result of the error. Each error requires careful analysis to determine whether it will be added or subtracted in the unreconciled book balance of cash on the bank reconciliation.

Bank Reconciling Items

Cash receipts are recorded as an increase of cash in the company's accounting records when they are received. These cash receipts are deposited by the company into its bank. The bank records an increase in cash only when these amounts are actually deposited with the bank. Since not all cash receipts recorded by the company will have been recorded by the bank when the bank statement is prepared, there will be outstanding deposits, also known as **deposits in transit**. Outstanding deposits cause the bank statement cash balance to be understated. Therefore, outstanding deposits are a reconciling item that must be added to the unreconciled bank balance of cash on the bank reconciliation.

On the date that a check is prepared by a company, it is recorded as a reduction of cash in a company's books. A bank statement will not record a cash reduction until a check is presented and accepted for payment (or *clears* the bank). Checks that are recorded in the company's books but are not paid out of its bank account when the bank statement is prepared are referred to as **outstanding checks**. Outstanding checks mean that the bank statement cash balance is overstated. Therefore, outstanding checks are a reconciling item that must be subtracted from the unreconciled bank balance of cash on the bank reconciliation.

Bank errors sometimes occur and are not revealed until the transactions on the bank statement are compared to the company's accounting records. When an error is identified, the company notifies the bank to have it corrected. Depending on the nature of the error, it is either added to or subtracted from the unreconciled bank balance of cash on the bank reconciliation. For example, if the bank cleared a check as $520 that was correctly written for $250, the $270 difference would be added to the unreconciled bank balance of cash on the bank reconciliation. Why? Because the cash balance reported on the bank statement is understated by $270 as a result of this error. As another example, if the bank recorded a deposit as $520 when the correct amount was actually

$250, the $270 difference would be subtracted from the unreconciled bank balance of cash on the bank reconciliation. Why? Because the cash balance reported on the bank statement is overstated by $270 as a result of this specific error. Each error must be carefully analyzed to determine how it will be treated on the bank reconciliation.

Illustrative Problem—Bank Reconciliation

Assume that a bank reconciliation is prepared by Big Dog Carworks Corp. (BDCC) at April 30. At this date, the Cash account in the general ledger shows a balance of $21,929 and includes the cash receipts and payments shown in Figure 7.1.

Cash — Acct. No. 101

Date		Description	Debit	Credit	DR/CR	Balance
2015						
Mar.	31	Balance			DR	20673 -
Apr.	30	April cash receipts	9482 -		DR	30155 -
	30	April cash payments		8226 -	DR	21929 -

Remember, 'DR' (debit) denotes a positive cash balance in the far right-hand column of the general ledger.

Figure 7.1: Big Dog's General Ledger 'Cash' Account at April 30

Extracts from BDCC's accounting records are reproduced with the bank statement for April in Figure 7.2.

PER COMPANY RECORDS

Outstanding checks at March 31:

Check No.	*Amount*
580	$4,051 x
599	196 x
600	7 x

Step 1a: March 31 outstanding checks are compared with checks cashed to see if any are still outstanding at April 30. Cleared items are marked with an 'x'.

Checks written during month of April:

Check No.	*Amount*
601	$ 24 x
602	1,720 x
603	230 x
604	200 x
605	2,220 x
606	287
607	1,364
608	100
609	40
610	1,520
611	124 x
612	397 x
	$8,226

Step 1b: Checks written are compared with the cleared checks on the bank statement to identify which ones have not cleared the bank (outstanding checks). Cleared items are marked with an 'x'.

Step 2: Other charges made by the bank are identified (SC=service charge; NSF=not sufficient funds).

Deposits made for the month of April:

Date	*Amount*
April 5	$1,570 x
10	390 x
23	5,000 x
28	1,522 x
30	1,000
	$9,482

Step 3: Deposits made by the company are compared with deposits on the bank statement to determine outstanding deposits at April 30. Cleared items are marked with an 'x'.

PER BANK RECORDS

The BDCC bank statement for the month of April is as follows:

Second Chartered Bank
Bank Statement
for Big Dog Carworks Corp.
For the Month Ended April 30, 2015

Checks/Charges/Debits			*Deposits/ Credits*	*Balance*
				24,927
4,051 x			1,570	22,446
196 x	24 x	230 x	390	22,386
200 x				22,186
124 x	397 x	7 x		21,658
2,220 x	180 NSF		5,000	24,258
1,720 x	31		1,522	24,029
	6 SC			24,023

Step 5: Remaining items are identified and resolved with the bank.

Step 4: Outstanding deposits from March 31 are compared with the bank statement to see if they are still outstanding at April 30. (There were no outstanding deposits at March 31.)

Figure 7.2: The Bank Reconciliation Process

For each entry in BDCC's general ledger Cash account, there should be a matching entry on its bank statement. Items in the general ledger Cash account but not on the bank statement must be reported as a reconciling item on the bank reconciliation. For each entry on the bank statement, there should be a matching entry in BDCC's general ledger Cash account. Items on the bank statement but not in the general ledger Cash account must be reported as a reconciling item on the bank reconciliation.

There are nine steps to follow in preparing a bank reconciliation for BDCC at April 30, 2015:

Step 1

Identify the ending general ledger cash balance ($21,929 from Figure 7.1) and list it on the bank reconciliation as the book balance on April 30 as shown in Figure 7.3. This represents the unreconciled book balance.

Step 2

Identify the ending cash balance on the bank statement ($24,023 from Figure 7.2) and list it on the bank reconciliation as the bank statement balance on April 30 as shown in Figure 7.3. This represents the unreconciled bank balance.

Step 3

Checks written that have cleared the bank are returned with the bank statement. These checks are said to be *cancelled* because, once cleared, the bank marks them to prevent them from being used again. Cancelled checks are compared to the company's list of cash payments. Outstanding checks are identified using two steps:

a. Any outstanding checks listed on the BDCC's March 31 bank reconciliation are compared to the checks listed on the April 30 bank statement.

   For BDCC, all of the March outstanding checks (nos. 580, 599, and 600) were paid by the bank in April. Therefore, there are no reconciling items to include in the April 30 bank reconciliation. If one of the March outstanding checks had not been paid by the bank in April, it would be subtracted as an outstanding check from the unreconciled bank balance on the bank reconciliation.

b. The cash payments listed in BDCC's accounting records are compared to the checks on the bank statement. This comparison indicates that the following checks are outstanding.

Check No.	*Amount*
606	$ 287
607	1,364
608	100
609	40
610	1,520

   Outstanding checks must be deducted from the bank statement's unreconciled ending cash balance of $24,023 as shown in Figure 7.3.

Step 4

Other payments made by the bank are identified on the bank statement and subtracted from the unreconciled book balance on the bank reconciliation.

a. An examination of the April bank statement shows that the bank had deducted the NSF check of John Donne for $180. This is deducted from the unreconciled book balance on the bank reconciliation as shown in Figure 7.3.

b. An examination of the April 30 bank statement shows that the bank had also deducted a service charge of $6 during April. This amount is deducted from the unreconciled book balance on the bank reconciliation as shown in Figure 7.3.

Step 5

Last month's bank reconciliation is reviewed for outstanding deposits at March 31. There were no outstanding deposits at March 31. If there had been, the amount would have been added to the unreconciled bank balance on the bank reconciliation.

Step 6

The deposits shown on the bank statement are compared with the amounts recorded in the company records. This comparison indicates that the April 30 cash receipt amounting to $1,000 was deposited but it is not included in the bank statement. The outstanding deposit is added to the unreconciled bank balance on the bank reconciliation as shown in Figure 7.3.

Step 7

Any errors in the company's records or in the bank statement must be identified and reported on the bank reconciliation.

An examination of the April bank statement shows that the bank deducted a check issued by another company for $31 from the BDCC bank account in error. Assume that when notified, the bank indicated it would make a correction in May's bank statement.

The check deducted in error must be added to the bank statement balance on the bank reconciliation as shown in Figure 7.3.

Step 8

Total both sides of the bank reconciliation. The result must be that the book balance and the bank statement balance are equal or reconciled. These balances represent the adjusted balance.

The bank reconciliation in Figure 7.3 is the result of completing the preceding eight steps.

Big Dog Carworks Corp.
Bank Reconciliation
At April 30, 2015

Book balance at Apr. 30		$21,929	Bank statement balance at Apr. 30			$24,023
			Add: Outstanding deposit			1,000
			Check deducted in error			31
						25,054
Less: Bank charges	$ 6		Less: Outstanding checks			
NSF Check – J. Donne	180	186	*Check No.*	*Amount*		
			606	$ 287		
			607	1,364		
			608	100		
			609	40		
			610	1,520		3,311
Adjusted book balance at Apr. 30		$21,743	Adjusted bank balance at Apr. 30			$21,743

These balances must agree.

Reconciling items in this section require journal entries to be made in the general journal to correct the unreconciled Cash balance of $21,929 in the general ledger to the reconciled balance of $21,743.

Reconciling items in this section do not require journal entries because the outstanding deposits and checks should clear the bank next month, in May. Additionally, the other reconciling items (e.g., the $31 check deducted in error) must be reported to the bank so it can make the necessary corrections to Big Dog's account in the next month.

Figure 7.3: BDCC's April Bank Reconciliation

Step 9

For the adjusted balance calculated in the bank reconciliation to appear in the accounting records, an adjusting entry(s) must be prepared.

The adjusting entry(s) is based on the reconciling item(s) used to calculate the adjusted book balance. The book balance side of BDCC's April 30 bank reconciliation is copied to the left below to clarify the source of the following April 30 adjustments.

Book balance at Apr. 30		$21,929
Less: Bank charges	$ 6	
NSF Check – J. Donne	180	186
Adjusted book balance at Apr. 30		$21,743

Bank Service Charges Expense 6
Cash 6
To record service charges from April 30 bank reconciliation.

Accounts Receivable – J. Donne 180
Cash 180
To record NSF check from April 30 bank reconciliation.

It is common practice to use one compound entry to record the adjustments resulting from a bank reconciliation as shown below for BDCC.

Once the adjustment is posted, the Cash general ledger account is up to date, as illustrated in Figure 7.4.

Bank Service Charges Expense 6
Accounts Receivable – J. Donne 180
Cash 186

To record reconciling items from April 30 bank reconciliation.

Cash — Acct. No. 101

Date 2015		Description	Debit	Credit	DR/CR	Balance
Mar.	31	Balance			DR	20673 -
Apr.	30	April cash receipts	9482 -		DR	30155 -
	30	April cash payments		8226 -	DR	21929 -
	30	Bank charge expense		6 -	DR	21923 -
	30	NSF check		180 -	DR	21743 -

This adjusted cash balance now agrees with the bank reconciliation.

Figure 7.4: Updated Cash Account in the General Ledger

Note that the balance of $21,743 in the general ledger Cash account is the same as the adjusted book balance of $21,743 on the bank reconciliation. Big Dog does not make any adjusting entries for the reconciling items on the bank side of the bank reconciliation since these will eventually clear the bank and appear on a later bank statement. Bank errors will be corrected by the bank.

Debit and Credit Card Transactions

Debit and credit cards are commonly accepted by companies when customers make purchases. Because the cash is efficiently and safely transferred directly into a company's bank account by the debit or credit card company, such transactions enhance internal control over cash. However, the seller is typically charged a fee for accepting debit and credit cards. For example, assume BDCC makes a $1,000 sale to a customer who uses a credit card that charges BDCC a fee of 2%; the cost of the sale is $750. BDCC would record:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		980	
	Credit Card Expense E+ (SE)		20	
	Sales R+ SE+			1,000
	To record sale and related credit card fee.			
	Cost of Goods Sold E+ (SE)		750	
	Merchandise Inventory (A)			750
	To record cost of sales.			

The credit card fee is calculated as the $1,000 sale $\times$ 2% $=$ $20. Companies may record this as Credit Card Discount, a contra revenue account netted against sales, or recorded as part of selling, general, and administrative (S, G & A) expenses. The above journal entry shows the fee recorded as an S, G & A expense. This means that BDCC collects net cash proceeds of $980 ($1,000 $-$ $20). The use of debit cards also involves fees and these would be journalized in the same manner.

7.4 Accounts Receivable

LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

Recall from Chapter 5 that the revenue portion of the operating cycle, as copied in Figure 7.5, begins with a sale on credit and is completed with the collection of cash. Unfortunately, not all receivables are collected. This section discusses issues related to accounts receivable and their collection.

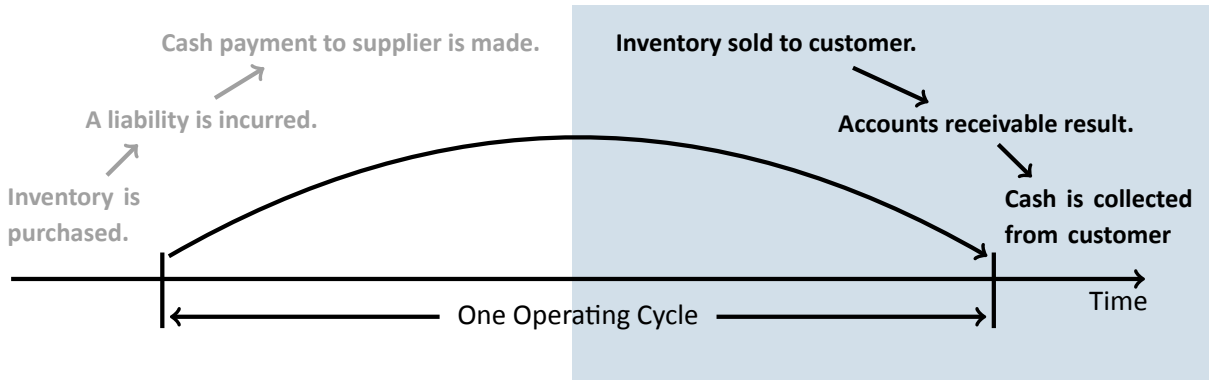


Figure 7.5: Revenue Portion of Operating Cycle

Uncollectible Accounts Receivable

Extending credit to customers results in increased sales and therefore profits. However, there is a risk that some accounts receivable will not be collected. A good internal control system is designed to minimize bad debt losses. One such control is to permit sales on account only to credit-worthy customers; this can be difficult to determine in advance. Companies with credit sales realize that some of these amounts may never be collected. **Uncollectible accounts**, commonly known as **bad debts**, are an expense associated with selling on credit.

Bad debt expenses must be matched to the credit sales of the same period (matching principle). For example, assume BDCC recorded a $1,000 credit sale to XYA Company in April, 2015. Assume further that in 2016 it was determined that the $1,000 receivable from XYA Company would never be collected. The bad debt arising from the credit sale to XYA Company should be matched to the period in which the sale occurred, namely, April, 2015. But how can that be done if it is not known which receivables will become uncollectible? A means of estimating and recording the amount of sales that will not be collected in cash is needed. This is done by establishing a contra current asset account called **Allowance for Doubtful Accounts (AFDA)** in the general ledger to record estimated uncollectible receivables. This account is a contra account to accounts receivable and is disclosed on the balance sheet as shown below using assumed values.

Accounts receivable	$25,000	
Less: Allowance for doubtful accounts	1,400	23,600
OR		
Accounts receivable (net of $1,400 AFDA)		$ 23,600

The Allowance for Doubtful Accounts contra account reduces accounts receivable to the amount that is expected to be collected — in this case, $23,600.

Estimating Uncollectible Accounts Receivable

The AFDA account is used to reflect how much of the total Accounts Receivable is estimated to be uncollectible. To record estimated uncollectible accounts, the following adjusting entry is made.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debts Expense E+ (SE)		XXX	
	Allowance for Doubtful Accounts XA+ (A)			XXX
	To record the adjustment estimating uncollectible accounts receivable.			

The bad debt expense is shown on the income statement. AFDA appears on the balance sheet and is subtracted from accounts receivable resulting in the estimated net realizable accounts receivable.

Two different methods can be used to estimate uncollectible accounts. One method focuses on estimating Bad Debt Expense on the income statement, while the other focuses on estimating the desired balance in AFDA on the balance sheet.

The Income Statement Method

The objective of the **income statement method** is to estimate bad debt expense based on credit sales. Bad debt expense is calculated by applying an estimated loss percentage to credit sales for the period. The percentage is typically based on actual losses experienced in prior years. For instance, a company may have the following history of uncollected sales on account:

Year	*Credit Sales*	*Amounts Not Collected*
2012	$150,000	$1,000
2013	200,000	1,200
2014	250,000	800
	$600,000	$3,000

The average loss over these years is $\frac{\$3,000}{\$600,000}$, or $\frac{1}{2}$ of 1%. If management anticipates that similar losses can be expected in 2015 and credit sales for 2015 amount to $300,000, bad debts expense would be estimated as $1,500 ($300,000 x 0.005). Under the income statement method, the $1,500 represents estimated bad debt expense for the period and is recorded as:

This estimated bad debt expense is calculated without considering any existing balance in the AFDA account.

Bad Debts Expense 1,500
Allowance for Doubtful Accounts 1,500
To record the adjustment estimating bad debt expense.

AFDA ACCOUNT *BEFORE* POSTING ADJUSTMENT
Assume the balance remaining in AFDA from the previous period is $250.

AFDA ACCOUNT *AFTER* POSTING ADJUSTMENT
The adjustment estimating bad debt expense of $1,500 is posted to AFDA to get an adjusted balance of $1,750.

Allowance for Doubtful Accounts		
	Bal.	250

Allowance for Doubtful Accounts		
	Bal.	250
	Adjustment	1,500
	Adjusted Bal.	1,750

The Balance Sheet Method

Estimated uncollectible accounts can also be calculated by using the **balance sheet method** where a process called **aging of accounts receivable** is used. At the end of the period, the total of estimated uncollectible accounts is calculated by analyzing accounts receivable according to how long each account has been outstanding. An aging analysis approach assumes that the longer a receivable is outstanding, the less chance there is of collecting it. This process is illustrated in the following schedule.

Aging of Accounts Receivable
December 31, 2015

			Number of Days Past Due				
Customer	*Total*	*Not Yet Due*	*1–30*	*31–60*	*61–90*	*91–120*	*Over 120*
Bendix Inc.	$ 1,000						$ 1,000
Devco Marketing Inc.	6,000		$ 1,000	$3,000	$2,000		
Horngren Corp	4,000		2,000	1,000		$ 1,000	
Perry Co. Ltd.	5,000		3,000	1,000		1,000	
Others	9,000		4,000			5,000	
Totals	$25,000	$ 0	$10,000	$5,000	$2,000	$ 7,000	$ 1,000

In this example, accounts receivable total $25,000 at the end of the period. These are classified into six time periods: those receivables that are not yet due; 1–30 days past due; 31–60 days past due; 61–90 days past due; 91–120 days past due; and over 120 days past due.

Based on past experience, assume management estimates a bad debt percentage, or rate of un-

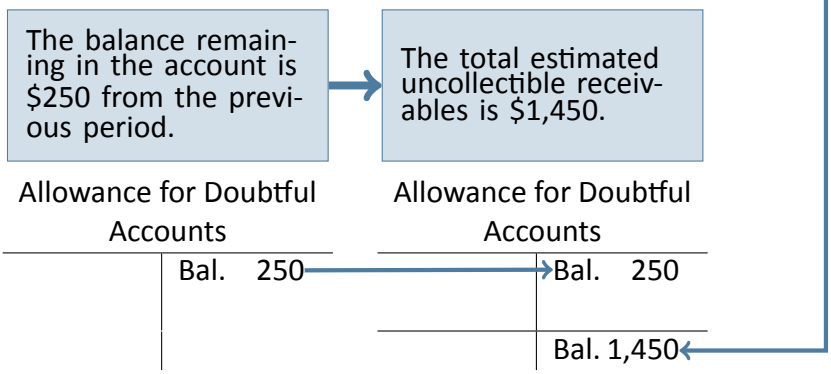
collectibility, for each time period as follows:

Number of Days Outstanding	*Not Yet Due*	*1–30*	*31–60*	*61–90*	*91–120*	*Over 120*
Rate of Uncollectibility	0.5%	1%	3%	5%	10%	40%

The calculation of expected uncollectible accounts receivable at December 31, 2015 would be as follows:

Calculation of Uncollectible Amounts
December 31, 2015

Age (days)	*Accounts Receivable*	*Estimated Bad Debt Percentage*	*Estimated Uncollectible Amount*
1–30	$10,000	1%	$ 100
31–60	5,000	3%	150
61–90	2,000	5%	100
91–120	7,000	10%	700
Over 120	1,000	40%	400
Totals	$25,000		$1,450



A total of $1,450 of accounts receivable is estimated to be uncollectible at December 31, 2015.

Under the balance sheet method, the estimated bad debt expense for the period consists of the *difference* between the opening AFDA balance ($250, as in the prior example) and the estimated uncollectible receivables ($1,450) required at year-end.

$1,200 must be recorded to bring the account to $1,450.

Allowance for Doubtful Accounts	
	Bal. 250
	1,200
	Bal. 1,450

$1,200 is the difference between the $250 unadjusted balance and the required $1,450 closing balance.

The adjustment is recorded by the following journal entry:

Bad Debts Expense 1,200
Allowance for Doubtful Accounts 1,200
To record the adjustment estimating bad debt expense.

As an alternative to using an aging analysis to estimate uncollectible accounts, a simplified balance sheet method can be used. The **simplified balance sheet method** calculates the total estimated uncollectible accounts as a percentage of the outstanding accounts receivables balance. For example, assume an unadjusted balance in AFDA of $250 as in the preceding example. Also assume the accounts receivable balance at the end of the period was $25,000 as in the previous illustration. If it was estimated that 6% of these would be uncollectible based on historical data, the adjustment would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debts Expense E+ (SE)		1,250	
	Allowance for Doubtful Accounts XA+ (A)			1,250
	To record the adjustment estimating bad debt expense.			

The total estimated uncollectible accounts was $1,500 ($25,000 × 0.06). Given an unadjusted balance in AFDA of $250, the adjustment to AFDA must be a credit of $1,250 ($1,500 – $250).

Regardless of whether the income statement method or balance sheet method is used, the amount estimated as an allowance for doubtful accounts seldom agrees with the amounts that actually prove uncollectible. A credit balance remains in the allowance account if fewer bad debts occur during the year than are estimated. There is a debit balance in the allowance account if more bad debts occur during the year than are estimated. By monitoring the balance in the Allowance for Doubtful Accounts general ledger account at each year-end, though, management can determine whether the estimates of uncollectible amounts are accurate. If not, they can adjust these estimates going forward.

Writing Off Accounts Receivable

When recording the adjusting entry to estimate uncollectible accounts receivable at the end of the period, it is not known which specific receivables will become uncollectible. When an account is determined to be uncollectible, it must be removed from the accounts receivable account. This process is known as a **write-off**. To demonstrate the write-off of an account receivable, assume that on January 15, 2016 the $1,000 credit account for customer Bendix Inc. is identified as uncollectible because of the company's bankruptcy. The receivable is removed by:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	AFDA (XA) A+		1,000	
	Accounts Receivable – Bendix Inc. (A) .			1,000
	To record write-off of Bendix Inc.'s account receivable.			

The $1,000 write-off reduces both the accounts receivable and AFDA accounts. The write-off does not affect net realizable accounts receivable as demonstrated below.

	Before Write-Off	*Write-Off*	*After Write-Off*
Accounts receivable	$25,000	Cr 1,000	$24,000
Less: Allowance for doubtful accounts	1,450	Dr 1,000	450
Net accounts receivable	$23,550		$23,550

Additionally, a write-off does not affect bad debt expense. This can be a challenge to understand. To help clarify, recall that the adjusting entry to estimate uncollectibles was:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debts Expense E+ (SE)		XXX	
	AFDA XA+ (A)			XXX
	To record the adjustment estimating bad debt expense.			

This adjustment was recorded because GAAP requires that the bad debt expense be matched to the period in which the sales occurred even though it is not known which receivables will become uncollectible. Later, when an uncollectible receivable is identified, it is written off as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	AFDA (XA) A+		XXX	
	Accounts Receivable (A)			XXX
	To record write-off of account receivable.			

Notice that the AFDA entries cancel each other out so that the net effect is a debit to bad debt expense and a credit to accounts receivable. The use of the AFDA contra account allows us to estimate uncollectible accounts in one period and record the write-off of bad receivables as they become known in a later period.

Recovery of a Write-Off

When Bendix Inc. went bankrupt, its debt to Big Dog Carworks Corp. was written off in anticipation that there would be no recovery of the amount owed. Assume that later, an announcement was made that 25% of amounts owed by Bendix would be paid. This new information indicates that BDCC will be able to recover a portion of the receivable previously written off. A recovery requires two journal entries. The first entry reinstates the amount *expected* to be collected by BDCC—$250 ($1,000 × 25%) in this case and is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable – Bendix Inc. A+		250	
	AFDA XA+ (A)			250
	To reverse write-off and reinstate collectible portion of account.			

This entry reverses the collectible part of the receivable previously written off. The effect of the reversal is shown below.

Accounts Receivable			
Bal.	$25,000		
		Write-off	1,000
Recovery	250		

Allowance for Doubtful Accounts			
		Bal.	1,450
Write-off	1,000		
		Recovery	250

The second entry records the collection of the reinstated amount as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		250	
	Accounts Receivable – Bendix Inc. (A) .			250
	To record recovery of collectible portion of account previously written off.			

The various journal entries related to accounts receivable are summarized below.

Sale on account.	Accounts Receivable	XXX	
	Sales		XXX
	COGS	XXX	
	Merchandise Inventory		XXX
Adjusting entry estimating uncollectible accounts.	Bad Debts Expense	XXX	
	AFDA		XXX
Write-off of uncollectible account.	AFDA	XXX	
	Accounts Receivable		XXX
Recovery of account previously written off.	Accounts Receivable	XXX	
	AFDA		XXX
	Cash	XXX	
	Accounts Receivable		XXX

7.5 Short-Term Notes Receivable

LO5 – Explain and record a short-term notes receivable as well as calculate related interest.

Short-term notes receivable are current assets, since they are due within the greater of 12 months or the business's operating cycle. A note receivable is a *promissory note*. A **promissory note** is a signed document where the **debtor**, the person who owes the money, promises to pay the *creditor* the *principal* and *interest* on the *due date*. The **principal** is the amount owed. The **creditor**, or **payee**, is the entity owed the principal and interest. **Interest** is the fee for using the principal and is calculated as: Principal $\times$ Annual Interest Rate $\times$ Time. The **time** or **term** of the note is the period from the *date of the note* to the due date. The **due date**, also known as the **maturity date**, is the date on which the principal and interest must be paid. The **date of the note** is the date the note begins accruing interest.

Short-term notes receivable can arise at the time of sale or when a customer's account receivable becomes overdue. To demonstrate the conversion of a customer's account to a short-term receivable, assume that BDCC's customer Bendix Inc. is unable to pay its $5,000 account within the normal 30-day period. The receivable is converted to a 5%, 60-day note dated December 5, 2015 with the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 5	Notes Receivable - Bendix A+		5,000	
	Accounts Receivable - Bendix (A)			5,000
	To record the conversion of a customer's account to a 5%, 60-day note dated December 5, 2015.			

The note is due on February 3, 2016 calculated as:

Days in December	31
Less: December 5 date of the note	5
Subtotal number of days	26
Add: Days in January	31
Subtotal number of days	57
Add: Days in February to total 60 days	**3**
Total term of the note in days	60

Assuming a December 31, year-end for BDCC, the adjusting entry to accrue interest on December 31 would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Interest Receivable A+		18.06	
	Interest Revenue R+ SE+			18.06
	To record the accrual of interest from December 5 to December 31.			

The interest of \$18.06 was calculated as: \$5,000 $\times$ 5% $\times$ 26/360[2] = \$18.0556 rounded to \$18.06. ***All interest calculations in this textbook are rounded to two decimal places.***

At maturity, February 3, 2016, BDCC collects the note plus interest and records:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb 3	Cash A+		5,041.67	
	Note Receivable - Bendix (A)			5,000.00
	Interest Receivable (A)			18.06
	Interest Revenue R+ SE+			23.61
	To record the collection of the principal and interest.			

The total interest realized on the note was \$41.67 (\$5,000 $\times$ 5% $\times$ 60/360 = \$41.6667 rounded to \$41.67). Part of the \$41.67 total interest revenue was realized in 2015 (\$18.06) and the rest in

[2]When calculating interest based on days, use 360 days per year.

2016 ($41.67 - $18.06 = $23.61). Therefore, care must be taken to correctly allocate the interest between periods. The total cash received by BDCC on February 3 was the sum of the principal and interest: $5,000.00 + $41.67 = $5,041.67.

When the term of a note is expressed in months, the calculations are less complex. For example, assume that BDCC sold customer Woodlow a $4,000 service on August 1, 2015. On that date, the customer signed a 4%, 3-month note. The term of the note is based on months and not days therefore the maturity date is October 31, 2015. BDCC would record the collection on October 31 as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Oct 31	Cash A+		4,040	
	Note Receivable - Woodlow (A)			4,000
	Interest Revenue R+ SE+			40
	To record the collection of the principal and interest.			

The total interest realized on the note was $40 ($4,000 × 4% × 3/12[3] = $40.00)

7.6 Appendix A: Ratio Analysis—Acid Test

LO6 – Explain and calculate the acid-test ratio.

The **acid-test ratio**, also known as the **quick ratio**, is a liquidity ratio that is a strict measure of a business's availability of cash to pay current liabilities as they come due. It is considered a strict measure because it includes only *quick current assets*. **Quick current assets** are those current assets that are one step away from becoming cash. For example, accounts receivable are a quick current asset because collection of receivables results in cash. However, inventory is not a quick current asset because it is two steps from cash — it has to be sold which creates an account receivable and the receivable then has to be collected. Prepaids are not a quick current asset because the intent in holding prepaids is not to convert them into cash but, instead, to use them (e.g., prepaid insurance becomes insurance expense as it is used). Quick current assets include only cash, short-term investments, and receivables.

The acid-test ratio is calculated as:

Quick current assets ÷ **Current liabilities**

The acid-test ratios for three companies operating in a similar industry are shown below:

[3] When calculating interest based on months, use 12 months per year.

	Acid-Test Ratios		
Year	**Company A**	**Company B**	**Company C**
2014	0.56	1.3	8.6
2015	0.72	1.2	8.7

In 2014, Company A's acid-test ratio shows that it has only $0.56 to cover each $1.00 of current liabilities as they come due. Company A therefore has a liquidity issue. Although Company A's acid-test ratio is still unfavorable in 2015, the change is favorable because the liquidity improved. So a company can have an unfavorable acid-test ratio but show a favorable change.

Company B's 2014 acid-test shows that it has favorable liquidity: $1.30 to cover each $1.00 of current liabilities as they come due. However, the change from 2014 to 2015 shows a decrease in the acid-test ratio which is unfavorable although Company B's acid-test still shows favorable liquidity. So a company can have a favorable acid-test ratio but an unfavorable change.

Company C's 2014 acid-test ratio indicates that it has favorable liquidity: $8.60 to cover each $1.00 of current liabilities as they come due. However, this is actually unfavorable because a company can have an acid-test ratio that is too high. If the acid-test ratio is too high, it is a reflection that the company has idle assets. Idle assets do not typically generate the most optimum levels of revenue. Remember that the purpose of holding assets is to generate revenue. In 2015, Company C's acid-test ratio increased a bit and it is still excessive which is unfavorable. So the change was favorable but because the ratio is too high, it reflects an unfavorable liquidity position, though for different reasons than Company A.

7.7 Appendix B: Ratio Analysis—Accounts Receivable Turnover

LO7 – Explain and calculate the accounts receivable turnover.

The accounts receivable turnover not only measures the liquidity of receivables but also the efficiency of collection, referred to as turnover (i.e., accounts receivable *turnover* into cash). A low turnover indicates high levels of accounts receivable which has an unfavorable impact on liquidity since cash is tied up in receivables. A low turnover means management might need to review credit granting policies and/or strengthen collection efforts.

The accounts receivable turnover is calculated as:

Net credit sales (or revenues) ÷ **Average net accounts receivable**[4]

Average accounts receivable is calculated by taking the beginning of the period balance plus the end of the period balance and dividing the sum by two.

[4]Short-term notes receivable from customers would be included in this amount.

The accounts receivable turnover ratios for two companies operating in a similar industry are shown below:

	Accounts Receivable Turnover	
Year	**Company A**	**Company B**
2015	5.8	6.9

Company B is more efficient at collecting receivables than is Company A. The higher the ratio, the more favorable.

Summary of Chapter 7 Learning Objectives

LO1 – Define the fraud triangle. Define internal control and explain how it is applied to cash.

The fraud triangle are the three things antifraud experts say are needed in order to commit financial statement fraud: incentive, opportunity, and the ability to rationalize the fraud. The purpose of internal controls is to safeguard the assets of a business. Since cash is a particularly vulnerable asset, policies and procedures specific to cash need to be implemented, such as the use of checks and electronic funds transfer for payments, daily cash deposits into a financial institution, and the preparation of bank reconciliations.

LO2 – Explain and journalize petty cash transactions.

A petty cash fund is used to pay small, irregular amounts for which issuing a check would be inefficient. A petty cash custodian administers the fund by obtaining a check from the cash payments clerk. The check is cashed and the coin and currency placed in a locked box. The petty cash custodian collects receipts and reimburses individuals for the related amounts. When the petty cash fund is replenished, the receipts are compiled and submitted for entry in the accounting records so that a replacement check can be issued and cashed.

LO3 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

A bank reconciliation is a form of internal control that reconciles the bank statement balance to the general ledger cash account, also known as the book balance. Reconciling items that affect the bank statement balance are outstanding deposits, outstanding checks, and bank errors. Reconciling items that affect the book balance are collections made by the bank on behalf of the

company, NSF checks, bank service charges, and errors. Once the book and bank statement balances are reconciled, an adjusting entry is prepared based on the reconciling items affecting the book balance.

LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

Not all accounts receivable are collected, resulting in uncollectible accounts. Because it is not known which receivables will become uncollectible, the allowance approach is used to match the cost of estimated uncollectible accounts to the period in which the related revenue was generated. The adjusting entry to record estimated uncollectibles is a debit to Bad Debt Expense and a credit to Allowance for Doubtful Accounts (AFDA). The income statement method and the balance sheet method are two ways to estimate and apply the allowance approach. The income statement method calculates bad debt expense based on a percentage of credit sales while the balance sheet method calculates total estimated uncollectible accounts (aka the balance in AFDA) using an aging analysis. When receivables are identified as being uncollectible, they are written off. If write-offs subsequently become collectible, a recovery is recorded using two entries: by reversing the write-off (or the portion that is recoverable) and then journalizing the collection.

LO5 – Explain and record a short-term notes receivable as well as calculate related interest.

A short-term notes receivable is a promissory note that bears an interest rate calculated over the term of the note. Short-term notes receivable are current assets that mature within 12 months from the date of issue or within a business's operating cycle, whichever is longer. Notes can be issued to a customer at the time of sale, or a note receivable can replace an overdue receivable.

LO6 – Explain and calculate the acid-test ratio.

The acid-test ratio is a strict measure of liquidity. It is calculated as quick current assets divided by current liabilities. Quick assets include cash, short-term investments, and accounts receivable.

LO7 – Explain and calculate the accounts receivable turnover.

The accounts receivable turnover is a measure of liquidity and demonstrates how efficiently receivables are being collected. It is calculated as net sales divided by average accounts receivable. Average accounts receivable are the sum of the beginning accounts receivable, including short-term notes receivable from customers, plus ending receivables, divided by two.

Discussion Questions

1. What is the fraud triangle? What is internal control?
2. How does the preparation of a bank reconciliation strengthen the internal control of cash?
3. What are some reconciling items that appear in a bank reconciliation?
4. What are the steps in preparing a bank reconciliation?
5. What is an NSF check?
6. What is a petty cash system?
7. What is the difference between establishing and replenishing the petty cash fund?
8. How does use of allowance for doubtful accounts match expenses with revenue?
9. How does the income statement method calculate the estimated amount of uncollectible accounts?
10. What is an aging schedule for bad debts, and how is it used in calculating the estimated amount of uncollectible accounts?
11. How are credit balances in accounts receivable reported on the financial statements?

Exercises

EXERCISE 7–1 (LO2)

The following transactions were made by Landers Corp. in March 2017.

Mar. 1	Established a petty cash fund of $200	
12	Reimbursed the fund for the following:	
	Postage	$10
	Office supplies	50
	Maintenance	35
	Meals (selling expenses)	25
		$120
18	Increased the fund by an additional $200	
25	Reimbursed the fund for the following:	
	Office supplies	$75
	Delivery charges	30
		$105
28	Reduced the amount of the fund to $350.	

Required: Prepare journal entries to record the petty cash transactions.

EXERCISE 7–2 (LO3)

The following information pertains to Ferguson Corp. at December 31, 2016, its year-end:

Cash per company records		$5,005
Cash per bank statement		7,000
Bank service charges not yet recorded in company records		30
Note collected by bank not yet recorded in company records:		
Amount of note receivable	$1,300	
Amount of interest	25	1,325
Fluet inc. check deducted in error by bank		200
December checks not yet paid by bank in December:		
#631	$354	
#642	746	
#660	200	
#661	300	1,600
December deposit recorded by the bank January 3, 2017		700

Required: Prepare a bank reconciliation and all necessary adjusting entries at December 31, 2016.

EXERCISE 7–3 (LO3)

The Cash general ledger account balance of Gladstone Ltd. was $2,531 at March 31, 2018. On this same date, the bank statement had a balance of $1,500. The following discrepancies were noted:

a. A deposit of $1,000 made on March 30, 2018 was not yet recorded by the bank on the March statement.

b. A customer's check amounting to $700 and deposited on March 15 was returned NSF with the bank statement.

c. Check #4302 for office supplies expense, correctly made out for $125 and cleared the bank for this amount, was recorded in the company records incorrectly as $152.

d. $20 for March service charges were recorded on the bank statement but not in the company records.

e. A cancelled check for $250 belonging to Global Corp. but charged by the bank to Gladstone Ltd. was included with the cancelled checks returned by the bank.

f. There were $622 of outstanding checks at March 31.

g. The bank collected a net amount of $290: $250 regarding a note receivable, interest revenue of $50, and a $10 service charge that also is not included in the company records.

Required: Prepare a bank reconciliation and record all necessary adjusting entries at March 31, 2018.

EXERCISE 7–4 (LO4)

Sather Ltd. had the following unadjusted account balances at December 31, 2015 (assume normal account balances):

Accounts Receivable	$147,000
Allowance for Doubtful Accounts	3,000
Sales	750,000

Required:

a. Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2015 to be two per cent of sales.

i. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2015.

ii. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.

b. Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2015 to be ten per cent of the unadjusted balance in accounts receivable.

i. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2015.

ii. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.

c. Why is there a difference in the calculated estimates of doubtful accounts in parts (a) and (b)?

d. Which calculation provides better matching: that made in part (a) or in part (b)? Why?

EXERCISE 7–5 (LO4)

The following information is taken from the records of Salzl Corp. at its December 31 year-end:

	2019	*2020*
Accounts written off		
During 2019	$2,400	
During 2020		$1,000
Recovery of accounts written off		
Recovered in 2020		300
Allowance for doubtful accounts (adjusted balance)		
At December 31, 2018	8,000	
At December 31, 2019	9,000	

Salzl had always estimated its uncollectible accounts at two per cent of sales. However, because of large discrepancies between the estimated and actual amounts, Hilroy decided to estimate its December 31, 2020 uncollectible accounts by preparing an aging of its accounts receivable. An amount of $10,000 was considered uncollectible at December 31, 2020.

Required:

a. Calculate the amount of bad debt expense for 2019.

b. What adjusting entry was recorded at December 31, 2019 to account for bad debts?

c. Calculate the amount of bad debt expense for 2020.

d. What adjusting entry was recorded at December 31, 2020 to account for bad debts?

EXERCISE 7–6 (LO5)

Following are notes receivable transactions of Vilco Inc. whose year-end is March 31:

Mar. 1	Accepted a $40,000, 90-day, 3% note receivable dated today in granting a time extension to West Corp. on its past-due accounts receivable.
Mar. 31	Made an adjusting entry to record the accrued interest on West Corp.'s note receivable.
May 30	Received West Corp.'s payment for the principal and interest on the note receivable dated March 1.
Jun. 15	Accepted a $50,000, 45-day, 3% note receivable dated today in granting a time extension to Jill Monte on her past-due accounts receivable.
???	Received Jill Monte's payment for the principal and interest on her note dated June 15.

Required:

a. Prepare journal entries to record Vilco Inc.'s transactions (round all calculations to two decimal places).

b. Assume instead that on May 30 West Corp. dishonored (did not pay) its note when presented for payment. How would Vilco Inc. record this transaction on May 30?

EXERCISE 7–7 (LO6,7)

The following comparative information is taken from the records of Salzl Corp. at its December 31 year-ends from 2016 to 2018:

	2018	*2017*	*2016*
Cash	$42,000	$30,000	$21,000
Accounts receivable	25,000	20,000	14,000
Merchandise inventory	36,000	25,000	17,500
Prepaid insurance	6,000	4,000	2,800
Plant and equipment	160,000	160,000	112,000
Accumulated depreciation – plant and equipment	68,000	54,000	37,800
Accounts payable	14,000	12,000	8,400
Salaries payable	9,000	8,000	5,600
Income tax payable	11,000	9,000	6,300
Bank loan, due in 3 months	17,000	0	0
Bank loan, due in 24 months	48,000	0	0
Common stock	50,000	50,000	35,000
Retained earnings	15,000	12,000	8,400
Dividends	15,000	15,000	10,500
Sales	375,000	367,000	256,900
Cost of goods sold	190,000	152,000	106,400
Operating expenses	120,000	96,000	67,200
Income tax expense	13,000	10,000	7,000

Required:

a. Calculate the acid-test and accounts receivable turnover ratios for each of 2017 and 2018 (round final calculations to two decimal places).

b. Was the change in each ratio from 2017 to 2018 favorable or unfavorable? Explain.

Problems

PROBLEM 7–1 (LO3)

The reconciliation of the cash balance per bank statement with the balance in the Cash account in the general ledger usually results in one of five types of adjustments. These are

a. Additions to the reported general ledger cash balance.

b. Deductions from the reported general ledger cash balance.

c. Additions to the reported cash balance per the bank statement.

d. Deductions from the reported cash balance per the bank statement.

e. Information that has no effect on the current reconciliation.

Required: Using the above letters a to e from the list, indicate the appropriate adjustment for each of the following items that apply to Goertzen Ltd. for December, 2019:

_____ The company has received a $3,000 loan from the bank that was deposited into its bank account but was not recorded in the company records.

_____ A $250 check was not returned with the bank statement though it was paid by the bank.

_____ Checks amounting to $4,290 shown as outstanding on the November reconciliation still have not been returned by the bank.

_____ A collection of a note receivable for $1,000 made by the bank has not been previously reported to Goertzen. This includes interest earned of $50.

_____ The bank has erroneously charged Goertzen with a $1,100 check, which should have been charged to Gagetown Ltd.

_____ A $350 check made out by Fynn Company and deposited by Goertzen has been returned by the bank marked NSF; this is the first knowledge Goertzen has of this action.

_____ An $840 check from customer Abe Dobbs was incorrectly recorded as $730 in the company records.

_____ A $600 bank deposit of December 31 does not appear on the bank statement.

_____ Bank service charges amounting to $75 were deducted from the bank statement but not yet from the company records.

PROBLEM 7–2 (LO2) Petty Cash

As of August 1, 2017, Bolchuk Buildings Ltd. decided that establishing a petty cash fund would be more efficient way to handle small day-to-day reimbursements. Below is a list of transactions during August:

August 2	Prepared and cashed a $500 check to establish the petty cash fund for the first time.
3	Purchased some office supplies for $35.00 for immediate use.
4	Paid $20.00 for delivery charges for some merchandise inventory purchased from a supplier, fob shipping point.
6	Reimbursed an employee $139.60 for travel expenses to attend an out of town meeting.
8	Paid a delivery charge of $32.00 regarding a sale to a customer.
10	Purchased a birthday cake for all the employees having a birthday in August as part of their employee recognition program. Cost was $80.00.
14	Paid $145.00 for postage to cover postage needs for the next 6 months.

15 Checked the petty cash and realized that it needed to be replenished so a check was issued to replenish the fund and increase it to $800.00. Petty cash currency was counted and totaled $50.00.
17 Reimbursed an employee $75.80 for company-related travel expenses.
20 Purchased shop supplies for $300.00 to replenish shop inventory.
24 Paid $56.00 to a courier company to deliver documents to a customer.
28 Paid $345.00 to repair a broken window.
31 Check issued to replenish petty cash. Petty cash was counted and totaled $20.00.

Required: Prepare journal entries with dates as needed to record the items above.

PROBLEM 7–3 (LO3) Bank Reconciliation

It was time for Trevrini Co. to complete its bank reconciliation for November 30, 2017. Below is information that may relate to the task:

1. The cash balance as at November 30, 2017 was a debit balance of $23,500. The ending balance shown on the bank statement was $30,000.
2. Checks that were outstanding at November 30 were:

Chq 236	$230
Chq 240	15

3. It was noted that Check 230 was recorded as $50 in the accounting records but was posted by the bank as $55 in error.
4. The bank statement showed a deposit of $180 for a $200 non-interest bearing note that the bank had collected on behalf of the company, net of the $20 bank service charge for collection of the note. This was not yet recorded in the company's books.
5. The bank statement showed a deduction of $1,500 for a check from a customer for payment on account returned NSF. Included in this charge was a $25 NSF charge.
6. The bank statement also showed a deduction of bank service charge fees of $18.
7. A deposit recorded by the company for $4,500 did not yet appear in the bank statement.

Required:

1. Prepare a bank reconciliation for the company as at November 30, 2017.

2. Prepare any necessary journal entries as a result of the bank reconciliation.

PROBLEM 7–4 (LO4)

Tarpon Inc. made $1,000,000 in sales during 2018. Thirty per cent of these were cash sales. During 2018, $25,000 of accounts receivable were written off as being uncollectible. In addition, $15,000 of the accounts that were written off in 2017 were unexpectedly collected in 2018. The December 31, 2017 adjusted balance in AFDA was a credit of $15,000. At its December 31, 2018 year-end, Tarpon had the following accounts receivable:

Age (days)	*Accounts Receivable*
1-30	$100,000
31-60	50,000
61-90	25,000
91-120	60,000
Over 120	15,000
Total	$250,000

Required:

1. Prepare journal entries to record the following 2018 transactions:
   (a) The write-off of $25,000.
   (b) The recovery of $15,000.
2. Calculate the unadjusted balance in AFDA at December 31, 2018.
3. Prepare the adjusting entry required at December 31, 2018 for each of the following scenarios:
   (a) Bad debts at December 31, 2018 is based on three per cent of credit sales.
   (b) Estimated uncollectible accounts at December 31, 2018 is estimated at five per cent of accounts receivable.
   (c) Estimated uncollectible accounts at December 31, 2018 is calculated using the following aging analysis:

Age (days)	*Estimated Loss Percentage*
2015-01-30	2%
31-60	4%
61-90	5%
91-120	10%
Over 120	50%

4. Calculate the December 31, 2018 adjusted balance in AFDA based on the adjustments prepared in 3(a), 3(b), and 3(c) above.

PROBLEM 7–5 (LO4) Recording Accounts Receivable Related Entries

Ripter Co. Ltd. began operations on January 1, 2017. It had the following transactions during 2017, 2018, and 2019.

Dec 31, 2017	Estimated uncollectible accounts as $5,000 (calculated as 2% of sales)
Apr 15, 2018	Wrote off the balance of Coulter, $700
Aug 8, 2018	Wrote off $3,000 of miscellaneous customer accounts as uncollectible
Dec 31, 2018	Estimated uncollectible accounts as $4,000 (1.5% of sales)
Mar 6, 2019	Recovered $200 from Coulter, whose account was written off in 2018; no further recoveries are expected
Sep 4, 2019	Wrote off as uncollectible $4,000 of miscellaneous customer accounts
Dec 31, 2019	Estimated uncollectible accounts as $4,500 (1.5% of sales).

Required:

1. Prepare journal entries to record the above transactions.
2. Assume that management is considering a switch to the balance sheet method of calculating the allowance for doubtful accounts. Under this method, the allowance at the end of 2019 is estimated to be $2,000. Comment on the discrepancy between the two methods of estimating allowance for doubtful accounts.

PROBLEM 7–6 (LO4) Recording Accounts Receivable Adjusting Entries

The following balances are taken from the unadjusted trial balance of Cormrand Inc. at its year-end, December 31, 2016:

	Account Balances	
	Debit	*Credit*
Accounts Receivable	$100,000	
Allowance for Doubtful Accounts	1,800	
Sales (all on credit)	750,000	
Sales Returns and Allowances		$22,000

The balance of a customer's account in the amount of $1,000 is over 90 days past due and management has decided to write this account off.

Required:

1. Record the write-off of the uncollectible account.
2. Record the adjusting entry if the bad debts are estimated to be 2% of sales.
3. Record the adjusting entry if instead, the bad debts are estimated to be 4% of the adjusted accounts receivable balance as at December 31, 2016.
4. Show how Accounts Receivable and the Allowance for Doubtful Accounts would appear on the December 31, 2011, balance sheet for parts (1) and (2).

PROBLEM 7–7 (LO5) Recording Short-term Notes Receivables Transactions

Below are transactions for Regal Co.:

2016

Dec 12	Accepted a $20,500, 30-day, 5% note dated this date from a customer in exchange for their past-due accounts receivable amount owing.
Dec 31	Made an adjusting entry to record the accrued interest on the Dec 12 note.
Dec 31	Closed the Interest Revenue account as part of the closing process at year-end.

2017

Jan 12	Received payment for the principal and interest on the note dated December 12.
Jan 14	Accepted a $12,000, 6%, 60-day note dated this date for a sale to a customer with a higher credit risk. Cost of goods was $7,500.
Jan 31	Made adjusting entries to record the accrued interest for January, 2017 for all outstanding notes receivable.
Feb 10	Accepted a $6,600, 90-day, 9% note receivable dated this day in exchange for his past-due account.
Feb 28	Made adjusting entries to record the accrued interest for January, 2017 regarding any outstanding notes receivable.
?	Received payment for the principal and interest on the note dated January 14.

Required:

1. Prepare the journal entries for the transactions above. Determine the maturity date of the January 14 note required for the journal entry. Round interest amounts to the nearest whole dollar for simplicity.
2. Determine the maturity date of the February 10 note.

PROBLEM 7–8 (LO5) Notes Receivables

	Note Date	Face Value	Note Term	Interest Rate	Maturity Date	Accrued Interest
						Dec 31, 2016
a)	Jan 1, 2017	$260,000	180 days	4.0%		
b)	Jan 15, 2017	180,000	3 months	5.0%		
c)	Jun 21, 2017	40,000	45 days	5.5%		
d)	Dec 1, 2017	60,000	4 months	6.5%		

Required:

1. Determine the maturity date for each note.
2. For each note, calculate the total amount of accrued interest from the note date to December 31, 2017 (the company year-end). Round interest to the nearest whole dollar.
3. What is the amount that would be collected for each note, assuming that both interest and principal are collected at maturity?

PROBLEM 7–9 (LO6) Ratio Calculations

The following information was taken from the December 31, 2017, financial statements of Stonehedge Cutters Ltd.:

	2017	2016
Sales	$250,000	$162,000
Sales discounts	52,000	2,300
Sales allowances	5,000	500
Accounts receivable	53,000	22,000

Required:

1. Calculate the accounts receivable turnover for 2017. Round answer to two decimal places.
2. If the ratio was 5.25 from 2016, has the company become more efficient or not?

Chapter 8

Long-lived Assets

Long-lived assets or *property, plant, and equipment (PPE)* assets are used in the normal operating activities of the business and are expected to provide benefits for a period in excess of one year. Long-lived assets covered in this chapter consist of three types: property, plant, and equipment (PPE), intangible assets, and goodwill. Also discussed are *depreciation* and *amortization*, techniques to allocate the cost of most long-lived assets over their estimated useful lives.

Chapter 8 Learning Objectives

LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

LO3 – Explain, calculate, and record depreciation for partial years.

LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

LO5 – Explain, calculate, and record the impairment of long-lived assets.

LO6 – Account for the derecognition of PPE assets.

LO7 – Explain and record the acquisition and amortization of intangible assets.

LO8 – Explain goodwill and identify where on the balance sheet it is reported.

LO9 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

Concept Self-Check

Use the following as a self-check while working through Chapter 8.

1. What is the distinction between capital expenditures and revenue expenditures?
2. How do generally accepted accounting principles prescribe what amount should be capitalized?

3. How is partial period depreciation recorded?
4. What is the formula for calculating revised depreciation?
5. What is the difference between a tangible and intangible long-lived asset?
6. What different methods can be used to calculate depreciation for property, plant, and equipment?
7. How are disposals of property, plant, and equipment recorded in the accounting records?
8. How is the impairment of a long-lived asset accounted for?
9. How are intangible assets amortized?
10. What is goodwill and what is its accounting treatment?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

8.1 Establishing the Cost of Property, Plant, and Equipment (PPE)

LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

Property, plant, and equipment (PPE) are *tangible* long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. They are held for use in the production or supply of goods and services, have been acquired for use on a continuing basis, and are not intended for sale in the ordinary course of business. Because PPE assets are long-lived or have a life greater than one year, they are non-current in nature, also known as long-term assets. Examples of PPE assets include land, office and manufacturing buildings, production machinery, trucks, ships or aircraft used to deliver goods or transport passengers, salespersons' automobiles owned by a company, or a farmer's production machinery like tractors and field equipment. PPE assets are **tangible assets** because they can be physically touched. There are other types of non-current assets that are *intangible* – existing only as legal concepts – like copyrights and patents. These will be discussed later in this chapter.

Capital Expenditures

Any cash disbursement is referred to as an **expenditure**. A **capital expenditure** results in the acquisition of a non-current asset, including any additional costs involved in preparing the asset for

its intended use. Under the cost principle, all reasonable and necessary expenditures made in acquiring and preparing an asset for use (or sale, as in the case of inventory) should be recorded as the cost of an asset. Examples of various costs that may be incurred to prepare PPE for use are listed below.

	Capital Expenditures		
	Land	*Building*	*Equipment*
Costs to Acquire PPE	Purchase price Commission to real estate agent Legal fees	Purchase price Commission to real estate agent Legal fees	Invoice cost Transportation Insurance (during transportation)
Costs to Prepare PPE for Use	Costs of draining, clearing, and landscaping; demolition Assessments for streets and sewage system	Repair and remodelling costs before use Payments to tenants for premature termination of lease	Assembly Installation (including wages paid to company employees) Special floor foundations or supports Wiring Inspection Test run costs

To demonstrate, assume that equipment is purchased for $20,000. Additional costs include transportation costs $500, installation costs $1,000, construction costs for a cement foundation $2,500, and test run(s) costs to debug the equipment $2,000. The total capitalized cost of the asset to put it into use is $26,000.

Determining whether an outlay is a capital expenditure or a *revenue expenditure* is a matter of judgment. A **revenue expenditure** does not have a future benefit beyond one year. The concept of materiality enters into the distinction between capital and revenue expenditures. As a matter of expediency, an expenditure of $20 that has all the characteristics of a capital expenditure would probably be expensed rather than capitalized, because the time and effort required by accounting staff to capitalize and then depreciate the item over its estimated useful life is so much greater than the benefits derived from doing so. Capitalization policies are established by many companies to resolve the problem of distinguishing between capital and revenue expenditures. For example, one company's capitalization policy may state that all capital expenditures equal to or greater than $1,000 will capitalized, while all capital expenditures under $1,000 will be expensed when incurred. Another company may have a capitalization policy limit of $500. Additionally, a company may have a different capitalization policy for different types of plant and equipment assets – hand tools may have a capitalization policy limit of $200 while the limit might be $1,000 for furniture.

Most assets require significant expenditures throughout their lives to maintain their productive capacity. Expenditures made after the purchase of an asset can be classified as **ordinary repairs and maintenance** or **improvements**. Ordinary repairs and maintenance are expenditures made

to maintain PPE in satisfactory working order and are expensed. These expenditures involve relatively small amounts, are recurring in nature, and do not directly increase the productive life, operating efficiency, or capacity of the asset. Examples of these expenditures include: (a) the cost of replacing small parts of an asset that normally wear out (in the case of a truck, for example: new tires, new muffler, new battery); (b) continuing expenditures for maintaining the asset in good working order (for example, oil changes, antifreeze, transmission fluid changes); and (c) costs of renewing structural parts of an asset (for example, repairs of collision damage, repair or replacement of rusted parts). Improvements are expenditures that increase the operating efficiency, productive life, or capacity of the asset. These expenditures occur infrequently, increase the economic usefulness of the asset, and involve large amounts of money. These expenditures are capitalized (added to the asset account). Examples of these expenditures include: (a) the cost of putting on an addition; (b) major overhaul of a building; and (c) replacing the engine in a vehicle.

In many cases there is no clear line between ordinary repairs and maintenance (expense) or improvements (asset). In this case, management must exercise professional judgment to determine how to classify the expenditure.

Land

The purchase of land is a capital expenditure when land is used in the operation of a business. In addition to the costs listed in the schedule above, the cost of land should be increased by the cost of removing any unwanted structures on it. This cost is reduced by the proceeds, if any, obtained from the sale of the scrap. For example, assume that the purchase price of land is $100,000 before an additional $15,000 cost to raze an old building: $1,000 is expected to be received for salvaged materials. The cost of the land is $114,000 ($100,000 + $15,000 - $1,000).

Frequently, land and useful buildings are purchased for a lump sum. That is, one price is negotiated for their entire purchase. A lump sum purchase price must be apportioned between the PPE assets acquired on the basis of their respective market values, perhaps established by a municipal assessment or a professional land appraiser. Assume that a lump sum of $150,000 cash is paid for land and a building, and that the land is appraised at 25% of the total purchase price. The Land account would be debited for $37,500 ($150,000 x 25%) and the Building account would be debited for the remaining 75% or $112,500 ($150,000 x 75% = $112,500 or $150,000 - $37,500 = $112,500) as shown in the following journal entry.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Land A+		37,500	
	Building A+		112,500	
	Cash (A)			150,000
	To record the purchase of land and building for a lump sum of $150,000; $150,000 x 25% = $37,500; $150,000 x 75% = $112,500.			

Building and Equipment

When a capital asset is purchased, its cost includes the purchase price plus all costs to prepare the asset for its intended use. However, a company may construct its own building or equipment. In the case of a building, for example, costs include those incurred for excavation, building permits, insurance and property taxes during construction, engineering fees, the cost of labor incurred by having company employees supervise and work on the construction of the building, and the cost of any interest incurred to finance the construction during the construction period.

Property, Plant, and Equipment (PPE) Subsidiary Ledger

The accounts receivable and accounts payable subsidiary ledgers (more commonly referred to as subledgers) were introduced in Chapter 5 and the merchandise inventory subledger was introduced in Chapter 6. To review, a subledger contains the details to support a general ledger control account, also known as the controlling account. For example, the accounts receivable controlling account for ABC Inc. shows a balance of $4,000 on the December 31, 2015 balance sheet. The accounts receivable subledger shows that the $4,000 is made up of three receivables: $800 for Ducker Inc.; $2,200 for Zest Inc.; and $1,000 for Frank Corporation. Since the controlling account is a summary of the subledger, their balances must be identical. Subledgers allow details to be maintained in a separate record.

In a PPE subledger, an account would exist for each piece of land, each piece of machinery, each vehicle, and so on. The subledger account would include information regarding the date of purchase, cost, residual value, estimated useful life, depreciation, and other relevant information.

8.2 Depreciation

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

The role of **depreciation** is to allocate the cost of a PPE asset (except land) over the accounting periods expected to receive benefits from its use. Depreciation begins when the asset is in the location and condition necessary for it to be put to use. Depreciation continues even if the asset becomes idle or is retired from use, unless it is fully depreciated. Land is not depreciated, as it is assumed to have an unlimited life.

Depreciation is an application of the matching principle.

> According to generally accepted accounting principles, a company should select a method of depreciation that represents the way in which the asset's future economic benefits are estimated to be used up.

There are many different ways to calculate depreciation. The most frequently used methods are

usage-based and time-based. Regardless of depreciation method, there are three factors necessary to calculate depreciation:

- cost of the asset
- residual value
- estimated useful life or productive output

Residual value is the estimated worth of the asset at the end of its estimated useful life.

Useful life is the length of time that a long-lived asset is estimated to be of benefit *to the current owner*. This is not necessarily the same as the asset's economic life. If a company has a policy of replacing its delivery truck every two years, its useful life is two years even though it may be used by the next owner for several more years.

Productive output is the amount of goods or services expected to be provided. For example, it may be measured in units of output, hours used, or miles driven.

Usage-Based Depreciation Method – Units-of-Production

Usage-based depreciation methods, such as the Units-of-Production Method, are used when the output of an asset varies from period to period.

> Usage methods assume that the asset will contribute to the earning of revenues in relation to the amount of output during the accounting period. Therefore, the depreciation expense will vary from year to year.

To demonstrate, assume that Big Dog Carworks Corp. purchased a $20,000 piece of equipment on January 1, 2015 with a $2,000 residual value and estimated productive life of 10,000 units. If 1,500 units were produced during 2015, the depreciation expense for the year ended December 31, 2015 would be calculated using the following formula:

$$\frac{\text{Cost} - \text{Residual value}}{\text{Estimated units of output}} = \begin{array}{c}\text{Depreciation}\\ \text{per unit}\end{array} \times \begin{array}{c}\text{Number of units}\\ \text{produced}\end{array} = \begin{array}{c}\text{Depreciation}\\ \text{expense}\end{array}$$

$$\frac{\$20{,}000 - \$2{,}000}{10{,}000 \text{ units}} = \begin{array}{c}\$1.80 \text{ depreciation}\\ \text{per unit}\end{array} \times \begin{array}{c}1{,}500 \text{ units}\\ \text{produced}\end{array} = \begin{array}{c}\$2{,}700 \text{ depreciation}\\ \text{expense for 2015}\end{array}$$

The following adjusting entry would be made on December 31, 2015:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Depreciation Expense E+ (SE)		2,700	
	Accumulated Depreciation XA+ (A) . . .			2,700
	To record depreciation expense using the Units-of-Production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 1,500 units = $2,700.			

The **carrying amount** or **net book value** of the asset (cost less accumulated depreciation) on the December 31, 2015 balance sheet would be $17,300 ($20,000 - 2,700).

Note that the residual value is only used to calculate depreciation expense. It is not recorded in the accounts of the company or included as part of the carrying amount (net book value) on the balance sheet.

If 2,000 units were produced during 2016, depreciation expense for that year would be $3,600 ($1.80 per unit × 2,000 units). At December 31, 2016, the following adjusting entry would be recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Depreciation Expense E+ (SE)		3,600	
	Accumulated Depreciation XA+ (A) . . .			3,600
	To record depreciation expense using the Units-of-Production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 2,000 units = $3,600.			

The carrying amount (or net book value) at December 31, 2016 would be $13,700 ($20,000 – 2,700 – 3,600). If the equipment produces 1,000 units in 2017, 2,500 units in 2018, and 3,000 units in 2019, depreciation expense and carrying amounts would be as follows each year:

(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
Year	*Carrying amount at start of year*	*Usage (units)*	*Rate*	*Dep'n expense*	*Carrying amount at end of year (b) – (e)*
2015	$20,000	1,500	$1.80	$2,700	$17,300
2016	$17,300	2,000	$1.80	$3,600	$13,700
2017	$13,700	1,000	$1.80	$1,800	$11,900
2018	$11,900	2,500	$1.80	$4,500	$7,400
2019	$7,400	3,000	$1.80	$5,400	$2,000
		10,000		$18,000	

If the equipment produces exactly 10,000 units over its useful life and is then retired, depreciation expense over all years will total $18,000 (10,000 × $1.80) and the carrying amount will equal residual value of $2,000.

It is unlikely that the equipment will produce exactly 10,000 units over its useful life. Assume instead that 4,800 units were produced in 2019. Depreciation expense and carrying amounts would be as follows each year:

(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
Year	*Carrying amount at start of year*	*Usage (units)*	*Rate*	*Dep'n expense*	*Carrying amount at end of year (b) – (e)*
2015	$20,000	1,500	$1.80	$2,700	$17,300
2016	17,300	2,000	1.80	3,600	13,700
2017	13,700	1,000	1.80	1,800	11,900
2018	11,900	2,500	1.80	4,500	7,400
2019	7,400	4,800	1.80	5,400	2,000
		11,800		$18,000	

Carrying amount (or net book value) cannot be less than residual value

Notice that the depreciation expense for 2019 is **not** $8,640 (calculated as the 4,800 units x $1.80/unit = $8,640). The depreciation expense for 2019 cannot exceed $5,400 because the remaining carrying amount must be equal to or greater than the residual value. In other words, the **maximum allowable accumulated depreciation** cannot exceed cost less residual. A PPE asset cannot be depreciation below its residual value.

Time-Based Depreciation Method – Straight-Line

The **straight-line method of depreciation** – introduced in Chapter 3 – assumes that the asset will contribute to the earning of revenues equally each time period. Therefore, equal amounts of depreciation are recorded during each year of the asset's useful life. Straight-line depreciation is based on time – the asset's estimated useful life.

Straight-line depreciation is calculated as:

$$\frac{\text{Cost} - \text{Estimated residual value}}{\text{Estimated useful life in years}} = \text{Depreciation expense/year}$$

To demonstrate, assume the same $20,000 piece of equipment used earlier, with an estimated useful life of five years and an estimated residual value of $2,000. Straight-line depreciation would be $3,600 per year calculated as:

$$\frac{\$20{,}000 - \$2{,}000}{5 \text{ years}} = \$3{,}600 \text{ depreciation expense/year}$$

Over the five-year useful life of the equipment, depreciation expense and carrying amounts will be as follows:

(a)	*(b)*	*(c)*	*(d)*
Year	*Carrying amount at start of year*	*Dep'n expense*	*Carrying amount at end of year (b) – (c)*
2015	$20,000	$3,600	$16,400
2016	16,400	3,600	12,800
2017	12,800	3,600	9,200
2018	9,200	3,600	5,600
2019	5,600	3,600	2,000
		$18,000	

The carrying amount at December 31, 2019 will be the residual value of $2,000 ($20,000 – 18,000).

Under the straight-line method, depreciation expense for each accounting period remains the same dollar amount over the useful life of the asset.

Accelerated Time-Based Depreciation Method – Double-Declining Balance (DDB)

An **accelerated depreciation** method assumes that a plant and equipment asset will contribute more to the earning of revenues in the earlier stages of its useful life than in the later stages. This means that more depreciation is recorded in earlier years with the depreciation expense decreasing each year. This approach is most appropriate where assets experience a high degree of obsolescence (such as computers) or where the value of the asset is highest in the first year when it is new and efficient and declines significantly each year as it is used and becomes worn (such as equipment).

Under an accelerated depreciation method, depreciation expense decreases each year over the useful life of the asset.

One type of accelerated depreciation is the **double-declining balance (DDB)** method. It is calculated as:

$$\text{Carrying Amount (or Net Book Value)} \times (2/n)$$

where n = estimated useful life. $2/n$ is the rate of depreciation and it remains constant over the asset's estimated useful life (unless there is a change in the useful life which is discussed in a later section of this chapter). The DDB rate of depreciation can also be described as twice the straight-line rate. For example, if the straight-line rate of depreciation is 15%, the DDB rate will be 30% (calculated as 2 $\times$ 15%).

To demonstrate DDB depreciation calculations, assume the same $20,000 equipment with an estimated useful life of five years. The DDB rate of depreciation is calculated as $2/n$ = $2/5$ = 0.40 or 40%. Alternatively, given that we know the straight-line rate is 20%, doubling it is 40%.

The declining balance rate is applied to the carrying amount of the asset *without regard to residual value*. Regardless of which depreciation method is used, remember that the asset cannot be depreciated below its carrying amount (or net book value) which in this case is $2,000. The DDB depreciation for the five years of the asset's useful life follows.

(a)	*(b)*	*(c)*	*(d)*	*(e)*
Year	*Carrying amount at start of year*	*DDB rate*	*Dep'n expense (b) x (c)*	*Carrying amount at end of year (b) – (d)*
2015	$20,000	40%	$8,000	$12,000
2016	12,000	40%	4,800	7,200
2017	7,200	40%	2,880	4,320
2018	4,320	40%	1,728	2,592
2019	2,592	40%	592	2,000
			$18,000	

Although for 2019 the depreciation expense would be calculated as $1,037 ($2,592 x 40%), only $592 is recorded to bring the carrying amount of the asset down to its residual value of $2,000.

At the end of five years, the carrying amount is once again equal to the residual value of $2,000.

A comparison of the three depreciation methods is shown in Figure 8.1.

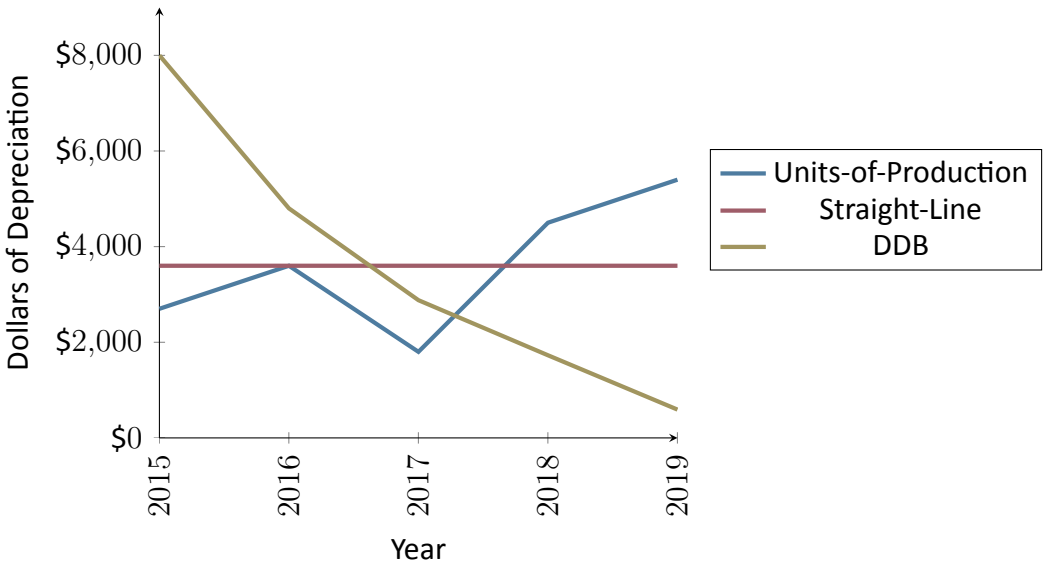


Figure 8.1: Comparing Three Depreciation Methods

8.3 Partial Year Depreciation

LO3 – Explain, calculate, and record depreciation for partial years.

Assets may be purchased or sold at any time during a fiscal year. Should depreciation be calculated for a whole year in such a case? The answer depends on corporate accounting policy. There are many alternatives. One is to calculate depreciation to the nearest whole month. Another, often called the **half-year convention**, states that, no matter when a fixed asset was purchased during the year, 6 months of depreciation is recorded in the first year and 6 months of depreciation is recorded in the final year. Many companies prefer to use the simplified half-year convention.

To demonstrate calculating depreciation to the nearest whole month, assume again that Big Dog Carworks Corp. purchases equipment for $20,000 with an estimated useful life of five years and a residual value of $2,000. Recall that depreciation expense for 2015 was $3,600 using the straight-line method. Assume the asset was owned for only 8 months out of the 2015 year. Depreciation expense for 2015 would be $2,400 ($3,600 x 8/12 months). Using the double-declining balance method, depreciation expense for 2015 would be $5,333 ($20,000 $\times$ .40 $\times$ 8/12 months). Recall the DDBM does not take into account the salvage value when calculating depreciation expense. Applying the half-year rule to the units-of-production depreciation for 2015, would result in no change because the method is usage-based and not time-based (presumably usage would be less if the asset is purchased partway through the year, so this depreciation method already takes this into account).

8.4 Revising Depreciation

LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

Both the useful life and residual value of a depreciable asset are estimated at the time it is purchased. As time goes by, these estimates may change for a variety of reasons. In these cases, the depreciation expense is recalculated from the date of the change in the accounting estimate and applied going forward. *No change is made to depreciation expense already recorded.*

Consider the example of the equipment purchased for $20,000 on January 1, 2015, with an estimated useful life of five years and residual value of $2,000. If the straight-line depreciation method is used, the yearly depreciation expense is $3,600. After two years, the carrying amount at the end of 2016 is $12,800 ($20,000 - 3,600 - 3,600). Assume that on January 1, 2017, management estimates the remaining useful life of the equipment to be six years, and the residual value to be $5,000.

Depreciation expense for the remaining six years would be calculated as:

$$\frac{(\text{Remaining carrying amount} - \text{Revised residual value})}{\text{Estimated remaining useful life}}$$
$$= \frac{(\$12{,}800 - 5{,}000)}{6 \text{ years}}$$
$$= \$1{,}300 \text{ per year}$$

Subsequent Capital Expenditures

As noted earlier, normal, recurring expenditures that relate to day-to-day servicing of depreciable assets are not capitalized, but rather are expensed when incurred. Oil changes and new tires for vehicles are examples of recurring expenditures that are expensed. Expenditures that are material, can be reliably measured, and enhance the future economic benefit provided by the asset, are added to the cost of the asset rather than being expensed when incurred.

To demonstrate the accounting for a subsequent capital expenditure, recall our original example where equipment was purchased on January 1, 2015 for $20,000; the estimated useful life and residual value were five years and $2,000, respectively. Assume that on January 4, 2016, a heat exchanger was added to the equipment that allowed it to produce a new product in addition to the existing product line. This $12,000 addition, paid in cash, had an estimated life of ten years with no residual value. The useful life and residual value of the original equipment did not change as a result of the addition. The entry to record the addition on January 4 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 4	Equipment – Heat Exchanger A+		12,000	
	Cash (A)			12,000
	To record the addition of a heat exchanger to the equipment.			

The entry to record revised depreciation on December 31, 2016 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Depreciation Expense - Equipment E+ (SE)		4,800	
	Accumulated Depreciation - Equipment XA+ (A)			4,800
	To record revised straight-line depreciation; ($20,000 - $2,000)/5 years = $3,600/year; ($12,000 - $0)/10 years = $1,200/year; $3,600 + $1,200 = $4,800.			

8.5 Impairment of Long-lived Assets

LO5 – Explain, calculate, and record the impairment of long-lived assets.

Under generally accepted accounting principles, management must perform two steps to investigate the possible impairment of an asset. The tests should be performed when circumstances indicate that the asset's carrying amount may not be recoverable. Step 1 is to test for **impairment**. The asset may be impaired if events or circumstances indicate that the asset is not expected to generate sufficient cash flows that are, at a minimum, equal to its carrying amount (carrying amount > estimated future cash flows). If this is the case the asset would be considered impaired. Step 2 calculate the impairment loss (carrying amount of the asset less fair value of the asset). The difference between the carrying amount and the **fair value** (market price) of the asset is recognized as the loss and the asset is written down to fair value.

An impairment loss may occur because of a variety of reasons such as technological obsolescence, an economic downturn, or a physical disaster. When an impairment is recorded, subsequent years' depreciation expense must also be revised.

Recall again our $20,000 equipment purchased January 1, 2015 with an estimated useful life of five years and a residual value of $2,000. Assume straight-line depreciation has been recorded for 2015 and 2016 at $3,600 per year. At December 31, 2016, the carrying amount of the equipment is $12,800 ($20,000 – 3,600 – 3,600). At that point management determines that the equipment has an estimated future cash flow of $8,000 and is impaired. The fair value of the equipment at December 31, 2016 is estimated to be $7,000. Because the fair value is less than its carrying amount of $12,800, an impairment loss of $5,800 ($12,800 – 7,000) is recorded in the accounting records of BDCC as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Impairment Loss E+ (SE)		5,800	
	Equipment (A)			5,800
	To record impairment loss on equipment.			

This reduces the carrying amount of the equipment to $7,000 so that revised depreciation expense of $1,667 per year would be recorded at the end of 2017, 2018, and 2019, calculated as follows (assume no change to original useful life and residual value):

$$\frac{(\text{Revised carrying amount} - \text{Revised residual value})}{\text{Remaining useful life}}$$
$$= \frac{(\$7{,}000 - \$2{,}000)}{3 \text{ years remaining useful life}}$$
$$= \$1{,}667 \text{ per year}$$

Impairment losses cannot be reversed under U.S. GAAP.

8.6 Derecognition of Property, Plant, and Equipment

LO6 – Account for the derecognition of PPE assets.

Property, Plant, and Equipment is *derecognized* (that is, the cost and any related accumulated depreciation are removed from the accounting records) when it is sold or when no future economic benefit is expected. To account for the disposal of a PPE asset, the following must occur:

1. If the disposal occurs part way through the accounting period, depreciation must be updated to the date of disposal by

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense E+ (SE)		XXX	
	Accumulated Depreciation XA+ (A) . . .			XXX
	To update depreciation for partial period.			

2. Record the disposal including any resulting gain or loss by

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash (if any, or other assets received) A+ .		XXX	
	Accumulated Depreciation (XA) A+		XXX	
	Loss on Disposal E+ (SE)		XXX	
	OR Gain on Disposal R+ SE+			XXX
	PPE Asset (such as Equipment) (A)			XXX
	To record disposal of PPE asset.			

A loss results when the carrying amount of the asset is greater than the proceeds received, if any. A gain results when the carrying amount is less than any proceeds received.

Sale or Retirement of PPE

When a PPE asset has reached the end of its useful life it can be either sold or retired. In either case, the asset's cost and accumulated depreciation must be removed from the records, after depreciation expense has been recorded up to the date of disposal or retirement.

Recall the calculation of straight-line depreciation for the equipment purchased for $20,000 with an estimated useful life of five years and a residual value of $2,000. Assume that the general ledger T-accounts of equipment and accumulated depreciation contain the following entries for the last five years:

Equipment			
2015	20,000		

Accumulated Depreciation Equipment			
		2015	3,600
		2016	3,600
		2017	3,600
		2018	3,600
		2019	3,600
			18,000

Assume that the equipment is sold at the end of 2019, when accumulated depreciation totals $18,000. The carrying amount at this date is $2,000 ($20,000 cost – $18,000 accumulated depreciation). Three different situations are possible.

1. Sale at carrying amount

   Assume the equipment is sold for its residual value of $2,000. No gain or loss on disposal would occur.

Cost	$	20,000
Accumulated depreciation		(18,000)
Carrying amount		2,000
Proceeds of disposition		(2,000)
Gain or loss on disposal	$	-0-

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Cash A+		2,000	
	Accumulated Dep. – Equipment (XA) A+ . .		18,000	
	Equipment (A)			20,000
	To record the disposal of equipment sold for $2,000 cash.			

2. Sale above carrying amount

   Assume the equipment is sold for $3,000. A gain of $1,000 would occur.

Cost	$	20,000
Accumulated depreciation		(18,000)
Carrying amount		2,000
Proceeds of disposition		(3,000)
Gain on disposal	$	(1,000)

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Cash A+		3,000	
	Accumulated Dep. – Equipment (XA) A+ . .		18,000	
	Gain on Disposal R+ SE+			1,000
	Equipment (A)			20,000
	To record the disposal of equipment sold for $3,000 cash.			

3. Sale below carrying amount

   Assume the equipment is sold for $500. A loss on disposal of $1,500 would occur.

Cost	$	20,000
Accumulated depreciation		(18,000)
Carrying amount		2,000
Proceeds of disposition		(500)
Loss on disposal	$	1,500

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Cash A+		500	
	Accumulated Dep. – Equipment (XA) A+ . .		18,000	
	Loss on Disposal E+ (SE)		1,500	
	Equipment (A)			20,000
	To record the disposal of equipment sold for $500 cash.			

In each of these cases, the cash proceeds must be recorded (by a debit) and the cost and accumulated depreciation must be removed from the accounts. A credit difference represents a gain on disposal while a debit difference represents a loss.

Disposal Involving Trade-In

It is a common practice to exchange a used PPE asset for a new one. This is known as a **trade-in**. The value of the trade-in agreed by the purchaser and seller is called the **trade-in allowance**. This amount is applied to the purchase price of the new asset, and the purchaser pays the difference. For instance, if the cost of a new asset is $10,000 and a trade-in allowance of $6,000 is given for the old asset, the purchaser will pay $4,000 ($10,000 – 6,000).

Sometimes as an inducement to the purchaser, the trade-in allowance is higher than the fair value of the used asset on the open market. Regardless, the cost of the new asset must be recorded at its fair value, calculated as follows:

$$\text{Cost of new asset} = \text{Cash paid} + \text{Fair value of asset traded}$$

If there is a difference between the fair value of the old asset and its carrying value, a gain or loss results. For example, assume again that equipment was purchased by BDCC for $20,000 and has accumulated depreciation of $18,000 at the end of 2019. It is traded on January 1, 2020 for new equipment with a list price of $25,000. A trade-in allowance of $2,500 is given on the old equipment, which has a fair value of only $1,800. In this case, the cost of the new asset is calculated as follows:

Cash paid	+	Fair value of asset traded	=	Cost of new asset
$22,500	+	1,800	=	$24,300

Cash paid will equal the difference between the selling price of the new equipment less the trade-in allowance, or $22,500 ($25,000 - 2,500). The fair value of the asset traded-in is $1,800. The cost of the new asset is therefore $24,300 ($22,500 + 1,800). There will be a loss on disposal of $200 on the old equipment, calculated as follows:

Cost	$	20,000
Accumulated depreciation		(18,000)
Carrying amount		2,000
Fair value		(1,800)
Loss on disposal	$	200

The journal entry on January 1, 2020 to record the purchase of the new equipment and trade-in of the old equipment is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Equipment (new) A+		24,300	
	Accumulated Dep. – Equipment (old) (XA) A+		18,000	
	Loss on Disposal E+ (SE)		200	
	Equipment (old) (A)			20,000
	Cash (A)			22,500
	To record trade-in.			

It's important to note that the gain/loss on sale is the difference between the carrying amount of the old asset and the fair value of the old asset. The amount of cash given or received in these trade-in transactions has no effect on the amount of gain or loss recognized. The cash that is given or received only supports equalizing the fair value of the assets exchanged. By this entry, the cost

of the new equipment ($24,300) is entered into the accounts, the accumulated depreciation and cost of the old equipment is removed from the accounts, and the amount of cash paid is recorded. The debit difference of $200 represents the loss on disposal of the old equipment. It's important to note that the gain/loss on sale is the difference between the carrying amount of the old asset and the fair value of the old asset. The amount of cash given or received in these trade-in transactions has no effect on the amount of gain or loss recognized. The cash that is given or received only supports equalizing the fair value of the assets exchanged.

8.7 Intangible Assets

LO7 – Explain and record the acquisition and amortization of intangible assets.

Another major category of long-lived assets that arises from legal rights and does not have physical substance is that of **intangible assets**. Intangible assets are not recorded unless they have been purchased. Normally, purchased intangible assets are measured at cost at the time of acquisition and are reported in the asset section of a company's balance sheet under the heading "Intangible Assets". The cost of an acquired intangible asset includes its purchase price and any expenditures needed to directly prepare it for its intended use.

Intangible assets are further categorized as having a **definite life** such as patents, copyrights, and software, or an **indefinite life** such as trademarks and goodwill. The cost of purchased intangible assets with a definite life are allocated on a straight-line basis over the **economic life** (time useful to the owner) or **legal life** (determined by law) of the asset (whichever is shorter). This process is called **amortization** and is similar to the depreciation of fixed assets.

The cost of purchased indefinite life assets are not amortized but are tested annually for impairment. However, annual testing can be avoided by doing a qualitative analysis first to determine if annual testing is necessary. Based on an assessment of relevant events and circumstances if the likelihood is more than 50% that impairment has occurred the impairment testing process should continue. If testing is deemed necessary the difference between the carrying amount and the fair value the intangible asset will determine if an impairment loss has occurred.

Patents

A **patent** is an intangible asset that is granted when a company has an exclusive legal privilege to produce and sell a product or use a process for a 20 year period. This right is granted by the U.S. Patent Office.

If purchased from an inventor, the patent's cost is capitalized for the initial amount paid. The capitalized costs may include legal and filing fees paid in order to secure the rights to the patent. If the patent is developed internally, the research and development costs are expensed as incurred. However, even when the patent is developed internally, the legal and filing fees paid in order to secure the rights to the patent are capitalized.

Copyrights

A **copyright** is another intangible asset that confers on the holder an exclusive legal privilege to publish a literary or artistic work. Copyrights are protected by law and give the creator control over a published or artistic work for the life of the creator plus 70 years. Accounting for the costs of copyrights is identical to patents.

Software

Computer software programs may be developed by a company, patented, and then sold to customers for use on their computers. Productivity software like Microsoft Office® is an example. Costs to formulate and design computer software programs are expensed when incurred as research and development costs until **technological feasibility** has been established. Technological feasibility is established "when the entity has completed all planning, designing, coding, and testing activities that are necessary to establish that the product can be produced to meet is design specifications ...". The topic of how to account for software developed for internal use vs external use becomes quite complex and is beyond the scope of this text.

Franchises

A **franchise** is a legal right granted by one company (the franchisor) to another company (the franchisee) to sell particular products or to provide certain services in a given region using a specific trademark or trade name. In return, the franchisee pays a fee to the franchisor. McDonald's® is an example of a franchised fast-food chain. Many retail businesses such as motels, fast food businesses, and automobile dealerships are franchises. In addition to the payment of an initial franchise fee, which is capitalized, a franchise agreement usually requires annual payments. These payments are considered revenue expenditures. Franchises can be considered definite or indefinite depending on the terms of the franchise contract.

Trademarks

A **trademark** is a symbol or a word used by a company to identify itself or one of its products in the marketplace. Symbols are often logos printed on company stationery or displayed at company offices, on vehicles, or in advertising. A well-known example is Coke®. The right to use a trademark can be protected by registering it with the appropriate agency. The symbol '®' denotes that a trademark is registered. Trademarks are registered through the U.S. Patent office and are protected for 10 years. They can be renewed indefinitely and are therefore categorized as an indefinite intangible asset. However, you will rarely see a trademark on the balance sheet because trademarks are typically internally developed and the costs are expensed as incurred.

Amortization of Intangible Assets

Plant and equipment assets are depreciated. Recall from above, intangible assets are also depreciated but the term used is amortization instead of depreciation. Like PPE considerations, useful life and residual value of intangible assets are estimated by management and must be reviewed annually for reasonableness. Any effects on amortization expense because of changes in estimates are accounted for prospectively. That is, prior accounting periods' expenses are not changed.

To demonstrate the accounting for intangibles, assume a patent is purchased for $20,000 on July 1, 2015. The entry to record the purchase is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
July 1	Patent A+		20,000	
	Cash (A)			20,000
	To record the purchase of a patent, an intangible asset.			

The patent will last 20 years with no residual value, and amortization is calculated to the nearest whole month, amortization expense will be recorded at the December 31, 2015 year end as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Amortization Expense - Patent E+ (SE)		500	
	Accumulated Amortization - Patent XA+ (A)			500
	To record amortization on the patent; ($20,000 – 0)/20 years = $1,000/year; $1,000 x 6/12 = $500.			

Notice that an accumulated amortization account is credited and not accumulated depreciation.

Impairment losses, and gains and losses on disposal of intangible assets, are calculated and recorded in the same manner as for property, plant, and equipment.

8.8 Goodwill

LO8 – Explain goodwill and identify where on the balance sheet it is reported.

Assume that Big Dog Carworks Corp. purchases another company for $10 million ($10M). BDCC takes over all operations, including management and staff. There are no liabilities. The fair values of the purchased assets consist of the following:

Patents	$2M
Machinery	$7M
Total	$9M

Why would BDCC pay $10M for assets with a fair value of only $9M? The extra $1M represents *goodwill*. **Goodwill** is the excess paid over the fair value of the net assets when one company buys another, and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry.

For accounting purposes, goodwill is defined as the difference between the purchase price of an entire company and the fair value of the company's net assets. Goodwill is a residual intangible asset that can only be valued after all the other assets of the company have been identified and valued.

Goodwill is a unique intangible asset because it's cost doesn't point to a specific legal right and it can't be separated from the company. Goodwill arises from a company's reputation, favorable business location, clientele, specially trained employees and management, and other unique attributes that a company can't tie to a specific asset. Goodwill appears in the asset section of the balance sheet under its own heading of "Goodwill" but only if it was obtained by purchasing another company. Internally developed Goodwill will not appear on a company balance sheet.

A more detailed discussion of goodwill is an advanced accounting topic and beyond the scope of this textbook.

8.9 Disclosure

LO9 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

When long-lived assets are presented on the balance sheet, the following more common elements need to be disclosed:

- *Accumulated depreciation*. The balances in each of the major classes of fixed assets as of the end of the reporting period.
- *Asset aggregation*. The balances in each of the major classes of fixed assets as of the end of the reporting period.
- *Depreciation expense*. The amount of depreciation charged to expense in the reporting period.
- *Depreciation methods*. A description of the methods used to depreciate assets in the major asset classifications.

Examples of appropriate disclosure of long-lived assets were shown in notes 3(d) and 4 of BDCC's financial statements in Chapter 4.

Summary of Chapter 8 Learning Objectives

LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

Property, plant and equipment (PPE) are tangible, long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. A capital expenditure is debited to a PPE asset account because it results in the acquisition of a non-current asset and includes any additional costs involved in preparing the asset for its intended use at or after initial acquisition. A revenue expenditure that does not have a future benefit beyond one year is expensed when incurred. The details regarding a PPE asset are maintained in a PPE subsidiary ledger.

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

Depreciation, an application of the matching principle, allocates the cost of a PPE asset (except land) over the accounting periods expected to receive benefits from its use. A PPE asset's cost, residual value, and useful life or productive output are used to calculate depreciation. There are different depreciation methods. Units-of-production is a usage-based method. Straight-line and double-declining balance are time-based methods. The formulas for calculating depreciation using these methods are:

Units-of-Production	Straight-Line	Double-Declining Balance
$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Units of Production}}$	$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Useful Life}}$	Carrying Amount $\times$ 2/n where n = estimated useful life
= Depreciation Expense/Unit	= Depreciation Expense/Period	= Depreciation Expense/Period

Maximum accumulated depreciation is equal to cost less residual. The carrying amount of a PPE asset, also known as the net book value, equals the cost less accumulated depreciation.

LO3 – Explain, calculate, and record depreciation for partial years.

When assets are acquired or derecognized partway through the accounting period, partial period depreciation is recorded. There are several ways to account for partial period depreciation. Two common approaches are to calculate depreciation to the nearest whole month or to apply the half-year convention. The half-year convention assumes six months of depreciation in the year of acquisition and year of derecognition regardless of the actual date these occurred.

LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

When there is a change that impacts depreciation (such as a change in the estimated useful life or estimated residual value, or a subsequent capital expenditure) revised depreciation is calculated prospectively. It is calculated as:

$$\frac{\text{Remaining Carrying Amount} - \text{Estimated Residual Value}*}{\text{Estimated Remaining Useful Life}*}$$

$*$ where the residual value and/or useful life may have changed

LO5 – Explain, calculate, and record the impairment of long-lived assets.

Two steps are performed to investigate the possible impairment of an asset. Step 1 is to test for **impairment**. The asset may be impaired if events or circumstances indicate that the asset is not expected to generate sufficient cash flows that are, at a minimum, equal to its carrying amount (carrying amount > estimated future cash flows). If this is the case the asset is considered to be impaired. Step 2 calculate the impairment loss (carrying amount of the asset less fair value of the asset). The difference between the carrying amount and the fair value (market price) of the asset is recognized as the loss and the asset is written down to fair value.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Impairment Loss E+ (SE)		XXX	
	Equipment (A)			XXX
	To record impairment loss.			

Impairment losses cannot be reversed under U.S. GAAP.

LO6 – Account for the derecognition of PPE assets.

Property, plant, and equipment is *derecognized* (that is, the cost and any related accumulated depreciation are removed from the accounting records) when it is sold or when no future economic benefit is expected. To account for the disposal of a PPE asset, the following must occur:

1. If the disposal occurs part way through the accounting period, depreciation must be updated to the date of disposal by

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense E+ (SE)		XXX	
	Accumulated Depreciation XA+ (A) . . .			XXX
	To update depreciation for partial period.			

2. Record the disposal including any resulting gain or loss by

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash (if any, or other assets received) A+ .		XXX	
	Accumulated Depreciation (XA) A+		XXX	
	Loss on Disposal E+ (SE)		XXX	
	OR Gain on Disposal R+ SE+			XXX
	PPE Asset (such as Equipment) (A)			XXX
	To record disposal of PPE asset.			

A loss results when the carrying amount of the asset is greater than the proceeds received, if any. A gain results when the carrying amount is less than any proceeds received.

It is a common practice to exchange a used PPE asset for a new one, known as a **trade-in**. The value of the trade-in is called the **trade-in allowance** and is applied to the purchase price of the new asset so that the purchaser pays the difference. Sometimes the trade-in allowance is higher than the fair value of the used asset. The cost of the new asset must be recorded at its fair value, calculated as:

$$\text{Cost of new asset} = \text{Cash paid} + \text{Fair value of asset traded}$$

If there is a difference between the fair value of the old asset and its carrying value, a gain or loss results.

LO7 – Explain and record the acquisition and amortization of intangible assets.

Intangible assets are long-lived assets that arise from legal rights and do not have physical substance. Intangible assets are further categorized as having a **definite life** such as patents, copyrights, and software, or an indefinite life such as trademarks and goodwill. The cost of purchased intangible assets with a definite life are allocated on a straight-line basis over the economic or legal life of the asset (whichever is shorter). This process is called **amortization** and is similar to the depreciation of fixed assets. The entry to record amortization is a debit to amortization expense and a credit to either the intangible asset or to an accumulated amortization account. The cost of purchased indefinite life assets are not amortized but are tested annually for impairment.

Intangibles are amortized using various methods. The entry to record amortization is a debit to amortization expense and a credit to either the intangible asset or to an accumulated amortization account.

LO8 – Explain goodwill and identify where on the balance sheet it is reported.

When one company buys another company, goodwill is the excess paid over the fair value of the net assets purchased and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry. Goodwill is a unique intangible asset because it's cost doesn't point to a specific legal right and it can't be separated from the company. Goodwill arises from a company's reputation, favorable business location, clientele, specially trained employees and management, and other unique attributes that a company can't tie to a specific asset. Goodwill appears in the asset section of the balance sheet under its own heading of "Goodwill" but only if it was obtained by purchasing another company. Internally developed Goodwill will not appear on a company balance sheet.

LO9 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

When long-lived assets are presented on the balance sheet, the notes to the financial statements need to disclose the following:

- *Accumulated depreciation*. The balances in each of the major classes of fixed assets as of the end of the reporting period.
- *Asset aggregation*. The balances in each of the major classes of fixed assets as of the end of the reporting period.

- *Depreciation expense*. The amount of depreciation charged to expense in the reporting period.
- *Depreciation methods*. A description of the methods used to depreciate assets in the major asset classifications.

Discussion Questions

1. The cost of a long-lived asset is said to be *capitalized*. What does this mean?
2. How does a capital expenditure differ from a revenue expenditure?
3. Assume that you have purchased a computer for business use. Illustrate, using examples, capital and revenue expenditures associated with its purchase.
4. A company purchases land and buildings for a lump sum. What does this mean? What is the acceptable manner of accounting for a lump sum purchase?
5. How does the concept of materiality affect the recording of an expenditure as a capital or revenue item?
6. When one long-lived asset is exchanged for another, how is the cost of the newly-acquired asset determined?
7. What is depreciation?
8. Long-lived assets can be considered future benefits to be used over a period of years. The value of these benefits in the first years may not be the same as in later years. Using a car as an example, indicate whether you agree or disagree.
9. Assume that you have recently purchased a new sports car. Is a usage or a time-based method preferable for recording depreciation? Why?
10. Why is residual value ignored when depreciation is calculated using the declining balance method but not the straight-line method? Is this inconsistent? Why or why not?
11. What is the formula for calculating the declining balance method of depreciation? ...the straight-line method?
12. What is the double-declining balance rate of depreciation for an asset that is expected to have a ten-year useful life?
13. Explain two types of partial-year depreciation methods.
14. What changes in estimates affect calculation of depreciation expense using the straight-line method? Explain the appropriate accounting treatment when there is a revision of an estimate that affects the calculation of depreciation expense.

15. Explain the effect on the calculation of depreciation expense for capital expenditures made subsequent to the initial purchase of plant or equipment.

16. Explain the process for determining whether the value of a long-lived asset has been impaired, and the required adjustments to the accounting records.

17. Your friend is concerned that the calculation of depreciation and amortization relies too much on the use of estimates. Your friend believes that accounting should be precise. Do you agree that the use of estimates makes accounting imprecise? Why or why not?

18. What is a lump sum purchase and how are the costs allocated?

19. When does the disposal of PPE not result in a gain or loss?

20. What is a trade-in? Explain how a trade-in impacts the recording of a gain or loss on sale.

21. Why might a trade-in allowance, particularly in the case of a car, be unrealistic? Why would a dealer give more trade-in allowance on a used car than it is worth?

22. How is the cost of a new capital asset calculated when a trade-in is involved?

23. How are intangible assets different from property, plant, and equipment? the same?

24. What is a patent? Does a patent's useful life correspond to its legal life? Why or why not? Support your answer with an example.

25. How does a copyright differ from a trademark? Give an example of each.

26. What is goodwill? Why is a company's internally-generated goodwill usually not recorded in its accounting records?

27. How are intangible assets valued, and what are their financial statement disclosure requirements?

Exercises

EXERCISE 8–1 (LO1)

For all expenditures, accountants identify them as either capital or revenue expenditures. The entries for such transactions can be made to any one of the following accounts:

Capital expenditures are recorded in an asset account on the balance sheet such as:

a. Land

b. Buildings

c. Equipment

d. Trucks

e. Automobiles

Revenue expenditures are recorded in an income statement account:

f. An expense account

Required: For each transaction below, indicate the account to be adjusted. Assume all expenditures are material in amount. Explain your answers.

Example:
b Architect fees to design building.

_____ Battery purchased for truck.
_____ Commission paid to real estate agent to purchase land.
_____ Cost of equipment test runs.
_____ Cost to remodel building.
_____ Cost to replace manual elevator with automatic elevator.
_____ Cost of sewage system.
_____ Equipment assembly expenditure.
_____ Expenditures for debugging new equipment and getting it ready for use.
_____ Installation of air-conditioner in automobile.
_____ Insurance paid during construction of building.
_____ Legal fees associated with purchase of land.
_____ Oil change for truck.
_____ Payment for landscaping.

_____ Expenditures for removal of derelict structures.
_____ Repair made to building after moving in.
_____ Repair of collision damage to truck.
_____ Repair of torn seats in automobile.
_____ Replacement of engine in automobile.
_____ Special floor foundations for installation of new equipment.
_____ Tires purchased for truck.
_____ Transportation expenditures to bring newly purchased equipment to plant.

EXERCISE 8–2 (LO1)

Glasgo Holdings Inc. purchased a property including land and a building for $300,000. The market values of the land and building were $100,000 and $300,000, respectively.

Required: Using these market values, prepare a journal entry to record the lump sum purchase.

EXERCISE 8–3 (LO1,2)

Ekman Corporation purchased a new laser printer to be used in its business. The printer had a list price of $4,000, but Ekman was able to purchase it for $3,575. The company expects it to have a useful life of five years, with an estimated residual value of $250. Ekman is paying the delivery costs of $100 along with the set-up and debugging costs of $350.

Required:

a. Calculate the total cost of the laser printer.

b. Ekman management asks you whether the straight-line or double-declining balance method of depreciation would be most appropriate for the printer. Provide calculations to support your answer.

EXERCISE 8–4 (LO2)

Willow Inc. began a business on January 1, 2019. It purchased equipment for its factory on this date for $240,000. The equipment is expected to have an estimated useful life of five years with a residual value of $40,000. Willow's year-end is December 31.

Required: Compute the depreciation for 2019, 2020, 2021, 2022 and 2023 using

a. The straight-line method

b. The double-declining balance method.

EXERCISE 8–5 (LO2)

Mayr Inc. began a business on January 1, 2019. It purchased a machine for its factory on this date for $110,000. The machine is expected to have an estimated useful life of four years with a residual value of $40,000.

Required: Compute the depreciation for 2019, 2020, 2021, and 2022 using

a. The straight-line method

b. The double-declining balance method.

EXERCISE 8–6 (LO2,3)

Penny Corp. purchased a new car on March 1, 2019 for $25,000. The estimated useful life of the car was five years or 500,000 miles. Estimated residual value was $5,000. The car was driven 120,000 miles. in 2019 and 150,000 miles. in 2020. Penny Corp.'s year end is December 31.

Required:

a. Applying the half-year rule, calculate depreciation for 2019 and 2020 using

i. The straight-line method
ii. Units-of-production method
iii. Double-declining-balance method

b. Assuming Penny Corp. calculates depreciation to the nearest whole month, determine depreciation for 2019 and 2020 using

i. The straight-line method
ii. Units-of-production method
iii. Double-declining-balance method

EXERCISE 8–7 (LO4)

Global Flow Inc. purchased machinery on January 1, 2019 for $60,000 cash. It had an estimated useful life of three years, with no residual value, and depreciation is calculated using the straight-line method. During 2021, Global Flow determined that the estimated useful life should be revised to a total of five years and the residual value changed to $10,000.

Required: Prepare the entry to record revised depreciation for the year ended December 31, 2021.

EXERCISE 8–8 (LO4)

Denton Inc. purchased machinery on January 1, 2019 for $140,000 cash. It had an estimated useful life of five years and no residual value. On January 1, 2020, Denton purchased a specialized component for $50,000 that was attached to the machinery to significantly increase its productivity. The estimated useful life of the component was four years with no residual value. The life and residual value of the original machinery was not affected by the new component.

Required:

a. Prepare the entry to record depreciation for the year ended December 31, 2019.

b. Prepare the entry to record revised depreciation for the year ended December 31, 2020.

EXERCISE 8–9 (LO5)

As part of its December 31, 2019 year end procedures, Beltore Inc. is evaluating its assets for impairment. It has recorded no impairment losses for previous years. Following is the Property, Plant and Equipment schedule showing adjusted balances as at December 31, 2019:

Asset	*Date of Purchase*	*Depn. Method*	*Cost*	*Estim. Residual*	*Estim. Useful life*	*Accum. Depn.*	*Estim. Future Cash Flows*	*Fair Market Value*
Land	Sept. 1/2018	N/A	$100,000	N/A	N/A	N/A	$120,000	$115,000
Building	Dec. 1/2018	SL	$890,000	$250,000	20	$34,667	$895,000	$870,000
Machinery	Dec. 1/2018	SL	$400,000	$0	10	$40,000	$330,000	$337,083

DDB = Double-declining-balance; SL = Straight-line; U = Units-of-production; N/A = Not applicable

Required:

a. Record any impairment losses at December 31, 2019.

b. Record depreciation expense for the year ended December 31, 2020 assuming no changes in the estimated residual values or estimated useful lives of the assets.

EXERCISE 8–10 (LO6)

Freeman Inc. purchased a piece of agricultural land several years ago for $125,000. The land has a fair value of $200,000 now. The company plans to exchange this land for equipment owned by a land developer that has a fair value of $240,000. The equipment was originally purchased for $325,000, and $80,000 of depreciation has been recorded to the date of the exchange.

Required:

a. Prepare the journal entry on the books of

i. Freeman

ii. the developer.

b. Why would the developer give up an asset with a fair value of $240,000 in exchange for an asset with a fair value of only $200,000?

EXERCISE 8–11 (LO6)

Mayr Inc. showed the following selected adjusted trial balance information at June 30, 2019:

	Debits	*Credits*
Equipment	$60,000	
Accumulated Depreciation – Equipment		$40,000

Required: Mayr Inc. is planning on selling the equipment. Using the information provided above, prepare the journal entry to record the sale assuming

a. The equipment was sold for $20,000.

b. The equipment was sold for $30,000.

c. The equipment was sold for $5,000.

EXERCISE 8–12 (LO7)

On March 1, 2019, Willis Publishing purchased the copyright from the author of a new book for cash of $50,000. It is expected that the book will have a shelf life of about 5 years with no expected residual value. On October 1, 2021, Willis sold the copyright to a movie producer for $100,000. Willis Publishing uses the straight-line method to amortize copyrights.

Required: Prepare Willis Publishing's journal entries at

a. March 1, 2019 to record the purchase of the copyright.

b. December 31, 2019, Willis's year-end, to record amortization of the copyright.

c. October 1, 2021.

Problems

PROBLEM 8–1 (LO1)

Arrow Construction Company Ltd. purchased a farm from K. Jones. Arrow and Jones completed the transaction under the following terms: a check from Arrow to Jones for $140,000; bank loan assumed by Arrow, $100,000. Legal, accounting, and brokerage fees amounted to $20,000.

It was Arrow's intention to build homes on the property after sub-dividing. Crops on the farm were sold for $6,000; a house, to be moved by the buyer, was sold for $1,600; barns were razed at a cost of $6,000, while salvaged lumber was sold for $4,400. The property was cleared and levelled at a cost of $10,000.

The necessary property was turned over to the township for roads, schools, churches, and playgrounds. Riverside still expected to secure a total of 500 identical lots from the remaining land.

Required: Prepare a schedule showing the cost to Arrow of the 500 lots.

PROBLEM 8–2 (LO2)

On January 1, 2017, Beyond Adventures Ltd. purchased a safari jeep for use in their wilderness weekends. The following information is available.

Cost	$30,000
Estimated useful life	6 years or 80,000 miles
Residual value	$8,000
Mileage in 2017	15,000 miles

Required:

1. Assuming that the company depreciates on the basis of 50% each in the years of acquisition and disposal, calculate the depreciation for 2018 under each of the methods below. Round your final answer to nearest whole dollar.

   (a) Usage based (Units of Production)

   (b) Straight-line

   (c) Double-declining balance – round percentage to two decimal places.

2. Compare the carrying amount for 2017 under each of these methods.

3. Which of the three methods results in the lowest net income for 2017?
4. Which of the three methods results in the lowest net income for 2018 if 25,000 miles were driven?

PROBLEM 8–3 (LO2,6)

Janz Corporation purchased a piece of machinery on January 1, 2019. The company's year-end is December 31. The following information is available regarding the machinery:

Cost	*Estim. Useful Life*	*Estim. Residual Value*	*Depn. Method*
$95,000	9,000 units	$5,000	Units-of-Production

Assume actual output was:

Year	*Actual Units Produced*
2019	2,000
2020	3,000
2021	2,800
2022	2,900

The machinery was sold on January 15, 2023 for $12,000.

Required:

1. Calculate the depreciation expense for each of 2019 through to 2022 inclusive.
2. What is the balance of accumulated depreciation at the end of 2022?
3. What is the carrying amount of the machinery shown on the balance sheet at the end of 2022?
4. Prepare the entry on January 15, 2023 to record the sale of the machinery.

PROBLEM 8–4 (LO1,2,4)

The following are details about an equipment purchase on January 1, 2017:

Purchase price	$35,000
Transportation charges	1.200
Installation costs	5,700
Minor repair cost	100
Useful life	four years
Residual value	$8,000

Required:

1. Calculate the total cost of the equipment asset.
2. Record the depreciation for each year of the expected useful life of the machine under straight-line method and double-declining balance method. Year-end is Dec 31.
3. Assume now that on January 1, 2020, management changed the estimated useful life on the machine to a total of five years from the date of purchase. Residual value was also changed to $2,000. Calculate the depreciation that should be recorded in 2020 and each year thereafter assuming the company used the straight-line method.

Round all final answers to the nearest whole dollar.

PROBLEM 8–5 (LO4,6)

On January 1, 2011, Inceptor Ltd. purchased equipment for $115,000. The estimated useful life was thirty years. The residual value was estimated to be 15 per cent of the original cost. On January 1, 2018, experts were hired to review the expected useful life and residual value of the machine. They determined that the estimated useful life remaining was fifteen years and the new residual value was $18,000.

Depreciation has not yet been recorded in 2018. The company uses straight-line method of depreciation and the policy is to depreciate 50% each in the years of acquisition and disposal.

Required:

1. Calculate the carrying amount of the machine at December 31, 2017.
2. Calculate and record the depreciation expense at December 31, 2018.
3. Record the journal entries if the machine is sold on July 31, 2019 for $80,000.

PROBLEM 8–6 (LO4,6)

On August 1, 2014 Mayfere Co. commenced business and purchased production equipment for $250,000 cash. The equipment had an estimated useful life of eight years, an estimated total production output of 200,000 units, and a residual value of $40,000. The equipment was depreciated using the units-of-production method. Actual units of output over three years were: 2014: 11,000; 2015: 25,000; and 2016: 35,000.

On January 1, 2017, the company traded in the original equipment for new production equipment. The company paid and additional $30,000 cash for the new equipment. The fair value of the original equipment was $140,000 at the date of the trade.

Required: Prepare journal entries to record the transactions for:

1. The equipment purchase
2. Depreciation for 2014, 2015 and 2016
3. The sale of the equipment

PROBLEM 8–7 (LO7,8,9)

Teldor Ltd. paid $1M cash to purchase the following tangible and intangible assets of Zak Company on January 1, 2018. The fair values of the assets purchased were:

Land	$150,000
Building	400,000
Patents	200,000
Machinery	150,000

The patents have an estimated useful life of twenty years and are amortized on a straight-line basis. They have no residual value. On January 3, 2020, the value of the patents was estimated to be $165,000.

Required: Record the entries for the following transactions for Teldor:

1. The $900,000 purchase.
2. The decline in value of the patents at January 3, 2020.
3. The amortization of the patents at December 31, 2020.
4. Prepare a partial balance sheet for the intangible assets section at December 31, 2020 in good form, with proper disclosures.

PROBLEM 8–8 (LO1,2)

Global Flow Inc. purchased a computer on January 1, 2018 for $3,000 cash. It had an estimated useful life of three years and no residual value. Global Flow made the following changes to the computer:

Mar 1, 2018	Added storage capacity at a cost of $1,000. This had no effect on residual value or estimated useful life.
Apr 1, 2019	Added a new processing board for $2,000, which extended the estimated useful life of the computer another three years but did not affect residual value.

Required:

1. Prepare a journal entry to record each of the above expenditures. Assume all amounts are material. Descriptions are not necessary.
2. Calculate and prepare journal entries to record depreciation expense for 2018 and 2019 using the double-declining balance method. Assume a December 31 fiscal year-end and that the company depreciates 50% each in the acquisition and disposal years.

Chapter 9

Debt Financing: Current and Long-term Liabilities

A corporation often has liabilities. These liabilities must be classified on the balance sheet as current or long-term. Current liabilities can include known liabilities such as payroll liabilities, interest payable, and other accrued liabilities. Short-term notes payable and estimated liabilities, including warranties and income taxes, are also classified as current. Long-term debt is used to finance operations and may include a bond issue or long-term bank loan.

Chapter 9 Learning Objectives

LO1 – Identify and explain current versus long-term liabilities.

LO2 – Record and disclose known current liabilities.

LO3 – Record and disclose estimated current liabilities.

LO4 – Identify, describe, and record bonds.

LO5 – Explain, calculate, and record long-term loans.

Concept Self-Check

Use the following as a self-check while working through Chapter 9.

1. What is the difference between a current and long-term liability?
2. What are some examples of known current liabilities?
3. How are known current liabilities different from estimated current liabilities?
4. What are some examples of estimated current liabilities?
5. How is an estimated current liability different from a contingent liability?
6. What are bonds, and what rights are attached to bond certificates?
7. What are some characteristics of bonds?
8. When a bond is issued at a premium, is the market interest rate higher or lower than the contract interest rate on the bond?

9. When a bond is issued at a discount, is the market interest rate higher or lower than the contract interest rate on the bond?
10. How are bonds and related premiums or discounts recorded in the accounting records and disclosed on the balance sheet?
11. How is a loan payable similar to a bond issue? How is it different?
12. How are payments on a loan recorded, and how is a loan payable presented on the balance sheet?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

9.1 Current versus Long-term Liabilities

LO1 – Identify and explain current versus long-term liabilities.

Current or **short-term liabilities** are a form of debt that is expected to be paid within the longer of one year of the balance sheet date or one operating cycle. Examples include accounts payable, wages or salaries payable, unearned revenues, short-term notes payable, and the current portion of long-term debt.

Long-term liabilities are forms of debt expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Mortgages, long-term bank loans, and bonds payable are examples of long-term liabilities.

Current and long-term liabilities must be shown separately on the balance sheet. For example, assume the following adjusted trial balance at December 31, 2015 for Waterton Inc.:

Waterton Inc.
Adjusted Trial Balance
December 31, 2015

Account	*Debits*	*Credits*
Cash	$ 80,000	
Accounts receivable	140,000	
Equipment	570,000	
Accumulated depreciation – equipment		$ 40,000
Accounts payable		39,000
Unearned revenue		15,000
Wages payable		7,000
Notes payable, due November 30, 2016		20,000
Notes payable, due March 31, 2018		75,000
Mortgage payable (Note 1)		115,797
Common stock		300,000
Retained earnings		178,203
	$790,000	$790,000

Note 1: A 4-year, 6%, $150,000 mortgage was dated January 1, 2015. Waterton makes monthly payments of $3,523. The principal balances at the end of each year are:

December 31, 2015	–	$	115,797
December 31, 2016	–	$	79,484
December 31, 2017	–	$	40,931
December 31, 2018	–	$	-0-

Based on this information, the liabilities section of the December 31, 2015 balance sheet would appear as follows:

Waterton Inc.
Liabilities Section of the Balance Sheet
December 31, 2015

Liabilities		
Current liabilities		
Accounts payable	$39,000	
Unearned revenues	15,000	
Wages payable	7,000	
Notes payable, due November 30, 2016	20,000	
Current portion of mortgage payable	36,313	
Total current liabilities		$117,313
Long-term liabilities		
Notes payable, due March 31, 2018	$75,000	
Mortgage payable (less current portion)	79,484	
Total long-term liabilities		154,484
Total liabilities		$271,797

Notice the sum of the current and long-term portion of the mortgage equals the unadjusted balance of $115,797 on the Adjusted Trial Balance. This must always be the case.

The $20,000 notes payable, due November 30, 2016 is a current liability because its maturity date is within one year of the balance sheet date, a characteristic of a current liability. The $75,000 notes payable, due March 31, 2018 is a long-term liability since it is to be repaid beyond one year of the balance sheet date.

It is important to classify liabilities correctly otherwise decision makers may make incorrect conclusions regarding, for example, the organization's liquidity position.

9.2 Known Current Liabilities

LO2 – Record and disclose known current liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are known. Examples include accounts payable, unearned revenues, and payroll liabilities. These are different from **estimated current liabilities** where the amount is not known and must be estimated. Estimated current liabilities are discussed later in this chapter.

Payroll Liabilities

Accounts payable and unearned revenues were introduced and discussed in previous chapters. Payroll is subject to a number of taxes, including federal, state, and local; federal and state unemployment taxes; and Social Security (FICA) taxes. Both employers and employees pay payroll taxes. These withheld amounts are remitted by the employer to the appropriate agencies. An employee's gross earnings, less the deductions withheld by the employer, equals the net pay.

Employers are required to withhold *income taxes* from the paycheck of each employee. This withholding is recorded as a liability on the company books because the employer must then remit the amount withheld to the government. This is normally done on a quarterly basis.

The Social Security taxes are known as FICA taxes because they are required by the Federal Insurance Contribution Act. The Social Security taxes also known as the matching taxes include both Social Security and Medicare taxes. They are known as a matching tax because the employer must match the amount required to be withheld from the employees paycheck. This results in the company recording both an expense and a liability related to these taxes. The employee portion, withheld by the company, will be recorded as a liability on the company books because the employer must remit the amount withheld to the government. The additional matching expense that the employer must pay will be recorded as an expense on the company books. This expense will also be remitted to the government. The Social Security tax for 2018 is 6.2% on the first $128,700 of wages per employee and 1.45% for Medicare on the first $200,000 of wages per employee. There is an additional Medicare tax for employees of 0.9% for all earnings above $200,000. This tax is not matched by the company.

All employees must pay unemployment taxes due to the Federal Unemployment Tax Act (FUTA) and the State Unemployment Tax Act (SUTA). These taxes help support people that have lost their jobs. The FUTA tax is 6.0% on all employee wages up to $7,000. The SUTA tax varies from state to state. Employers may receive credit that reduces their FUTA tax by having a solid SUTA tax payment history.

To demonstrate the journal entries to record a business's payroll liabilities for its two employees,

assume the following payroll record (ignore SUTA due to state variances):

Salaries earned	$400,000
Employee income taxes withheld	$80,000
FICA taxes (employees' share)	$21,759
FUTA taxes	$840

The employer's journal entries would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries Expense E+ (SE)		400,000	
	Employee Income Taxes Payable L+ . . .			80,000
	FICA Taxes Payable L+			21,759
	Salaries Payable L+			298,241
	To record payroll. Note we are assuming each employee earned $200,000.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Payroll Tax Expense E+ (SE)		22,599	
	FICA Payable L+			21,759
	FUTA Payable L+			840
	To record the employer's payroll related taxes. FICA calculated as Social Security ($128,700 × 2 × 6.2%) + Medicare ($200,000 × 2 × 1.45%), FUTA ($7,000 × 2 × 6%). Note we are assuming each employee earned $200,000.			

Both the employee and employer are responsible for making payments to the government. Notice the two separate journal entries. The first journal entry records the salaries and wages paid to employees and the deductions withheld from the employees' paychecks that will be remitted to the government. The second journal entry records the matching tax that is a company expense that must also be remitted to the government.

Short-term Notes Payable

A short-term note payable is formal obligation to pay a specific sum, plus interest, within one year. A short-term note is classified as a current liability. Assume on October 31, 2015 BDCC takes out 6%, 60-day note for $50,000. The following example shows the required entries for the short-term note payable.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Oct 31	Cash A+		50,000	
	Short-term Note Payable L+			50,000
	To record the short-term loan taken on October 31, 2015.			
Dec 31	Interest Expense E+ (SE)		500	
	Interest Payable L+			500
	To record the adjusting entry for interest incurred as of December 31, 2015 ($50,000 × .06 × 2 ÷ 12).			
Dec 31	Short-term Note Payable (L)		50,000	
	Interest Payable (L)		500	
	Cash (A)			50,500
	To record payment of the principal and interest at maturity on December 31, 2015.			

9.3 Estimated Current Liabilities

LO3 – Record and disclose estimated current liabilities.

An **estimated liability** is known to exist where the amount, although uncertain, can be estimated. Two common examples of estimated liabilities are warranties and income taxes.

Warranty Liabilities

A **warranty** is an obligation incurred by the seller of a product or service to replace or repair defects. Warranties typically apply for a limited period of time. For example, appliances are often sold with a warranty for a specific time period. The seller does not know which product/service will require warranty work, when it might occur, or the amount. To match the warranty expense to the period in which the revenue was realized (matching principle), the following entry that estimates the amount of warranty expense and related liability must be recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Warranty Expense E+ (SE)		XXX	
	Estimated Warranty Liability L+			XXX
	To record estimated warranty expense and related liability.			

When the warranty work is actually performed, assuming both parts and labor, the following is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Estimated Warranty Liability (L)		XXX	
	Parts Inventory (A)			XXX
	Wages Payable L+			XXX
	To record the actual costs of parts and labor for warranty work.			

Income Tax Liabilities

A corporation is taxed on the taxable income it earns. As for any entity, corporations must file a tax return annually. However, the government typically requires the corporation to make advance monthly payments based on an estimated amount. When the total actual amount of income tax is known at the end of the accounting period, the corporation will record an adjustment to reconcile any difference between the total actual tax and the total monthly tax accrued in the accounting records. For example, assume it is estimated that the total income tax for the year ended December 31, 2015 will be $300,000. This translates into $25,000 of income tax to be accrued at the end of each month ($300,000 ÷ 12 months = $25,000/month). Assume further that the government requires payments to be made by the 15th of the following month. The entries at the end of each month from January through to November would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Tax Expense E+ (SE)		25,000	
	Income Tax Payable L+			25,000
	To record estimated income tax expense.			

On the 15th of each month beginning February 15th to December 15th, the following entry would be recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Tax Payable (L)		25,000	
	Cash (A)			25,000
	To record payment of income tax.			

Assume that at the end of December, the corporation's actual income tax was determined to be $297,000 instead of the originally estimated $300,000. The entry at December 31 would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Income Tax Expense E+ (SE)		22,000	
	Income Tax Payable L+			22,000
	To report income tax expense; ($25,000 x 11 months = $275,000; $297,000 - $275,000 = $22,000).			

Contingent Liabilities

Recall that an estimated liability is recorded when the liability is probable and the amount can be reliably estimated. A **contingent liability** exists when a potential liability has arisen due to a past event but will not be a definitive liability until some future event occurs. Generally accepted accounting principles require that a contingent liability be reported on the balance sheet if it meets the following two factors: 1.) the ability of management to estimate the liability and 2.) the probability that there will be a future economic sacrifice. The probability is determined by the following:

Probable – the future event or events are likely to occur

Reasonably possible – the chance of the future event or events occurring is more than remote but less than likely

Remote – the chance of the future event or events occurring is slight

The following table illustrates the decision to record or disclose a contingent liability:

	Probable	**Reasonably Possible**	**Remote**
The liability amount can be reasonably estimated	Record as a liability	Disclose in the footnotes to the financial statements	Disclosure is not required
The liability amount cannot be reasonably estimated	Disclose in the footnotes to the financial statements	Disclose in the footnotes to the financial statements	Disclosure is not required

An example of a contingent liability is a lawsuit where it is probable there will be a loss but the amount cannot be reasonably estimated. A brief description of the lawsuit must be disclosed in the notes to the financial statements; it would not be recorded until the amount of the loss could be reasonably estimated. Great care must be taken with contingencies — if an organization intentionally withholds information, it could cause decision makers, such as investors, to make decisions they would not otherwise have made.

9.4 Long-Term Liabilities—Bonds Payable

LO4 – Identify, describe, and record bonds.

Corporations generally acquire long-lived assets like property, plant, and equipment through the issue of shares or long-term debt that is repayable over many years. Chapter 10 addresses the ways in which a corporation can raise funds by issuing shares, known as equity financing. This chapter discusses corporate financing by means of issuing long-term debt, known as debt financing. Types of long-term debt are typically classified according to their means of repayment.

1. **Bonds** pay *only interest* at regular intervals to investors. The original investment is repaid to bondholders when the bond *matures* (or comes due), usually after a number of years. Bonds are generally issued to many individual investors.
2. **Loans** are repaid in equal payments on a regular basis. The payments represent both *interest and principal* paid to creditors. Such payments are said to be *blended*. That is, each payment contains repayment of a certain amount of the original amount of the loan (the principal), as well as interest on the remaining principal balance.

Bonds are discussed in this section. Loans are expanded upon in the next section. Other types of debt, such as leases, are left for study in a more advanced accounting textbook.

Rights of Bondholders

As noted above, a **bond** is a debt instrument, generally issued to many investors, that requires future repayment of the original amount at a fixed date, as well as periodic interest payments during the intervening period. A legal contract called a **bond indenture** is prepared that specifies all the details of the bond offering. A regulatory document called a **bond prospectus** is also prepared and filed with the Securities and Exchange Commission (SEC). The prospectus also states the details of the bond offering such as interest rate, interest payment dates, maturity date, and other characteristics. In addition to this, the prospectus also describes any bond **covenants** designed to protect the creditors. Typical covenants will include limitations on dividend payments to shareholders, limitations on future borrowings, or requirements that the company maintain certain accounting ratio minimums.

Ownership of a bond certificate carries with it certain rights. These rights are printed on the actual certificate and vary among bond issues. The various characteristics applicable to bond issues are the subject of more advanced courses in finance and are not covered here. However, individual bondholders always acquire two rights.

1. The right to receive the face value of the bond at a specified date in the future, called the *maturity date*.

2. The right to receive periodic interest payments at a specified percent of the bond's face value.

A **trustee** is appointed to be an intermediary between the corporation and the bondholder. The trustee is an independent party that administers the terms of the indenture.

Bond Authorization

Assume that Big Dog Carworks Corp. decides to issue $30 million of 12% bonds to finance its expansion. The bonds are repayable three years from the date of issue, January 1, 2015. The amount of authorized bonds, their interest rate, and their maturity date can be shown in the accounts as follows:

GENERAL LEDGER
Bonds Payable –
Long-Term
Due Jan. 1, 2018

Acct. No. 272

Date		Description	Debit	Credit	DR/CR	Balance
2015						
Jan.	1	Authorized to issue $30,000,000				
		of 12%, 3-year bonds, due				
		January 1, 2018.				

Bonds in the Financial Statement

Each bond issue is disclosed separately in the notes to the financial statements because each issue may have different characteristics. The descriptive information disclosed to readers of financial statements includes the interest rate and maturity date of the bond issue. Also disclosed in a note are any restrictions imposed on the corporation's activities by the terms of the bond indenture and the assets pledged, if any.

Other Issues Related to Bond Financing

There are several additional considerations related to the issue of bonds.

1. **Cash Required in the Immediate and the Foreseeable Future**

   Most bond issues are sold in their entirety when market conditions are favorable. However, more bonds can be authorized in a particular bond issue than will be immediately sold. Authorized bonds can be issued whenever cash is required.

2. **Time Periods Associated with Bonds**

   The interest rate of bonds is associated with time, their maturity date is based on time, and other provisions — such as convertibility into common stock and restrictions on future dividend distributions of the corporation — are typically activated at a given point in time. These must also be considered, as the success of a bond issue often depends on the proper combination of these and other similar features.

Bond Characteristics

Each corporation issuing bonds has unique financing needs and attempts to satisfy various borrowing situations and investor preferences. Many types of bonds have been created to meet these varying needs.

Secured bonds are backed by physical assets of the corporation. These are usually long-lived assets. When real property is legally pledged as security for the bonds, they are called **mortgage bonds**.

Unsecured bonds are commonly referred to as **debentures**. A debenture is a formal document stating that a company is liable to pay a specified amount with interest. The debt is not backed by any collateral. As such, debentures are usually only issued by large, well-established companies. Debenture holders are ordinary creditors of the corporation. These bonds usually command a higher interest rate because of the added risk for investors.

The issue of **callable bonds** have a call feature that permits the issuing corporation to redeem, or call, the bonds before their maturity date. The bond indenture usually indicates the price at which bonds are callable. Corporate bond issuers are thereby protected in the event that market interest rates decline below the bond contract interest rate. The higher interest rate bonds can be called to be replaced by bonds bearing a lower interest rate.

Some bonds allow the bondholder to exchange bonds for a specified type and amount of the corporation's common stock. Bonds with this feature are called **convertible bonds**. This feature permits bondholders to enjoy the security of being creditors while having the option to become shareholders if the corporation is successful.

When **sinking fund bonds** are issued, the corporation is required to deposit funds at regular intervals with a trustee. This feature ensures the availability of adequate cash for the redemption of the bonds at maturity. The fund is called "sinking" because the transferred assets are tied up or "sunk," and cannot be used for any purpose other than the redemption of the bonds.

The corporation issuing bonds may be required to restrict its retained earnings. The **restriction of dividends** means that dividends declared cannot exceed a specified balance in retained earnings. This protects bondholders by limiting the amount of dividends that can be paid.

Investors consider the interest rates of bonds as well as the quality of the assets, if any, that are pledged as security. The other provisions in a bond contract are of limited or no value if the issuing

corporation is in financial difficulties. A corporation in such difficulties may not be able to sell its bonds, regardless of the attractive provisions attached to them.

Recording the Issuance of Bonds at Face Value (at Par)

Each bond has an amount printed on the face of the bond certificate. This is called the **face value** of the bond; it is also referred to as the **par-value** of the bond. When the cash received is the same as a bond's face value, the bond is said to be issued at *par*. A common face value of bonds is $1,000, although bonds of other denominations exist. A $30 million bond issue can be divided into 30,000 bonds, for example. This permits a large number of individuals and institutions to participate in corporate financing.

If a bond is sold at face value, the journal entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		1,000	
	Bonds Payable L+			1,000
	To record the issue of 8% bonds at par.			

Recording the Issuance of Bonds at a Premium

A $1,000 bond is sold at a **premium** when it is sold for more than its face value. This results when the bond interest rate is higher than the market interest rate. For instance, assume Big Dog Carworks Corp. issues a bond on January 1, 2015 with a face value of $1,000, a maturity date of one year, and a stated or contract interest rate of 8% per year, at a time when the market interest rate is 7%. Potential investors will bid up the bond price to $1,009.34 based on present value calculations where FV = $1,000; PMT = $80; i = 7 (the market rate); and n = 1. We will round the $1,009.34 to $1,009 to simplify the demonstration.

The premium is the $9 difference between the $1,009 selling price of the bond and the $1,000 face value. The journal entry to record the sale of the bond on January 1, 2015 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Cash A+		1,009	
	Bonds Payable L+			1,000
	Premium on Bonds Payable XL+ L+			9
	To record the issue of 8% bonds at a premium.			

The Premium on Bonds Payable account is a contra liability account that is added to the value of the bonds on the balance sheet. Because the bonds mature in one year, the bond appears in the current liabilities section of the balance sheet as follows:

Liabilities		
Current		
Bonds payable	$1,000	
Add: Premium on bonds payable	9	$1,009

On the maturity date of December 31, 2015, the interest expense of $80 is paid, bondholders are repaid, and the premium is written off as a reduction of interest expense.

The journal entry that would be recorded is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Interest Expense E+ (SE)		71	
	Premium on Bonds Payable (XL) (L)		9	
	Bonds Payable (L)		1,000	
	Cash (A)			1,080
	To record payment of bond and interest on maturity date.			

Note that the interest expense recorded on the income statement would be $71 ($80 – 9). This is equal to the market rate of interest at the time of bond issue.

Recording the Issuance of Bonds at a Discount

If the bond is sold for less than $1,000, then the bond has been sold at a **discount**. This results when the bond interest rate is lower than the market interest rate. To demonstrate the journal entries, assume a $1,000, one-year, 8% bond is issued by BDCC when the market interest rate is 9%. The selling amount will be $990.83 using PV calculations where FV = $1,000; PMT = $80; i = 9 (the market rate); and n = 1. We will round the $990.83 to $991 to simplify the demonstration.

The difference between the face value of the bond ($1,000) and the selling price of the bond ($991) is $9. This is the *discount*.

The journal entry to record the transaction on January 1, 2015 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Cash A+		991	
	Discount on Bonds Payable XL+ (L)		9	
	Bonds Payable L+			1,000
	To record issue of bonds at a discount.			

The $9 amount is a contra liability account and is *deducted* from the face value of the bonds on the balance sheet as follows:

Liabilities		
Current		
Bonds payable	$1,000	
Less: Discount on bonds payable	(9)	$991

On December 31, 2015, when the bonds mature, the following entry would be recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Interest Expense E+ (SE)		89	
	Bonds Payable (L)		1,000	
	Discount on Bonds Payable (XL) L+			9
	Cash (A)			1,080
	To record payment of bond and interest on maturity date.			

The interest expense recorded on the income statement would be $89 ($80 + 9). This is equal to the market rate of interest at the time of bond issue.

These are simplified examples, and the amounts of bond premiums and discounts in these examples are insignificant. In reality, bonds may be outstanding for a number of years, and related premiums and discounts can be substantial when millions of dollars of bonds are issued. These premiums and discounts are *amortized* using the effective interest method over the same number of periods as the related bonds are outstanding. The amortization of premiums and discounts is an intermediate financial accounting topic and is not covered here.

Refer to the Appendix Section 9.8 at the end of this chapter for discussions and illustrations regarding the use of the effective interest method for bonds issued at a premium or discount.

Bonds Issued in Between Interest Payments

If investors purchase bonds on dates falling in between the interest payment dates, then the investor pays an additional interest amount. This is because the bond issuer always pays the full six months interest to the bondholder on the interest payment date because it is the easiest way to administer multiple interest payments to potentially thousands of investors. For example, if an investor purchases a bond four months after the last interest payment, then the issuer will add these additional four months of interest to the purchase price. When the next interest payment date occurs, the issuer pays the full six months interest to the purchaser. The interest amount paid and received by the bond-holder will net to two months. This makes intuitive sense given that the bonds have only been held for two months making interest for two months the correct amount.

For example, on September 1, 2016, an investor purchases **at face value**, $100,000, 10-year, 8% bonds with interest payable each May 1 and November 1.

Bond payable	$100,000
Accrued interest (100,000 × 8% × 4 ÷ 12)	2,667
Total cash paid	$102,667

To record the bond issuance on September 1, with four months' accrued interest:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Sept 1, 2016	Cash A+		102,667	
	Bond payable L+			100,000
	Interest payable L+			2,667

To record the first semi-annual interest payment on November 1 and zero out the interest payable:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2016	Interest payable (L)		2,667	
	Bond interest expense E+ (SE)		1,333	
	Cash (A) ($100,000 × 8% × 6 ÷ 12)			4,000

Note that the bond interest on November 1 is for the amount the bondholder is entitled to, which is two months' of interest.

The December 31 year-end accrued interest entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2016	Interest expense E+ (SE)		1,333	
	Interest payable L+ ($100,000 × 8% × 2 ÷ 12)			1,333

At maturity, the May 1, 2026, entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2026	Bond payable (L)		100,000	
	Cash (A)			100,000

Repayment Before Maturity Date

In some cases, a company may want to repay a bond issue before its maturity. Examples of such bonds are callable bonds, which give the issuer the right to call and retire the bonds before maturity. For example, if market interest rates drop, the issuer will want to take advantage of the lower interest rate. In this case, the reacquisition price paid to extinguish and derecognize the bond

issuance will likely be slightly higher than the bond carrying value on that date, and the difference will be recorded by the issuing corporation as a loss on redemption. The company can, then, sell a new bond issuance at the new, lower interest rate.

For example, on January 1, 2016, Angen Ltd. issued bonds with a par value of $500,000 at 99, due in 2026. On January 1, 2020, the entire issue was called at 101 and cancelled. The bond payable carrying value on the call date was $497,000. Interest is paid annually and the discount amortized using the straight-line method. The carrying value of the bond on January 1, 2020, would be calculated as follows:

Carrying value on call date	$497,000
Re-acquisition price ($500,000 × 101)	505,000
Loss on redemption	$ 8,000

Angen Ltd. would make the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2020	Bond Payable (L)		500,000	
	Loss on redemption of bonds E+ (SE)		8,000	
	Cash (A)			505,000
	Discount on Bonds Payable (XL) L+			3,000

9.5 Long-term Liabilities—Loans Payable

LO5 – Explain, calculate, and record long-term loans.

A *loan* is another form of long-term debt that a corporation can use to finance its operations. Like bonds, loans can be *secured*, giving the lender the right to specified assets of the corporation if the debt cannot be repaid. For instance a mortgage is a loan secured by specified real estate of the company, usually land with buildings on it.

Unlike a bond, a loan is typically obtained from one lender such as a bank. Also, a loan is repaid in equal *blended* payments over a period time. These payments contain both interest payments and some repayment of principal. As well, a loan does not give rise to a premium or discount because it is obtained at the market rate of interest in effect at the time.

To demonstrate the journal entries related to long-term loans, assume BDCC obtained a three-year, $100,000, 10% loan on January 1, 2015 from First Bank to acquire a piece of equipment. When the loan proceeds are deposited into BDCC's bank account, the following entry is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Cash A+		100,000	
	Long-Term Note Payable L+			100,000
	To record 10%, 3-year, $100,000 bank loan.			

The loan is repayable in three annual blended payments. To calculate the payments, PV analysis is used whereby the following keystrokes are entered into a business calculator:

PV = 100000 (the cash received from the bank),

i = 10 (the interest rate),

n = 3 (the term of the loan is three years), and

Compute PMT.

The PMT (or payment) is -40211.48. The result is negative because payments are cash outflows. While the payments remain the same each year, the amount of interest paid decreases and the amount of principal increases. Figure 9.1 illustrates this effect.

Year Ended Dec. 31	*(a) Beginning Loan Balance (e)*	*(b) Periodic Interest Expense (a) x 10%*	*(c) Reduction of Loan Payable (d) - (b)*	*(d) Total Loan Payment*	*(e) Ending Loan Balance (a) - (c)*
2015	$100,000	$10,000	$30,211	$40,211	$69,789
2016	69,789	6,979	33,232	40,211	36,557
2017	36,557	3,654	36,557	40,211	-0-
			$100,000		

Interest expense and the principal balance decrease with each loan payment.

Figure 9.1: Effect of Blended Interest and Principal Payments

Figure 9.1 can be used to construct the journal entries to record the loan payments at the end of each year:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31, 2015	Interest Expense E+ (SE)		10,000	
	Loan Payable (L)		30,211	
	Cash (A)			40,211
Dec. 31, 2016	Interest Expense E+ (SE)		6,979	
	Loan Payable (L)		33,232	
	Cash (A)			40,211
Dec. 31, 2017	Interest Expense E+ (SE)		3,654	
	Loan Payable (L)		36,557	
	Cash(A)			40,211

The amounts in Figure 9.1 can also be used to present the related information on the financial statements of BDCC at each year end. Recall that assets and liabilities need to be classified as current and non-current portions on the balance sheet. Current liabilities are amounts paid within one year of the balance sheet date. That part of the loan payable to First Bank to be paid in the upcoming year needs to be classified as a current liability on the balance sheet. The amount of the total loan outstanding at December 31, 2015, 2016, and 2017 and the current and non-current portions are shown in Figure 9.2:

A	*B*	*C*	*D*
Year ended Dec. 31	*Ending loan balance per general ledger (Fig 9.1, Col. E)*	*Current portion (Fig. 9.1, Col. C)*	*(B – C) Long-term portion*
2015	$69,788	$33,232	$36,557
2016	36,557	36,557	-0-
2017	-0-	-0-	-0-

Figure 9.2: Current and Long-term Portions of Loan Principal

Balance sheet presentation would be as follows at the end of 2015, 2016, and 2017:

	2015	*2016*	*2017*
Current liabilities			
Current portion of bank loan	$33,232	$36,557	$ -0-
Long-term liabilities			
Bank loan (Note X)	36,557	-0-	-0-

Details of the loan would be disclosed in a note to the financial statements. Only the *principal* amount of the loan is reported on the balance sheet. The *interest* expense portion is reported on the income statement as an expense. Because these loan payments are made at BDCC's year end, no interest payable is accrued or reported on the balance sheet.

9.6 Appendix A: Present Value Calculations

Interest is the time value of money. If you borrow $1 today for one year at 10% interest, its future value in one year is $1.10 ($1 $\times$ 110% = $1.10). The increase of 10 cents results from the interest on $1 for the year. Conversely, if you are to pay $1.10 one year from today, the *present value* is $1 — the amount you would need to invest today at 10% to receive $1.10 in one year's time ($1.10/110% = $1). The exclusion of applicable interest in calculating present value is referred to as *discounting*.

If the above $1.10 amount at the end of the first year is invested for an additional year at 10% interest, its future value would be $1.21 ($1.10 x 110%). This consists of the original $1 investment, $.10 interest earned in the first year, and $.11 interest earned during the second year. Note that the second year's interest is earned on both the original $1 and on the 10 cents interest earned during the first year. This increase provides an example of *compound interest* — interest earned on interest.

The following formula can be used to calculate this:

> FV $=$ PV $\times (1+i)^n$
>
> where FV = future value, PV = present value, i = the interest rate, and n = number of periods.

Substituting the values of our example, the calculation would be FV $= \$1[(1+.1)^2]$, or $1.21.

If the *future* value of today's $1 at 10% interest compounded annually amounts to $1.21 at the end of two years, the *present* value of $1.21 to be paid in two years, discounted at 10%, is $1. The formula to calculate this is just the inverse of the formula shown above, or

$$\text{PV} = \frac{\text{FV}}{(1+i)^n}$$

Substituting the values of our example,

$$\text{PV} = \frac{\$1.21}{(1+.1)^2}$$

That is, the present value of $1.21 received two years in the future is $1. The present value is always less than the future value, since an amount received today can be invested to earn a return (interest) in the intervening period. Calculating the present value of amounts payable or receivable over several time periods is explained more thoroughly below.

Instead of using formulas to calculate future and present values, a business calculator can be used where:

PV = present value

FV = future value

i = interest rate per period (for a semi-annual period where the annual interest rate is 8%, for example, i = 4% and would be entered into the calculator as '4' – not .04)

PMT = dollar amount of interest per period

n = number of periods.

The following three scenarios demonstrate how PV analysis is used to determine the issue price of a $100,000 bond.

1. Big Dog Carworks Corp. issues $100,000 of 3-year, 12% bonds on January 1, 2015 when the market rate of interest is 12%. Interest is paid semi-annually.
2. BDCC's bonds are issued at a premium because the market rate of interest is 8% at the date of issue.
3. BDCC's bonds are issued at a discount because the market rate of interest is 16% at the date of issue.

In each scenario, the bond *principal* of $100,000 will be repaid at the end of three years, and *interest* payments of $6,000 (calculated as $100,000 x 12% x 6/12) will be received every six months for three years.

Scenario 1: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 12%

The market interest rate is the same as the bond interest rate, therefore the bond is selling at par. The present value will be $100,000, the face value of the bond, which can be confirmed by entering the following into a business calculator:

FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)

i = 6 (calculated as 12%/year ÷ 2 periods per year)

PMT = -6000 (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)

n = 6 (3-year bond × 2 periods per year)

Compute PV

The PV = 100000. This result confirms that the bond is being issued at par or face value.

Scenario 2: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 8%

The market interest rate is less than the bond interest rate, therefore the bond is selling at a premium. The present value can be determined by entering the following into a business calculator:

> FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)
>
> i = 4 (calculated as 8%/year ÷ 2 periods per year)
>
> PMT = -6000 (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)
>
> n = 6 (3-year bond × 2 periods per year)
>
> Compute PV

The PV = 110484.27. This confirms that the bond is being issued at a premium. The premium is $10,484.27 calculated as the difference between the present value of $110,484.27 and the face value of $100,000.

Scenario 3: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 16%

The market interest rate is more than the bond interest rate, therefore the bond is selling at a discount. The present value can be determined by entering the following into a business calculator:

> FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)
>
> i = 8 (calculated as 16%/year ÷ 2 periods per year)
>
> PMT = -6000 (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)
>
> n = 6 (3-year bond × 2 periods per year)
>
> Compute PV

The PV = 90754.24. This confirms that the bond is being issued at a discount. The discount is $9,245.76 calculated as the difference between the present value of $90,754.24 and the face value of $100,000.

9.7 Appendix B: Additional Payroll Transactions

Fringe Benefits and Vacation Benefits

Some employers pay for an employee's benefits such as health insurance. The journal entry to record benefits would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Benefits Expense E+ (SE)		XX	
	Health Insurance Payable L+			XX
	To record health insurance benefits.			

Employers are also required to pay for vacation time equal to 4% of gross income. The entry to accrue vacation benefits would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Benefits Expense E+ (SE)		XX	
	Estimated Vacation Liability L+			XX
	To record accrual of vacation benefits.			

When vacation benefits are realized by the employee, the Estimated Vacation Liability account is debited and the appropriate liability accounts to record deductions/withholdings and net pay are credited.

9.8 Appendix C: The Effective Interest Rate Method

Another way to calculate the interest expense when a bond is issued at a premium or discount is the **effective interest rate method**.

Below are two examples where a bond is issued at a premium or discount. The interest expense and the amortization of the premium or discount is computed using the effective interest rate method.

Note that the bond's fair value can be determined by either using the **bond quote** or by performing a present value calculation. The bond quote is the last price a bond traded, expressed as a percentage of par value, and then converted to a point scale. Use of the bond quote rate is shown in the bond premium example, while the present value calculation is shown in the bond discount example. These are discussed next.

Bonds Issued at a Premium

On May 1, 2016, Impala Ltd. issued a 10-year, 8%, $500,000 face value bond at a bond quote of 102 (2% above par). Interest is payable each year on May 1 and November 1. The company uses the effective interest rate method to calculate interest expense and amortize the bond premium.

The bond quote is 102, so the amount to be paid is $510,000 (500,000 × 1.02) and, therefore, represents the fair value or present value of the bond issuance on the purchase date.

The entry for the bond issuance is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2016	Cash A+		510,000	
	Bond payable L+			500,000
	Premium on bonds payable XL+ L+ . . .			10,000

Below is a portion of the effective interest rate method table:

	Payment	**Interest 3.8547%**	**Amortization of Premium**	**Balance**
May 1, 2016				510,000
Nov 1, 2016	20,000	19,659	341	509,659
May 1, 2017	20,000	19,646	354	509,305
Nov 1, 2017	20,000	19,632	368	508,937

Using the information from the schedule, the entries are completed below.

To record the interest payment and amortization of premium on November 1:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2016	Interest expense E+ (SE)		19,659	
	Premium on bonds payable (XL) (L)		341	
	Cash (A)			20,000

Recording the accrued interest at the December 31 year-end uses the relevant portion of the effective interest schedule. For example, at December 31, 2016, the table shows interest of $19,646 and bond amortization of $354 at May, 2017. Prorating these amounts for November and December, or two months, results in the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2016	Interest expense E+ (SE) (19,646 × 2 ÷ 6)		6,549	
	Premium on bonds payable (XL) (L) (354 × 2 ÷ 6)		118	
	Interest payable L+			6,667

To record the interest payment on May 1, 2017, interest expense and amortization will be for the remainder of the table amounts of $19,646 and $354 respectively:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2017	Interest expense E+ (SE) (19,646 − 6,549)		13,097	
	Interest payable (L)		6,667	
	Premium on bonds payable (XL) (L) (354 − 118)		236	
	Cash (A)			20,000

To record the interest payment on November 1, 2017:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2017	Interest expense E+ (SE)		19,632	
	Premium on bonds payable (XL) (L)		368	
	Cash (A)			20,000

At maturity, the May 1, 2026, entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2026	Bond payable (L)		500,000	
	Cash (A)			500,000

Bonds Issued at a Discount

On May 1, 2016, Engels Ltd. issued a 10-year, 8%, $500,000 face value bond with interest payable each year on May 1 and November 1. The market rate at the time of issuance is 9% and the company year-end is December 31. In this case the stated rate of 8% is less than the market rate of 9%. This means that the bond issuance is trading at a discount and the fair value, or its present value of the future cash flows, will be less than the face value upon issuance. The present value is calculated as:

20,000	PMT	(where semi-annual interest using the stated or face rate is $500,000 × 8% × 6 ÷ 12)
4.5	I/Y	(where 9% market or effective interest is paid twice per year)
20	N	(where interest is paid twice per year for 10 years)
500,000	FV	(where a single payment of the face value is due in a future year 2026);

Expressed in the following variables string, and using a financial calculator, the present value is calculated:

Present value (PV) = (20,000 PMT, 4.5 I/Y, 20 N, 500,000 FV) = $467,480

Had the bond quote been used, this bond would be trading at a bond quote of 93.496 (or 93.496% of the bond's face value, which is below par). The fair value would also be $467,480 ($500,000 × 0.93496).

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2016	Cash A+		467,480	
	Discount on bonds payable XL+ (L)		32,520	
	Bond payable (L)			500,000

The stated rate of 8% is less than the market rate of 9%, resulting in a present value less than the face amount of $500,000. This bond issuance is trading at a discount. Since the market rate is greater, the investor would not be willing to purchase bonds paying less interest at the face value. The bond issuer must, therefore, sell these at a discount in order to entice investors to purchase them. The investor pays the reduced price of $467,480. For the seller, the discount amount of $32,520 ($500,000 − 467,480) is then amortized over the life of the bond issuance using the effective interest rate method. The total interest expense for either method will be the same.

The interest schedule for the bond issuance is shown below:

	Payment	Interest 4.5%	Amortization of Discount	Balance
May 1, 2016				467,480
Nov 1, 2016	20,000	21,037	1,037	468,517
May 1, 2017	20,000	21,083	1,083	469,600
Nov 1, 2017	20,000	21,132	1,132	470,732
May 1, 2018	20,000	21,183	1,183	471,915
Nov 1, 2018	20,000	21,236	1,236	473,151
May 1, 2019	20,000	21,292	1,292	474,443
Nov 1, 2019	20,000	21,350	1,350	475,793
May 1, 2020	20,000	21,411	1,411	477,203
Nov 1, 2020	20,000	21,474	1,474	478,677
May 1, 2021	20,000	21,540	1,540	480,218
Nov 1, 2021	20,000	21,610	1,610	481,828
May 1, 2022	20,000	21,682	1,682	483,510
Nov 1, 2022	20,000	21,758	1,758	485,268
May 1, 2023	20,000	21,837	1,837	487,105
Nov 1, 2023	20,000	21,920	1,920	489,025
May 1, 2024	20,000	22,006	2,006	491,031
Nov 1, 2024	20,000	22,096	2,096	493,127
May 1, 2025	20,000	22,191	2,191	495,318
Nov 1, 2025	20,000	22,289	2,289	497,607
May 1, 2026	20,000	22,392	2,392	500,000

Using the information from the schedule, the entries are completed below.

To record the interest payment on November 1:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2016	Interest expense E+ (SE) (467,480 × 4.5%)		21,037	
	Discount on bonds payable (XL) L+			1,037
	Cash (A)			20,000

Recording the accrued interest at the December 31 year-end uses the relevant portion of the effective interest schedule. For example, at December 31, 2016, the table shows interest of $21,083 and bond amortization of $1,083 at May, 2017. Prorating these amounts for November and December, or two months, results in the following entry

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2016	Interest expense E+ (SE) (21,083 × 2 ÷ 6)		7,028	
	Discount on bonds payable (XL) L+ (1,083 × 2 ÷ 6)			361
	Interest payable L+			6,667

To record the interest payment on May 1, 2017, interest expense and amortization will be for the remainder of the table amounts of $21,083 and $1,083 respectively:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2017	Interest expense E+ (SE) (21,083 – 7,028)		14,055	
	Interest payable (L)		6,667	
	Discount on bonds payable (XL) L+ (1,083 – 361)			722
	Cash (A)			20,000

At maturity, the May 1, 2026, entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2026	Bond payable (L)		500,000	
	Cash (A)			500,000

Summary of Chapter 9 Learning Objectives

LO1 – Identify and explain current versus long-term liabilities.

Current or short-term liabilities are a form of debt that is expected to be paid within the longer of one year of the balance sheet date or one operating cycle. Long-term liabilities are a form of debt that is expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Current and long-term liabilities must be shown separately on the balance sheet.

LO2 – Record and disclose known current liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are known. Examples include accounts payable, unearned revenues, and payroll liabilities. Short-term notes payable, also a known current liability, can involve the accrual of interest if the maturity date falls in the next accounting period.

LO3 – Record and disclose estimated current liabilities.

An estimated liability is known to exist where the amount, although uncertain, can be estimated. Warranties and income taxes are examples of estimated liabilities. A contingent liability exists when a potential liability has arisen due to a past event but will not be a definitive liability until some future event occurs. Generally accepted accounting principles require that a contingent

liability be reported on the balance sheet if it meets the following two factors: 1.) the ability of management to estimate the liability and 2.) the probability that there will be a future economic sacrifice.

LO4 – Identify, describe, and record bonds.

Bonds pay interest at regular intervals to bondholders. The original investment is repaid to bondholders when the bonds mature. There are different types of bonds such as secured or unsecured. Bonds can have a variety of characteristics, including: varying maturity dates, call provisions, conversion privileges, sinking fund requirements, or dividend restrictions. Bonds are issued: (a) at par (also known as the face value) when the market interest rate is the same as the bond (or contract) interest rate; (b) at a discount when the market interest rate is higher than the bond interest rate; or (c) at a premium when the market interest rate is lower than the bond interest rate.

LO5 – Explain, calculate, and record long-term loans.

A loan is a form of long-term debt that can be used by a corporation to finance its operations. Loans can be secured and are typically obtained from a bank. Loans are often repaid in equal blended payments containing both interest and principal.

Discussion Questions

1. What is the difference between a current and long-term liability?
2. What are some examples of known current liabilities?
3. How are known current liabilities different from estimated current liabilities?
4. What are some examples of estimated current liabilities?
5. How is an estimated current liability different from a contingent liability?
6. What is a bond? ...a bond indenture? Why might a trustee be used to administer a bond indenture?
7. List and explain some bondholder rights.
8. How are different bond issues reported in the financial statements of a corporation?
9. What are three reasons why bonds might be redeemed before their maturity date?
10. Why would investors pay a premium for a corporate bond? Why would a corporation issue its bonds at a discount? Explain, using the relationship between the bond contract interest rate and the prevailing market interest rate.

11. How is an unamortized bond premium or discount disclosed in accordance with GAAP?
12. If the bond contract interest rate is greater than that required in the market on the date of issue, what is the effect on the selling price of the bond? Why?
13. What method is used to amortize premiums and discounts?
14. How is a loan payable similar to a bond? How is it different?
15. Distinguish between future value and present value. What is the time value of money? Why is it important?
16. How is the actual price of a bond determined?

Exercises

EXERCISE 9–1 (LO1)

Ajam Inc. shows the following selected adjusted account balances at March 31, 2019:

Accounts Payable	$ 58,000
Wages Payable	102,000
Accumulated Depreciation – Machinery	69,000
Income Taxes Payable	92,000
Note Payable, due May 15, 2021	108,000
Note Payable, due November 30, 2019	64,000
Mortgage Payable	320,000
Accounts Receivable	71,000

Note: $240,000 of the mortgage payable balance is due one year beyond the balance sheet date; the remainder will be paid within the next 12 months.

Required: Prepare the liability section of Ajam's March 31, 2019 balance sheet.

EXERCISE 9–2 (LO2)

Libra Company borrowed $300,000 by signing a 3.5%, 45-day note payable on July 1, 2019. Libra's year-end is July 31. Round all calculations to two decimal places.

Required:

a. Prepare the entry to record the issuance of the note on July 1, 2019.

b. Prepare the entry to accrue interest on July 31, 2019.

c. On what date will this note mature?

d. Prepare the entry to record the payment of the note on the due date.

EXERCISE 9–3 (LO3)

On January 23, 2019, Zenox Company sold $105,000 of furniture on account that had a cost of $82,000. All of Zenox's sales are covered by an unconditional 24-month replacement warranty. Historical data indicates that warranty costs average 2% of the cost of sales. On January 29, 2019, Zenox replaced furniture with a cost of $2,000 that was covered by warranty.

Required:

a. Prepare the journal entry to record the estimated warranty liability for January.

b. Prepare the entry to record the warranty expense incurred in January.

c. Assuming the Estimated Warranty Liability account had a credit balance of $740 on January 1, 2019, calculate the balance at January 31, 2019 after the entries above were posted.

EXERCISE 9–4 (LO2)

An extract from the trial balance of Paragon Corporation at December 31, 2018 is reproduced below:

		Amount in unadjusted trial balance	*Amount in adjusted trial balance*
a.	Salaries expense (J. Smith)	$50,000	$52,000
b.	Employee income taxes payable	-0-	500
c.	Health insurance benefits	-0-	1,000
d.	Vacation expense benefits	-0-	1,500

Required:

a. Prepare the adjusting entry that was posted, including a plausible description.

b. Prepare the journal entries to record the payments on January 5, 2019 to employee J. Smith and the IRS.

EXERCISE 9–5 (LO3)

Paul's Roofing Corporation paid monthly corporate income tax instalments of $500 commencing February 15, 2018. The company's income before income taxes for the year ended December 31, 2018 was $15,000. The corporate income tax rate is 35%. Paul's Roofing paid the 2018 corporate income taxes owing on January 31, 2019.

Required:

a. Record the February 15, 2018 payment.

b. Record the 2018 corporate income tax expense.

c. Record the January 31, 2019 payment.

EXERCISE 9–6 (LO4)

Leong Corporation was authorized to issue $500,000 face value bonds on January 1, 2017. The corporation issued $100,000 of face value bonds on that date. The bonds will mature on December 31, 2020. Interest is paid semi-annually on June 30 and December 31 each year. The bond interest rate per the terms of the indenture is 12% per year.

Required: Answer the questions for each of the following cases.

Case A: The bonds were issued at face value.

Case B: The bonds were issued for $112,000.

Case C: The bonds were issued for $88,000.

a. How much cash does Leong receive for the bonds?

b. How much annual interest must the corporation pay? On what amount does the corporation pay?

c. Prepare the journal entry to record the sale of the bonds.

d. Record the entries applicable to interest and straight-line amortization for June 30, 2017 and for December 31, 2017.

EXERCISE 9–7 (LO4) Bonds Issued at a Discount and Retired

On January 1, 2017, the date of bond authorization, Nevada Inc. issued a 3-year, 12-per cent bond with a face value of $100,000 at 94. Semi-annual interest is payable on June 30 and December 31.

Required:

a. Prepare journal entries to record the following transactions:

i. The issuance of the bonds.
ii. The interest payment on June 30, 2017.
iii. The amortization of the discount on June 30, 2017 (use the straight-line method of amortization).

b. Calculate the amount of interest paid in cash during 2017 and the amount of interest expense that will appear in the 2017 income statement.

c. Prepare a partial balance sheet at December 31, 2017 showing how the bonds payable and the discount on the bonds should be shown on the balance sheet.

d. Prepare the journal entry to record the retirement of the bonds on December 31, 2019.

e. Prepare the journal entry on January 1, 2018, assuming the bonds were called at 102.

EXERCISE 9–8 (LO4) Bonds Issued at a Premium and Retired

On January 1, 2019, the date of bond authorization, Sydney Corp. issued 3-year, 12-per cent bonds with a face value of $200,000 at 112. Semi-annual interest is payable on June 30 and December 31.

Required:

a. Prepare the journal entries to record the following transactions:

i. The issuance of the bonds.
ii. The interest payment on June 30, 2019.
iii. The amortization of the premium on June 30, 2019 (use the straight-line method of amortization).

b. Calculate the amount of interest paid in cash during 2019 and the amount of interest expense that will appear in the 2019 income statement. Why are these amounts different?

c. Prepare a partial balance sheet at December 31, 2019 showing how the bonds payable and the premium on bonds should be shown on the balance sheet.

d. Prepare the journal entry on January 1, 2022 when the bonds were called at 106.

EXERCISE 9–9 (LO4) Bonds Issued between Interest Dates

On September 1, 2017, Harvort Inc. issues $100,000, 10-year, 8% bonds at par. Interest is payable each May 1 and November 1. The company year-end is December 31.

Required: Prepare the journal entries to record the following transactions:

a. The issuance of the bonds.

b. The journal entries for 2018.

c. The bond at maturity.

d. Prepare a partial balance sheet at December 31, 2018 showing how the bonds and interest payable should be shown on the balance sheet.

EXERCISE 9–10 (LO5) Long Term Loan Payable

Rosedale Corp. obtained a $50,000 loan from Second Capital Bank on January 1, 2021. It purchases a piece of heavy equipment for $48,000 on the same day. The loan bears interest at 6% per year on the unpaid balance and is repayable in three annual blended payments of $18,705 on December 31 each year.

Required:

a. Prepare the journal entries to record the following transactions:

i. Receipt of loan proceeds from the bank.

ii. Purchase of the equipment.

b. Prepare the loan repayment schedule.

c. Prepare the journal entry to record the first loan payment.

d. Prepare the liabilities section of the balance sheet in good form, including all disclosures, for this loan at December 31, 2021. (Hint: The current portion of a long-term liability must be reported.)

EXERCISE 9–11 (LO4)

Required: Complete the following by responding either *premium* or *discount*.

a. If the market rate of interest is 15 per cent and the bond interest rate is 10 per cent, the bonds will sell at a _____.

b. If a bond's interest rate is 10 per cent and the market rate of interest is 8 per cent, the bonds will sell at a _____.

c. In computing the carrying amount of a bond, unamortized _____ is subtracted from the face value of the bond.

d. In computing the carrying amount of a bond, unamortized _____ is added to the face value of the bond.

e. If a bond sells at a _____, an amount in excess of the face value of the bond is received on the date of issuance.

f. If a bond sells at a _____, an amount less than the face value of the bond is received on the date of issuance.

EXERCISE 9–12 (LO4)

On January 1, 2019, the date of bond authorization, Nevada Inc. issued a 3-year, 12-per cent bond with a face value of $100,000 at 94. Semi-annual interest is payable on June 30 and December 31.

Required: Prepare the journal entry to record the issuance of the bonds on January 1, 2019.

EXERCISE 9–13 (LO4)

On January 1, 2019, the date of bond authorization, Sydney Corp. issued 3-year, 12-per cent bonds with a face value of $200,000 at 112. Semi-annual interest is payable on June 30 and December 31.

Required: Prepare the journal entry to record the issuance of the bonds on January 1, 2019.

EXERCISE 9–14 (LO5)

Rosedale Corp. obtained a $50,000 loan from Second Capital Bank on January 1, 2019. It purchased a piece of heavy equipment for $48,000 on the same day. The loan bears interest at 6% per year on the unpaid balance and is repayable in three annual blended payments of $18,705 on December 31 each year.

Required:

a. Prepare the journal entries to record the following transactions:

i. Receipt of loan proceeds from the bank.

ii. Purchase of the equipment.

b. Prepare the loan repayment schedule.

c. Prepare the journal entry to record the first loan payment.

Problems

PROBLEM 9–1 (LO5)

Zinc Corp. obtained a $100,000 loan from First Capital Bank on December 31, 2015. It purchased a piece of heavy equipment for $95,000 on January 2, 2016. The loan bears interest at 8% per year on the unpaid balance and is repayable in four annual blended payments of $30,192 on December 31 each year, starting in 2016.

Required:

1. Prepare the journal entries to record the following transactions:

   (a) Receipt of loan proceeds from the bank.

   (b) Purchase of the equipment.

2. Prepare the loan repayment schedule in the following format:

Zinc Corp.
Loan Repayment Schedule

	A	*B*	*C*	*D*	*E*
			(D − B)		*(A − C)*
Year Ended Dec. 31	*Beginning Loan Balance*	*Interest Expense*	*Reduction of Loan Payable*	*Total Loan Payment*	*Ending Loan Balance*
2016					
2017					
2018					
2019					

3. Prepare the journal entry to record the last loan payment.

4. Prepare a partial balance sheet showing the loan liability at December 31, 2017

Chapter 10

Equity Financing

Corporations sometimes finance a large portion of their operations by issuing equity in the form of stocks. This chapter discusses in detail the nature of the corporate form of organization, the different types of stocks used to obtain funds for business activities, and how these transactions are recorded. It also expands on the concept of dividends.

Chapter 10 Learning Objectives

LO1 – Identify and explain characteristics of the corporate form of organization and classes of stock.

LO2 – Record and disclose preferred and common stock transactions including stock splits.

LO3 – Record and disclose cash dividends.

LO4 – Record and disclose stock dividends.

Concept Self-Check

Use the following as a self-check while working through Chapter 10.

1. What are the characteristics of a corporation?
2. What types of stock can a corporation issue to investors?
3. What are the rights of common stockholders in a corporation?
4. How are the rights of common stockholders different from those of preferred stockholders?
5. How are stock transactions recorded?
6. When both preferred and common stock are issued by a corporation, how is this disclosed in the equity section of the balance sheet?
7. What is meant by *authorized* shares?
8. How do *issued* shares differ from *outstanding* shares?
9. What is a stock split?

10. How does a stock split affect equity?
11. How are cash dividends recorded?
12. What is a stock dividend and how is it recorded?
13. How does a stock dividend affect equity?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

10.1 The Corporate Structure

LO1 – Identify and explain characteristics of the corporate form of organization and classes of stock.

The accounting equation expresses the relationship between assets owned by a corporation and the claims against those assets by creditors and stockholders. Accounting for equity in a corporation requires a distinction between the two main sources of stockholders' equity: common stock and retained earnings. Their relationship to the accounting equation is shown in Figure 10.1.

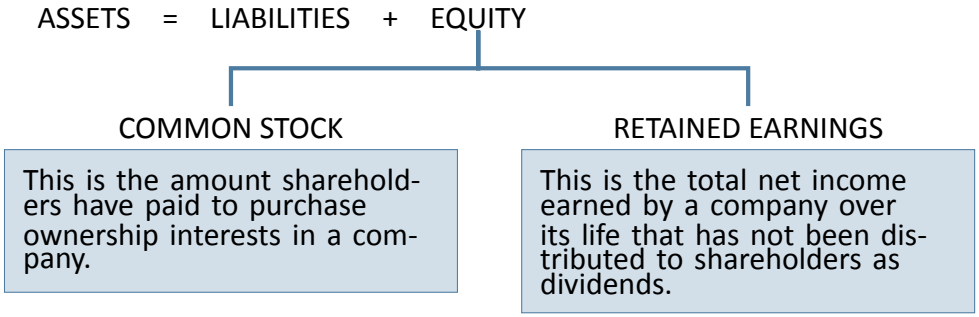


Figure 10.1: Common Stock Versus Retained Earnings

Corporate Characteristics

A unique characteristic of corporations is that they are legally separate from their owners, who are called **stockholders**. Each unit of ownership of a corporation is called a share of **stock**. If a corporation issues 1,000 shares and you own 100 of them, you own 10% of the company. Corporations can be *privately-held* or *publicly-held*. A privately-held corporation's shares of stock are not issued

for sale to the general public. A publicly-held corporation offers its shares of stock for sale to the general public on a stock market like the National Association of Securities Dealers Automated Quotation System (NASDAQ) or the New York Stock Exchange (NYSE).

A corporation has some of the same rights and obligations as individuals. For instance, it pays income taxes on its earnings, can enter into legal contracts, can own property, and can sue and be sued. A corporation also has distinctive features. It is separately regulated by law, has an indefinite life, its owners have limited liability, and it can usually acquire capital more easily than an individual. These features are discussed below.

- **Creation by law**

A corporation can be formed in any of the 50 states in the United States. Some states are considered more business friendly, such as Delaware, Nevada, and Wyoming. Therefore many business choose to file their *articles of incorporation* in one of these states. This is sometimes called the *corporate charter* and must describe (a) the nature of the firm's business activities, (b) the shares to be issued, and (c) the make-up of the *board of directors (BOD)*. The **classes** or types of stock that will be issued will be determined as well as the total number of shares of each class that can be issued, known as the **authorized** number of shares. Once approved investors can then purchase stocks of the corporation. The investors elect the BOD. The BOD establishes corporate policies and appoints officers who manage the corporation. A chief executive officer (CEO) will be appointed by the BOD. This person in turn has authority over the employees of the corporation.

The board meets regularly, perhaps monthly or quarterly, to review the operations of the corporation and to set policies for future operations. The board may decide to distribute some assets of the corporation as a dividend to stockholders. It may also decide that some percentage of the assets of the corporation legally available for dividends should be made unavailable; in this case, a *restriction* is created. Accounting for such restrictions is discussed later in this chapter.

Wherever it is incorporated, a company is generally subject to the following regulations:

1. It must provide timely financial information to investors.
2. It must file required reports with the government.
3. It cannot distribute profits arbitrarily but must treat all stocks of the same class alike.
4. It is subject to special taxes and fees.

Despite these requirements, a corporation's advantages usually outweigh its disadvantages when compared to other forms of business such as a sole-proprietorship or partnership. These features of a corporation are described further below. Proprietorships and partnerships are discussed in more detail in Chapter 13.

- **Indefinite life**

A corporation has an existence separate from that of its owners. Individual stockholders may die, but the corporate entity continues. The life of a corporation comes to an end only when it is dissolved, becomes bankrupt, or has its charter revoked for failing to follow laws and regulations.

- **Limited liability**

The corporation's owners are liable only for the amount that they have invested in the corporation. If the corporation fails, its assets are used to pay creditors. If insufficient assets exist to pay all debts, there is no further liability on the part of stockholders. This situation is in direct contrast to a sole-proprietorship or a partnership. In these forms of organization, creditors have full recourse to the personal assets of the proprietorship or partners if the business is unable to fulfill its financial obligations. For the protection of creditors, the limited liability of a corporation must be disclosed in its name. The words "Limited," "Incorporated," or "Corporation" (or the abbreviations Ltd., Inc., or Corp.) are often used as the last word of the name of a company to indicate this corporate form.

- **Ease of acquiring capital**

Issuing stock allows many individuals to participate in the financing of a corporation. Both small and large investors are able to participate because of the relatively small cost of a share of stock, and the ease with which ownership can be transferred — stocks are simply purchased or sold. Large amounts of capital can be raised by a corporation because the risks and rewards of ownership can be spread among many investors.

A corporation only receives money when stocks are first issued. Once a stock is issued, it can be bought and sold a number of times by various investors. These subsequent transactions between investors do not affect the corporation's balance sheet.

Income Taxes on Earnings

Because corporations are considered separate legal entities, they pay income taxes on their earnings. The Tax Cuts and Jobs Act (TCJA) recently reduced the corporate income tax rate from 35 percent to 21 percent.

Classes of Stocks

There are many types of stocks, with differences related to voting rights, dividend rights, liquidation rights, and other preferential features. The rights of each stockholder depends on the class or type of stock held.

Every corporation issues **common stock**. The rights and privileges usually attached to common stock are outlined below.

- The right to participate in the management of the corporation by voting at stockholders' meetings or through absentee ballot.
- The right to receive dividends when they are declared by the corporation's board of directors.
- The right to receive assets upon liquidation of the corporation.

For other classes of stocks, some or all of these rights are usually restricted. The articles of incorporation may also grant the stockholders the **pre-emptive** right to maintain their proportionate interests in the corporation if additional stocks are issued.

If the company is successful, common stockholders may receive dividend payments and the value of their common stock may increase. Common stockholders can submit a proposal to raise any matter at an annual meeting and have this proposal circulated to other stockholders at the corporation's expense. If the corporation intends to make fundamental changes in its business, these stockholders can often require the corporation to buy their stocks at their fair value. In addition, stockholders can apply to the courts for an appropriate remedy if they believe their interests have been unfairly disregarded by the corporation.

Some corporations issue different classes of stock in order to appeal to as large a group of investors as possible. This permits different risks to be assumed by different classes of stockholders in the same company. For instance, a corporation may issue common stock but divide these into different classes like class A and class B common stocks. When dividends are declared, they might only be paid to holders of class A stock.

Preferred stocks is a class of stock where the stockholders are entitled to receive dividends before common stockholders. These stocks usually do not have voting privileges. Preferred stockholders typically assume less risk than common stockholders. In return, they receive only a limited amount of dividends. Issuing preferred stock allows a corporation to raise additional capital without requiring existing stockholders to give up control. Preferred stock is listed before common stock in the equity section of the balance sheet. Other characteristics of preferred stock and dividend payments are discussed later in this chapter.

The stocks of a corporation can have a different status at different points in time. They can be **unissued** or **issued**, issued and **outstanding**, or issued and reacquired by the corporation (called **treasury stocks**). The meaning of these terms is summarized in Figure 10.2:

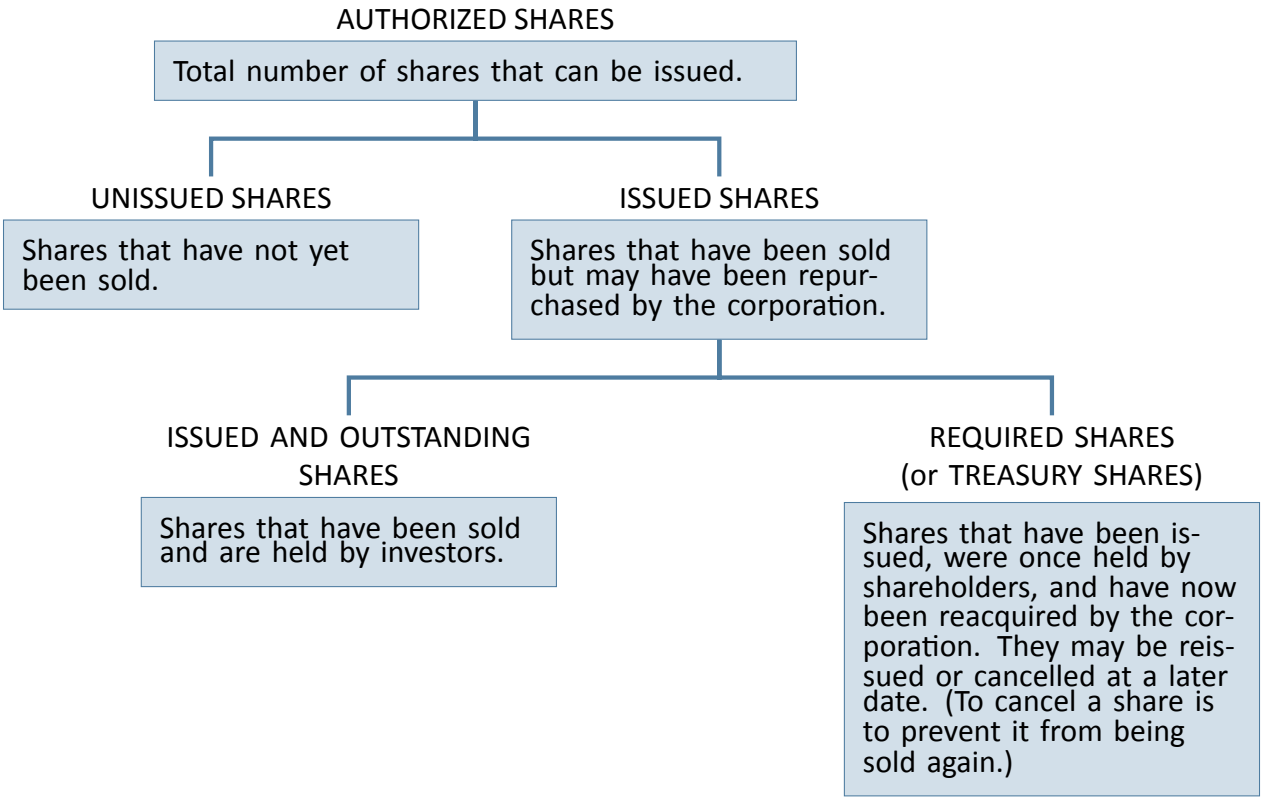


Figure 10.2: Status of Stocks

Par Value

Par-value is the nominal value per share that is established by the corporate charter. Par-value has nothing to do with the market value of the stock. Most states require stock to have a par value although there are states that require stock be issued at no-par value. The original purpose of par value was to protect creditors by specify a pre-determined amount that owners of the company could not withdraw from the company in the case of bankruptcy. This pre-determined amount is referred to as **legal capital**. In the case of a no-par value stock the legal capital would be determined by state law. However, companies simply started to issue par value at minimal amounts in order to avoid restrictions on what could be distributed and it does little to protect investors.

The practice of recording shares with a par value simply allocates the proceeds from the shareholder investment between legal capital and additional paid-in capital. The proceeds received based on par value is recorded to the stock account and everything above par value is recorded to the additional paid-in capital account.

The Debt Versus Equity Financing Decision

Many factors influence management in its choice between the issue of debt and the issue of common stock. One of the most important considerations is the potential effect of each of these financing methods on the present stockholders.

Consider the example of Old World Corporation, which has 100,000 shares of common stock outstanding, is a growth company, and is profitable. Assume Old World requires $30 million in cash to finance a new plant. Management is currently reviewing two financing options:

1. Issue 12% $30 million in debt, due in three years
2. Issue an additional 500,000 common stock at a selling price of $60 each.

Management estimates that the new plant should result in income before interest and tax of $6 million. Management has prepared the following analysis to compare and evaluate each financing option.

	Plan 1: Issue Debt	*Plan 2:* Issue Common Stock
Income before interest and income taxes	$ 6,000,000	$ 6,000,000
Less: Interest expense ($30M × 12%)	(3,600,000)	-0-
Income before taxes	2,400,000	6,000,000
Less: Income taxes assumed to be 21%	(504,000)	(1,260,000)
Net income available to common stockholders	$ 1,896,000	$ 4,740,000
Number of shares common stock outstanding	100,000	600,000
Earnings per share	$ 18.96	$ 7.90

Plan 1, the issue of debt, has several advantages for existing common stockholders.

- **Advantage 1: Earnings per share**

If the additional long-term financing were acquired through the issue of debt, the corporate earnings per share (EPS) on each share of common stock would be $18.96. This EPS is greater than the EPS earned through financing with additional common stock. On this basis alone, the issue of debt is more financially attractive to existing common stockholders.

- **Advantage 2: Control of the corporation**

Creditors have no vote in the affairs of the corporation. If additional common shares were issued, there might be a loss of corporate control by existing stockholders because ownership would be distributed over a larger number of stockholders, or concentrated in the hands of one or a few new owners. In the Old World case, issuing common stock would increase the number from 100,000 to 600,000 shares.

- **Advantage 3: Income taxes expense**

Interest expense paid on debt is deductible from income for income tax purposes. Dividend payments are distributions of retained earnings, which is after-tax income. Thus, dividends are not deductible again for tax purposes. With a 21% income tax rate, the after-tax interest expense to the corporation is only 2.5% (12% $\times$ 21%).

Debt Financing Disadvantages

There are also some disadvantages in long-term financing with debt that must be carefully reviewed by management and the board of directors. The most serious disadvantage is the possibility that the corporation might earn less than $6 million before interest expense and income taxes. The interest expense is a fixed amount. It must be paid to creditors at specified times, unlike dividends.

Another disadvantage is the fact that debt must be repaid at maturity, whether or not the corporation is financially able to do so. Stocks do not have to be repaid.

10.2 Recording Stock Transactions

LO2 – Record and disclose preferred and common stock transactions including stock splits.

To demonstrate the issuance and financial statement presentation of stocks, assume that New World Corporation is authorized to issue stock consisting of 500,000 shares of common stock and 100,000 non-voting shares of preferred stock.

Transaction 1: On January 1, 2015, New World sells 1,000 shares of $1 par-value common stock to its first stockholders for $10 per share, or $10,000 cash. New World records the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Cash A+		10,000	
	Common stock SE+.			1,000
	Paid-in capital – excess of par, common SE+			9,000
	To record the issuance of 1,000 common shares at $10 per share.			

Transaction 2: On February 1, 2015, 2,500 shares of $10 par-value preferred stock are issued to

the owner of land and buildings that have a fair value of $35,000 and $50,000, respectively. The journal entry to record this transaction is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb 1	Land A+		35,000	
	Building A+		50,000	
	Preferred stock SE+			25,000
	Paid-in capital – excess of par, preferred SE+			60,000
	To record the issuance of 2,500 preferred shares in exchange for land and buildings.			

Usually, one or more individuals decide to form a corporation and before the corporation is created may use their own funds to pay for legal and government fees, travel and promotional costs, and so on. When the corporation is legally formed, it is not unusual for the corporation to issue shares of stock to these organizers for these amounts. These expenditures are referred to as **organization costs** (**start-up costs**) and are required to be expensed.

Transaction 3: On March 1, 2015, 500 shares of $1 par-value common stock are issued to the organizers of New World to pay for their services, valued at $5,000. The journal entry to record this transaction is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar 1	Organization Expense E+(SE)		5,000	
	Common stock SE+			500
	Paid-in capital – excess of par, common SE+			4,500
	To record the issuance of 500 common shares in exchange for organization efforts.			

Assuming no further stock transactions and a retained earnings balance of $480,000, the equity section of the New World Corporation balance sheet would show the following at December 31, 2015:

Heading required when there is more than one common stock account on a classified balance sheet.

100,000 shares authorized means there are 100,000 shares available for sale.

Equity Section of the Balance Sheet

Stockholders' equity:	
Preferred stock, $10 par value; 100,000 shares authorized;	
2,500 shares issued and outstanding	$25,000
Common stock, $1 par value; 500,000 shares authorized;	
1,500 shares issued and outstanding	1,500
Paid-in capital - excess of par, preferred	60,000
Paid-in capital - excess of par, common	13,500
Contributed capital	100,000
Retained earnings	480,000
Total stockholders' equity	$580,000

1,500 shares issued means 1,500 shares have been sold.

A Total contributed capital subtotal is required if there is more than one class of shares.

1,500 shares outstanding means 1,500 shares are held by shareholders (shares that have been issued but are not outstanding means the corporation purchased its own shares).

Transaction 4: Corporate legislation permits a company to reacquire some of its stocks, provided that the purchase does not cause insolvency. Repurchased stock is referred to as treasury stock. Treasury stock is issued but not outstanding. A company can use treasury stock for purposes such as giving the shares to employees as an incentive or bonus or they can choose to cancel the stock.

Assume that New World Corporation decides to repurchase 200 shares of common stock on December 1, 2016 and hold them in treasury. Assume that the price of each stock is the average issue price of the outstanding common stock, or $10. The journal entry to record the repurchase is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 1	Treasury Stock XSE+ (SE)		2,000	
	Cash (A)			2,000
	To record the repurchase of 200 common shares at $10 per share to be held in treasury.			

Assuming no further transactions, the equity section of the New World Corporation balance sheet would show the following at December 31, 2016:

Stockholder's equity:	
Preferred stock, $10 par value; 100,000 shares authorized;	
2,500 shares issued and outstanding	$25,000
Common stock, $1 par value; 500,000 shares authorized;	
1,500 shares issued; 1,300 shares outstanding	1,500
Paid-in capital – excess of par, preferred	60,000
Paid-in capital – excess of par, common	13,500
Retained earnings	480,000
Treasury stock, at cost; 200 common shares	(2,000)
Total stockholders' equity	$578,000

Notice that the repurchase of stocks caused a decrease in total stockholders' equity ($2,000 decrease) and in the number of shares outstanding (decreased by 200 shares). If the company chose to sell its treasury stock it would never report a profit or loss on the sale. This is the case even if the stock was sold above or below than the original repurchase price. For example if the above treasury stock were to be sold for $12 ($2 above the original repurchase price) the journal entry would be a DR to Cash for $2,400 (200 shares $\times$ $12 per share selling price) and CR to Treasury Stock for $2,000 (the original repurchase price) and CR to Paid-in capital, common for $400 (the difference).

Stock Splits

A corporation may find its shares are selling at a high price on a stock exchange, perhaps putting them beyond the reach of many investors. To increase the marketability of a corporation's shares, management may opt for a **stock split**. A stock split increases the number of shares issued and outstanding, and lowers the cost of each new share. The originally-issued shares are exchanged for a larger number of new shares.

Assume that on December 1, 2017 New World Corporation declares a 3-for-1 common stock split. This results in three new common shares replacing each currently-issued and outstanding common share. The number of issued and outstanding shares has now been tripled. The market price of each share will decrease to about one-third of its former market price. Since there is no change in the dollar amount of common stock, no debit-credit entry is required to record the stock split. Instead, a memorandum entry would be recorded in the general ledger indicating the new number of shares issued and outstanding, as follows:

Common Shares — Acct. No. 320

Date		Description	Debit	Credit	DR/CR	Balance
2017						
Dec.	1	Memorandum Entry:				
		Because of a 3-for-1 stock split, the issued and outstanding common shares				
		increased, respectively, from 1,500 and 1,300 to 4,500 and 3,900.				

The dollar amount shown on the balance sheet and statement of stockholders' equity will not

change. The only change is an increase in the number of issued and outstanding common stock. After the stock split, the equity section of the New World Corporation would appear as follows:

The number of common shares issued changed from 1,500 shares before the stock split to 4,500 after the stock split.

Equity Section of the Balance Sheet

Stockholders' equity:	
Preferred stock, $10 par value; 100,000 shares authorized, 2,500 shares issued and outstanding	$25,000
Common stock, $1 par-value; 500,000 shares authorized; 4,500 shares issued; 3,900 shares outstanding	1,500
Paid-in capital - excess of par, preferred	60,000
Paid-in capital - excess of par, common	13,500
Contributed capital	100,000
Retained earnings	480,000
Treasury stock, at cost; 200 common shares	(2,000)
Total stockholders' equity	$578,000

The number of common shares outstanding changed from 1,300 shares before the stock split to 3,900 after the stock split.

The paid-in capital is not affected by a stock split.

10.3 Cash Dividends

LO3 – Record and disclose cash dividends.

Both creditors and stockholders are interested in the amount of assets that can be distributed as dividends. Dividends are distributions of assets the company has earned for its stockholders. If a company pays dividends that exceeds the amount of assets earned, this would result in returning to the stockholders a portion of their investment. Therefore, companies generally view the amount in retained earnings as the amount available for dividends. For example, assume total assets are $40,000; total liabilities $39,000; and total equity $1,000, consisting of $900 in common stock and $100 of retained earnings. The maximum dividends that could be declared in this situation is $100, the balance in retained earnings.

Dividend Policy

Sometimes the board of directors may choose not to declare any dividends. There may be financial conditions in the corporation that make the payment impractical.

- **Consideration 1: There may not be adequate cash**

Corporations regularly reinvest their earnings in assets in order to make more profits. In this way, growth occurs and reliance on creditor financing can be minimized. As a result, there may not be enough cash on hand to declare and pay a cash dividend. The assets of the corporation may be tied up in property, plant, and equipment, for instance.

- **Consideration 2: A policy of the corporation may preclude dividend payments**

Some corporations pay no dividends. Instead, they reinvest their earnings in the business. Stockholders generally benefit through increased earnings, reflected in increased market price for the corporation's stocks. A stated policy to this effect can apprise investors. This type of dividend policy is often found in growth-oriented corporations.

- **Consideration 3: No legal requirement that dividends have to be paid**

The board of directors may decide that no dividends should be paid. Legally, there is no requirement to do so. If stockholders are dissatisfied, they can elect a new board of directors or sell their stocks.

- **Consideration 4: Dividends may be issued in stocks of the corporation rather than in cash**

Stock dividends may be issued to conserve cash or to increase the number of stocks to be traded on the stock market. Stock dividends are discussed in Section 10.4.

Dividend Declaration

Dividends can be paid only if they have been officially declared by the board of directors. The board must pass a formal resolution authorizing the dividend payment. Notices of the dividend are then published. Once a dividend declaration has been made public, the dividend becomes a liability and must be paid. An example of a dividend notice is shown in Figure 10.3.

New World Corporation
Dividend Notice

On May 25, 2016 the board of directors of New World Corporation declared a dividend of $0.50 per share on common stock outstanding (3,900). The dividend will be paid on June 26, 2016 to stockholders of record on June 7, 2016.

By order of the board

[signed]
Lee Smith
Secretary
May 25, 2016

Figure 10.3: An Example of a Dividend Notice

There are three dates associated with a dividend. Usually dividends are declared on one date, the **date of declaration** (May 25, 2016 in this case); they are payable to stockholders on a second date, the date of record (June 7, 2016); and the dividend is paid on a third date, the **date of payment** (June 26, 2016).

Date of Declaration

The dividend declaration provides an official notice of the dividend. It specifies the amount of the dividend as well as which stockholders will receive the dividend. The liability for the dividend is recorded in the books of the corporation at its declaration date.

The following entry would be made in the general ledger of New World Corporation on May 25, 2016, the date of declaration:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 25	Retained Earnings (SE)		1,950	
	Dividends Payable L+			1,950
	To record $0.50 per common share cash dividend declared; 3,900 shares × $0.50/share = $1,950.			

Date of Record

Stockholders who own stocks on the date of record will receive the dividend even if they have sold the stocks before the dividend is actually paid. No journal entry is made in the accounting records for the date of record.

Date of Payment

The dividend is paid on this date and recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Dividends Payable (L)		1,950	
	Cash (A)			1,950
	To record payment of dividend.			

Notice that at no point in time does a dividend impact the income statement. Dividends are not a company expense, they reduce assets (cash) and stockholders' equity (retained earnings).

Preferred Stockholder Dividends

Preferred stocks are offered to attract investors who have lower tolerance for risk than do common stockholders. Preferred stockholders are content with a smaller but more predictable share of a corporation's profits. For instance, preferred stockholders are entitled to dividends before any dividends are distributed to common stockholders. Also, most preferred stock will specifically state the amount of dividends their holders can expect each year. For example owners of 6%, \$10.00 par-value preferred stock would be paid \$0.60 per share of stock (6% $\times$ \$10.00 par-value). If the preferred stock had no par-value the dividend would be specified as \$0.60 per share. These dividends are often paid even if the corporation experiences a net loss in a particular year.

Preferred stocks may also have other dividend preferences, depending on what rights have been attached to preferred stocks at the date of incorporation. One such preference is the accumulation of undeclared dividends from one year to the next — referred to as *cumulative dividends*. Discussion of other preferences is beyond the scope of this introductory textbook. Cumulative dividends are discussed in the next section.

Cumulative Dividend Preferences

Cumulative preferred shares of stock require that any unpaid dividends accumulate from one year to the next and are payable from future earnings when a dividend is eventually declared by a corporation. These accumulated dividends must be paid before any dividends are paid on common shares of stock. The unpaid dividends are called **dividends in arrears**. Dividends in arrears are not recorded as a liability on the balance sheet of the company until they have been declared by the board of directors. However, disclosure of dividends in arrears must be made in a note to the financial statements.

If a preferred stock is **non-cumulative**, a dividend not declared by the board of directors in any one year is never paid to stockholders.

10.4 Stock Dividends

LO4 – Record and disclose stock dividends.

A **stock dividend** is a dividend given to stockholders in the form of stock rather than cash. In this way, the declaring corporation is able to retain cash in the business and reduce the need to finance its activities through borrowing. Like a cash dividend, a stock dividend reduces retained earnings. However, a stock dividend does not cause assets to change. Instead, it simply reclassifies by reducing one or more shareholders' equity accounts and simultaneously increasing one or more paid-in capital accounts. The amount to be reclassified will depend on the size of the stock dividend. A small common stock dividend, normally less than 25%, will have the fair value (market value) of the distributed shares allocated from the retained earnings account to the common stock and paid-in capital accounts. A large common stock dividend, normally greater than 25%, is distributed from the retained earnings account to the common stock account. The large stock dividend does not take into account the fair value (market value) of the stock. Total assets, total liabilities, and total equity remain unchanged when there is a stock dividend. Like a cash dividend, there are three dates regarding a stock dividend: date of declaration, date of record, and date of distribution. Notice that there is no 'date of payment' as there was for a cash dividend. This is because there is no cash payment involved for a stock dividend. Instead, stocks are distributed, or given, to the stockholders.

Accounting for Stock Dividends

To demonstrate a stock dividend, assume that the Sherbrooke Corporation declares a small 10% stock dividend to common stockholders. The stock dividend, with a par-value of $1, is declared on December 15, 2015 payable to stockholders of record on December 20, 2015. The stock dividend is distributed on January 10, 2016. At the time of the dividend declaration, the stocks were trading on the stock exchange at $4 per stock and the equity of the corporation consisted of the following:

Common stock; $1 par value; 20,000 shares authorized;	
5,000 shares issued and outstanding	$25,000
Paid-in capital – excess of par, common	65,000
Retained earnings	100,000
Total equity	$190,000

The 10% stock dividend equals 500 shares (calculated as 5,000 outstanding shares $\times$ 10% stock dividend). The market price on the date of declaration is used to record a small stock dividend. On the declaration date, the journal entry to record the stock dividend is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 15	Retained earnings (SE)		2,000	
	Common stock dividends distributable SE+			500
	Paid-in capital in excess of par – common stock SE+			1,500
	(5,000 shares stock dividend × $4 = $2,000 stock dividend)			

$2,000 stock dividend is allocated to common stock based on the $1 par-value of the stock and the excess to additional paid in capital. If Sherbrooke prepared a balance sheet after the date of declaration the dividend distributable in the equity section would present as an addition to common stock. It would not be presented as a current liability. This is unlike a cash or property dividends payable that would be presented as a current liability.

On the small stock dividend distribution date, the following entry is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 10	Common stock distributable (SE)		500	
	Common stock SE+			500

When a large stock dividend is declared (a stock dividend of more than 20-25% of the number of shares outstanding), the stock dividend is reported at par value rather than reported at fair market value. Retained earnings is then decreased by the amount of par-value times the number of shares declared.

To demonstrate a large stock dividend, assume the Sherbrooke Corporation declares a 60% stock dividend to common stockholders. The stock dividend, with a par-value of $1, is declared on December 15, 2015 payable to stockholders of record on December 20, 2015. The stock dividend is distributed on January 10, 2016. At the time of the dividend declaration, the stocks were trading on the stock exchange at $4 per stock and the assume the equity balances of the corporation presented the same values as shown in the previous example. On the stock dividend distribution date, the following entry is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 10	Retained earnings (SE)		3,000	
	Common stock SE+			3,000
	(5,000 issued shares × $0.60 = 3,000 shares stock dividend × $1 par-value = $3,000)			

The large stock dividend ignores the market value of the stock and the transaction is based on the par-value only. However, note the large stock dividend, like the small stock dividend, does

not change total stockholders' equity. It simply moves the dollar value from the retained earnings account to the common stock account. Both small and large stock dividends merely reflect a reclassification of stockholders' equity and each common stockholder retains the same proportional interest in the corporation.

Is There Any Change in the Investor's Percentage of Corporate Ownership Because of a Stock Dividend?

Since a stock dividend is issued to all stockholders of a particular class, as a result of a stock dividend, each stockholder has a larger number of stocks. However, ownership percentage of the company remains the same for each stockholder, as illustrated below, for the four stockholders of Sherbrooke Corporation.

Each stockholder has received a 10% stock dividend but their ownership percentage of the company remains constant. Since total equity does not change when there is a stock dividend, the proportion owned by each stockholder does not change.

	Corporate ownership			
	Before 10% stock dividend		*After 10% stock dividend*	
Stockholder	Number of Shares Owned	Percent of Shares Owned	Number of Shares Owned	Percent of Shares Owned
1	1,000	20%	1,100	20%
2	500	10%	550	10%
3	2,000	40%	2,200	40%
4	1,500	30%	1,650	30%
Totals	5,000	100%	5,500	100%

10.5 Appendix A: Reporting for Multiple Classes of Stock

Multiple classes of stock are to be separately reported in the financial statements. See the equity section of the balance sheet examples displayed throughout this chapter. Another statement affected by multiple classes of stock is the statement of stockholders' equity. This provides important information about the composition of the company's equity for its stockholders and creditors. See below using some sample data:

Sample Company Ltd.
Statement of Stockholders' Equity
For the Year Ended December 31, 2017

	Preferred Stock	Common Stock	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Total
Balance at January 1, 2017	$5,000	$15,000	$55,000	$80,000	($30,000)	$125,000
Additional stock issued	5,000	5,000	25,000			35,000
Repurchase of common stock					(5,000)	(5,000)
Reissuance of common stock		-			-	-
Net income				20,000		20,000
Dividends declared				(12,000)		(12,000)
Balance at December 31, 2017	$10,000	$20,000	$80,000	$88,000	($35,000)	$163,000

Summary of Chapter 10 Learning Objectives

LO1 – Identify and explain characteristics of the corporate form of organization and classes of stock.

A corporation is a legal entity that is separate from its owners, known as stockholders. The board of directors is responsible for corporate policy and broad direction of the corporation, including hiring the person in charge of day-to-day operations. A corporation has an indefinite life, its stockholders have limited liability, it can acquire capital more easily than a sole proprietorship or partnership, and it pays income taxes on its earnings since it is a separate legal entity. A corporation can issue common and preferred stock. Common stock has voting rights while preferred stock does not. Preferred stock is listed before common stock in the equity section of the balance sheet. Preferred stockholders are entitled to receive dividends before common stockholders. Authorized shares are the total number of shares that can be issued or sold. Shares that have been issued can be repurchased by the corporation and either held in treasury for subsequent sale/distribution or cancelled. Outstanding shares are those that have been issued and are held by stockholders. Shares repurchased by a corporation are not outstanding shares.

LO2 – Record and disclose preferred and common stock transactions including stock splits.

Common and preferred stock can be issued for cash or other assets. Organization costs are expensed when incurred and organizers sometimes accept stock in lieu of cash for their work in organizing the corporation. When more than one type of stock has been issued, the equity section of the balance sheet must be classified by including the various forms of stock. When a corporation's stock is selling at a high price, a stock split may be declared to increase the marketability of the stock. There is no journal entry for a stock split. Instead, a memorandum entry is entered into the records detailing the split. A stock split increases the number of shares but does not change any of the dollar amounts on the financial statements.

LO3 – Record and disclose cash dividends.

Cash dividends are a distribution of earnings to the stockholders and are declared by the board of directors. On the declaration date, retained earnings is debited and dividends payable is credited. On the date of record, no journal entry is recorded. Stockholders who hold stocks on the date of record are eligible to receive the declared dividend. On the date of payment, dividends payable is debited and cash is credited. Preferred stocks may have a feature known as cumulative or non-cumulative. Cumulative preferred stocks accumulate undeclared dividends from one year to the next. These unpaid dividends are called dividends in arrears. When dividends are subsequently declared, dividends in arrears must be paid before anything is paid to the other stockholders. Non-cumulative preferred stocks do not accumulate undeclared dividends.

LO4 – Record and disclose stock dividends.

Stock dividends distribute additional shares to stockholders and are declared by the board of directors. On the declaration date, retained earnings is debited and common stock dividends distributable (an equity account), is credited. When the stock dividend is distributed to stockholders, common stock dividends is debited and common stock is credited. Stock dividends cause an increase in the number of shares issued and outstanding but do not affect account balances. Stock dividends simply transfer an amount from retained earnings to common stock or common stock and additional paid-in capital depending on the size of the stock dividend.

Discussion Questions

1. What are some advantages of the corporate form of organization?
2. What is meant by *limited liability* of a corporation?
3. What rights are attached to common stock? Where are these rights indicated?

4. What is a board of directors and whom does it represent? Are the directors involved in the daily management of the entity?

5. Describe:

   a. two main classes of stock that can be issued by a corporation; and

   b. the different terms relating to the status of a corporation's stocks.

6. In what ways can stock be "preferred"? In what way is it similar to common stock? Different from common stock?

7. Why do corporations sometimes opt for a stock split?

8. Identify the major components of the equity section of a balance sheet. Why are these components distinguished?

9. How can retained earnings be said to be reinvested in a corporation?

10. What are the main issues a board of directors considers when making a dividend declaration decision?

11. Even if a corporation is making a substantial net income each year, why might the board of directors decide to not pay any cash dividends?

12. Distinguish among the date of dividend declaration, the date of record, and the date of payment.

13. What is the difference in accounting between cash dividends and stock dividends?

14. Explain the different dividend preferences that may be attached to preferred stock. Why would preferred stock have these preferences over common stock? Does it mean that purchasing preferred stock is better than purchasing common stock?

15. What are dividends in arrears? Are they a liability of the corporation?

16. How does a stock dividend differ from a stock split?

17. Does a stock dividend change an investor's percentage of corporate ownership? Explain, using an example.

Exercises

EXERCISE 10–1 (LO1,2)

Bagan Corporation, a profitable growth company with 200,000 shares of common stock outstanding, is in need of $40 million in new funds to finance a required expansion. Management has two options:

(1) Sell $40 million of 12% bonds at face value.

(2) Sell an additional 200,000 common stocks at $200 per stock.

Operating income (before interest and income taxes) upon completion of the expansion is expected to average $12 million per year; assume an income tax rate of 21 per cent.

Required:

a. Complete the schedule below.

	12% Bonds	**Common Stock**
Income before interest and income taxes		
Less: Interest expense		
Income before taxes		
Less: Income taxes at 21%		
Net income		
Less: Preferred dividends		
Net income available to common stockholders		
Number of shares of common stock outstanding		
Earnings per share		

b. Which financing option is most advantageous to the common stockholders? Why?

EXERCISE 10–2 (LO2)

A tract of land valued at $50,000 has been given to a corporation in exchange for 1,000 preferred shares of stock with a par value of $15.

Required:

a. Prepare the journal entry to record the transaction.

b. Where would the transaction be classified in the balance sheet?

EXERCISE 10–3 (LO1,2)

A portion of the equity section of Gannon Oilfield Corporation's balance sheet at December 31, 2019 is shown below.

Preferred stock, 3%, $10 par-value; 100 authorized shares; ? shares issued	640
Common stocks, $1 par-value; 2,000 shares authorized; ? shares issued	1,000
Paid-in capital – excess of par, preferred	2,200
Paid-in capital – excess of par, common	1,800
Retained earnings	600

Required:

There are no outstanding shares.

a. What is the number of shares of preferred stock that has been issued?

b. What is the number of shares of common stock that has been issued?

c. If this was the company's first year of operations and they paid no dividends how much was the company net income for the year?

EXERCISE 10–4 (LO3)

Strada Controls Inc. has 100,000 shares of $0.25 par value common stock outstanding on January 1, 2019. On May 25, 2019, the board of directors declared a semi-annual cash dividend of $1 per stock. The dividend will be paid on June 26, 2019 to stockholders of record on June 7, 2019.

Required: Prepare journal entries for

a. The declaration of the dividend.

b. The payment of the dividend.

EXERCISE 10–5 (LO1,3)

Landers Flynn Inc. has 1,000, $5 cumulative preferred shares of stock outstanding. Dividends were not paid last year. The corporation also has 5,000 common shares of stock outstanding. Landers Flynn declared a $14,000 cash dividend to be paid in the current year.

Required:

a. Calculate the dividends received by the preferred and common stockholders.

b. If the preferred stocks were non-cumulative, how would your answers to part (a) above change?

EXERCISE 10–6 (LO1,3)

The following note appeared on the balance sheet of Sabre Rigging Limited:

> As of December 31, 2019, dividends on the 1,000 issued and outstanding shares of cumulative preferred stock were in arrears for three years at the rate of $5 per stock per year or $15,000 in total.

Required:

a. Does the $15,000 of dividends in arrears appear as a liability on the December 31, 2019 balance sheet? Explain your answer.

b. Why might the dividends be in arrears? In other words why might the company have chosen not to pay dividends for three years?

c. The comptroller of Sabre Rigging projects net income for the 2020 fiscal year of $35,000. When the company last paid dividends, the directors allocated 50% of current year's net income for dividends. If dividends on preferred stock is declared at the end of 2020 and the established policy of 50% is continued, how much will be available for dividends to the common stockholders if the profit projection is realized?

EXERCISE 10–7 (LO1,2,3,4)

The December 31, 2018 balance sheet for Arrow Streaming Corporation shows that as of that date it issued a total of 10,000 shares of common stock with a par-value of $1 for $140,000. On April 1, 2019 Arrow Streaming declared a 10% small stock dividend, payable on April 15 to stockholders of record on April 10. The market value of Arrow's stocks on April 1 was $15. On June 1, the company declared a $2 cash dividend per share to common stockholders of record on June 10, and paid the dividend on June 30. Assume the year end of the corporation is December 31.

Required: Prepare journal entries for the above transactions.

EXERCISE 10–8 (LO2,5)

The equity section of Pembina Valley Manufacturing Limited's balance sheet at December 31, 2019 is shown below.

Preferred stock, 3% cumulative ? par-value;	
1,000 shares authorized; 300 issued and outstanding	$ 4,500
Common stock, $? par-value; 10,000 shares authorized;	
2,000 shares issued and 1,500 outstanding	2,000
Paid-in capital – excess of par, preferred	5,000
Paid-in capital – excess of par, common	22,000
Retained earnings	?
Treasury stock, at cost, ? shares	(750)
Total equity	$92,750

Note: There were $3,000 of dividends in arrears on the preferred stock at December 31, 2019.

Required:

a. Calculate the par value of

i. the preferred stock; and

ii. the common stock.

b. What is the balance in retained earnings?

c. How many shares of stock are in treasury?

EXERCISE 10–9 (LO2)

Essential Financial Service Corp. was incorporated on January 1, 2018 to prepare business plans for small enterprises seeking bank financing.

Required: Prepare journal entries to record the following transactions on January 2, 2018:

a. Received an incorporation charter authorizing the issuance of 800,000 shares of $0.20 par-value common stock and 10,000, 4%, $1.00 par-value preferred stock.

b. Issued in exchange for start-up costs incurred by stockholders 10,000 shares of common stock at $1.

c. Issued for cash 1,000 shares of preferred stock at $3 each.

EXERCISE 10–10 (LO4)

The stockholders' equity section of Lakeview Homes Corporation's statement of financial position at December 31, 2018 is reproduced below:

Stockholders' equity:	
Common stock, $0.50 par-value;	
50,000 shares authorized; 5,000 issued and outstanding	$ 5,000
Paid-in capital – excess of par, common	15,000
Retained earnings	100,000
Total stockholders' equity	$120,000

Scenario 1: On January 15, 2018, Lakeview Homes declared a 10% stock dividend to holders of common stock. At this date, the common stock of the corporation were trading on the stock exchange at $10 each. The stock dividend was issued February 15, 2018.

Required: Prepare the journal entries to record the stock dividend.

Scenario 2: On January 15, 2018, Lakeview Homes declared a 30% stock dividend to holders of common stock. At this date, the common stock of the corporation were trading on the stock exchange at $10 each. The stock dividend was issued February 15, 2018.

Required: Prepare the journal entries to record the stock dividend.

EXERCISE 10–11 (LO2,3,4)

Blitz Power Tongs Inc. received a charter that authorized it to issue 100,000 shares of common stock with a par-value of $2. The following transactions were completed during 2018:

Jan 5	Issued 10 shares of common stock for a total of $150 cash.
Jan 12	Exchanged 50 shares of common stock for assets listed at their fair values: machinery – $100; building – $100; land – $50.
Feb 28	Declared a 10% stock dividend. Market value is $7 per stock. Net income to date is $60.
Mar 15	Issued the stock dividend.
Dec 31	Closed the 2018 net income of $200 from the Income Summary account in the general ledger to the Retained Earnings account.
Dec 31	Declared a $1 per stock cash dividend.

Required:

a. Prepare journal entries for the 2018 transactions, including closing entries.

b. Prepare the stockholders' equity section of the statement of financial position at:

i. January 31, 2018

ii. February 28, 2018

iii. December 31, 2018

EXERCISE 10–12 (LO1)

The board of directors of Oolong Ltd. is planning to expand its manufacturing facilities. To raise the $1.5 million capital needed, the following financing methods are being considered:

i. Sell $1.5 million of 10% bonds at face value.

ii. Sell another 30,000 stocks of common stocks at $50 a stock (currently 20,000 common stocks are outstanding).

Income before interest and income taxes is expected to average $750,000 per year following the expansion; the income tax rate is 30%.

Required:

a. Calculate the earnings per common stock for each alternative.

b. Which financing method will the stockholders most likely prefer and why?

EXERCISE 10–13 (LO2,3)

At December 31, 2018, the stockholders' equity section of the statement of financial position for Belfast Steel Ltd. totaled $30,000,000. Following are the balances of various general ledger accounts at that date.

Preferred stock, $1.00 cumulative no-par value; 1,000,000 shares authorized; 100,000 shares issued and outstanding	1,000,000
Common stock, $0.01 par-value; 2,000,000 shares authorized; 1,250,000 issued and outstanding	12,500
Paid-in capital – excess of par, common	24,987,500
Retained earnings	4,000,000

The following transactions occurred during 2019:

Feb 20	A cash dividend of $0.50 per preferred stock was declared, payable Mar 1 to stockholders of record on Feb 25.
Mar 1	Payment of previously declared dividend on preferred stock was made.
Apr 15	A cash dividend on common stock of $0.60 per stock was declared, payable Jun 10 to stockholders of record on May 1.
Jun 10	Payment of the previously-declared dividend on common stock was made.
Aug 1	10,000 shares of common stock were issued for $250,000 cash.
Dec 31	A cash dividend on common stock totaling $425,000 was declared and paid.

Required:

a. Prepare journal entries for the 2019 transactions. Separate the dividends for preferred and common stock into the two classes of stock.

b. Prepare the statement of stockholders' equity for the year ended December 31, 2019 assuming net income for the year amounted to $500,000.

EXERCISE 10–14 (LO2,3)

Bray Co. was authorized to issue 10,000 $2.00 preferred stock and 350,000 shares of $1 par-value common stock. December 31 is Bray's year-end. During 2016, its first year of operations, the following selected transactions occurred:

i. January 15: Issued 32,000 shares of common stock to the corporation's organizers in exchange for services to get the company operational. Their efforts are estimated to be worth $15,000.

ii. February 20: 15,000 shares of common stock were issued for cash of $6 per stock.

iii. March 7: 4,500 shares of preferred stock were issued for cash totaling $90,000.

iv. April 9: 60,000 shares of common stock were issued in exchange for land and building with appraised values of $300,000 and $120,000 respectively.

v. May 1: 3,500 shares of preferred stock were issued for a cash price of $18.00 per stock.

vi. May 15: Declared and paid dividends to the stockholders of record May 18. Total cash paid dividends was $50,000.

vii. January 5: 16,000 shares of common stock were issued for a cash total of $112,000.

viii. July 15: 2,000 shares of preferred stock and 20,000 shares of common stock were issued for a cash price of $17.50 and $7.50, respectively.

ix. December 31: The company closed all its temporary accounts. The Income Summary account showed a debit balance of $25,000.

Required:

a. Prepare journal entries for each of the items above during Bray's first year of operations.

b. Prepare the equity section of the balance sheet in good form with all disclosures and subtotals, for the year ended December 31, 2019.

EXERCISE 10–15 (LO2,3)

The partial balance sheet for the Carman Corp. reported the following components of equity on December 31, 2016:

Carman Corp.
Equity Section of the Balance Sheet
December 31, 2016

Stockholders' equity:	
Preferred stock, $1.50 cumulative no-par value; 20,000 shares authorized;	
10,000 shares issued and outstanding	$150,000
Common stock, $1 par-value; 500,000 authorized;	
25,000 shares issued; 20,000 shares outstanding	25,000
Paid-in capital – excess of par, common	275,000
Retained earnings	250,000
Treasury stock, 5,000 shares, at cost	(50,000)
Total equity	$650,000

In 2017, Carman Corp. had the following transactions affecting the various equity accounts:

Jan 4	Sold 15,000 shares of common stock at $11 per share.
Jan 8	The directors declared a total cash dividend of $57,500 payable on Jan. 31 to the Jan. 21 stockholders of record. Dividends had not been declared for 2015 and 2016. All of the preferred shares had been issued during 2015.
Jan 31	Paid the dividends declared on January 8.
July 1	Sold preferred stock for a total of $77,500. The average issue price was $15.50 per share.
Aug 7	The directors declared a $1.00 dividend per common share cash dividend payable on Aug. 31 to the Aug. 20 stockholders of record.
Aug 31	Paid the dividends declared on Aug 7.

Required:

a. Prepare journal entries to record the transactions for 2017.

b. Prepare a statement of stockholders' equity for the year ended December 31, 2017. For purposes of preparing this statement, assume that the retained earnings balance at December 31, 2017 was $102,500.

c. Prepare the equity section of the company's balance sheet as at December 31, 2017 in good form with all required disclosures and subtotals.

Problems

PROBLEM 10–1 (LO2)

Following is the equity section of Critter Contracting Inc. shown before and after the board of directors authorized a 5 for 1 stock split on April 15, 2019.

Before split		**After split**	
Equity		*Equity*	
Common stock, $0.50 par-value;		Common stock, $0.50 par-value;	
5,000 shares authorized;		? shares authorized;	
1,000 issued and outstanding	100,000	? issued and outstanding	?

Required:

1. Complete the equity section of the balance sheet after the split.

2. Record a memorandum indicating the new number of shares.
3. If the market value per stock was $40 before the split, what would be the market value after the split? Why?

PROBLEM 10–2 (LO3,4)

The equity section of TWR Contracting Inc.'s December 31, 2018 balance sheet showed the following:

Equity	
Stockholders' equity:	
Preferred stock, $0.30 cumulative no-par-value;	
100,000 shares authorized; 40 issued and outstanding	$400
Common stock, $0.50 par-value;	
50,000 shares authorized; 2,000 issued and outstanding	1,000
Paid-in capital – in excess of par, common	1,000
Retained earnings	900
Total equity	$3,300

The following transactions occurred during 2019:

Feb. 15	Declared the regular $0.30 per share semi-annual dividend on its preferred stock and a $0.05 per share dividend on the common stock to holders of record March 5, payable April 1.
Apr. 1	Paid the dividends declared on February 15.
May 1	Declared a 10% stock dividend to common stockholders of record May 15 to be issued June 15, 2016. The market value of the common stock at May 1 was $2 per share.
June 15	Distributed the dividends declared on May 1.
Aug. 15	Declared the regular semi-annual dividend on preferred stock and a dividend of $0.05 on the common stock to holders of record August 31, payable October 1.
Oct. 1	Paid the dividends declared on August 15.
Dec. 15	Declared a 10% stock dividend to common stockholders of record December 20 to be issued on December 27, 2019. The market value of the common stock at December 15 was $3 per stock.
Dec. 27	Distributed the dividends declared on December 15.
Dec. 31	Net income for the year ended December 31, 2019 was $1,400.

Required:

1. Prepare journal entries to record the 2019 transactions, including closing entries for the December 31 year end date. Show calculations. Descriptive narrative is not needed.

2. Prepare the statement of stockholders' equity for the year ended December 31, 2019.

PROBLEM 10–3 (LO1,2,3,4)

The equity section of Wondra Inc.'s December 31, 2018 balance sheet showed the following:

Stockholders' equity:	
Preferred stock; $0.50 cumulative no par-value;	
400,000 authorized; 30,000 stocks issued and outstanding	$480,000
Common stock; $1 par-value; 700,000 authorized;	
70,000 stocks issued; 60,000 outstanding	490,000
Paid-in capital – excess of par, common	80,000
Retained earnings	95,000
Treasury stock, ? shares, at cost	(10,000)
Total equity	$1,135,000

At December 31, 2018 there were $15,000 of dividends in arrears.

The following transactions occurred during 2019:

Feb. 10	Declared a total dividend of $32,000 to stockholders of record on February 15, payable March 1.
Mar. 1	Paid dividends declared February 10.
5	Issued for cash 2,000 shares of preferred stock at $18 each.
Apr. 15	The Board of Directors declared a 2:1 split on the preferred and common stock.
Jun. 22	Issued for cash 20,000 shares of common stock at $4.00 per stock.
Nov. 10	Declared a 20% stock dividend to common stockholders of record on Nov. 14, distributable Dec. 15. The market price of the stock on Nov. 10 was $3.50.
Dec. 15	Distributed stock dividend declared on November 10.
Dec. 31	Closed the Income Summary account which had a credit balance of $290,000.
31	Closed the dividend accounts.

Required:

1. Journalize the 2019 transactions.

2. Prepare the equity section of the December 31, 2019 balance sheet.

3. What is the number of shares in Treasury?

PROBLEM 10–4 (LO1,2,5)

The following is the equity section of the balance sheet of Tridon Construction Limited at December 31, 2019.

Stockholders' equity:	
Common stock, $0.30 par-value; 500 shares authorized;	
300 shares issued and outstanding	?
Paid-in capital	2,980
Retained earnings	500
Total equity	?

Required: What is the value of common stock? What is the value of total equity?

Chapter 11

The Statement of Cash Flows

Details about the amount of cash received and paid out during an accounting period are not shown on the balance sheet, income statement, or statement of stockholders' equity. This information is disclosed on the statement of cash flows (SCF). This chapter discusses the purpose of the statement of cash flows, the steps in preparing the SCF, as well as how to interpret various sections of the statement of cash flows.

Chapter 11 Learning Objectives

LO1 – Explain the purpose of the statement of cash flows.

LO2 – Prepare a statement of cash flows.

LO3 – Interpret a statement of cash flows.

Concept Self-Check

Use the following as a self-check while working through Chapter 11.

1. What is the definition of cash and cash equivalents?
2. Why is a statement of cash flows prepared?
3. What are the three sections of a statement of cash flows?
4. What two methods can be used to prepare the operating activities section of the statement of cash flows?
5. Why is depreciation expense an adjustment in the operating activities section of the statement of cash flows?
6. Where are dividend payments listed on the statement of cash flows?
7. In what section of the statement of cash flows are the cash proceeds resulting from the sale of a non-current asset listed?
8. Where on the statement of cash flows is a long-term bank loan payment identified?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

11.1 Financial Statement Reporting

LO1 – Explain the purpose of the statement of cash flows.

Cash flow is an important factor in determining the success or failure of a corporation. It is quite possible for a profitable business to be short of cash. As discussed in Chapter 7, a company can have liquidity issues because of large amounts of cash tied up in inventory and accounts receivable, for instance. Conversely, an unprofitable business might have sufficient cash to pay its bills if it has access to enough financing from loans or by issuing common stock.

We know that the financial activities of a corporation are reported through four financial statements: a balance sheet, an income statement, a statement of shareholders' equity, and a statement of cash flows (SCF). This chapter discusses the statement of cash flows in detail.

The SCF identifies the sources (inflows) and uses (outflows) of cash during the accounting period. It explains why the cash balance at the end of the accounting period is different from that at the beginning of the period by describing the enterprise's *financing*, *investing*, and *operating* activities.

Cash flow information is useful to management when making decisions such as purchasing equipment, plant expansion, retiring long-term debt, or declaring dividends. The SCF is useful to external users when evaluating a corporation's financial performance.

The SCF, together with the income statement, provides a somewhat limited means of assessing future cash flows because these statements are based on historical, not prospective data. Nevertheless, the ability to generate cash from past operations is often an important indication of whether the enterprise will be able to meet obligations as they become due, pay dividends, pay for recurring operating costs, or survive adverse economic conditions.

The FASB views cash on the CFS to include cash and cash equivalents — assets that can be quickly converted into a known amount of cash, such as short-term investments that are not subject to significant risk of changes in value. For our purposes, an investment will be considered a cash equivalent when it has a maturity of three months or less from the date of acquisition.

Because of differences in the nature of each entity and industry, management judgment is required to determine what assets constitute cash and cash equivalents for a particular firm. This decision needs to be disclosed on the SCF or in a note to the financial statements as shown in the following example:

Note X
Cash and cash equivalents consist of cash on deposit and short-term investments held for the purposes of meeting cash commitments within three months from the balance sheet date. Cash and cash equivalents consist of the following:

	($000s)		
	2019	2018	2017
Cash on Deposit	$20	$30	$50
Short-term Investments	36	31	37
	$56	$61	$87

For simplicity, examples throughout this chapter involving cash and cash equivalents will include only cash.

Cash flows result from a wide variety of a corporation's activities as cash is received and disbursed over a period of time. Because the income statement is based on accrual accounting that matches expenses with revenues, net income most often does not reflect cash receipts and disbursements during the time period they were made. As we will see, the statement of cash flows converts accrual net income to a cash basis net income.

11.2 Preparing the Statement of Cash Flows

LO2 – Prepare a statement of cash flows.

The general format for a SCF is shown in Figure 11.1. The SCF details the cash inflows and outflows that caused the beginning of the period cash account balance to change to its end of period balance.

Name of Company
Statement of Cash Flows
For the Period Ended

Cash flows from operating activities:		
[Each operating inflow/outflow is listed]		
Net cash inflow/outflow from operating activities	$	XX
Cash flows from investing activities:		
[Each investing inflow/outflow is listed]		
Net cash inflow/outflow from investing activities		XX
Cash flows from financing activities:		
[Each financing inflow/outflow is listed]		
Net cash inflow/outflow from financing activities		XX
Net increase/decrease in cash	$	XX
Cash at beginning of period		XX
Cash at end of period	$	XX

Figure 11.1: General Format for a Statement of Cash Flows

Notice that the cash flows in Figure 11.1 are separated into three groups: cash flows from operating, investing, and financing activities. Grouping or classifying cash flows is a key component of preparing a SCF.

Classifying Cash Flows—Operating Activities

Cash flow from operating activities represents cash flows generated from the principal activities that produce revenue for a corporation, such as selling products, and the related expenses reported on the income statement. Because of accrual accounting, the net income reported on the income statement includes non-cash transactions. For example, revenue earned on account is included in accrual net income but it does not involve cash (debit accounts receivable and credit revenue). Therefore, the operating activities section of the SCF must convert accrual net income to a cash basis net income. There are two generally accepted methods for preparing the operating activities section of the SCF, namely the direct method and the indirect method. This chapter illustrates the indirect method because it is more commonly used in the United States. Both methods result in the same cash flows from operating activities — it is the way in which the number is calculated that differs. The method used has an impact on only the operating activities section and not on the investing or financing activities sections.

In using the indirect method for preparing the operating activities section, the accrual net income is adjusted for changes in current assets (except cash), current liabilities (except dividends payable), depreciation expense, and gains/losses on the disposition of non-current assets. Figure 11.2 illustrates the effect of these items on the SCF.

Cash flows from operating activities:		
Net income/net loss	$	XX
Adjustments for non-cash effects:		
Add: Depreciation expense		XX
Add: Losses on disposal of non-current assets		XX
Subtract: Gains on disposal of non-current assets		XX
Changes in operating assets and liabilities:		
Add: Decreases in current assets (except Cash)		XX
Subtract: Increases in current assets (except Cash)		XX
Add: Increases in current liabilities (except Dividends payable)		XX
Subtract: Decreases in current liabilities (except Dividends payable)		XX
Net cash inflow/outflow from operating activities	$	XX

Figure 11.2: Detailed Adjustments to Convert Accrual Net Income to a Cash Basis

Depreciation expense is subtracted in calculating accrual net income. However, an analysis of the journal entry shows that no cash was involved (debit depreciation expense and credit accumulated depreciation), so it must be added back to adjust the accrual net income to a cash basis.

A loss on the disposal of a non-current asset is added back as an adjustment to net income because, in analyzing the journal entry when losses occur (e.g., debit cash, debit loss, credit land), the loss represents the difference between the cash proceeds and the book value of the non-current asset. Since a loss is subtracted on the income statement and does not represent a cash outflow, it is added back to adjust the accrual net income to a cash basis. The same logic applies for a gain on the disposal of a non-current asset.

Decreases in current assets are added back as an adjustment to net income because, for example, a decrease in accounts receivable indicates that cash was collected from credit customers (debit cash and credit accounts receivable) yet it is not part of accrual net income, so the cash collected must be added. An increase in accounts receivable indicates that sales on account were recorded (debit accounts receivable and credit sales) so it is part of accrual net income. However, since no cash was collected, this must be subtracted from accrual net income to adjust it to a cash basis.

Increases in current liabilities are added back as an adjustment to net income because, for example, an increase in accounts payable indicates that a purchase/expense was made on account (debit expense and credit accounts payable) so it was subtracted in calculating accrual net income. However, since no cash was paid, this must be added back to accrual net income to adjust it to a cash basis. A decrease in accounts payable indicates that a payment was made to a creditor (debit accounts payable and credit cash) yet it is not part of accrual net income so the cash paid must be subtracted.

Classifying Cash Flows—Investing Activities

Cash flows from investing activities involve increases and decreases in long-term asset accounts. These include outlays for the acquisition of investments and property, plant, and equipment, as

well as proceeds from their disposal. Note that interest receivable from investments belongs in the operating section of the SCF. Figure 11.3 illustrates the effect of these items on the SCF.

Cash flows from investing activities:		
Cash proceeds from sale of non-current assets	XX	
Cash paid to purchase non-current assets	XX	
Net cash inflow/outflow from investing activities		XX

Figure 11.3: Detail of Inflows/(Outflows) From Investing Activities

Classifying Cash Flows—Financing Activities

Cash flows from financing activities result when the composition of the debt and equity capital structure of the entity changes. This category is generally limited to increases and decreases in long-term liability accounts and common stock accounts such as common and preferred shares. These include cash flows from the issue and repayment of debt, and the issue and repurchase of common stock. Dividend payments to shareholders are considered to be financing activities, since these represent a return to shareholders on the original capital they invested. Note, however, that dividends receivable from investing in another entity and interest payable on any borrowings both belong in the operating section of the SCF. Figure 11.4 illustrates the effect of these items on the SCF.

Cash flows from financing activities:		
Cash proceeds from issuance of shares	XX	
Cash paid for repurchase of shares	XX	
Cash proceeds from borrowings	XX	
Cash repayments of borrowings	XX	
Cash paid for dividends to shareholders	XX	
Net cash inflow/outflow from financing activities		XX

Figure 11.4: Detail of Inflows/(Outflows) From Financing Activities

Classifying Cash Flows—Non-cash Investing and Non-cash Financing Activities

There are some transactions that involve the direct exchange of non-current balance sheet items so that cash is not affected. For example, non-cash investing and non-cash financing activities would include the purchase of a non-current asset by issuing debt or common stock, the declaration and issuance of a share dividend, retirement of debt by issuing shares, or the exchange of non-cash assets for other non-cash assets. Although non-cash investing and non-cash financing activities do not appear on the SCF, the full disclosure principle requires that they be disclosed either in a note to the financial statements or in a schedule on the SCF.

Now, let us demonstrate the preparation of a SCF using the balance sheet, income statement, and statement of shareholders' equity of Example Corporation shown below.

Example Corporation
Balance Sheet
At December 31
($000s)

	2016	2015
Assets		
Current assets		
Cash	$ 27	$ 150
Accounts receivable	375	450
Merchandise inventory	900	450
Prepaid expenses	20	10
Total current assets	1,322	1,060
Property, plant, and equipment		
Land	70	70
Buildings	1,340	620
Less: Accumulated depreciation - buildings	(430)	(280)
Machinery	1,130	920
Less: Accumulated depreciation - machinery	(250)	(240)
Total property, plant, and equipment	1,860	1,090
Total assets	$ 3,182	$ 2,150
Liabilities		
Current liabilities		
Accounts payable	$ 235	$ 145
Dividends payable	25	30
Income taxes payable	40	25
Total current liabilities	300	200
Long-term loan payable	1,000	500
Total liabilities	1,300	700
Equity		
Common stock	1,210	800
Retained earnings	672	650
Total equity	1,882	1,450
Total liabilities and equity	$ 3,182	$ 2,150

Example Corporation
Income Statement
For the Year Ended December 31, 2016
($000s)

Sales		$ 1,200
Cost of goods sold		674
Gross profit		526
Operating expenses		
Selling, general, and administration	$ 115	
Depreciation	260	375
Income from operations		151
Other revenues and expenses		
Interest expense	26	
Loss on disposal of machinery	10	36
Income before income taxes		115
Income taxes		35
Net Income		$ 80

Example Corporation
Statement of Stockholders' Equity
For the Year Ended December 31, 2016
($000s)

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$ 800	$ 650	$ 1,450
Common shares issued	410	-	410
Net income	-	80	80
Dividends declared	-	(58)	(58)
Ending balance	$ 1,210	$ 672	$ 1,882

The SCF can be prepared from an analysis of transactions recorded in the Cash account. Accountants summarize and classify these cash flows on the SCF for the three major activities noted earlier, namely operating, investing, and financing. To aid our analysis, the following list of additional information from the records of Example Corporation will be used.

Additional Information

1. A building was purchased for $720 cash.
2. Machinery was purchased for $350 cash.
3. Machinery costing $140 with accumulated depreciation of $100 was sold for $30 cash.
4. Total depreciation expense of $260 was recorded during the year; $150 on the building and $110 on the machinery.
5. Example Corporation received $500 cash from issuing a long-term loan with the bank.
6. Shares were issued for $410 cash.
7. $58 of dividends were declared during the year.

Analysis of Cash Flows

There are different ways to analyze cash flows and then prepare the SCF; only one of those techniques will be illustrated here using the following steps.

1. Set up a cash flow table.
2. Calculate the changes in each balance sheet account.
3. Calculate and analyze the changes in retained earnings and dividends payable (if there is a Dividends Payable account).

4. Calculate and analyze the changes in the non-cash current assets and current liabilities (excluding Dividends Payable account).
5. Calculate and analyze changes in non-current asset accounts
6. Calculate and analyze changes in Long-term Liability and Common Stock accounts.
7. Reconcile the analysis.
8. Prepare a statement of cash flows.

Step 1: Set up a cash flow table

Set up a table as shown below with a row for each account shown on the balance sheet. Enter amounts for each account for 2015 and 2016. Show credit balances in parentheses. Total both columns and ensure they equal zero. The table should appear as follows after this step has been completed:

Account	*Balance ($000s)*	
	2016	*2015*
	Dr. (Cr.)	*Dr. (Cr.)*
Cash	27	150
Accounts receivable	375	450
Merchandise inventory	900	450
Prepaid expenses	20	10
Land	70	70
Buildings	1,340	620
Accum. dep.- buildings	(430)	(280)
Machinery	1,130	920
Accum. dep.- machinery	(250)	(240)
Accounts payable	(235)	(145)
Dividends payable	(25)	(30)
Income taxes payable	(40)	(25)
Long-term loan payable	(1,000)	(500)
Common stock	(1,210)	(800)
Retained earnings	(672)	(650)
Total	-0-	-0-

Step 2: Calculate the change in cash

Add two columns to the cash flow table. Calculate the net debit or net credit change in cash and insert this change in the appropriate column. This step is shown below.

	Balance ($000s)		Step 2 Change	
Account	*2016 Dr. (Cr.)*	*2015 Dr. (Cr.)*	*Dr.*	*Cr.*
Cash	**27**	**150**		**123**
Accounts receivable	375	450		
Merchandise inventory	900	450		
Prepaid expenses	20	10		
Land	70	70		
Buildings	1,340	620		
Accum. dep. – buildings	(430)	(280)		
Machinery	1,130	920		
Accum. dep. – machinery	(250)	(240)		
Accounts payable	(235)	(145)		
Dividends payable	(25)	(30)		
Income taxes payable	(40)	(25)		
Long-term loan payable	(1,000)	(500)		
Common stock	(1,210)	(800)		
Retained earnings	(672)	(650)		
Total	-0-	-0-		

Cash has decreased by $123k. This is the amount that the SCF analysis must reconcile to.

Step 3: Calculate and analyze the changes in retained earnings and dividends payable (if there is a Dividends Payable account)

When we calculate the changes for each of retained earnings and dividends payable, the net difference may not always reflect the causes for change in these accounts. For example, the net difference between the beginning and ending balances in retained earnings is an increase of $22 thousand. However, two things occurred to cause this net change: a net income of $80 thousand (a debit to income summary and a credit to retained earnings) and dividends of $58 thousand that were declared during the year per the additional information (a debit to retained earnings of $58k and a credit to dividends payable of $58k). ***The net income of $80 thousand is the starting position in the operating activities section of the SCF (see Figure 11.5).***

The change in the dividends payable balance was also caused by two transactions — the dividend declaration of $58 thousand (a debit to retained earnings and a credit to dividends payable) and a $63 thousand payment of dividends (a debit to dividends payable and a credit to cash). ***The $63 thousand cash payment is subtracted in the financing activities section of the SCF (see Figure 11.5).*** Dividends payable can change because of two transactions, as in this example, or because of one transaction, which could be either a dividend declaration with no payment of cash, or a payment of the dividend payable and no dividend declaration. Step 3 as it applies to Example Corporation is detailed below.

During 2016, dividends of $58k were declared (this information was given). The beginning balance of $30k plus $58k means $63k were paid, creating the ending balance of $25k (the $63k was not given so had to be calculated and results in a debit to dividends payable). The payment of $63k of dividends is a financing activity.

	Balance ($000s)		Step 3 Change	
Account	*2016 Dr. (Cr.)*	*2015 Dr. (Cr.)*	*Dr.*	*Cr.*
Cash	27	150		123
Accounts receivable	375	450		75
Merchandise inventory	900	450	450	
Prepaid expenses	20	10	10	
Land	70	70		
Buildings	1,340	620		
Accum. dep. – buildings	(430)	(280)		
Machinery	1,130	920		
Accum. dep. – machinery	(250)	(240)		
Accounts payable	(235)	(145)		90
Dividends payable	**(25)**	**(30)**	**63**	**58**
Income taxes payable	(40)	(25)		15
Long-term loan payable	(1,000)	(500)		
Common stock	(1,210)	(800)		
Retained earnings	**(672)**	**(650)**	**58**	**80**
Total	-0-	-0-		

During 2016, net income of $80k was earned. The beginning balance in retained earnings of $650k plus net income of $80 means $58k of dividends were declared, creating the $672k ending retained earnings balance.

Step 4: Calculate and analyze the changes in the non-cash current assets and current liabilities (excluding Dividends Payable account)

Calculate the net debit or net credit changes for each current asset and current liability account on the balance sheet and insert these changes in the appropriate column. Step 4 as it applies to Example Corporation is detailed below. ***The $75 thousand decrease in accounts receivable is added in the operating activities section of the SCF, the $450 thousand increase in merchandise inventory is subtracted, the $10 thousand increase in prepaid expenses is subtracted, the $90 thousand increase in accounts payable is added, and the $15 thousand increase in income taxes payable is added (see Figure 11.5).***

	Balance ($000s)		Step 4 Change	
Account	*2016 Dr. (Cr.)*	*2015 Dr. (Cr.)*	*Dr.*	*Cr.*
Cash	27	150		123
Accounts receivable	**375**	**450**		**75**
Merchandise inventory	**900**	**450**	**450**	
Prepaid expenses	**20**	**10**	**10**	
Land	70	70		
Buildings	1,340	620		
Accum. dep. – buildings	(430)	(280)		
Machinery	1,130	920		
Accum. dep. – machinery	(250)	(240)		
Accounts payable	**(235)**	**(145)**		**90**
Dividends payable	(25)	(30)		
Income taxes payable	**(40)**	**(25)**		**15**
Long-term loan payable	(1,000)	(500)		
Common stock	(1,210)	(800)		
Retained earnings	(672)	(650)		
Total	-0-	-0-		

The net change in each of accounts receivable, merchandise inventory, and prepaid expenses are classified as operating activities.

The net change in each of accounts payable and income taxes payable are classified as operating activities.

Step 5: Calculate and analyze changes in non-current asset accounts

Changes in non-current assets are classified as investing activities. There was no change in the Land account. We know from the additional information provided that buildings and machinery were purchased and that machinery was sold.

Buildings were purchased for $720 thousand (a debit to buildings and a credit to cash). ***The cash payment of $720 thousand is shown in the investing activities section (see Figure 11.5)***.

Accumulated depreciation–buildings is a non-current asset account and it increased by $150 thousand. This change was caused by a debit to depreciation expense and a credit to accumulated depreciation–building. We know from an earlier discussion that depreciation expense is an adjustment in the operating activities section of the SCF therefore ***the $150 thousand is added in the operating activities section (see Figure 11.5)***.

Two transactions caused machinery to change. First, the purchase of $350 thousand of machinery (debit machinery and credit cash); ***the $350 thousand cash payment is shown in the investing activities section (see Figure 11.5).*** Second, machinery costing $140 thousand with accumulated depreciation of $100 thousand was sold for cash of $30 thousand resulting in a loss of $10 thousand. ***The cash proceeds of $30 thousand is shown in the investing activities section of the SCF and the $10 thousand loss is added in the operating activities section (see Figure 11.5).***

Accumulated depreciation–machinery not only decreased $100 thousand because of the sale of machinery but it increased by $110 thousand because of depreciation (debit depreciation expense and credit accumulated depreciation–machinery). ***The $110 thousand of depreciation expense is added in the operating activities section of the SCF (see Figure 11.5).***

Total depreciation expense of $260k was recorded during the year; $150k on the building and $110k on the machinery, an adjustment under operating activities on the SCF.

	Balance ($000s)		Step 5 Change	
Account	*2016 Dr. (Cr.)*	*2015 Dr. (Cr.)*	*Dr.*	*Cr.*
Cash	27	150		123
Accounts receivable	375	450		75
Merchandise inventory	900	450	450	
Prepaid expenses	20	10	10	
Land	**70**	**70**	**-0-**	
Buildings	**1,340**	**620**	**720**	
Accum. dep. – buildings	**(430)**	**(280)**		**150**
Machinery	**1,130**	**920**	**350**	**140**
Accum. dep. – machinery	**(250)**	**(240)**	**100**	**110**
Accounts payable	(235)	(145)		90
Dividends payable	(25)	(30)	5	
Income taxes payable	(40)	(25)		15
Long-term loan payable	(1,000)	(500)		
Common stock	(1,210)	(800)		
Retained earnings	(672)	(650)		
Total	-0-	-0-		

A building was purchased for cash of $720k, an investing activity.

Machinery costing $140k with accum. dep. of $100k was sold for cash of $30k, an investing activity.

Step 6: Calculate and analyze changes in Long-term Liability and Common Stock accounts

Changes in Long-term Liability and Common Stock accounts result from financing activities. We know from the additional information provided earlier that Example Corporation received cash of $500k from a bank loan (debit cash and credit long-term loan payable) and issued shares for $410k cash (debit cash and credit common stock). ***The $500 thousand cash proceeds from the bank loan and $410 thousand cash proceeds from the issuance of shares are listed in the financing section of the SCF (see Figure 11.5)***.

	Balance ($000s)		Step 6 Change	
Account	*2016 Dr. (Cr.)*	*2015 Dr. (Cr.)*	*Dr.*	*Cr.*
Cash	27	150		123
Accounts receivable	375	450		75
Merchandise inventory	900	450	450	
Prepaid expenses	20	10	10	
Land	70	70	-0-	
Buildings	1,340	620	720	
Accum. dep. – buildings	(430)	(280)		150
Machinery	1,130	920	350	140
Accum. dep. – machinery	(250)	(240)	100	110
Accounts payable	(235)	(145)		90
Dividends payable	(25)	(30)	5	
Income taxes payable	(40)	(25)		15
Long-term loan payable	**(1,000)**	**(500)**		**500**
Common stock	**(1,210)**	**(800)**		**410**
Retained earnings	(672)	(650)	58	80
Total	-0-	-0-		

Shares were issued for cash of $410k, a financing activity.

$500k of cash was received because of an additional bank loan, a financing activity.

Step 7: Reconcile the analysis

The analysis is now complete. Add the debit and credit changes, excluding the change in cash. The total debits of $1,693 less the total credits of $1,570 equal a difference of $123 which reconciles to the decrease in cash calculated in Step 2.

	Balance ($000s)		Step 7 Change	
Account	*2016 Dr. (Cr.)*	*2015 Dr. (Cr.)*	*Dr.*	*Cr.*
Cash	27	150		**123**
Accounts receivable	375	450		75
Merchandise inventory	900	450	450	
Prepaid expenses	20	10	10	
Land	70	70	-0-	
Buildings	1,340	620	720	
Accum. dep. – buildings	(430)	(280)		150
Machinery	1,130	920	350	140
Accum. dep. – machinery	(250)	(240)	100	110
Accounts payable	(235)	(145)		90
Dividends payable	(25)	(30)	5	
Income taxes payable	(40)	(25)		15
Long-term loan payable	(1,000)	(500)		500
Common stock	(1,210)	(800)		410
Retained earnings	(672)	(650)	58	80
Total	-0-	-0-	**1,693**	**1,570**
Change in cash				**123**

The change in cash calculated in Step 2…

…must agree to the change in cash resulting from the analysis.

The information in the completed analysis can be used to prepare the statement of cash flows shown in Figure 11.5.

Example Corporation
Statement of Cash Flows
For the Year Ended December 31, 2016
($000s)

Cash flows from operating activities:		
Net income		$ 80
Adjustments for non-cash effects:		
Depreciation expense		260
Loss on disposal of machinery		10
Adjustments to reconcile net income cash provided by operating activities:		
Decrease in accounts receivable		75
Increase in merchandise inventory		(450)
Increase in prepaid expenses		(10)
Increase in accounts payable		90
Increase in income taxes payable		15
Net cash inflow from operating activities		$ 70
Cash flows from investing activities:		
Proceeds from sale of machinery	30	
Purchase of building	(720)	
Purchase of machinery	(350)	
Net cash outflow from investing activities		(1,040)
Cash flows from financing activities:		
Payment of dividends	(63)	
Proceeds from bank loan	500	
Proceeds from issuance of shares	410	
Net cash inflow from financing activities		847
Net decrease in cash		$ (123)
Cash at beginning of year		150
Cash at end of year		$ 27

Figure 11.5: Statement of Cash Flows for Example Corporation

11.3 Interpreting the Statement of Cash Flows

LO3 – Interpret a statement of cash flows.

Readers of financial statements need to know how cash has been used by the enterprise. The SCF provides external decision makers such as creditors and investors with this information. The statement of cash flows provides information about an enterprise's financial management policies and practices. It also may aid in predicting future cash flows, which is an important piece of information for investors and creditors.

The *quality* of earnings as reported on the income statement can also be assessed with the information provided by the SCF. The measurement of net income depends on a number of accruals and allocations that may not provide clear information about the cash-generating power of a company. Users will be more confident in a company with a high correlation between cash provided by operations and net income measured under the accrual basis. Recall, for instance, that although

Example Corporation has net income of $80,000 during 2016, its net cash inflow from operations is only $70,000, chiefly due to the large increase in inventory levels. Although net cash flow from operations is still positive, this discrepancy between net income and cash flow from operations may indicate looming cash flow problems, particularly if the trend continues over time.

Example Corporation's SCF also reveals that significant net additions to plant and equipment assets occurred during the year ($1,070,000), financed in part by cash flow from operating activities but primarily by financing activities. These activities included the assumption of loans and issue of shares that amounted to $847,000, net of dividend payments ($500,000 from issuing a long-term loan plus $410,000 from issuing shares less $63,000 for payment of dividends).

It appears that a significant plant and equipment asset acquisition program may be underway, which may affect future financial performance positively. This expansion has been financed mainly by increases in long-term debt and the issuance of common stock. However, the magnitude of the plant and equipment asset purchases, coupled with the payment of the dividends to shareholders, has more than offset cash inflows from operating and financing activities, resulting in a net overall decrease in cash of $123,000. Though the current cash expenditure on long-term productive assets may be a prudent business decision, it has resulted in (hopefully temporary) adverse effects on overall cash flow.

The SCF is not a substitute for an income statement prepared on the accrual basis. Both statements should be used to evaluate a company's financial performance. Together, the SCF and income statement provide a better basis for determining the enterprise's ability to generate funds from operations and thereby meet current obligations when they fall due (liquidity), pay dividends, meet recurring operating costs, survive adverse economic conditions, or expand operations with internally-generated cash.

The SCF highlights the amount of cash available to a corporation, which is important. Excess cash on hand is unproductive. Conversely, inadequate cash decreases liquidity. Cash is the most liquid asset, and its efficient use is one of the most important tasks of management. Cash flow information, interpreted in conjunction with other financial statement analyses, is useful in assessing the effectiveness of the enterprise's cash management policies.

Readers who wish to evaluate the financial position and results of an enterprise's operations also require information on cash flows produced by investing and financing activities. The SCF is the only statement that explicitly provides this information. By examining the relationship among the various sources and uses of cash during the year, readers can also focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

11.4 Appendix A: Putting It All Together: Corporate Financial Statements

The core financial statements connect to complete an overall picture of the company's operations and its current financial state. It is important to understand how these reports connect; therefore, a review of some simplified financial statements for Wellbourn Services Ltd. is presented below.

Wellbourn Services Ltd.
Statement of Income
For the Year Ended December 31, 2015

Revenues:		
Sales	$ 250,000	
Services revenue	53,000	
Total revenue		$ 303,000
Operating expenses:		
Cost of good sold	100,000	
Depreciation expense	3,000	
Rent expense	20,000	
Salaries expense	65,000	
Total operating expense		188,000
Income from continuing operations before tax		115,000
Income tax		34,500
Net income		$ 80,500
Earnings per share		$ 24

Wellbourn Services Ltd.
Statement of Stockholders' Equity
For the Year Ended December 31, 2015

	Common Stock	Retained Earnings	Total
Balance, January 1	$200,000	$75,000	$275,000
Net income		80,500	80,500
Issuance of common stock	10,000		10,000
Dividends declared		(50,000)	(50,000)
Balance, December 31	$210,000	$105,500	$315,500

Wellbourn Services Ltd.
Statement of Financial Position
December 31, 2015

Assets		Liabilities	
Current assets		Current liabilities	
Cash	$135,500	Accounts payable	$ 77,500
Accounts receivable (net)	225,000	Accrued liabilities	225,000
Inventory	130,000	Total current liabilities	302,500
Total current assets	490,500	Bonds payable	160,000
Investments	100,000	Total liabilities	462,500
Property, plant, and equipment (net)	172,500	Equity	
Intangible assets	15,000	Common stock	210,000
Total assets	$778,000	Retained earnings	105,500
		Total equity	315,500
		Liabilities and equity	$778,000

Wellbourn Services Ltd.
Statement of Cash Flows
For the Year Ended December 31, 2015

Cash flows from operating activities		
Net income	$ 80,500	
Adjustments for non-cash effects:		
Plus: Depreciation	3,000	
Adjustments to reconcile net income cash provided by operating activities:		
Increase in accounts receivable	(50,000)	
Increase in inventory	(34,700)	
Decrease in accounts payable	(20,000)	
Decrease in accrued liabilities	(5,000)	
Net cash used by operating activities		(26,200)
Cash flows from investing activities		
Purchase of equipment	(25,000)	
Net cash used by investing activities		(25,000)
Cash flows from financing activities		
Payment of dividends	(50,000)	
Proceeds from bonds	160,000	
Net cash received by financing activities		110,000
Net increase in cash		58,800
Cash balance, January 1		76,700
Cash balance, December 31		$135,500

As can be seen from the flow of the numbers above, the net income from the statement of income is closed to retained earnings.

The statement of shareholders' equity total column flows to the equity section of the balance sheet. Finally, the **statement of cash flows** (SCF) ending cash balance must be equal to the cash ending balance reported in the balance sheet, which completes the loop of interconnecting accounts and amounts.

Statement of Income with Discontinued Operations

Single-step and Multiple-step Statement of Income

Companies can choose whichever format best suits their reporting needs. Smaller companies tend to use the simpler single-step format, while larger companies tend to use the multiple-step format.

The Wellbourn Services Ltd. statement of income, shown earlier, is an example of a typical **single-step** income statement. For this type of statement, revenue and expenses are each reported in the two sections for continuing operations. Discontinued operations are separately reported below the continuing operations. The separate disclosure and format for the discontinued operations section is a reporting requirement and is discussed and illustrated below. The single-step format makes the statement simple to complete and keeps sensitive information out of the hands of competitive companies, but provides little in the way of analytical detail.

The **multiple-step** income statement format provides much more detail. Below is an example of a multiple-step statement of income for Toulon Ltd. for the year ended December 31, 2015.

Multiple-step format - typical sections and subtotals:

Heading

Toulon Ltd.
Statement of Income
For the Year Ended December 31, 2015

	In $000's except per share amounts	2015	2014
Gross profit section with subtotal	Sales	$6,260	$5,008
	Cost of goods sold	2,500	1,750
	Gross profit	3,760	3,258
Operating expenses with subtotal	Operating expenses		
	Salaries and benefits expense	650	520
	Depreciation expense	35	20
	Travel and entertainment expense	150	120
	Advertising expense	55	45
	Freight-out expenses	10	8
	Supplies and postage expense	5	4
	Telephone and internet expense	15	12
	Legal and professional expenses	8	6
	Insurance expense	6	5
		934	740
	Income from operations	2,826	2,518
Non-operationing section with subtotal	Other revenue and expense		
	Interest income from investments	5	5
	Gain from sale of trade investments	4	0
	Interest expense	(2)	(3)
		7	2
	Income from continuing operations before income tax	2,833	2,520
Income tax expense	→ Income tax expense	850	680
Subtotal from continuing operatings	→ Income from continuing operations	1,983	1,840
Discontinued	Discontinued operations		
	Loss from disposal of division (net of tax of $63,000)	(147)	0
		(147)	0
Net income (profit or loss)	Net income	1,836	1,840
Earnings per share	Basic earnings per share		
	Continuing operations	$16.32	$13.25
	Discontinued operations	(1.21)	0

The multiple-step format with its section subtotals makes performance analysis and ratio calculations such as gross profit margins easier to complete and makes it easier to assess the company's future earnings potential. The multiple-step format also enables investors and creditors to evaluate company performance results from continuing and ongoing operations having a high predictive value separately, compared to non-operating or unusual items having little predictive value.

Operating Expenses

As discussed in an earlier chapter, expenses from operations can be reported by their nature and, optionally, by function. **Expenses by nature** relate to the type of expense or the source of expense such as salaries, insurance, advertising, travel and entertainment, supplies expense, depreciation and amortization, and utilities expense, to name a few. The statement for Toulon Ltd. is an example of reporting expenses by nature.

Expenses by function relate to how various expenses are incurred within the various departments and activities of a company such as selling and administrative expenses.

The sum of all the revenues, expenses, gains, and losses to this point represents the **income or loss from continuing operations**. This is a key component used in performance analysis.

Income Tax Allocations

This is the process of allocating income tax expense to various categories within the statement of income such as income from continuing operations before taxes and discontinued operations. The purpose of these allocations is to make the information within the statements more informative and complete. For example, Toulon's statement of income for the year ending December 31, 2015, allocates tax at a rate of 30% to the following:

- Income from continuing operations of \$850,000 (\$2,833,000 $\times$ 30%)
- Loss from disposal of discontinued operations of \$63,000

Discontinued operations

Sometimes companies will sell or shut down certain business operations because the operating segment is no longer profitable, or they may wish to focus their resources on other business operations. Examples are a major business line or geographical area. If the discontinued operation has not yet been sold, then *there must be a formal plan in place to dispose of the component within one year and to report it as a discontinued operation*.

The items reported in this section of the statement of income are to be reported net of tax, with the tax amount disclosed.

Earnings per Share

Basic earnings per share represent the amount of income attributable to each outstanding common share, as shown in the calculation below:

$$\text{Basic earnings per share (EPS)} = \frac{\text{Net income} - \text{preferred dividends}}{\text{Number of common shares outstanding}}$$

The earnings per share amounts are not required for private companies. This is because ownership of privately owned companies is often held by only a few investors, compared to publicly-traded companies where shares are held by many investors.

Basic earnings per share are to be reported on the face of the statement of income as follows:

- Basic EPS from continuing operations
- Basic EPS from discontinued operations, if any

If the outstanding common shares for Toulon was 121,500, the EPS from continuing operations would be $16.32 (1,983,000 ÷ 121,500) and $(1.21) from discontinued operations ($147,000 loss ÷ 121,500), as reported in their statement above. There is also a requirement to report diluted EPS but this is beyond the scope of this course.

Summary of Chapter 11 Learning Objectives

LO1 – Explain the purpose of the statement of cash flows.

The statement of cash flows is one of the four financial statements. It highlights the net increase or decrease in the cash and cash equivalents balance during the accounting period, and details the sources and uses of cash that caused that change.

LO2 – Prepare a statement of cash flows.

The operating activities section of the statement of cash flows can be prepared using the direct or indirect method. This textbook focuses only on the indirect method. The result of both methods is identical; it is only how the calculations are performed that differs. The operating activities section begins with accrual net income and by adding back depreciation expense, and adding back/subtracting losses/gains on disposal of non-current assets, and then adjusting for changes in current assets, current liabilities, in order to arrive at net income on a cash basis. The investing activities section analyzes cash inflows and outflows from the sale and purchase of non-current assets. The finance activities section details the cash inflows and outflows resulting from the issue and payment of loans, issue and repurchase of shares, and payment of dividends to shareholders.

LO3 – Interpret a statement of cash flows.

A statement of cash flows contributes to the decision-making process by explaining the sources and uses of cash. The operating activities section can signal potential areas of concern by focusing on differences between accrual net income and cash basis net income. The investing activities section can highlight if cash is being used to acquire assets for generating revenue, while the financing activities section can identify where the cash to purchase those assets might be coming from. Those who use financial statements can focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

Discussion Questions

1. Using an example, explain in your own words the function of a statement of cash flows. Why is it prepared? What does it communicate to the reader of financial statements? What is its advantage over a balance sheet? over an income statement?
2. Why are financing and investing activities of a corporation important to financial statement readers?
3. How does an increase in accounts receivable during the year affect the cash flow from operating activities?
4. What effect does the declaration of a cash dividend have on cash flow? the payment of a dividend declared and paid during the current year? the payment of a dividend declared in the preceding year?
5. Why may a change in the Short-term investments account not affect the amount of cash provided by operations?
6. Why is it possible that cash may have decreased during the year, even though there has been a substantial net income during the same period?
7. Describe common transactions affecting balance sheet accounts that use cash. Explain how these items are analyzed to identify cash flows that have occurred during the year.

Exercises

EXERCISE 11–1 (LO1,2)

The following transactions were carried out by Crozier Manufacturing Limited.

Required: Indicate into which category each transaction or adjustment is placed in the statement of cash flows: operating (O), financing (F), or investing (I) activities. For non-cash investing/financing activities that are disclosed in a note to the financial statements, indicate (NC).

_____ A payment of $5,000 was made on a bank loan.
_____ Depreciation expense for equipment was $1,000.
_____ $10,000 of common stock was issued for cash.
_____ Cash dividends of $2,500 were declared and paid to shareholders.
_____ Bonds were issued in exchange for equipment costing $7,000.
_____ Land was purchased for $25,000 cash.
_____ $750 of accrued salaries was paid.

_____ $10,000 of accounts receivable was collected.
_____ A building was purchased for $80,000: $30,000 was paid in cash and the rest was borrowed.
_____ A long-term investment in shares of another company was sold for $50,000 cash.
_____ Equipment was sold for $6,000. The related accumulation depreciation was $3,000 with an original cost of $10,000.
_____ $1,200 was paid for a 12-month insurance policy in effect next year.
_____ A patent was amortized for $500.
_____ Bonds were issued for $50,000 cash.

EXERCISE 11–2 (LO2)

Assume the following selected income statement and balance sheet information for Larriet Inc.:

Larriet Inc.
Balance Sheet Information
(000's)

	December 31, Year 5	December 31, Year 4
Cash	$40	$22
Accounts receivable	34	39
Merchandise inventory	150	146
Prepaid expenses	3	2
Machinery	125	138
Accumulated depreciation	55	42
Accounts payable	29	31
Dividends payable	1	5
Bonds payable	15	38
Common stock	208	150
Retained earnings	44	81

Larriet Inc.
Income Statement
Year Ended December 31, Year 5
(000's)

Sales revenue		$385
Cost of goods sold	$224	
Other operating expenses	135	
Depreciation expense	25	
Loss on sale of machinery	3	(387)
Net loss		$2

Additional information:

i. Machinery costing $20 thousand was sold for cash.

ii. Machinery was purchased for cash.

iii. The change in retained earnings was caused by the net loss and the declaration of dividends.

Required:

a. Reconstruct the journal entry regarding the sale of the machinery.

b. Reconstruct the entry regarding the purchase of machinery.

c. Reconstruct the entry regarding the declaration of dividends.

d. Reconstruct the entry regarding the payment of dividends.

e. Prepare the statement of cash flows for the year ended December 31, Year 5.

EXERCISE 11–3 (LO2,3)

The comparative statement of financial positions of Glacier Corporation showed the following at December 31.

	2019	*2018*
Debits		
Cash	$ 10	$ 8
Accounts receivable	18	10
Merchandise inventory	24	20
Land	10	24
Plant and equipment	94	60
	$156	$122
Credits		
Accumulated depreciation	$ 14	$ 10
Accounts payable	16	12
Non-current borrowings	40	32
Common stock	60	50
Retained earnings	26	18
	$156	$122

The statement of profit and loss for 2019 was as follows:

Glacier Corporation
Statement of Profit and Loss
For the Year Ended December 31, 2019

Sales		$ 300
Cost of sales		200
Gross profit		100
Operating expenses		
Rent	$ 77	
Depreciation	6	83
Income from operations		17
Other gains (losses)		
Gain on sale of equipment	1	
Loss on sale of land	(4)	(3)
Net income		$ 14

Additional information:

i. Cash dividends paid during the year amounted to $6.

ii. Land was sold during the year for $10. It was originally purchased for $14.

iii. Equipment was sold during the year that originally cost $7. Carrying amount was $5.

iv. Equipment was purchased for $41.

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2019.

b. Comment on the operating, financing, and investing activities of Glacier Corporation for the year ended December 31, 2019.

EXERCISE 11–4 (LO2,3)

The following trial balance has been prepared from the ledger of Lelie Ltd. at December 31, 2019, following its first year of operations.

	(in $000's)	
	Debits	*Credits*
Cash	$ 40	
Accounts receivable	100	
Merchandise inventory	60	
Prepaid rent	10	
Equipment	160	
Accumulated depreciation – equipment		$ 44
Patent	-0-	
Accounts payable		50
Dividends payable		10
Income taxes payable		8
Note payable – due 2023		80
Common stock		140
Retained earnings		-0-
Cash dividends	20	
Sales		225
Depreciation	44	
Cost of goods sold	100	
Selling and administrative expenses	28	
Income taxes expense	10	
Gain on sale of land		15
	$ 572	$ 572

Additional information:

i. A patent costing $30,000 was purchased, and then sold during the year for $45,000.

ii. Lelie assumed $100,000 of long-term debt during the year.

iii. Some of the principal of the long-term debt was repaid during the year.

iv. Lelie issued $40,000 of common stock for equipment. Other equipment was purchased for $120,000 cash. No equipment was sold during the year.

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2019.

b. Explain what the statement of cash flows tells you about Lelei Ltd. at the end of December 31, 2019.

EXERCISE 11–5 (LO2,3)

The accounts balances of ZZ Corp. at December 31 appear below:

	2019	*2018*
Debits		
Cash	$ 40,000	$ 30,000
Accounts receivable	40,000	30,000
Merchandise inventory	122,000	126,000
Prepaid expenses	6,000	4,000
Land	8,000	30,000
Buildings	220,000	160,000
Equipment	123,000	80,000
	$559,000	$460,000
Credits		
Accounts payable	$ 48,000	$ 50,000
Accumulated depreciation	86,000	70,000
Note payable, due 2023	70,000	55,000
Common stock	300,000	250,000
Retained earnings	55,000	35,000
	$559,000	$460,000

The following additional information is available:

i. Net income for the year was $40,000; income taxes expense was $4,000 and depreciation recorded on building and equipment was $27,000.

ii. Equipment costing $30,000 was purchased; one-half was paid in cash and a 4-year promissory note signed for the balance.

iii. Equipment costing $50,000 was purchased in exchange for 6,000 shares of common stock.

iv. Equipment was sold for $15,000 that originally cost $37,000. The gain/loss was reported in net income.

v. An addition to the building was built during the year.

vi. Land costing $22,000 was sold for $26,000 cash during the year. The related gain was reported in the income statement.

vii. Cash dividends were paid.

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2019.

b. What observations about ZZ Corp. can be made from this statement?

EXERCISE 11–6 (LO2,3)

Below is a comparative statement of financial position for Egglestone Vibe Inc. as at December 31, 2016:

Egglestone Vibe Inc.
Statement of Financial Position

	December 31	
	2016	*2015*
Assets:		
Cash	$ 166,400	$ 146,900
Accounts receivable	113,100	76,700
Inventory	302,900	235,300
Land	84,500	133,900
Plant assets	507,000	560,000
Accumulated depreciation – plant assets	(152,100)	(111,800)
Goodwill	161,200	224,900
Total assets	$1,183,000	$1,265,900
Liabilities and Equity:		
Accounts payable	38,100	66,300
Dividend payable	19,500	41,600
Notes payable	416,000	565,500
Common stock	322,500	162,500
Retained earnings	374,400	370,200
Accumulated other comprehensive income	12,500	59,800
Total liabilities and equity	$1,183,000	$1,265,900

Additional information:

i. Net income for the 2016 fiscal year was $24,700. Depreciation expense was $55,900.

ii. During 2016, land was purchased for cash of $62,400 for expansion purposes. Six months later, another section of land with a carrying value of $111,800 was sold for $150,000 cash.

iii. On June 15, 2016, notes payable of $160,000 was retired in exchange for the issuance of common stock. On December 31, 2016, notes payable for $10,500 were issued for additional cash flow.

iv. At year-end, plant assets originally costing $53,000 were sold for $27,300, since they were no longer contributing to profits. At the date of the sale, the accumulated depreciation for the asset sold was $15,600.

v. Cash dividends were declared and a portion of those were paid in 2016.

vi. Goodwill impairment loss was recorded in 2016 to reflect a decrease in the recoverable amount of goodwill. (Hint: Review impairment of long-lived assets in Chapter 8 of the text.)

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2016.

b. Analyze and comment on the results reported in the statement.

EXERCISE 11–7 (LO2)

Below is a comparative statement of financial position for Nueton Ltd. as at June 30, 2016:

Nueton Ltd.
Balance Sheet

	June 30	
	2016	*2015*
Cash	$ 55,800	$ 35,000
Accounts receivable (net)	80,000	62,000
Inventory	66,800	96,800
Prepaid expenses	5,400	5,200
Equipment	130,000	120,000
Accumulated depreciation	28,000	10,000
Accounts payable	6,000	32,000
Wages payable	7,000	16,000
Income taxes payable	2,400	3,600
Notes payable (long-term)	40,000	70,000
Common stock	230,000	180,000
Retained earnings	24,600	7,400

Nueton Ltd.
Income Statement
For Year Ended June 30, 2016

Sales	$500,000
Cost of goods sold	300,000
Gross profit	200,000
Operating expenses:	
Depreciation expense	58,600
Other expenses	80,000
Total operating expenses	138,600
Income from operations	61,400
Gain on sale of equipment	2,000
Income before taxes	63,400
Income taxes	19,020
Net income	$ 44,380

Additional Information:

i. A note is retired at its carrying value.

ii. New equipment is acquired during 2016 for $58,600.

iii. The gain on sale of equipment costing $48,600 during 2016 is $2,000.

Required: Use the Neuton Ltd. information given above to prepare a statement of cash flows for the year ended June 30, 2016.

EXERCISE 11–8 (LO2)

The trial balance for Yucotin Corp. is shown below. All accounts have normal balances.

Yucotin Corp.
Trial Balance

	December 31	
	2016	*2015*
Cash	$ 248,000	$ 268,000
Accounts receivable	62,000	54,000
Inventory	406,000	261,000
Equipment	222,000	198,000
Accumulated depreciation, equipment	(104,000)	(68,000)
Accounts payable	46,000	64,000
Income taxes payable	18,000	16,000
Common stock	520,000	480,000
Retained earnings	116,000	58,000
Sales	1,328,000	1,200,000
Cost of goods sold	796,000	720,000
Depreciation expense	36,000	30,000
Operating expenses	334,000	330,000
Income taxes expense	28,000	25,000

Additional information:

i. Equipment is purchased for $24,000 cash.

ii. 16,000 common shares are issued for cash at $2.50 per share.

iii. Declared and paid $74,000 of cash dividends during the year.

Required: Prepare a statement of cash flows for 2016.

EXERCISE 11–9 (LO2)

Below is an unclassified balance sheet and income statement for Tubric Corp. for the year ended December 31, 2016:

Tubric Corp.
Balance Sheet

	December 31	
	2016	*2015*
Cash	$ 40,000	$ 20,800
Petty cash	14,400	8,000
Accounts receivable	73,600	31,200
Inventory	95,200	69,600
Long-term investment	0	14,400
Land	64,000	64,000
Building and equipment	370,400	380,000
Accumulated depreciation	98,400	80,800
Total assets	$559,200	$507,200
Accounts payable	16,600	31,500
Dividends payable	1,000	500
Bonds payable	20,000	0
Preferred stock	68,000	68,000
Common stock	338,400	338,400
Retained earnings	115,200	68,800
Total liabilities and equity	$559,200	$507,200

Tubric Corp.
Income Statement
For the Year Ended December 31, 2016

Sales		$720,000
Cost of goods sold		480,000
Gross profit		240,000
Operating expenses	$110,600	
Depreciation expense	34,400	
Loss on sale of equipment	3,200	
Income tax expense	15,000	
Gain on sale of long-term investment	(9,600)	153,600
Net income		$ 86,400

During 2016, the following transactions occurred:

i. Purchased equipment for $16,000 cash.

ii. Sold the long-term investment on January 2, 2016, for $24,000.

iii. Sold equipment originally costing $25,600 for $5,600 cash. Equipment had $16,800 of accumulated depreciation at the time of the sale.

iv. Issued $20,000 of bonds payable at par.

Required:

a. Calculate the cash paid dividends for 2016.

b. Prepare a statement of cash flows for Tubric Corp. for the year ended December 31, 2016.

Problems

PROBLEM 11–1 (LO2)

Assume the following income statement information:

Sales (all cash)	$35
Operating Expenses	
Depreciation	10
Income before Other Item	25
Other Item	
Gain on Sale of Equipment	8
Net Income	$33

Required:

1. Assume the equipment that was sold for a gain of $8 originally cost $20, had a book value of $4 at the date of disposal, and was sold for $12. Prepare the journal entry to record the disposal. What is the cash effect of this entry?
2. Calculate cash flow from operating activities.

PROBLEM 11–2 (LO2)

Assume the following selected income statement and balance sheet information for the year ended December 31, 2019:

Sales	$200
Cost of Goods Sold	120
Gross Profit	80
Operating Expenses	
Rent	30
Net Income	$50

	2019	*2018*
	Dr. (Cr.)	*Dr. (Cr.)*
Cash	$100	$86
Accounts Receivable	60	40
Inventory	36	30
Prepaid Rent	10	-0-
Retained Earnings	(206)	(156)

Required:

1. Reconcile the change in retained earnings from December 31, 2018 to December 31, 2019.
2. Calculate cash flow from operating activities.

PROBLEM 11–3 (LO2)

Assume the following income statement and balance sheet information:

Revenue	$-0-
Depreciation Expense	(100)
Net Loss	$(100)

	2019	*2018*
	Dr. (Cr.)	*Dr. (Cr.)*
Cash	$350	$650
Machinery	500	200
Accumulated Depreciation – Machinery	(250)	(150)
Retained Earnings	(600)	(700)

No machinery was disposed during the year. All machinery purchases were paid in cash.

Required:

1. Prepare a journal entry to record the depreciation expense for the year. Determine the cash effect.
2. Prepare a journal entry to account for the change in the Machinery balance sheet account. What is the cash effect of this entry?
3. Prepare a statement of cash flows for the year ended December 31, 2019.

PROBLEM 11–4 (LO2)

Assume the following income statement and balance sheet information:

Service Revenue (all cash)	$175
Operating Expenses	
Salaries (all cash)	85
Net Income	$90

	2019	*2018*
	Dr. (Cr.)	*Dr. (Cr.)*
Cash	$1,350	$1,800
Borrowings	(800)	(1,300)
Retained Earnings	(550)	(500)

Other information: All dividends were paid in cash.

Required:

1. Calculate cash flow from operating activities.
2. Calculate the amount of dividends paid during the year.
3. Calculate cash flow used by financing activities.

PROBLEM 11–5 (LO2)

The following transactions occurred in the Hubris Corporation during the year ended December 31, 2019.

(a)	Net income for the year (accrual basis)	$800
(b)	Depreciation expense	120
(c)	Increase in wages payable	20
(d)	Increase in accounts receivable	40
(e)	Decrease in merchandise inventory	50
(f)	Amortization of patents	5
(g)	Payment of non-current borrowings	250
(h)	Issuance of common stock for cash	500
(i)	Payment of cash dividends	30

Other information: Cash at December 31, 2019 was $1,200.

Required: Prepare a statement of cash flows.

PROBLEM 11–6 (LO2,3)

During the year ended December 31, 2019, the Wheaton Co. Ltd. reported $95,000 of revenues, $70,000 of operating expenses, and $5,000 of income taxes expense. Following is a list of transactions that occurred during the year:

(a) Depreciation expense, $3,000 (included with operating expenses)

(b) Increase in wages payable, $500

(c) Increase in accounts receivable, $900

(d) Decrease in merchandise inventory, $1,200

(e) Amortization of patent, $100

(f) Non-current borrowings paid in cash, $5,000

(g) Issuance of common stock for cash, $12,500

(h) Equipment, cost $10,000, acquired by issuing common stock

(i) At the end of the fiscal year, a $5,000 cash dividend was declared but not paid.

(j) Old machinery sold for $6,000 cash; it originally cost $15,000 (one-half depreciated). Loss reported on income statement as ordinary item and included in the $70,000 of operating expenses.

(k) Decrease in accounts payable, $1,000.

(l) Cash at January 1, 2019 was $1,000; increase in cash during the year, $37,900

(m) There was no change in income taxes owing.

Required:

1. Prepare a statement of cash flows.
2. Explain what this statement tells you about Wheaton Co. Ltd.

Chapter 12

Financial Statement Analysis

Financial statements can be used by stockholders, creditors, and other interested parties to analyze a corporation's liquidity, profitability, and financial structure compared to prior years and other similar companies. As part of this analysis, financial evaluation tools are used. Some of these tools are discussed in this chapter.

Chapter 12 Learning Objectives

LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Concept Self-Check

Use the following as a self-check while working through Chapter 12.

1. What is working capital?
2. What is meant by *liquidity?*
3. What are some ratios commonly used to evaluate liquidity?
4. What is a company's revenue operating cycle and how is it measured?
5. What profitability ratios can be used to evaluate a corporation?
6. How is the amount of stockholder claims against a corporation's assets compared to the amount of creditor claims?
7. What are the relative advantages of short-term and long-term debt?
8. What are some measures used to evaluate the future financial prospects of a company for investors?
9. What is a *horizontal analysis?* How does it differ from a *vertical analysis?*
10. What is a common-size analysis?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

12.1 Introduction to Ratio Analysis

LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

A common way to evaluate financial statements is through **ratio analysis**. A *ratio* is a relationship between two numbers of the same kind. For example, if there are two apples and three oranges, the ratio of the number of apples to the number of oranges is 2:3 (read as "two to three"). A *financial ratio* is a measure of the relative magnitude of two selected numerical values taken from a company's financial statements. For instance, the gross profit percentage studied in Chapter 6, also known as the gross profit ratio, expresses the numerical relationship between gross profit and sales. If a company has a gross profit ratio of 0.25:1, this means that for every $1 of sales, the company earns, on average, $0.25 to cover expenses other than cost of goods sold. Another way of stating this is to say that the gross profit ratio is 25%.[1]

Financial ratios are effective tools for measuring the financial performance of a company because they provide a common basis for evaluation — for instance, the amount of gross profit generated by each dollar of sales for different companies. Numbers that appear on financial statements need to be evaluated in context. It is their relationship to other numbers and the relative changes of these numbers that provide some insight into the financial health of a business. One of the main purposes of ratio analysis is to highlight areas that require further analysis and investigation. Ratio analysis alone will not provide a definitive financial evaluation. It is used as one analytic tool, which, when combined with informed judgment, offers insight into the financial performance of a business.

For example, one business may have a completely different product mix than another company even though both operate in the same broad industry. To determine how well one company is doing relative to others, or to identify whether key indicators are changing, ratios are often compared to *industry averages*. To determine trends in one company's performance, ratios are often compared to past years' ratios of the same company.

To perform a comprehensive analysis, qualitative information about the company as well as ratios should be considered. For example, although a business may have sold hundreds of refrigerators last year and all of the key financial indicators suggest growth, qualitative information from trade publications and consumer reports may indicate that the trend will be towards refrigerators us-

[1] Any ratio in the form X:1 can be expressed as a percentage by multiplying both the numerator and denominator by 100. For example, a 0.25:1 ratio would equal 25% [$(0.25 \times 100)/(1 \times 100) = 25/100 = 25\%$]

ing significantly different technologies in the next few years. If the company does not have the capacity or necessary equipment to produce these new appliances, the present positive financial indicators may not accurately reflect the likely future financial performance of the company.

An examination of qualitative factors provides valuable insights and contributes to the comprehensive analysis of a company. An important source of qualitative information is also found in the notes to the financial statements, which are an integral part of the company's financial statements.

In this chapter, financial ratios will be used to provide insights into the financial performance of Big Dog Carworks Corp. (BDCC). The ratios will focus on financial information contained within the income statement, statement of stockholders' equity, and balance sheet of BDCC for the three years 2019, 2020, and 2021. This information is shown below. Note that figures in these statements are reported in thousands of dollars (000s). ***For consistency, all final calculations in this chapter are rounded to two decimal places.***

Big Dog Carworks Corp.
Balance Sheet
At December 31
($000s)

	2021	*2020*	*2019*
Assets			
Current			
Cash	$ 20	$ 30	$ 50
Short-term Investments	36	31	37
Accounts Receivable	544	420	257
Inventories	833	503	361
	1,433	984	705
Property, Plant, and Equipment, net	1,053	1,128	712
Total Assets	$ 2,486	$ 2,112	$ 1,417
Liabilities			
Current			
Borrowings	$ 825	$ 570	$ 100
Accounts Payable	382	295	$ 219
Income Taxes Payable	48	52	$ 50
	1,255	917	369
Equity			
Common Stock	1,063	1,063	963
Retained Earnings	168	132	85
	1,231	1,195	1,048
Total Liabilities and Equity	$ 2,486	$ 2,112	$ 1,417

Big Dog Carworks Corp.
Income Statement
For the Year Ended December 31
($000s)

	2021	*2020*	*2019*
Sales (net)	$ 3,200	$ 2,800	$ 2,340
Cost of Goods Sold	2,500	2,150	1,800
Gross Profit	700	650	540
Operating Expenses			
Selling, General, and Administration	212	183	154
Employee Benefits	113	109	119
Depreciation	75	84	63
	400	376	336
Income from Operations	300	274	204
Financing Costs			
Interest	89	61	-0-
Income Before Income Taxes	211	213	204
Income Taxes	95	96	92
Net Income	$ 116	$ 117	$ 112

Big Dog Carworks Corp.
Statement of Shareholders' Equity
For the Year Ended December 31
($000s)

	2021			*2020*	*2019*
	Share Capital	*Retained Earnings*	*Total Equity*	*Total Equity*	*Total Equity*
Opening Balance	$1,063	$132	$1,195	$1,048	$ 43
Common Shares Issued				100	953
Net Income		116	116	117	112
Dividends Declared		(80)	(80)	(70)	(60)
Ending Balance	$1,063	$168	$1,231	$1,195	$1,048

Assume that 100,000 common shares are outstanding at the end of 2019, 2020, and 2021. Shares were issued in 2020, but at the end of year the number of outstanding stock was still 100,000.

There are four major types of financial ratios: a) *liquidity ratios* that measure the ability of a corporation to satisfy demands for cash as they arise in the near-term (such as payment of current liabilities); b) *profitability ratios* that measure various levels of return on sales, total assets employed, and stockholder investment; c) *leverage ratios* that measure the financial structure of a corporation, its amount of relative debt, and its ability to cover interest expense; and d) *market ratios* that measure financial returns to stockholders, and perceptions of the stock market about the corporation's value.

Initial insights into the financial performance of BDCC can be derived from an analysis of relative amounts of current and non-current debt. This analysis is addressed in the following sections.

12.2 Liquidity Ratios: Analyzing Short-term Cash Needs

Current (Short-term) versus Non-current (Long-term) Debt

Short-term and long-term financing strategies both have their advantages. The advantage of some short-term debt (repayable within one year of the balance sheet date) is that it often does not require interest payments to creditors. For example, accounts payable may not require payment of interest if they are paid within the first 30 days they are outstanding. Short-term debt also has its disadvantages; payment is required within at least one year, and often sooner. Interest rates on short-term debt are often higher than on long-term debt. An increase in the proportion of short-term debt is more risky because it must be renewed and therefore renegotiated more frequently.

The advantages of long-term debt are that payment may be made over an extended period of time. Risk may be somewhat reduced through the use of a formal contractual agreement that is often lacking with short-term debt. The disadvantages of long-term debt are that interest payments must be made at specified times and the amounts owing may be secured by assets of the company.

Analyzing Financial Structure

As a general rule, long-term financing should be used to finance long-term assets. Note that in BDCC's case, property, plant, and equipment assets amount to $1,053,000 at December 31, 2021 yet the firm has no long-term liabilities. This is unusual. An analysis of the company's balance sheet reveals the following:

		(000s)	
	2021	*2020*	*2019*
Current Liabilities	$1,255	$917	$369
Non-current Liabilities	-0-	-0-	-0-

2021 information indicates that BDCC's management relies solely on short-term creditor financing, part of which is $382,000 of accounts payable that may bear no interest and $825,000 of borrowings that also need to be repaid within one year. The risk is that management will likely need to replace current liabilities with new liabilities. If creditors become unwilling to do this, the ability of BDCC to pay its short-term creditors may be compromised. As a result, the company may experience a liquidity crisis — the inability to pay its current liabilities as they come due. The ratios used to evaluate liquidity of a corporation are discussed below.

Even though a company may be earning net income each year (as in BDCC's case), it may still be unable to pay its current liabilities as needed because of a shortage of cash. This can trigger various problems related to current and non-current liabilities and equity.

Current Liabilities

- Creditors can refuse to provide any further goods or services on account.
- Creditors can sue for payment.
- Creditors can put the company into receivership or bankruptcy.

Non-current Liabilities

- Long-term creditors can refuse to lend additional cash.
- Creditors can demand repayment of their long-term debts, under some circumstances.

Equity

- Shareholders may be unwilling to invest in additional common stock of the company.
- Shareholders risk the loss of their investments if the company declares bankruptcy.

There are several ratios that can be used to analyze the liquidity of a company.

Working Capital

Working capital is the difference between a company's current assets and current liabilities at a point in time. BDCC's working capital calculation is as follows:

	(000s)		
	2021	*2020*	*2019*
Current Assets			
Cash	$ 20	$ 30	$ 50
Short-term Investments	36	31	37
Accounts Receivable	544	420	257
Inventories	833	503	361
Total Current Assets (a)	1,433	984	705
Current Liabilities			
Borrowings	825	570	100
Accounts Payable	382	295	219
Income Taxes Payable	48	52	50
Total Current Liabilities (b)	1,255	917	369
Net Working Capital (a-b)	$ 178	$ 67	$ 336

In the schedule above, working capital amounts to $178,000 at December 31, 2021. Between 2019 and 2021, working capital decreased by $158,000 ($336,000 – 178,000). BDCC is less liquid in 2021 than in 2019, though its liquidity position has improved since 2020 when it was only $67,000.

In addition to calculating an absolute amount of working capital, ratio analysis can also be used. The advantage of a ratio is that it is usually easier to interpret.

Current Ratio

Is BDCC able to repay short-term creditors? The **current ratio** can help answer this question. It expresses working capital as a proportion of current assets to current liabilities and is calculated as:

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

The relevant BDCC financial data required to calculate this ratio is taken from the balance sheet, as follows:

		(000s)		
		2021	*2020*	*2019*
Current Assets	(a)	$1,433	$984	$705
Current Liabilities	(b)	1,255	917	369
Current Ratio	(a/b)	1.14:1	1.07:1	1.91:1

This ratio indicates how many current asset dollars are available to pay current liabilities at a point in time. The expression "1.14:1" is read, "1.14 to 1." In this case it means that at December 31, 2021, $1.14 of current assets exist to pay each $1 of current liabilities. This ratio is difficult to interpret in isolation. There are two types of additional information that could help. First, what is the trend within BDCC over the last three years? The ratio declined between 2019 and 2020 (from 1.91 to 1.07), then recovered slightly between the end of 2020 and 2021 (from 1.07 to 1.14). The overall decline may be a cause for concern, as it indicates that in 2021 BDCC had fewer current assets to satisfy current liabilities as they became due.

A second interpretation aid would be to compare BDCC's current ratio to a similar company or that of BDCC's industry as a whole. Information is available from various trade publications and business analysts' websites that assemble financial ratio information for a wide range of industries.

Some analysts consider that a corporation should maintain a 2:1 current ratio, depending on the industry in which the firm operates. The reasoning is that, if there were $2 of current assets to pay each $1 of current liabilities, the company should still be able to pay its current liabilities as they become due, even in the event of a business downturn. However, it is recognized that no one current ratio is applicable to all entities; other factors — such as the composition of current assets — must also be considered to arrive at an acceptable ratio. This is illustrated below.

Composition of Specific Items in Current Assets

In the following example, both Corporation A and Corporation B have a 2:1 current ratio. Are the companies equally able to repay their short-term creditors?

	Corp. A	*Corp. B*
Current Assets		
Cash	$ 1,000	$ 10,000
Accounts Receivable	2,000	20,000
Inventories	37,000	10,000
Total Current Assets	$ 40,000	$ 40,000
Current Liabilities	$ 20,000	$ 20,000
Current Ratio	2:1	2:1

The companies have the same dollar amounts of current assets and current liabilities. However, they have different short-term debt paying abilities because Corporation B has more liquid current assets than does Corporation A. Corporation B has less inventory ($10,000 vs. $37,000) and more in cash and accounts receivable. If Corporation A needed more cash to pay short-term creditors quickly, it would have to sell inventory, likely at a lower-than-normal gross profit. So, Corporation B is in a better position to repay short-term creditors.

Since the current ratio doesn't consider the components of current assets, it is only a rough indicator of a company's ability to pay its debts as they become due. This weakness of the current ratio is partly remedied by the acid-test ratio discussed below.

Acid-Test Ratio

A more rigid test of liquidity is provided by the **acid-test ratio**; also called the **quick ratio**. To calculate this ratio, current assets are separated into *quick* current assets and *non-quick* current assets.

Quick Current Assets

Cash
Short-term investments
Accounts Receivable

} These current assets are considered to be readily convertible into cash.

Non-quick Current Assets

Inventories
Prepaid Expenses

} Cash cannot be obtained either at all or easily from these current assets.

Inventory and prepaid expenses cannot be converted into cash in a short period of time, if at all. Therefore, they are excluded in the calculation of this ratio. The acid-test ratio is calculated as:

$$\frac{\text{Quick current assets}}{\text{Current liabilities}}$$

The BDCC information required to calculate this ratio is:

		(000s)		
		2021	*2020*	*2019*
Cash		$ 20	$ 30	$ 50
Short-term investments		36	31	37
Accounts receivable		544	420	257
Quick current assets	(a)	$ 600	$ 481	$ 344
Current liabilities	(b)	$ 1,255	$ 917	$ 369
Acid-test ratio	(a/b)	0.48:1	0.52:1	0.93:1

This ratio indicates how many quick asset dollars exist to pay each dollar of current liabilities. What is an adequate acid-test ratio? It is generally considered that a 1:1 acid test ratio is adequate to ensure that a firm will be able to pay its current obligations. However, this is a fairly arbitrary guideline and is not appropriate in all situations. A lower ratio than 1:1 can often be found in successful companies. However, BDCC's acid-test ratio trend is worrisome.

There were $0.48 of quick assets available to pay each $1 of current liabilities in 2021. This amount appears inadequate. In 2020, the acid-test ratio of $0.52 also seems to be too low. The 2019 ratio of $0.93 is less than 1:1 but may be reasonable. Of particular concern to financial analysts would be BDCC's declining trend of the acid-test ratio over the three years.

Additional analysis can also be performed to determine the source of liquidity issues. These are discussed next.

Accounts Receivable Collection Period

Liquidity is affected by management decisions related to trade accounts receivable. Slow collection of receivables can result in a shortage of cash to pay current obligations. The effectiveness of management decisions relating to receivables can be analyzed by calculating the *accounts receivable collection period*.

The calculation of the **accounts receivable collection period** establishes the average number of days needed to collect an amount due to the company. It indicates the efficiency of collection procedures when the collection period is compared with the firm's sales terms (in BDCC's case, the sales terms are *net 30* meaning that amounts are due within 30 days of the invoice date).

The accounts receivable collection period is calculated as:

$$\frac{\text{Average net accounts receivable}^{2}}{\text{Net credit sales (or revenues)}} \times 365$$

The BDCC financial information required to make the calculation is shown below (the 2019 calculation cannot be made because 2018 Accounts Receivable amount is not available). Assume all of BDCC's sales are on credit.

		(000s)	
		2021	*2020*
Net credit sales	(a)	$3,200	$2,800
Average accounts receivable [(Opening balance + closing balance)/2]	(b)	$ 482[3]	$ 338.5[4]
Average collection period [(b/a) × 365 days]		54.98 days	44.13 days

When Big Dog's 30-day sales terms are compared to the 54.98-day collection period, it can be seen that an average 24.98 days of sales (54.98 days – 30 days) have gone uncollected beyond the regular credit period in 2021. The collection period in 2021 is increasing compared to 2020. Therefore, some over-extension of credit and possibly ineffective collection procedures are indicated by this ratio. Quicker collection would improve BDCC's cash position. It may be that older or uncollectible amounts are buried in the total amount of receivables; this would have to be investigated.

Whether the increase in collection period is good or bad depends on several factors. For instance, more liberal credit terms may generate more sales (and therefore profits). The root causes of the change in the ratio need to be investigated. However, the calculation does provide an indication of the change in effectiveness of credit and collection procedures between 2020 and 2021.

Number of Days of Sales in Inventory

The effectiveness of management decisions relating to inventory can be analyzed by calculating the number of days of sales that can be serviced by existing inventory levels.

The **number of days of sales in inventory** is calculated by dividing ending inventory by the cost of goods sold and multiplying the result by 365 days.

$$\frac{\text{Ending inventory}}{\text{Cost of goods sold}} \times 365$$

The BDCC financial data for 2020 and 2021 required to calculate this ratio are shown below.

[2]Average balance sheet amounts are used when income statement amounts are compared to balance sheet amounts in a ratio. This is because the income statement item is realized over a fiscal year, while balance sheet amounts are recorded at points in time at the end of each fiscal year. Averaging opening and ending balance sheet amounts is an attempt to match numerators and denominators to an approximate midpoint in the fiscal year.

[3]($420 + 544)/2 = $482

[4]($257 + 420)/2 = $338.5

		(000s)	
		2021	*2020*
Cost of goods sold	(a)	$2,500	$2,150
Inventory	(b)	$ 833	$ 503
Number of days sales in inventory [(b/a) × 365 days]		121.62 days	85.39 days

The calculation indicates that BDCC is investing more in inventory in 2021 than in 2020 because there are 121.62 days of sales in inventory in 2021 versus 85.39 days in 2020. BDCC has approximately 4 months of sales with its existing inventory (122 days represents about 4 months). The increase from 2020 to 2021 may warrant investigation into its causes.

A declining number of days of sales in inventory is usually a sign of good inventory management because it indicates that the average amount of assets tied up in inventory is lessening. With lower inventory levels, inventory-related expenses such as rent and insurance are lower because less storage space is often required. However, lower inventory levels can have negative consequences since items that customers want to purchase may not be in inventory resulting in lost sales.

Increasing days of sales in inventory is usually a sign of poor inventory management because an excessive investment in inventory ties up cash that could be used for other purposes. Increasing levels may indicate that inventory is becoming obsolete (consider clothing) or deteriorating (consider perishable groceries). Obsolete and/or deteriorating inventories may be unsalable. However, the possible positive aspect of more days of sales in inventory is that there can be shorter delivery time to customers if more items are in stock.

Whether Big Dog's increasing days of sales in inventory is positive or negative depends on management's objectives. Is management increasing inventory to provide for increased sales in the next year, or is inventory being poorly managed? Remember that ratio analyses identify areas that require investigation. The resulting investigation will guide any required action.

The Revenue Portion of the Operating Cycle

As discussed in Chapter 4, the sale of inventory and resulting collection of receivables are part of a business's operating cycle as shown in Figure 12.1.

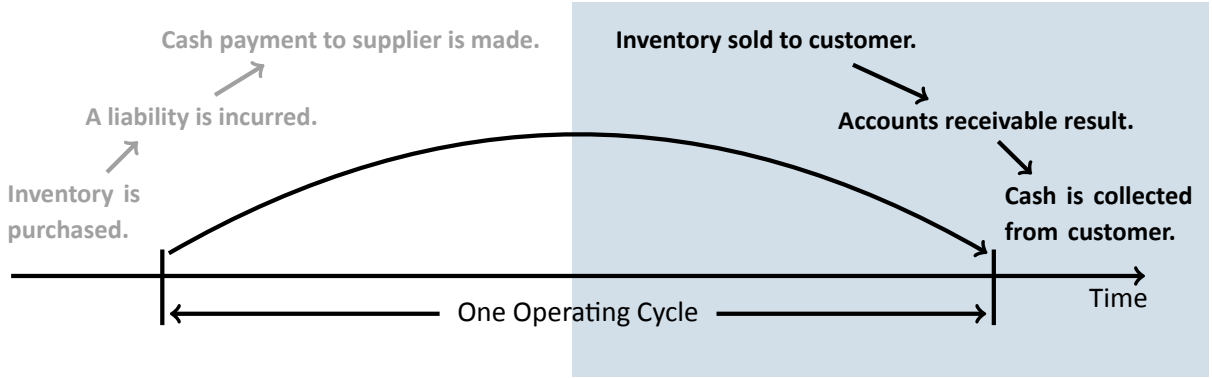


Figure 12.1: Sales and Collection Portion of the Operating Cycle

A business's **revenue operating cycle** is a subset of the operating cycle and includes the purchase of inventory, the sale of inventory and creation of an account receivable, and the generation of cash when the receivable is collected. The length of time it takes BDCC to complete one revenue operating cycle is an important measure of liquidity and can be calculated by adding the number of days of sales in inventory plus the number of days it takes to collect receivables. The BDCC financial data required for this calculation follows.

	2021	*2020*
Number of days of sales in inventory	121.62 days	85.39 days
Accounts receivable collection period	54.98 days	44.13 days
Number of days to complete the revenue cycle	176.6 days	129.52 days

In 2021, 176.6 days were required to complete the revenue cycle, compared to 129.52 days in 2020. So, if accounts payable terms require payment within 60 days, BDCC may not be able to pay them because the number of days to complete the revenue cycle for both 2020 (129.52 days) and 2021 (176.6 days) are significantly greater than 60 days.

Analysis of BDCC's Liquidity

Reflecting on the results of all the liquidity ratios, it appears that Big Dog Carworks Corp. is growing less liquid. Current assets, especially quick assets, are declining relative to current liabilities. The revenue operating cycle is increasing.

12.3 Profitability Ratios: Analyzing Operating Activities

Profitability ratios compare various expenses to revenues, and measure how well the assets of a corporation have been used to generate revenue.

Gross Profit Ratio

The **gross profit ratio**, as introduced briefly in Chapter 6, indicates the percentage of sales revenue that is left to pay operating expenses, creditor interest, and income taxes after deducting cost of goods sold. The ratio is calculated as:

$$\frac{\text{Gross profit}}{\text{Net sales}} \quad OR \quad \frac{\text{Gross profit}}{\text{Net sales}} \times 100$$

BDCC's gross profit ratios for the three years are:

		(000s)		
		2021	*2020*	*2019*
Gross profit	(a)	$ 700	$ 650	$ 540
Net sales	(b)	$ 3,200	$ 2,800	$ 2,340
Gross profit ratio	(a/b)	0.2188:1 or 21.88%	0.2321:1 or 23.21%	0.2308:1 or or 23.08%

In other words, for each dollar of sales BDCC has $0.22 of gross profit left to cover operating, interest, and income tax expenses ($0.23 in each of 2020 and 2019). The ratio has not changed significantly from year to year. However, even a small decline in this percentage can affect net income significantly because the gross profit is such a large component of the income statement. Changes in the gross profit ratio should be investigated, as it will impact future financial performance.

Operating Profit Ratio

The **operating profit ratio** is one measure of relative change in these other expenses. This ratio indicates the percentage of sales revenue left to cover interest and income taxes expenses after deducting cost of goods sold and operating expenses. In other words:

$$\frac{\text{Income from operations}}{\text{Net sales}} \quad OR \quad \frac{\text{Income from operations}}{\text{Net sales}} \times 100$$

BDCC's operating profit ratio for the 2019, 2020, and 2021 fiscal years is calculated as follows:

		(000s)		
		2021	*2020*	*2019*
Income from operations	(a)	$ 300	$ 274	$ 204
Net sales	(b)	$ 3,200	$ 2,800	$ 2,340
Operating profit ratio	(a/b)	0.0938:1 or 9.38%	0.0979:1 or 9.79%	0.0872:1 or or 8.72%

For each dollar of sales revenue in 2021, the company had $0.09 left to cover interest and income tax expenses after deducting cost of goods sold and operating expenses. A review of the company's operating expenses (selling, general, and administrative expenses; employee benefits, and

depreciation) show that they have all increased. As a result, and despite increasing sales revenue and gross profit, operating income has remained relatively flat. Although it seems reasonable that an increase in operating expenses would follow an increase in sales, the reasons for the operating expense increases should be investigated.

Net Profit Ratio

The **net profit ratio** is the percentage of sales revenue retained by the company after payment of operating expenses, interest expenses, and income taxes. It is an index of performance that can be used to compare the company to others in the same industry. This ratio is calculated by the following formula:

$$\frac{\text{Net income}}{\text{Net sales (or revenues)}} \quad OR \quad \frac{\text{Net income}}{\text{Net sales (or revenues)}} \times 100$$

BDCC's net profit ratios for the three years are calculated as follows:

		(000s)		
		2021	*2020*	*2019*
Net income	(a)	$ 116	$ 117	$ 112
Net sales	(b)	$ 3,200	$ 2,800	$ 2,340
Net profit ratio	(a/b)	0.0363:1 or 3.63%	0.418:1 or 4.18%	0.0479:1 or or 4.79%

For each $1 of sales in 2021, BDCC earned $0.04 of net income. The net profit ratio has been relatively stable but needs to be compared with industry or competitors' averages for a better perspective.

Recall that revenues are generated from a business's asset holdings. The financial strength and success of a corporation depends on the efficient use of these assets. An analysis of asset investment decisions can be made by calculating several ratios, and is discussed next.

Sales to Total Assets Ratio

Are BDCC's sales adequate in relation to its assets? The calculation of the sales to total assets ratio helps to answer this question by establishing the number of sales dollars earned for each dollar invested in assets. The ratio is calculated as:

$$\frac{\text{Net sales}}{\text{Average total assets}} \quad OR \quad \frac{\text{Net sales}}{\text{Average total assets}} \times 100$$

BDCC's ratios are calculated as follows:

		(000s)	
		2021	*2020*
Net sales	(a)	$ 3,200	$ 2,800
Average total assets	(b)	$ 2,299[5]	$ 1,764.50[6]
Sales to total assets ratio	(a/b)	1.3919:1 or 139.19%	1.5869:1 or 158.69%

The ratio has decreased from 2020 to 2021. Each $1 of investment in assets in 2020 generated sales of $1.59. In 2021, each $1 of investment in assets generated only $1.39 in sales. Over the same period, BDCC's investment in assets increased. The ratios indicate that the additional assets are not producing revenue as effectively as in the past. It may be too soon to tell whether the increase in assets in 2020 will eventually create greater sales but an investigation is required.

As noted earlier, comparison with industry averages would be useful. A low ratio in relation to other companies in the same industry may indicate an over-investment in or inefficient use of assets by BDCC. On the other hand, a higher ratio in comparison to other companies would be a positive indicator.

Return on Total Assets Ratio (ROA)

The return on total assets ratio or ROA is designed to measure the efficiency with which all of a company's assets are used to produce net income. The ratio is calculated as:

$$\frac{\text{Net income}}{\text{Average total assets}} \quad OR \quad \frac{\text{Net income}}{\text{Average total assets}} \times 100$$

Average Total Assets are used in the calculation because the amount of assets used likely varies during the year. The use of averages tends to smooth out such fluctuations.

BDCC's returns on total assets for 2020 and 2021 are calculated as follows:

		(000s)	
		2021	*2020*
Net income	(a)	$ 116	$ 117
Average total assets	(b)	$ 2,299[7]	$ 1,764.50[8]
Return on total assets ratio	(a/b)	0.0505:1 or 5.05%	0.0663:1 or 6.63%

The ratios indicate that Big Dog earned $0.05 of net income for every $1 of average total assets in 2021, a decrease from $0.07 per $1 in 2020. This downward trend indicates that assets are being used less efficiently. However, it may be that the increased investment in assets has not yet begun to pay off. On the other hand, although sales are increasing, it is possible that future

[5] ($2,112 + 2,486)/2 = $2,299
[6] ($1,417 + 2,112)/2 = $1,764.50
[7] ($2,112 + 2,486)/2 = $2,299
[8] ($1,417 + 2,112)/2 = $1,764.50

sales volume will not be sufficient to justify the increase in assets. More information about the company's plans and projections would be useful. Recall that ratio analysis promotes the asking of directed questions for the purpose of more informed decision making.

Return on Equity Ratio (ROE)

The return on equity ratio measures the return to stockholders — how much net income was earned for the owners of a business. It is calculated as:

$$\frac{\text{Net income}}{\text{Average equity}} \quad OR \quad \frac{\text{Net income}}{\text{Average equity}} \times 100$$

The 2020 and 2021 returns on equity ratios for BDCC are calculated as follows (note that the 2019 ratio is excluded because average equity cannot be calculated since 2018 ending balances are not provided):

		(000s)	
		2021	*2020*
Net income	(a)	$ 116	$ 117
Average equity	(b)	$ 1,213[9]	$ 1,121.50[10]
Return on equity ratio	(a/b)	0.0956:1 or 9.56%	0.1043:1 or 10.43%

In both years, stockholders earned, on average, $0.10 for every $1 invested in BDCC, or 10%. Industry averages could help with this analysis. For instance, if the industry as a whole earned only a 5% return on equity in 2021, it could be concluded that BDCC performed better than the industry average in terms of return on equity.

12.4 Leverage Ratios: Analyzing Financial Structure

The accounting equation expresses a relationship between assets owned by an entity and the claims against those assets. Although stockholders own a corporation, they alone do not finance the corporation; creditors also finance some of its activities. Together, creditor and stockholder capital are said to form the financial structure of a corporation. At December 31, 2021, the balance sheet of BDCC shows the following financial structure:

ASSETS	=	LIABILITIES	+	EQUITY
$2,486	=	$1,255	+	$1,231

[9] ($1,195 + 1,231)/2 = $1,213
[10] ($1,048 + 1,195)/2 = $1,121.50

Debt Ratio

The proportion of total assets financed by debt is called the debt ratio, and is calculated by dividing total liabilities by total assets.

$$\frac{\text{Total liabilities}}{\text{Total assets}} \quad OR \quad \frac{\text{Total liabilities}}{\text{Total assets}} \times 100$$

In BDCC's case, these amounts are:

		(000s)	
		2021	*2020*
Total liabilities	(a)	$ 1,255	$ 917
Total assets	(b)	$ 2,486	$ 2,112
Debt ratio	(a/b)	0.5048:1 or 50.48%	0.4342:1 or 43.42%

In other words, 50.48% of BDCC's assets are financed by debt. Therefore, because assets are financed by debt (aka liabilities) and equity, we intuitively know that 49.52% of BDCC's assets must be financed by equity which is the topic of the next section.

Equity Ratio

The proportion of total assets financed by equity is called the equity ratio, and is calculated by dividing total equity by total assets. In BDCC's case, these amounts are:

		(000s)	
		2021	*2020*
Total equity	(a)	$ 1,231	$ 1,195
Total assets	(b)	$ 2,486	$ 2,112
Equity ratio	(a/b)	0.4952:1 or 49.52%	0.5658:1 or 56.58%

In 2021, 49.52% of the assets were financed by equity while in 2020 56.58% of the assets were financed by equity. Generally, this is considered an unfavourable trend because as equity financing decreases, we know that debt financing must be increasing as evidenced by the debt ratio above. The greater the debt financing, the greater the risk because principal and interest payments are part of debt financing.

Notice that the sum of the debt and equity ratios will always equal 100% because of the accounting equation relationship: A = L + E where A = 100% and, in the case of BDCC, L = 43.42% in 2020 and E = 56.58% in 2020.

Debt to Equity Ratio

The proportion of creditor to stockholders' claims is called the debt to equity ratio, and is calculated by dividing total liabilities by equity. In BDCC's case, these amounts are:

		(000s)		
		2021	*2020*	*2019*
Total liabilities	(a)	$ 1,255	$ 917	$ 369
Equity	(b)	$ 1,231	$ 1,195	$ 1,048
Debt to equity ratio	(a/b)	1.02:1	0.77:1	0.35:1

In other words, BDCC has $1.02 of liabilities for each dollar of equity at the end of its current fiscal year, 2021. The proportion of debt financing has been increasing since 2019. In 2019 there was only $0.35 of debt for each $1 of equity. In 2021, creditors are financing a greater proportion of BDCC than are stockholders. This may be a cause for concern.

On the one hand, management's reliance on creditor financing is good. Issuing additional shares might require existing stockholders to give up some of their control of BDCC. Creditor financing may also be more financially attractive to existing stockholders if it enables BDCC to earn more with the borrowed funds than the interest paid on the debt.

On the other hand, management's increasing reliance on creditor financing increases risk because interest and principal have to be paid on this debt. Before deciding to extend credit, creditors often look at the total debt load of a company, and therefore the company's ability to meet interest and principal payments in the future. Total earnings of BDCC could be reduced if high interest payments have to be made, especially if interest rates rise. Creditors are interested in a secure investment and may evaluate stockholder commitment by measuring relative amounts of capital invested. From the creditors' perspective, the more capital invested by owners of the company, the greater the relative risk assumed by stockholders thus decreasing risk to creditors.

Although there is no single most appropriate debt to equity ratio, there are techniques for estimating the optimum balance. These are beyond the scope of introductory financial accounting. For now, it is sufficient to note that for BDCC the debt to equity ratio has increased considerably over the three-year period which is generally unfavorable because of the risk associated with debt financing.

Times Interest Earned Ratio

Creditors are interested in evaluating a company's financial performance, in order to project whether the firm will be able to pay interest on borrowed funds and repay the debt when it comes due. Creditors are therefore interested in measures such as the times interest earned ratio. This ratio indicates the amount by which income from operations could decline before a default on interest may result. The ratio is calculated by the following formula:

$$\frac{\text{Income from operations}}{\text{Interest expense}}$$

Note that income from operations is used, so that income before deduction of creditor payments in the form of income taxes and interest is incorporated into the calculation. BDCC's 2020 and 2021 ratios are calculated as follows:

		(000s)		
		2021	*2020*	*2019*
Income from operations	(a)	$ 300	$ 274	$ 204
Interest expense	(b)	$ 89	$ 61	-0-
Times interest earned ratio	(a/b)	3.37:1	4.49:1	n/a

The larger the ratio, the better creditors are protected. BDCC's interest coverage has decreased from 2020 to 2021 (3.37 times vs. 4.49 times), but income would still need to decrease significantly for the company to be unable to pay its obligations to creditors. The analysis does indicate, though, that over the past two years interest charges have increased compared to income from operations. Creditors need to assess company plans and projections, particularly those affecting income from operations, to determine whether their loans to the company are at risk. As discussed above, it may be that significant investments in assets have not yet generated related increases in sales and income from operations.

12.5 Market Ratios: Analysis of Financial Returns to Investors

Investors frequently consider whether to invest or divest in shares of a corporation. There are various ratios that help them make this decision. These are called market ratios, because the stock market plays an important role in allocating financial resources to corporations that offer their shares to the public.

Earnings-per-Share (EPS)

Measures of efficiency can focus on shareholder returns on a per-share basis. That is, the amount of net income earned in a year can be divided by the number of common shares outstanding to establish how much return has been earned for each outstanding share. This earnings-per-share (EPS) value is calculated as:

$$\frac{\text{Net income}}{\text{Average number of common stock outstanding}}$$

EPS is quoted in financial markets and is disclosed on the income statement of publicly-traded companies. If there are preferred shareholders, they have first rights to distribution of dividends.

Therefore, when calculating EPS, preferred shareholders' claims on net income are deducted from net income to calculate the amount available for common shareholders:

$$\frac{\text{Net income} - \text{preferred stock dividends}}{\text{Average number of common stock outstanding}}$$

BDCC has no preferred stock and thus no preferred stock dividends. Recall that 100,000 common shares are outstanding at the end of 2019, 2020, and 2021. For BDCC, EPS calculations for the three years are:

		(000s)		
		2021	*2020*	*2019*
Net income	(a)	$ 116	$ 117	$ 112
Number of common shares outstanding	(b)	100	100	100
Earnings per share	(a/b)	$ 1.16	$ 1.17	$ 1.12

Big Dog's EPS has remained relatively constant over the three-year period because both net income and number of outstanding shares have remained fairly stable. Increasing sales levels and the resulting positive effects on net income, combined with unchanged common shares issued, has generally accounted for the slight increase from 2019 to 2020.

Price-earnings (P/E) Ratio

A price at which a common share of stock trades on a stock market is perhaps the most important measure of a company's financial performance. The market price of one share reflects the opinions of investors about a company's future value compared to alternative investments.

The earnings performance of common stock is often expressed as a price-earnings (P/E) ratio. Price-earnings (P/E) ratio It is calculated as:

$$\frac{\text{Market price per share}}{\text{Earnings per share}}$$

This ratio is used as an indicator of the market's expectation of a company's future performance. Assume Company A has a current market value of $15 per share and an EPS of $1 per share. It will have a P/E ratio of 15. If Company B has a market value of $4 per share and an EPS of $0.50 per share, it will have a P/E ratio of 8. This means that the stock market expects Company A to earn relatively more in the future than Company B. For every $1 of net income generated by Company A, investors are willing to invest $15. In comparison, for every $1 of net income generated by Company B, investors are willing to pay only $8. Investors perceive shares of Company A as more valuable because the company is expected to earn greater returns in the future than is Company B.

Assume that BDCC's average market price per common share was $4 in 2019, $5 in 2020, and $6 in 2021. Its P/E ratio would be calculated as:

		(000s)		
		2021	*2020*	*2019*
Market price per common share	(a)	$ 6.00	$ 5.00	$ 4.00
Earnings per share (see above)	(b)	$ 1.16	$ 1.17	$ 1.12
Price-earnings ratio	(a/b)	5.17	4.27	3.57

BDCC's P/E ratio has increased each year. Although industry and competitor's P/E ratio comparisons would be important to compare, BDCC's increasingly positive ratio also indicates that investors are "bullish" on BDCC. That is, the stock market indicates that it expects BDCC to be increasingly profitable in the coming years. Despite a relatively constant EPS ratio from 2019 to 2021, investors are willing to pay more and more for the company's common shares. This must be because future financial prospects are anticipated to be better than in the past three years.

Dividend Yield

Some investors' primary objective is to maximize dividend revenue from stock investments, rather than realize an increasing market price of the shares. This type of investor is interested in information about the earnings available for distribution to shareholders and the actual amount of cash paid out as dividends rather than the market price of the shares.

The dividend yield ratio is a means to determine this. It is calculated as:

$$\frac{\text{Dividends per share}}{\text{Market price per share}}$$

This ratio indicates how large a return in the form of dividends can be expected from an investment in a company's shares. The relevant information for BDCC over the last three years is shown in the financial statements, as follows:

		(000s – except per share values)		
		2021	*2020*	*2019*
Dividends declared	(a)	$ 80	$ 70	$ 60
Outstanding common shares	(b)	100	100	100
Dividends per share	(a/b)	$ 0.80	$ 0.70	$ 0.60

The dividend yield ratio is therefore:

		2021	*2020*	*2019*
Dividends per share	(a)	$ 0.80	$ 0.70	$ 0.60
Market price per share (given)	(b)	$ 6.00	$ 5.00	$ 4.00
Dividend yield ratio	(a/b)	0.13:1	0.14:1	0.15:1

The company's dividend yield ratio decreased from 2019 to 2021. In 2019, investors received $0.15 for every $1 invested in stock. By 2021, this had decreased to $0.13 for every $1 invested. Though the decline is slight, the trend may concern investors who seek steady cash returns. Also notice that total dividends declared increased from 2019 to 2021 even though net income did not substantially increase, and despite the company's poor liquidity position noted in an earlier analysis. Investors might ask why such high levels of dividends are being paid given this situation.

12.6 Overall Analysis of Big Dog's Financial Statements

Results of ratio analysis are always more useful if accompanied by other information such as overall industry performance, the general economy, financial ratios of prior years, and qualitative factors such as analysts' opinions and management's plans.

However, there are some interpretations that can be made about BDCC from the foregoing ratio analyses even without other information. Although BDCC is experiencing growth in sales, net income has not substantially increased over the three-year period 2019 to 2021. The gross profit ratio is relatively constant. Their increasing operating expenses appear to be an issue. The sales to total assets and return on assets ratios have decreased due to a recent investment in property, plant and equipment assets and growth in current assets. Income from operations has not increased with the growth in the asset base. However, it may be premature to make conclusions regarding the timing of outlays for property, plant, and equipment.

The most immediate problem facing BDCC is the shortage of working capital and its poor liquidity. BDCC expanded its property, plant, and equipment in 2020 and experienced increases in revenue that did not correspond to increases in accounts receivable and inventories. The company should therefore review its credit policies and monitor its investment in inventory to ensure that these expand in proportion to sales.

The plant expansion produced an increase in current liabilities (mainly borrowings). The company's ability to meet its debt obligations appears to be deteriorating. The ability of income from operations to cover interest expense has declined. The company's liquidity position is deteriorating, even though it continues to produce net income each year. BDCC should investigate alternatives to short-term borrowings, such as converting some of this to long-term debt and/or issuing additional common stock to retire some of its short-term debt obligations.

Despite these challenges, the stock market indicates that it expects BDCC to be increasingly profitable in the future. Perhaps it views the negative indicators noted above as only temporary or easily rectified by management.

The next section provides further insights into BDCC's operations through trend analysis of the company's financial statements.

12.7 Horizontal and Vertical Trend Analysis

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Trend analysis is the evaluation of financial performance based on a restatement of financial statement dollar amounts to percentages. Horizontal analysis and vertical analysis are two types of trend analyses.

Horizontal analysis involves the calculation of percentage changes from one or more years over the base year dollar amount. The base year is typically the oldest year and is always 100%. The following two examples of horizontal analysis use an abbreviated income statement and balance sheet information where 2019 represents the base year. ***For demonstration purposes, the percentages have been rounded to the nearest whole number.***

	2021		*2020*		*2019*	
Sales[1]	$100	200%	$70	140%	$50	100%
Gross profit	$ 48	160%	$45	150%	$30	100%
Net income	$ 14	140%	$12	120%	$10	100%

1. Sales in 2020 were 140% of 2019 sales calculated as ($70/$50)x100. Sales in 2021 were 200% of 2019 sales calculated as ($100/$50)x100.

	2021		*2020*		*2019*	
Current assets[2]	$ 18	90%	$ 22	110%	$ 20	100%
Long-term investments	$ -0-	N/A	$ 48	60%	$ 80	100%
Total assets	$252	105%	$228	95%	$240	100%

2. Current assets in 2020 were 110% of 2019 current assets calculated as ($22/$20)x100. Current assets in 2021 were 90% of 2019 current assets calculated as ($18/$20)x100.

An alternate method of performing horizontal analysis calculations is to simply calculate the percentage change between two years as shown in the following example.

	2021	*% Change*	*2020*
Sales[3]	$100	43%	$70
Gross profit	$ 48	7%	$45
Net income	$ 14	17%	$12

3. Sales in 2021 increased 43% over 2020 calculated as ($100–$70)=$30; ($30/$70)x100=43%.

Vertical analysis requires numbers in a financial statement to be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For balance sheet analysis, total assets, or total liabilities and equity, are used as the base amounts. When financial statements are converted to percentages, they are called common-size financial statements. The following two examples of vertical analysis use information from an abbreviated income statement and balance sheet.

	2021		*2020*		*2019*[1]	
Sales	$100	100%	$70	100%	$50	100%
Gross profit	$ 48	48%	$45	64%	$30	60%
Net income	$ 14	14%	$12	17%	$10	20%

1. 2019 Gross profit was 60% of Sales calculated as ($30/$50)x100; 2019 Net income was 20% of Sales calculated as ($10/$50)x100.

	2021		*2020*		*2019*[2]	
Current assets	$ 18	7%	$ 22	10%	$ 20	8%
Long-term investments	$ -0-	N/A	$ 48	21%	$ 80	33%
Total assets	$252	100%	$228	100%	$240	100%

2. 2019 Current assets were 8% of Total assets calculated as ($20/$240)x100. 2019 Long-term investments were 33% of Total assets calculated as ($80/$240)x100.

Notice that the same information was used for both the horizontal and vertical analyses examples but that the results are different because of how the dollar amounts are being compared.

Horizontal and vertical analyses of the balance sheets of Big Dog Carworks Corp. are as follows:

Horizontal Analysis: Balance Sheet

	2021		2020		Change: Difference		Change: Per Cent	
Current assets	$1,433	(a)	$ 984	(b)	+$449	(a-b)	+45.6	[(a-b)/b]
PPE assets	1,053		1,128		-75		-6.6	
Total	$2,486		$2,112	(c)	+$374		+17.7	
Current liabilities	$1,255		$917		+$338		+36.9	
Equity	1,231		1,195		+36		+3.0	
Total	$2,486		$2,112		+$374		+17.7	

Vertical Analysis (Common-size): Balance

	% 2021	% 2020	
Current assets	57.6	46.6	(b/c)
PPE assets	42.4	53.4	
Total	100.0	100.0	
Current liabilities	50.5	43.4	
Equity	49.5	56.6	
Total	100.0	100.0	

Notice the two columns introduced here. Analysis of the changes indicates a large increase in current assets (45.6%) together with a large increase in current liabilities (36.9%). There was a small decline in PPE assets (6.6%) and a small increase in equity (3%). The percentage change must always be interpreted together with the absolute dollar amount of change to avoid incorrect conclusions; percentage can sometimes be misleading.

In the common-size balance sheet, the composition of the assets has changed with an overall shift to current assets in 2019 (57.6% vs. 46.6%). Also, an increase in the percentage of current liabilities has occurred, resulting in an overall shift from equity financing to debt financing from 2020 to 2021.

The same analysis of BDCC's income statement is as follows:

Horizontal Analysis: Income Statements

	2021		2020		Change: Amount		Change: Per Cent	
Sales	$3,200	(a)	$2,800	(b)	+$400	(a-b)	+14	[(a-b)/b]
Cost of Goods Sold	2,500		2,150		+$350		+16	
Gross Profit	700		650	(c)	+$ 50		+8	
Expenses	584		533		+$ 51		+10	
Net Income	$ 116		$ 117		-$ 1		-1	

Vertical Analysis (Common-size): Income Statements

	% 2021	% 2020	
Sales	100	100	(b/c)
Cost of Goods Sold	78	77	
Gross Profit	22	23	
Expenses	18	19	
Net Income	4	4	

Although sales and gross profit increased in dollar amounts, net income decreased slightly from 2020 to 2021 (1%). This net decrease resulted because cost of goods sold increased at a faster rate than sales (16% vs. 14%).

Notice the relative change in the components. For example, cost of goods sold increased in 2021 relative to sales (78% vs. 77%), while expenses in 2021 relative to sales decreased (18% vs. 19%). The overall changes were almost offsetting, as net income remained fairly stable.

The percentages calculated become more informative when compared to earlier years. Further analysis is usually undertaken in order to establish answers to the following questions:

What caused this change? Is this change favourable or unfavourable?	How do the percentages of this company compare with other companies in the same industry? In other industries?

These and similar questions call attention to areas that require further study. One item of note becomes more apparent as a result of the trend analysis above. Initially, it was stated that operating expenses were increasing between 2019 and 2021. Based on trend analysis, however, these expenses are actually declining as a percentage of sales. As a result, their fluctuations may not be as significant as first inferred. Conversely, the increases each year in cost of goods sold may be worrisome. Initial gross profit ratio calculations seemed to indicate little variation, and thus little effect on income from operations. The increase in cost of goods sold (78% vs. 77% of sales) may warrant further investigation.

The ratios covered in this chapter are summarized in Figure 12.2.

Analysis of liquidity:	**Calculation of ratio:**	**Indicates:**
1. Working Capital	Current assets – Current liabilities	The excess of current assets available after covering current liabilities (expressed as a dollar amount).
2. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	The amount of current assets available to pay current liabilities.
3. Acid-test ratio	$\frac{\text{Quick current assets}}{\text{Current liabilities}}$	Whether the company is able to meet the immediate demands of creditors. (This is a more severe measure of liquidity.)
4. Accounts receivable collection period	$\frac{\text{Average net accounts receivable}}{\text{Net credit sales (or revenues)}} \times 365$	The average time needed to collect receivables.
5. Number of days of sales in inventory	$\frac{\text{Ending inventory}}{\text{Cost of goods sold}} \times 365$	How many days of sales can be made with existing inventory
6. Revenue operating cycle	Average number of days to collect receivables + Average number of days of sales inventory	Length of time between the purchase of inventory and the subsequent collection of cash.

Analysis of profitability:	**Calculation of ratio:**	**Indicates:**
1. Gross profit ratio	$\frac{\text{Gross profit}}{\text{Net sales}}$	The percentage of sales revenue that is left to pay operating expenses, interest, and income taxes after deducting cost of goods sold.
2. Operating profit ratio	$\frac{\text{Income from operations}}{\text{Net sales}}$	The percentage of sales revenue that is left to pay interest and income taxes expenses after deducting cost of goods sold and operating expenses.
3. Net profit ratio	$\frac{\text{Net income}}{\text{Net sales (or revenues)}} \times 100$	The percentage of sales left after payment of all expenses.
4. Sales to total assets ratio	$\frac{\text{Net sales}}{\text{Average total assets}}$	The adequacy of sales in relation to the investment in assets.
5. Return on total assets	$\frac{\text{Net income}}{\text{Average total assets}}$	How efficiently a company uses its assets as resources to earn net income.
6. Return on equity	$\frac{\text{Net income}}{\text{Average equity}}$	The adequacy of net income as a return on equity.
Leverage ratios:	**Calculation of ratio:**	**Indicates:**
1. Debt ratio	$\frac{\text{Total liabilities}}{\text{Total assets}}$	The proportion of total assets financed by debt.
2. Equity ratio	$\frac{\text{Total equity}}{\text{Total assets}}$	The proportion of total assets financed by equity.
3. Debt to equity ratio	$\frac{\text{Total liabilities}}{\text{Equity}}$	The proportion of creditor financing to stockholder financing.
4. Times interest earned ratio	$\frac{\text{Income from operations}}{\text{Interest expense}}$	The ability of a company to pay interest to long-term creditors.
Market ratios:	**Calculation of ratio:**	**Indicates:**
1. Earnings per share	$\frac{\text{Net income} - \text{Preferred stock dividends}}{\text{Average number of common stock outstanding}}$	The amount of net income that has been earned on each common share after deducting dividends to preferred shareholders.
2. Price-earnings ratio	$\frac{\text{Market price per share}}{\text{Earnings per share}}$	Market expectations of future profitability.
3. Dividend yield ratio	$\frac{\text{Dividends per share}}{\text{Market price per share}}$	The short-term cash return that can be expected from an investment in a company's stock.

Figure 12.2: Summary of Financial Statement Analysis Ratios

Schematically, the various analytical tools can be illustrated as shown in Figure 12.3.

Liquidity		Profitability		Financial Structure	Market Measures	Trend Analysis
Short-term cash needs	*Current asset performance*	*Returns on sales*	*Returns on balance sheet items*			
Current ratio	A/R collection period	Gross profit ratio	Sales to total assets ratio	Debt to equity ratio	Earnings per share	Horizontal
Acid-test ratio	Number of days of sales in inventory	Operating income ratio	Return on total assets	Times interest earned ratio	Price-earnings ratio	Vertical
	Revenue operating cycle	Net profit ratio	Return on equity		Dividend yield ratio	

Figure 12.3: Categorization of Financial Statement Analytical Tools

Summary of Chapter 12 Learning Objectives

LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

Ratio analysis measures the relative magnitude of two selected numerical values taken from a company's financial statements and compares the result to prior years and other similar companies. Financial ratios are an effective tool for measuring: (a) liquidity (current ratio, acid-test ratio, accounts receivable collection period, and number of days of sales in inventory); (b) profitability (gross profit ratio, operating profit ratio, net profit ratio, sales to total assets ratio, return on total assets, and return on equity); (c) leverage (debt ratio, equity ratio, debt to equity ratio, and times interest earned ratio); and (d) market ratios (earnings per share, price-earnings ratio, and dividend yield ratio). Ratios help identify the areas that require further investigation.

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Horizontal analysis involves the calculation of percentage changes from one or more years over the base year dollar amount. The base year is typically the oldest year and is always 100%. Vertical analysis requires that numbers in a financial statement be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For balance sheet

analysis, total assets, or total liabilities and equity, are used as the base amounts. When financial statements are converted to percentages, they are called common-size financial statements.

Discussion Questions

1. Ratios need to be evaluated against some base. What types of information can be used to compare ratios against?
2. Explain what *liquidity* means. When a corporation is illiquid, what are the implications for stockholders? ...for creditors?
3. How is it possible that a corporation producing net income each year can be illiquid?
4. What ratios can be calculated to evaluate liquidity? Explain what each one indicates.
5. **a.** Define working capital. Distinguish between the current ratio and the acid-test ratio.
   b. "The current ratio is, by itself, inadequate to measure liquidity." Discuss this statement.
6. Two firms have the same amount of working capital. Explain how it is possible that one is able to pay off short-term creditors, while the other firm cannot.
7. Management decisions relating to accounts receivable and inventory can affect liquidity. Explain.
8. What is one means to evaluate the management of accounts receivable? ...inventory?
9. Discuss the advantages and disadvantages of decreasing number of days of sales in inventory.
10. What is the revenue operating cycle? How is its calculation useful in evaluating liquidity?
11. **a.** Identify and explain six ratios (and any associated calculations) that evaluate a corporation's profitability.
    b. What does each ratio indicate?
12. Why are analysts and investors concerned with the financial structure of a corporation?
13. Is the reliance on creditor financing good or bad? Explain its impact on net income.
14. Discuss the advantages and disadvantages of short-term debt financing compared to long-term debt financing.
15. Identify and explain ratios that evaluate financial returns for investors.
16. Distinguish between horizontal and vertical analyses of financial statements.

Exercises

EXERCISE 12–1 (LO1)

The following are condensed comparative financial statements of Stockwell Inc. for the three years ended December 31, 2015.

Balance Sheet
At December 31

Assets	*2015*	*2014*	*2013*
Current			
Cash	$ 21	$ 8	$ 17
Accounts Receivable	38	30	20
Merchandise Inventory	60	40	30
Prepaid Expenses	1	2	3
Total Current Assets	120	80	70
Property, plant and equipment assets, at carrying amount	260	150	76
Total Assets	$380	$230	$146
Liabilities			
Current			
Accounts Payable	$100	$ 80	$ 50
Non-current			
Bonds Payable, 4%	50	50	-0-
	150	130	50
Equity			
Common Stock	200	80	80
Retained Earnings	30	20	16
	230	100	96
Total Liabilities and Equity	$380	$230	$146

Income Statement
For the Years Ended December 31

	2015	*2014*	*2013*
Sales	$210	$120	$100
Cost of Goods Sold	158	80	55
Gross Profit	52	40	45
Operating Expenses	35	32	33
Income from Operations	17	8	12
Interest Expense	2	2	-0-
Income before Income Taxes	15	6	12
Income Taxes	5	2	4
Net Income	$ 10	$ 4	$ 8

Additional information:

i. The company's accounts receivable at December 31, 2012 totaled $20.

ii. The company's merchandise inventory at December 31, 2012 totaled $20.

iii. The company's property, plant and equipment assets at December 31, 2012 totaled $70.

iv. Credit terms are net 60 days from date of invoice.

v. Number of common stock outstanding: 2013–80, 2014–80, 2015–400.

Required:

a. Calculate liquidity ratios and discuss.

b. What is your evaluation of

i. The financial structure of the corporation?

ii. The proportion of stockholder and creditor claims to its assets?

iii. The structure of its short-term and long-term credit financing?

c. What are some other observations you can make about the financial performance of Stockwell?

EXERCISE 12–2 (LO1)

The following information relates to three companies in the same industry:

Company	*Latest market price*	*Earnings per share*	*Dividends per share*
A	$ 35	$ 11	$ -0-
B	40	5	4
C	90	10	6

Required: Explain and calculate the price-earnings and dividend yield ratios. On the basis of only the foregoing information, which company represents the most attractive investment opportunity to you? Explain.

EXERCISE 12–3 (LO1)

Consider the following information:

Salinas Limited
Balance Sheet
At December 31, 2012

Assets		*Liabilities and Equity*	
Cash	$ 72	Accounts Payable	$ 60
Accounts Receivable	88	Bank Loan, non-current	150
Merchandise Inventory	100		
Prepaid Expenses	40	Preferred Stock	60
Property, Plant, and Equipment,		Common Stock	250
at carrying amount	320	Retained Earnings	100
Total Assets	$620	Total Liabilities and Equity	$620

Salinas Limited
Income Statement
For the Year Ended December 31, 2012

Sales		$240
Cost of Goods Sold		144
Gross Profit		96
Operating Expenses		
Salaries	$ 44	
Depreciation	6	50
Income from Operations		46
Less: Interest		8
Income before Income Taxes		38
Less: Income Taxes		18
Net Income		$ 20

Assume that 80% of sales are on credit, that the average of all balance sheet items is equal to the year-end figure, that all preferred stock dividends have been paid and the total annual preferred dividend entitlement is $6, and that the number of common stock outstanding is 10.

Required: Calculate the following ratios and percentages

a. Current ratio

b. Return on total assets

c. Sales to total assets

d. Acid-test ratio

e. Times interest earned

f. Earnings per common stock

g. Accounts receivable collection period

h. Return on equity

EXERCISE 12–4 (LO2)

The following data are taken from the records of Cronkite Corp.:

	2012	*2011*
Sales	$2,520	$1,440
Cost of Goods Sold	1,890	960
Gross Profit	630	480
Other Expenses	510	430
Net Income	$ 120	$ 50

Required: Perform horizontal analysis on the above date and interpret your results.

EXERCISE 12–5 (LO2)

Assume you are an accountant analyzing Escalade Corporation. Escalade has expanded its production facilities by 200% since 2010. Its income statements for the last three years are as follows:

Escalade Corporation
Comparative Income Statements
For the Years Ending December 31

	2012	*2011*	*2010*
Sales	$250	$150	$120
Cost of Goods Sold	190	100	60
Gross Profit	60	50	60
Other Expenses	35	34	35
Net Income	$ 25	$ 16	$ 25

Required:

a. Prepare a vertical analysis of Escalade Corporation's income statement for the three years.

b. What inferences can be drawn from this analysis?

EXERCISE 12–6 (LO1)

The following information is taken from the partial balance sheet of Quail Productions Corp.

	2018	2017
Current assets		
Cash	$ 10	$ 15
Marketable investments	35	35
Accounts receivable	200	150
Inventory	600	400
Current liabilities		
Accounts payable	500	400
Notes payable	245	180

Required:

a. Describe the purpose of and calculate the current ratio for each year.

b. Describe the purpose of and calculate the acid-test ratio for both years.

c. What observations can you make from a comparison of the two types of ratios?

EXERCISE 12–7 (LO1)

The following information is taken from the records of Black Spruce Co. Ltd.:

	2019	*2018*	*2017*
Sales	$252	$141	$120
Gross profit	63	48	54
Net income	12	5	15

Required: Analyze the gross profit and net profit ratios using the above data. Comment on any trends that you observe.

EXERCISE 12–8 (LO1)

In the left-hand column, a series of independent transactions is listed. In the right-hand column, a series of ratios is listed.

Transaction	*Ratio*	*Effect on ratio*
Declared a cash dividend	Current ratio	
Wrote-off an uncollectible account receivable	Accounts receivable collection period	
Purchased inventory on account	Acid-test ratio	
Issued 10-year bonds to acquire property, plant, and equipment	Return on total assets	
Issued additional shares for cash	Debt to stockholders' equity ratio	
Declared a stock dividend on common shares	Earnings per share	
Purchased supplies on account	Current ratio	
Paid a current creditor in full	Acid-test ratio	
Paid an account payable	Number of days of sales in inventory	

Required: For each transaction indicate whether the ratio will increase (I), decrease (D), or remain unchanged (No Change). Assume all ratios are greater than 1:1 before each transaction where applicable.

EXERCISE 12–9 (LO1)

Consider the following financial statement data:

Balance Sheet

Cash	$ 20
Accounts receivable	20
Merchandise inventory	40
Plant, at carrying amount	140
	$220

Accounts payable	$ 20
Non-current borrowings	60
Common stock (8 shares issued)	80
Retained earnings	60
	$220

Income Statement

Sales	$100
Cost of goods sold	50
Gross profit	50
Operating expenses	14
Income from operations	36
Less: Interest	6
Income before income taxes	30
Less: Income taxes	10
Net income	$ 20

Assume that the average of all balance sheet items is equal to the year-end figure and that all sales are on credit.

Required:

a. Calculate the following ratios:

i. Return on total assets
ii. Return on stockholders' equity
iii. Times interest earned ratio
iv. Earnings per share
v. Number of days of sales in inventory
vi. Accounts receivable collection period
vii. Sales to total assets ratio
viii. Current ratio
ix. Acid-test ratio

x. Debt to stockholders' equity ratio.

b. Which of these ratios are measures of liquidity?

EXERCISE 12–10 (LO1)

Assume a company has the following financial information:

Cash and short-term investments	$ 6
Prepaid expenses	-0-
Capital assets	90
Total liabilities	40
Stockholders' equity	140
Sales	420
Credit sales	300
Current ratio	2.5:1
Acid-test ratio	1:1
Gross profit ratio	30%

Assume current assets consist of cash, short-term investments, accounts receivable, inventory, and prepaid expenses, and that ending balances are the same as average balances for the year.

Required: Calculate

a. Current liabilities

b. Inventory

c. Accounts receivable collection period

d. Number of days of sales in inventory

e. Revenue operating cycle

EXERCISE 12–11 (LO1)

A company began the month of May with $200,000 of current assets, a 2.5 to 1 current ratio, and a 1.25 to 1 acid-test ratio. During the month, it completed the following transactions:

	Transaction	*Effect on current ratio*
i.	Bought $20,000 of merchandise on account (the company uses a perpetual inventory system)	
ii.	Sold for $10,000 cash, merchandise that cost $5,000	
iii.	Collected a $2,500 account receivable	
iv.	Paid a $10,000 account payable	
v.	Wrote off a $1,500 bad debt against the allowance for doubtful accounts	
vi.	Declared a $1 per-share cash dividend on the 10,000 outstanding common stock	
vii.	Paid the dividend declared above	
viii.	Borrowed $10,000 from a bank by assuming a 60-day, 10-per cent loan	
ix.	Borrowed $25,000 from a bank by placing a 10-year mortgage on the plant	
x.	Used the $25,000 proceeds of the mortgage to buy additional machinery	

Required:

a. Indicate the effect on current ratio assuming each transaction is independent of the others: Increase, Decrease, or No Change.

b. At the end of May, and taking all the above transactions into account, what was the current ratio and acid-test ratio?

Use the following format. The opening current ratio calculation and effects of the first transaction are provided:

Current ratio:

In thousands of dollars		*Bal May 1*	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*vii*	*ix*	*x*	*Bal May 31*
Current assets	x	200	+20										
Current liabilities	y	80	+20										
Current ratio	x/y	2.5											

Acid-test ratio:

In thousands of dollars		*Bal May 1*	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	*Bal May 31*
Quick assets	x												
Current liabilities	y												
Acid-test ratio	x/y												

Problems

PROBLEM 12–1 (LO1)

Belafonte Corporation's books were destroyed in a fire on April 20, 2011. The comptroller of the corporation can only remember a few odd pieces of information:

a. The current ratio was 3.75 to 1.

b. Sales for the year were $73,000.

c. Inventories were $20,000 and were equal to property, plant and equipment at carrying amount, and also equal to bonds payable.

d. The accounts receivable collection period was 40 days.

e. The bonds payable amount was 10 times cash.

f. Total current assets were twice as much as common shares.

Required: Using this information, prepare Belafonte Corporation's balance sheet at April 30, 2011. Assume balances at April 30, 2011 are the same as average balances for the year then ended, and besides retained earnings, there are no accounts other than those mentioned above.

PROBLEM 12–2 (LO1)

The incomplete balance sheet of Hook Limited is given below.

Hook Limited
Balance Sheet
At December 31, 2011

Assets		
Current		
Cash	$30,000	
Accounts Receivable	?	
Merchandise Inventory	?	
		$?
Property, plant and equipment assets	?	
Less: Accumulated Depreciation	100,000	?
Total Assets		$?
Liabilities		
Current		
Accounts Payable	$50,000	
Accrued Liabilities	?	
		$120,000
Non-current		
8% Bonds Payable		?
Equity		
Common Stock		?
Retained Earnings		?
Total Liabilities and Equity		$?

Additional information for 2011 year-end:

a. The amount of working capital is $150,000.

b. The issued value of the stock is $10 per share.

c. Market price per share is $15.

d. Price-earnings ratio is 3.

e. Income before payment of interest and income tax is $80,000.

f. The ratio of stockholder's equity to total assets is 0.60 to 1.

g. Income tax expense equals $30,000.

h. The acid-test ratio is 1.5 to 1.

i. The times interest earned ratio is 8 to1.

Required: Complete Hook Limited's balance sheet.

Chapter 13

Proprietorships and Partnerships

Chapter 1 introduced the three forms of business organizations — corporations, proprietorships, and partnerships. The corporation has been the focus in Chapters 1 through 12. This chapter will expand on some of the basic accounting concepts as they apply to proprietorships and partnerships.

Chapter 13 Learning Objectives

LO1 – Describe the characteristics of a proprietorship, including how its financial statements are different from those of a corporation.

LO2 – Describe the characteristics of a partnership including how its financial statements are different from those of a corporation.

Concept Self-Check

Use the following questions as a self-check while working through Chapter 13.

1. What are some of the characteristics of a proprietorship, that are different from those of a corporation?
2. What is the journal entry to record the investment of cash by the owner into a proprietorship?
3. How are the closing entries for a proprietorship different than those recorded for a corporation?
4. Why is there only one equity account on a sole proprietorship's balance sheet and multiple accounts in the equity section of a corporate balance sheet?
5. What is mutual agency as it relates to a partnership?
6. How is a partnership different than a corporation?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

13.1 Proprietorships

LO1 – Describe the characteristics of a proprietorship including, how its financial statements are different from those of a corporation.

As discussed in Chapter 1, a proprietorship is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. As a result, for example, from an income tax perspective, the profits of a proprietorship are taxed as part of the owner's personal income tax return. Unlimited liability is another characteristic of a proprietorship meaning that if the business could not pay its debts, the owner would be responsible even if the business's debts were greater than the owner's personal resources.

Investing in a Proprietorship

When the owners of a corporation, known as stockholders, invest in the corporation, shares are issued. The shares represent how much of the corporation is owned by each stockholder. In a proprietorship, there is only one owner. When that owner invests in their business, the journal entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		XXX	
	Owner's Capital OE+			XXX
	To record the owner's investment into their business.			

Distribution of Income in a Proprietorship — Withdrawals

A corporation distributes a portion of income earned to its owners, the stockholders, in the form of dividends. In a proprietorship, the owner distributes a portion of the business's income to her/himself in the form of **withdrawals**. Typically, the owner will withdraw cash but they can withdraw other assets as well. The journal entry to record a cash withdrawal is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Withdrawals XOE+ (OE)		XXX	
	Cash (A)			XXX
	To record the owner's withdrawal of cash.			

Closing Entries for a Proprietorship

The closing entries for a corporation involved four steps:

Entry 1: Close the revenue accounts to the Income Summary account

This would be identical for a proprietorship.

Entry 2: Close the expense accounts to the Income Summary account

This would also be identical for a proprietorship.

Entry 3: Close the income summary to retained earnings

Instead of closing the balance in the income summary to retained earnings, a proprietorship would close the income summary to the Owner's Capital account.

Entry 4: Close dividends to retained earnings

The equivalent to dividends for a proprietorship is withdrawals. There is no Retained Earnings account in a proprietorship. A corporation separates investments made by the owners (stockholders) into a Common Stock account while dividends and accumulated net incomes/losses are recorded in retained earnings. In a proprietorship, all owner investments, withdrawals, and net incomes/losses are maintained in the Owner's Capital account. Therefore, the fourth closing entry for a proprietorship closes withdrawals to this Owner's Capital account.

Figure 13.1 compares the closing entries for a proprietorship and a corporation.

Proprietorship			Corporation		
Entry 1: Close the revenue accounts to the Income Summary account.					
Revenues	XXX		Revenues	XXX	
Income Summary		XXX	Income Summary		XXX
Entry 2: Close the expense accounts to the Income Summary account.					
Income Summary	XXX		Income Summary	XXX	
Expenses		XXX	Expenses		XXX
Entry 3: Close the Income Summary account					
…to the Owner's Capital account.			**…to the Retained Earnings account.**		
Income Summary	XXX		Income Summary	XXX	
Owner's Capital		XXX	Retained Earnings		XXX
When there is a net income.			*When there is a net income.*		
OR			***OR***		
Owner's Capital	XXX		Retained Earnings	XXX	
Income Summary		XXX	Income Summary		XXX
When there is a net loss.			*When there is a net loss.*		
Entry 4: Close					
…withdrawals to the Owner's Capital account.			**…dividends to the Retained Earnings account.**		
Owner's Capital	XXX		Retained Earnings	XXX	
Withdrawals		XXX	Dividends		XXX

Figure 13.1: Comparing Closing Entries for a Proprietorship and Corporation

Financial Statements

The financial statements for a proprietorship are much the same as for a corporation with some minor differences. As shown in Figure 13.2, the income statements only differ in that the proprietorship does not include income tax expense since its profits are taxed as part of the owner's personal income tax return.

Proprietorship

ABC Consulting
Income Statement
Year ended December 31, 2015

Revenues		$400
Operating expenses		180
Income from operations		$220
Other revenues and expenses		
Interest revenue	$20	
Loss on sale of equipment	(5)	15
Net income		$235

Corporation

ABC Inc.
Income Statement
Year ended December 31, 2015

Revenues		$400
Operating expenses		180
Income from operations		$220
Interest revenue	$20	
Loss on sale of equipment	(5)	
		15
Income before tax		$235
Income tax expense		50
Net income		$185

Figure 13.2: Comparing the Income Statement for a Proprietorship and for a Corporation

The statement of equity for each of a proprietorship and corporation includes the same elements: beginning equity, additional investments by the owner(s), net income/loss, distribution of income to the owner(s), and the ending balance in equity. However, the statements are structured differently because in a proprietorship, all the equity items are combined in one account, the Owner's Capital account. In a corporation, equity is divided between common stock and retained earnings. These differences are illustrated in Figure 13.3.

Proprietorship

ABC Consulting
Statement of Owner Equity
Year ended December 31, 2015

Owner's capital, January 1, 2015		$12,000
Add: Owner investment	$1,000	
Net income	235	1,235
Total		$13,235
Less: Withdrawals		150
Owner's capital, December 31, 2015		$13,085

Corporation

ABC Inc.
Statement of Shareholders' Equity
Year ended December 31, 2015

	Share Capital	Retained Earnings	Total Equity
Balance, January 1, 2015	$9,000	$3,000	$12,000
Issuance of common stock	1,000		1,000
Net income/loss		185	185
Dividends		(150)	(150)
Balance, December 31, 2015	$10,000	$3,035	$13,035

Figure 13.3: Comparing the Statement of Equity for a Proprietorship and for a Corporation

Although both statements are based on identical dollar amounts, notice that the total equity at December 31, 2015 for the proprietorship is $13,085 which is $50 more than the $13,035 shown for the corporation. The $50 difference is the income tax expense deducted on the corporation's income tax.

The balance sheet for each of a proprietorship and corporation includes the same elements: as-

sets, liabilities, and equity. However, the equity section of the statement differs because in a proprietorship, all the equity items are combined in one account, the owner's capital account. In a corporation, equity is divided between common stock and retained earnings. These differences are illustrated in Figure 13.4.

Proprietorship

ABC Consulting
Balance Sheet
December 31, 2015

Assets	
Cash	$ 4,000
Other assets	86,000
Total assets	$90,000
Liabilities	$76,915
Equity	
Owner's capital	13,085
Total liabilities and equity	$90,000

Corporation

ABC Inc.
Balance Sheet
December 31, 2015

Assets		
Cash		$ 3,950
Other assets		86,000
Total assets		$89,950
Liabilities		$76,915
Equity		
Common stock	$10,000	
Retained earnings	3,035	
Total equity		13,035
Total liabilities and equity		$89,950

Figure 13.4: Comparing the Balance Sheet for a Proprietorship and for a Corporation

The $50 difference between the proprietorship's and corporation's balances in each of cash and total equity is because the corporation paid $50 income tax which the proprietorship is not subject to. The equity sections of the two balance sheets are different only in terms of the types of accounts used.

13.2 Partnerships

LO2 – Describe the characteristics of a partnership, including how its financial statements are different from those of a corporation.

As discussed in Chapter 1, a partnership is a business owned by more than one person. Partners should have a partnership contract that details their agreement on things such as each partner's rights and duties, the sharing of incomes/losses and withdrawals, as well as dispute and termination procedures. A partnership is not a separate legal entity, which means that the business and the partners are considered to be the same entity. As a result, for example, from an income tax perspective, each partner's share of the profits is taxed as part of that partner's personal income tax return. Unlimited liability is another characteristic of a partnership, meaning that if the business could not pay its debts, the partners would be responsible even if the business's debts were greater than their personal resources.

The exception to this would be the formation of a **limited liability partnership (LLP)** that that is permitted for professionals such as lawyers and accountants. In an LLP, the **general partner(s)** is/are responsible for the management of the partnership and assume(s) unlimited liability, while the **limited partners** have limited liability but also limited roles in the partnership as specified in the partnership agreement. Partnerships also have a limited life and are subject to *mutual agency*. **Mutual agency** means that a partner can commit the partnership to any contract because each partner is an authorized agent of the partnership. For example, one partner could sign a contract to purchase merchandise that falls within the scope of the business's operations.

Investing in a Partnership

Recall that when the owners of a corporation, known as stockholders, invest in the corporation, shares are issued. Recall as well that in a proprietorship there is only one owner whose investments into the business are credited to their capital account. A partnership is similar to a proprietorship in that each partner's investment into the business is credited to an owner's capital account. The difference is that in a partnership there will be more than one owner's capital account. For example, assume Doug Wharton, Lisa Bartwiz, and Tahanni Butti started a partnership called WBB Consulting and invested cash of $20,000, $15,000, and $40,000, respectively. The journal entry to record the investment is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		75,000	
	Wharton, Capital OE+			20,000
	Bartwiz, Capital OE+			15,000
	Butti, Capital OE+			40,000
	To record each partner's investment into the business.			

Distribution of Income in a Partnership — Withdrawals

Recall that a corporation distributes a portion of income earned to its owners, the stockholders, in the form of dividends. In a proprietorship and partnership, the owner/partners distribute a portion of the income to themselves in the form of withdrawals. Assume Wharton, Bartwiz, and Butti each withdraw $5,000. The journal entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Wharton, Withdrawals XOE+ (OE)		5,000	
	Bartwiz, Withdrawals XOE+ (OE)		5,000	
	Butti, Withdrawals XOE+ (OE)		5,000	
	Cash (A)			15,000
	To record the partners' withdrawal of cash.			

Closing Entries for a Partnership

The closing entries for a partnership are much the same as those for a proprietorship except that for a partnership there is more than one withdrawals account and more than one capital account. The only complexity with the closing entries for a partnership is with closing the Income Summary account to the capital accounts. The complexity stems from the partnership agreement which details how incomes/losses are to be allocated. Let us review several scenarios.

Example 1: Assume WBB Consulting earned $60,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated equally. The journal entry to close the income summary (a temporary holding account) to the partners' capital accounts would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		60,000	
	Wharton, Capital OE+			20,000
	Bartwiz, Capital OE+			20,000
	Butti, Capital OE+			20,000
	To close the income summary based on equal allocation.			

Example 2: Assume WBB Consulting had a net loss of $70,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated on a fractional basis of 2:1:4, respectively. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Wharton, Capital (OE)		20,000	
	Bartwiz, Capital (OE)		10,000	
	Butti, Capital (OE)		40,000	
	Income Summary			70,000
	To close the income summary based on 2:1:4 fractional allocation; calculations: 2/(2+1+4) x 70,000 = 20,000; 1/(2+1+4) x 70,000 = 10,000; 4/(2+1+4) x 70,000 = 40,000.			

Example 3: Assume WBB Consulting had a net income of $100,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated on the ratio of capital investments. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		100,000	
	Wharton, Capital OE+			26,667
	Bartwiz, Capital OE+			20,000
	Butti, Capital OE+			53,333
	To close the income summary with the allocation based on a ratio of capital investments; calculations: (20,000/75,000) x 100,000 = 26,667 (rounded to the nearest whole dollar); (15,000/75,000) x 100,000 = 20,000; (40,000/75,000 x 100,000 = 53,333 (rounded to the nearest whole dollar).			

Example 4: Assume WBB Consulting had a net income of $60,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated based on salaries of $70,000 to Wharton; $20,000 to Bartwiz; zero to Butti; and the remainder equally. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		60,000	
	Butti, Capital (OE)		10,000	
	Wharton, Capital OE+			60,000
	Bartwiz, Capital OE+			10,000
	To close the income summary with the allocation based on salaries and the remainder allocated equally; calculations:			

	Wharton	Bartwiz	Butti	Total
Net income				60,000
Salaries:	70,000	20,000	0	-90,000
Remainder to be allocated:				-30,000
-30,000x1/3	-10,000	-10,000	-10,000	30,000
Balance of net income to be allocated				0
Total to be allocated to each partner	60,000	10,000	-10,000	60,000

The sum of the totals **must** reconcile (be equal to) the net income/loss being allocated.

Notice in Example 4 that Butti is receiving a negative allocation which results in a debit to her Capital account.

Example 5: Assume WBB Consulting had a net income of $90,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated based on a combination of: (a) 20% interest of each partner's beginning-of-year capital balance; (b) salaries of $70,000 to Wharton, $20,000 to Bartwiz, $15,000 to Butti; and (c) the remainder equally. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		90,000	
	Wharton, Capital OE+			64,000
	Bartwiz, Capital OE+			13,000
	Butti, Capital OE+			13,000
	To close the income summary with the allocation based on a combination of interest and salaries with the remainder allocated equally; calculations:			

	Wharton	Bartwiz	Butti	Total
Net income				90,000
Interest:				
20%x20,000; 20%x15,000; 20%x40,000	4,000	3,000	8,000	-15,000
Salaries:	70,000	20,000	15,000	-105,000
Remainder to be allocated:				-30,000
-30,000x1/3	-10,000	-10,000	-10,000	30,000
Balance of net income to be allocated				0
Total to be allocated to each partner	64,000	13,000	13,000	90,000

The sum of the totals **must** reconcile (be equal to) the net income/loss being allocated.

The total income allocated to each partner is carried into the net income line of the Statement of Owners' Equity (as shown next).

Financial Statements

The income statement for a partnership is identical to that for a proprietorship. The statement of equity for a partnership is similar to a proprietorship's except that there is a Capital account and Withdrawals account for each of the partners.

Assume that on January 1, 2015, the first year of operations for WBB Consulting, the partners, Wharton, Bartwiz, and Butti, invested $20,000, $15,000, and $40,000, respectively. During 2015 they each withdrew $5,000. The statement of stockholders' equity would appear as illustrated in Figure 13.5 given a net income for the year of $90,000 allocated as shown in Example 5 previously.

WBB Consulting
Statement of Owners' Equity
Year Ended December 31, 2015

	Wharton	Bartwiz	Butti	Totals
Capital, January 1, 2015	$ 0	$ 0	$ 0	$ 0
Add: Investments by partners	20,000	15,000	40,000	75,000
Net income	64,000	13,000	13,000	90,000
Subtotals	$84,000	$28,000	$53,000	$165,000
Less: Withdrawals by partners	5,000	5,000	5,000	15,000
Capital, December 31, 2015	$79,000	$23,000	$48,000	$150,000

Figure 13.5: Statement of Owners' Equity for a Partnership

In the equity section on the balance sheet there will be more than one owner's capital account as shown in Figure 13.6.

WBB Consulting
Balance Sheet
December 31, 2015

Assets		
Cash		$ 35,000
Other assets		143,000
Total assets		$ 178,000
Liabilities		$ 28,000
Equity		
Wharton, capital	$79,000	
Bartwiz, capital	23,000	
Butti, capital	48,000	150,000
Total liabilities and equity		$ 178,000

Figure 13.6: Balance Sheet for a Partnership

Summary of Chapter 13 Learning Objectives

LO1 – Describe the characteristics of a proprietorship, including how its financial statements are different from those of a corporation.

A proprietorship is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. The profits of a proprietorship are taxed as part of the owner's personal income tax return. Unlimited liability is another characteristic of a proprietorship meaning that if the business could not pay its debts, the owner would be responsible even if the business's debts were greater than the owner's personal resources. Owner investments, owner withdrawals, and net incomes/losses are closed to one permanent account: the Owner's Capital account.

LO2 – Describe the characteristics of a partnership, including how its financial statements are different from those of a corporation.

A partnership is a business owned by more than one person. Partners should have a partnership contract that details their agreement on things such as each partner's rights and duties, the sharing of incomes/losses and withdrawals, as well as dispute and termination procedures. A partnership is not a separate legal entity, which means that the business and the partners are considered to be the same entity. Each partner's share of the profits is taxed as part of that partner's personal income tax return. Unlimited liability is another characteristic of a partnership meaning that if the business could not pay its debts, the partners would be responsible even if the business's debts were greater than the partners' personal resources. The exception to this would be the formation of a limited liability partnership (LLP) that is permitted for professionals such as lawyers and accountants. In an LLP, the general partner(s) is/are responsible for the management of the partnership and assume(s) unlimited liability while the limited partners have limited liability but also limited roles in the partnership as specified in the partnership agreement. Partnerships also have a limited life and are subject to *mutual agency*. Mutual agency means that a partner can commit the partnership to any contract because each partner is an authorized agent of the partnership. The closing entries for a partnership are the same as those for a proprietorship except there is more than one capital account and more than one withdrawals account. The closing of the income summary to each partner's capital account is based on the allocation details in the partnership agreement.

Discussion Questions

1. Define a partnership and briefly explain five characteristics.
2. What are the advantages and disadvantages of partnerships?

3. How does accounting for a proprietorship, partnership, and corporation differ?
4. How can partnership profits and losses be divided among partners?
5. Why are salary and interest bases used as a means to allocate profits and losses in a partnership?
6. How are partners' capital balances disclosed in the balance sheet?

Exercises

EXERCISE 13–1 (LO2)

You are given the following data for the partnership of B. White and C. Green.

B. White and C. Green Partnership
Trial Balance
December 31, 2015

Cash	$41,000	
Accounts Receivable	68,400	
Merchandise Inventory	27,000	
Accounts Payable		$45,800
B. White, Capital		30,000
B. White, Withdrawals	7,000	
C. Green, Capital		20,000
C. Green, Withdrawals	5,000	
Sales		322,000
Cost of Goods Sold	160,500	
Rent Expense	36,000	
Advertising Expense	27,200	
Delivery Expense	9,600	
Office Expense	12,800	
Utilities Expense	23,300	
Totals	$417,800	$417,800

Each partner contributed $10,000 cash during 2015. The partners share profits and losses equally.

Required:

a. Prepare an income statement for the year.

b. Prepare a statement of owners' equity for the year in the following format:

Statement of Owners' Equity
For the Year Ended December 31, 2015

	White	*Green*	*Total*
Opening Balance	$	$	$
Add: Investments during 2015			
Net Income			
	$	$	$
Deduct: Withdrawals			
Ending Balance	$	$	$

c. Prepare a balance sheet at December 31, 2015.

d. Prepare closing entries at year end.

EXERCISE 13–2 (LO1,2)

Refer to EXERCISE 13–1.

Required: Prepare the equivalent statement of equity at December 31, 2015 assuming that the partnership is instead:

a. A proprietorship owned by B. White called White's (Combine C. Green balances and transactions with those of B. White.)

b. A corporation named BW and CG Ltd. with 100 common shares issued for $1 per share to each of B. White and C. Green. Assume opening retained earnings equal $29,800 and that 20,000 common shares were issued during 2015 for $20,000. Assume the net income of $52,600 is net of income tax.

EXERCISE 13–3 (LO2)

Refer to EXERCISE 13–1.

Required: Prepare the journal entry to allocate net income to each of the partners assuming the following unrelated scenarios:

a. Net income is allocated in a fixed ratio of 5:3 (White: Green).

b. Net income is allocated by first paying each partner 10% interest on opening capital balances, then allocating salaries of $30,000 for White and $10,000 for Green, then splitting the remaining unallocated net income in a fixed ratio of 3:2 (White:Green).

EXERCISE 13–4 (LO2)

Walsh and Abraham began a partnership by investing $320,000 and $400,000, respectively. They agreed to share net incomes/losses by allowing a 10% interest allocation their investments, an annual salary allocation of $75,000 to Walsh and $150,000 to Abraham, and the balance 1:3.

Required: Prepare the journal entry to allocate net income to each of the partners assuming the following unrelated scenarios:

a. Net income for the first year was $210,000.

b. A net loss for the first year was realized in the amount of $95,000.

EXERCISE 13–5 (LO1)

You are given the following data for the proprietorship of R. Black.

R. Black Proprietorship
Trial Balance
December 31, 2018

	Debit	*Credit*
Cash	$ 10,000	
Accounts receivable	20,000	
Merchandise inventory	30,000	
Accounts payable		$ 25,000
R. Black, capital		5,000
R. Black, withdrawals	7,000	
Sales		166,000
Cost of goods sold	100,000	
Rent expense	24,000	
Income taxes expense	5,000	
Totals	$196,000	$196,000

Black contributed $5,000 capital during the year.

Required:

a. Prepare an income statement for the year.

b. Prepare a statement of owner capital for the year in the following format:

R. Black Proprietorship
Statement of Owner Capital
For the Year Ended December 31, 2018

Balance at Jan. 1, 2018	$
Contributions	
Net income	
Withdrawals	
Balance at Dec 31, 2018	$

c. Prepare a balance sheet at December 31, 2018.

d. Prepare closing entries at year-end.

EXERCISE 13–6 (LO1)

Refer to EXERCISE 13–5. Assume that the proprietorship is instead a corporation named R. Black Ltd., with 1,000 common shares issued on January 1, 2018 for a stated value of $5 per share. Assume there are no opening retained earnings and consider withdrawals to be dividends. Assume income taxes expense applies to corporate earnings.

Required:

a. Prepare an income statement for the year ended December 31, 2018.

b. Prepare a statement of stockholders' equity.

c. Prepare a balance sheet at December 31, 2018.

d. Prepare closing entries at year-end.

EXERCISE 13–7 (LO2)

Assume the following information just prior to the admission of new partner *I*:

Assets		*Liabilities*		
Cash	$ 5,000	Accounts payable		$ 8,000
Accounts receivable	43,000			
		Partners' Capital		
		G, Capital	$30,000	
		H, Capital	10,000	40,000
	$48,000			$48,000

Required: Prepare journal entries to record the following unrelated scenarios:

a. New partner *I* purchases partners G's partnership interest for $40,000.

b. New partner *I* receives a cash bonus of $2,000 and a one-tenth ownership share, allocated equally from the partnership interests of G and H.

c. New partner *I* contributes land with a fair value of $100,000. Relative ownership interests after this transaction are:

Partner	*Ownership interest*
G	20%
H	5%
I	75%
	100%

EXERCISE 13–8 (LO2)

Assume the following information just prior to the withdrawal of Partner X:

Assets		*Liabilities*		
Cash	$20,000	Accounts payable		$ 5,000
Inventory	50,000			
		Partners' Capital		
		X, Capital	$10,000	
		Y, Capital	20,000	
		Z, Capital	35,000	65,000
	$70,000			$70,000

Required: Prepare journal entries to record the following unrelated scenarios:

a. Partner X sells his interest to new partner T for $25,000.

b. Partner X sells his interest to partner Y for $30,000.

c. Partner X sells his interest and is paid a share of partnership net assets as follows:

Cash	$ 5,000
Inventory	5,000
Accounts payable	(2,000)
	$ 8,000

Partner Y receives a 60% share of the partnership interest of X. Partner Z receives 40%.

EXERCISE 13–9 (LO2)

Smith, Jones, and Black are partners, sharing profits equally. They decide to admit Gray for an equal partnership (25%). The balances of the partners' capital accounts are:

Smith, capital	$ 50,000
Jones, capital	40,000
Black, capital	10,000
	$100,000

Required: Prepare journal entries to record admission of Gray, using the bonus method:

a. assuming the bonus is paid to the new partner; Gray invests $5,000 cash;

b. assuming the bonus is paid to existing partners; Gray invests $60,000 cash; the remaining partners benefit equally from the bonus.

Problems

PROBLEM 13–1 (LO2)

On January 1, 2015, Bog, Cog, and Fog had capital balances of $60,000, $100,000, and $20,000 respectively in their partnership. In 2015 the partnership reported net income of $40,000. None of the partners withdrew any assets in 2013. The partnership agreed to share profits and losses as follows:

a. A *monthly* salary allowance of $2,000, $2,500, and $4,000 to Bog, Cog and Fog respectively.

b. An annual interest allowance of 10 per cent to each partner based on her capital balance at the beginning of the year.

c. Any remaining balance to be shared in a 5:3:2 ratio (Bog:Cog:Fog).

Required:

1. Prepare a schedule to allocate the 2015 net income to partners.

2. Assume all the income statement accounts for 2015 have been closed to the income summary account. Prepare the entry to record the division of the 2015 net income.

Solutions To Discussion Questions

Chapter 1 Solutions

1. Generally accepted accounting principles (GAAP) are a set of principles and assumptions that guide the preparation of financial statements within the United States of America.

2. The revenue recognition principle assumes that revenue is earned by the entity at the time when a service is provided or when a sale is made, not necessarily when cash is received.

3. The matching concept states that revenue is recognized in the time period when goods and services are provided and that the assets of the entity that have been used up during the time period (expenses) must be matched with the asset inflows (revenues) during the same period.

4. Accounting information should be relevant, complete and free from error. It should also be comparable, verifiable, timely and understandable. Accounting information should only be disclosed if it is material – that is, of sufficient size or importance to influence the judgement of a reasonably knowledgeable user. Accounting information should also be disclosed in such a manner that the benefits of doing so outweigh the costs.

5. An asset is anything of value that is owned by the entity. Assets are economic resources controlled by an entity. They have some future value to the entity, usually for generating revenue.

6. A liability is an obligation to pay an asset or to provide services or goods in the future. Until the obligations are paid, creditors have claims against the assets of the entity.

   Equity represents the amount of assets owing to the owners of the entity. The total assets of an entity belong either to the stockholders or to the creditors.

7. The exchange of assets or obligations by a business entity, expressed in monetary terms like dollars, is called a financial transaction. The exchange of cash for land or a building is an example of such a transaction.

8. The three forms of business organization are corporations, sole proprietorships, and partnerships.

9. A business entity is a unit of accountability that exists independently from other units. A set of accounting records is kept for each unit or entity. The entity exists separately from its owners. This concept is important because it keeps separate all the various activities in which the owner is involved; lumping all the activities together would not yield useful information for keeping track of the financial performance each financial unit.

10. Financial statements evaluate the performance of an entity and measure its progress. Financial information is collected, then summarized and reported in the financial statements (balance sheet, income statement, statement of cash flows, and statement of stockholders' equity).

11. The date line on the income statement, statement of stockholders' equity, and statement of cash flows represents a period of time. The income statement details the revenues and expenses that occurred over a given period of time. The statement of stockholders' equity shows how equity changed over a given period of time. The statement of cash flows shows how the balance in cash changed over a given period of time. The date line on the balance sheet is a point in time because each account listed on the balance sheet identifies the account balance on a specific date.

12. The purpose of the income statement is to communicate the inflow of assets, in the form of revenues, and the outflow or consumption of assets, in the form of expenses, over a period of time. Total inflows greater than total outflows creates net income or profit, which is reported on the Income statement and in retained earnings in the equity section of the balance sheet. The purpose of the balance sheet is to communicate what the entity owns (its assets), what the entity owes (its liabilities), and the difference between assets and liabilities (its equity) at a point in time.

    If revenue is recorded on the income statement, there is usually a corresponding increase in assets on the balance sheet. Similarly, if expenses are recorded on the income statement, there is generally a decrease in assets or increase of liabilities on the balance sheet.

13. Revenue is an increase in an entity's assets or a decrease in liabilities in return for services performed or goods sold, expressed in monetary units like dollars. An expense is an asset belonging to the entity that is used up or obligations incurred in selling goods or performing services.

14. Net income is the difference between revenues and expenses. It communicates whether the activities of the entity are being conducted profitably. Thus it is one measure of the success of the entity. Net income is one of the criteria used to determine the amount of dividends to be declared.

15. The statement of stockholders' equity shows why common stock and retained earnings have changed over a specified period of time – for instance, when stocks are issued or net income is earned. The statement of cash flows explains to the users of the financial statements the entity's sources (inflows) and the uses (outflows) of cash over a specified period of time.

16. Financial statements are prepared at regular intervals to keep a number of interested groups informed about the financial performance of an entity. The timing is determined in response to the needs of management in running the entity or of outside parties, such as bankers to aid in granting loans to the entity, stockholders, or others interested in evaluating the progress of the entity. They are generally used as a means to inform investing and lending decisions.

17. The accounting equation has the following form:

ASSETS	=	LIABILITIES	+	EQUITY
(economic resources owned by an entity)		(creditors' claims to assets)		(owners' claims to assets – residual claims)

The entity has assets, which are the resources it owns. The total assets owned by an entity must always equal the total claims of creditors and owners, who have the residual claims.

A company's accounting equation is expanded to include major categories of the balance sheet, like cash and common stock. An expanded form of the accounting equation could be as follows:

ASSETS	=	LIABILITIES	+	EQUITY
Cash+Accounts Receivable +Equipment+Truck		Accounts Payable		Common Stock +Retained Earnings

18. The double entry accounting system reflects the fact that each financial transaction affects at least two items in the accounting equation, in order to maintain the equality of the equation. For example,

    a. A truck is sold for cash: The asset truck decreases and the asset cash increases.

    b. An obligation is paid: The liability accounts payable decreases and the asset cash decreases.

    c. An account is collected: The asset cash increases and the asset accounts receivable decreases.

    In this way, the equation always remains in balance after each transaction is recorded.

19. A year-end is the last day of the fiscal year of the entity. The income statement, statement of cash flows, and statement of stockholders' equity reflect financial translations for the year up to this date. The balance sheet reflects the financial position of the entity at the year-end date. Interim financial statements may be prepared more frequently, say quarterly or monthly; these are prepared for each entity only if required by certain users, usually stockholders of large corporations with many stockholders. Year-end financial statements must be prepared for all entities.

20. A fiscal year refers to a 12-month accounting period and that may not coincide with the calendar year. A company whose fiscal year-end coincides with the calendar year has a December 31 year-end.

Chapter 2 Solutions

1. The use of a transactions worksheet is impractical in actual practice because the record keeping and the calculation of totals becomes convoluted. This method is therefore not very efficient or convenient, especially for a business with a high volume of transactions.

2. An *account* is an accounting record designed to classify and accumulate the dollar effect of financial transactions. In a simplified account called a T-account, the term "debit" is used to describe the left side of the account, while the term "credit" refers to the right side.

3. The association of "good" and "bad" or "increase" and "decrease" with credits and debits is not a valid association. To an accountant, "debit" means only "place an amount of the left side of an account" and "credit" means only "place an amount on the right side of an account."

4. A debit, which is always on the left side, records an increase in assets and expenses. A credit, which is always on the right side, records a decrease in assets and expenses. For example,

   a. If an asset like a truck is purchased for cash, the asset account "Truck" is debited and the Cash account is credited.

   b. If rent expense is incurred and paid with cash, the account "Rent expense" is debited. The Cash account is credited.

5. A debit, which is always on the left side, records a decrease in liabilities, equity, and revenue. A credit, which is always on the right side, records an increase in liabilities, equity, and revenue. For example,

   a. A cash sale is made. Cash is debited, Sales is credited.

   b. We incur an expense, so we debit the expense account and credit a liability account like Accounts Payable.

   c. We issue some common stock for cash. The general ledger account Common Stock is credited and Cash is debited.

6.

Assets, Expenses	*Liabilities, Equity, Revenues*
Increases are debited.	Increases are credited.
Decreases are credited.	Decreases are debited.

7. A trial balance is a list of each account contained in the general ledger of an entity, together with its individual debit or credit balance. It is prepared in order to establish the equality of debits with credits before the preparation of the financial statements

8. A trial balance is used to prepare the financial statements. It shows the totals of each revenue and expense account that will appear on the income statement and the asset, liability, and equity balances that will appear on the balance sheet.

9. A general journal is a chronological record of an entity's financial transactions. It is often called a book of original entry because each transaction is recorded in the general journal first before it is posted to the entity's accounts.

10. The positioning of a debit-credit entry in the journal is similar in some respects to programming methods. In the following entry,

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 1	Accounts Receivable		XX	
	Sales			XXX
	To record a sale on account.			

The positions represent the instructions "Post $XX to the debit side of the Accounts Receivable account" (thus increasing the accounts receivable) and "Post $XXX to the credit side of the Sales account" (thus increasing sales).

11. A general ledger is a book that contains the separate asset, liability, equity, revenue, and expense accounts of an entity. It is often referred to as a *book of final entry* and it is prepared so that the balance of each account can be found easily at any time.

12. A chart of accounts is a list of account names and numbers used in the general ledger, normally listed in the order of presentation on the financial statements. For example, accounts that appear on the balance sheet or on the income statement are grouped together. This facilitates the preparation of the financial statements.

13. The steps in the accounting cycle involve analyzing transactions, journalizing them in the general journal, posting from the general journal into the general ledger, preparing the trial balance, and generating financial statements are steps followed each accounting period. These steps form the core of the accounting cycle. Additional steps involved in the accounting cycle will be introduced in Chapter 3.

Chapter 3 Solutions

1. The sequence of financial transactions that occurs continuously during an accounting time period is called the *operating cycle*. Operations begin with some cash on hand. The cash is used to purchase supplies and pay expenses while revenue is being generated. When revenue is earned, cash is collected, beginning the cycle over again. While some transactions are being completed, others are only beginning.

2. No, the operating cycle does not have to be complete before income can be measured. Revenue can be recorded as earned when the product is sold or the service performed regardless of whether cash is collected. To measure income, expenses must be matched to revenues or the relevant time period. This usually can be done whether or not the operating cycle is complete.

3. Accrual accounting matches expenses to revenues for a particular time period. The accrual method is the basis on which accounts are adjusted to reach this objective. Under this method, expenses are matched to the revenues during the period that the revenues are generated. The revenue recognition assumption helps determine when revenues are earned, thus allowing expenses to be matched to these revenues. Revenues are not generally matched to expenses by convention. The rationale is that revenues are recognized before expenses; therefore expenses should be matched to revenues.

4. Under the going concern concept, it is assumed that operating cycles that are incomplete at the end of financial periods will be completed during the (assumed) unlimited life of the entity. Since accountants must prepare financial statements even though operating cycles are incomplete, accrual accounting techniques are employed to more accurately measure economic activity during a given time period.

5.
   - The cost of goods that are transferred to customers (such as items sold); these expenses can be matched to revenue generated relatively easily.
   - The cost of assets only partially consumed during the time period like trucks and equipment; these expenses are as easily matched with revenue.
   - Some expenses incurred during the accounting period are not easily identified with revenue generated, such as salaries of administrative staff. These are matched to the period in which they are incurred, rather than to related revenue.

6. Adjusting entries are changes made at the end of an operating cycle to more accurately reflect economic activity during the period. For instance, depreciation is calculated on plant and equipment assets and charged to the income statement.

7. At the end of the accounting period, an accountant must determine the amount of future benefits (assets like Prepaid Insurance) that belong on the balance sheet and how much should be recorded in the income statement (as Insurance Expense, in this example). The appropriate amounts must be transferred by means of adjusting entries.

8. Plant and equipment accounts and are handled differently than other asset accounts. The expired portion of the cost of such an asset is estimated based on its useful life and recorded as depreciation expense. This requires no cash outlay, despite being an expense. Plant and equipment asset accounts themselves are not reduced by the depreciation expense; rather, a contra asset account is set up in order to show a reduced balance on the balance sheet.

9. A contra account is used to reduce the value of a related balance sheet item. For instance, the account Accumulated Depreciation-Equipment is credited by the amount of depreciation expense recorded each year. The balance in this account is netted against the related account (Equipment, in this example) so that the asset is shown at carrying amount on the balance sheet.

10. At the end of the accounting period, the amount of the liability that belongs on the balance sheet must be determined. The account balance is adjusted through the use of an adjusting entry to the related revenue account (Repair Revenue, in this example).

11. Accruals are assets and liabilities that increase during an accounting period but are not recognized in the normal course of recording financial transactions. They are recorded through the use of accrual adjusting entries at the end of the accounting period. Examples of accounts that accrue are:

	Examples of Income Statement Account	Related Balance Sheet Account
Revenues:	Interest earned	Interest receivable
	Rent earned	Unearned rent
Revenue		
Expenses:	Interest expense	Interest payable
	Rent expense	Prepaid rent
	Insurance expense	Prepaid insurance
	Salaries expense	Salaries payable

Related balance sheet accounts are eventually reduced when cash is received or paid, as applicable.

12. An adjusted trial balance is prepared after posting the adjusting entries in order to establish the equality of debits and credits, and before preparing the financial statements.

13. The adjusted trial balance conveniently summarizes the general ledger accounts in order of their appearance in the financial statements. This facilitates preparation of the financial statements.

14. The eight steps in the accounting cycle are:

    a. Transactions are analyzed and recorded in the general journal.

    b. The journal entries are posted to general ledger accounts.

    c. An unadjusted trial balance is prepared to ensure debits equal credits.

    d. The account balances are analyzed, and adjusting entries are prepared and posted.

    e. An adjusted trial balance is prepared to prove the equality of debits and credits.

    f. The adjusted trial balance is used to prepare financial statements.

    g. Closing entries are journalized and posted.

    h. A post-closing trial balance is prepared to ensure closing entries have been appropriately recorded and to ensure equality of debits and credits.

15. The first two steps in the accounting cycle occur continuously throughout the accounting period:

    a. Transactions are analyzed and recorded in the general journal.

    b. The journal entries are posted to general ledger accounts.

16. The next six steps in the accounting cycle occur only at the end of the accounting period:

    a. An unadjusted trial balance is prepared to ensure debits equal credits.

    b. The account balances are analyzed, and adjusting entries are prepared and posted.

    c. An adjusted trial balance is prepared to prove the equality of debits and credits.

d. The adjusted trial balance is used to prepare financial statements.

e. Closing entries are journalized and posted.

f. A post-closing trial balance is prepared to ensure closing entries have been appropriately recorded and to ensure equality of debits and credits.

These steps differ from the others because they don't deal with individual transactions but address account balances. The adjusted balances are used to prepare financial statements.

17. Revenues must be accrued during the current accounting period if they have been earned and even if they have not yet been satisfied with cash during in the current accounting period. An account receivable is an example. Expenses must be accrued during the current accounting period if they relate to the revenue recognized during the current period or the current time period itself (for example, salaries) even if they have not yet been paid in cash. An account payable is an example. Cash outlays are recorded as prepaid expenses if cash is paid in advance of expense recognition. Prepaid Insurance is an example. For each such asset and liability, the accountant must determine at the end of the accounting period the appropriate balance that should be recorded on the balance sheet. These accounts are adjusted as appropriate through adjusting entries.

18. The need for regular financial information requires that revenue and expense accounts of a business be accumulated for usually no more than one year by convention, and that financial statements be prepared for that period. Using a consistent time period allows revenue and expenses for one period to be compared to a preceding period. A one-year cycle reduces effects of seasonal variations in business activity, for instance, but also allows for business performance to be evaluated by owners and creditors regularly and predictably.

19. Temporary accounts include all revenues and expense categories, as well as the dividend account, that are reduced to zero at the end of the fiscal year when they are closed to the Retained earnings account. Permanent accounts have a continuing balance from one fiscal year to the next: these include all balance sheet accounts.

20. An income summary account is an account used only at year-end to accumulate all revenue and expense balances, and to reduce their general ledger accounts to zero at the end of the fiscal year. This account summarizes the Net income (or Net Loss) for the period. It is closed to the Retained earnings account at year-end.

21. A post-closing trial balance is a listing of balance sheet accounts and their balances after all temporary accounts have been closed. It proves the equality of general ledger debit and credit balances before the next accounting period commences.

Chapter 4 Solutions

1. The economic resources of Big Dog Carworks Corp. are its assets: cash, accounts receivable, inventories, prepaid expenses and property, plant and equipment.

2. The financial statements are the balance sheet, the income statement, the statement of stockholders' equity, and the statement of cash flows. Notes to the financial statements are also included. The statements report the financial position of the company at year-end, the results of operations for the year, changes in common stock and retained earnings, sources and uses of cash during the year, and information in the notes that is not quantifiable or that provides additional supporting information to the financial statements.

3. Fundamentally, accounting measures the financial progress of an entity. The purpose of financial statements is to communicate information about this progress to external users, chiefly investors and creditors.

4. ASSETS = LIABILITIES + EQUITY

   \$284,645 = 241,145 + 43,500.

5. Net assets equal \$43,500 (\$284,645 − 241,145). Net assets are synonymous with equity. They represent the amount of total assets attributable to the shareholders after taking into account the claims of creditors.

6. The individual assets of Big Dog Carworks Corp. as shown on the balance sheet are cash, accounts receivable, inventories, prepaid expenses, and property, plant, and equipment. Its liabilities are borrowings, accounts payable, and income taxes payable.

7. Per Note 3(d), property, plant, and equipment are depreciated on a straight-line basis over their estimated useful lives. Land is not depreciated.

8. **a.** Current asset accounts: Per Note 3(a), revenue and expenses are accrued. This will give rise to current assets and current liabilities like accounts receivable, inventory, prepaid expenses, accounts payable, income taxes payable, and accrued liabilities. In addition, accounts receivable are carried at net realizable value. Per Note 3(e), inventory is carried at lower of cost and net realizable value. These amounts must be adjusted to the correct balance. Prepaid expenses would be adjusted to reflect the unused portion at the end of the period.

   b. Non-current asset accounts: Per Note 3(d), buildings are depreciated at 4% per year using the straight-line method. Equipment is depreciated at 10% per year on a straight-line basis; motor vehicles are depreciated on a straight-line basis over five years.

   c. Current liability accounts: income taxes payable are adjusted at the end of the period to reflect the estimated amount of taxes incurred for the period. All expenses that are incurred but not yet paid are added to the unrecorded accrual accounts. Examples are salaries payable for partial periods and interest owed but not yet paid.

   d. Non-current liability accounts: borrowings must be analyzed to determine current and non-current amounts, as shown in Note 5.

9. The balance sheet is classified in order to facilitate the analysis of its information. For instance, comparing amounts that will be needed to be satisfied within the upcoming year (current liabilities) with resources available to satisfy these claims (current assets) allows readers to assess the relative ability of the corporation to meets its short-term obligations as they become due.

10. Big Dog Carworks Corp. makes it easier to compare financial information from period to period by presenting comparative annual financial data for two years.

11. The auditor is H. K. Walker, Chartered Professional Accountant. The audit report states that the financial statements of BDCC have been examined in accordance with generally accepted auditing standards. It also states that, in the auditor's opinion, the statements present fairly the financial position of BDCC and the results of its operations and changes in financial position for the year just ended. There are no concerns raised in the report.

12. The auditor's report indicates that GAAP have been consistently applied in BDCC's financial statements (see last sentence of the report).

13. Though the financial statements are produced under the direction of management, they belong to the stockholders. Stockholders are the owners of the company.

14. Management is responsible for demonstrating that the internal controls of a company are effective.

Chapter 5 Solutions

1. A business providing a service holds no inventory for resale. Thus, a business that sells goods must match the cost of the goods sold with the revenue the sales generate. The Income Statement will show this, as well as the Gross Profit (also known as Gross Margin)—the difference between Sales and Cost of Goods Sold. A service business Income Statement would not show these items.

2. Gross Profit is the result of deducting Cost of Goods Sold from Sales (or Net Sales). For example, if a car is sold for $16,000 but cost $12,000, the Gross Profit calculation would be

Sales	$16,000
Cost of Goods Sold	12,000
Gross Profit	4,000

The profit on the sale, before considering operating and other expenses, is $4,000. The Gross Profit percentage is $4,000/16,000 or 25 per cent. That means for every $1 of Sales, the business earns $0.25 on average to cover operating and other expenses.

3. The Merchandise Inventory account collects information regarding the purchase of inventory, return to supplier of inventory, purchase discounts, transportation costs, and inventory shrinkage adjustments.

4. The sales and collection cycle starts off when a sale is made, often creating an Account Receivable. The Account Receivable is subsequently removed when cash is collected. If merchandise is returned because it is say, the wrong model or defective, a Sales Returns and Allowances records this amount and the Account Receivable is reduced. To speed up collections, discounts may be offered in return for prompt payments. If so, a Sales Discount may be given.

Assuming a perpetual inventory system, the purchase and payment cycle starts with the purchase of merchandise, which becomes the inventory held for resale; the purchase generally creates an Account Payable. The Account Payable is removed once the account is paid by a cash disbursement. Purchases may be returned if the inventory item is wrong or defective. If so, the Account Payable would be reduced and a credit to Merchandise Inventory would be recorded. Discounts may be offered by the supplier to speed up payment by the purchaser. If so, the purchaser would be given a purchase discount which is debited to Account Payable and credited to Merchandise Inventory.

5. The contra accounts used for sales are

   a. Sales Returns and Allowances, which accumulates merchandise returned to the seller by the customer because of some defect or error.

   b. Sales Discounts, which accumulates discounts taken by customers when payments are made to the seller within the discount period.

6. (Appendix) In a perpetual inventory system, the balances in Merchandise Inventory and Cost of Goods Sold are updated with each transaction involving purchases and sales. In a periodic inventory system, the balances in Merchandise Inventory and Cost of Goods Sold are not known until an inventory count is performed. The advantage of a perpetual system is that account balances are maintained in real time and therefore always known which is not the case for a periodic system where account balances have to be estimated until an inventory count is performed.

Chapter 6 Solutions

1. **a.** The amount of inventory on hand is important to management for two reasons. First, management wants to ensure there is ample inventory to meet all customers' orders. Second, because the cost of carrying inventory (for instance, rental of warehouse space, insurance) can be quite high, management wants to keep the inventory as low as possible.

   b. Investors and creditors are concerned with the inventory because inventory is a large asset. They will want to assess its current amount and trends compared to other years and competitors' levels to help determine the financial strength of the company before investing or lending money, or for use as collateral, for instance.

2. Accountants must ensure the inventory is not obsolete or unsalable and that it is properly counted and valued, using an acceptable inventory cost flow assumption that is applied consistently from year to year.

3. The cost of inventory is the invoice price of the goods less purchase discounts, plus transportation-in, insurance while in transit, and any other expenditure made by the purchaser to get the merchandise to the place of business and ready for sale.

4. Flow of goods is the physical movement of the goods themselves as they enter the firm and are sold, especially when dealing with similar items, while the flow of costs is the costs assigned to the flow of goods in the firm using specific identification, FIFO, LIFO, or weighted average cost bases.

   GAAP does not require that the flow of costs basis be similar to the physical flow of goods, except when individual units of inventory can be identified by, for example, serial numbers. However, it does require that once the cost basis is selected, that it be followed consistently from period to period.

5. Two factors are considered in costing inventory: the quantity and the assigned value per unit. Assigning the value is often the more difficult aspect, as this involves tracking the laid-down costs of many items. Physical quantities can be tracked by computerized accounting systems and verified or determined by physical count at year-end.

6. Consistency in inventory costing is necessary for comparing a company's performance from year to year. GAAP does allow a company to change its inventory valuation method; however, the company must restate inventory and cost of goods sold effects on prior years using the new method. In practice this change is rarely made.

7. If the ending inventory is overstated at the end of 2018, then cost of goods sold is understated; therefore, the 2018 net income is overstated by $5,000. In 2019, the opening inventory would be overstated and cost of goods sold would be overstated; therefore, the net income would be understated by $5,000.

8. Inventory should be valued at less than cost when the lower of cost and net realizable value (LCNRV) principle is applied, perhaps due to factors such as physical deterioration, obsolescence, or changes in price levels.

9. The primary reason for the use of the LCNRV method and the LCM method of inventory valuations are to prevent overstatement. If the likely value of inventory has declined below cost, it is prudent to recognize the loss immediately, rather than when the goods are eventually sold. Net realizable value is the expected selling cost of inventory, less any applicable costs related to the sale. Market is the current replacement cost of inventory.

10. When inventory is valued at LCNRV or LCM, cost refers to the invoice price of the goods less purchase discounts, plus transportationiin, insurance while in transit, and any other expenditure made by the purchaser to get the merchandise to the place of business and ready for sale.

11. The inventory cost flow assumptions permissible under GAAP are specific identification, FIFO, LIFO, and weighted average cost.

12. Estimating inventory is useful for two reasons:

    a. It is useful for inventory control. When a total inventory amount is calculated under a periodic inventory system through physical count and valuation, an estimate can help check the accuracy.

b. It is useful for the preparation of interim financial statements. Under a periodic inventory system, inventory on hand at any point in time is not readily available. To take a physical count often would be costly and inconvenient. An estimate offers a way of determining a company's inventory at any point in time in a cost-effective manner.

13. Under the gross profit method, the percentage of profit remaining after accounting for cost of goods sold (the gross profit percentage) is assumed to remain the same from year to year. By applying the rate to sales, gross profit and then cost of goods sold can be estimated. Opening inventory and purchases will be known from the accounting records, so cost of goods available for sale can be determined. The difference between the cost of goods sold and cost of goods available for sale is the ending inventory amount.

    Under the retail inventory method, mark-up on goods purchases then sold is considered to be constant. Both cost and selling prices of goods acquired are then valued at retail by using the mark-up amount. From this, the ending inventory at retail is calculated. By applying the cost percentage (costs of goods available for sale divided by retail costs of goods available for sale) to the retail ending inventory, its value at cost can be calculated.

    i. Example – gross profit method:

Sales		$100
Cost of Goods Sold:		
Opening Inventory (from records)	80	
Purchases (from records)	70	
Cost of Goods Available for Sale	150	
Ending Inventory	(a)?	(b)?
Gross Profit		$(c)?

    If the gross profit percentage average is 25%, the following can be estimated:

(c) Gross profit	= 25% of $100	= $25
(b) Cost of goods sold	= $100 − $25 (c)	= $75
(a) Ending inventory	= $150 − $75 (b)	= $75

    Ending inventory (a) would be $75.

    ii. Example – retail inventory method; assumed mark-up = 200%:

	At Retail		*At Cost*	
Sales		$500		$500
Cost of Goods Sold:				
Opening Inventory (records)	$(b)		$80	
Purchases (records)	(b)		300	
Cost of Goods Available for Sale	(c)		380	
Ending Inventory	(d)?		(e)?	
Cost of Goods Sold		(a)?		(f)?
Gross Profit (same as Sales)		$-0-		(g)?

(a) Cost of Goods restated at retail to equal sales	= \$500
(b) Opening Inventory and Purchases re-stated at retail	= \$300 × 200% = \$600;
	= 80 × 200% = 160
(c) Cost of Goods Available at retail	= \$600 (b) + 160 (b)
	= \$760
(d) Ending Inventory at retail	= \$760 (c) − 500 (a)
= Cost of Goods Available at retail	= \$260
− Cost of Goods Sold at retail	
(e) Inventory at cost = Inventory at retail/200%	= \$260 (c)/200%
	= \$130
(f) Cost of Goods Sold at cost	= \$380 − 130(e) = \$250
(e) Gross Profit at cost	= \$500 − \$250(e) = \$250

14. The gross profit method is particularly useful in cases where goods have been stolen or lost in a fire; in such cases it is not possible to determine the balance in the ending inventory by a physical count when the periodic inventory system is used.

15. The retail inventory method assumes an average inventory cost flow assumption because the cost percentage used to calculate ending inventory and cost of goods sold is based on a constant mark-up.

Chapter 7 Solutions

1. 1. The fraud triangle are the three things antifraud experts say are needed in order to commit financial statement fraud: incentive, opportunity, and the ability to rationalize the fraud. Internal control is the system, plan, or organization established to ensure, as far as practical, the orderly and efficient conduct of business. In part, it is used to ensure accurate record-keeping and the timely preparation of financial statements, safeguard the assets of the business, and promote efficiency.

2. A bank reconciliation is a comparison of the items shown on the bank statement with the entries made in the records of the entity. A reconciliation leads to the update of the accounting records and the correction of errors, if any. Thus, control over cash is enhanced.

3. Different reconciling items that may appear in a bank reconciliation are as follows:

Book Reconciling Items	*Bank Reconciling Items*
Book errors	Outstanding deposits
NSF checks	Outstanding checks
Bank charges	Bank errors
Collection of AR	

4. The steps in preparing a bank reconciliation are (for which there is no specific order):

   a. Cancelled checks returned by the bank are compared with checks recorded as cash disbursements (both outstanding checks from previous months and checks written in

current month's cash disbursements). Any outstanding checks must be deducted from the bank statement ending balance.

b. Other disbursements made by the bank are examined. These could include NSF (not sufficient funds) checks or bank service charges. These must be deducted from the companies Cash account balance in the general ledger.

c. The deposits shown on the bank statement are compared with the amounts recorded in the company records.

d. The prior month's bank reconciliation is reviewed for outstanding deposits at the current date.

e. Errors in the bank statement and in the company's record must be entered on the reconciliation.

5. A check received from trade customers that has been deposited but cannot be cleared by the bank because the customer's own bank balance is less than the amount of the check is an NSF (Not Sufficient Funds) check.

6. A petty cash system reimburses petty cash for an amount equal to the amounts disbursed when the fund has been depleted.

7. When a petty cash fund is established, a regular check is written for the amount to be held in the petty cash fund. The general ledger account Petty Cash is debited and Cash is credited. The check is cashed and the funds are held by the petty cash fund custodian.

   When the balance of cash in the funds held by the custodian is low, a check is written to reimburse the fund for the amount of all receipts held. The check is recorded as a debit to the applicable expense accounts and a credit to the Cash account in the general ledger.

8. Allowance for doubtful accounts is a contra accounts receivable account showing the estimated amount that will not be collected. To set it up, bad debt expense is debited and the allowance is credited for the estimated amount. In this way, the bad debt expenses for the period are matched with revenues for that period.

9. The income statement method for calculating the estimated amount of doubtful accounts assumes that a certain percentage of sales made on account will become uncollectible. The percentage is applied to credit sales and is chosen on the basis of bad debt experience of previous years. The estimated bad debt expense is calculated independently of any current balance in the Allowance for Doubtful Accounts general ledger account.

10. Aging of accounts receivable is the detailed analysis of trade accounts receivable based on time that has elapsed since the creation of the receivable. An estimated loss percentage is applied to each time category to estimate an uncollectible amount. The estimated bad debt expense consists of the difference between the current balance in the Allowance for Doubtful Accounts general ledger account and the amount required to be set up based on this analysis.

11. The usual balance in the Accounts Receivable general ledger account is a debit. Occasionally, as a result of double payments, merchandise returns, or allowances granted for example, a credit balance occurs in some accounts. Theoretically, the credit balance should be transferred to liabilities. In practice, the net amount of accounts receivable is reported on the balance sheet unless the credits would materially distort the numbers reported.

Chapter 8 Solutions

1. To capitalize a cost means to record an expenditure as an asset instead of an expense.

2. An expenditure is a cash disbursement. A capital expenditure is one that

   a. Benefits more than the current accounting period, and these benefits are reasonably assured;

   b. Is material in amount.

   A revenue expenditure is an expense and does not have the characteristics belonging to a capital expenditure. NOTE: An expense is known as a revenue expenditure because its purpose is to generate revenue in the period in which it was expended (i.e., the current accounting period).

3. The purchase of a computer for business use qualifies as a capital expenditure when it benefits more than one accounting period. However, its purchase price may not be immaterial, depending on the company's capitalization policy. The annual maintenance or repairs made to the computer to keep it running are revenue expenditures if the cash disbursements are frequent, small, and do not extend the life of the computer. Purchase of a part that significantly enhances performance or extends the useful life of the computer might be capitalized, again depending on materiality.

4. Purchasing land and buildings for a lump sum means that no distinction is made between the two items at the time the purchase price is negotiated. The purchase price must be apportioned between the Land and Building accounts because buildings are subject to depreciation. The purchase price, therefore, is allocated on the basis of relative fair values of the land and the buildings.

5. As a matter of expediency, large companies set a dollar limit to help determine whether a disbursement is to be treated as a revenue or a capital expenditure because efforts required to capitalize and amortize an inexpensive item are so much greater than the benefits to be derived. The concept of materiality is used to determine the amount at which an expenditure is considered capital in nature.

6. When one asset is exchanged for another, the cost of the asset acquired is determined by the fair value of the asset given up. If the fair value of the asset given up is not known, then the fair value of the asset acquired becomes the cost of the new asset.

7. Depreciation is the process of allocating the cost of a tangible, long-lived asset to each accounting period that will benefit from its use. The amount to be allocated is based on an estimate of the asset's useful life, residual value, and method of depreciation to be used.

8. As time elapses, the economic benefits provided by an asset may decrease, so that the efficiency of the asset is greater during its initial years and less later on. If a car is free from initial defect, it should not require any repairs in its first year of use, but it will need regular maintenance (e.g., oil changes). Eventually, it will likely require repairs, such as a replacement battery or new valves. The annual maintenance costs will increase, costing the user more to use the car. Therefore, the value of the car or the value of its services each year will decrease, so depreciation should be lower in subsequent years.

9. A usage method of depreciation is useful when the use of an asset varies from period to period and when wear and tear is the major cause of depreciation. A time-based method, such as straight-line depreciation, assumes that each period receives services of equal value from the use of the asset; time-based methods ignore asset usage. The preferable method is a matter of judgment.

   The sports car may wear out in two ways. The distance travelled has a large bearing on the value of the car; however, the passage of time also does, as an older model generally sells for less than its original cost. In terms of the useful life of the car, it will only last for a certain number of miles and it only renders services if it is driven. A usage method is likely best to measure depreciation, since the car is not necessarily driven for equal times during each period; the less it is driven, the more periods it will last.

10. Under the declining balance method, the calculation of depreciation is made without an adjustment for residual value. The asset cannot be depreciated below a reasonable residual value. The arithmetic of this formula is such that it will never reduce the asset balance to zero. Under the straight-line method, there is an adjustment made for residual value. This difference is not inconsistent, since both methods eventually result in a balance considered to be the residual value.

11. Under the declining balance method, a constant depreciation rate is applied in each accounting period to the remaining carrying amount (cost less accumulated depreciation). Both the depreciation expense and the carrying amount decline every period. Therefore, it is called the declining balance method.

    Under the straight-line method, the depreciation expense for each accounting period is the same over the useful life of the asset.

12. If an asset is expected to have a 10-year life, then, each year 10 per cent of its life is over (100%/10 years = 10%). The double-declining balance is double this rate or 20% per year, calculated on the carrying amount of the asset at the end of the previous year.

13. Partial-year depreciation can be calculated using the half-year rule or by pro-rating depreciation expense over the number of months (rounded) that the asset was in use.

14. Either changes in estimated residual value or useful life may affect the calculation of depreciation expense. In both cases, no change is made to depreciation expense already recorded. The effects of the changes are spread over the remaining future periods.

15. Subsequent capital expenditures affect depreciation calculations in the same manner as changes in accounting estimates. The effects are accounted for prospectively (over the remaining future periods).

16. At the end of each reporting period, the recoverable amount (fair value less estimated costs of disposal) of an asset must be compared to its carrying value. If the recoverable amount is lower, the carrying value must be adjusted downward (a credit to the asset account) and an impairment loss must be recorded (a debit to an expense account). Subsequent years' depreciation expense calculations must also be adjusted.

17. Estimates of future events are commonplace in accounting, and necessary to provide more meaningful information to financial statement users, within reason. Depreciation is one example. The benefits of matching the use of a capital asset to the revenue of future periods which it helps to produce is deemed to be useful information under GAAP. To facilitate this, depreciation methods rely on estimates, and estimates of future events are subject to error. Accounting is intended to produce financial information that are not precise but rather that present a fair representation of the entity. If the estimates used subsequently prove to be incorrect, accountants change them.

18. 18. Lump sum is one price is negotiated for the entire purchase of building and land. A lump sum purchase price must be apportioned between the PPE assets acquired on the basis of their respective market values, perhaps established by a municipal assessment or a professional land appraiser.

19. A gain or loss on disposal does not occur when the carrying amount of an asset is the same as the proceeds of disposition.

20. A trade-in involves acquiring a long-lived asset by giving up a similar asset to the one being acquired (i.e., exchanging it) as part of the purchase price. It is not quite the same as an outright sale, which involves giving up a long-lived asset and receiving just cash for it. A trade-in impacts the gain/loss on sale by the difference between the carrying amount of the old asset and the fair value of the old asset.

21. The trade-in allowance may be higher or lower than the fair value of the used asset on the open market. Dealers often give more trade-in allowance on a used car than it is actually worth to make purchasers think that they are getting a better deal on the new car.

22. The cost of the new asset is calculated as the sum of cash paid plus the fair value of the trade-in.

23. Intangible assets, unlike property, plant, and equipment, cannot be touched or otherwise sensed. They are the same as PPE in that they represent future economic benefits to an entity over more than one accounting period, and so are similarly capitalized.

24. A patent is an exclusive right granted by the state to an inventor to produce and sell an invention for a specified period of time. A patent's useful life may be affected by economic factors based on demand and competition. The 20-year life may be excessive; a shorter life may be more realistic. For example, if a company develops a unique computer and patents it, even though it cannot be reproduced by other firms for 20 years, nothing stops a competitor from studying it, improving it, and patenting this improved computer. Although the "unique" computer may be useful for many years, it may be technologically obsolete before the patent expires.

25. A copyright is the exclusive right granted by the state to publish a literary or artistic work. It exists for the lifetime of the author and for a specific period of time after death. Similarly, a trademark is a legal right granted by the state, in this case for an entity to use a symbol or a word as a trademark to identify one of its products or services. A copyright would be granted for a piece of music or a novel. Examples of trademarks are the word "Coke"®on soft drink bottles and the stylised 'M'®of the McDonald's®logo.

26. Goodwill is a long-lived asset that represents the capitalized value of superior earnings potential of an acquired company. Goodwill is an asset but it is not an intangible asset. Such factors as favorable customer relations, loyal and competent employees, possession of valuable patents or copyrights, high-quality products, or effective management help create goodwill. Goodwill cannot be identified separately because it relates to the total entity acquired. Its useful life is considered indefinite unless its value is impaired because these attributes are assumed to continue into the future. Goodwill can only be purchased in an arms-length transaction because it is otherwise difficult to attach a value to it.

27. Intangible assets are generally measured and recorded at cost. The measurement basis should be disclosed, along with

    - the type of amortization method for each class of intangible asset;
    - opening and ending balances for cost, accumulated amortization, and carrying value, and disclosure of any changes;
    - whether they are internally generated; and
    - whether they have finite or indefinite lives.

Chapter 9 Solutions

1. A current liability is a form of debt that is expected to be paid within the longer of one year of the balance sheet date or one operating cycle. A long-term liability is also a form of debt but it is expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Current and long-term liabilities must be shown separately on the balance sheet.

2. Examples of known current liabilities are accounts payable, sales taxes payable, short-term notes payable, and payroll liabilities.

3. Known current liabilities are those where the payee, amount, and timing of payment are known. These are different from estimated current liabilities where the amount is not known and must be estimated.

4. Examples of estimated current liabilities include warranties and income taxes.

5. Estimated current liabilities are those where the amount is not known and must be estimated. The amount of an estimated current liability is probable and can be reliably estimated. A contingent liability is either not probably or it cannot be reliably estimated. Contingent liabilities are not recorded whereas estimated current liabilities are recorded.

6. A bond is a debt security that necessitates periodic interest payments during its life as well as a future repayment of the borrowed amount. A bond indenture is the contract that binds the corporation to the bondholders; it specifies the terms with which the corporation must comply and may restrict further borrowing by the corporation. A trustee may be used to serve as an impartial intermediary between the corporation and the bondholders, and so better balance the rights and needs of these two groups.

7. A bondholder has the following rights:

   a. The right to receive the face value of the bond at a specified maturity date in the future, that is, the right to receive the amount of money that was invested;

   b. The right to receive periodic interest payments at a specified per cent of the bond's face value; this interest represents the bondholder's return on investment; and

   c. The right to have the corporation pledge some secured assets to protect the bondholder's investment; this safeguard restricts excess borrowing and, in the event that interest or the face amount of the bonds cannot be paid, allows for the sale of these assets to generate the funds necessary for repayment.

8. Bond issues with different characteristics are disclosed separately in the financial statements, or more usually, in a note. The interest rate, maturity date, and any restrictions imposed on the corporation in the bond indenture, together with any assets pledged, also must be disclosed.

9. The different possibilities in the redemption of bonds before their maturity follow:

   a. The bonds can be repurchased on the open market if this option is financially advantageous to the issuer.

   b. The issuer may exercise a call provision if it is financially advantageous. A call provision, sometimes included in a bond indenture, permits early redemption at a specified price, usually higher than the face value.

   c. The bondholder or issuer may exercise a conversion feature if provided for in the bond indenture, whereby the bonds can be converted into corporate shares.

10. If the bond contract interest rate is the same as the prevailing market interest rate, the bond will sell "at par". If the bond contract interest rate is higher than the prevailing market

interest rate, the bond will sell at a premium. Prospective bondholders will bid up the price of the bonds because the bonds pay a rate of interest higher than other securities with similar features and risks. This creates a premium over the face value of the bonds. If the bond contract interest rate is lower than the prevailing market interest rate, the bond will sell at a discount because prospective bondholders will not be willing to pay the face value of the bonds. The issuer will have to accept a lower price so the effective interest rate will equal that of other securities with similar features and risks.

11. Under GAAP, an unamortized premium (discount) is added to (deducted from) the face value of the bond so that the liability is recorded at its carrying amount on the balance sheet.

12. If the bond contract interest rate is greater than that required in the market, then the bonds are sold at a premium. If the investment market operates efficiently, investor should earn only the market rate of interest. By paying a premium over the face value, the overall return to the investor is reduced from the bond contract rate to the market rate in effect at the issue date.

13. The *effective interest method* of amortization calculates different amounts of amortization from one period to another is the preferred method. GAAP does allow for straight line method to be used as well.

14. A loan, like a bond issue, is a means for an entity to raise investment capital through creditors. Both can be secured, and generally have fixed rates of interest and specified terms of repayment. However, loans are repaid with blended payments of interest and principal over the life of the liability. While the total payment on a loan is constant, the relative portion of interest decreases with each payment because loan principal is being reduced with each preceding payment. The portion of principal repayment increases. Bonds pay interest only to investors at regular intervals over the life of the issue plus a payment for the face value of the bond when it matures.

15. If money is borrowed today for one year, at the end of that year the money to be repaid is increased by the amount of interest charged. The future value is therefore the principal plus interest. If a certain sum must be repaid in one year, the value in today's money would exclude the interest to be earned in the future. This is its present value. The time value of money is represented by interest. Interest is added to the principal to obtain the future value, and it is removed from a future sum to arrive at the present value.

16. The price of a bond is determined by combining the present value of the following future cash flows associated with the bond:

    a. a single amount, the face value, to be paid at maturity; and

    b. semi-annual interest payments made during the bond's life.

Chapter 10 Solutions

1. The corporate form of organization offers the following advantages:

a. It is a legal entity with unlimited life; its existence is separate from its owners; and it has many of the rights and responsibilities of an individual.

b. It has limited liability; the owners are liable only for the amount they invest in the corporation.

c. Acquiring capital is facilitated by being able to issue shares (ownership units) with different risk and reward structures to many owners.

d. Corporations may pay income taxes at rates that may be lower than rates for individuals.

2. The owners of the corporation are liable for only the amount they have each invested. If the corporation fails, its assets are used to pay the creditors. If assets are not sufficient to pay all creditors, the shareholders have no further liability. Creditors are protected to some degree by disclosure of the corporation's limited liability.

3. Some of the rights of common stockholders are as follows:

   a. The right to participate in the management of the corporation by voting at stockholders' meetings (1 share generally equals 1 vote).

   b. The right to participate in dividends when they are declared by the corporation's board of directors.

   c. The right to participate in a distribution of assets on liquidation.

   d. The right to appoint auditors.

   The rights may be printed on the share certificate itself; they are detailed in the articles of incorporation.

4. The shareholders elect a board of directors, which appoints the officers of the corporation. The officers execute the policies approved by the board of directors. The directors are not involved in the daily management of the corporation.

5. **a.** The two main classes of shares are:

   i. Preferred Stock – a class of shares that has a preference over common stock. Holders of preferred stock are entitled to payment of dividends before common stockholders and usually have prior claims on a corporation's assets on liquidation. A fixed dividend rate may be attached to the shares. Some preferred stock may have voting privileges.

   ii. Common Stock – the class of shares that are the basic ownership units in a corporation. Ownership of common stock carries the right to vote, to share in dividends, and to share in the assets of the corporation if it is liquidated; however, all other claims to the assets of a corporation rank ahead of the common stockholders' claims.

   b. Terms relating to the present status of a corporation's shares:

   i. Authorized Shares – the designated number of shares within each class of shares that a corporation may issue.

ii. Unissued Shares – the shares of common stock in each class that a corporation is authorized to issue but has not yet issued.

iii. Issued Shares – the total number of authorized shares that have been issued in the name of shareholders; issued shares may not actually be in the hands of stockholders (e.g., treasury stock).

iv. Outstanding Shares – authorized shares that have been issued and are actually in the hands of shareholders.

v. Reacquired Shares – shares that have been re-purchased from shareholders, have not been cancelled, and have not been reissued (also called treasury stock).

6. Shares are preferred in that their owners

   a. Generally assume less risk than common stockholders. When a corporation is dissolved, preferred stockholders have first claim on the remaining assets after the creditors have been paid; and

   b. Have a prior claim to the earnings of the corporation. Preferred stockholders must be paid specified dividends before any payments are made to common stockholders.

   Preferred stockholders are similar to common stockholders in that both

   a. Own stock certificates, evidence of corporate ownership;

   b. Have the legal guarantee that all shares of the same class will be treated equally with respect to rights and privileges attached to them;

   c. Have the right to dividends declared by the board of directors; and

   d. Have the right to participate in distribution of assets on liquidation of the corporation.

   Preferred stockholders differ from common stockholders in that

   a. Common stockholders can participate in the management of the corporation by voting at stockholders' meetings (though some preferred stock may have voting privileges);

   b. Common stockholders can appoint auditors;

   c. Common stockholders assume more risk than preferred stockholders. However, common stockholders have more potential for receiving substantial dividends and increases in the value of their shares if the corporation is successful; and

   d. Common stockholders receive the balance of assets after other claims have been satisfied—in the case of a bankruptcy or liquidation, there are usually few or no other assets to distribute to common stockholders; preferred stockholders have prior claims.

7. When the shares of a corporation are selling at a high price on the stock market, management may opt for a stock split in order to put them more easily within the reach of more investors.

8. The major components of the equity section of the balance sheet are common stock (preferred stock and common stock) and retained earnings. These two major components are distinguished because common stock represents invested capital not available for distribution to owners, while retained earnings are available for distribution as dividends.

9. Retained earnings represent net assets that are earned by a corporation over its life that have not been distributed as dividends to stockholders. As such, they can be used to invest in productive activities of the business.

10. Some of the main considerations involving the declaration of dividends are

    a. Whether or not there is enough cash, or whether the dividends can be paid by distribution of some other assets;

    b. Whether the policy of the corporation precludes dividend payments; and

    c. Whether there is a legal requirement that dividends must be declared.

11. A corporation may decide not to pay cash dividends even though it has a substantial net income because financial conditions may make it impractical or impossible.

    a. There may be insufficient cash, due to a significant investment in capital assets or reduction of debt, for instance. In a growth-oriented corporation, stockholders benefit from this strategy through increased earnings, which increase market prices for the shares.

    b. The policy of the corporation may preclude dividend payments.

    c. There is no legal requirement that dividends must be paid, unless otherwise specified by the various classes of shares.

    d. Dividends may be issued in shares of the corporation rather than in cash. A stock dividend helps to preserve cash or to increase the number of shares traded on the stock market.

12. *The date of dividend declaration*: the corporation is legally required to pay the dividend; a liability is established.

    The date of record: stockholders who own the shares on this date will receive the dividend.

    The date of payment: the dividend is actually paid on this date.

13. A cash dividend reduces both the asset Cash and the equity account Retained Earnings. A stock dividend does not affect Cash; the Retained Earnings account is still reduced, but the account Common Stock (or Preferred, if applicable) is increased. A stock dividend has no net effect on equity.

14. Dividend preferences that may be attached to preferred stock are

    a. Preferred stockholders are entitled to dividends before any dividends are distributed to common stockholders;

    b. Preferred stock may be cumulative; undeclared dividends can accumulate from one year to the next; and

    c. Preferred stockholders may participate with common stockholders in dividend distributions beyond their usual preferred dividends.

Preferred stock has returns that are more predictable and thus attract investors with a lower tolerance for risk. These advantages do not mean that purchasing preferred stock is necessarily better than purchasing common shares. Holding common stock has its own advantages. Common stockholders generally have legal control of the corporation. Ownership of commons stock carries the right to vote, to earn potentially unlimited dividends, and to have share values increase on stock markets.

15. If preferred stock is cumulative, undeclared dividends from previous years are accumulated and must be paid along with the current dividend. The unpaid dividends are called dividends in arrears. They are not a liability of the corporation unless dividends have been declared by the board of directors.

16. A stock dividend is a dividend in the form of shares of the corporation. Retained earnings decrease and common stock increases. A share split is an action taken by the corporation to increase the number of shares outstanding and reduce the per-share market value. No journal entry is required to record a stock split, and there is no effect on the accounting records.

17. A stock dividend increases the number of shares held by each stockholder but the ownership percentage remains the same. If a 10 per cent stock dividend is distributed, each stockholder holds more shares but the percentage of ownership remains the same, illustrated as follows:

	Ownership			
	Before Stock Dividend		*After Stock Dividend*	
Stockholders	*Shares*	*%*	*Shares*	*%*
W	250	25%	275	25%
X	250	25%	275	25%
Y	250	25%	275	25%
Z	250	25%	275	25%
	1,000	100%	1,100	100%

Chapter 11 Solutions

1. A statement of cash flows (SCF) provides external readers of a corporation's financial statements with a summary of the cash transactions that took place in the company in a particular period. For example, a reader could determine the amount of proceeds from the sale of plant and equipment assets, or whether plant and equipment assets were acquired. It communicates how the company is financing its activities (internally from operations or externally from other sources), and why cash increased or decreased.

   Its advantage over the balance sheet is that the balance sheet reports the financial position of the company at a particular point in time, while the SCF reports the changes in cash that occurred from one balance sheet date to another.

An income statement reports earnings on an accrual basis, which is important. However, investors and creditors are also interested in determining how a corporation has generated and used cash during a fiscal period, because cash is an important determinant of liquidity. The SCF provides this information succinctly to readers.

2. These activities are important to readers who wish to evaluate the financial position and the results of operations of a particular company in order to make certain decisions, such as whether or not to invest in it. The extent of cash flows resulting from financing and investing decisions can help readers identify the underlying, longer-range activities of the firm that may affect future earnings, such as whether plant and equipment assets are being acquired, or debt is being retired. The SCF makes these activities explicit.

3. An increase in accounts receivable during a fiscal year is recorded by a debit. The offsetting credit to the Cash account denotes a use of cash. In effect, cash has been diminished because amounts owing by customers has increased, instead of being collected.

4. The declaration of cash dividends has no effect on cash flow, since it does not involve the use of cash; it merely sets up a dividend payable in the books of the company. The payment of a dividend declared decreases cash flow, since it involves the outlay of cash. Whether the dividend was declared in prior years or in the current year has no effect; only the payment reduces cash. Changes in the dividends payable account balance from one year to the next also affect cash flows. A net reduction in dividends payable (a debit) increases cash outflow (a credit). A net increase in dividends payable decreases cash outflow.

5. Buying or selling short-term investments may decrease or increase the amount of cash available to the company if they are considered part of cash and cash equivalents. If they are considered part of C&CE, transactions involving short-term investments have no effect on cash flow from operating activities.

6. Net income for a period usually consists of sales less cost of sales, operating expenses, and other expenses like interest and income taxes. If there are a large number of credit sales and the amount of accounts receivable over the last year has increased, then there is less cash inflow compared to sales revenue recorded on the income statement. If many expenses are prepaid, then cash has been used but the expenses have not decreased net income. Similarly, if inventory levels have increased from one year-end to the next, cash has decreased but cost of goods sold is unaffected on the income statement.

   Depreciation of property, plant, and equipment decreases net income but not cash. Losses and gains on sale of property, plant, and equipment assets affect net income, but do not affect cash flows. Cash may also be used to purchase property, plant, and equipment, pay off borrowings, and pay dividends, as examples. These investing and financing activities affect cash, but are not reflected on the income statement.

7. Main balance sheet account transactions that use cash are (a) operations of the company (net cash outflow from operating activities during the period), (b) purchase of property, plant and equipment assets, (c) retirement of debt and common stock, and (d) payment of dividends. The balance sheet accounts are analyzed by looking at the opening and ending

balances of the account, determining the reasons for the change in the account, and recording the effects as a cash inflow or outflow from operating, financing, or investing activities.

Chapter 12 Solutions

1. Comparisons can be made using published industry statistics, statistics of previous years, statistics of leading competitors, or internally-developed ratios.

2. Liquidity is a corporation's ability to pay current liabilities as they become due. Being "illiquid" means creditors that have provided the corporation with goods and services on account, or with other forms of short-term borrowing, cannot be paid. Implications of being illiquid:

   Creditors:

   a. Can refuse to provide further goods or services on account.

   b. Can sue for payment.

   c. Can put the corporation into receivership or bankruptcy.

   d. Can refuse to lend additional cash.

   e. Can demand repayment of all debts, including long-term debt.

   Stockholders:

   a. May be unwilling to invest in additional common stock of the corporation

   b. Risk the loss of their investments if the company becomes bankrupt

3. Net income is based on accrual accounting and not cash basis accounting. For example, if $1,000,000 of sales are on account, this transaction increases net income but not cash. As an additional example, the corporation may have large sums of capital tied up in inventory which means there is less cash available to pay the liabilities.

4. *Current ratio*: Indicates how many current asset dollars exist to pay current liabilities.

   Acid-test ratio: Indicates whether or not the corporation is able to meet the immediate demands of creditors, without considering current assets tied up in inventory or prepaid expenses.

   Accounts receivable collection period: Indicates the average time needed to collect receivables.

   Number of days of sales in inventory: Indicates how many days of sales can be made with inventory on hand.

   Revenue operating cycle: Indicates how long it is between the purchase of inventory and the subsequent collection of cash from sales of inventory.

5. **a.** Working capital is the difference between current assets and current liabilities.

   The current ratio is computed by dividing current assets by current liabilities. It is one measure of whether or not the corporation is able to repay short-term creditors. The acid-test ratio, on the other hand, is a more severe test of liquidity. It is computed by dividing quick assets (cash, short-term investments, accounts receivable) by current liabilities.

   b. The current ratio is only a rough indication of how able an entity is to pay its current liabilities as they become due. The relative liquidity of components of current assets is not considered in the calculation of this ratio. The acid-test ratio is often used as a more severe test of liquidity.

6. The ability to pay short-term creditors as amounts become due depends on the liquidity of the current assets. If, for example, company X's current assets consist of cash and company Y's current assets consist of inventory, company Y will not be able to pay its creditors easily because of a lack of cash.

7. Taking too long to collect accounts receivable will reduce the amount of cash available to pay liabilities as they become due. The same is true if there is an over-investment in inventory.

8. An acceptable number of days to collect accounts receivable and to convert inventory to sales depends on several factors, including the industry in which the corporation does business and the state of the economy. Management judgment and experience are crucial. If accounts receivable are collected too slowly, or if credit is extended to liberally, debts may not be collected in a timely manner, or at all. If accounts receivable collections are too short, potential credit sales may be lost. Similarly, higher number of days of sales in inventory indicates that more cash is tied up in inventory. On the other hand, a lower number of days of sales in inventory may indicate that inventory levels are too low. Potential sales may be lost.

9. Advantages of decreasing number of days of sales in inventory might be that

   a. The amount of assets tied up in inventory is reduced.

   b. The dangers of obsolescence or deterioration are reduced.

   c. Less storage space is used for inventory, so that warehousing expenses are reduced.

   A disadvantage of decreasing number of days of sales in inventory is that stock can be reduced to the point where sales are lost.

10. The revenue operating cycle indicates the number of days that elapse between the purchase of inventory and the subsequent collection of cash after a sale is made. It is computed by adding the number of days needed to turn over inventory and the average number of days needed to collect receivables. It is useful in evaluating liquidity because a comparison can be made of the number of days needed to complete the cycle and the number of days within which the payables are due. Management can determine how long it will take the corporation to pay reinvest in inventory with cash generated by the revenue operating cycle.

11. **a.** Ratios that measure margins on sales:
    i. *Gross profit ratio*: indicates the amount of revenue left to cover other expenses after deducting cost of goods sold. It is calculated by dividing gross profit by net sales.
    ii. *Operating profit ratio*: indicates the amount of revenue left to cover interest and income taxes expenses after deducting cost of goods sold and operating expenses. It is calculated by dividing income from operations by net sales.
    iii. *Net profit ratio*: Indicates the percentage of sales revenue left in the business after payment of operating expenses, interest, and income taxes. It is calculated by dividing net income by net sales.

    b. Same as above.

12. Analysts and investors are concerned with the financial structure of a corporation because the higher the reliance on debt, the more substantial claim the creditors have against the assets of the corporation. The corporation is also more vulnerable to rises in interest rates and economic downturns, which in turn affects future earnings expectations.

13. Reliance on creditor financing can be positive, since financing a corporation by issuing additional shares results in a dilution of existing shareholders' control of the corporation. Also, creditor financing is beneficial to shareholders when the return is greater than the interest paid on the debt. However, interest has to be paid on the debt and, ultimately, the debt itself has to be repaid. Interest reduces the income of the corporation. If interest rates paid on debt are higher than the returns generated from the borrowed funds, net income is reduced. The corporation is more susceptible to economic downturns and interest rate increases as its reliance on debt grows.

14. *Short-Term Financing* Advantages:

    a. Usually does not require interest payment to the creditors

    b. Easily obtained

    Disadvantages:

    a. Payment is required within a short time

    b. More risky, because it has to be renewed more frequently

    Long-Term Financing Advantages:

    a. More secure, because renewal is infrequent

    b. Principal repayment not required for a long time

    Disadvantages:

    a. Must pay interest, and legal documents are often signed to enforce this.

    b. More work to acquire (must present financial statements, may have to be audited)

15. **a.** *Earnings per share*: Indicates the amount of net income that has been earned on each common share. It is calculated by dividing (net income less preferred share dividends) by number of common shares outstanding.

    b. *Price-earnings ratio*: Indicates the reasonableness of the market price in relation to per-share earnings. It is calculated by dividing market price per share by earnings per share.

    c. *Dividend yield*: Indicates the short-term cash return that could be expected from an investment in a company's shares. It is calculated by dividing dividends declared by outstanding common shares.

16. Horizontal analysis is the comparison of the change in one item on financial statements (such as merchandise inventory) during two or more accounting periods. Vertical analysis is the analysis of the composition of a financial statement by restating all items in that statement as percentages of a total. Generally sales is used as the income statement base and total assets (or total liabilities and equity) is used as the balance sheet base. Comparing the percentages of a particular item between two or more years shows the change in composition of the statement components.

Chapter 13 Solutions

1. A partnership is an unincorporated form of business organization in which the entity is owned by two or more persons. Five characteristics of a partnership are:

    a. *Limited life* – if a partner is admitted, withdraws, or dies, the existing partnership is dissolved and the business continues under a new partnership agreement.

    b. *Unlimited liability* – in general, each partner is personally liable for the debts that the partnership cannot pay. In the event that a partner cannot pay his/her share of partnership debts, the other partners can be called on to pay personally for such debts.

    c. *Mutual agency* – each partner can make binding agreements not only on the partnership, but also on the other partners.

    d. *Co-ownership of assets* – all assets contributed to the partnership by individual partners are jointly owned by all partners.

    e. *Sharing of profits and losses* – if the partnership agreement does not stipulate how profits and losses will be shared, all profits and losses are shared equally.

2. The advantages of a partnership are:

    a. The knowledge, skills, and financial resources of two or more persons can be combined.

    b. Partnerships can be formed relatively easily and quickly.

    c. A partnership can act promptly as a business enterprise in all matters. A corporation may be restricted in its actions on certain matters by its charter, by laws, or by statute.

d. Many of the formal government reports required of a corporation are not required of the partnership.

e. Income taxes are not levied against partnerships. The partners, however, report on their individual tax returns their share of partnership income.

The disadvantages of partnerships are:

a. Liability is usually unlimited. Partners are liable for all debts of the partnership.

b. The life of the partnership is limited. Death, withdrawal, or admission of a partner; agreement to terminate; bankruptcy; and incapacity of a partner are all terminate a partnership.

c. The partnership is a mutual agency; that is, each partner may act in business matters as the agent of the partnership.

d. The ability of a partnership to raise funds may be limited.

3. Although a proprietorship, partnership, and corporation engage in the same equity transactions of investment, distribution of income, and incomes/losses, how they are recorded is different.

   In a proprietorship, there is only one equity account: owner's capital. Investments by the owner, distributions of income known as withdrawals, and incomes/losses are all recorded in the owner's capital account.

   In a partnership, there is a capital account for each partner. A partner's investments, distributions of income in the form of withdrawals, and a share of incomes/losses are all recorded in the partner's capital account.

   In a corporation, there are two types of equity accounts: common stock and retained earnings. Investments by the owners, known as shareholders, are recorded in common stock. Distributions of income, known as dividends, along with incomes/losses are recorded in retained earnings.

4. Profits and losses are divided equally among partners if no agreement exists. Otherwise, several methods may be followed to allocate profits or losses Formulas often consider three factors – a return to each partner based on relative levels of services rendered, a return on capital invested, and a further division of remaining profits and losses according to a fixed ratio.

5. Salary and interest allocations are included in the division of profits and losses because the time and effort contributed by individual partners to the business and the amount of contributed capital may differ among partners.

6. The balance sheet of a partnership merely shows the ending capital balance of each partner. If many partners exist, a total capital amount is shown and the details of each partner's capital account appear in a statement of shareholders' equity.

Chapter 1 Solutions

EXERCISE 1–1

a. Partnership

b. GAAP

c. Ethics

d. Financial accounting

e. Managerial accounting

f. Separate legal entity

g. Limited liability

h. Unlimited liability

EXERCISE 1–2

a. Violation: Historical Cost

b. Violation: Economic entity

c. Violation: Economic entity

d. Violation: Revenue recognition

e. Violation: Full Disclosure

f. Correct: Matching

g. Correct: Time Period

h. Violation: Full Disclosure

EXERCISE 1–3

a. 30,000

b. 9,000

c. 95,000

d. In **a**, debt financing = (20,000/50,000) × 100=40%. In **b**, debt financing = (9,000/10,000) × 100=90%. In **c**, debt financing = (15,000/95,000) × 100 = 15.79% (rounded to two decimal places). Therefore, the greatest percentage of debt financing is reflected in **b**.

e. In **a**, equity financing = 100 − 40 = 60%. In **b**, equity financing = 100 − 90 = 10%. In **c**, equity financing = 100 − 15.79 = 84.21%. Therefore, the greatest percentage of equity financing is reflected in **c**.

EXERCISE 1–4

ASSETS			=	LIABILITIES	+	EQUITY		
Cash	+	Equipment	=	Accounts Payable	+	Common Stock	+	Retained Earnings

A.	Retained earnings	= \$5,000 (3,000 + 8,000 − 4,000 − 2,000)
B.	Accounts payable	= \$3,000 (1,000 + 6,000 − 3,000 − 1,000)
C.	Cash	= \$1,000 (4,000 − 1,500 − 3,000 − 500)
D.	Retained earnings	= \$6,000 (6,000 + 7,000 − 3,000 − 4,000)
E.	Equipment	= \$3,500 (2,500 −4,500 − 500 − 1,000)

EXERCISE 1–5

a. ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = \$10,000 (\$50,000 − 40,000)

Equity at Dec. 31 = \$20,000 (\$40,000 − 20,000)

The increase in equity during the year was \$10,000 (\$20,000 ending equity − 10,000 beginning equity). Given that during the year no common stock was issued and no dividends were declared, \$10,000 is the amount of net income earned during 2015.

b. ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = $10,000 ($50,000 − 40,000)

Equity at Dec. 31 = $20,000 ($40,000 − 20,000)

The increase in equity during the year was $10,000 ($20,000 ending equity − 10,000 beginning equity). Given that during the year no common stock was issued and $5,000 of dividends were declared, $15,000 is the amount of net income earned during 2015 [calculated as net income − $5,000 dividends = $10,000 increase in equity; net income = 10,000 + 5,000 or 15,000].

c. ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = $10,000 ($50,000 − 40,000)

Equity at Dec. 31 = $20,000 ($40,000 − 20,000)

The increase in equity during the year was $10,000 ($20,000 ending equity − 10,000 beginning equity). Given that during the year $12,000 of common stock was issued and no dividends were declared, a net loss of $2,000 was realized for 2015 (calculated as net income + $12,000 common stock issued = $10,000 increase in equity; net income = $10,000 − $12,000; net income is therefore a negative $2,000 which represents a net loss).

d. ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = $10,000 ($50,000 − 40,000)

Equity at Dec. 31 = $20,000 ($40,000 − 20,000)

The increase in equity during the year was $10,000 ($20,000 ending equity − 10,000 beginning equity). Given that during the year $8,000 of common stock was issued and $12,000 of dividends were declared, $14,000 is the amount of net income earned during 2015 (calculated as net income + $8,000 common stock issued − $12,000 dividends = $10,000 increase in equity; net income = $10,000 − $8,000 + $12,000; net income = $14,000).

EXERCISE 1–6

a.	L	**h.**	A	**o.**	L
b.	A	**i.**	A	**p.**	E
c.	L	**j.**	E	**q.**	A
d.	A	**k.**	E	**r.**	E
e.	A	**l.**	A	**s.**	E
f.	E	**m.**	E	**t.**	A
g.	L	**n.**	E		

EXERCISE 1–7

1. ASSETS = Cash + Accounts Receivable + Unused Supplies + Land + Building + Equipment
   = $33,000 + $82,000 + $2,000 + $25,000 + $70,000 + $30,000
   = $242,000 Total Assets
2. LIABILITIES = Notes Payable + Accounts Payable
   = $15,000 + $27,000
   = $42,000 Total Liabilities
3. ASSETS = LIABILITIES + EQUITY
   EQUITY = $242,000 Total Assets − $42,000 Total Liabilities
   = $200,000 Total Equity

Since equity is $200,000 and retained earnings is $40,000, common stock must be $160,000.

EXERCISE 1–8

EDW Inc.
Income Statement
Month Ended March 31, 2015

Revenues		
Service revenue		$20,000
Expenses		
Wages expense	$9,000	
Miscellaneous rxpense	2,500	
Insurance expense	1,500	
Office supplies expense	1,000	14,000
Net income		$6,000

EDW Inc.
Statement of Shareholders' Equity
Month Ended March 31, 2015

	Share Capital	Retained Earnings	Total Equity
Opening balance	$ -0-	$ -0-	$ -0-
Shares issued	2,000		2,000
Net income		6,000	6,000
Ending balance	$2,000	$6,000	$8,000

EDW Inc.
Balance Sheet
March 31, 2015

Assets		Liabilities		
Cash	$1,000	Accounts payable		$5,000
Accounts receivable	4,000			
Equipment	8,000	Equity		
		Common stock	$2,000	
		Retained rarnings	6,000	
		Total equity		8,000
Total Assets	$13,000	Total liabilities and equity		$13,000

NOTE:

The $2,000 amount for shares issued was calculated using A = L + E or, using the accounts in the order given in the alphabetized information; 4,000 + 1,000 + 8,000 = 5,000 − 1,500 − 2,500 − 1,000 + 20,000 + Common Stock − 9,000; 13,000 = 11,000 + Common Stock; 13,000 − 11,000 = 2,000 Common Stock.

Alternatively, you could have inserted all the values from the alphabetized information into the financial statements and then solved for the unknown Common Stock amount. There is often more than one approach to solving math related questions.

EXERCISE 1–9

Algonquin Inc.
Income Statement
Year Ended July 31, 2015

Revenues		
Service Revenue		$81,000
Expenses		
Advertising expense	$5,000	
Insurance expense	7,000	
Salaries expense	64,000	76,000
Net Income		$5,000

Algonquin Inc.
Statement of Stockholders' Equity
Year Ended July 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening Balance	$10,000	$6,000	$16,000
Net income		5,000	5,000
Dividends		(2,000)	(2,000)
Ending balance	$10,000	$9,000	$19,000

Algonquin Inc.
Balance Sheet
July 31, 2015

Assets		Liabilities		
Cash	$9,000	Accounts Payable	$3,000	
Accounts receivable	17,000	Notes payable	18,000	
Machinery	14,000	Total liabilities		$21,000
		Equity		
		Common stock	$10,000	
		Retained rarnings	9,000	
		Total equity		19,000
Total Assets	$40,000	Total liabilities and equity		$40,000

EXERCISE 1–10

Algonquin Inc.
Income Statement
Year Ended July 31, 2015

Revenues		
Service Revenue		$81,000
Expenses		
Advertising Expense	$5,000	
Insurance expense	7,000	
Salaries expense	64,000	76,000
Net income		$5,000

Algonquin Inc.
Statement of Stockholders' Equity
Year Ended July 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening Balance	$7,000	$6,000	$13,000
Shares issued	3,000		3,000
Net income		5,000	5,000
Dividends		(2,000)	(2,000)
Ending balance	$10,000	$9,000	$19,000

Algonquin Inc.
Balance Sheet
July 31, 2015

Assets		*Liabilities*		
Cash	$9,000	Accounts Payable	$3,000	
Accounts Receivable	17,000	Notes Payable	18,000	
Machinery	14,000	Total liabilities		$21,000
		Equity		
		Common stock	$10,000	
		Retained earnings	9,000	
		Total equity		19,000
Total assets	$40,000	Total liabilities and equity		$40,000

NOTE:

Given that additional shares were issued for cash of $3,000 during the year ended July 31, 2015 and common stock had a balance of $10,000 at July 31, 2015, the end of the year, the beginning balance in common stock must have been $7,000.

EXERCISE 1–11

Wallaby Inc.
Income Statement
Month Ended March 31, 2015

Revenues		
Fees Earned		$12,000
Expenses		
Equipment rental expense	$9,400	
Wages expense	3,400	
Fuel expense	500	13,300
Net Loss		$1,300

Wallaby Inc.
Statement of Stockholders' Equity
Month Ended March 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$6,400	$4,000	$10,400
Net Loss		(1,300)	(1,300)
Ending balance	$6,400	$2,700	$9,100

Wallaby Inc.
Balance Sheet
March 31, 2015

Assets		*Liabilities*		
Cash	$6,000	Rent payable	$2,500	
Accounts receivable	1,600	Note payable	18,000	
Truck	22,000	Total liabilities		$20,500
		Equity		
		Common stock	$6,400	
		Retained earnings	2,700	
		Total equity		9,100
Total assets	$29,600	Total liabilities and equity		$29,600

EXERCISE 1–12

Adams Ltd.
Income Statement
For the Month Ended January 31, 2015

Revenue		
Service Revenue		$3,335
Expenses		
Rent expense	$300	
Repairs expense	500	
Salaries expense	1,000	
Miscellaneous expense	335	
Total expenses		2,135
Net Income		$1,200

Adams Ltd.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$ -0-	$ -0-	$ -0-
Shares issued	3,000	-0-	3,000
Net income	-0-	1,200	1,200
Ending balance	$3,000	$1,200	$4,200

Adams Ltd.
Balance Sheet
At January 31, 2015

Assets		
Cash	$1,000	
Land	1,000	
Building	2,500	
Total assets		$4,500
Liabilities		
Accounts payable		$300
Equity		
Common stock	$3,000	
Retained earnings	1,200	
Total equity		4,200
Total liabilities and equity		$4,500

EXERCISE 1–13

Mitch's Architects Ltd.
Income Statement
For the Year Ended December 31, 2015

Revenues		
Consulting fees earned		$150,000
Expenses		
Office rent expense	$60,000	
Salaries and benefits expense	40,000	
Utilities expense	12,000	
Insurance expense	5,000	
Supplies and postage expense	2,400	119,400
Net income		$ 30,600

EXERCISE 1–14

Mitch's Architects Ltd.
Statement of Shareholders' Equity
For the Year Ended December 31, 2015

	Share Capital	Retained Earnings	Total Equity
Opening balance*	$20,400	$ 6,000	$26,400
Shares issued**	10,000		10,000
Net income		30,600	30,600
Dividends***		(1,000)	(1,000)
Ending balance	$30,400	$ 35,600	$66,000

* Common stock opening balance ($30,400 − 10,000)
* Retained earnings opening balance ($5,000 balance + 1,000 dividends)
** Common stock issued during the current year given in the question as $10,000
*** Dividends paid during the current year given in the question as $1,000

EXERCISE 1–15

Mitch's Architects Ltd.
Balance Sheet
At December 31, 2015

Assets		*Liabilities*		
Cash	$ 23,000	Accounts payable	$30,000	
Accounts receivable	24,000	Unearned consulting fees	15,000	
Office supplies inventory	2,000	Total liabilities		$ 45,000
Prepaid insurance	7,000	*Equity*		
Truck	40,000	Common stock	$30,400	
Office equipment	15,000	Retained earnings	35,600	
		Total equity		66,000
Total assets	$111,000	Total liabilities and equity		$111,000

EXERCISE 1–16

Gillespie Corp.
Income Statement
For the Year Ended May 31, 2015

Revenues	
Service revenue	$382,000
Rent revenue	90,000
Total Revenue	472,000
Expenses	
Warehouse rent expense	100,000
Salaries and benefits expense	110,000
Utilities expense	42,000
Insurance expense	15,000
Shop supplies expense	6,000
Net income	$199,000

Gillespie Corp.
Statement of Stockholders' Equity
At May 31, 2015

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ 5,000	$140,000	$145,000
Net income		199,000	199,000
Dividends		(10,000)	(10,000)
Ending balance	$ 5,000	$329,000	$334,000

Gillespie Corp.
Balance Sheet
For the Year Ended May 31, 2015

Assets		*Liabilities*		
Cash	$ 50,000	Accounts payable	$130,000	
Accounts receivable	85,000	Unearned service revenue	25,000	
Prepaid advertising	17,000	Total liabilities		$155,000
Shop supplies	52,000	*Equity*		
Building	240,000	Common stock	$ 5,000	
Office equipment	45,000	Retained earnings	329,000	
		Total equity		334,000
Total assets	$489,000	Total liabilities and equity		$489,000

EXERCISE 1–17

Using the same calculation as the retained earnings column in the statement of stockholders' equity:

Opening retained earnings + Net income (or minus net loss) – Dividends = Ending retained earnings

a. $50,000 + Net income ? – 20,000 = $40,000
Net income = $40,000 – 50,000 + 20,000 = $10,000

b. Retained earnings opening balance ? + 150,000 – 40,000 = $130,000
Retained earnings opening balance = $130,000 – 150,000 + 40,000 = $20,000

c. $75,000 – 35,000 – Dividends ? = $40,000
Dividends = $40,000 – 75,000 + 35,000 = 0

EXERCISE 1–18

a.	**Assets**	=	**Liabilities**	+	**Equity**	
Balances at April 1, 2015	$100,000		$60,000		$40,000	
					10,000	April net income(loss)
Balances at April 30, 2015	$180,000	=	$130,000	+	$50,000	

b.	**Assets**	=	**Liabilities**	+	**Equity**	
Balances at April 1, 2015	$100,000		$60,000		$40,000	
					$50,000	Shares issued in April
					(40,000)	April net income(loss)
Balances at April 30, 2015	$180,000	=	$130,000	+	$50,000	

c.	**Assets**	=	**Liabilities**	+	**Equity**	
Balances at April 1, 2015	$100,000		$60,000		$40,000	
					14,000	April net income(loss)
					(4,000)	Dividends paid in April
Balances at April 30, 2015	$180,000	=	$130,000	+	$50,000	

EXERCISE 1–19

a.	**Assets**	=	**Liabilities**	+	**Equity**	
Balances at June 1, 2015	$160,000		$100,000		$60,000	
					$70,000	June net income(loss)
					(20,000)	Dividends paid in June
Balances at June 30, 2015	$200,000	=	$90,000	+	$110,000	

b.	**Assets**	=	**Liabilities**	+	**Equity**	
Balances at June 1, 2015	$160,000		$100,000		$60,000	
					$40,000	Shares issued in June
					$90,000	June net income(loss)
					(80,000)	Dividends paid in June
Balances at June 30, 2015	$200,000	=	$90,000	+	$110,000	

c.	**Assets**	=	**Liabilities**	+	**Equity**	
Balances at June 1, 2015	$160,000		$100,000		$60,000	
					$130,000	Shares issued in June
					($80,000)	June net income(loss)
					-0-	Dividends paid in June
Balances at June 30, 2015	$200,000	=	$90,000	+	$110,000	

EXERCISE 1–20

a.	3	Purchased a truck for cash.
b.	1	Issued common stock for cash.
c.	2	Incurred a bank loan as payment for equipment.
d.	3	Made a deposit for electricity service to be provided to the company in the future.
e.	4	Paid rent expense.
f.	NT	Signed a new union contract that provides for increased wages in the future.
g.	NT	Wrote a letter of complaint to the State Governor about a mail strike and hired a messenger service to deliver letters.
h.	4	Received a collect telegram from the State Governor; paid the messenger.
i.	1	Billed customers for services performed.
j.	5	Made a cash payment to satisfy an outstanding obligation.
k.	3	Received a payment of cash in satisfaction of an amount owed by a customer.
l.	1	Collected cash from a customer for services rendered.

m.	4	Paid cash for truck operation expenses.
n.	5&4	Made a monthly payment on the bank loan; this payment included a payment on part of the loan and also an amount of interest expense. (Hint: This transaction affects more than two parts of the accounting equation.)
o.	7	Issued shares in the company to pay off a loan.

Chapter 2 Solutions

EXERCISE 2–1

a.	b.				
L	CR	Unearned consulting fees	A	DR	Vehicles
A	DR	Prepaid insurance	E	DR	Depreciation expense
A	DR	Office supplies	R	CR	Interest income
A	DR	Notes receivable	E	DR	Interest expense
R	CR	Insurance fee revenue	A	DR	Furniture
L	CR	Unearned insurance fee revenue	L	CR	Utilities payable
E	DR	Salary and benefits expense	L	CR	Unearned rent revenue
A	DR	Small tools and supplies	E	CR	Retained earnings
R	CR	Service fees earned	L	CR	Salaries and benefits payable
R	CR	Service fees revenue	E	DR	Compensation expense
L	CR	Notes payable	R	CR	Interest earned
A	DR	Buildings	E	DR	Meals and mileage expense
L	CR	Rent payable	L	CR	Unearned service fees
E	CR	Common stock	A	DR	Equipment

EXERCISE 2–2

a.	b.				
L	DR	Unearned consulting fees	A	CR	Vehicles
A	CR	Prepaid insurance	E	CR	Depreciation expense
A	CR	Office supplies	R	DR	Interest income
A	CR	Notes receivable	E	CR	Interest expense
R	DR	Insurance fee revenue	A	CR	Furniture
L	DR	Unearned insurance fee revenue	L	DR	Utilities payable
E	CR	Salary and benefits expense	L	DR	Unearned rent revenue
A	CR	Small tools and supplies	E	DR	Retained earnings
R	DR	Service fees earned	L	DR	Salaries and benefits payable
R	DR	Service fees revenue	E	CR	Compensation expense
L	DR	Notes payable	R	DR	Interest earned
A	CR	Buildings	E	CR	Meals and mileage expense
L	DR	Rent payable	L	DR	Unearned service fees
E	DR	Common stock	A	CR	Equipment

EXERCISE 2–3

	Assets		Liabilities		Equity	
	Debit (increase)	*Credit* (decrease)	*Debit* (decrease)	*Credit* (increase)	*Debit* (decrease)	*Credit* (increase)
1. Purchased a $10,000 truck on credit.	10,000			10,000		
2. Borrowed $5,000 from the bank.	5,000			5,000		
3. Paid $2,000 of the bank loan.		2,000	2,000			
4. Paid $600 in advance for a one-year insurance policy.	600	600				
5. Received $500 in advance for next month's rental of office space.	500			500		

EXERCISE 2–4

	Debit	*Credit*
1. Issued common stock for cash.	Cash	Common stock
2. Purchased equipment on credit.	Equipment	Accounts payable
3. Paid for a one-year insurance policy.	Prepaid expenses	Cash
4. Billed a customer for repairs completed today.	Accounts receivable	Repair revenue
5. Paid this month's rent.	Rent expense	Cash
6. Collected the amount billed in transaction 4 above.	Cash	Accounts receivable
7. Collected cash for repairs completed today.	Cash	Repair Revenue
8. Paid for the equipment purchased in transaction 2 above.	Accounts payable	Cash
9. Signed a union contract.	No entry	No entry
10. Collected cash for repairs to be made for customers next month.	Cash	Unearned revenue
11. Transferred this month's portion of prepaid insurance that was used to Insurance Expense.	Insurance expense	Prepaid expenses

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EXERCISE 2–5

#	Cash	
1	13,000	
3	10,000	
4		2,000
7		1,000
8		5,000
9		1,500
10		25
11	5,000	
12		10,000
13		200
15	2,000	
16	2,000	
20		5,000
Bal	7,275	

#	Accounts Receivable	
6	7,000	
11		5,000
18	8,000	
Bal	10,000	

#	Prepaid Rent	
20	5,000	
Bal	5,000	

#	Office Supplies Office Supplies	
17	3,000	
Bal	3,000	

#	Equipment	
7	1,000	
Bal	1,000	

#	Vehicle	
12	30,000	
Bal	30,000	

#	Furniture	
14	3,000	
Bal	3,000	

#	Computer	
29	2,500	
Bal	2,500	

#	Accounts Payable	
2		200
13	200	
14		3,000
17		3,000
Bal		6,000

#	Loan Payable	
3		10,000
9	1,350	
Bal		8,650

#	Notes Payable	
5		5,000
12		20,000
19		2,500
Bal		27,500

#	Unearned Service Revenue	
16		2,000
Bal		2,000

#	Common Stock	
1		13,000
Bal		13,000

#	Service Revenue	
6		7,000
15		2,000
18		8,000
Bal		17,000

#	Electricity Expense	
2	200	
Bal	200	

#	Vehicle/Travel Expense	
10	25	
Bal	25	

#	Repairs Expense	
5	5,000	
Bal	5,000	

#	Rent Expense	
8	5,000	
Bal	5,000	

#	Salaries Expense	
4	2,000	
Bal	2,000	

#	Interest Expense	
9	150	
Bal	150	

Debits	74,150
Credits	74,150

EXERCISE 2–6

BOLA Co.
Trial Balance
At August 31, 2016

	Debit	Credit
Cash	$ 7,275	
Accounts receivable	10,000	
Prepaid rent	5,000	
Office supplies inventory	3,000	
Equipment	1,000	
Vehicle	30,000	
Furniture	3,000	
Computer	2,500	
Accounts payable		$ 6,000
Loan payable		8,650
Notes payable		27,500
Unearned service revenue		2,000
Common stock		13,000
Service revenue		17,000
Electricity expense	200	
Vehicle/travel expense	25	
Repairs expense	5,000	
Rent expense	5,000	
Salaries expense	2,000	
Interest expense	150	
	$74,150	$74,150

EXERCISE 2–7

BOLA Co.
Income Statement
For the Month Ended August 31, 2016

Revenues		
Service revenue		$17,000
Expenses		
Electricity expense	$ 200	
Vehicle/Travel expense	25	
Repairs expense	5,000	
Rent expense	5,000	
Salaries expense	2,000	
Interest expense	150	12,375
Net income		$ 4,625

BOLA Co.
Statement of Stockholders' Equity
For the Month Ended August 31, 2016

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ –	$ –	$ –
Shares issuance	13,000		13,000
Net income		4,625	4,625
Ending balance	$ 13,000	$ 4,625	$17,625

BOLA Co.
Balance Sheet
At August 31, 2016

Assets		*Liabilities*		
Cash	$ 7,275	Accounts payable	$ 6,000	
Accounts receivable	10,000	Loan payable	8,650	
Prepaid rent	5,000	Note payable	27,500	
Office supplies inventory	3,000	Unearned service revenue	2,000	
Equipment	1,000	Total liabilities		$44,150
Vehicle	30,000	*Equity*		
Furniture	3,000	Common stock	$13,000	
Computer	2,500	Retained earnings	4,625	
		Total equity		17,625
Total assets	$61,775	Total liabilities and equity		$61,775

EXERCISE 2–8

Cash		Bank Loan		Common Stock		Repair Revenue	
(1) 5,000	(2) 900	(8) 2,500	(5) 7,500		(1) 5,000		(3) 1,500
(5) 7,500	(8) 2,500						
(6) 500	(10) 2,000						

Accounts Receivable		Accounts Payable		Electricity Expense	
(3) 1,500	(6) 500	(10) 2,000	(4) 2,000	(7) 200	
			(7) 200		

Prepaid Rent		Rent Expense	
(2) 900	(11) 300	(11) 300	

Supplies		Supplies Expense	
(4) 2,000	(9) 800	(9) 800	

EXERCISE 2–9

Cross Corporation
Trial Balance
At December 31, 2015

	Account Balances	
	Debits	*Credits*
Cash	$120,400	
Commissions earned		5,000
Common stock		170,000
Accounts payable		$30,000
Insurance expense	100	
Land	8,000	
Building	120,000	
Rent expense	1,000	
Accounts receivable	26,000	
Unused supplies	6,000	
Supplies expense	300	
Loan payable		80,000
Salaries expense	3,000	
Telephone expense	200	–
Total	$285,000	$285,000

EXERCISE 2–10

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		3,000	
	Common stock			3,000
	(a) To record the issuance of common stock.			
	Equipment		2,000	
	Accounts payable			2,000
	(b) To record the purchase of equipment on account.			
	Rent expense		400	
	Cash			400
	(c) To record the payment of rent for the month.			
	Supplies		4,000	
	Accounts payable			4,000
	(d) To record the purchase of supplies.			
	Accounts receivable		2,500	
	Repair revenue			2,500
	(e) To record repair revenue.			
	Accounts payable		2,000	
	Cash			2,000
	(f) To record the payment on account.			
	Cash		500	
	Accounts receivable			500
	(g) To record collection of an amount owed.			
	Cash		1,000	
	Equipment			1,000
	(h) To record the sale of equipment.			

EXERCISE 2–11

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		XX	
	Common stock			XX
	(1) To record issuance of common stock.			
	Unused supplies		XX	
	Cash			XX
	Accounts payable			XX
	(2) To record the purchase of supplies.			
	Cash		XX	
	Repair revenue			XX
	(3) To record revenue earned.			
	Accounts receivable		XX	
	Repair revenue			XX
	(4) To record revenue earned.			
	Prepaid expense		XX	
	Cash			XX
	(5) To record expense paid in advance.			
	Supplies expense		XX	
	Accounts payable			XX
	(6) To record supplies purchased and used.			
	Rent expense		XX	
	Accounts payable			XX
	(7) To record rent expense.			
	Cash		XX	
	Unused supplies			XX
	(8) To record the sale of supplies.			
	Electricity expense		XX	
	Prepaid expense			XX
	(9) To record electricity expense for the month.			
	Accounts payable		XX	
	Cash			XX
	(10) To record payment on account.			
	Cash		XX	
	Bank loan			XX
	(11) To record the issuance of a bank loan.			

EXERCISE 2–12

a. General Ledger T-accounts with transactions:

Cash			
Jan. 1	10,000	Jan. 5	200
11	1,300	9	4,000
		30	1,800
Bal.	5,300		

Accounts Payable			
		Jan. 28	450

Common Stock			
		Jan. 1	10,000

Service Revenue			
		Jan. 11	1,300
		31	1,600
		Bal.	2,900

Accounts Receivable			
Jan. 31	1,600		

Rent Expense			
Jan. 5	200		

Unused Supplies			
Jan. 9	4,000	Jan. 31	200
Bal.	3,800		

Truck Operation Expense			
Jan. 28	450		

Salaries Expense			
Jan. 30	1,800		

Supplies Expense			
Jan. 31	200		

b. Trial balance is as follows:

Elgert Corporation
Trial Balance
January 31, 2015

	Debit	*Credit*
Cash	$5,300	
Accounts receivable	1,600	
Unused supplies	3,800	
Accounts payable		$450
Common stock		10,000
Service revenue		2,900
Rent expense	200	
Truck operation expense	450	
Salaries expense	1,800	
Supplies expense	200	
Total	$13,350	$13,350

c. Income statement, statement of stockholders' equity, and the balance sheet are as follows:

Elgert Corporation
Income Statement
For the Month Ended January 31, 2015

Revenue		
Service revenue		$2,900
Expenses		
Rent expense	$200	
Truck operation expense	450	
Salaries expense	1,800	
Supplies expense	200	
Total expenses		2,650
Net income		$250

Elgert Corporation
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$ 0	$ 0	$ 0
Shares issued	10,000	0	10,000
Net income	0	250	250
Ending balance	$10,000	$250	$10,250

Elgert Corporation
Balance Sheet
At January 31, 2015

Assets		
Cash		$5,300
Accounts receivable		1,600
Unused supplies		3,800
Total assets		$10,700
Liabilities		
Accounts payable		$450
Equity		
Common stock	$10,000	
Retained earnings	250	10,250
Total liabilities and equity		$10,700

EXERCISE 2–13

1. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		1,500	
	Accounts payable			150
	Advertising expense			1,350

2. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries expense		4,400	
	Cash			4,400

3. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Repairs expense		1,500	
	Prepaid repairs			1,500

4. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		5,000	
	Revenue		5,000	
	Unearned revenue			5,000
	Accounts receivable			5,000

5. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Rent expense		5,500	
	Cash			5,500

6. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Revenue		4,000	
	Unearned revenue			4,000

7. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts receivable		8,000	
	Accounts payable			8,000

8. Adjusting Entry required to correct the error:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid rent		10,000	
	Rent expense			10,000

Chapter 3 Solutions

EXERCISE 3–1

a. and **c.**

Graham Corporation
General Ledger

ASSETS		=	LIABILITIES		+	EQUITY	
Interest Receivable			**Interest Payable**			**Interest Earned**	
(a) 110				(c) 90			(a) 110
Prepaid Insurance			**Salaries Payable**			**Rent Earned**	
1,800				(d) 450			(e) 500
	(b) 1,200						
Bal. 600			**Unearned Rent**			**Insurance Expense**	
				700		(b) 1,200	
			(e) 500				
				Bal. 200		**Interest Expense**	
						(c) 90	
						Salaries Expense	
						(d) 450	

b.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Interest receivable		110	
	Interest earned			110
	(a)			
	Insurance expense		1,200	
	Prepaid insurance			1,200
	(b)			
	Interest expense		90	
	Interest payable			90
	(c)			
	Salaries expense		450	
	Salaries payable			450
	(d)			
	Unearned rent		500	
	Rent earned			500
	(e)			

d.

Revenues	
Interest earned	$110
Rent earned	500
Expenses	
Insurance expense	$1,200
Interest expense	90
Salaries expense	450

EXERCISE 3–2

a. The adjustments column is as follows:

	Lauer Corporation							
	Trial Balance			Adjustments			Adjusted Trial Balance	
	Dr.	*Cr.*		*Dr.*		*Cr.*	*Dr.*	*Cr.*
Cash	$4,000						$4,000	
Accounts receivable	5,000						5,000	
Prepaid insurance	3,600				(a)	$300	3,300	
Prepaid rent	1,000				(b)	500	500	
Truck	6,000						6,000	
Accumulated depreciation – truck					(c)	1,500		$1,500
Accounts payable		$7,000			(d)	400		7,400
Salaries payable					(e)	1,000		1,000
Unearned rent		1,200	(f)	$600				600
Common stock		2,700						2,700
Revenue		25,000						25,000
Rent earned					(f)	600		600
Advertising expense	700						700	
Commissions expense	2,000						2,000	
Depreciation expense			(c)	1,500			1,500	
Insurance expense			(a)	300			300	
Rent expense	5,500		(b)	500			6,000	
Salaries expense	8,000		(e)	1,000			9,000	
Interest expense	100		(d)	400			500	
Totals	$35,900	$35,900		$4,300		$4,300	$38,800	$38,800

b. The general journal is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Insurance expense		300	
	Prepaid insurance			300
	(a) To record expiry of prepaid insurance.			
	Rent expense		500	
	Prepaid rent			500
	(b) To record expiry of prepaid rent.			
	Depreciation expense		1,500	
	Accumulated depreciation – truck			1,500
	(c) To record truck depreciation.			
	Interest expense		400	
	Accounts payable			400
	(d) To accrue interest.			
	Salaries expense		1,000	
	Salaries payable			1,000
	(e) To accrue unpaid salaries.			
	Unearned rent		600	
	Rent earned			600
	(f) To record expiry of unearned rent.			

EXERCISE 3–3

a. The general journal is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Rent expense		200	
	Prepaid rent			200
	(a) To adjust prepaid rent account to the proper balance.			
	Office supplies expense		400	
	Unused office supplies			400
	(b) To record the ending balance of supplies on hand.			
	Income taxes expense		5,000	
	Income taxes payable			5,000
	(c) To record income taxes for the period.			
	Unearned commissions		1,000	
	Commissions earned			1,000
	(d) To record the proper balance in the Unearned Commissions account.			
	Salaries expense		300	
	Salaries payable			300
	(e) To accrue salaries for the period.			

b. Assets would be overstated by \$600 [(a): 200 + (b): 400].

Liabilities would be understated by \$4,300 [(c): 5,000 − (d): 1,000 + (e): 300].

Revenue would be understated by $1,000 (d).

Expenses would be understated by $5,900 [(a): 200 + (b): 400 + (c): 5,000 + (e): 300].

Equity would be overstated by $4,900 [(a):200 + (b):400 + (c):5,000 − (d):1,000 + (e):300].

EXERCISE 3–4

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Advertising expense		500	
	Prepaid advertising			500
	To record the expired portion of advertising for the period.			
Dec. 31	Supplies expense		400	
	Unused supplies			400
	To record the remaining amount of supplies on hand.			
Dec. 31	Depreciation expense – equipment		250	
	Accumulated depreciation – equipment			250
	To record the depreciation for the period.			
Dec. 31	Maintenance expense		200	
	Telephone expense		100	
	Utilities expense		400	
	Commissions expense		800	
	Accounts payable			1,500
	To record expenses incurred but not yet paid for the period.			
Dec. 31	Salaries expense		700	
	Salaries payable			700
	To record salaries accrued for the period.			
Dec. 31	Unearned subscriptions		5,000	
	Subscription revenue			5,000
	To record subscriptions earned for the period.			

EXERCISE 3–5

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Depreciation expense – truck		1,200	
	Accumulated depreciation – truck			1,200
	To record additional truck depreciation for the year ($2,500 − 1,300) ($10,000/4 years = $2,500/year).			

EXERCISE 3–6

Interest expense for the year should be $12,000 × 10% = $1,200. The needed adjusting entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Interest expense		100	
	Interest payable			100
	To record interest accrued at December 31 ($1,200 − 1,100).			

EXERCISE 3–7

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Insurance expense		600	
	Prepaid insurance			600
	(a) To record expiry of 6 months insurance.			
	Supplies expense		200	
	Unused supplies			200
	(b) To adjust supplies on hand to physical count.			
	Telephone expense		50	
	Accounts payable			50
	(c) To record account payable at year end.			

EXERCISE 3–8

1.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts receivable		Dr	
	Revenue			Cr

2.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		Dr	
	Unearned revenue			Cr

3.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Unearned revenue		Dr	
	Revenue			Cr

4.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Repairs expense		Dr	
	Accounts payable			Cr

5.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid repairs expense		Dr	
	Cash			Cr

6.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Repairs expense		Dr	
	Prepaid repairs expense			Cr

7.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries expense		Dr	
	Accrued salaries payable			Cr

8.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation expense		Dr	
	Accumulated depreciation, equipment			Cr

EXERCISE 3–9

1. Last pay date was Monday, March 28, 2016, for work done until Friday, March 25, 2016.
   Number of remaining business days from last pay date to March 31, 2016 is 4 days.
   Total payroll per day: 65 employees $\times$ \$80 day $=$ \$5,200 per day
   Total accrued salaries to March 31, 2016: \$5,200 per day $\times$ 4 days $=$ \$20,800
   Total payroll per week: \$5,200 $\times$ 5 working days per week $=$ \$26,000 per week

2.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar 31, 2016	Salaries expense		20,800	
	Accrued salaries payable			20,800

3.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Apr 4, 2016	Salaries expense*		5,200	
	Accrued salaries payable		20,800	
	Cash			26,000

* 5 days per week $-$ 4 days accrued $=$ 1 day not yet expensed $\times$ \$5,200 per day $=$ \$5,200

EXERCISE 3–10

1. Adjusting entry for \$70,000 of revenue earned but not yet billed to the customer.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts receivable		70,000	
	Revenue			70,000

2. Adjusting entry for \$4,500 of salaries from the last pay date of October 14.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries expense		4,500	
	Accrued salaries payable			4,500

3. Adjusting entry for \$40,000 of cash received from a customer for revenue not yet earned.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		40,000	
	Unearned revenue			40,000

4. Adjusting entry for $500 of utilities for October, but not yet paid.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Utilities expense		500	
	Accounts payable			500

5. Adjusting entry for $1,300 of cash paid to a supplier for advertising not yet published.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid advertising expenses		1,300	
	Cash			1,300

6. Adjusting entry for October depreciation expense for equipment.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation expense		1,000	
	Accumulated depreciation, equipment			1,000

Self-Check Trail balance accounts:

Quertin Quick Fix Ltd.
Trial Balance
At October 31, 2016

	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance	
	Debit	Credit	Debit	Credit	Debit	Credit
Cash	$ 80,000		$ 40,000	$ 1,300	$118,700	
Accounts receivable	325,000		70,000		395,000	
Office supplies	5,000				5,000	
Prepaid expenses	15,000		1,300		16,300	
Equipment	150,000				150,000	
Accumulated depreciation, equipment	1,500			1,000		$ 2,500
Land	150,000				150,000	
Accounts payable		$225,000		500		225,500
Accrued salaries payable		5,000		4,500		9,500
Unearned service revenue		10,000		40,000		50,000
Notes payable		210,000				210,000
Common stock		10,000				10,000
Retained earnings		37,800				37,800
Service revenue		300,000		70,000		370,000
Advertising expense	1,500				1,500	
Depreciation expense	800		1,000		1,800	
Maintenance service expenses	1,000				1,000	
Rent expense	14,000				14,000	
Salaries expense	45,000		4,500		49,500	
Utilities expense	12,000		500		12,500	
	$799,300	$799,300	$117,300	$117,300	$915,300	$915,300

EXERCISE 3–11

Bernard Inc.
Adjusted Trial Balance
December 31, 2015

	Debits	*Credits*
Prepaid advertising	$1,000	
Supplies	750	
Equipment	21,750	
Accumulated depreciation – equipment		$1,500
Accounts payable		13,250
Salaries payable		700
Unearned subscriptions		10,000
Common stock		8,000
Subscription revenue		5,000
Advertising expense	500	
Commissions expense	800	
Depreciation expense – equipment	250	
Maintenance expense	200	
Salaries expense	10,200	
Supplies expense	2,500	
Telephone expense	100	
Utilities expense	400	
Totals	$38,450	$38,450

EXERCISE 3–12

1. Close revenue accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Services revenue		276,000	
	Income summary			276,000

2. Close expense accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income summary		110,780	
	Salaries expense			41,700
	Insurance expense			3,700
	Interest expense			150
	Shop supplies expense			750
	Advertising expense			4,050
	Depreciation expense			2,380
	Repairs expenses			7,800
	Rent expense			22,500
	Income tax expense			4,500
	Utilities expense			23,250

3. Close the income summary account to retained earnings.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income summary		165,220	
	Retained earnings			165,220

4. Close dividends to retained earnings.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Retained earnings		5,000	
	Cash dividends			5,000

EXERCISE 3–13

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Commissions earned		20,000	
	Subscriptions revenue		17,630	
	Income summary			37,630
	To close revenue accounts to Income summary.			
Dec. 31	Income summary		58,400	
	Depreciation expense – machinery . . .			900
	Depreciation expense – warehouse . . .			1,200
	Insurance expense			1,800
	Interest expense			2,365
	Salaries expense			33,475
	Supplies expense			15,800
	Utilities expense			2,860
	To close expense accounts to Income summary.			
Dec. 31	Retained earnings		20,770	
	Income summary			20,770
	To close net loss in Income summary to Retained earnings.			
Dec. 31	Retained earnings		14,000	
	Dividends			14,000
	To close Dividends to Retained earnings.			

Willis Inc.
Post-Closing Trial Balance
December 31, 2015

	Debits	*Credits*
Accounts payable		$4,400
Accounts receivable	$3,600	
Accumulated depreciation – machinery		$2,800
Accumulated depreciation – warehouse		8,000
Bank loan		47,600
Cash	12,000	
Interest payable		1,200
Land	15,000	
Machinery	20,000	
Retained earnings*		1,230
Salaries payable		1,970
Common stock		52,100
Supplies	2,500	
Unearned fees		800
Warehouse	67,000	
Totals	$120,100	$120,100

**calculated as $36,000 adjusted retained earnings balance +$37,630 total revenues closed to re-*

tained earnings —$58,400 total expenses closed to retained earnings —$14,000 dividends closed to retained earnings.

Chapter 4 Solutions

EXERCISE 4–1

a. The balance sheet is as follows:

Joyes Enterprises Ltd.
Balance Sheet
At December 31, 2016

Assets			
Current			
Cash		$2,000	
Accounts receivable		8,000	
Merchandise inventory		19,000	
Prepaid insurance		1,000	
Total current assets			$30,000
Property, plant, and equipment			
Land		5,000	
Buildings	$25,000		
Less: Accum. Dep'n.	1,000	24,000	
Equipment	20,000		
Less: Accum. Dep'n.	4,000	16,000	
Net property, plant, and equipment			45,000
Total Assets			$75,000
Liabilities			
Current liabilities			
Bank loan		$5,000	
Accounts payable		7,000	
Income taxes payable		3,000	
Total current liabilities			$15,000
Non-current liabilities			
Mortgage payable			5,000
Total liabilities			20,000
Equity			
Common stock		48,000	
Retained earnings		7,000	
Total equity			55,000
Total liabilities and equity			$75,000

b. Current assets total $30,000. Current liabilities total $15,000. The company appears to have sufficient resources to meet its obligations in the next year.

c. Total equity is $55,000. Total liabilities equal $20,000. The ratio is $55,000/20,000 = 2.75 to 1.

EXERCISE 4–2

a. The building should likely be a non-current asset, as its useful life is generally greater than one fiscal year. Short-term investments are current assets because they are readily marketable, by definition. Unused office supplies are likely current assets, as they will usually be used in the next fiscal period. The Notes payable (due 2022) is due in 2022 and therefore a non-current liability, as it will not be paid within the next fiscal year. Salaries payable is likely a current liability, as it will be paid in the next fiscal year in all likelihood. The last line on the balance sheet should read "Total Liabilities and Equity". The balance sheet lists a building account but not a land account. Sometimes a company owns a building without owning land, but it is more likely that these two assets should have been separated when they were acquired. Retained earnings should be shown in the equity section. There is no accumulated depreciation recorded for the long-lived assets and there are no income taxes payable recorded. The reasons for these omissions should be investigated.

b. The balance sheet is as follows:

Abbey Limited
Balance Sheet
At November 30, 2015

Assets		
Current		
Cash	$1,000	
Short-term investments	3,000	
Accounts receivable	6,000	
Merchandise inventory	3,000	
Unused supplies	100	
Total current assets		$13,100
Property, plant, and equipment		
Building*	12,000	
Equipment	1,500	
Truck	1,350	
Net property, plant, and equipment		14,850
Total assets		$27,950
Liabilities		
Current		
Accounts payable	$5,600	
Notes payable	2,000	
Salaries payable	250	
Total current liabilities		$7,850
Non-current		
Notes payable (due 2022)	1,000	
Mortgage payable	7,000	
Total Non-current liabilities		8,000
Total liabilities		15,850
Equity		
Common stock	11,100	
Retained earnings	1,000	
Total equity		12,100
Total liabilities and equity		$27,950

**Land may need to be separated out.*

c. Additional disclosure should be considered for:

- Depreciation rates for plant and equipment.
- Details about cost and accumulated depreciation amounts for property, plant, and equipment.

- Details about debt, including interest rates, due dates, any assets securing the debt, repayment amounts and intervals, and when terms will be re-negotiated.
- Details about common stock.

EXERCISE 4–3

3	Land used in the normal course of business operations	5	Accrued salaries payable
5	Notes payable, due in four months	1	Prepaid advertising
3	Truck	8	Advertising expense
2	Land held for investment	5	Unearned revenue
4	Copyright	8	Service revenue
5	Accounts payable	1	Cash
8	Cash dividends	6	Mortgage payable, due in fifteen years
3	Building	5	Mortgage payable, due in six months
3	Furniture	7	Common stock
1	Accounts receivable, from customer sales	1	Shop supplies
4	Franchise	3	Accumulated depreciation, building
8	Utilities expense	8	Depreciation expense
5	Utilities payable	1	Office supplies

EXERCISE 4–4

a. 1. Close revenue accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Revenue		35,000	
	Income summary			35,000

2. Close expense accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Income summary		16,600	
	Salaries expense			8,000
	Insurance expense			600
	Supplies and postage expense			3,000
	Rent expense			3,000
	Travel expense			1,500
	Utilities expense			500

3. Close the income summary account to retained earnings.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Income summary		18,400	
	Retained earnings			18,400

4. Close dividends to retained earnings: No entry required.

b.

Abled Appliance Repair Ltd.
Balance Sheet
At December 31, 2016

Assets			*Liabilities*		
Cash		$ 80,000	Accounts payable		$ 35,000
Accounts receivable		66,000	Unearned consulting fees		10,000
Office supplies		2,000	Total current liabilities		$ 45,000
Prepaid insurance expense		5,000			
Total current assets		153,000			
			Equity		
Property, plant and equipment			Common stock	$ 1,000	
Land	$20,000		Retained earnings	135,000*	
Office equipment	10,000		Total equity		
Accumulated depreciation,			Total liabilities and equity		136,000
office equipment	(2,000)	28,000			
Total assets		$181,000			$181,000

*Net income $(35{,}000 - 3{,}000 - 8{,}000 - 500 - 1{,}500 - 600 - 3{,}000) = \$18{,}400$
Retained earnings $(\$116{,}600 + 18{,}400) = 135{,}000$

c.

Abled Appliance Repair Ltd.
Post-closing Trial Balance
At December 31, 2016

	Debit	Credit
Cash	$ 80,000	
Accounts receivable	66,000	
Office supplies	2,000	
Prepaid insurance expense	5,000	
Land	20,000	
Office equipment	10,000	
Accumulated depreciation, office equipment		$ 2,000
Accounts payable		35,000
Unearned consulting fees		10,000
Common stock		1,000
Retained earnings		135,000
	$183,000	$183,000

EXERCISE 4–5

Mystery Company Ltd.
Balance Sheet
At November 30, 2016

Assets			*Liabilities*		
Cash		$150,650	Accounts payable		$ 95,960
Accounts receivable		99,520	Accrued salaries payable		58,580
Office supplies		1,300	Current portion of long-term		
Prepaid insurance expense		10,000	Debt		72,000
Prepaid rent expense		12,000	Income taxes payable		32,500
Total current assets		273,470	Interest payable		12,000
			Unearned revenue		150,000
Property, Plant and Equipment			Total current liabilities		421,040
Building	$270,000				
Accumulated depreciation, building	(43,530)	226,470	*Long-term Liabilities*		
Vehicle	108,000		Note payable, due 2025		145,000
Accumulated depreciation, vehicle	(8,650)	99,350	Total liabilities		566,040
Total property, plant and equipment		325,820	*Equity*		
			Common stock	$10,000*	
Intangible Assets			Retained earnings	74,850	84,850
Copyright		51,600	Total liabilities and equity		$650,890
Total assets		$650,890			

* Common stock:
Assets = Liabilities + Equity

Total assets	$ 650,890
Less total liabilities	(566,040)
Less retained earnings	(74,850)
Common stock	$ 10,000

EXERCISE 4–6

Hitalle Heights Corp.
Statement of Stockholders' Equity
For the Period Ended May 31, 2016

	Common Stock	Retained Earnings	Total Equity
Opening balance	$ 640	$192,355	$192,995
Shares issuance	200		200
Dividends declared		(2,800)	(2,800)
Net income		47,759	47,759
Ending balance	$ 840	$237,314	$238,154

Net income $(\$94{,}000 - 1{,}333 - 2{,}520 - 2{,}072 - 84 - 12{,}600 - 840 - 23{,}352 - 420 - 3{,}020) = \$47{,}759$

Hitalle Heights Corp.
Balance Sheet
At May 31, 2016

Assets			*Liabilities*		
Cash		$ 8,888	Accounts payable		$ 13,020
Accounts receivable		59,808	Accrued salaries payable		4,872
Shop supplies		1,008	Current portion of long-term		5,200
Prepaid rent expense		7,162	note payable*		5,200
Total current assets		76,866	Income taxes payable		3,320
			Interest payable		224
			Unearned revenue		21,000
Property, Plant and Equipment			Total current liabilities		47,636
Land		58,048			
Furniture	$ 8,400		*Long-term Liabilities*		
Accumulated depreciation, furniture	(1,792)	6,608	Note payable, due 2025*		11,600
Total property, plant and equipment		64,656	Total liabilities		59,236
			Equity		
Intangible Assets			Common stock	$ 840	
Franchise		155,868	Retained earnings	237,314	238,154
Total assets		$297,390	Total liabilities and equity		$297,390

Chapter 5 Solutions

EXERCISE 5–1

a. The completed table is as follows:

	2014	*2013*	*2012*	*2011*
Sales	$10,000	$9,000	$8,000	$7,000
Cost of Goods Sold	7,500	6,840	6,160	5,460
Gross Profit	2,500	2,160	1,840	1,540
Gross Profit Percentage	25%	24%	23%	22%

b. The company's gross profit percentage has increased each year from 2011 to 2014 inclusive. This means it is earning more per sales dollar each year (from 22 cents per dollar in 2011 to 25 cents per dollar in 2014). This is a favorable trend because the company is generating more gross profit to apply against operating and other expenses which hopefully results in greater net income.

EXERCISE 5–2

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jul. 6	Merchandise inventory		600	
	Accounts payable			600
	To record purchase of inventory on account.			
Jul. 9	Accounts payable		200	
	Merchandise inventory			200
	To record returns made on goods purchased.			
Jul. 15	Accounts payable		400	
	Cash			396
	Merchandise inventory			4
	To record payment made within discount period.			

EXERCISE 5–3

a. The Horne Inc. general journal is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 5	Accounts receivable		4,000	
	Sales			4,000
	Cost of goods sold		2,500	
	Merchandise inventory			2,500
7	Sales returns and allowances		500	
	Accounts receivable			500
	Merchandise inventory		300	
	Cost of goods sold			300
15	Cash		3,430	
	Sales discounts		70	
	Accounts receivable			3,500
31	Cost of goods sold		100	
	Merchandise inventory			100
	(3,000 beginning MI − 2,500 + 300 = 800 unadjusted MI balance; 800 − 700 = 100 shrinkage)			

b. The Sperling Renovations Ltd. general journal is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 5	Merchandise inventory		4,000	
	Accounts payable			4,000
7	Accounts payable		500	
	Merchandise inventory			500
15	Accounts payable		3,500	
	Merchandise inventory			70
	Cash			3,430
	The shrinkage adjustment recorded by Horne Inc. does not impact Sperling in any way therefore no adjusting entry is required in Sperling's records.			

EXERCISE 5–4

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar 1	Merchandise inventory		25,000	
	Accounts payable			25,000
	(Purchase, terms 2/10, net 30)			
Mar 3	Accounts receivable		5,000	
	Cost of goods sold		2,600	
	Sales			5,000
	Merchandise inventory			2,600
	(Sale, terms 1/10, n/30)			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar 4	Merchandise inventory		100	
	Sales returns and allowances		200	
	Accounts receivable			200
	Cost of goods sold			100
	(Sales return, Mar 3)			
Mar 5	Merchandise inventory		15,000	
	Cash			15,000
	(Cash purchase)			
Mar 6	Merchandise inventory		200	
	Cash			200
	(Freight)			
Mar 7	Cash		500	
	Merchandise inventory			500
	(Allowance for damaged inventory)			
Mar 8	Accounts receivable		25,000	
	Cost of goods sold		13,000	
	Sales			25,000
	Merchandise inventory			13,000
	(Sale, terms 1.5/10, n/30)			
Mar 9	Delivery expense or freight-out		500	
	Cash			500
	(Shipping costs for Mar 8 sale)			
Mar 11	Accounts payable		12,500	
	Merchandise inventory			250
	Cash			12,250
	(50% payment of Mar 1 purchase)			
Mar 13	Cash		4,950	
	Sales discount		50	
	Accounts receivable			5,000
	(Collect Mar 3 sale)			
Mar 15	Office supplies inventory		540	
	Account payable			540
	(Purchase 1/10, n/30)			
Mar 18	No Entry			
Mar 20	Cash		6,010	
	Accounts receivable			6,010
	(Collect account)			
Mar 25	Account payable		540	
	Office supplies inventory			5.40
	Cash			534.60
	(Payment of Mar 15 purchase)			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar 27	Cash		12,500	
	Cost of goods sold		5,000	
	Sales			12,500
	Merchandise inventory			5,000
	(Cash sale)			
Mar 31	Account payable		12,500	
	Cash			12,500
	(Payment of Mar 1 balance, discount expired)			

EXERCISE 5–5

General Journal				
Date	Account/Explanation	R	Debit	Credit
Apr 1	Merchandise inventory		15,000	
	Cash			15,000
	(Cash purchase)			
Apr 3	Cash		8,000	
	Cost of goods sold		4,600	
	Sales			8,000
	Merchandise inventory			4,600
	(Cash sale)			
Apr 5	Merchandise inventory		10,000	
	Accounts payable			10,000
	(Purchase, terms 1/10, n/30)			
Apr 7	Accounts payable		2,000	
	Merchandise inventory			2,000
	(Purchase returns)			
Apr 8	Accounts receivable		8,000	
	Cost of goods sold		4,000	
	Merchandise inventory			4,000
	Sales			8,000
	(Sale, terms 2/10, n/30)			
Apr 9	Delivery expense or freight-out		500	
	Cash			500
	(Shipping costs for Apr 8 sale)			
Apr 10	Merchandise inventory		1,000	
	Sales returns and allowances		400	
	Cost of goods sold			400
	Cash			1,000
	(Sale return)			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Apr 10	Sales allowance		200	
	Accounts receivable			200
	(Apr 8 sale, sales allowance)			
Apr 12	Merchandise inventory		22,000	
	Accounts payable			22,000
	(Purchase, terms 1/10, n/30)			
Apr 15	Accounts payable		8,000	
	Merchandise inventory			
	Cash $(\$10{,}000 - 2{,}000) \times 0.99$			7,920
	(Paid Apr 5 purchase)			
Apr 16	Merchandise inventory		600	
	Cash			600
	(Freight on Apr 12 purchase)			
Apr 18	Cash		5,000	
	Sales discount		102	
	Accounts receivable ($5,000 ÷ 0.98)			5,102
	(Partial payment on account)			
Apr 27	Accounts payable		22,000	
	Cash			22,000
	(Paid account, discount forfeited)			
Apr 27	Cash		20,000	
	Cost of goods sold		10,000	
	Merchandise inventory			10,000
	Sales			20,000
	(Cash sale)			

EXERCISE 5–6

a. The income statement is as follows:

Smith Corp.
Income Statement
Year Ended June 30, 2015

Sales			$72,000
Less: Sales returns and allowances			2,000
Net sales			$70,000
Cost of goods sold			50,000
Gross profit			$20,000
Operating expenses:			
Selling expenses:			
Advertising expense	$1,500		
Commissions expense	4,000		
Delivery expense	500		
Rent expense – store	1,500		
Sales salaries expense	2,000		
Total selling expenses		$9,500	
General and administrative expenses:			
Depreciation expense - equipment	500		
Insurance expense	1,000		
Office salaries expense	3,000		
Rent expense – office	1,000		
Total general and administrative expenses		5,500	
Total operating expenses			15,000
Income before income tax expense			5,000
Income tax expense			1,000
Net income			$4,000

b. The gross profit percentage, rounded to two decimal places, is 28.57% calculated as 100 × (20,000/70,000).

EXERCISE 5–7

Inventory, opening balance	$ 10,000	$ 53,000	$ 561,800	$ 168,540	50,562
Plus: purchases	30,000	159,000	1,685,400	1,011,240	606,744
Total goods available for sale	40,000	212,000	2,247,200	1,179,780	657,306
Less: ending inventory	15,000	79,500	842,700	556,180	100,000
Cost of goods sold	25,000	132,500	1,404,500	623,600	557,306
Sales	55,000	240,000	1,600,000	900,000	700,000
Less: cost of goods sold	25,000	132,500	1,404,500	623,600	557,306
Gross profit	30,000	107,500	195,500	276,400	142,694
Less: operating expenses	12,000	63,600	275,000	250,000	145,000
Net income/(loss)	18,000	43,900	(79,500)	26,400	(2,306)
Gross profit/sales (%)	54.55%	44.79%	12.22%	30.71%	0

EXERCISE 5–8

a. Closing entries:

General Journal				
Date	Account/Explanation	R	Debit	Credit
June 30	Sales		72,000	
	Income summary			72,000
	(to close credit balance temporary accounts)			
	Income summary		68,000	
	Sales returns and allowances			2,000
	Cost of goods sold			50,000
	Advertising expense			1,500
	Commissions expense			4,000
	Delivery expense			500
	Rent expense – store			1,500
	Sales salaries expense			2,000
	Depreciation expense – equipment			500
	Insurance expense			1,000
	Office salaries expense			3,000
	Rent expense – office			1,000
	Income tax expense			1,000
	(to close debit balance temporary accounts)			
30	Income summary		4,000	
	Retained earnings			4,000
	(to close balance in Income Summary to Retained earnings)			
30	Retained earnings		2,000	
	Dividends			2,000
	(to close Dividends to Retained earnings)			

b. The June 30, 2015 post-closing balance in Retained Earnings is $20,000 calculated as:

Retained Earnings	
Beginning Balance	18,000
Net Income	4,000
Less: Dividends	(2,000)
Ending Balance	20,000

EXERCISE 5–9

	A	*B*	*C*	*D*
Opening Inventory	500	184	112	750
Purchases	1,415	344	840	5,860
Transportation-In	25	6	15	10
Cost of Goods Available for Sale	1,940	534	967	6,620
Ending Inventory	340	200	135	880
Cost of Goods Sold	1,600	334	832	5,740

EXERCISE 5–10

Opening Inventory	375
Purchases	2,930
Less: Purchases Discounts	5
Less: Purchases Returns and Allowances	20
Transportation-In	105
Less: Ending Inventory	440
Cost of Goods Sold	2,945

EXERCISE 5–11

a. The completed table is as follows:

	A	*B*	*C*	*D*
Sales	$300	$150	$195	$90
Opening Inventory	80	40	40	12
Purchases	240	120	150	63
Cost of Goods Available for Sale	320	160	190	75
Ending Inventory	(120)	(60)	(60)	(15)
Cost of Goods Sold	200	100	130	60
Gross Profit	$100	$50	$65	$30
Gross Profit percentage	33.33%	33.33%	33.33%	33.33%

b. All four companies have the same gross profit percentage of 33.33% which means each is contributing equally to operating expenses. In terms of real dollars, Company A is doing the best because its gross profit is $100.

Chapter 6 Solutions

EXERCISE 6–1

FIFO

		Purchased (Sold)				*Balance*				
Date		*Units*		*Unit Cost*	*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan. 1	Opening Inventory					100	×	$1	=	$100
7	Purchase #1	10	×	$2		100 10	× ×	1 2		120
9	Sale #1	(80)	×	1	($80)	20 10	× ×	1 2		40
21	Purchase #2	20	×	3		20 10 20	× × ×	1 2 3		100
24	Sale #2	(20) (10) (10)	× × ×	1 2 3	(70)	**10**	×	**3**	=	**30**
	Total COGS				**$150**					

LIFO

		Purchased (Sold)				*Balance*				
Date		*Units*		*Unit Cost*	*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan. 1	Opening Inventory					100	×	$1	=	$100
7	Purchase #1	10	×	$2		100	×	1		
						10	×	2		120
9	Sale #1	(10)	×	2		30	×	1		30
		(70)	×	1	($90)					
21	Purchase #2	20	×	3		30	×	1		
						20	×	3		90
24	Sale #2	(20)	×	3						
		(20)	×	1	(80)	**10**	×	**1**	=	**10**
	Total COGS				**$170**					

EXERCISE 6–2

		Purchased (Sold)				*Balance*				
Date		*Units*		*Unit Cost*	*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan. 1	Opening Inventory					100	×	$1	=	$100
7	Purchase #1	10	×	$2		100	×	1		
						10	×	2		120
9	Sale #1	(72)	×	1	($72)	28	×	1		
		(8)	×	2	($16)	2	×	2		32
21	Purchase #2	20	×	3		28	×	1		
						2	×	2		92
						20	×	3		
24	Sale #2	(23)	×	1		**5**	×	**1**		
					(74)	**2**	×	**2**	=	**18**
		(17)	×	3		**3**	×	**3**		
	Total COGS				**$162**					

EXERCISE 6–3

Weighted Average (per unit costs must be rounded to two decimal places)

		Purchased (Sold)					*Balance*				
Date		*Units*		*Unit Cost*		*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan 1	Opening Inventory						2,000		$0.50	=	$1,000
5	Sales #1	(1,200)	×	$0.50		**($600)**	800	0.50			400
6	Purchase #1	1,000	×	2.00			1,800		1.33[1]		2,400
10	Purchase #2	500	×	1.00			2,300		1.26[2]		2,900
16	Sale #2	(2,000)	×	1.26	=	**(2,520)**	300	1.26			380
21	Purchase #3	1,000	×	2.50			1,300		2.22[3]		**$2,880**

[1][$400 + (1,000 × $2)]/(800 + 1,000) = $1.33/unit (rounded) [2][$2,400 + (500 × 1)]/(1,800 + 500) = $1.26/unit (rounded) [3][$380 + (1,000 × 2.50)]/(300 + 1,000) = $2.22/unit (rounded)

a. The entry for the January 5 sale:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 5	Accounts Receivable		6,000	
	Sales			6,000
	Cost of Goods Sold		600	
	Merchandise Inventory			600
	To record Jan. 5 sales: 1,200 units × $5.00/unit selling price = $6,000.			

b. The entry for the January 16 sale:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 16	Accounts Receivable		12,000	
	Sales			12,000
	Cost of Goods Sold		2,520	
	Merchandise Inventory			2,520
	To record Jan. 16 sales: 2,000 units × $6.00/unit selling price = $12,000.			

c. Per the above table, there are 1,300 units on hand @ $2.22 (rounded), for a total ending inventory cost of $2,880. Be careful to note that the total ending inventory cost of $2,880 is ***NOT*** calculated as 1,300 units × the average unit cost of $2.22. The $2,880 is calculated as the inventory balance of $380 on January 16 plus the January 21 purchase of $2,500.

EXERCISE 6–4

N/E = No Effect; O = Overstated; U = Understated

	2016 Statements				*2017 Statements*			
Errors	*Opening Invent.*	*Ending Invent.*	*2016 Total Assets*	*2016 Net Income*	*Opening Invent.*	*Ending Invent.*	*2017 Total Assets*	*2017 Net Income*
1. Goods purchased in 2016 were included in the December 31, 2016 inventory, but the transaction was not recorded until early 2017.	N/E	U	U	U	U	N/E	N/E	O
2. Goods purchased in 2017 were included in December 31, 2016 inventory, and the transaction was recorded in 2016.	N/E	O	O	O	O	N/E	N/E	U

EXERCISE 6–5

a. i. Ending inventory for 2021 was understated by $2,000. Thus, cost of goods sold should have been $18,000 and gross profit, $12,000. Because of this mistake, the 2022 opening inventory was also understated by $2,000, causing cost of goods sold to be understated by $2,000 and gross profit overstated by $2,000; gross profit in 2022 should have been $15,000. There is no impact on 2023 as a result of the error.

ii. The 2023 ending inventory was overstated by $5,000. Thus, cost of goods sold should have been $30,000 and gross profit, $20,000. This error does not impact 2021 or 2022.

b. For 2021, the merchandise inventory on the balance sheet was understated by $2,000. Thus, the total assets were $2,000 less than they should have been. For 2022, there is no effect on the balance sheet, as the error is in opening inventory. For 2023, the ending inventory in the balance sheet is overstated by $5,000, which means that total assets were overstated by $5,000.

EXERCISE 6–6

a. LCNRV on a unit-by-unit basis: $(2 \times \$50) + (3 \times \$75) + (4 \times \$20) = \$405$

Therefore, LCNRV $=$ $405 on a unit-by-unit basis.

b. LCNRV on a group inventory basis: Total cost of the group: $(2 \times \$50) + (3 \times \$150) + (4 \times \$25) = \$650$ Total NRV of the group: $(2 \times \$60) + (3 \times \$75) + (4 \times \$20) = \$425$

Therefore, LCNRV $=$ $425 on a group inventory basis.

EXERCISE 6–7

a. Estimated amount of inventory lost in the fire:

Sales		$300,000	100%
Cost of Goods Sold:			
Opening Inventory	$80,000		
Purchases	150,000		
Cost of Goods Available	230,000		
Ending Inventory (estimated)	(iii)		
Cost of Goods Sold		(ii)	65%
Gross Profit		(i)	35%

(i) Gross Profit $= 35\%$ of Sales
$= 35\% \times \$300{,}000$
$= \$105{,}000$

(ii) Cost of Goods Sold $=$ Sales $-$ Gross Profit
$= \$300{,}000 - 105{,}000$
$= \$195{,}000$

(iii) Estimated Ending Inventory $=$ Cost of Goods Available $-$ Total Cost of Goods Sold
$= \$230{,}000 - 195{,}000$
$= \$35{,}000$

b. Balton lost about $35,000 of inventory in the fire and is claiming $45,000. This does not appear reasonable.

EXERCISE 6–8

a. Merchandise inventory turnover for each of the years 2022 to 2025:

	2025	*2024*	*2023*	*2022*	*2021*
Cost of Goods Sold	370,000	400,000	420,000	440,000	450,000
Merchandise Inventory	120,000	111,250	88,750	111,250	88,750
Merchandise Inventory Turnover	3.2	4	4.2	4.4	

b. The change in Able Corp.'s Merchandise Inventory Turnover ratio is unfavorable because inventory is being sold at a slower rate from 2022 to 2025, from 4.4 times per year in 2022 to 3.2 times per year in 2025.

Chapter 7 Solutions

EXERCISE 7–1

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar. 1	Petty Cash A+		200	
	Cash (A)			200
12	Office Supplies Expense E+ (SE)		60	
	Maintenance Expense E+ (SE)		35	
	Miscellaneous Selling Expense E+ (SE)		25	
	Cash (A)			120
18	Petty Cash A+		200	
	Cash (A)			200
25	Office Supplies Expense E+ (SE)		75	
	Delivery Expense E+ (SE)		30	
	Cash (A)			105
28	Cash A+		50	
	Petty Cash (A)			50

EXERCISE 7–2

Ferguson Corp.
Bank Reconciliation
At December 31, 2016

Cash per general ledger, Dec. 31		$5,005	Cash per bank statement, Dec. 31		$7,000
Add:	Note collected by bank	1,300	*Add*:	Error Fluet Inc. check	200
	Interest on note	25		Outstanding deposit	700
Less:	Bank service charges	(30)	*Less*:	Outstanding checks	(1,600)
Adjusted Cash balance, Dec. 31		$6,300	Adjusted Cash balance, Dec. 31		$6,300

Adjusting entries resulting from bank reconciliation:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Cash A+		1,325	
	Note Receivable (A)			1,300
	Interest Earned R+ SE+			25
	To record the note collected by the bank.			
Dec. 31	Interest and Bank Charges Expense E+ (SE)		30	
	Cash (A)			30
	To record service charges from the bank.			

OR

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Cash A+		1,295	
	Interest and Bank Charges Expense E+ (SE)		30	
	Note Receivable (A)			1,300
	Interest Earned R+ SE+			25
	To record bank service charges and note collected by the bank.			

EXERCISE 7–3

Gladstone Ltd.
Bank Reconciliation
At March 31, 2018

Cash per general ledger, Mar. 31		$2,531	Cash per bank statement, Mar. 31		$1,500
Add:	Error check No. 4302	27	*Add*:	Outstanding deposit	1,000
	Note receivable	250		Error re. Global	250
	Interest on note	50			
Less:	Service charges – March	(20)	*Less*:	Outstanding checks	(622)
	Service charges – Note	(10)			
	NSF check	(700)			
Adjusted Cash balance, Mar. 31		$2,128	Adjusted Cash balance, Mar. 31		$2,128

Adjusting entries:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar. 31	Cash A+		27	
	Office Supplies Expense (E) SE+			27
	To correct ck. no. 4302			
	Cash A+		290	
	Interest and Bank Charges Expense E+ (SE)		10	
	Note Receivable (A)			250
	Interest Earned R+ SE+			50
	To record note collected by the bank.			
	Interest and Bank Charges Expense E+ (SE)		20	
	Cash (A)			20
	To record service charges for March.			
	Accounts Receivable A+.		700	
	Cash (A)			700
	To record NSF check returned.			

OR

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar. 31	Interest and Bank Charges Expense E+ (SE)		30	
	Accounts Receivable A+		700	
	Office Supplies Expense (E) SE+			27
	Note Receivable (A)			250
	Interest Earned R+ SE+			50
	Cash (A)			403
	To record adjustments resulting from March 31, 2018 bank rec.			

EXERCISE 7–4

a. i. Entry to record the estimated uncollectible accounts at December 31, 2015:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debt Expense E+ (SE)		15,000	
	Allowance for Doubtful Accounts XA+ (A)			15,000
	(2% × 750,000 = 15,000)			

ii. Allowance for Doubtful Accounts = 3,000 + 15,000 = 18,000

b. i. Entry to record the estimated uncollectible accounts at December 31, 2015:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debt Expense E+ (SE)		11,700	
	Allowance for Doubtful Accounts XA+ (A)			11,700
	[10% × 147,000] = 14,700 − 3,000 = 11,700			

ii. Allowance for Doubtful Accounts = 3,000 + 11,700 = 14,700
(or 10% × 147,000)

c. There is a difference in the estimates because different methods are used. The first method is based on a percentage of sales; the second on percentage of accounts receivable, a simplified balance sheet method.

d. The calculation made in part (a) above better matches revenues and expenses: the revenues (sales) is directly related to the amount that is written off as bad debt expense. The calculation made in part (b) above better matches accounts receivable to allowance for doubtful accounts and thus produces a better balance sheet valuation.

EXERCISE 7–5

a. Amount of bad debt expense in 2019:

Allowance for doubtful accounts, Dec. 31, 2018	$8,000
Written off in 2019	(2,400)
	5,600
Allowance for doubtful accounts, Dec. 31, 2019	(9,000)
Bad debt expense for 2019	$3,400

OR

Allowance for Doubtful Accounts

		8,000	Dec. 31/18 Adj. Bal
2019 A/R Write-Offs	**2,400**		
		?	Adj. Entry Dec. 31/19
		9,000	Dec. 31/19 Adj. Bal.

b. Entry recorded at December 31, 2019 to account for bad debts:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Bad Debt Expense E+ (SE)		3,400	
	Allowance for Doubtful Accounts XA+ (A)			3,400

c. Amount of bad debt expense in 2020:

Allowance for doubtful accounts, Dec. 31, 2019	$ 9,000
Written off in 2020	(1,000)
Recovered in 2020	300
	8,300
Allowance for doubtful accounts, Dec. 31, 2020	(10,000)
Bad debt expense for 2020	$ 1,700

OR

Allowance for Doubtful Accounts

		9,000	Dec. 31/19 Adj. Bal.
2020 A/R Write-Offs	**1,000**	**300**	2020 Recovery
		?	Adj. Entry Dec. 31/20
		10,000	Dec. 31/20 Adj. Bal.

Recall that the ending balance in one period becomes the beginning balance in the next.

d. Entry recorded at December 31, 2020 to account for bad debts:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Bad Debt Expense E+ (SE)		1,700	
	Allowance for Doubtful Accounts XA+ (A)			1,700

EXERCISE 7–6

Part a:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar. 1	Notes Receivable – West Corp. A+		40,000.00	
	Accounts Receivable – West Corp. (A) .			40,000.00
	To record 90-day, 3% note receivable.			
Mar. 31	Interest Receivable A+		100	
	Interest Revenue (or Interest Earned) R+ SE+			100
	To record accrued interest; 40,000 × 3% × 30/360.			
May 30	Cash A+		40,300.00	
	Interest Receivable (A)			100
	Interest Revenue (or Interest Earned) R+ SE+			200
	Notes Receivable – West Corp. (A)			40,000.00
	To record collection; 40,000 × 3% × 60/360 = 200.			
Jun. 15	Notes Receivable – Jill Monte A+		50,000.00	
	Accounts Receivable – Jill Monte (A) . .			50,000.00
	To record 45-day, 3% note receivable.			
Jul. 30*	Cash A+		50,187.50	
	Notes Receivable – Jill Monte (A)			50,000.00
	Interest Revenue (or Interest Earned) R+ SE+			187.50
	To record collection; 50,000 × 3% × 45/360.			

**July 30 is determined by: June 30 − June 15 = 15 days + 30 days in July = 45 days.*

Part b:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 30	Notes Receivable – West Corp.* A+		40,300.00	
	Interest Receivable (A)			100
	Interest Revenue (or Interest Earned) R+ SE+			200
	Notes Receivable – West Corp. (A)			40,000.00
	To record dishonored note; 40,000 × 3% × 60/360 = 200.			

**When a note is dishonored, a 'new' note is recorded that includes the interest and principal to be recovered.*

EXERCISE 7–7

a. Acid test ratio

2017: (30,000 + 20,000)/(12,000 + 8,000 + 9,000) = 1.72

2018: (42,000 + 25,000)/(14,000 + 9,000 + 11,000 + 17,000) = 1.31

Accounts receivable turnover ratio

2017: 367,000/[(20,000 + 14,000)/2] = 21.59

2018: 375,000/[(25,000 + 20,000)/2] = 16.67

b. The change in both the acid-test and accounts receivable turnover ratios was unfavorable. Although Salzl Corp.'s acid-test is greater than one indicating that it has sufficient quick current assets to cover current liabilities as they come due, that amount decreased from 2017 to 2018. The decrease in the accounts receivable turnover indicates that Salzl Corp. Is collecting receivables at a much slower rate in 2018 than in 2017 which is unfavorable. Receivables should be collected as quickly as possible so the accounts receivable turnover ratio should be as high as possible.

Chapter 8 Solutions

EXERCISE 8–1

f	Battery purchased for truck.
a	Commission paid to real estate agent to purchase land.
c	Cost of equipment test runs.
b	Cost to remodel building.
b or c	Cost to replace manual elevator with automatic elevator.
a	Cost of sewage system.
c	Equipment assembly expenditure.
c	Expenditures for debugging new equipment and getting it ready for use.
e	Installation of air-conditioner in automobile.
b	Insurance paid during construction of building.
a	Legal fees associated with purchase of land.
f	Oil change for truck.
a	Payment for landscaping.
a	Expenditures for removal of derelict structures.
f	Repair made to building after moving in.
f	Repair of collision damage to truck.
f	Repair of torn seats in automobile.
e	Replacement of engine in automobile.
c	Special floor foundations for installation of new equipment.
f	Tires purchased for truck.
c	Transportation expenditures to bring newly purchased equipment to plant.

EXERCISE 8–2

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Land		75,000	
	Building		225,000	
	Cash			300,000
	Land = \$100,000/\$400,000 × \$300,000 = \$75,000. Building = \$300,000/\$400,000 × \$300,000 = \$225,000.			

EXERCISE 8–3

a. Cost = \$3,575 + \$100 + \$350 = \$4,025.

b. Straight-Line Method:

Year	*Straight-Line*	*Double-Declining Balance*
1	\$755*	\$4,025 $\times$ 40%** $=$ \$1,610
2	\$755	2,415 $\times$ 40% $=$ 966
3	\$755	1,449 $\times$ 40% $=$ 580
4	\$755	869 $\times$ 40% $=$ 348
5	\$755	521 $\times$ 40% $=$ 208

* (\$4,025 $-$ 250)/5 years $=$ \$755

** (Rate $=$ 2/n where $n =$ useful life; 2/5yrs. $=$ .40 or 40%)

Under the straight-line method, each period is assumed to receive equal benefits from the use of the asset. Under the double-declining balance method, each period is charged a diminishing amount. The straight-line method would be more appropriate if the economic benefits would be used about equally over the years. The double-declining balance method would be better to use if the economic benefits were used up more in the first few years. The DDB method is likely the better choice, given the probability of technological obsolescence of this type of asset.

EXERCISE 8–4

a. Straight-Line Method:

(\$240,000 $-$ 40,000)/5 years $=$ \$40,000 per year

2019 depreciation	$=$	\$40,000
2020 depreciation	$=$	40,000
2021 depreciation	$=$	40,000
2022 depreciation	$=$	40,000
2023 depreciation	$=$	40,000
Total depreciation	$=$	\$200,000*

*Maximum allowable depreciation $=$ Cost $-$ Residual which is \$240,000 $-$ \$40,000 $=$ \$200,000.

b. Double-Declining Balance Method:

Rate $=$ 2/n $=$ 2/5 $=$ 0.40 or 40%

2019 depreciation $=$ \$240,000 $\times$ 40% $=$	\$ 96,000
2020 depreciation $=$ (\$240,000 $-$ 96,000) $\times$ 40% $=$	57,600
2021 depreciation $=$ (\$240,000 $-$ 96,000 $-$ 57,600) $\times$ 40% $=$	34,560
2022 depreciation $=$	11,840*
2023 depreciation $=$	0
Total depreciation $=$	\$200,000

*Maximum allowable depreciation = $200,000 which is Cost − Residual. Therefore, although the calculation of depreciation for 2022 is:

2022 depreciation = ($240,000 − 96,000 − 57,600 − 34,560) × 40% = 20,736

taking this amount would exceed the maximum allowable total depreciation of $200,000. Therefore, only $11,840 of depreciation can be recorded in 2022. This is calculated as $200,000 maximum allowable − $96,000 depreciation in 2019 − $57,600 depreciation in 2020 − $34,560 depreciation taken in 2021 = $11,840.

EXERCISE 8–5

a. Straight-Line Method:

($110,000 − 40,000)/4 years = $17,500 per year

2019 depreciation	=	$17,500
2020 depreciation	=	17,500
2021 depreciation	=	17,500
2022 depreciation	=	17,500
Total depreciation	=	$70,000*

*Maximum allowable depreciation = Cost − Residual which is $110,000 − $40,000 = $70,000.

b. Double-Declining Balance Method:

Rate = 2/n = 2/4 = 0.50 or 50%

2019 depreciation = $110,000 × 50% =	$55,000
2020 depreciation =	15,000*
2021 depreciation =	0
2022 depreciation =	0
Total depreciation =	$70,000

*Maximum allowable depreciation = $70,000 which is Cost − Residual. Therefore, although the calculation of depreciation for 2020 is:

2020 depreciation = ($110,000 − 55,000) × 50% = $27,500

taking this amount would exceed the maximum allowable total depreciation of $70,000. Therefore, only $15,000 of depreciation can be recorded in 2020. This is calculated as $70,000 maximum allowable − $55,000 depreciation in 2019 = $15,000.

EXERCISE 8–6

a. i. Straight-Line Method:
($25,000 − 5,000)/5 years = $4,000 per year
2019 depreciation = $4,000 × 1/2 = **$2,000**
2020 depreciation = **$4,000**

ii. Units-of-Production Method:
($25,000 − 5,000)/500,000 km. = $0.04/km.
2019 depreciation = 120,000 km. × $0.04 = **$4,800***
2020 depreciation = 150,000 km. × $0.04 = **$6,000**
*The 1/2 year rule does not apply under usage methods of calculating depreciation since depreciation is based on units produced and not time.

iii. Double-Declining-Balance Method:
$2/n = 2/5 = 0.40$ or 40% per year
2019 depreciation = $25,000 × 40% = $10,000 × 1/2 yr. = **$5,000**
2020 depreciation = ($25,000 − 5,000) × 40% = **$8,000**

b. i. Straight-Line Method:
($25,000 − 5,000)/5 years = $4,000 per year
2019 depreciation = $4,000 × 10/12 = **$3,333**
2020 depreciation = **$4,000**

ii. Units-of-Production Method:
($25,000 − 5,000)/500,000 km. = $0.04/km.
2019 depreciation = 120,000 km. × $0.04 = **$4,800***
2020 depreciation = 150,000 km. × $0.04 = **$6,000**
*The 1/2 year rule does not apply under usage methods of calculating depreciation since depreciation is based on units produced and not time.

iii. Double-Declining-Balance Method:
$2/n = 2/5 = 0.40$ or 40% per year
2019 depreciation = $25,000 × 40% = $10,000 × 10/12 = **$8,333**
2020 depreciation = ($25,000 − 8,333) × 40% = **$6,667**

EXERCISE 8–7

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense – Machinery		3,333	
	Accumulated Depreciation – Machinery			3,333
	To record revised depreciation at Dec. 31, 2021; (60,000 − 0)/3 years = 20,000 depreciation for each of 2019 and 2020; (60,000 − 20,000 − 20,000 − 10,000)/(5 − 2) = 3,333 revised depreciation 2021			

EXERCISE 8–8

a. General journal entry to record depreciation for the year ended December 31, 2019:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense – Machinery		28,000	
	Accumulated Depreciation – Machinery			28,000
	To record depreciation at Dec. 31, 2019; (140,000 − 0)/5 years = 28,000 depreciation for December 31, 2019			

b. General journal entry to record revised depreciation for the year ended December 31, 2020:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense – Machinery		40,500	
	Accumulated Depreciation – Machinery			40,500
	To record revised depreciation at Dec. 31, 2020; Original Machinery: (140,000 − 0)/5 years = 28,000 depreciation; New Component: (50,000 − 0)/4 years = 12,500 depreciation; 28,000 + 12,500 = 40,500 total depreciation at December 31, 2020			

EXERCISE 8–9

a. General journal entry to record any impairment losses at December 31, 2019:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Impairment Loss		22,917	
	Machinery			22,917
	To record impairment at Dec. 31, 2019; ($400,000 Cost − $40,000 Accum. Dep. = $360,000 Carrying or Book Value) − $337,083 Recoverable Amount = $22,917 Impairment Loss			

The land's future cash flows of $120,000 is greater than its carrying or book value of $100,000 therefore there is no impairment.

The building's future cash flows of $890,000 is greater than its carrying or book value of $855,333 ($890,000 − $34,667) therefore there is no impairment.

b. General journal entry to record depreciation for the year ended December 31, 2020:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense – Building		32,000	
	Accumulated Depreciation – Building .			32,000
	To record depreciation at Dec. 31, 2020; calculated as ($890,000 − $250,000)/20 years = $32,000			
	Depreciation Expense – Machinery		22,430	
	Accumulated Depreciation – Machinery			22,430
	To record depreciation at Dec. 31, 2020; calculated as ($400,000 − $150,000 − $27,083 − $22,917)/(10 − 1 1/12 = 8 11/12 years) = $22,430. Note that the Accum. Dep. of $27,083 represents 1 year and 1 month of depreciation (1 month in 2018 + 12 months in 2019). Therefore, the remainder over which the machinery's cost must be depreciated is the original 10 years less the 1 year and 1 month.			

EXERCISE 8–10

a. Journal entries to record the exchange on the books of:

i. Freeman:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Equipment		200,000	
	Land			125,000
	Gain on Disposal			75,000
	The equipment is valued at the fair value of the asset given up.			

ii. The developer:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Land		240,000	
	Equipment			325,000
	Accumulated Depreciation – Equipment . .		80,000	
	Loss on Disposal		5,000	
	To record loss on disposal calculated as: [$325,000 Cost − $80,000 Accumulated Depreciation = $245,000 Carrying Amount] − [$240,000 Proceeds [fair value of equipment)] = $5,000.			

b. The developer may be speculating that the land will increase in value in the future beyond the current fair value of the equipment exchanged for the land.

EXERCISE 8–11

a. Equipment sold for $20,000:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		20,000	
	Accumulated Depreciation – Equipment		40,000	
	Equipment			60,000
	To record sale of equipment for $20,000.			

b. Equipment sold for $30,000:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		30,000	
	Accumulated Depreciation		40,000	
	Equipment			60,000
	Gain on Disposal			10,000
	To record gain on disposal calculated as: [$60,000 Cost of Equipment − $40,000 Accumulated Depreciation = $20,000 Carrying Amount (or net book value)] − $30,000 Proceeds of Disposal = $(10,000).			

c. Equipment sold for $5,000:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		5,000	
	Accumulated Depreciation		40,000	
	Loss on Disposal		15,000	
	Equipment			60,000
	To record loss on disposal calculated as: [$60,000 Cost of Equipment − $40,000 Accumulated Depreciation = $20,000 Carrying Amount (or net book value)] − $5,000 Proceeds of Disposal = $15,000.			

To record loss on disposal calculated as:

Cost of equipment	$60,000
Accumulated depreciation	(40,000)
Carrying amount (or net book value)	20,000
Proceeds of disposal	(5,000)
Loss on disposal	$15,000

EXERCISE 8–12

a. March 1, 2019 to record the purchase of the copyright:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Copyright		50,000	
	Cash			50,000
	To record purchase of copyright.			

b. December 31, 2019, Willis's year-end, to record amortization of the copyright:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Amortization Expense		8,333	
	Accumulated Amortization – Copyright			8,333
	To record amortization; 50,000/5 = 10,000 × 10/12 = 8,333.			

c. October 1, 2021, Willis's sale of the copyright to a movie producer for $100,000:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		100,000	
	Accumulated Amortization – Copyright . . .		25,833	
	Copyright			50,000
	Gain on Disposal			75,833
	To record sale of copyright at a gain; Accumulated amortization = 8,333 for 2019 + 10,000 for 2020 + 7,500 for 2021 = 25,833.			

Chapter 9 Solutions

EXERCISE 9–1

Ajam Inc.
Partial Balance Sheet
March 31, 2019

Current liabilities:		
Accounts payable	$58,000	
Wages payable	102,000	
Income taxes payable	92,000	
Note payable, due November 30, 2019	64,000	
Current portion of mortgage payable	80,000	
Total current liabilities		$396,000
Long-term liabilities:		
Note payable, due May 15, 2021	$108,000	
Long-term portion of mortgage payable	240,000	
Total long-term liabilities		348,000
Total liabilities		$744,000

EXERCISE 9–2

a. Entry to record the issuance of the note on July 1, 2019:

General Journal				
Date	Account/Explanation	R	Debit	Credit
July 1	Cash		300,000.00	
	Notes Payable			300,000.00
	To record 45-day, 3.5% note issued July 1.			

b. Entry to accrue interest on July 31, 2019:

General Journal				
Date	Account/Explanation	R	Debit	Credit
July 31	Interest Expense		875.00	
	Interest Payable			875.00
	To record accrued interest; 300,000 × 3.5% × 30/360.			

c. August 15, 2019 (July 31 − July 1 = 30 days + August 15 = 45 days)

d. Entry to record the payment of the note on the due date:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Aug. 15	Notes Payable		300,000.00	
	Interest Payable		875	
	Interest Expense		437.50	
	Cash			301,312.50
	To record payment of note; 300,000 × 15/360 × 3.5% = 437.50.			

EXERCISE 9–3

a. Entry to record the estimated warranty liability for January:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 23	Warranty Expense		1,640	
	Estimated Warranty Liability			1,640
	To record estimated warranty liability; 2% × $82,000 = $1,640.			

b. Entry to record the warranty expense incurred in January:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 29	Estimated Warranty Liability		2,000	
	Merchandise Inventory			2,000
	To record replacement of furniture covered by warranty.			

c. $380 (calculated as: $740 + 1,640 − 2,000).

EXERCISE 9–4

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2018	Salaries expense		2,000	
	Benefit expense		2500	
	Employee Income Taxes Payable			500
	Health Insurance Payable			1000
	Employment Vacation Liability			1,500
	Salaries Payable			1,500
	To record accrual of salary, income taxes, health insurance and vacation benefits			

b.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 5, 2019	Salaries Payable		1,500	
	Cash			1,500
	To record payment of Dec 31 salary payable to J. Smith.			
Jan 5, 2019	Employee Income Taxes Payable		500	
	Health Insurance Payable		1000	
	Cash			1500
	To record payment of amounts owing at Dec 31 to IRS and Health Insurance Company			

EXERCISE 9–5

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb 15, 2018	Corporate Income Taxes Payable		500	
	Cash			500

b.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2018	Corporate Income Taxes Expense		6,000	
	Corporate Income Taxes Payable			6,000
	($15,000 × 40% = $6,000)			

c.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31, 2019	Corporate Income Taxes Payable		500	
	Cash			500
	To record payment of 2018 corporate income taxes owing.			

Calculation:

2018 expense	$ 6,000
Instalments paid (11 × $500)	(5,500)
Owing	$ 500

EXERCISE 9–6

	CASE A	CASE B	CASE C
	A. Investors purchase the bonds at par	*B. Investors purchase the bonds at a premium*	*C. Investors purchase the bonds at a discount*
a.	The corporation receives $100,000 cash for the bonds.	The corporation receives $112,000 cash for the bonds.	The corporation receives $88,000 cash for the bonds.
b.	The corporation pays $12,000 annual interest on the $100,000 face value of the bonds.	The corporation pays $12,000 annual interest on the $100,000 face value of the bonds.	The corporation pays $12,000 annual interest on the $100,000 face value of the bonds.
c.	The following journal entry records the sale of the bonds. Cash . . . . . 100,000 Bonds Payable 100,000	The following journal entry records the sale of the bonds. Cash . . . . . 112,000 Premium on Bonds . . . . . 12,000 Bonds Payable 100,000	The following journal entry records the sale of the bonds. Cash . . . . . 88,000 Discount on Bonds . . . . . 12,000 Bonds Payable 100,000
d.	June 30, 2017 The interest payment is recorded as follows: Interest Expense . . . . . 6,000 Cash 6,000	June 30, 2017 The interest payment is recorded as follows: Interest Expense . . . . . 6,000 Cash . . . . . 6,000 Amortization is recorded as follows: Premium on Bonds . . . . . 2,000 Interest Expense 2,000	June 30, 2017 The interest payment is recorded as follows: Interest Expense . . . . . 6,000 Cash . . . . . 6,000 Amortization is recorded as follows: Interest Expense . . . . . 2,000 Discount on Bonds 2,000
	December 31, 2017 The interest payment is recorded as follows: Interest Expense . . . . . 6,000 Cash 6,000	December 31, 2017 The interest payment is recorded as follows: Interest Expense . . . . . 6,000 Cash . . . . . 6,000 Amortization is recorded as follows: Premium on Bonds . . . . . 2,000 Interest Expense 2,000	December 31, 2017 The interest payment is recorded as follows: Interest Expense . . . . . 6,000 Cash . . . . . 6,000 Amortization is recorded as follows: Interest Expense . . . . . 2,000 Discount on Bonds 2,000

EXERCISE 9–7

a. i. The issuance of bonds:

Cash = \$100,000 × 94% = \$94,000
Discount = \$100,000 − \$94,000 = \$6,000

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2017	Cash		94,000	
	Discount on Bonds		6,000	
	Bonds Payable			100,000

ii. The interest payment:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Interest Expense		6,000	
	Cash			6,000

iii. The amortization of the discount:

Discount = \$6,000 ÷ 3 years × 6 ÷ 12 = \$1,000

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Interest Expense		1,000	
	Discount on Bonds			1,000

b. Interest paid in cash = \$100,000 × 12% = \$12,000
Interest expense for 2017 = Interest + amortization for the year = \$12,000 + \$2,000 = \$14,000

c.

Nevada Inc.
Balance Sheet
At December 31, 2017

Liabilities

*Non-current**	
Bonds payable (Note X)	\$100,000
Discount on bonds	(4,000)
Carrying amount	\$ 96,000

Note X would disclose pertinent information of the bond indenture including details of the face value and unamortised bond discount. Just the carrying amount is shown on the balance sheet.

* If it was likely that the bonds would be called on January 1, 2018, they would be classified as current liabilities. If so, details of the redemption should be disclosed in a note to the December 31, 2017 financial statements.

d. Retirement of the bonds:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2019	Bonds Payable		100,000	
	Cash			100,000

e. Calling of the bonds:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2019	Bonds Payable		100,000	
	Loss on Bond Retirement		6,000	
	Discount on Bonds			4,000
	Cash			102,000
	To record retirement of bonds.			

Calculation for bonds at 102:

Face value	$100,000
Unamortised discount	(4,000)
Carrying amount	96,000
Cash paid	102,000
Loss on retirement	$ (6,000)

EXERCISE 9–8

a. Prepare the journal entries to record the following transactions:

i. The issuance of the bonds:
Cash = $200,000 × 112% = $224,000

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2019	Cash		224,000	
	Premium on Bonds			24,000
	Bonds Payable			200,000

ii. The interest payment:

Interest $= \$200{,}000 \times 12\% \times 6 \div 12 = \$12{,}000$

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Interest Expense		12,000	
	Cash			12,000

iii. The amortization of the premium:

Premium $= (\$24{,}000 \div 3 \text{ years}) \times 6 \div 12 = \$4{,}000$

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Premium on Bonds		4,000	
	Interest Expense			4,000

b. Interest paid in cash = $\$200{,}000 \times 12\% = \$24{,}000$

$$\begin{aligned}\text{Interest expense for 2019} &= \text{Interest} - \text{amortization for the year}\\ &= \$24{,}000 - (\$24{,}000 \div 3 \text{ years})\\ &= \$24{,}000 - \$8{,}000\\ &= \$16{,}000\end{aligned}$$

These amounts are different because the amortization of the premium, which reduces Interest Expense, does not require cash.

c.

Sydney Corp.
Balance Sheet
At December 31, 2019

Liabilities	
Non-current	
Bonds payable	$200,000
Premium on bonds	16,000
Carrying amount	$216,000

d. Calling of the bonds:

Cash paid $= \$200{,}000 \times 106\% = \$212{,}000$

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2022	Bonds Payable		200,000	
	Premium on Bonds		8,000	
	Loss on Bond Retirement		4,000	
	Cash			212,000

To record retirement of bonds at 106 as follows:

Face value	$200,000
Unamortised premium	(8,000)
Carrying amount	208,000
Cash paid	212,000
Loss on retirement	$ (4,000)

EXERCISE 9–9

a. The issuance of bonds:

Interest paid from last interest payment date ($100,000 × 8% × 4 ÷ 12 May 1 to Sep 1) = $2,667 (rounded)

General Journal				
Date	Account/Explanation	R	Debit	Credit
Sep 1, 2017	Cash		102,667	
	Interest payable			2,667
	Bonds payable			100,000

b. The interest payment for 2018:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2018	Interest expense		1,333	
	Interest payable		2,667	
	Cash*			4,000
	* ($100,000 × 8% × 6 ÷ 12)			

Accrued interest at December 31, 2018:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Interest expense		1,333	
	Interest payable			1,333
	($100,000 × 8% × 2 ÷ 12)			

c. Bond at Maturity:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Sep 1, 2027	Bonds Payable		100,000	
	Cash			100,000

d.

Harvort Inc.
Balance Sheet
At December 31, 2018

Liabilities	
Current	
Interest payable	$ 1,333
*Non-current**	
Bonds payable (Note X)	$100,000

Note X would disclose pertinent information of the bond indenture including details of the face value and unamortised bond premium or discount if any. Just the carrying amount is shown on the balance sheet.

EXERCISE 9–10

a. Prepare the journal entries to record the following transactions:

i.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2021	Cash		50,000	
	Loan Payable			50,000
	To record loan from Second Capital Bank.			

ii.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Equipment		48,000	
	Cash			48,000
	To record the purchase of equipment.			

b.

Rosedale Corp.
Loan Repayment Schedule

	A	*B*	*C*	*D*	*E*
			(D − B)		(A − C)
Year ended Dec 31	*Beginning loan balance*	(A × 6%) *Interest expense*	*Reduction of loan payable*	*Total loan payment*	*Ending loan balance*
2021	$50,000	$3,000	$15,705	$18,705	$34,295
2022	34,295	2,058	16,647	18,705	17,648
2023	17,648	1,057	17,648	18,705	-0-

c.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2021	Interest Expense		3,000	
	Loan Payable		15,705	
	Cash			18,705
	To record loan payment to Second Capital Bank.			

d.

Rosedale Corp.
Balance Sheet
At December 31, 2021

Liabilities	
Current liabilities	
Loan payable, current portion*	$16,647
Long-term liabilities	
Loan payable, 6%, instalments payable over three years**	17,648

* Current portion is the principal amount of the liability owing for one year after the reporting date. Refer to the loan schedule above.

** ($34,295 − 16,647 current portion)

EXERCISE 9–11

a. discount

b. premium

c. discount

d. premium

e. premium

f. discount

EXERCISE 9–12

Cash = \$100,000 × 94% = \$94,000

Discount = \$100,000 − \$94,000 = \$6,000

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 1	Cash		94,000	
	Discount on Bonds		6,000	
	Bonds Payable			100,000

EXERCISE 9–13

Cash = \$200,000 × 112% = \$224,000

Premium = \$224,000 − \$200,000 = \$24,000

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 1	Cash		224,000	
	Premium on Bonds			24,000
	Bonds Payable			200,000

EXERCISE 9–14

a. (a) Entry to record receipt of loan proceeds from the bank:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 1	Cash		50,000	
	Loan Payable			50,000
	To record loan from Second Capital Bank.			

(b) Entry to record purchase of equipment:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 1	Equipment		48,000	
	Cash			48,000
	To record loan the purchase of the equipment.			

b. The loan repayment schedule is as follows:

Rosedale Corp.
Loan Repayment Schedule

	A	*B*	*C*	*D*	*E*
			(D − B)		*(A − C)*
Year Ended Dec. 31	*Beginning Loan Balance*	*(A × 6%) Interest Expense*	*Reduction of Loan Payable*	*Total Loan Payment*	*Ending Loan Balance*
2014	$50,000	$3,000	$15,705	$18,705	$34,295
2015	34,295	2,058	16,647	18,705	17,648
2016	17,648	1,057*	17,648	18,705	-0-
			$50,000		

* *Adjusted for rounding*

c. Entry to record the first loan payment:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Interest Expense		3,000	
	Loan Payable		15,705	
	Cash			18,705
	To record loan payment to Second Capital Bank.			

Chapter 10 Solutions

EXERCISE 10–1

a. The completed schedule is as follows:

	12% Bonds	*Common Stock*
Income before interest and income taxes	$12,000,000	$12,000,000
Less: Interest expense	4,800,000[1]	-0-
Income before taxes	7,200,000	12,000,000
Less: Income taxes at 50%	3,600,000	6,000,000
Net income	3,600,000	6,000,000
Less: Preferred dividends	-0-	-0-
Net income available to common stockholders (a)	$3,600,000	$6,000,000
Number of common stock outstanding (b)	200,000	400,000
Earnings per common share (a/b)	$18	$15

[1]$40,000,000 × 12% = $4,800,000

b. Issuing bonds is the financing option that is most advantageous to the common stockholders, all other factors being considered equal. It results in higher earnings per common stock. A second advantage of issuing bonds is that it does not disrupt current stockholder control. The option to issue more shares would distribute control over a larger number of stockholders causing the control held by the present stockholders to be diluted. A third advantage of issuing bonds is that interest expense is deductible for tax purposes, while dividends are paid out of after-tax dollars. One disadvantage of issuing bonds, which may make one of the other options more advantageous, is that interest expense is fixed. Issuing bonds increases interest expense and the company must earn enough income to cover the interest expense in any given year.

EXERCISE 10–2

a. Entry to record the transaction:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Land		50,000	
	Preferred Shares			50,000
	To record the purchase of a tract of land in exchange for preferred shares.			

b. The credit part of the transaction would be classified on the balance sheet in the equity section as part of preferred stock. The debit part of the transaction would be recorded as an asset in the property, plant, and equipment section.

EXERCISE 10–3

a. The number of preferred stock issued is 64 (640 / $10 par-value).

b. The number of common stock issued is 1,000 (1,000 / $1 par-value).

c. Net income would be $600 (Ending RE $600 − Beg. RE $0 = $600).

EXERCISE 10–4

a. Entry to record the declaration of the dividend:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 25	Dividends Declared.....		100,000	
	Dividends Payable			100,000
	To record the declaration of the dividend.			

b. Entry to record the payment of the dividend:

General Journal				
Date	Account/Explanation	R	Debit	Credit
June 26	Dividends Payable.....		100,000	
	Cash.....			100,000
	To record the payment of the dividend.			

EXERCISE 10–5

a. Since the preferred stockholders have cumulative shares, they must receive all dividends in arrears ***and*** the current dividend before the common stockholders receive any dividends.

Dividends received by preferred stockholders (1,000 shares × $5/share = $5,000/year dividend entitlement):

= Dividends in arrears for one year + Dividends for current year

= $5,000 + 5,000 = $10,000

Common stockholders receive the balance, or $4,000 ($14,000 − $10,000).

b. Preferred stockholders receive dividends before the common stockholders. Since the preferred stockholders are not cumulative shares, they receive only the current dividend or $5,000.

Common stockholders receive the balance, or $9,000 ($14,000 − $5,000).

EXERCISE 10–6

a. The $15,000 of dividends in arrears at December 31, 2019 does not appear as a liability. Although the dividends pertain to cumulative shares, no liability exists until the board of directors declares a dividend. However, disclosure of dividends in arrears would be made in a note to the financial statements.

b. The company may have sufficient retained earnings but may not have sufficient cash to pay the dividends, taking into consideration other needs of the company.

c. The amount available for dividends to the common stockholders is calculated as follows:

Amount available for all dividends (1/2 × $35,000)	$17,500
Priority given to cumulative preferred stockholders	
Arrears to December, 2019	(15,000)
Preferred dividends for 2020	(5,000)
Deficiency	$(2,500)

The $2,500 deficiency in 2020 preferred dividends has to be paid in the future before any dividends are paid to common stockholders. There will be no dividends available for common stockholders at December 31, 2020 based on the projections.

EXERCISE 10–7

General Journal				
Date	Account/Explanation	R	Debit	Credit
Apr. 1	Share Dividend Declared		15,000	
	Common Share Dividend To Be Distributed			15,000
	To record the declaration of the share dividend. (10,000 shares × 10% = 1,000 shares × $15)			

OR

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Retained Earnings		15,000	
	Common Share Dividend To Be Distributed			15,000
	To record the declaration of the share dividend. (10,000 shares × 10% = 1,000 shares × $15)			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Apr. 15	Common Share Dividend To Be Distributed		15,000	
	Common Shares			15,000
	To record the distribution of the dividend.			
Jun. 1	Cash Dividends Declared		22,000	
	Dividends Payable			22,000
	To record the declaration of the cash dividend. [(10,000 shares + 1,000 shares) × $2]			

OR

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Retained Earnings		22,000	
	Dividends Payable			22,000
	To record the declaration of the cash dividend. [(10,000 shares + 1,000 shares) × $2]			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun. 30	Dividends Payable		22,000	
	Cash			22,000
	To record payment of the cash dividend.			
Dec. 31	Retained Earnings		37,000	
	Share Dividend Declared			15,000
	Cash Dividend Declared			22,000
	To close the Dividends Declared general ledger account to the Retained Earnings account.			

OR

If Retained Earnings was debited on April 1 (instead of Stock Dividends Declared) and June 1 (instead of Cash Dividends Declared), then no closing entry is required on December 31.

EXERCISE 10–8

a. i. Par value for preferred stock = ($4,500) / 300 shares = $15 per share

ii. Par value for common stock = ($2,000) / 2,000 shares = $1 per share

b. Retained Earnings Balance is $60,000 ($4,500 + 2,000 + 5,000 + 22,000 − 750 − 92,750 = 60,000)

EXERCISE 10–9

a. No journal entry.

Authorization of stock issue:

Memorandum

The company is authorized under the [name of legislation] to issue an unlimited number of common stock and 10,000, 4% preferred stock.

b. Issue of 10,000 common stock:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 2, 2018	Intangible Assets		10,000	
	Common Shares			10,000

c. Issue of 1,000 preferred stock:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 2, 2018	Cash		3,000	
	Preferred Shares			3,000

EXERCISE 10–10

Scenario 1

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 15, 2018	Retained earnings		5,000	
	Common stock to be distributed			250
	Additional paid in capital			4,750
	$5,000 × 10% = $500, $500 × 10 = $5,000. Common stock listed at par × $0.50			
Feb 15, 2018	Common stock to be distributed		250	
	Common stock			250

Scenario 2

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 15, 2018	Retained earnings		750	
	Common stock to be distributed			750
	$5,000 × 30% = $1,500. Common stock listed at par × $0.50			
Feb 15, 2018	Common stock to be distributed		750	
	Common stock			750

EXERCISE 10–11

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 5, 2018	Cash		150	
	Common stock			20
	Additional paid in capital			130
	To record issue of 10 common shares (par value $2).			
Jan 12	Land		50	
	Buildings		100	
	Machinery		100	
	Common stock			100
	Additional paid in capital			150
	To record issue of 50 common shares (par value $2).			
Feb 28	Stock dividend		42	
	Common stock to be distributed			12
	Additional paid in capital			30
	To record the stock dividend: $[(10+50)\times 10\% = 6 \text{ shares} \times \$7]$. Common stock recorded at $2 par.			
Mar 15	Common stock to be distributed		12	
	Common stock			12
	To record issue of dividend on common stock.			
Dec 31	Cash dividend		66	
	Dividend payable			66
	To record the cash dividend declared.			
Dec 31	Income summary		200	
	Retained earnings			200
	To close the income summary account.			
Dec 31	Retained earnings		108	
	Stock dividend			42
	Cash dividend			66
	To close 2018 dividends to Retained earnings.			

b. i.

Blitz Power Tongs Inc.
Partial Statement of Financial Position
At January 31, 2018

Stockholders' Equity

Common shares, par value $2 per share	
Authorized – unlimited shares	
Issued and outstanding – 60 shares	$120
Additional paid in capital – Excess of par, common	280
Total stockholders' equity	$400

ii.

Blitz Power Tongs Inc.
Partial Statement of Financial Position
At February 28, 2018

Stockholders' Equity

Common shares, par value $2 per share		
Authorized – unlimited shares		
Issued and outstanding – 60 shares	$120	
Additional paid in capital – Excess of par, common	310	
Common stock to be distributed – 6 shares	12	442
Retained earnings*		18
Total stockholders' equity		$460

* ($60 net income − 42 dividends declared)

Blitz Power Tongs Inc.
Partial Statement of Financial Position
At December 31, 2018

Stockholders' Equity

Common shares, par value $2 per share	
Authorized – unlimited shares	
Issued and outstanding – 60 shares	$132
Additional paid in capital – Excess of par, common	310
Retained earnings*	92
Total stockholders' equity	$534

iii. * ($200 net income − 66 dividends declared − 42 dividends declared)

EXERCISE 10–12

a.

	10% bonds		*Common shares*
Income before interest and income taxes	$750,000		$750,000
Less: Interest expense	150,000	*	-0-
Income before income taxes	600,000		750,000
Less: Income taxes at 30%	180,000		225,000
Net Available to common shareholders	$420,000		$525,000
Number of common shares outstanding	20,000		50,000
Earnings per common share	$ 21		$ 10.50

* $1,500,000 × 10% = $150,000

b. From a common stockholders perspective, issuing bonds is the best option, since it maximizes net income (net income is available as potential dividends) per stockholder, which is seen through the earnings per share ratio.

EXERCISE 10–13

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb. 20	Cash dividend		50,000	
	Dividend payable – preferred			50,000
	(100,000 × $0.50)			
Mar. 1	Dividend payable – preferred		50,000	
	Cash			50,000
Apr. 15	Cash dividend		750,000	
	Dividend payable – common			750,000
	(1,250,000 × $0.60)			
Jun. 10	Dividend payable – common		750,000	
	Cash			750,000
Aug. 1	Cash		250,000	
	Common stock			100
	Additional paid in capital			249,900
Dec. 31	Cash dividend – preferred		50,000	
	Cash dividend – common		375,000	
	Cash			425,000
	($425,000 − $50,000 preferred*) = $375,000 to common stockholders			

* Remaining cumulative dividends on preferred shares not yet declared for the current fiscal year; 100,000 shares × ($1.00 − $.50 declared Feb 20) = $50,000 to be allocated to preferred class before any allocation to common shareholders.

b.

Belfast Steel Ltd.
Statement of Stockholders' Equity
For the Year Ended December 31, 2019
('000s)

	Common	*Preferred*	*Additional paid in*	*Retained*	*Total*
Balance at Jan 1, 2019	$ 12	$ 1,000	$ 24,987	$ 4,000	$30,000
Common stock issued	0.1		249.9		250
Net income				500	500
Dividends					
Preferred				(100)*	(100)
Common				(1,125)**	(1,125)
Balance at Dec 31, 2019	$ 12.1	$ 1,000	&25,236.9	$ 3,275	$29,525

* Feb 20 dividends	$ 50,000
Dec 31 cumulative dividends allocated	50,000
Total	$ 100,000

** Apr 15 dividends	$ 750,000
Dec 31 dividends	375,000
Total	$1,125,000

EXERCISE 10–14

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 15	Organization expenses		15,000	
	Common stock			32,000
	Additional paid in capital		17,000	
	Issued 32,000 shares at $1 par.			
Feb 20	Cash		90,000	
	Common stock			15,000
	Additional paid in capital			75,000
	Issued 15,000 shares at $ par.			
Mar 7	Cash		90,000	
	Preferred stock			90,000
Apr 9	Land		300,000	
	Building		120,000	
	Common stock			60,000
	Additional paid in capital			360,000
	Issued 60,000 shares at $1 par.			
May 1	Cash		63,000	
	Preferred stock			63,000
May 15	Cash dividend – common		16,000	
	Cash dividend – preferred		34,000	
	Cash			50,000
	(4,500 + 3,500) × $2 preferred, remainder to common			
Jun 5	Cash		112,000	
	Common stock			16,000
	Additional paid in capital			96,000
	Issued 16,000 shares at $1 par.			
Jul 15	Cash		185,000	
	Common stock			20,000
	Preferred stock			35,000
	Additional paid in capital			130,000
	Issued $20,000 common shares at $1 par.			
Dec 31	Retained earnings		25,000	
	Income summary			25,000
	Closed the net loss to Retained earnings.			
Dec 31	Retained earnings		50,000	
	Cash dividends			50,000
	Closed the dividend account to Retained earnings.			

b.

Bray Co.
Equity Section of the Balance Sheet
December 31, 2019

Contributed Capital:	
Preferred Stock, $2.00; 10,000 shares authorized;	
10,000 shares issued and outstanding	$ 188,000*
Common Stock	
unlimited shares authorized;	
114,000 shares issued and outstanding	143,000**
Additional paid in capital	644,000***
Total contributed capital	$ 975,000
Deficit****	75,000
Total equity	$ 900,000

Calculations:

* Preferred Shares:		Shares	Dollars
Mar 7	Issued 4,500 shares	4,500	$ 90,000
May 1	Issued 3,500 shares	3,500	63,000
Jul 15	Issued 2,000 shares	2,000	35,000
	Totals	10,000	$188,000
** Common Stock:			
Jan 15	Issued 32,000 shares	32,000	$ 32,000
Feb 20	Issued 15,000 shares	15,000	15,000
Apr 9	Issued 60,000 shares	60,000	60,000
Jun 5	Issued 16,000 shares	16,000	16,000
Jul 15	Issued 20,000 shares	20,000	20,000
	Totals	$143,000	$143,000

*** Additional paid in Capital: $(17{,}000) + 75{,}000 + 360{,}000 + 96{,}000 + 130{,}000 = 644$
**** Retained earnings/(deficit): $25,000 deficit − dividends declared $50,000 = $75,000 deficit balance

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EXERCISE 10–15

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 4	Cash		165,000	
	Common stock			15,000
	Additional paid in capital			150,000
	Issued 15,000 shares at $ par.			
Jan 8	Cash dividends		57,500	
	Preferred dividend payable			45,000
	Common dividend payable			12,500
	Preferred (10,000 × $1.5 × 3 yrs)			
Jan 31	Preferred dividend payable		45,000	
	Common dividend payable		12,500	
	Cash			57,500
Jul 1	Cash		77,500	
	Preferred stock			77,500
Aug 7	Cash dividends – common		40,000	
	Common dividend payable			40,000
	($1 × 40,000)			
Aug 31	Common dividend payable		40,000	
	Cash			40,000

b.

Carman Corp.
Statement of Stockholders' Equity
For Year Ended December 31, 2017

	Preferred Stock	Common Stock	Additional paid in Capital	Retained Earnings	Treasury Stock	Total Equity
Balance, January 1	$150,000	$ 25,000	$ 275,000	$250,000	$(50,000)	$650,000
Issuance of shares	77,500	15,000	150,000			242,500
Net income (loss)**				(50,000)		(50,000)
Dividends*				(97,500)		(97,500)
Balance, December 31	$227,500	$ 40,000	$ 425,000	$102,500	$(50,000)	$745,000

* ($57,500 + 40,000)

** ($102,500 − 250,000 + 97,500) = (50,000) loss

c.

Carman Corp.
Equity Section of the Balance Sheet
December 31, 2017

Contributed Capital:	
Preferred shares, $1.50 cumulative, unlimited shares authorized,	
15,000 shares issued and outstanding	$227,500
Common shares, unlimited shares authorized	
40,000 shares issued and outstanding	40,000
Additional paid in capital	425,000
Less: Treasury stock	(50,000)
Total contributed capital	$642,500
Retained earnings	102,500
Total equity	$745,000

Calculations:

		Shares	Dollars
Preferred Stock:			
Jan 1	Opening balance	10,000	$150,000
Jul 1	Issued 5,000 shares ($77,500 ÷ $15.50)	5,000	77,500
	Totals	15,000	$227,500
Common Stock:			
Jan 1	Opening balance	25,000	$ 25,000
Jan 4	Issued 15,000 shares	15,000	$ 15,000
	Totals	40,000	$ 40,000

d.

2016:

$$\text{Book value per preferred share} = \frac{\text{Paid-in capital for preferred shares} + \text{dividends in arrears}}{\text{Number of preferred shares outstanding}}$$
$$= \frac{\$150{,}000 + 30{,}000^*}{10{,}000}$$
$$= \$18{,}00 \text{ per share}$$

* ($1.50 × 10,000 shares × 2 years)

2017:

$$\text{Book value per preferred share} = \frac{\$227{,}500 + 0}{15{,}000} = \$15.17$$

2016:

$$\begin{aligned}\text{Book value per common share} &= \frac{\text{Total equity minus preferred shares paid-in capital} + \text{dividends in arrears}}{\text{Number of common shares outstanding}} \\ &= \frac{\$650{,}000 - 180{,}000}{25{,}000} \\ &= \$18{,}80 \text{ per share}\end{aligned}$$

2017:

$$\text{Book value per common share} = \frac{\$745{,}000 - 227{,}500}{40{,}000} = \$12.94$$

Chapter 11 Solutions

EXERCISE 11–1

F	A payment of $5,000 was made on a bank loan.
O	Depreciation expense for equipment was $1,000.
F	$10,000 of common stock was issued for cash.
F	Cash dividends of $2,500 were declared and paid to stockholders.
NC	Bonds were issued in exchange for equipment costing $7,000.
I	Land was purchased for $25,000 cash.
O	$750 of accrued salaries was paid.
O	$10,000 of accounts receivable was collected.
NC & I	A building was purchased for $80,000: $30,000 was paid in cash and the rest was borrowed.
I	A long-term investment in shares of another company was sold for $50,000 cash.
O & I	Equipment was sold for $6,000. The related accumulation depreciation was $3,000 with an original cost of $10,000.
O	$1,200 was paid for a 12-month insurance policy in effect next year.
O	A patent was amortized for $500.
F	Bonds were issued for $50,000 cash.

EXERCISE 11–2

a. The reconstructed entry to record the sale of the machinery:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accumulated Depreciation		?	
	Cash		?	
	Loss on Sale of Machinery (given)		3	
	Machinery (given)			20

Accumulated Depreciation

		42	Dec. 31, Year 4 bal.
Debit regarding sale	? = 12	25	Dep. Expense, Year 5
		55	Dec. 31, Year 5 bal.

Therefore, the debit to cash in the journal entry must be 5 (20-12-3).

b. The reconstructed entry to record the purchase of machinery:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Machinery		?	
	Cash			?

Machinery

Dec. 31, Year 4 bal.	138		
Debit regarding purch.	? = 7	20	Credit regarding sale
Dec. 31, Year 5 bal.	125		

Therefore, the debit to Machinery and credit to Cash in the entry must be 7 (138-20-125).

c. The reconstructed entry to record the declaration of dividends:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Dividends or Retained Earnings		?	
	Dividends Payable			?

Retained Earnings

		81	Dec. 31, Year 4 bal.
Year 5 Net loss	2		
Year 5 Div. Declared	? = 35		
		44	Dec. 31, Year 5 bal.

Therefore, the debit to Dividends or Retained Earnings is 35 and credit to Dividends Payable 35 (81-2-44).

d. The reconstructed entry to record the payment of dividends:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Dividends Payable		?	
	Cash			?

Dividends Payable			
		5	Dec. 31, Year 4 bal.
Div. Paid Year 5	? = 39	35	Div. Declared Year 5
		1	Dec. 31, Year 5 bal.

Therefore, the debit to Dividends Payable is 39 and the credit to Cash 39 (5+35-1).

Calculations:

	Balance ($000s)		*Change*		*Explanation of Change*
Account	*Year 5 Dr. (Cr.)*	*Year 4 Dr. (Cr.)*	*Dr.*	*Cr.*	
Cash	40	22	18		
Accounts receivable	34	39		5	Decrease in accounts receivable
Merchandise inventory	150	146	4		Increase in merchandise inventory
Prepaid expenses	3	2	1		Increase in prepaids
Machinery	125	138	7	20	Purchase in machinery for cash of 7; Sold machinery for cash of 5; Loss on sale 3
Accumulated dep.	-55	-42	12	25	Depreciation expense 25
Accounts payable	-29	-31	2		Decrease in accounts payable
Dividends payable	-1	-5	39	35	Paid dividends of 39
Bonds payable	-15	-38	23		Paid bonds 23
Common stock	-208	-150		58	Issued common shares 58
			2		Net loss 2
Retained earnings	-44	-81	35		
Total			125	143	
Change in cash			18		Net increase in cash of 18

e. The statement of cash flows is as follows:

Larriet Inc.
Statement of Cash Flows
Year Ended December 31, Year 5

Cash flows from operating activities:		
Net loss	$(2)	
Adjustments to reconcile net loss to cash provided by operating activities:		
Decrease in accounts receivable	5	
Increase in merchandise inventory	(4)	
Increase in prepaids	(1)	
Decrease in accounts payable	(2)	
Depreciation expense	25	
Loss on sale of machinery	3	
Net cash inflow from operating activities		$24
Cash flows from investing activities:		
Purchase of machinery	$(7)	
Sale of machinery	5	
Net cash outflow from investing activities		(2)
Cash flows from financing activities:		
Issued common shares	$58	
Paid bonds	(23)	
Paid dividends	(39)	
Net cash outflow from financing activities		(4)
Net increase in cash		$18
Cash at beginning of year		22
Cash at end of year		$40

EXERCISE 11–3

a.

Glacier Corporation
Statement of Cash Flows
For the Year Ended December 31, 2019

Operating activities		
Net income		$ 14
Items not affecting cash flow		
Depreciation expense		6
Gain on sale of equipment (note 2)		(1)
Loss on sale of land (note 1)		4
Net changes in non-cash working capital:		
Accounts receivable, inventory and accounts payable ($4 − 8 − 4)		(8)
Cash flow from operating activities		15
Investing activities		
Proceeds from sale of equipment (note 2)	$ 6	
Proceeds from sale of land	10	
Purchase of property, plant, and equipment	(41)	
Cash flow used by investing activities		(25)
Financing activities		
Proceeds from borrowings	8	
Common shares issued	10	
Payment of dividends	(6)	
Cash flow from financing activities		12
Net increase in cash		2
Cash at beginning of year		8
Cash at end of year		$ 10

Note 1: The journal entry to record the sale of the land would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		10	
	Loss on Disposal		4	
	Land			14

Note 2:

Cost of equipment sold (given)	$ 7
Accumulated depreciation (derived)	(2)
Carrying amount (given)	5
Cash proceeds (derived)	**(6)**
Gain on sale (per income statement)	$ 1

b. Cash flow from operating activities is almost identical to net income ($15 vs $14). The company appears to be embarking on a re-capitalization project, selling equipment and investing

in new property, plant, and equipment. Most of this ($8 + 10) has been financed by issuing debt and common shares. Opening and ending cash balances are almost identical ($8 vs $10).

EXERCISE 11–4

a.

Lelei Ltd.
Statement of Cash Flows
For the Year Ended December 31, 2019
($000s)

Operating activities		
Income from operations(225 − 44 − 100 − 28 − 10 + 15)		$ 58
Items not affecting cash flow		
Depreciation expense	44	
Gain on sale of patent	(15)	
Net changes in non-cash working capital:		
Increase in accounts receivable	(100)	
Increase in inventory	(60)	
Increase in prepaid rent	(10)	
Increase in accounts payable	50	
Increase in income taxes payable	8	(83)
Cash flow used by operating activities		(25)
Investing activities		
Proceeds from sale of patent	$ 45	
Purchase of equipment	(120)	
Purchase of patent	(30)	
Cash flow used by investing activities		(105)
Financing activities		
Proceeds from non-current borrowings	100	
Common shares issued (140 − 40 non-cash)	100	
Repayment of non-current borrowings (100 − 80)	(20)	
Dividends (20 − 10 dividend payable)	(10)	
Cash flow from financing activities		170
Net increase in cash		40
Cash at beginning of year		-0-
Cash at end of year		$ 40

b. The statement of cash flows shows that the company used debt and equity to finance its operations, purchase equipment, and pay dividends. The company generated more cash

than it used ($40), from solely its financing activities. The cash flow used by operating activities ($25) is a concern, but on the other hand, this may be acceptable in the first year of operations.

EXERCISE 11–5

a.

ZZ Corp.
Statement of Cash Flows
For the Year Ended December 31, 2019

Operating activities		
Income from operations		$ 40,000
Items not affecting cash flow:		
Depreciation expense	27,000	
Loss on sale of equipment	11,000	
Gain on sale of land	(4,000)	
Net changes in non-cash working capital:		
Income taxes paid	(4,000)	
Increase in accounts receivable	(10,000)	
Decrease in inventory	4,000	
Decrease in prepaid expenses	2,000	
Decrease in accounts payable	(2,000)	24,000
Cash flow used by operating activities		64,000
Investing activities		
Proceeds from sale of land	$ 26,000	
Proceeds from sale of equipment	15,000	
Building addition	(60,000)	
Purchase of equipment	(15,000)	
Cash flow used by investing activities		(34,000)
Financing activities		
Payment of dividends	(20,000)	
Cash flow from financing activities		(20,000)
Net increase in cash		10,000
Cash at beginning of year		30,000
Cash at end of year		$ 40,000

b. ZZ Corp. has generated cash inflow of $64,000 from operating activities, which is good. The company is advised to watch its management of accounts receivable as it has increased from $30,000 to $40,000 or 33% in one year. Management needs to ensure that it is collecting

the accounts receivable as efficiently as possible. In terms of investing activities, it has sold land and equipment, but overall there has been a cash outflow of $34,000 because of the purchase of new equipment and the building addition. The company was able to pay its shareholders dividends of $20,000. Overall, the company added $10,000 more cash to its cash balance at the end of the year.

EXERCISE 11–6

a.

Egglestone Vibe Inc.
Statement of Cash Flows
For the Year Ended December 31, 2016

Cash flows from operating activities		
Net income		$ 24,700
Items not affecting cash flow:		
Depreciation expense	$ 55,900	
Loss on sale of equipment (Note 1)	10,100	
Gain on sale of land (Note 2)	(38,200)	
Impairment loss – goodwill	63,700	
Net changes in non-cash working capital:		
Increase in accounts receivable	(36,400)	
Increase in inventory	(67,600)	
Decrease in accounts payable	(28,200)	(40,700)
Net cash used by operating activities		(16,000)
Cash flows from investing activities		
Proceeds from sale of equipment	27,300	
Purchase of land	(62,400)	
Proceeds from sale of land	150,000	
Net cash provided by investing activities		114,900
Cash flows used by financing activities		
Payment of cash dividends (Note 3)	(89,900)	
Issuance of notes payable	10,500	
Net cash used by financing activities		(79,400)
Net increase in cash		19,500
Cash at beginning of year		146,900
Cash at end of year		$166,400

Notes:

1. $\$27{,}300 - (\$53{,}000 - \$15{,}600)$

2. \$150,000 − \$111,800
3. \$430,000 + 24,700 net income − 386,900 = 67,800 dividends declared
   \$41,600 + 67,800 − 19,500 = \$89,900

b. Negative cash flows from operating activities may signal trouble ahead with regard to Egglestone's daily operations. Current assets such as accounts receivable, inventory, and accounts payable all increased the cash outflows over the year. The only positive cash flows was from the investing activities. Specifically, proceeds from the sale of equipment and land were used to fund operating and pay dividends. This may be cause for concern if the assets sold were actually still being used to earn revenues and generate net income. Shareholders did receive cash dividends, but was that appropriate, given the net cash outflows from operations? All this increases the pressure on the company to find ways to improve its profitability as well as its management of receivables, payables, and inventory.

EXERCISE 11–7

Neuton Ltd.
Statement of Cash Flows
For Year Ended June 30, 2016

Cash flows from operating activities:		
Net income	$ 44,380	
Items not affecting cash flow:		
Depreciation expense	58,600	
Net changes in non-cash working capital:		
Increase in accounts receivable	(18,000)	
Decrease in merchandise inventory	30,000	
Increase in prepaid expenses	(200)	
Decrease in accounts payable	(26,000)	
Decrease in wages payable	(9,000)	
Decrease in income taxes payable	(1,200)	
Gain on sale of equipment	(2,000)	
Net cash inflow from operating activities		$ 76,580
Cash flows from investing activities:		
Cash received from sale of old equipment (Note 1)	$ 10,000	
Cash paid for new equipment	(58,600)	
Net cash outflow from investing activities		(48,600)
Cash flows from financing activities:		
Cash received from issuance of common shares	$ 50,000	
Cash paid to retire notes payable	(30,000)	
Cash paid for dividends (Note 2)	(27,180)	
Net cash outflow from financing activities		(7,180)
Net increase in cash		$ 20,800
Cash balance at beginning of year		35,000
Cash balance at end of year		$ 55,800

Note 1:

Cash Proceeds from Sale of Equipment:	
Cost of equipment sold	$ 48,600
Accumulated depreciation of equipment sold (see below)	(40,600)
Book value of equipment sold	8,000
Gain on sale of equipment	2,000
Cash receipt from sale of equipment	$ 10,000

Equipment			
Bal 30/6/15	120,000		
Purchase	58,600	48,600	Sale
Bal 30/6/16	130,000		

Accum. Depreciation, Equipment			
		10,000	Bal 30/6/15
Sale	40,600	58,600	Deprec. Exp
		28,000	Bal 30/6/16

Note 2: Opening retained earnings + net income – dividends declared = Closing retained earnings
$7,400 + 44,380 − dividends = 24,600
Dividends = 24,600 − 7,400 − 44,380 = 27,180

EXERCISE 11–8

Yucotin Corp.
Statement of Cash Flows
For Year Ended December 31, 2016

Cash flows from operating activities:		
Net income	$ 134,000	
Items not affecting cash flow:		
Depreciation	36,000	
Net changes in non-cash working capital:		
Increase in accounts receivable	(8,000)	
Increase in inventory	(145,000)	
Decrease in accounts payable	(18,000)	
Increase in income taxes payable	2,000	
Net cash inflow from operating activities		$ 1,000
Cash flows from investing activities:		
Equipment purchase		(24,000)
Cash flows from financing activities:		
Common shares issued	$ 40,000	
Dividends	(37,000)	
Net cash outflow from financing activities		(3,000)
Net increase in cash		$(20,000)
Cash, beginning balance		268,000
Cash, ending balance		$248,000

EXERCISE 11–9

a. Opening retained earnings + net income – dividends declared = closing retained earnings
Dividends declared = 115,200 − 68,800 − 86,400 = $40,000

Cash dividends paid = opening dividends payable + dividends declared − closing dividends payable
Cash dividends paid = 500 + 40,000 − 1,000 = $39,500

b.

Tubric Corp.
Statement of Cash Flows
For Year Ended December 31, 2016

Cash flows from operating activities:		
Net income	$ 86,400	
Items not affecting cash flow:		
Depreciation expense	34,400	
Loss on sale of equipment	3,200	
Gain on sale of long-term investment	(9,600)	
Net changes in non-cash working capital:		
Increase in accounts receivable	(42,400)	
Increase in inventory	(25,600)	
Decrease in accounts payable	(14,900)	
Net cash inflow from operating activities		$ 31,500
Cash flows from investing activities:		
Proceeds from sale of long-term investment	$ 24,000	
Proceeds from sale of equipment	5,600	
Purchase of equipment	(16,000)	
Net cash inflow from investing activities		13,600
Cash flows from financing activities:		
Issuance of bonds payable	$ 20,000	
Payment of dividend (from part a above)	(39,500)	
Net cash outflow from financing activities		(19,500)
Net increase in cash and cash equivalents		$ 25,600
Cash and cash equivalents, January 1, 2016		28,800
Cash and cash equivalents, December 31, 2016		$ 54,400

Chapter 12 Solutions

EXERCISE 12–1

The calculation of ratios as shown by the financial statements of Stockwell Inc. for each of the three years is as follows:

a. Liquidity ratios

		2015	*2014*	*2013*
Current ratio		1.2:1	1.0:1	1.4:1
Acid-test ratio		0.59:1	0.48:1	0.74:1
Sales		210 (a)	120	100
Accounts receivable	–opening	30	20	20
	–closing	38	30	20
	–average	34 (b)	25	20
Accounts receivable Collection period (b/a × 365)		59 days	76 days	73 days
Cost of goods sold		158 (c)	80	55
Merchandise inventory		60 (d)	40	30
Number of days of sales in inventory (d/c × 365)		139 days	183 days	199 days
Revenue operating cycle		198 days	259 days	272 days

- The company's working capital position does not appear to be satisfactory, since the liquid assets appear to be insufficient to meet current obligations. The acid-test ratio is quite low, well below 1:1. The company could obtain additional cash by issuing shares or acquiring long-term debt. Alternately, it may need to seek short-term financing like an operating loan from a bank to provide cash to pay liabilities as they become due.
- Control over accounts receivable and inventories has improved. Even though the dollar value of both of these items has increased, average sales and collection periods have declined in 2015. The liquidity ratios for 2014 as compared with 2015 and 2013 suggest that not enough attention was given during that year to investments in inventories and to the collection of accounts receivable. However, the improvements shown in 2015 indicate that better control is now being exercised over these current assets.

b. i. Financial structure

	2015	*2014*	*2013*
Debt to equity ratio	\$150/230 = 0.65:1	\$130/100 = 1.30:1	\$50/96 = 0.52:1

The appropriate financial structure for Stockwell Inc. cannot be adequately determined without knowledge of its industry, for instance. With the exception of 2014, Stockwell Inc.'s debt to equity ratio indicates a reliance on equity rather than debt financing due to the 2015 share issue. In 2014, however, a bond issue temporarily changed the financial structure. Market rates of interest for debt would need to be evaluated to see if there is potential for leverage (that is, if interest rates are lower than current return on total assets). If not, it is less likely that any potential for positive leverage exists. In this circumstance a weighting toward equity is reasonable.

ii. The proportion of assets provided by creditors is as follows: 2013 – 34.3% (50/146); 2014 – 56.5% (130/230), and 2015 – 39.5% (150/380).

iii. A disproportionately high percentage of debt, over 60% in both 2014 and 2015, is in current liabilities.

c. Other observations:

- The gross profit ratio has declined over the past year, even though sales have more than doubled (2015: \$52/210 = 25%; 2014: \$40/120 = 33%). The decrease in this ratio suggests either that selling prices were reduced in order to dispose of the increased production or that the expansion in production facilities resulted in a higher unit cost; possibly there was a combination of both.
- All funds derived from earnings during the last two years have been retained within the business, since no dividends have been paid. However, the investment in property, plant and equipment assets of \$190 (\$260 − 70) exceeds the \$170 received on the issue of bonds and shares [\$50 + (200 − 80)]. It appears that a substantial part of the funds derived from earnings have been used to finance additions to property, plant and equipment assets rather than to provide working capital. This has weakened the liquidity ratios.

(Other relevant observations are acceptable.)

EXERCISE 12–2

$$\text{Price-earnings ratio} = \frac{\text{Market price per share}}{\text{Earnings per share}}$$

This ratio indicates the stock market's expectations of profitability for the company. A higher P/E ratio indicates that the market expects the company to be profitable despite relatively lower net income at present. On this basis, company C is preferred.

A: \$35/11 = 3.2

B: \$40/5 = 8

C: \$90/10 = 9

$$\text{Dividend yield} = \frac{\text{Dividends per share}}{\text{Market price per share}}$$

This ratio indicates what short-term cash return shareholders might expect on their investment in common shares of the company.

A: 0

B: \$4/40 = 0.1 or 10%

C: \$6/90 = 0.067 or 6.7%

The stock market indicates that company C is expected to be relatively more profitable than A or B in the future. However, if dividend yield is important to the shareholder, then company B should be chosen. On either basis, company A does not appear to be a good investment.

EXERCISE 12–3

a. Current ratio

$$= \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$= \frac{\text{Cash} + \text{accounts receivable} + \text{inventory} + \text{prepaid expenses}}{\text{Current liabilities}}$$

$$= \$300/60$$

$$= 5{:}1$$

b. Return on total assets

$$= \frac{\text{Net income}}{\text{Average total assets}}$$

$$= \$20/620$$

$$= 3.2\%$$

c. Sales to total assets ratio

$$= \frac{\text{Net sales}}{\text{Average total assets}}$$

$$= \$240/620$$

$$= 38.7\%$$

d. Acid-test ratio

$$= \frac{\text{Quick assets}}{\text{Current liabilities}}$$

$$= \frac{\text{Cash} + \text{accounts receivable}}{\text{Current liabilities}}$$

$$= (\$72 + 88)/60$$

$$= 2.7{:}1$$

e. Times interest earned ratio

$$= \frac{\text{Income from operations}}{\text{Interest expense}}$$

$$= \$46/8$$

$$= 5.75{:}1$$

f. Earnings per common share

$$= \frac{\text{Net income} - \text{preferred share dividends}}{\text{Number of common shares outstanding}}$$

$$= [\$20 - (\$60 \times 10\%)]/10 \text{ shares}$$

$$= \$1.40 \text{ per share}$$

g. Accounts receivable collection period

$$= \frac{\text{Average accounts receivable}}{\text{Net credit sales}} \times 365 \text{ days}$$

$$= \$88/(80\% \times \$240) \times 365 \text{ days}$$

$$= 167 \text{ days}$$

h. Return on equity

$$= \frac{\text{Net income}}{\text{Equity}}$$

$$= \frac{\text{Net income}}{\text{Preferred shares} + \text{Common shares} + \text{Retained earnings}}$$

$$= \$20/(60 + 250 + 100)$$

$$= 4.9\%$$

EXERCISE 12–4

a. Horizontal analysis:

			Change	
	2012	*2011*	*Amount*	*Percentage*
	(a)	*(b)*	*(a − b)*	*(a − b)/b*
Sales	$2,520	$1,440	$+1,080	+75%
Cost of Goods Sold	1,890	960	+930	+96.9%
Gross Profit	630	480	+150	+31.3%
Other Expenses	510	430	+80	+18.6%
Net Income	$120	$50	+70	+140%

b. Although sales have increased, cost of goods sold has increased at a faster pace. However, operating expenses have increased at a slower pace, resulting in a substantially higher net income.

EXERCISE 12–5

a. Vertical analysis:

Escalade Corporation
Vertical Analysis of the Income Statements
For the Years Ending December 31, 2010–2012

	Common–Size Percentages		
	2012	*2011*	*2010*
Sales	100.0	100.0	100.0
Cost of Goods Sold	76.0	66.7	50.0
Gross Profit	24.0	33.3	50.0
Other Expenses	14.0	22.7	29.2
Net Income	10.0	10.6	20.8

b. Escalade's gross profit ratio has significantly declined over the past three years. This could be owing to the initial inefficiency of a larger plant or because of selling an increased number of units at a greatly reduced price to obtain a larger share of the market. At any rate, the reasons for this decline should be investigated further. Since other expenses have not increased proportionately, perhaps more money could be put into sales promotion to increase the number of units sold.

EXERCISE 12–6

a.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

The current ratio indicates how many dollars of current assets exist to pay a dollar of current liabilities. A ratio of 2 to 1 is often appropriate but this depends on the type of industry.

2018: $(\$10 + 35 + 200 + 600) \div 745$ = \$1.13 to 1
2017: $(\$15 + 35 + 150 + 400) \div 580$ = \$1.03 to 1

b.

$$\text{Acid-test ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}}$$

The acid-test ratio indicates how many dollars of current assets excluding inventory and prepaid expenses exist to pay a dollar of current liabilities. A ratio of at least 1 to 1 is often appropriate but this depends on the type of industry.

2018: $(\$10 + 35 + 200) \div 745$ = \$0.33 to 1
2017: $(\$15 + 35 + 150) \div 580$ = \$0.34 to 1

c. Both the current and acid-test ratios are below the suggested guidelines. The company's continuing low acid-test ratio in particular suggests that it will likely have problems meeting its liabilities as they become due, and that the company may be at risk of bankruptcy.

EXERCISE 12–7

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net sales}}$$

2019: \$63 ÷ 252 = 25%
2018: \$48 ÷ 141 = 34%
2017: \$54 ÷ 120 = 45%

$$\text{Net profit ratio} = \frac{\text{Net income}}{\text{Net sales}}$$

2019: \$12 ÷ 252 = 4.7%
2018: \$5 ÷ 141 = 3.6%
2017: \$15 ÷ 120 = 12.5%

This company has a decreasing gross profit ratio. This significantly affects net income and the net profit ratio. Net income and the net profit ratio dipped significantly in 2018, but both have rebounded somewhat in 2019. The company may be facing significant competition in recent years; hence the overall decline in the gross profit and net profit ratios.

EXERCISE 12–8

Transaction	*Ratio*	*Effect on ratio*
Declared a cash dividend	Current ratio	D
Wrote-off an uncollectible account receivable	Accounts receivable collection period	I
Purchased inventory on account	Acid-test ratio	D
Issued 10-year bonds to acquire property, plant, and equipment	Return on total assets	D
Issued additional shares for cash	Debt to shareholders' equity ratio	D
Declared a share dividend on common shares	Earnings per share	NC
Purchased supplies on account	Current ratio	D
Paid a current creditor in full	Acid-test ratio	I
Paid an account payable	Number of days of sales in inventory	NC

EXERCISE 12–9

a. i. Return on total assets

$= \frac{\text{Net income}}{\text{Average total assets}}$

= ($20/220)

= 9.1%

ii. Return on shareholders' equity

$= \frac{\text{Net income}}{\text{Average shareholders' equity}}$

= $20/(80 + 60)

= 14.3%

iii. Times interest earned ratio

$= \frac{\text{Income from operations}}{\text{Interest expense}}$

= $36/6

= 6 times

iv. Earnings per share

$= \frac{\text{Net income}}{\text{Number of common shares outstanding}}$

= $20/8 shares

= $2.50

v. Number of days of sales in inventory

$= \frac{\text{Ending inventory}}{\text{Cost of goods sold}} \times 365 \text{ days}$

= $40/50 × 365 days

= 292 days

vi. Accounts receivable collection period

$= \frac{\text{Accounts receivable}}{\text{Net credit sales}} \times 365 \text{ days}$

= $20/100 × 365 days

= 73 days

vii. Sales to total assets ratio

$= \frac{\text{Net sales}}{\text{Average total assets}}$

= $100/220

= 45%

viii. Current ratio

$= \frac{\text{Current assets}}{\text{Current liabilities}}$

= ($20 + 20 + 40)/20

= 4:1

ix. Acid-test ratio

$= \frac{\text{Quick assets}}{\text{Current liabilities}}$

= ($20 + 20)/20

= 2:1

x. Debt to shareholders' equity ratio

$= \frac{\text{Total liabilities}}{\text{Shareholders' equity}}$

= $(20 + 60)/140)

= 0.57:1

b. The following ratios are measures of liquidity:
v. Number of days of sales in inventory
vi. Accounts receivable collection period
viii. Current ratio
ix. Acid-test ratio

EXERCISE 12–10

a. Current assets + capital assets = Total liabilities + shareholders' equity
Current assets + $90 = $40 + 140
Current assets = $90
Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$
2.5 = $90/Current liabilities
Current liabilities = $36

b. From above: Current assets = $90; Current liabilities = $36
Acid-test Ratio = $\frac{\text{Quick current assets}}{\text{Current liabilities}}$
Since the Acid-test Ratio is 1:1,
Inventory = $\frac{\$90 - \text{inventory} + 0}{\$36}$
Inventory = $90 – 36
Inventory = $54

c. Accounts receivable = Quick current assets – (cash + short-term investments)
$36 – 6 = 30
Accounts rec. collection period = $\frac{\text{Average accounts receivable}}{\text{Net credit sales}} \times 365$ days
= $30/300 × 365 days
= 37 days

d. If gross profit is 30 per cent of sales, the cost of goods sold is 70 per cent of sales (70% × $420 = $294). From above, inventory = $54
Number of days of sales in inventory = $\frac{\text{Ending inventory}}{\text{Cost of goods sold}} \times 365$ days
= $54/294 × 365 days
= 12 days

e. Revenue operating cycle = Accounts receivable collection period + number of days of sales in inventory
= 37 + 12 = 49 days

EXERCISE 12–11

a.

	Transaction	*Effect on current ratio*
i.	Bought $20,000 of merchandise on account (the company uses a perpetual inventory system)	D
ii.	Sold for $10,000 cash, merchandise that cost $5,000	I
iii.	Collected a $2,500 account receivable	NC
iv.	Paid a $10,000 account payable	I
v.	Wrote off a $1,500 bad debt against the allowance for doubtful accounts	NC*
vi.	Declared a $1 per-share cash dividend on the 10,000 outstanding common shares	D
vii.	Paid the dividend declared above	I
viii.	Borrowed $10,000 from a bank by assuming a 60-day, 10-per cent loan	D
ix.	Borrowed $25,000 from a bank by placing a 10-year mortgage on the plant	I
x.	Used the $25,000 proceeds of the mortgage to buy additional machinery	D

* The journal entry is a debit from Allowance for Doubtful Accounts and a credit to Accounts Receivable.

b. At the end of May,

The current ratio was 2.15 to 1, calculated as follows:

In thousands of dollars		*Bal May 1*	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*vii*	*ix*	*x*	*Bal May 31*
Current assets	x	200	+20	+10	+2.5	-10	+1.5	–	-10	+10	+25	-25	215
				-5	-2.5		-1.5						
Current liabilities	y	80	+20	–	–	-10	–	+10	-10	+10	–	–	100
Current ratio	x/y	2.5											**2.15**

The acid-test ratio was 1 to 1 calculated as follows:

In thousands of dollars		*Bal May 1*	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	*Bal May 31*
Quick assets	x	100	–	+10	+2.5	-10	+1.5	–	-10	+10	+25	-25	100
					-2.5		-1.5						
Current liabilities	y	80	+20	–	–	-10	–	+10	-10	+10	–	–	100
Acid-test ratio	x/y	1.25											**1.0**

Chapter 13 Solutions

EXERCISE 13–1

a. The income statement is as follows:

B. White and C. Green Partnership
Income Statement
For the Year Ended December 31, 2015

Sales		$322,000
Cost of Goods Sold		160,500
Gross Profit		161,500
Operating Expenses		
Rent	36,000	
Advertising	27,200	
Delivery	9,600	
Office	12,800	
Utilities	23,300	108,900
Net Income		$ 52,600

b. The statement of owners' equity is as follows:

B. White and C. Green Partnership
Statement of Owners' Equity
For the Year Ended December 31, 2015

	White	*Green*	*Total*
Opening Balance	$20,000	$10,000	$30,000
Investments	10,000	10,000	20,000
Net Income	26,300	26,300	52,600
	56,300	46,300	102,600
Less: Withdrawals	7,000	5,000	12,000
Ending Balance	$49,300	$41,300	$90,600

c. The balance sheet is as follows:

B. White and C. Green Partnership
Balance Sheet
At December 31, 2015

Assets		
Current		
Cash		$41,000
Accounts Receivable		68,400
Inventory		27,000
Total Assets		$136,400
Liabilities		
Current		
Accounts Payable		$45,800
Equity		
B. White, Capital	$49,300	
C. Green, Capital	41,300	90,600
Total Liabilities and Equity		$136,400

d. The closing entries for the year are as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales		322,000	
	Income Summary			322,000
	Income Summary		269,400	
	Cost of Goods Sold			160,500
	Rent			36,000
	Advertising			27,200
	Delivery			9,600
	Office			12,800
	Utilities			23,300
	Income Summary		52,600	
	B. White, Capital			26,300
	C. Green, Capital			26,300
	B. White, Capital		7,000	
	B. White, Withdrawals			7,000
	C. Green, Capital		5,000	
	C. Green, Withdrawals			5,000

EXERCISE 13–2

a. The statement of owners' equity for White's is as follows:

White's
Statement of Owners' Equity
For the Year Ended December 31, 2015

Opening Balance	$ 30,000
Investments	20,000
Net Income	52,600
	102,600
Less: Withdrawals	12,000
Ending Balance	$ 90,600

b. The statement in changes in equity for BW and CG Ltd. is as follows:

BW and CG Ltd.
Statement of Stockholders' Equity
For the Year Ended December 31, 2015

	Common Stock	*Retained Earnings*	*Total*
Opening Balance	$200	$29,800	$30,000
Common Stock Issued	20,000		20,000
Net Income		52,600	52,600
Dividends Declared		(12,000)	(12,000)
Ending Balance	$20,200	$70,400	$ 90,600

EXERCISE 13–3

a. The journal entry is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		52,600	
	B. White, Capital			32,875
	C. Green, Capital			19,725
	To allocate net income as follows: White ($52,600 × 5/8) + Green ($52,600 × 3/8) = $32,875 + 19,725 = $52,600			

b. The journal entry is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		52,600	
	B. White, Capital			37,760
	C. Green, Capital			14,840

To allocate net income as follows:

	White	*Green*	*Total*
Profit to be allocated			$52,600
Interest allocation:			
White: $20,000 × 10%	$ 2,000		
Green: $10,000 × 10%		$1,000	(3,000)
Balance			49,600
Salary allocation:	30,000	10,000	(40,000)
Balance			9,600
Balance allocated in profit and loss sharing ratio:			
White: $9,600 × 3/5	5,760		
Green: $9,600 × 2/5		3,840	(9,600)
Balance			$ -0-
Total allocated to partners	$37,760	$14,840	

EXERCISE 13–4

a. The journal entry is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		210,000	
	Walsh, Capital			85,250
	Abraham, Capital			124,750

Calculations to allocate net income:

	Walsh	*Abraham*	*Total*
Net income to be allocated			$210,000
Interest allocation:			
Walsh: $320,000 × 10%	$32,000		
Abraham: $400,000 × 10%		$40,000	(72,000)
Balance			138,000
Salary allocation:	75,000	150,000	(225,000)
Balance			(87,000)
Balance allocated in profit and loss sharing ratio:			
Walsh: ($87,000) × 1/4	(21,750)		
Abraham: ($87,000) × 3/4		(65,250)	87,000
Balance			$ -0-
Total allocated to partners	$85,250 +	$124,750 =	$210,000

The total actually allocated of $210,000 must equal the net income initially required to be allocated of $210,000.

b. The journal entry is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	C. Abraham, Capital		104,000	
	B. Walsh, Capital			9,000
	Income Summary			95,000

Calculations to allocate net loss:

	Walsh	*Abraham*	*Total*
Net income to be allocated			$(95,000)
Interest allocation:			
Walsh: $320,000 × 10%	$32,000		
Abraham: $400,000 × 10%		$40,000	(72,000)
Balance			(167,000)
Salary allocation:	75,000	150,000	(225,000)
Balance			(392,000)
Balance allocated in profit and loss sharing ratio:			
Walsh: ($392,000) × 1/4	(98,000)		
Abraham: ($392,000) × 3/4		(294,000)	392,000
Balance			$ -0-
Total allocated to partners	$9,000 +	$(104,000) =	$(95,000)

The total actually allocated of $210,000 must equal the net income initially required to be allocated of $210,000.

EXERCISE 13–5

a. An adjusting entry is needed to reallocate personal income taxes:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Proprietor's Withdrawals		5,000	
	Income Taxes Expense			5,000

The statement of profit and loss would then appear as follows:

R. Black Proprietorship
Income Statement
For the Year Ended December 31, 2018

Sales	$ 166,000
Cost of goods sold	100,000
Gross profit	66,000
Operating expenses	
Rent	24,000
Net income	$ 42,000

b.

R. Black Proprietorship
Statement of Owners' Capital
For the Year Ended December 31, 2018

Balance at Jan 1, 2018 (derived)	$ -0-
Contributions	5,000
Net income	42,000
Withdrawals	(12,000)
Balance at Dec 31, 2018	$ 35,000

c.

R. Black Proprietorship
Balance Sheet
At December 31, 2018

Assets	
Current	
Cash	$10,000
Accounts receivable	20,000
Inventory	30,000
Total assets	$60,000
Liabilities	
Current	
Accounts payable	$25,000
Proprietor's Capital	
R. Black, capital	35,000
Total liabilities and proprietor's capital	$60,000

d.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales		166,000	
	Cost of Goods Sold			100,000
	Rent Expense			24,000
	Income Summary			42,000
	Income Summary		42,000	
	R. Black, Capital			42,000
	R. Black, Capital		12,000	
	R. Black, Withdrawals			12,000

EXERCISE 13–6

a.

R. Black Ltd.
Income Statement
For the Year Ended December 31, 2018

Sales	$166,000
Cost of goods sold	100,000
Gross profit	66,000
Operating expenses	
Rent	24,000
Income before income taxes	42,000
Income taxes	5,000
Net income	$ 37,000

b.

R. Black Ltd.
Statement of Stockholders' Equity
For the Year Ended December 31, 2018

	Common Stock	Retained Earnings	Total Equity
Balance at Jan 1, 2018	$ 5,000	$ -0-	$ 5,000
Net income		37,000	37,000
Dividends		(7,000)	(7,000)
Balance at Dec 31, 2018	$ 5,000	$ 30,000	$35,000

c.

R. Black Ltd.
Balance Sheet
At December 31, 2018

Assets		
Current		
Cash		$10,000
Accounts receivable		20,000
Inventory		30,000
Total assets		$60,000
Liabilities		
Current		
Accounts payable		$25,000
Shareholders' Equity		
Common stock	$ 5,000	
Retained earnings	30,000	35,000
Total liabilities and stockholders' equity		$60,000

d.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales		166,000	
	Cost of Goods Sold			100,000
	Rent Expense			24,000
	Income Taxes Expense			5,000
	Income Summary			37,000
	Income Summary		37,000	
	Retained Earnings			37,000
	Income Summary		7,000	
	Dividends			7,000

EXERCISE 13–7

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	G, Capital		30,000	
	I, Capital			30,000
	To record transfer of G's partnership interest to new partner I.			

b.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	G, Capital ($30,000 − 17,100)		12,900	
	H, Capital ($10,000 − 17,100)			7,100
	I, Capital			3,800
	Cash			2,000
	To record payment of bonus to new partner I and reallocation of partnership interest.			

Interest calculations:

G, Capital	$30,000
H, Capital	10,000
Bonus payment	(2,000)
Capital of new partnership	$38,000

Allocated as:	
G (45%)	$17,100
H (45%)	17,100
I (10%)	3,800
	$38,000

c.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Land		100,000	
	G, Capital ($30,000 − 28,000)		2,000	
	H, Capital ($10,000 − 7,000)		3,000	
	I, Capital			105,000
	To record contribution of assets by new partner I and reallocation of partnership interest.			

Interest calculations:

G, Capital	$ 30,000
H, Capital	10,000
I, Investment	100,000)
Capital of new partnership	$ 140,000

Allocated as:	
G (20%)	$ 28,000
H (5%)	7,000
I (75%)	105,000
	$ 140,000

EXERCISE 13–8

a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	X, Capital		10,000	
	T, Capital			10,000
	To record transfer of X's partnership interest to new partner T.			

b.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	X, Capital		10,000	
	Y, Capital			10,000
	To record transfer of X's partnership interest to existing partner Y.			

c.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	X, Capital		10,000	
	Accounts Payable		2,000	
	Y, Capital			1,200
	Z, Capital			800
	Cash			5,000
	Inventory			5,000
	To record dispersal of partnership net assets to withdrawing partner X and transfer of X's partnership interest to existing partners Y and Z.			

EXERCISE 13–9

a.

Smith, capital	$ 50,000
Jones, capital	40,000
Black, capital	10,000
Existing capital	100,000
Investment by Gray	5,000
Capital of new partnership (a)	$105,000
Mood's capital ($105,000 × 25%)	$ 26,250

The new partner's bonus is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		5,000	
	Smith, Capital		7,083	
	Jones, Capital		7,083	
	Black, Capital		7,084	
	Gray, Capital			26,250

b.

Smith, capital	$ 50,000
Jones, capital	40,000
Black, capital	10,000
Existing capital	100,000
Investment by Gray	60,000
Capital of new partnership (a)	$160,000
Mood's capital ($160,000 × 25%)	$ 40,000

The bonus to existing partners is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		60,000	
	Smith, Capital			6,667
	Jones, Capital			6,667
	Black, Capital			6,666
	Gray, Capital			40,000

Chapter 1 Solutions

PROBLEM 1–1

Dumont Inc.
Income Statement
For the Month Ended January 31, 2015

Revenue		
Service revenue		$7,500
Expenses		
Advertising expense	$500	
Commissions expense	720	
Insurance expense	50	
Interest expense	80	
Rent expense	400	
Supplies expense	100	
Telephone expense	150	
Wages expense	2,500	
Total expenses		4,500
Net income		$3,000

Dumont Inc.
Balance Sheet
At January 31, 2015

Assets		
Cash	$1,300	
Accounts receivable	2,400	
Prepaid expenses	550	
Unused supplies	750	
Truck	9,000	
Total assets		$14,000
Liabilities		
Bank loan	$8,000	
Accounts payable	1,000	
Total liabilities		9,000
Equity		
Common stock	$2,000	
Retained earnings	3,000	
Total equity		5,000
Total liabilities and equity		$14,000

Dumont Inc.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$ -0-	$ -0-	$ -0-
Shares issued	2,000	-0-	2,000
Net income	-0-	3,000	3,000
Ending balance	$2,000	$3,000	$5,000

PROBLEM 1–2

1. The income statement and statement of stockholders' equity are as follows:

Laberge Sheathing Inc.
Income Statement
For the Month Ended August 31, 2015

Revenue		
Service revenue		$2,000
Expenses		
Advertising expense	$300	
Interest expense	500	
Maintenance expense	475	
Supplies expense	125	
Wages expense	2,600	
Total expenses		4,000
Net loss		$2,000

Laberge Sheathing Inc.
Balance Sheet
August 31, 2015

Assets		
Cash	$400	
Accounts receivable	3,800	
Unused supplies	100	
Equipment	8,700	
Total assets		$13,000
Liabilities		
Accounts payable		$7,800
Equity		
Common stock	3,200	
Retained earnings	2,000	5,200
Total liabilities and equity		$13,000

Laberge Sheathing Inc.
Statement of Stockholders' Equity
Month Ended August 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$3,200	$4,000	$7,200
Net loss	-0-	(2,000)	(2,000)
Ending balance	$3,200	$2,000	$5,200

2. The percentage of assets financed by equity is 40% calculated as (5,200/13,000) $\times$ 100. Although part 2 of this question did not require that the percentage of assets financed by debt be calculated, it is 60% calculated as 100% $-$ 40%.

PROBLEM 1–3

Larson Services Inc.
Transactions Worksheet
At August 31, 2015

	ASSETS					=	LIABILITIES			+	EQUITY		
	Cash	Acct. Rec.	Ppd. Exp.	Unused Supplies	Truck		Bank Loan	Acct. Pay	Unearned Revenue		Common Stock	Retained Earnings	
Aug. 1	+3,000										+3,000		
1	+10,000						+10,000						
1	-8,000				+8,000								
3	No effect												
4	-600		+600										
5	+2,000								+2,000				
7		+5,000										+5,000	Fees earned
9	-250											-250	Supplies expense
12				+500				+500					
15	+1,000	-1,000											
16	-200											-200	Advertising
20	-250							-250					
25	-2,800											-350	Rent expense
												-2,150	Salaries
												-50	Telephone
												-250	Truck operation
28	No Effect												
29		+6,000										+6,000	Fees earned
31									-500			+500	Fees earned
	$3,900	+ $10,000	+ $600	+ $500	+ $8,000	=	$10,000	+ $250	+ $1,500	+	$3,000	+ $8,250	

Assets = $23,000

Liabilities + Equity = $23,000

PROBLEM 1–4

Larson Services Inc.
Income Statement
For the Month Ended August 31, 2015

Revenues		
Fees earned		$11,500
Expenses		
Advertising expense	$200	
Rent expense	350	
Salaries expense	2,150	
Supplies expense	250	
Telephone expense	50	
Truck operation expense	250	
Total expenses		3,250
Net income		$8,250

Larson Services Inc.
Balance Sheet
At August 31, 2015

Assets		
Cash	$3,900	
Accounts receivable	10,000	
Prepaid expenses	600	
Unused supplies	500	
Truck	8,000	
Total assets		$23,000
Liabilities		
Bank loan	$10,000	
Accounts payable	250	
Unearned revenue	1,500	
Total liabilities		11,750
Equity		
Common stock	3,000	
Retained earnings	8,250	
Total equity		11,250
Total liabilities and equity		$23,000

Larson Services Inc.
Statement of Stockholders' Equity
For the Month Ended August 31, 2015

	Share Capital	*Retained Earnings*	*Total Equity*
Opening balance	$ -0-	$ -0-	$ -0-
Shares issued	3,000	-0-	3,000
Net income	-0-	8,250	8,250
Ending balance	$3,000	$8,250	$11,250

PROBLEM 1–5

	Cash	Accounts receivable	Office supplies	Prepaid expenses	Office furniture	Equipment	Accounts payable	Unearned revenue	Note payable	Common stock	Retained earnings
Open Bal	+10,000	+25,000	+2,000	0	+15,000	+25,000	+35,000	0	0	+8,000	+34,000
1	+5,000							+5,000			
2	-5,000										-5,000
3			+3,000				+3,000				
4		+27,000									+27,000
5						+3,000			+3,000		
6											
7							+300				-300
8	+20,000								+20,000		
9	-8,000						-8,000				
10	-3,000										-3,000
11		+25,000									+25,000
12	+25,000	-25,000									
13											
14											
15	-3,500										-3,500
16	-5,000			+5,000							
17	-50										-50
18					+3,000		+3,000				
Bal	+35,450	+52,000	+5,000	+5,000	+18,000	+28,000	+33,300	+5,000	+23,000	+8,000	+74,150

PROBLEM 1–6

Olivier Bondar Ltd.
Balance Sheet
At May 31, 2016

Assets		*Liabilities*		
Cash	$ 35,450	Accounts payable	$33,300	
Accounts receivable	52,000	Note/Loan payable	23,000	
		Unearned revenue	5,000	
Office supplies	5,000	Total liabilities		$ 61,300
Prepaid expenses	5,000			
Equipment	28,000	*Equity*		
Office furniture	18,000	Common stock	$ 8,000	
		Retained earnings	74,150	
		Total equity		82,150
Total assets	$143,450	Total liabilities and equity		$143,450

Chapter 2 Solutions

PROBLEM 2–1

1. The trial balance is as follows:

Fox Creek Service Limited
Trial Balance
At October 31, 2015

	Account Balances	
	Debit	*Credit*
Cash	$1,000	
Accounts Receivable	6,000	
Equipment	7,000	
Truck	9,000	
Bank Loan		$5,000
Accounts Payable		9,000
Wages Payable		1,500
Common Stock		2,000
Repair Revenue		19,000
Advertising Expense	2,200	
Commissions Expense	4,500	
Insurance Expense	500	
Supplies Expense	800	
Telephone Expense	250	
Truck Operation Expense	1,250	
Wages Expense	4,000	
	$36,500	$36,500

2. The income statement and statement of stockholders' equity are as follows:

Fox Creek Service Limited
Income Statement
For the Year Ended October 31, 2015

Revenue		
Repair revenue		$19,000
Expenses		
Advertising expense	$2,200	
Commissions expense	4,500	
Insurance expense	500	
Supplies expense	800	
Telephone expense	250	
Truck operation expense	1,250	
Wages expense	4,000	
Total expenses		13,500
Net income		$ 5,500

Fox Creek Service Limited
Statement of Stockholders' Equity
For the Year Ended October 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening Balance	$ -0-	$ -0-	$ -0-
Shares Issued	2,000	-0-	2,000
Net Income	-0-	5,500	5,500
Ending Balance	$2,000	$5,500	$7,500

3. The balance sheet is as follows:

Fox Creek Service Limited
Balance Sheet
At October 31, 2015

Assets		
Cash		$ 1,000
Accounts receivable		6,000
Equipment		7,000
Truck		9,000
Total assets		$23,000
Liabilities		
Bank loan	$5,000	
Accounts payable	9,000	
Wages payable	1,500	15,500
Equity		
Common stock	2,000	
Retained earnings	5,500	7,500
Total liabilities and equity		$23,000

PROBLEM 2–2

1. The general journal is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1	Cash		5,000	
	Common stock			5,000
	Stock sold for cash			
May 5	Accounts receivable		3,000	
	Service revenue			3,000
	Billed customer for services provided			
May 6	Cash		2,000	
	Service revenue			2,000
	Provided services for cash			
May 10	Cash		1,500	
	Accounts receivable			1,500
	Collected cash owed by customer			
May 11	Equipment		2,000	
	Cash			1,000
	Accounts payable			1,000
	Purchased new machinery, half with cash, half with credit			
May 15	Cash		1,200	
	Accounts receivable			1,200
	Collected cash owed by customer			
May 16	Prepaid advertising		500	
	Cash			500
	Paid upfront for May and June advertising			
May 18	Accounts receivable		2,500	
	Service revenue			2,500
	Porvided services for cash			
May 20	Unused supplies		300	
	Cash			300
	Purchased supplies, paid cash			
May 21	Cash		800	
	Equipment			800
	Sold old equipment for cash			
May 22	Accounts payable		600	
	Cash			600
	Paid partial bill owed from equipment purchased			

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 23	Telephone expense		150	
	Accounts payable			150
	Received telephone bill for month of May			
May 24	Commissions expense		250	
	Accounts payable			250
	Received invoice for commissions owed			
May 28	Rent expense		400	
	Cash			400
	Paid May rent			
May 29	Salaries expense		3,500	
	Cash			3,500
	Paid employee salaries			
May 30	Supplies expense		100	
	Unused supplies			100
	Physical count of supplies showed $200 remaining			
May 31	Advertising expense		250	
	Prepaid advertising			250
	To record May Advertising expense			

2. The Trial Balance is as follows:

Davidson Tools Rentals Corporation
Trial Balance
May 31, 2015

	Account Balances	
	Debit	*Credit*
Cash	$4,200	
Accounts receivable	2,800	
Prepaid advertising	250	
Unused supplies	200	
Equipment	1,200	
Accounts payable		$1,650
Common stock		5,000
Service revenue		7,500
Advertising expense	250	
Commissions expense	1,100	
Rent expense	400	
Supplies expense	100	
Salaries expense	3,500	
Telephone expense	150	–
	$14,150	$14,150

Cash		101
	5,000	1,000
	2,000	500
	1,500	300
	1,200	600
	800	400
	–	3,500
Bal.	4,200	

Accounts Receivable		110
	3,000	1,500
	2,500	1,200
Bal.	2,800	

Prepaid Advertising		160
	500	250
Bal.	250	

Unused Supplies		173
	300	100
Bal.	200	

Equipment		183
	2,000	800
Bal.	1,200	

Accounts Payable		210
	600	1,000
		150
		1,100
	Bal.	1,650

Common Stock		320
		5,000

Service Revenue		460
		3,000
		2,000
		2,500
	Bal.	7,500

Advertising Expense		610
	250	

Commissions Expense		615
	1,100	

Rent Expense		654
	400	

Salaries Expense		656
	3,500	

Supplies Expense		668
	100	

Telephone Expense		669
	150	

PROBLEM 2–3

General Journal				
Date	Account/Explanation	R	Debit	Credit
Apr. 2015	Cash		2,000	
	Accounts receivable			2,000
	(a) To record a collection on account.			
	Accounts receivable		3,000	
	Service revenue			3,000
	(b) To record billings to customers.			
	Advertising expense		300	
	Salaries expense		2,000	
	Telephone expense		100	
	Cash			2,400
	(c) To record payment of expenses incurred.			
	Accounts payable		1,000	
	Cash			1,000
	(d) To record payment made on account.			
	Truck operation expense		500	
	Accounts payable			500
	(e) To record bill received for truck repair expense.			
	Cash		2,500	
	Accounts receivable			2,500
	(f) To record payment received on account.			
	Accounts receivable		1,500	
	Service revenue			1,500
	(g) To record billings to customers.			
	Rent expense		500	
	Prepaid rent			500
	(h) To record expiry of a portion of prepaid rent.			
	Supplies expense		150	
	Unused supplies			150
	(i) To record supplies used, based on count of unused supplies at end of month.			

PROBLEM 2–4

General Journal				
Date	Account/Explanation	R	Debit	Credit
Aug. 1	Cash		3,000	
	Common stock			3,000
	Issued common stock for $3,000 cash			
	Cash		10,000	
	Bank loan			10,000
	Borrowed $10,000 cash from the bank			
	Truck		8,000	
	Cash			8,000
	Paid $8,000 cash for a used truck			
Aug. 4	Prepaid insurance		600	
	Cash			600
	Paid $600 for one-year truck insurance policy effective August 1			
Aug. 5	Cash		2,000	
	Fees earned			2,000
	Collected $2,000 fees in cash from a client for work performed			
Aug. 7	Accounts receivable		5,000	
	Fees earned			5,000
	Billed $5,000 fees to clients for services peformed to date			
Aug. 9	Supplies expense		250	
	Cash			250
	Paid $250 for supplies used to date			
Aug. 12	Unused supplies		500	
	Accounts payable			500
	Purchased $500 of supplies on credit			
Aug. 15	Cash		1,000	
	Accounts receivable			1,000
	Collected $1,000 of the amount billed on August 7			
Aug. 16	Advertising expense		200	
	Cash			200
	Paid $200 for advertising in first two weeks of August			
Aug. 20	Accounts payable		250	
	Cash			250
	Paid half of the amount owed from August 12 purchase			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Aug. 25	Rent expense		350	
	Salaries expense		2,150	
	Telephone expense		50	
	Truck operation expense		250	
	Cash			2,800
Aug. 28	No entry			
Aug. 29	Accounts receivable		6,000	
	Fees earned			6,000
	Billed $6,000 to clients for services performed to date			
Aug. 31	Insurance expense		50	
	Prepaid insurance			50
	Adjusted for unused insurance portion			
	Supplies expense		400	
	Unused supplies			400
	Adjust Supplies from amount used			

NOTE: *No entry is recorded for August 28 because a transaction did not occur.*

PROBLEM 2–5

Cushio Corp.
Trial Balance
At August 31, 2016

	Incorrect		Adjustments				Correct Balance	
	Debit	Credit		Debit		Credit	Debit	Credit
Cash	102,000						102,000	
Accounts receivable	59,730		3	270	1	5,000	55,000	
Prepaid expenses	2,000		6	6,000			8,000	
Office supplies inventory	5,500						5,500	
Equipment	115,000		5	10,000			125,000	
Accounts payable		74,500			4	500		85,000
					5	10,000		
Unearned revenue		50,000	2	5,000				45,000
Common stock		25,000						25,000
Retained earnings		50,500						50,500
Revenue		245,000			2	5,000		250,000
Repairs expense	1,000		4	500			1,500	
Rent expense	25,000						25,000	
Advertising expense	24,500				6	6,000	18,500	
Salaries expense	115,000						115,000	
	449,730	445,000		21,770		26,500	455,500	455,500

PROBLEM 2–6

1.

a. No entry

b.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid expense		12,000	
	Cash			12,000

c.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts payable		57,500	
	Cash			57,500
	($115,000 × 50%)			

d. No entry

e.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		200,000	
	Unearned service revenue			200,000

f. No entry

g. No entry

h.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts receivable		12,000	
	Service revenue			12,000

i.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		6,000	
	Accounts receivable			6,00

j.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		20,000	
	Unearned service revenue			20,000

k.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		150,000	
	Note payable			150,000

l.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		30,000	
	Equipment		10,000	
	Common stock			40,000

m.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid rent		18,000	
	Cash			18,000

n.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Land		250,000	
	Building/Warehouse		60,000	
	Note payable			260,000
	Cash			50,000

o. No entry

p.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts receivable		30,000	
	Service revenue			30,000

q.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Equipment		8,000	
	Equipment			3,000
	Cash			5,000

r.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Retained earnings		1,000	
	Cash			1,000

s.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Service revenue		2,000	
	Accounts receivable			2,000

t.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries expense		35,000	
	Cash			35,000

u.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Utilities expense		1,800	
	Accounts payable			1,800

v.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Office equipment		5,000	
	Office supplies		2,000	
	Accounts payable			7,000

w. No entry

2.

Stellar Services Ltd.
Income Statement
For the Two Months Ended January 31, 2016

Revenues		
Service revenue		$ 65,000
Expenses		
Repairs expense	$ 500	
Salaries expense	67,000	
Utilties expense	6,300	73,800
Net loss		$ (8,800)

Stellar Services Ltd.
Statement of Stockholders' Equity
For the Two Months Ended January 31, 2016

	Common Stock	Retained Earnings	Total Equity
Opening balance, December 31, 2015	$108,000	$ 90,000	$198,000
Shares issued	40,000		40,000
Net loss		(8,800)	(8,800)
Dividends***		(1,000)	(1,000)
Ending balance	$148,000	$ 80,200	$228,200

Stellar Services Ltd.
Balance Sheet
At January 31, 2016

Assets		*Liabilities*		
Cash	$377,500	Accounts payable	$ 66,300	
Accounts receivable	119,000	Note payable	430,000	
Office supplies	9,000	Unearned consulting fees	220,000	
Prepaid expenses	30,000	Total liabilities		$716,300
Land	250,000			
Building/Warehouse	60,000			
Equipment	60,000	*Equity*		
Office equipment	5,000	Common stock	$148,000	
Furniture	15,000	Retained earnings	80,200	
Vehicle	19,000	Total equity		
		Total liabilities and equity		228,200
Total assets	$944,500			$944,500

Chapter 3 Solutions

PROBLEM 3–1

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Rent expense		300	
	Prepaid rent			300
	(a) To record rent expense at year end.			
	Wages expense		200	
	Wages payable			200
	(b) To record accrued wages at year-end.			
	Income taxes expense		1,000	
	Income taxes payable			1,000
	(c) To record income taxes.			
	Unearned commissions revenue		1,000	
	Commissions earned			1,000
	(d) To record commissions earned at year-end.			
	Other unearned revenue		5,000	
	Revenue			5,000
	(e) To adjust unearned revenue to actual at year end.			
	Prepaid advertising		1,500	
	Advertising expense			1,500
	(f) To correct advertising expense and record prepaid advertising at year-end.			
	Depreciation expense – equipment		500	
	Accumulated depreciation – equipment			500
	(g) To record depreciation expense.			
	Unused supplies		225	
	Supplies expense			225
	(h) To correct supplies expense and adjust for unused supplies.			
	Truck expense		500	
	Accounts payable			500
	(i) To record accounts payable at year-end.			

PROBLEM 3–2

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Unused supplies		100	
	Supplies expense			100
	(a)			
	Telephone expense		75	
	Accounts payable			75
	(b)			
	Wages expense		125	
	Wages payable			125
	(c)			
	Depreciation expense – equipment		100	
	Accumulated depreciation – equipment			100
	(d)			
	Rent expense		500	
	Prepaid rent			500
	(e)			
	Unearned advertising revenue		500	
	Other revenue			500
	(f)			
	Prepaid insurance*		525	
	Insurance expense			525
	(g)			

**$900/12 months = $75/month; 5 months have been used (August 1 to December 31 = 5 months); therefore 7 months × $75/month = $525 remains unused.*

PROBLEM 3–3

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Interest receivable		250	
	Interest earned			250
	(a)			
	Insurance expense		200	
	Prepaid insurance			200
	(b)			
	Supplies expense		200	
	Unused supplies			200
	(c)			
	Interest expense		25	
	Interest payable			25
	(d)			
	Subscription revenue		7,500	
	Unearned subscription revenue			7,500
	(e) ($9,000 × 5/6 mos. = $7,500)			
	Salaries expense		300	
	Salaries payable			300
	(f)			
	Prepaid rent		300	
	Rent expense			300
	(g)			
	Truck operation expense		400	
	Accounts payable			400
	(h)			

PROBLEM 3–4

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation expense – truck		150	
	Accumulated depreciation – truck			150
	(a) ($6,000 × 6/48 mos. = $750 − 600 = $150)			
	(b) No entry required			
	Unused supplies		300	
	Supplies expense			300
	(c)			
	Rent expense		400	
	Prepaid rent			400
	(d)			
	Wages expense		250	
	Wages payable			250
	(e)			
	Interest expense		200	
	Interest payable			200
	(f) ($8,000 × 10% = $800 − 600 = $200)			
	Utilities expense		150	
	Utilities payable			150
	(g)			
	Insurance expense		500	
	Prepaid insurance			500
	(h) ($1,200 × 1/12 mos. = $100 prepaid; $600 − 100 = $500)			
	Unearned rent revenue		600	
	Rent earned			600
	(i)			
	Commissions earned		2,000	
	Other unearned revenue			2,000
	(j)			

PROBLEM 3–5

1., 3., 4., and 6.

Roth Contractors Corporation

Cash				101
(a)	5,000	(b)	1,200	
(g)	800	(e)	1,800	
(i)	2,000	(h)	3,450	
(m)	2,000	(l)	3,225	
Bal.	125			

Accounts Receivable				110
(f)	4,500	(i)	2,000	
(j)	6,500			
Bal.	9,000			

Prepaid Insurance				161
(e)	1,800	(o)	150	
Bal.	1,650			

Prepaid Rent				162
(b)	1,200	(p)	400	
Bal.	800			

Supplies				173
(q)	350			

Truck				184
(c)	10,000			

Accounts Payable				210
		(c)	10,000	
		(d)	1,000	
		(n)	100	
		Bal.	11,100	

Wages Payable				237
		(s)	1,500	

Unearned Revenue				249
		(r)	2,000	

Accum. Dep'n Truck				194
		(t)	208	

Common Stock				320
		(a)	5,000	

Repair Revenue				450
(r)	2,000	(f)	4,500	
		(g)	800	
		(j)	6,500	
		(m)	2,000	
		Bal.	11,800	

Advertising Expense				610
(h)	350			
(l)	200			
Bal.	550			

Depreciation Expense – Truck				624
(t)	208			

Insurance Expense				631
(o)	150			

Interest Expense				632
(h)	100			
(l)	150			
Bal.	250			

Rent Expense				654
(p)	400			

Supplies Expense				668
(d)	1,000	(q)	350	
Bal.	650			

Telephone Expense				669
(h)	75			

Truck Operation Expense				670
(h)	425			
(l)	375			
Bal.	800			

Utilities Expense				676
(n)	100			

Wages Expense				677
(h)	2,500			
(l)	2,500			
(s)	1,500			
Bal.	6,500			

2.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		5,000	
	Common stock			5,000
	(a)			
	Prepaid rent		1,200	
	Cash			1,200
	(b)			
	Truck		10,000	
	Accounts payable			10,000
	(c)			
	Supplies expense		1,000	
	Accounts payable			1,000
	(d)			
	Prepaid insurance		1,800	
	Cash			1,800
	(e)			
	Accounts receivable		4,500	
	Repair revenue			4,500
	(f)			
	Cash		800	
	Repair revenue			800
	(g)			
	Advertising expense		350	
	Interest expense		100	
	Telephone expense		75	
	Truck operation expense		425	
	Wages expense		2,500	
	Cash			3,450
	(h)			
	Cash		2,000	
	Accounts receivable			2,000
	(i)			
	Accounts receivable		6,500	
	Repair revenue			6,500
	(j)			
	Advertising expense		200	
	Interest expense		150	
	Truck operation expense		375	
	Wages expense		2,500	
	Cash			3,225
	(l)			
	Cash		2,000	
	Repair revenue			2,000
	(m)			
	Utilities expense		100	
	Accounts payable			100
	(n)			

5.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Insurance expense		150	
	Prepaid insurance			150
	(o)			
	Rent expense		400	
	Prepaid rent			400
	(p)			
	Supplies		350	
	Supplies expense			350
	(q)			
	Repair revenue		2,000	
	Unearned revenue			2,000
	(r)			
	Wages expense		1,500	
	Wages payable			1,500
	(s)			
	Depreciation expense – truck		208	
	Accumulated depreciation – truck			208
	(t) $10,000/48 mos. = $208 per month*			

**Recall that depreciation is always rounded to the nearest whole dollar because it is not 'exact'; depreciation is based on estimated useful life and estimated residual value.*

7.

Roth Contractors Corporation
Adjusted Trial Balance
December 31, 2015

	Account Balances	
	Debit	*Credit*
Cash	$ 125	
Accounts receivable	9,000	
Prepaid insurance	1,650	
Prepaid rent	800	
Supplies	350	
Truck	10,000	
Accumulated depreciation – truck		$ 208
Accounts payable		11,100
Wages payable		1,500
Unearned pevenue		2,000
Common stock		5,000
Repair revenue		11,800
Advertising expense	550	
Depreciation expense – truck	208	
Insurance expense	150	
Interest expense	250	
Rent expense	400	
Supplies expense	650	
Telephone expense	75	
Truck expense	800	
Utilities expense	100	
Wages expense	6,500	
Totals	$31,608	$31,608

PROBLEM 3–6

1. The general journal is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Repair Revenue		11,800	
	Income Summary			11,800
	To close revenue account to income summary.			
31	Income Summary		9,683	
	Advertising Expense			550
	Depreciation Expense – Truck			208
	Insurance Expense			150
	Interest Expense			250
	Rent Expense			400
	Supplies Expense			650
	Telephone Expense			75
	Truck Expense			800
	Utilities Expense			100
	Wages Expense			6,500
	To close expense accounts to income summary.			
31	Income Summary		2,117	
	Retained Earnings			2,117
	To close net income in income summary to retained earnings.			

2. The post-closing trial balance is as follows:

Roth Contractors Corporation
Post-Closing Trial Balance
December 31, 2015

	Debits	*Credits*
Cash	$ 125	
Accounts receivable	9,000	
Prepaid insurance	1,650	
Prepaid rent	800	
Supplies	350	
Truck	10,000	
Accumulated depreciation – truck		$ 208
Accounts payable		11,100
Wages payable		1,500
Unearned revenue		2,000
Common stock		5,000
Retained earnings		2,117
Totals	$21,925	$21,925

PROBLEM 3–7

1., 3., 6., and 8.

Packer Corporation

Cash 101	
12,000	

Accounts Receivable 110	
3,600	

Prepaid Insurance 161	
(a) 900	

Supplies 173	
2,500	
(b) 350	
Bal. 2,850	

Land 180	
15,000	

Building 181	
60,000	

Furniture 182	
3,000	

Equipment 183	
20,000	

Accumulated Depreciation – Building 191	
	(c) 1,200

Accumulated Depreciation – Furniture 192	
	(d) 300

Accumulated Depreciation – Equipment 193	
	(e) 1,000

Accounts Payable 210	
	4,400

Interest Payable 222	
	(f) 208

Salaries Payable 226	
	(i) 325

Unearned Commissions Revenue 242	
(g) 750	1,200
	Bal. 450

Unearned Subscriptions Revenue 250	
	800
	(h) 2,000
	Bal. 2,800

Bank Loan Long Term 271	
	47,600

Common Stock 320	
	52,100

Retained Earnings 340	
	(l) 6,967

Income Summary 360	
(k) 62,383	(j) 69,350
(l) 6,967	
	Bal. 0

Commissions Earned 410	
	37,900
	(g) 750
(j) 38,650	Bal. 38,650
	Bal. 0

Subscription Revenue 480	
(h) 2,000	32,700
	Bal. 30,700
(j) 30,700	
Bal. 0	

Advertising Expense 610	
4,300	(k) 4,300
Bal. 0	

Depreciation Expense – Building 621	
(c) 1,200	(k) 1,200
Bal. 0	

Depreciation Expense – Furniture 622	
(d) 300	(k) 300
Bal. 0	

Depreciation Expense Equipment 623	
(e) 1,000	(k) 1,000
Bal. 0	

Insurance Expense 631	
1,800	(a) 900
Bal. 900	
	(k) 900
Bal. 0	

Interest Expense 632	
2,365	
(f) 208	
Bal. 2,573	
	(k) 2,573
Bal. 0	

Salaries Expense 656	
33,475	
(i) 325	
Bal. 33,800	
	(k) 33,800
Bal. 0	

Supplies Expense 668	
15,800	(b) 350
Bal. 15,450	
	(k) 15,450
Bal. 0	

Utilities Expense 676	
2,860	(k) 2,860
Bal. 0	

2. Adjusting entries:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Aug. 31	Prepaid insurance		900	
	Insurance expense			900
	(a) ($1,800 × 6/12 mos. = $900)			
	Supplies		350	
	Supplies expense			350
	(b)			
	Depreciation expense – building		1,200	
	Accumulated depreciation – Building .			1,200
	(c) ($60,000 × 12/600 mos. = $1,200)			
	Depreciation expense – furniture		300	
	Accumulated depreciation – furniture			300
	(d) ($3,000 × 12/120 mos. = $300)			
	Depreciation expense – equipment		1,000	
	Accumulated depreciation – equipment			1,000
	(e) ($20,000 × 12/240 mos. = $1,000)			
	Interest expense		208	
	Interest payable			208
	(f)			
	Unearned commissions revenue		750	
	Commissions earned			750
	(g)			
	Subscription revenue		2,000	
	Unearned Subscriptions revenue			2,000
	(h)			
	Salaries expense		325	
	Salaries payable			325
	(i)			

4. The adjusted trial balance is as follows:

Packer Corporation
Adjusted Trial Balance
August 31, 2015

	Account Balances	
	Debit	*Credit*
Cash	$ 12,000	
Accounts receivable	3,600	
Prepaid insurance	900	
Supplies	2,850	
Land	15,000	
Building	60,000	
Furniture	3,000	
Equipment	20,000	
Accumulated depreciation – building		$ 1,200
Accumulated depreciation – furniture		300
Accumulated depreciation – equipment		1,000
Accounts payable		4,400
Interest payable		208
Salaries payable		325
Unearned commissions revenue		450
Unearned subscriptions revenue		2,800
Bank loan – long rerm		47,600
Common stock		52,100
Commissions earned		38,650
Subscription revenue		30,700
Advertising expense	4,300	
Depreciation expense – building	1,200	
Depreciation expense – furniture	300	
Depreciation expense – equipment	1,000	
Insurance expense	900	
Interest expense	2,573	
Salaries expense	33,800	
Supplies expense	15,450	
Utilities expense	2,860	
	$179,733	$179,733

5. The income statement, statement of stockholders' equity, and balance sheet are as follows:

Packer Corporation
Income Statement
For the Year Ended August 31, 2015

Revenue		
Commissions	$38,650	
Subscriptions	30,700	
Total revenue		$69,350
Expenses		
Advertising	4,300	
Depreciation – building	1,200	
Depreciation – furniture	300	
Depreciation – equipment	1,000	
Insurance	900	
Interest	2,573	
Salaries	33,800	
Supplies	15,450	
Utilities	2,860	
Total expenses		62,383
Net Income		$ 6,967

Packer Corporation
Statement of Stockholders' Equity
For the Year Ended August 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$ -0-	$ -0-	$ -0-
Shares issued	52,100	-0-	52,100
Net income	-0-	6,967	6,967
Ending balance	$52,100	$6,967	$59,067

Packer Corporation
Balance Sheet
At August 31, 2015

Assets		
Cash		$12,000
Accounts receivable		3,600
Prepaid insurance		900
Supplies		2,850
Land		15,000
Buildings	$60,000	
Less: Accum. Depreciation	1,200	58,800
Furniture	$3,000	
Less: Accum. Depreciation	300	2,700
Equipment	$20,000	
Less: Accum. Depreciation	1,000	19,000
Total Assets		$114,850
Liabilities		
Accounts payable		$4,400
Interest payable		208
Salaries payable		325
Unearned advertising		450
Unearned subscriptions		2,800
Bank loan – long-term		47,600
Total liabilities		55,783
Equity		
Common stock	$52,100	
Retained earnings	6,967	
Total equity		59,067
Total liabilities and equity		$114,850

6. Closing entries:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Aug. 31	Commissions earned		38,650	
	Subscription revenue		30,700	
	Income summary			69,350
	(j)			
	Income summary		62,383	
	Advertising expense			4,300
	Depreciation expense – building			1,200
	Depreciation expense – furniture			300
	Depreciation expense – equipment . . .			1,000
	Insurance expense			900
	Interest expense			2,573
	Salaries expense			33,800
	Supplies expense			15,450
	Utilities expense			2,860
	(k)			
	Income summary		6,967	
	Retained earnings			6,967
	(l)			

Note: The closing entries were posted into the T-accounts as (j), (k), and (l).

7. The post-closing trial balance:

Packer Corporation
Post-Closing Trial Balance
August 31, 2015

	Account Balances	
	Debit	*Credit*
Cash	$ 12,000	
Accounts receivable	3,600	
Prepaid insurance	900	
Unused supplies	2,850	
Land	15,000	
Building	60,000	
Furniture	3,000	
Equipment	20,000	
Accumulated depreciation – building		$ 1,200
Accumulated depreciation – furniture		300
Accumulated depreciation – equipment		1,000
Accounts payable		4,400
Interest payable		208
Salaries payable		325
Unearned advertising revenue		450
Unearned subscriptions revenue		2,800
Bank loan – long-term		47,600
Common stock		52,100
Retained earnings		6,967
	$117,350	$117,350

PROBLEM 3–8

1. a.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Accounts receivable		45,000	
	Service revenue			45,000

b.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Advertising expense		500	
	Prepaid advertising expense			500

c.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Shop supplies expense		300	
	Shop supplies			300
	($1,500 − $1,200)			

d.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Depreciation expense		79	
	Accumulated depreciation, equipment			79
	($10,000 − $500) ÷ 120 months			

e.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Unearned service revenue		5,000	
	Service revenue			5,000

f.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Salaries expense		5,800	
	Accrued salaries payable			5,800

g.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Utilities expense		3,500	
	Accounts payable			3,500

h.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Cash		7,800	
	Accounts receivable			7,800

i.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Depreciation expense		107	
	Accumulated depreciation, building . .			107
	($74,000 − $10,000) ÷ 600 months			

j.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Prepaid rent expense		5,000	
	Rent expense			5,000

k.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Interest expense		100	
	Interest payable			100
	($20,000 × 6% × 1 ÷ 12)			

l.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Income tax expense		3,000	
	Income taxes payable			3,000

m.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Accounts receivable		9,000	
	Service revenue			9,000

n.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Insurance expense		75	
	Prepaid insurance			75
	($1,800 × 1 ÷ 24)			

o.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Insurance expense		2,400	
	Prepaid insurance			2,400
	($4,500 − $1,800) = $2,700 − $300			

2.

Quertin Quick Fix Ltd.
Trial Balance
At October 31, 2016

	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance	
	Debit	Credit	Debit	Credit	Debit	Credit
Cash	$ 50,400		$ 7800		$ 58,200	
Accounts receivable	25,000		45,000	7,800	71,200	
			9,000			
Shop supplies	1,500			300	1,200	
Prepaid insurance expense	4,500			75	2,025	
				2,400		
Prepaid advertising expense	2,000			500	1,500	
Prepaid rent expense	–		5,000		5,000	
Building	74,000				74,000	
Accumulated depreciation, building		–		107		107
Equipment	10,000				10,000	
Accumulated depreciation, equipment		$ 2,000		79		2,079
Accounts payable		12,000		3,500		15,500
Accrued salaries payable		–		5,800		5,800
Interest payable		–		100		100
Income taxes payable		–		3,000		3,000
Notes payable		20,000				20,000
Unearned service revenue		30,000	5,000			25,000
Common stock		1,000				1,000
Retained earnings		40,400				40,400
Service revenue		125,000		45,000		184,000
				5,000		
				9,000		
Salaries expense	22,000		5,800		27,800	
Insurance expense	–		75		2,475	
			2,400			
Interest expense	–		100		100	
Shop supplies expense	200		300		500	
Advertising expense	2,200		500		2,700	
Depreciation expense	1,400		79		1,586	
			107			
Maintenance service expenses	5,200				5,200	
Rent expense	20,000			5,000	15,000	
Income tax expense	–		3,000		3,000	
Utilities expense	12,000		3,500		15,500	
	$230,400	$230,400	$87,661	$87,661	$296,986	$296,986

PROBLEM 3–9

Smith and Smith Co.
Income Statement
For the Month Ended June 30, 2016

Revenues		
Service revenue		$184,000
Expenses		
Salaries expense	$27,800	
Insurance expense	2,475	
Interest expense	100	
Shop supplies expense	500	
Advertising expense	2,700	
Depreciation expense	1,586	
Maintenance service expense	5,200	
Rent expense	15,000	
Income tax expense	3,000	
Utilities expense	15,500	73,861
Net loss		$110,139

Smith and Smith Co.
Statement of Stockholders' Equity
For the Month Ended June 30, 2016

	Common Stock	Retained Earnings	Total Equity
Opening balance, June 1, 2016	$ 1,000	$ 40,400	$ 41,400
Net income		110,139	110,139
Ending balance	$ 1,000	$150,539	$151,539

Smith and Smith Co.
Balance Sheet
At June 30, 2016

Assets			*Liabilities*		
Cash		$ 58,200	Accounts payable	$ 15,500	
Accounts receivable		71,200	Accrued salaries	5,800	
Shop supplies		1,200	Interest payable	100	
Prepaid insurance expense		2,025	Income taxes payable	3,000	
Prepaid advertising expense		1,500	Note payable	20,000	
Repaid rent expense		5,000	Unearned consulting fees	25,000	
Building	74,000		Total liabilities		$ 69,400
Accumulated depreciation, building	(107)	73,893			
Equipment	10,000		*Equity*		
Accumulated depreciation, equipment	(2,079)	7,921	Common stock	$ 1,000	
			Retained earnings	150,539	
			Total equity		
			Total liabilities and equity		151,539
Total assets		$220,939			$220,939

PROBLEM 3–10

a. 1. Close revenue accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Services revenue		184,000	
	Income summary			184,000

2. Close expense accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Income summary		73,861	
	Salaries expense			27,800
	Insurance expense			2,475
	Interest expense			100
	Shop supplies expense			500
	Advertising expense			2,700
	Depreciation expense			1,586
	Maintenance service expenses			5,200
	Rent expense			15,000
	Income tax expense			3,000
	Utilities expense			15,500

3. Close the income summary account to retained earnings.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Income summary		110,139	
	Retained earnings			110,139

4. Close dividends to retained earnings: No entry required.

b.

Smith and Smith Co.
Trial Balance
At June 30, 2016
Post-Closing Trial Balance

	Debit	Credit
Cash	$ 58,200	
Accounts receivable	71,200	
Shop supplies	1,200	
Prepaid insurance expense	2,025	
Prepaid advertising expense	1,500	
Prepaid rent expense	5,000	
Building	74,000	
Accumulated depreciation, building		$ 107
Equipment	10,000	
Accumulated depreciation, equipment		2,079
Accounts payable		15,500
Accrued salaries payable		5,800
Interest payable		100
Income taxes payable		3,000
Notes payable		20,000
Unearned service revenue		25,000
Common stock		1,000
Retained earnings		150,539
	$223,125	$223,125

Chapter 4 Solutions

PROBLEM 4–1

Norman Company Ltd.
Balance Sheet
At December 31, 2015

Assets		
Current		
Cash	$250	
Accounts receivable	138	
Notes receivable	18	
Prepaid insurance	12	
Unused office supplies	70	
Total current assets		$488
Property, plant, and equipment		
Land	115	
Building	400	
Equipment	140	
Net property, plant, and equipment		655
Total assets		$1,143
Liabilities		
Current		
Accounts payable	$125	
Current portion note payable	110	
Salaries payable	14	
Total current liabilities		$249
Non-current		
Mortgage payable		280
Total liabilities		529
Equity		
Common stock	400	
Retained earnings	214	
Total equity		614
Total liabilities and equity		$1,143

PROBLEM 4–2

1. Calculation of net income:

Revenue	$80,000
Salaries expense	(39,000)
Depreciation	(1,100)
Interest	(1,300)
Income taxes	(2,300)
Advertising	(7,200)
Insurance	(1,200)
Utilities	(3,600)
Telephone	(1,100)
Rent	(17,950)
Net income	$5,250

2. The statement of stockholders' equity is as follows:

Dark Edge Sports Inc.
Statement of Stockholders' Equity
For the Year Ended December 31, 2015

	Share Capital	*Retained Earnings*	*Total Equity*
Opening balance	$3,000	$2,000	$5,000
Net income		5,250	5,250
Dividends		(600)	(600)
Ending balance	$3,000	$6,650	$9,650

3. The balance sheet is as follows:

Dark Edge Sports Inc.
Balance Sheet
At December 31, 2015

	Assets		
Current			
Cash			$1,500
Accounts receivable			18,700
Prepaid expenses (1,300 + 600)			1,900
Total current assets			22,100
Property, plant, and equipment	Equipment	$12,500	
Less: Accumulated depreciation		2,000	
Net property, plant, and equipment			10,500
Total Assets			$32,600
	Liabilities		
Current			
Notes payable		$10,000	
Accounts payable		8,350	
Income taxes payable		4 ,600	
Total current liabilities			$22,950
Equity Common stock		3,000	
Retained earnings		6,650	
Total equity			9,650
Total liabilities and equity			$32,600

4. Amount by which total current liabilities exceed total current assets:

Current Assets	$22,100
Current Liabilities	22,950
Difference	$ 850

5. After the $5,000 bank loan is received, both current assets and current liabilities will increase by the same amount (Debit to Cash; credit to Bank Loan). The difference will remain $850.

6. The company appears to have negative working capital (current assets less current liabilities) with or without the loan. More information should be requested, such as why the loan is needed. If it will be used to purchase a non-current asset like more equipment, perhaps the loan repayment terms should be extended by several years in which case the loan would be classified as a long-term liability causing working capital to be positive instead of negative as a result of the loan.

PROBLEM 4–3

1. 1. Close revenue accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Revenue		135,000	
	Income summary			135,000

2. Close expense accounts to income summary account.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Income summary		155,092	
	Advertising expense			5,670
	Depreciation expense			3,332
	Income tax expense			6,300
	Insurance expense			5,180
	Interest expense			210
	Rent expense			31,500
	Salaries expense			58,380
	Shop supplies expense			1,050
	Utilities expense			32,550
	Repairs expense			10,920

3. Close the income summary account to retained earnings.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Retained earnings		20,092	
	Income summary			20,092

4. Close dividends to retained earnings.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jun 30	Retained earnings		7,000	
	Cash dividends			7,000

2.

MayBee Services Ltd.
Balance Sheet
At June 30, 2016

Assets				*Liabilities*		
Cash			$122,220	Accounts payable		$ 32,550
Accounts receivable			149,520	Accrued salaries payable		12,180
Office supplies			2,520	Income taxes payable		6,300
Prepaid insurance expense			17,906	Interest payable		210
Total current assets			292,166	Current portion of notes payable		14,000
				Unearned revenue		52,500
Property, Plant and Equipment				Total current liabilities		117,740
Building	$145,400					
Accumulated depreciation, building	(280)	$145,120		*Long-term Liabilities*		
Equipment	21,000			Notes payable		28,000
Accumulated depreciation, equipment	(4,480)	16,520	161,640	Total liabilities		145,740
Intangible assets				*Equity*		
Trademark			10,000	Common stock	$ 2,100	
				Retained earnings	315,966*	
				Total equity		318,066
Total assets			$463,806	Total liabilities and equity		$463,806

* Retained earnings $(\$343{,}058 - 7{,}000 - 20{,}092) = \$315{,}966$

3.

MayBee Services Ltd.
Post-closing Trial Balance
At June 30, 2016

	Debit	Credit
Cash	$122,220	
Accounts receivable	149,520	
Office supplies	2,520	
Prepaid insurance expense	17,906	
Building	145,400	
Accumulated depreciation, building		$ 280
Equipment	21,000	
Accumulated depreciation, equipment		4,480
Trademark	10,000	
Accounts payable		32,550
Accrued salaries payable		12,180
Income taxes payable		6,300
Interest payable		210
Unearned revenue		52,500
Notes payable*		42,000
Common stock		2,100
Retained earnings		315,966
	$468,566	$468,566

* The notes payable account is not separated into two accounts for current and long-term portions. The disclosure of the current and long-term portions is for reporting purposes only.

PROBLEM 4–4

1.

2.

Jennette Ltd.
Adjusted Trial Balance
At September 30, 2016

	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance	
	Debit	Credit	Debit	Credit	Debit	Credit
Accounts payable		$ 39,983				$ 39,983
Accounts receivable	$ 321,468		$20,000		$ 341,468	
Accrued salaries payable		21,909		$ 2,500		24,409
Accumulated depreciation, building		9,632		8,504		18,136
Accumulated depreciation, vehicle		602		3,000		3,602
Advertising expense	12,191				12,191	
Building	312,610				312,610	
Cash	262,773				262,773	
Cash dividends	15,050				15,050	
Copyright	21,500				21,500	
Depreciation expense	7,164		8,504		18,668	
			3,000			
Income tax expense	13,545				13,545	
Income taxes payable		13,545				13,545
Insurance expense	11,137		4,249		15,386	
Interest expense	452				452	
Interest payable		4,730				4,730
Mortgage payable, due 2019		90,300				90,300
Office supplies	5,418				5,418	
Prepaid insurance expense	8,498			4,249	4,249	
Prepaid rent expense			5,150		5,150	
Rent expense	67,725			5,150	62,575	
Repairs expense	23,478				23,478	
Retained earnings		737,575				737,575
Revenue		290,250		20,000		360,250
				50,000		
Salaries expense	155,517		2,500		158,017	
Common stock		4,515				4,515
Shop supplies expense	2,259				2,259	
Unearned revenue		112,875	50,000			62,875
Utilities expense	39,981				39,981	
Vehicle	45,150				45,150	
	$1,325,916	$1,325,916	$93,403	$93,403	$1,359,920	$1,359,920

3.

Jennette Ltd.
Balance Sheet
At September 30, 2016

Assets				*Liabilities*		
Cash			$262,773	Accounts payable		$ 39,983
Accounts receivable			341,468	Accrued salaries payable		24,409
Office supplies			5,418	Income taxes payable		13,545
Prepaid insurance expense			4,249	Interest payable		4,730
Prepaid rent expense			5,150	Current portion of mortgage payable		30,000
Total current assets			619,058	Unearned revenue		62,875
				Total current liabilities		175,542
Property, Plant and Equipment						
Building	$312,610			*Long-term Liabilities*		
Accumulated depreciation, building	(18,136)	$294,474		Mortgage payable		60,300
Vehicle	45,150			Total liabilities		235,842
Accumulated depreciation, vehicle	(3,602)	41,548	336,022			
				Equity		
Intangible assets				Common stock	$ 4,515	
Copyright			21,500	Retained earnings	736,223*	
				Total equity		740,738
Total assets			$976,580	Total liabilities and equity		$976,580

Net income $(360{,}250 - 12{,}191 - 18{,}668 - 13{,}545 - 15{,}386 - 452 - 62{,}575 - 23{,}478 - 158{,}017 - 2{,}259 - 39{,}981) = 13{,}698$

* Retained earnings $(\$737{,}575 + 13{,}698 - 15{,}050) = 736{,}223$

Chapter 5 Solutions

PROBLEM 5–1

1. The Salem Corp. general journal is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jul. 2	Cash		5,000	
	Common stock			5,000
	To record the issue of common shares.			
	Merchandise inventory		3,500	
	Accounts payable			3,500
	To record Purchases on credit 2/10, n/30, from Blic Pens, Ltd.			
	Accounts receivable		2,000	
	Sales			2,000
	To record sale to Spellman Chair Rentals, Inc.; terms 2/10, n/30.			
	Cost of goods sold		1,200	
	Merchandise inventory			1,200
	To record the cost of sales.			
Jul. 3	Rent expense		500	
	Cash			500
	To record July rent payment.			
Jul. 5	Equipment		1,000	
	Cash			1,000
	To record purchase of equipment.			
Jul. 8	Cash		200	
	Sales			200
	To record cash sale to Ethan Matthews Furniture Ltd.			
	Cost of goods sold		120	
	Merchandise inventory			120
	To record the cost of sales.			
	Merchandise inventory		2,000	
	Accounts payable			2,000
	To record purchase of merchandise inventory; terms 2/15, n/30, from Shaw Distributors, Inc.			
Jul. 9	Cash		1,960	
	Sales discount		40	
	Accounts Receivable			2,000
	To record receipt of amount due from Spellman Chair Rentals, Inc. less the discount.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jul. 10	Accounts payable		3,500	
	Cash			3,430
	Merchandise inventory			70
	To record payment to Blic Pens Ltd. less the discount.			
	Merchandise inventory		200	
	Accounts payable			200
	To record purchase of merchandise inventory from Peel Products, Inc.; terms n/30.			
Jul. 15	Accounts receivable		2,000	
	Sales			2,000
	To record sale to Eagle Products Corp. 2/10, n/30.			
	Cost of goods sold		1,300	
	Merchandise inventory			1,300
	To record the cost of sales.			
	Merchandise inventory		1,500	
	Accounts payable			1,500
	To record purchase of merchandise inventory from Bevan Door, Inc.; terms 2/10, n/30.			
	Accounts payable		100	
	Merchandise inventory			100
	To record credit memo from Shaw Distributors, Inc.			
Jul. 16	Sales returns and allowances		200	
	Accounts receivable			200
	To record return of defective items sold to Eagle Products Corp.; inventory scrapped.			
Jul. 20	Accounts receivable		3,500	
	Sales			3,500
	To record sale to Aspen Promotions, Ltd. 2/10, n/30.			
	Cost of goods sold		2,700	
	Merchandise inventory			2,700
	To record the cost of sales.			
	Accounts payable		950	
	Cash			931
	Merchandise inventory			19
	To record payment of half of the amount due to Shaw Distributors, Inc. less memo and less discount.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jul. 24	Cash		882	
	Sales discounts		18	
	Accounts receivable			900
	To record receipt of half of the amount due from Eagle Products Corp.; 2,000 − 200 return = 1,800/2 = 900.			
	Accounts payable		1,500	
	Cash			1,470
	Merchandise inventory			30
	To record payment made to Bevan Door, Inc. less discount.			
Jul. 26	Accounts receivable		600	
	Sales			600
	To record sale to Longbeach Sales, Ltd. for terms 2/10, n/30.			
	Cost of goods sold		400	
	Merchandise inventory			400
	To record the cost of sales.			
	Merchandise inventory		800	
	Accounts payable			800
	To record purchase from Silverman Co. for terms 2/10, n/30.			
Jul. 31	Merchandise inventory		350	
	Cash			350
	To record payment to Speedy Transport Co. for July transport of inventory to warehouse.			

2. The unadjusted ending balance in merchandise inventory is as follows:

Merchandise Inventory			
2-Jul	3,500	1,200	2-Jul
8-Jul	2,000	120	8-Jul
10-Jul	200	70	10-Jul
15-Jul	1,500	1,300	15-Jul
26-Jul	800	100	15-Jul
31-Jul	350	2,700	20-Jul
		19	20-Jul
		30	24-Jul
		400	26-Jul
Unadj. Bal.	2,411		

3. The general journal entry is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
July 31	Cost of goods sold		11	
	Merchandise inventory			11
	To record adjustment to merchandise inventory calculated as $2,411 − $2,400 = $11.			

PROBLEM 5–2

Sales	$37,800
Less: Sales returns and allowances	690
Sales discounts	310
Net sales	$36,800
Cost of goods sold	26,800
Gross profit	$10,000

PROBLEM 5–3

1. The income statement and statement of stockholders' equity are as follows:

Acme Automotive Inc.
Income Statement
Year Ended December 31, 2015

Sales			$310,000
Less: Sales returns and allowances		$2,900	
Sales discounts		1,300	4,200
Net sales			$305,800
Cost of goods sold			126,000
Gross profit			$179,800
Operating expenses:			
Selling expenses:			
Advertising expense	$14,000		
Commissions expense	29,000		
Delivery expense	14,800		
Rent expense	19,440		
Sales salaries expense	26,400		
Total selling expenses		$103,640	
General and administrative expenses:			
Depreciation expense	$12,000		
Insurance expense	10,400		
Office supplies expense	3,100		
Rent expense	12,960		
Telephone expense	1,800		
Utilities expense	4,200		
Wages expense – office	14,300		
Total general and administrative expenses		58,760	
Total operating expenses			162,400
Income from operations			$17,400
Other revenues and expenses:			
Rent revenue		$19,200	
Interest expense		(840)	18,360
Income before tax			$35,760
Income tax expense			4,200
Net income			$31,560

Acme Automotive Inc.
Statement of Stockholders' Equity
Year Ended December 31, 2015

	Common Stock	*Retained Earnings*	*Total Equity*
Opening balance	$50,000	$12,440	$62,440
Shares issued	20,000		20,000
Net income		31,560	31,560
Dividends		(11,000)	(11,000)
Ending balance	$70,000	$33,000	$103,000

2. Closing entries:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Sales		310,000	
	Rent sales		19,200	
	Income summary			329,200
	(to close credit balance temporary accounts)			
	Income summary		297,640	
	Sales returns and allowances			2,900
	Sales discounts			1,300
	Cost of goods sold			126,000
	Advertising expense			14,000
	Commissions expense			29,000
	Delivery expense			14,800
	Rent expense			32,400
	Sales salaries expense			26,400
	Depreciation expense			12,000
	Insurance expense			10,400
	Office supplies expense			3,100
	Telephone expense			1,800
	Utilities expense			4,200
	Wages Expense – office			14,300
	Interest expense			840
	Income tax expense			4,200
	(to close debit balance temporary accounts)			
	Income summary		31,560	
	Retained earnings			31,560
	(to close Income Summary to Retained earnings)			
	Retained earnings		11,000	
	Dividends			11,000
	(to close Dividends to Retained earnings)			

PROBLEM 5–4

Answers for the missing boxes are in the colored cells.

Inventory, opening balance			55,000
Plus: purchases		250,000	
Plus: sales returns to inventory	100		
Plus: purchase shipping costs	500		
Less: Purchase returns and allowances	200		
Less: Purchase discounts	3,500	3,100	
Net purchases			246,900
Total goods available for sale			301,900
Ending inventory, per GL	90,000		
Less shrinkage adjustment (90,000 − 88,500)	1,500		88,500
Cost of goods sold			213,400
Sales		580,000	
Less: sales discounts	200		
Less: sales returns	200		
Less: sales allowances	600	1,000	
Net sales			579,000
Gross profit			365,600
Less: operating expenses			250,000
Net income/(loss)			115,600
Gross profit/sales (%) (365,600 ÷ 579,000)			63.14%

PROBLEM 5–5

1.

Turret Retail Ltd.
Income Statement
For the Year Ended December 31, 2016

Sales		$360,000
Less: Sales discounts	$ 3,600	
Sales returns and allowances	9,600	13,200
Net sales		346,800
Cost of goods sold		240,000
Gross profit from sales		106,800
Operating expenses		
Salaries expense	57,000	
Insurance expense	5,000	
Shop supplies expense	1,000	
Depreciation expense	3,200	
Rent expense	30,240	
Travel expense	2,100	
Utilities expense	7,300	
Total operating expenses		105,840
Income from operations		960
Other revenue and expenses		
Rental income	6000	
Interest expense	200	5,800
Income before tax		6,760
Income tax expense		2,028
Net income		$ 4,732

2.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Rental income		6,000	
	Sales		360,000	
	Income summary			366,000
	To close temporary revenue accounts.			
Dec 31	Income summary		108,068	
	Salaries expense			57,000
	Insurance expense			5,000
	Shop supplies expense			1,000
	Depreciation expense			3,200
	Rent expense			30,240
	Travel expense			2,100
	Utilities expense			7,300
	Interest expense			200
	Income tax expense			2,028
	To close temporary expense accounts.			
Dec 31	Income Summary		4,732	
	Retained earnings			4,732
	To close income summary to retained earnings.			
Dec 31	Retained earnings		10,000	
	Cash dividends			10,000
	To close temporary cash dividend account.			

3. Gross profit ratio = gross profit/Net sales = $106,800 ÷ 346,800 = 30.8%

   This ratio means that for every $100 of sales, the company has $30.8 left to cover operating expenses after deducting cost of goods sold. This ratio can be compared to other companies in the same industry or to historical trends within the same company. A small fluctuation in the ratio can often cause a large increase/decrease in gross profit, if inventory and sales dollar amounts are often the largest amounts reported on the income statement.

PROBLEM 5–6

1.

Yuba Yabi Enterprises Ltd.
Trial Balance
March 31, 2017

	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance	
	Debit	Credit	Debit	Credit	Debit	Credit
Accounts payable		$ 68,750				$ 68,750
Accounts receivable	$ 308,000				$ 308,000	
Accrued salaries and benefits payable		26,400		$ 12,000		38,400
Accumulated depreciation, furniture		9,460				9,460
Cash	46,200				46,200	
Cash dividends	22,000				22,000	
Cost of goods sold	528,000		$ 7,800		535,800	
Advertising expense	9,900				9,900	
Bank loan payable (long-term)		88,704				88,704
Depreciation expense	7,040				7,040	
Copyright	44,000				44,000	
Franchise	66,000				66,000	
Furniture	44,000				44,000	
Income tax expense	–		149,872*		229,481	
Income taxes payable		17,600		149,872*		247,081
Insurance expense	11,000		5,000		16,000	
Interest expense	440		5,600		6,040	
Interest payable		1,210		5,600		6,810
Land	308,000				308,000	
Merchandise inventory	264,000			7,800	256,200	
Prepaid insurance expense	13,200			5,000	8,200	
Prepaid advertising expense	8,800				8,800	
Rent expense	66,528				66,528	
Rental income		13,200				13,200
Retained earnings		265,364				265,364
Salaries expense	125,400		12,000		137,400	
Sales		792,000				792,000
Sales discounts	7,920				7,920	
Sales returns and allowances	21,120				21,120	
Service revenue		495,000		30,000		525,000
Common stock		44,000				44,000
Shop supplies	8,360				8,360	
Shop supplies expense	2,200				2,200	
Travel expense	4,620				4,620	
Unearned service revenue		111,100	30,000			81,100
Utilities expense	16,060				16,060	
	$1,932,788	$1,932,788	$ 210,272	$ 210,272	$2,179,869	$2,179,869

* Income tax expense calculation:

Cost of goods sold	$535,800		
Advertising expense	9,900		
Depreciation expense	7,040		
Insurance expense	16,000		
Interest expense	6,040		
Rent expense	66,528		
Rental income		$ 13,200	
Salaries expense	137,400		
Sales		792,000	
Sales discounts	7,920		
Sales returns and allowances	21,120		
Service revenue		525,000	
Shop supplies expense	2,200		
Travel expense	4,620		
Utilities expense	16,060		
	$830,628	$1,330,200	
Net income before taxes		499,572	
Income taxes @ 30%		$ 149,872	adjusting entry

2.

Turret Retail Ltd.
Income Statement
For the Year Ended December 31, 2016

Sales		$792,000
Less: Sales discounts	$ 7,920	
Sales returns and allowances	21,120	29,040
Net sales		762,960
Cost of goods sold		535,800
Gross profit from sales		227,160
Service revenue		525,000
		752,160
Operating expenses		
Salaries expense	137,400	
Insurance expense	16,000	
Advertising expense	9,900	
Shop supplies expense	2,200	
Depreciation expense	7,040	
Rent expense	66,528	
Travel expense	4,620	
Utilities expense	16,060	
Total operating expenses		259,748
Income from operations		492,412
Other revenue and expenses		
Rental income	13,200	
Interest expense	6,040	7,160
Income before tax		499,572
Income tax expense		149,872
Net income		$349,700

Chapter 6 Solutions

PROBLEM 6–1

1. Weighted Average Cost Flow Assumption:

Product A

		Purchased (Sold)					*Balance*				
Date		*Units*		*Unit Cost*		*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan 1	Opening Inventory						4,000	×	$11.90	=	$47,600
Jan 7	Purchase #1	8,000	×	$12.00			12,000	×	11.97[1]	=	143,600
Mar 30	Sale #1	(9,000)	×	11.97	=	($107,730)	3,000	×		=	35,870
May 10	Purchase #2	12,000	×	12.10			15,000	×	12.07[2]	=	181,070
Jul 4	Sale #2	(14,000)	×	12.07	=	(168,980)	1,000	×		=	**$12,090**

[1] [$47,600 + (8,000 × $12)]/(4,000 + 8,000) = $11.97/unit (rounded)

[2] [$35,870 + (12,000 × $12.10)]/(3,000 + 12,000) = $12.07/unit (rounded)

Product B

		Purchased (Sold)					*Balance*				
Date		*Units*		*Unit Cost*		*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan 1	Opening Inventory						2,000	×	$13.26	=	$26,520
Jan 13	Purchase #1	5,000	×	$13.81			7,000	×	13.65[3]	=	95,570
Jul 15	Sale #1	(1,000)	×	13.65	=	($13,650)	6,000	×		=	81,920
May 10	Purchase #2	7,000	×	14.21			13,000	×	13.95[4]	=	181,390
Dec 14	Sale #2	(8,000)	×	13.95	=	(111,600)	5,000	×		=	**$69,790**

[3] [$26,520 + (5,000 × $13.81)]/(2,000 + 5,000) = $13.65/unit (rounded)

[4] [$81,920 + (7,000 × $14.21)]/(6,000 + 7,000) = $13.95/unit (rounded)

2. Total ending inventory at December 31, 2020:

Product A	$12,090
Product B	69,790
Total	$81,880

3. Gross profit percentage earned:

	Product A		*Product B*
Mar 30 Sale	144,000	Jul 15 Sale	20,000
Jul 04 Sale	238,000	Dec 14 Sale	168,000
Total Sales	382,000	Total Sales	188,000
COGS	276,710	COGS	125,250
Gross Profit	105,290	Gross Profit	62,750
Gross Profit %	27.56	Gross Profit %	33.38

PROBLEM 6–2

1. Inventory Record – FIFO

Date	Description	Purchases/Shipping costs/ Purchase returns, discounts and allowances			Cost of Goods Sold/ Returns to Inventory			Balance in Inventory		
		Units	Cost/Unit	Total	Units	Cost/Unit	Total	Units	Cost/Unit	Total
Jan 1	Inventory, opening							500	$ 10	5,000
4	Sale of 100 units @ $20				100	$ 10	1,000	400	$ 10	4,000
								400	$ 10	4,000
6	Purchase	200	$ 11	2,200				200	$ 11	2,200
								400	$ 10	4,000
8	Purchase return (from Jan 6 purchase)	(10)	$ 11	(110)				190	$ 11	2,090
9	Sale of 200 unit @ $22				200	$ 10	2,000	200	$ 10	2,000
								190	$ 11	2,090
10	Sales return from customer from Jan 4 sale				(15)	$10	(150)	215	$ 10	2,150
	(returned to inventory)							190	$ 11	2,090
15	Sale of 150 units @ $23				150	$ 10	1,500	65	$ 10	650
								190	$ 11	2,090
								65	$ 10	650
								190	$ 11	2,090
17	Purchase	300	$ 9	2,700				300	$ 9	2,700
19	Sales return from customer from Jan 15 sale					no entry		65	$ 10	650
	(beyond repair, disposed)					disposed		190	$ 11	2,090
								300	$ 9	2,700
20	Sale of 400 units @ $21				65	$ 10	650	0	$ 10	–
					190	$ 11	2,090	0	$ 11	–
					145	$ 9	1,305	155	$ 9	1,395
	Total				835		8,395	155	$ 9	1,395

2. Inventory Record – LIFO

Date	Description	Purchases/Shipping costs/ Purchase returns, discounts and allowances			Cost of Goods Sold/ Returns to Inventory			Balance in Inventory		
		Units	Cost/Unit	Total	Units	Cost/Unit	Total	Units	Cost/Unit	Total
Jan 1	Inventory, opening							500	$ 10	5,000
4	Sale of 100 units @ $20				100	$ 10	1,000	400	$ 10	4,000
								400	$ 10	4,000
6	Purchase	200	$ 11	2,200				200	$ 11	2,200
								400	$ 10	4,000
8	Purchase return (from Jan 6 purchase)	(10)	$ 11	(110)				190	$ 11	2,090
9	Sale of 200 unit @ $22				190	$ 11	2,090	0	$ 11	0
					10	10	100	390	$ 10	3,900
10	Sales return from customer from Jan 4 sale				(15)	$10	(150)	405	$ 10	4,050
	(returned to inventory)							190	$ 11	2,090
15	Sale of 150 units @ $23				150	$ 10	1,500	255	$ 10	2550
17	Purchase	300	$ 9	2,700				300	$ 9	2,700
19	Sales return from customer from Jan 15 sale					no entry				
	(beyond repair, disposed)					disposed		255	$ 10	2,550
								300	$ 9	2,700
20	Sale of 400 units @ $21				300	$ 9	2700	0	$ 9	–
					100	$ 10	1,000	155	$ 10	1550
	Total				835		8,240	155	$ 10	1,550

3. Sales:

Sale of 100 units @ $20	$	2,000.00
Sale of 200 unit @ $22	$	4,400.00
Sales return of 15 units @ $20	$	(300.00)
Sale of 150 units @ $23	$	3,450.00
Sales return of 2 units @ $20	$	(40.00)
Sale of 400 units @ $21	$	8,400.00
Total sales	$	17,910.00
Cost of goods sold FIFO	$	8,395.00
Gross profit FIFO	$	9,515.00
Gross profit % FIFO		53.13%
Cost of goods sold LIFO	$	8,240.00
Gross profit LIFO	$	9,670.00
Gross profit % LIFO		53.99%

4. FIFO Ending inventory balance, Jan 20, 2016: $1,395.00
   LIFO Ending inventory balance, Jan 20, 2016: $1,550.00

PROBLEM 6–3

1. Weighted Average Cost

		Purchases/Shipping costs/ Purchase returns, discounts and allowances			Cost of Goods Sold/ Returns to Inventory			Balance in Inventory		
Date	Description	Units	Cost/Unit	Total	Units	Cost/Unit	Total	Units	Cost/Unit	Total
Feb 1	Opening inventory							75	$ 12.00	900
5	Sale				70	$12.00	840	5	$ 12.00	60
7	Purchase	300	$ 11.00	3,300				305	$ 11.02	3,360
12	Sale				180	$11.02	1,984	125	$ 11.01	1,376
14	Purchase return from Feb 7	(10)	$ 11.00	(110)				115	$ 11.01	1,266
17	Sale				100	$11.01	1,101	15	$ 11.00	165
19	Purchase	400	$ 9.00	3,600				415	$ 9.07	3,765
23	Sale				80	$ 9.07	726	335	$ 9.07	3,039
	Total				430		4,651	335	$ 9.07	3,039

2. Sales:

430 units × $24	$	10,320
Cost of goods sold	$	4,651
Gross profit	$	5,669
Gross profit %		54.93%

3. Ending inventory balance, Jan 20, 2016: $1,395

PROBLEM 6–4

2015

If ending inventory was overstated by $45,000, then COGS is understated causing net income to be overstated. This will cause equity to also be overstated.

	COGS	Net Income	Total Assets	Equity
Unadjusted balance	$ 500,000	$ 250,000	$ 1,500,000	$ 1,400,000
Correction	45,000	(45,000)	(45,000)	(45,000)
Corrected balance	$ 545,000	$ 205,000	$ 1,455,000	$ 1,355,000

2016

If ending inventory was overstated by $45,000 in 2015, then opening inventory will also be overstated in 2016. This will cause COGS to be overstated in 2016 causing net income to be understated. Since equity was overstated in 2015, this overstatement for 2016 will cancel out the previous year's error and equity will no longer contain any errors.

	COGS	Net Income	Total Assets	Equity
Unadjusted balance	$ 660,000	$ 350,000	$ 1,400,000	$ 1,300,000
Correction	(45,000)	45,000	0	0
Corrected balance	$ 615,000	$ 395,000	$ 1,400,000	$ 1,300,000

PROBLEM 6–5

2015

If ending inventory was understated by $30,000, then COGS is overstated causing net income to be understated. This will cause equity and total assets to also be understated.

	COGS	Net Income	Total Assets	Equity
Unadjusted balance	$ 500,000	$ 250,000	$ 1,500,000	$ 1,400,000
Correction	(30,000)	30,000	30,000	30,000
Corrected balance	$ 470,000	$ 280,000	$ 1,530,000	$ 1,430,000

2016

If ending inventory was understated by $30,000 in 2015, then opening inventory will also be understated in 2016. This will cause COGS to be understated in 2016 causing net income to be overstated. Since equity was overstated in 2015, this understatement for 2016 will cancel out the previous year's error and equity will no longer contain any errors. There are no errors in the ending inventory for 2016, so there are no mis-statements for assets.

	COGS	Net Income	Total Assets	Equity
Unadjusted balance	$ 660,000	$ 350,000	$ 1,400,000	$ 1,300,000
Correction	30,000	(30,000)	0	0
Corrected balance	$ 690,000	$ 320,000	$ 1,400,000	$ 1,300,000

PROBLEM 6–6

1.

2.

Ceramic Wall Tiles:	# of Units	Cost/Unit	NRV/Unit	Total Cost	Total NRV	LCNRV by Group	LCNRV by Product
White	1,025	$ 5.00	$ 6.00	$ 5,125.00	$ 6,150.00		5,125
Black	875	4.50	4.25	3,937.50	3,718.75		3,719
Slate	645	7.00	7.11	4,515.00	4,585.95		4,515
Beige	325	2.00	2.25	650.00	731.25		650
				14,227.50	15,185.95	$ 14,228	
Marble Flooring:							
Cordoba	10,000	9.25	9.35	92,500.00	93,500.00		92,500
Carrerra	12,000	10.50	10.50	126,000.00	126,000.00		126,000
Maricha	8,000	11.50	11.45	92,000.00	91,600.00		91,600
				310,500.00	311,100.00	310,500	
Shower Waterproofing:							
Novo	10,035	9.85	9.50	98,844.75	95,332.50		95,333
Deetra	15,000	6.75	7.15	101,250.00	107,250.00		101,250
				200,094.75	202,582.50	200,095	
Totals				$ 524,822.25		$ 524,822	$ 520,692

3. No entry required by group.

   By individual product:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of goods sold		4,130	
	Merchandise inventory			4,130
	($524,822 – 520,692)			

PROBLEM 6–7

1.

Goods available for sale:		
Inventory, opening balance		$ 420,364
Purchases	1,323,280	
Purchase returns	(18,270)	
Transportation-in	9,660	1,314,670
Goods available for sale:		$1,735,034
Sales	1,667,610	
Sales returns	(13,230)	
Net sales	1,654,380	
Estimated COGS		
($1,654,380 $\times$ (1 $-$ 34%))		(1,091,891)
Estimated March 31, 2017 inventory		$ 643,143

2.

Varane Ltd.
Income Statement
for the First Quarter ending March 31, 2017

Sales	$ 1,667,610	
Less: Sales returns and allowances	13,230	
Net sales	1,654,380	
Cost of goods sold	1,091,891	
Gross profit from sales	562,489	34%
Operating expenses		
Total operating expenses	130,500	
Income before tax	431,989	
Income tax expense	129,597	
Net income	$ 302,392	

PROBLEM 6–8

1.

		At Cost	At Retail
Goods available for sale:			
Inventory, opening balance		$ 659,890	$ 1,298,010
Purchases		4,660,362	8,958,180
Purchase returns		(73,920)	(167,090)
Goods available for sale:		$ 5,246,332	$ 10,089,100
Sales	$ 7,693,980		
Sales returns	(62,440)		$ 7,631,540
Ending inventory at retail			$ 2,457,560
Ratio of Cost to retail ($5,246,332 ÷ $10,089,100) × 100			52.00%
Ending inventory at cost			$ 1,277,931

2.

Ceabane Ltd.
Income Statement
for the Six Months ending June 30, 2017

Sales	$ 7,693,980
Less: Sales returns and allowances	62,440
Net sales	7,631,540
Cost of goods sold*	3,968,401
Gross profit from sales	3,663,139
Operating expenses	
Total operating expenses	1,500,000
Income before tax	2,163,139
Income tax expense	648,942
Net income	$ 1,514,197

* $5,246,332 − 1,277,931 = 3,968,401

PROBLEM 6–9

1. Ending inventory for 2016 was overstated by $2,000. Thus, cost of goods sold should have been $2,000 higher, or $22,000 and gross profit $2,000 lower, or $28,000. Because of this mistake, the 2017 opening inventory was also overstated by $2,000, causing cost of goods sold to be overstated by $2,000 and gross profit to be understated by $2,000. Gross profit should have been $29,000.

2. 2016 total and net assets were overstated by $2,000. 2017 total assets and net assets were correct.

PROBLEM 6–10

	2017			*2018*		
	Cost	*NRV*	*Unit Basis (LCNRV)*	*Cost*	*NRV*	*Unit Basis (LCNRV)*
Product X	$14,000	$15,000	$14,000	$15,000	$16,000	$15,000
Product Y	12,500	12,000	12,000	12,000	11,500	11,500
Product Z	11,000	11,500	11,000	10,500	10,000	10,000
Total	$37,500	$38,500	$37,000	$37,500	$37,500	$36,500

PROBLEM 6–11

	Cost	Replacement cost (RC)	NRV-Ceiling (NRV)	Floor (F)	Market (middle of RC, NRV, F)	LCM
Surgical Equipment	$170	240	$260 - 30 = 230$	$230 - (260 \times 30\%) = 152$	230	$170
Surgical Supplies	90	80	$120 - 5 = 115$	$115 - (120 \times 30\%) = 79$	80	80
Lab Equipment	250	235	$340 - 25 = 315$	$315 - (340 \times 30\%) = 213$	235	235
Lab Supplies	162	158	$165 - 10 = 155$	$155 - (165 \times 30\%) = 105.50$	155	155
Total	672	713	815	549.50	700	640

Chapter 7 Solutions

PROBLEM 7–1

a — The company has received a $3,000 loan from the bank, that was deposited into its bank account but was not recorded in the books of the company.

e — A $250 check was not returned with the bank statement though it was paid by the bank.

d — Checks amounting to $4,290 shown as outstanding on the November reconciliation still have not been returned by the

bank.

a — A collection of a note receivable for $1,000 made by the bank has not been previously reported to Goertzen. This includes interest earned of $50.

c — The bank has erroneously charged Goertzen with an $1,100 check which should have been charged to Gagetown Ltd.

b — A $350 check made out by Fynn Company and deposited by Goertzen has been returned by the bank marked NSF; this is the first knowledge Goertzen has of this action.

a — A check for $840 was erroneously recorded as $730 in the company records.

c — A $600 bank deposit of December 31 does not appear on the bank statement.

b — Bank service charges amounting to $75 were deducted from the bank statement but not yet from the company records.

PROBLEM 7–2

General Journal				
Date	Account/Explanation	R	Debit	Credit
Aug 2	Petty cash A+		500	
	Cash (A)			500
	To establish a petty cash fund for $200.			
Aug 15	Merchandise inventory A+		20.00	
	Office supplies expense E+ (SE)		35.00	
	Delivery expenses E+ (SE)		32.00	
	Travel expenses E+ (SE)		139.60	
	Employee recognition expense E+ (SE)		80.00	
	Postage E+ (SE)		145.00	
	Petty cash A+		300.00	
	Cash over/short (E) SE+			1.60
	Cash (A)			750.00
	To replenish petty cash and increase it to $800.			
Aug 31	Travel expenses E+ (SE)		75.80	
	Shop supplies A+		300.00	
	Delivery expense E+ (SE)		56.00	
	Maintenance expense E+ (SE)		345.00	
	Cash over/short E+ (SE)		1.80	
	Cash (A)			778.60
	To replenish petty cash.			

PROBLEM 7–3

1.

Bank balance, November 30		$30,000	Book balance	$35,598
Bank error on check 20		5	Add: Collection of note	200
			Less: NSF check from customer	1,475
Plus: Outstanding deposits		4,500		
			Less: Service charges	20
			Service charges	25
Less: Outstanding checks			Service charges	18
Chq 236	$230			
Chq 240	15	245		
		$34,260		$34,260

2.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 30	Bank service charges expense E+ (SE)		63	
	Accounts receivable A+		1,475	
	Note receivable (A)			200
	Cash (A)			1,338
	To record entries from November 2016 bank reconciliation.			

PROBLEM 7–4

1. (a) Entry to record the write-off of $25,000:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Allowance for Doubtful Accounts (XA) A+ .		25,000	
	Accounts Receivable (A)			25,000

(b) Entry to record the recovery of $15,000:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+.		15,000	
	Allowance for Doubtful Accounts XA+ (A).			15,000
	Cash A+		15,000	
	Accounts Receivable (A)			15,000

2. Allowance for doubtful accounts = ($15,000 Cr. $-$ $25,000 Dr.) (1a) $+$ $15,000 Cr. (1b) $=$ $5,000 Cr. balance

3. (a) The entries required for bad debts based on three per cent of credit sales:

$$\begin{aligned}\text{Balance required} &= 3\% \text{ of credit sales}\\ &= 3\% \times 70\% \times \$1{,}000{,}000\\ &= \$21{,}000\end{aligned}$$

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debt Expense E+ (SE)		21,000	
	Allowance for Doubtful Accounts XA+ (A)			21,000
	To record bad debts using % of sales, the income statement method.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debt Expense E+ (SE)		7,500	
	Allowance for Doubtful Accounts XA+ (A)			7,500
	To record bad debts using simplified balance sheet approach: 5% of receivables (250,000 $\times$ 5% $=$ 12,500 required balance $-$ 5,000 unadjusted balance $=$ 7,500 required adjustment).			

(b)

(c) Calculation of uncollectible amount at December 31, 2012:

Age (days)	*Accounts Receivable*	*Estimated Loss Percentage*	*Estimated Uncollectible Amount*
1-30	$100,000	2%	$2,000
31-60	50,000	4%	2,000
61-90	25,000	5%	1,250
91-120	60,000	10%	6,000
Over 120	15,000	50%	7,500
	$250,000		$18,750

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debt Expense E+ (SE)		13,750	
	Allowance for Doubtful Accounts XA+ (A)			13,750
	To record bad debts using aging analysis, a balance sheet approach (18,750 required balance − 5,000 unadjusted balance = 13,750 required adjustment).			

4. (a) December 31, 2018 adjusted AFDA balance = $26,000 (calculated as 5,000 unadjusted balance + 21,000 adjustment)

   (b) December 31, 2018 adjusted AFDA balance = $12,500 (calculated as 5,000 unadjusted balance + 7,500 adjustment)

   (c) December 31, 2018 adjusted AFDA balance = $18,750 (calculated as 5,000 unadjusted balance + 13,750 adjustment)

PROBLEM 7–5

1.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2017	Bad Debt Expense E+ (SE)		5,000	
	Allowance for Doubtful Accounts XA+ (A)			5,000
Apr 15, 2018	Allowance for Doubtful Accounts (XA) A+ .		700	
	Accounts Receivable (A)			700
Aug 8, 2018	Allowance for Doubtful Accounts (XA) A+ .		3,000	
	Accounts Receivable (A)			3,000
Dec 31, 2018	Bad Debt Expense E+ (SE)		4,000	
	Allowance for Doubtful Accounts XA+ (A)			4,000
Mar 6, 2019	Accounts Receivable A+		200	
	Allowance for Doubtful Accounts XA+ (A)			200
Sep 4, 2019	Allowance for Doubtful Accounts (XA) A+ .		4,000	
	Accounts Receivable (A)			4,000
Dec 31, 2019	Bad Debt Expense E+ (SE)		4,500	
	Allowance for Doubtful Accounts XA+ (A)			4,500

2. Both methods are estimates and attempt to match expenses with revenues. Over time, the allowance for doubtful accounts under either method should be approximately the same. If not, management should review the percentage estimates under each method to ensure that they are reasonable.

PROBLEM 7–6

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Allowance for doubtful accounts (XA) A+ .		1,000	
	Accounts receivable (A)			1,000
	1. To record uncollectible account.			
Dec 31	Bad debt expense E+ (SE)		14,560	
	Allowance for doubtful accounts XA+ (A).			14,560
	2. To record year-end adjusting entry for estimated uncollectible accounts. (\$750,000 − 22,000) × 2%			
Dec 31	Bad debt expense E+ (SE)		6,760	
	Allowance for doubtful accounts XA+ (A).			6,760
	3. To record year-end adjusting entry for estimated uncollectible accounts. (\$100,000 − 1,000) × 4% = \$3,960 credit (AFDA \$1,800 debit − \$1,000) + 3,960 = \$5,760			

4. For entry from part (2):

Accounts receivable	\$ 99,000	
Allowance for doubtful accounts	(11,760)	\$87,240
(\$1,800 + 1,000 − 14,560)		

Note that no attempt is made to reconcile the AFDA balance to the estimated bad debt amount when using the income statement method.

For entry from part (3):

Accounts receivable	\$99,000	
Allowance for doubtful accounts	(3,960)	\$95,040
(\$1,800 + 1,000 − 6,760)		

Note that the AFDA balance is adjusted so that its ending balance is equal to the estimated bad debt amount when using the balance sheet method.

PROBLEM 7–7

1.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 12, 2016	Note receivable A+		20,500	
	Accounts receivable (A)			20,500
	To accept a note receivable in exchange for an overdue accounts receivable.			
Dec 31, 2016	Interest receivable A+		54	
	Interest revenue R+ SE+			54
	To record accrued interest on the Dec 12 note receivable. ($20,500 × 5% × 19 ÷ 360)			
Dec 31, 2016	Interest revenue R+ SE+		54	
	Income summary			54
	To record the closing entry for interest revenue to Income Summary.			
Jan 12, 2017	Cash A+		20,585	
	Note receivable (A)			20,500
	Interest receivable (A)			54
	Interest income R+ SE+			31
	To record payment of note receivable. ($20,500 × 5% × 30 ÷ 360) + $20,500			

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 14, 2017	Note receivable A+		12,000	
	Cost of goods sold E+ (SE)		7,500	
	Sales R+ SE+			12,000
	Merchandise inventory (A)			7,500
	To record receipt of note receivable for a merchandise inventory sale according to company credit policy.			
Jan 31, 2017	Interest receivable A+		34	
	Interest income R+ SE+			34
	To record accrued interest on the Jan 14 note receivable. ($12,000 × 6% × 17 ÷ 360)			
Feb 10, 2017	Note receivable A+		6,600	
	Accounts receivable (A)			6,600
	To accept a note receivable in exchange for an overdue accounts receivable.			
Feb 28, 2017	Interest receivable A+		56	
	Interest income R+ SE+			56
	To record accrued interest on the Jan 14 notes receivable. ($12,000 × 6% × 28 ÷ 360)			
Mar 15, 2017	Cash A+		12,120	
	Note receivable (A)			12,000
	Interest receivable (A)			90
	Interest income R+ SE+			30
	To record payment of note receivable. ($12,000 × 6% × 60 ÷ 360) + $12,000			

To compute the March 15 date:

Jan	31 days
Note date	(14)
Feb	28 days
Mar 15	15 days = 60 days on this date

2. Maturity date of the Feb 10 note receivable:

Feb	28 days
Note date	(10)
Subtotal	18 days in Feb.
Mar	31 days
Apr	30 days
May 11	11 days = 90 days on this date

May 11, 2017 will be the maturity date for the February 10 note receivable.

PROBLEM 7–8

1.

	Note (a)		Note (b)	Note (c)		Note (d)
Total number of days in the month when the note was signed	Jan 1	31 days		Jun	30 days	
Less: Note date		(15)			(21)	
Subtotal		16 days			9 days	
Next month total days	Dec	31 days		Jul	31 days	
Next month total days	Jan	31 days		Aug	5 days	
Next month total days	Feb	28 days				
Next month total days	Mar	31 days				
Next month total days	Apr	30 days				
Date in month to equal term in days	May	13 days				
Total number of days of the note term		180 days			45 days	
Total number of months			3 months			4 months
Maturity date	May 13, 2017		Apr 6, 2017	Aug 5, 2017		April 11, 2018

2. Note (a) accrued interest from Jan 1 to Dec 31, 2017:

   $260,000 × 4% × 180 ÷ 360 = $5,200

   Note (b) accrued interest from Jan 15 to Dec 31, 2017:

   $180,000 × 5% × 3 ÷ 12 = $2,250

   Note (c) accrued interest from Jun 21 to Dec 31, 2017:

   $40,000 × 5.5% × 45 ÷ 360 = $275

   Note (d) accrued interest from Dec 1 to Dec 31, 2017:

   $60,000 × 6.5% × 1 ÷ 12 = $325

3. Note (a) cash payment amount collected at maturity:

   $260,000 × 4% × 180 ÷ 360 = $5,200 + $260,000 = $265,200 principal and interest

   Note (b) cash payment amount collected at maturity:

   $180,000 × 5% × 3 ÷ 12 = $2,250 + 180,000 = $182,250 principal and interest

   Note (c) cash payment amount collected at maturity:

   $40,000 × 5.5% × 45 ÷ 360 = $275 + 40,000 = $40,275 principal and interest

   Note (d) cash payment amount collected at maturity:

   $60,000 × 6.5% × 4 ÷ 12 = $1,300 + 60,000 = $61,300 principal and interest

PROBLEM 7–9

1. Net sales: $250,000 − 52,000 − 5,000 = 193,000

   Average accounts receivable: ($53,000 + 22,000) ÷ 2 = $37,500

   Accounts receivable turnover (193,000 ÷ 37,500) = 5.15 times per year

2. If the turnover ratio from the previous year was 5.25 times per year, the company is not as efficient at collecting its accounts receivable in 2017 compared to the previous year.

Chapter 8 Solutions

PROBLEM 8–1

Cost of Lots:			
Check to Jones			$140,000
Bank loan assumed by Arrow			100,000
Razing of barns			6,000
Legal, accounting, and brokerage Fees			20,000
Clearing and levelling costs			10,000
	Total outlays		$276,000
Less:	Contra items:		
	Proceeds from crops	$6,000	
	Proceeds from house	1,600	
	Proceeds from lumber	4,400	12,000
Net cost of 500 lots			$264,000
Net cost per lot ($264,000/500 lots)			$528

PROBLEM 8–2

1. (a) Units of Production: $\frac{(\$30{,}000-8{,}000)}{80{,}000 \text{ units}} \times 15{,}000 \text{ units} = \$4{,}125$

   Note: The half-year rule does not apply to this method.

   (b) Straight-line: $\frac{(\$30{,}000-8{,}000)}{6 \text{ years}} \times 50\% = \$1{,}833$

   (c) Double-declining balance: $30,000 × 33%* × 50% = $4,950

   * 2/6 = 33% DDB rate

2. Carrying amounts at the end of 2017:

   Carrying amount = Cost − accumulated depreciation

Units of production:		
Cost		$30,000
Accumulated depreciation	(4,125)	$25,075
Straight-line:		
Cost		$30,000
Accumulated depreciation	(1,833)	$28,167
Double declining balance:		
Cost		$30,000
Accumulated depreciation	(4,950)	$25,050

3. The double-decline balance method resulted in the highest depreciation expense and lowest net income for 2017.

4. Depreciation for 2018:

   (a) Units of Production: $\frac{(\$30{,}000-8{,}000)}{80{,}000 \text{ units}} \times 25{,}000 \text{ units} = \$6{,}875$

   (b) Straight-line: $\frac{(\$30{,}000-8{,}000)}{6 \text{ years}} = \$3{,}667$

   (c) Double-declining balance: $(\$30{,}000 - \$4{,}950) \times 33\% = \$8{,}267$

   Double-declining balance method resulted in the highest depreciation expense and lowest net income for 2018.

PROBLEM 8–3

1. Depreciation expense for each of 2019 through to 2022 inclusive:

$$\text{Depreciation/unit} = \frac{\text{Cost} - \text{Residual}}{\text{Expected Total Production}} = \frac{\$95{,}000 - \$5{,}000}{9{,}000 \text{ units}} = \$10/\text{unit}$$

Year	*Actual Units Produced*	*Depreciation Expense*	*Calculations*
2019	2,000	$20,000	2,000 units × $10/unit = 20,000
2020	3,000	30,000	3,000 units × $10/unit = 30,000
2021	2,800	28,000	2,800 units × $10/unit = 28,000
2022	2,900	12,000	1,200 units × $10/unit = 12,000*
		$90,000	Total depreciation

* Maximum allowable total depreciation is Cost-Residual or $90,000. This is based on a total of 9,000 units. Therefore, the maximum amount of depreciation that can be recorded in 2022 is $12,000 which is based on 1,200 units.

2. Accumulated depreciation at the end of 2022 is $90,000.
3. Carrying amount of the machine at the end of 2022 is $5,000 ($95,000 − 90,000).
4. Entry on January 15, 2023 to record the sale of the machinery for $12,000:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		12,000	
	Accumulated Depreciation		90,000	
	Machinery			95,000
	Gain on Disposal			7,000
	To record gain on disposal calculated as: [$95,000 Cost of Machinery − $90,000 Accumulated Depreciation = $5,000 Carrying Amount (or net book value)] − $12,000 Proceeds of Disposal = $(7,000)			

PROBLEM 8–4

1. Asset cost:

Purchase of machinery	$35,000
Transportation charges	1,200
Installation charge	5,700
	31,900

Note: Minor repairs are expensed.

2. Straight-line depreciation for each year for 4 years:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense		5,975	
	Accumulated Depreciation – Machine			5,975
	($31,900 − 8,000) ÷ 4 years			

Declining balance method:

General Journal				
Date	Account/Explanation	R	Debit	Credit
2017	Depreciation Expense		7,975	
	Accumulated Depreciation			7,975
	2/4 = 25% rate , ($31,900 × 25%)			
2018	Depreciation Expense		5,981	
	Accumulated Depreciation			5,981
	($31,900 − 7,975) × 25%			
2019	Depreciation Expense		4,486	
	Accumulated Depreciation			4,486
	($31,900 − 7,975 − 5,981) × 25%			
2020	Depreciation Expense		3,365	
	Accumulated Depreciation			3,365
	($31,900 − 7,975 − 5,981 − 4,486) × 25%			
2021	Depreciation Expense		2,093	
	Accumulated Depreciation			2,093
	($31,900 − 7,975 − 5,981 − 4,486 − 3,365) × 25% = $2,523			

Note: Only $2,093 of depreciation can be expensed to ensure that the carrying amount remains equal to the residual value of $8,000.

3.

Asset cost, 2017	$ 31,900
Depreciation expense for 3 years (2017, 2018, 2019)	(17,925)
Depreciable amount for remaining four years	$ 13,975

Revised depreciation = (13,975 − 2,000) ÷ (5 − 3) = $5,988

Annual depreciation for the remaining two years = $5,988 per year

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PROBLEM 8–5

1.

2011 depreciation ($115,000 − 17,250 ÷ 30 × 50%)	$ 288
2012-2017 deprecation ($115,000 − 17,250) ÷ 30 × 6 years	19,550
Total depreciation to Dec 31, 2017	$19,838

Cost	$115,000
Less: Accumulated depreciation	(19,838)
Carrying amount (Dec 31, 2017)	$ 95,162

2. Revised depreciation for 2018: $(\$95{,}162 - 18{,}000) \div 15$ years remaining $= \$5{,}144$

   Entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2018	Depreciation Expense		5,144	
	Accumulated Depreciation			5,144
	To record depreciation for 2018.			

3.

General Journal				
Date	Account/Explanation	R	Debit	Credit
July 31, 2019	Depreciation Expense		2,572	
	Accumulated Depreciation			2,572
	To record depreciation to date of disposal: ($5,144 × 50%).			
July 31, 2019	Cash		80,000	
	Accumulated Depreciation – Machine ($19,838 + 5,144 + 2,572)		27,554	
	Loss on Disposal		7,446	
	Machine			115,000
	To record sale of asset.			

PROBLEM 8–6

1.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Aug 1, 2018	Equipment		250,000	
	Cash			250,000
	To record the purchase of equipment.			

2.

General Journal				
Date	Account/Explanation	R	Debit	Credit
2014	Depreciation Expense		11,550	
	Accumulated Depreciation			11,550
	($250,000 − 40,000) ÷ 200,000 × 11,000)			
2015	Depreciation Expense		26,250	
	Accumulated Depreciation			26,250
	($250,000 − 40,000) ÷ 200,000 × 25,000)			
2016	Depreciation Expense		36,750	
	Accumulated Depreciation			36,750
	($250,000 − 40,000) ÷ 200,000 × 35,000)			

3.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2017	New asset*		170,000	
	Accum depreciation – Old asset		74,550	
	Loss on disposal		35,450	
	Old asset			250,000
	Cash			30,000
	To record the trade-in of the old asset for a new asset.			

* Trade-in of asset:
Value of new asset = cash paid + fair value of asset traded (given up) = $30,000 + $140,000 = $170,000

PROBLEM 8–7

1.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2018	Land		150,000	
	Buildings		400,000	
	Patents		200,000	
	Machinery		150,000	
	Goodwill		100,000	
	Cash			1,000,000
	To record purchase of Zak Company assets.			

2. For the impairment loss:

Carrying amount January 1, 2020:

$(\$200{,}000 - 0) \div 20$ years $= 10{,}000$ per year $\div$ 2 years $= \$20{,}000$

$\$200{,}000 - 20{,}000 = \$180{,}000$

Fair Market Value amount is 165,000, therefore there is an impairment.

Impairment amount: $15,000

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2020	Loss on impairment of patents		15,000	
	Patents			15,000

3. Amortization:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Amortization expense		9,167	
	Accumulated amortization, patents . . .			9,167
	$((\$165{,}000^* - 0) \div (20 - 2)$			

* Note: When an impairment occurs, the new carrying amount will be the Fair Market Value amount.

4.

Teldor Ltd.
Balance Sheet
At December 31, 2020

Intangible assets:		
Patents	$165,000	
Accumulated amortization	(29,167)	$135,833
Total intangible assets		235,833

Disclosure:

Patents were purchased on January 1, 2018 for $200,000. Their useful life is estimated to be 20 years and amortized on a straight-line basis. In 2020, patents were written down to $165,000 based on their Fair Market Value amount at that date.

Note: Goodwill is not reported as an intangible asset.

PROBLEM 8–8

1.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31, 2018	Computer		3,000	
	Cash			3,000
Mar 1, 2018	Computer		1,000	
	Cash			1,000
Apr 1, 2019	Computer		2,000	
	Cash			2,000

Alternate interpretations are acceptable, with adequate explanation.

2.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2018	Depreciation Expense		667	
	Accumulated Depreciation – Equipment			667
	To record 2018 depreciation: ($3,000 + 1,000) × 1/3 years × 50%).			
Dec 31, 2019	Depreciation Expense		2,667	
	Accumulated Depreciation – Equipment			2,667
	To record 2019 depreciation: ($3,000 + 1,000 + 2,000 − 667) × 50%)			

Chapter 9 Solutions

PROBLEM 9–1

1. (a) Entry to record receipt of loan proceeds from the bank:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Cash		100,000	
	Loan Payable			100,000
	To record loan from First National Bank.			

(b) Entry to record purchase of the equipment:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 2	Equipment		95,000	
	Cash			95,000
	To record purchase of equipment.			

2. The loan repayment schedule is as follows:

Zinc Corp.
Loan Repayment Schedule

	A	*B*	*C*	*D*	*E*
			(D − B)		*(A − C)*
Year Ended Dec. 31	*Beginning Loan Balance*	*(A × 8%) Interest Expense*	*Reduction of Loan Payable*	*Total Loan Payment*	*Ending Loan Balance*
2016	$100,000	$8,000	$22,192	$30,192	$77,808
2017	77,808	6,225	23,967	30,192	53,841
2018	53,841	4,307	25,885	30,192	27,956
2019	27,956	2,236	27,956	30,192	-0-

3. Entry to record the last loan payment:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Interest Expense		2,236	
	Loan Payable		27,956	
	Cash			30,192
	To record final loan payment to First National Bank.			

4. The partial balance sheet is as follows:

Zinc Corp.
Partial Balance Sheet
At December 31, 2017

Liabilities

Current	
Current Portion of First National Bank Loan (Note X)	$25,885
Non-current	
First National Bank Loan (Note X)	27,956

Note X would disclose pertinent information including details of the loan repayment agreement (for example, interest rate, repayment terms, security) if just the carry amount is shown on the balance sheet as above.

Chapter 10 Solutions

PROBLEM 10–1

1. The equity section of the balance sheet after the split is as follows:

Before split		**After split**	
Equity		*Equity*	
Common Stock		Common Stock	
Authorized – 5,000 Shares		Authorized – 5,000 Shares	
Issued and Outstanding – 1,000 Shares	$100,000	Issued and Outstanding – 5,000 Shares	$100,000

2. Memorandum indicating the new number of shares:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Memorandum The outstanding shares were increased from 1,000 to 5,000 by a 5-for-1 share split.			

3. It can be estimated that the market price per share would approximate $8 ($40/5). However, the share split should not have any effect on the overall value of the firm to investors. Therefore, if five times as many shares are now outstanding, each share should be worth 1/5 as much but each stockholder's paid-in capital would be the same before and after the share split.

PROBLEM 10–2

1. General journal to record 2019 transactions:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb. 15	Cash dividends*		112	
	Preferred dividend payable			12
	Common dividend payable			100
Apr. 1	Preferred dividend payable		12	
	Common dividend payable		100	
	Cash			112
May 1	Stock dividend*		400	
	Common stock to be distributed			100
	Additional paid in capital			300
	(2,000 shares × 10% = 200. 200 × 2 = 400. Common stock listed at par 200 × $0.5)			
Jun. 15	Common stock to be distributed		400	
	Common stock			400
Aug. 15	Cash dividends*		122	
	Preferred dividend payable			12
	Common dividend payable (2,200 shares × $0.05)			110
Oct. 1	Preferred dividend payable		12	
	Common dividend payable		110	
	Cash			122
Dec. 15	Stock dividend*		660	
	Common stock to be distributed			110
	Additonal paid in capital			550
	(2,200 × 10% = 220. 220 × $3 = $660. Common stock listed at par 220 × $0.5)			
Dec. 27	Common stock to be distributed		660	
	Common stock			660
Dec. 31	Income summary		1,400	
	Retained earnings**			1,400
Dec. 31	Retained earnings**		1,294	
	Stock dividend*			1,060
	Cash dividends*			234

* Alternatively, Retained Earnings could have been debited.

**If Retained Earnings was debited on the dividend declaration dates, then a closing entry is not required.

2. The statement of changes is as follows:

TWR Contracting Inc.
Statement of Stockholders' Equity
For the Year Ended December 31, 2019

	Common Stock	*Preferred Stock*	*Additional Paid-in Capital*	*Retained Earnings*	*Total Equity*
Opening Balance	$1,000	$400	$1,000	$ 900	$ 3,300
Net Income				1,400	1,400
Dividends Declared					
Cash				(234)	(234)
Stock	210		850	(1,060)	
Ending Balance	$1,210	$400	$1,850	$ 1,006	$ 4,466

PROBLEM 10–3

1. General journal to record 2019 transactions:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb. 10	Cash dividends*		32,000	
	Preferred dividend payable			30,000
	Common dividend payable			2,000
	$15,000 in arrears to preferred + $15,000 for 2019, $2,000 left for common			
Mar. 1	Preferred dividend payable		30,000	
	Common dividend payable		2,000	
	Cash			32,000
5	Cash		36,000	
	Preferred stock			36,000
	2,000 × $18			
	Memorandum Entry: 2:1 split on preferred and common. Preferred: (30,000 + 2,000) × 2 = 64,000 Common: 70,000 × 2 = 140,000			
Jun. 22	Cash		80,000	
	Common stock			20,000
	Additional paid in capital			60,000
	Cash 20,000 × $4, Common stock 20,000 × $1 par.			
Nov. 10	Stock dividend*		112,000	
	Common stock to be distributed			32,000
	Additional paid in capital			80,000
	(140,000 + 20,000) × 20% = 32,000 × $3.50 = 112,000. Common stock listed at par 32,000 × $0.1			
Dec. 15	Common stock to be distributed		32,000	
	Common stock			32,000
31	Income summary		290,000	
	Retained earnings			290,000
31	Retained earnings**		144,000	
	Stock dividend*			32,000
	Cash dividends*			112,000

* Alternatively, Retained earnings could have been debited.

** If Retained earnings was debited on the dividend declaration dates, then a closing entry is not required.

2. The equity section of the balance sheet is as follows:

Wondra Inc.
Partial Balance Sheet
December 31, 2019

Contributed Capital	
Preferred Shares; $0.50 cumulative; 400,000 shares authorized; 32,000 shares issued and outstanding	$516,000
Common Shares; 700,000 shares authorized; 192,000 shares issued and 172,000 outstanding	542,000
Additional Paid in Capital	220,000
Treasury Stock	(10,000)
Total contributed capital	$1,268,000
Retained Earnings	241,000
Total Equity	$1,509,000

3. There are 20,000 Treasury stock shares (Issued: 192,000 − Outstanding: 172,000)

PROBLEM 10–4

1. The paid-in capital per common share, and book value per common share are:

$$\text{Paid-in capital per common share} = \frac{\text{Total Paid-in Capital}}{\text{Number of shares outstanding}} = \$3{,}070/300 = \$10.23 \text{ (rounded)}$$

$$\text{Book value per common share} = \frac{\text{Total equity}}{\text{Number of shares outstanding}} = \$3{,}570/300 = \$11.90$$

2. There is little relationship between market price and the book value of a share. Book value provides only a basis on which to compare two or more companies, or to compare a company's market price per share. Market value is affected by investors' perceptions of future earnings expectations of the company. Also some assets recorded at historical cost, such as land, may have appreciated in value. This appreciation would be reflected in the market value of the common shares, but not in the book value.

Chapter 11 Solutions

PROBLEM 11–1

1. Entry to record the disposal:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accumulated Depreciation		16[1]	
	Cash		12	
	Equipment			20
	Gain on Sale of Equipment			8

Cost (given)	20
[1]Acc. Depreciation (derived)	(16)
Book Value or Carrying Amount (given)	4
Cash Proceeds (given)	(12)
Gain on Sale (given)	8

Cash is increased by $12, the amount of the sale proceeds, but this does not represent cash flow from an operating activity. The sale of property, plant and equipment assets is an investing activity, and so will not be shown in the calculation of cash flow from operating activities. The $12 inflow of cash from the sale of the equipment will be shown as a cash inflow in the Investing Activities section of the SCF.

The $8 gain on sale is included in the calculation of net income. Since it (a) does not represent actual cash inflow (the $12 is the actual cash inflow) and (b) is not an operating activity, the gain is deducted from net income on the SCF to derive cash flow from operating activities.

2. Cash flow from operating activities calculated as follows:

Net Income	$33
Items Not Affecting Cash Flow	
Depreciation Expense	10
Gain on Sale of Equipment	(8)
Cash Flow from Operating Activities	$35

PROBLEM 11–2

1. Beginning retained earnings + net income − dividends declared = Ending retained earnings; 156 + 50 − 0 = 206. No dividends were declared so the net change in retained earnings of 50 is entirely an operating activity – net income.

2. The cash flow from operating activities is calculating as follows:

	Balance		*Change*		*Cash Effect*		*Activity*
	2019	*2018*					
	Dr. (Cr.)	*Dr. (Cr.)*	*Dr.*	*Cr.*	*Inflow*	*Outflow*	
Cash	100	86	14		To be explained		C&CE
Accounts Receivable	60	40	20			20	Operating
Inventory	36	30	6			6	Operating
Prepaid Rent	10	-0-	10			10	Operating
Retained Earnings	(206)	(156)		50	50		Operating
	-0-	-0-	50	50	50	36	

$14 net cash inflow

Cash flow from operating activities would be calculated as:

Net Income		$ 50
Adjustments to reconcile net income to cash provided by operating activities:		
Increase in Accounts Receivable	(20)	
Increase in Inventory	(6)	
Increase in Prepaid Rent	(10)	(36)
Cash Flow from operating activities		$ 14

PROBLEM 11–3

1. Entry to record the depreciation expense for the year:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense		100	
	Accumulated Depreciation – Machinery			100

There is no cash effect. However, the depreciation expense should be added back to the net loss figure when deriving cash flow from operating activities because it is a non-cash expense.

2. Entry to account for the change in the Machinery balance sheet account:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Machinery		300	
	Cash			300

Since (a) the Machinery account increased $300 (500 – 200) during the year, (b) no disposals occurred, and (c) all purchases of machinery were paid in cash, $300 of cash must have been spent on machinery purchases. This cash outflow is an investing activity.

3. Cash flow table:

	Balance		*Change*		*Cash Effect*		*Activity*
	2019	*2018*					
	Dr. (Cr.)	*Dr. (Cr.)*	*Dr.*	*Cr.*	*Inflow*	*Outflow*	
Cash	350	650		300	To be explained		C&CE
Machinery	500	200	300			300	Investing
Accumulated Depreciation	(250)	(150)		100	100		Operating
Retained Earnings	(600)	(700)	100			100	Operating
	-0-	-0-	400	400	100	400	

$300 net cash outflow

Statement of Cash Flows
For the Year Ended December 31, 2019

Cash flows from operating activities:	
Net Loss	$(100)
Adjustments to reconcile net loss to cash provided by operating activities	
Depreciation Expense	100
Net cash flow from operating activities	-0-
Cash flows from investing activities:	
Purchase of Machinery	(300)
Net decrease in cash	(300)
Cash at beginning of year	650
Cash at end of year	$350

PROBLEM 11–4

1. Cash flow table:

	Balance		*Change*		*Cash Effect*		*Activity*
	2019	*2018*					
	Dr. (Cr.)	*Dr. (Cr.)*	*Dr.*	*Cr.*	*Inflow*	*Outflow*	
Cash	1,350	1,800		*450	To be explained		C&CE
Borrowings	(800)	(1,300)	500			500	Financing
Retained Earnings	(550)	(500)		50	90		Operating
						40	Financing
	-0-	-0-	500	500	90	540	

*$450 net cash outflow

Cash flow from operating activities equals net income of $90. All revenue was received in cash and all expenses were paid in cash, and there were no changes to any other balance sheet accounts that affect cash flow from operating activities.

2. Dividends declared must have been $40, calculated as follows:

Opening Retained Earnings (given)	$500
Add: Net Income (given)	90
Less: Dividends Paid (derived)	**(40)**
Ending Retained Earnings (given)	$550

3. Cash Used by Financing Activities:

Repayment of Borrowings	$(500)
Payment of Dividends	(40)
	$(540)

PROBLEM 11–5

Calculations:

	Change		*Cash Effect*		*Activity*
	Dr.	*Cr.*	*Inflow*	*Outflow*	
Cash	*1,175		To be explained		C&CE
Accum. Dep'n.		120(b)	120		Operating
Accounts Receivable	(d)40			40	Operating
Merchandise Inventory		50(e)	50		Operating
Accum. Amort – Patents		5(f)	5		Operating
Wages Payable		20(c)	20		Operating
Borrowings	(g)250			250	Financing
Common Stock		500(h)	500		Financing
Retained Earnings		800(a)	800		Operating
	(i)30			30	Financing
	1,495	1,495	1,495	320	

*$1,175 net cash inflow

Dunn Corporation
Statement of Cash Flows
For the Year Ended December 31, 2019

Cash flows from operating activities:		
Net Income		$800
Adjustments to reconcile net income to cash provided by operating activities		
Increase in accounts receivable		(40)
Decrease in merchandise inventory		50
Increase in wages payable		20
Depreciation and Amortization Expense ($120 + 5)		125
Net cash inflow from operating activities		955
Cash flows from financing activities:		
Repayment of borrowings	$(250)	
Common stock issued	500	
Payment of dividends	(30)	
Net cash inflow from financing activities		220
Net increase in cash		1,175
Cash at beginning of year**		25
Cash at End of Year		$1,200

**If the company had $1,200 cash on hand at the end of the year and cash increased by $1,175 during the year, cash on hand at the beginning of the year must be $25.

PROBLEM 11–6

Calculations:

	Change		*Cash Effect*		*Activity*
	Dr.	*Cr.*	*Inflow*	*Outflow*	
Cash	37,900[2]		To be explained		C&CE
Accounts Receivable	(c) 900			900	Operating
Merchandise Inventory		(d) 1,200	1,200		Operating
Equipment	(h) 10,000[5]				Investing
		(j) 15,000	(i)6,000[3]		Investing
			(j)1,500		Operating
Accum. Dep'n. – Equip.	(j) 7,500	(a) 3,000	3,000		Operating
Accum. Amort – Patents		(e) 100	100		Operating
Accounts Payable	(k) 1,000			1,000	Operating
Wages Payable		(b) 500	500		Operating
Dividends Payable		(i) 5,000[4]			
Borrowings	(f) 5,000			5,000	Financing
Common stock		(g) 12,500	12,500		Financing
		(h) 10,000[5]			
Retained Earnings		20,000[1]	20,000		Operating
	(i) 5,000[4]				
	67,300	67,300	44,800	6,900	

$37,900[2] net cash inflow

[1] Net income = $95,000 − 70,000 − 5,000 = $20,000

[2] Given

[3] Cost of machinery	$15,000
Accumulated depreciation (1/2)	(7,500)
Carrying amount	7,500
Cash proceeds	(6,000)
Loss on disposal	$1,500

The journal entry to record the sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		6,000 (i)	
	Accumulated Dep'n.		7,500	
	Loss on Sale		1,500(j)	
	Machinery			15,000

Items (a) and (b) affect the SCF. The first (i) is a cash inflow from investing activities. The second (j) is added back to net income to arrive at cash flow from operating activities.

[4] Dividends were declared but not paid therefore there is no impact on cash.

[5] $10,000 of equipment was acquired by issuing common stock which is a non-cash transaction reported in a note but not included on the statement of cash flows.

1. The statement of cash flows is as follows:

Wheaton Co. Ltd.
Statement of Cash Flows
For the Year Ended December 31, 2019

Cash flows from operating activities:		
Net income ($95,000 − 70,000 − 5,000)		$ 20,000
Adjustments to reconcile net income to cash provided by operating activities:		
Depreciation and amortization ($3,000 + 100)		3,100
Loss on Disposal of Machinery		1,500
Increase in wages payable		500
Increase in accounts receivable		(900)
Decrease in merchandise inventory		1,200
Decrease in accounts payable		(1,000)
Net cash inflow from operating activities		24,400
Cash flows from investing activities:		
Proceeds from sale of machinery	$ 6,000	
Net cash inflow from investing activities		6,000
Cash flows from financing activities:		
Repayment of borrowings	(5,000)	
Common stock issued for cash	12,500	
Net cash inflow from financing activities		7,500
Net Increase in cash (given)		37,900
Cash at beginning of year (given)		1,000
Cash at end of year (derived)		$ 38,900

2. The statement of cash flows shows that the company has financed its activities internally from operations and by issuing common stock. The sale of machinery also generated cash. It has repaid some borrowings and acquired some property, plant and equipment assets. Wheaton Co. Ltd. has generated substantially more cash than it has used in 2019.

Chapter 12 Solutions

PROBLEM 12–1

Belafonte Corporation
Balance Sheet
At April 30, 2011

Assets			*Liabilities and Equity*		
Cash	$ 2,000	(c)	Accounts Payable	$ 8,000	(f)
Accounts Receivable	8,000	(a)	Bonds Payable	20,000	(b)
Merchandise Inventories	20,000	(b)	Common Shares	15,000	(g)
Total Current Assets	30,000	(d)	Retained Earnings	7,000	(i)
Property, plant and equipment assets (net)	20,000	(b)			
Total Assets	$50,000	(e)	Total Liabilities and Equity	$50,000	(h)

Information:

(1) Current assets = 3.75 × Current liabilities (accounts payable)

(2) Sales for year = $73,000

(3) Merchandise inventories = $20,000 = Property, plant and equipment assets = bonds payable

(4) Accounts receivable collection period = 40 days

$$\frac{\text{Average accounts receivable}}{\text{Net credit sales}} \times 365 \text{ days}$$

(5) Bonds payable = 10 × cash

(6) Total current assets = 2 × common shares.

Calculations:

(a) $$\frac{\text{Average accounts receivable}}{\$73{,}000} \times 365 \text{ days} = 40 \text{ days}$$

Average accounts receivable = $8,000

(b) Merchandise inventory, property, plant and equipment assets (net), and bonds payable each equal $20,000

(c) Cash = bonds payable/10 = $20,000/10 = $2,000

(d) Total current assets = $2,000 + 8,000 + 20,000 = $30,000

(e) Total assets = $20,000 + 30,000 = $50,000

(f) Accounts payable = Current assets/3.75 = $30,000/3.75 = $8,000

(g) Common shares = Current assets/2 = $30,000/2 = $15,000

(h) Total liabilities and equity must equal total assets

(i) Retained earnings = Total liabilities and equity − accounts payable − bonds payable − common shares = $50,000 − 8,000 − 20,000 − $15,000 = $7,000

PROBLEM 12–2

Hook Limited
Balance Sheet
At December 31, 2011

Assets				
Current				
Cash			$ 30,000	
Accounts Receivable			150,000	(3)
Merchandise Inventories			90,000	(4)
Total Current Assets			270,000	(2)
Property, Plant, and Equipment	442,500	(10)		
Less: Accumulated Depreciation	100,000		342,500	(9)
Total Assets			$612,500	(8)
Liabilities				
Current				
Accounts Payable	$ 50,000			
Accrued Liabilities	70,000	(1)		
Total Current Liabilities			120,000	
Non-current				
8% Bonds Payable			125,000	(6)
			245,000	
Equity				
Common Shares	80,000	(5)		
Retained Earnings	287,500	(12)	367,500	
Total Liabilities and Equity			$612,500	(11)

Calculations:

(1) Accrued liabilities = \$120,000 − 50,000 = \$70,000

(Total current liabilities − accounts payable)

(2) Total current assets = \$120,000 + 150,000 = \$270,000

(Total current liabilities + working capital)

(3) Accounts receivable = (\$120,000 × 1.5) − 30,000 = \$150,000

[(Total current liabilities × acid-test ratio) − cash]

(4) Inventories = \$270,000 − 150,000 − 30,000 = \$90,000

(Total current assets − accounts receivable − cash)

(5) Net income = [\$80,000 − (80,000/8)] − \$30,000 = \$40,000

[Income before interest and income taxes − (income before interest and income taxes/times interest earned) − income taxes

Therefore, common shares = \$40,000/5 × \$10 = \$80,000

(Net income/Earnings per share) × issued value

(6) Bonds payable = \$80,000/8 divided by 0.08% = \$125,000

[Income before interest and income taxes/Times interest earned)/Interest rate]

(7) If the ratio of equity to total assets is 0.60 to 1, then the ratio of liabilities to total assets is 0.40 to 1.

(8) Total assets = (\$120,000 + 125,000)/0.4 = \$612,500

[(Total current liabilities + total non-current liabilities)/Total debt to total assets ratio]

(9) Net PPE = \$612,500 − 270,000 = \$342,500

(Total assets − current assets)

(10) PPE = \$342,500 + 100,000 = \$442,500

(Net PPE + accumulated depreciation)

(11) Total liabilities and equity = Total assets = \$612,500.

(12) Retained earnings = \$612,500 − 245,000 − 80,000 = \$287,500

(Total liabilities and equity − total liabilities − common shares)

Chapter 13 Solutions

PROBLEM 13–1

1. Schedule to allocate the 2015 net income to partners:

	Bog	*Cog*	*Fog*	*Total*
Profit to be allocated				$40,000
Interest allocation:				
Bog: $60,000 × 10%	$ 6,000			
Cog: $100,000 × 10%		$ 10,000		(18,000)
Fog: $20,000 × 10%			$ 2,000	
Balance				22,000
Salary allocation:	24,000	30,000	48,000	(102,000)
Balance (deficit)				(80,000)
Balance allocated in profit and loss sharing ratio:				
Bog: ($80,000) × 5/10	(40,000)			
Cog: ($80,000) × 3/10		(24,000)		80,000
Fog: ($80,000 × 2/10			(16,000)	
Balance				$ -0-
Total allocated to partners	($10,000)	$16,000	$34,000	

2. Entry to record the division of the 2015 net income:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Summary		40,000	
	Bog, Capital		10,000	
	Cog, Capital			16,000
	Fog, Capital			34,000
	To record net income allocation to partners.			