CHAPTER 1

Managerial Accounting

Learning Objectives

1. Identify the features of managerial accounting and the functions of management.
2. Describe the classes of manufacturing costs and the differences between product and period costs.
3. Demonstrate how to compute cost of goods manufactured and prepare financial statements for a manufacturer.
4. Discuss trends in managerial accounting.

ANSWERS TO QUESTIONS

1. (a) Not true. Managerial accounting is a field of accounting that provides economic and financial information for managers and other internal users.
(b) Joe is incorrect. Managerial accounting applies to all types of businesses—service, merchandising, and manufacturing.

LO1 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

2. (a) Financial accounting is concerned primarily with external users such as stockholders, creditors, and regulators. In contrast, managerial accounting is concerned primarily with internal users such as officers and managers.
(b) Financial statements are the end product of financial accounting. These statements are prepared quarterly and annually. In managerial accounting, internal reports may be prepared as frequently as needed.
(c) The purpose of financial accounting is to provide general-purpose information for external users. The purpose of managerial accounting is to provide special-purpose information for specific internal decisions.

LO1 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

3. Differences in the content of the reports are as follows:

Financial	Managerial
• Pertains to business as a whole and is highly aggregated. • Limited to accrual accounting and cost data. • Generally accepted accounting principles.	• Pertains to subunits of the business and may be very detailed. • Extends beyond accrual accounting system to any relevant data. • Standard is relevance to decisions.

In financial accounting, financial statements are verified annually through an independent audit by certified public accountants. There are no independent audits of internal reports prepared by managerial accountants.

LO1 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

4. Linda should know that the management of an organization performs three broad functions:
(1) **Planning** requires management to look ahead and to establish objectives.
(2) **Directing** involves coordinating the diverse activities and human resources of a company to produce a smooth-running operation.
(3) **Controlling** is the process of keeping the company's activities on track.

LO1 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

5. Not true. Decision-making is not a separate management function. Rather, decision-making involves the exercise of good judgment in performing the three management functions explained in the answer to question four above.

LO1 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

6. Employees with line positions are directly involved in the company's primary revenue generating operating activities. Examples would include factory managers and supervisors, and the vice president of operations. In contrast, employees with staff positions are not directly involved in revenue-generating operating activities, but rather serve in a support capacity to line employees. Examples include employees in finance, legal, and human resources.

LO1 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

7. The difference in balance sheets pertains to the presentation of inventories in the current asset section. In a merchandising company, only inventory is shown. In a manufacturing company, three inventory accounts are shown: finished goods, work in process, and raw materials.
LO3 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

8. Manufacturing costs are classified as either direct materials, direct labor, or manufacturing overhead.
LO2 BT: C Difficulty: Easy TOT: 1 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

9. No, Mel is not correct. The distinction between direct and indirect materials is based on two criteria: (1) physical association and (2) the convenience of making the physical association. Materials which cannot be easily associated with the finished product are considered indirect materials.
LO2 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

10. Product costs, or inventoriable costs, are costs that are a necessary and integral part of producing the finished product, they are classified as manufacturing costs. Period costs are costs that are identified with a specific time period rather than with a salable product. These costs relate to nonmanufacturing activities and therefore are not inventoriable costs, they are expensed as incurred.
LO2 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

11. A merchandising company that uses the periodic inventory system reports beginning inventory, cost of goods purchased, and ending inventory in the cost of goods section of the income statement. A manufacturing company reports beginning finished goods inventory, cost of goods manufactured, and ending finished goods inventory in its determination of cost of goods sold.
LO3 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

12. (a) X = total cost of work in process.
(b) X = cost of goods manufactured.
LO3 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

13.

Raw materials inventory, beginning	$12,000
Raw materials purchases	170,000
Less: Total raw materials available for use	182,000
Raw materials inventory, ending	15,000
Direct materials used	$167,000

LO3 BT: AP Difficulty: Easy TOT: 3 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management
($12,000 + $170,000 - $15,000 = $167,000)
(Beg. RM + RM purch. – End. RM = DM used)

14.

Direct materials used	$240,000
Direct labor	220,000
Total manufacturing overhead	180,000
Total manufacturing costs	$640,000

LO3 BT: AP Difficulty: Easy TOT: 2 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management
($240,000 + $220,000 + $180,000 = $640,000)
(DM used + DL used + Tot. MOH = Tot. mfg. costs)

15.

(a) Total cost of work in process ($26,000 + $640,000)	$666,000
(b) Cost of goods manufactured ($666,000 – $32,000)	$634,000

LO3 BT: AP Difficulty: Easy TOT: 2 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management
[(a: $26,000 + $640,000 = $666,000); (b: $666,0000 - $32,000 = $634,000)]
[(a: Beg. WIP + Tot. mfg. costs = Tot. cost of WIP); (b: Tot. cost of WIP – End. WIP = COGM)]

16. The order of reporting is finished goods inventory, work in process inventory, and raw materials inventory.
LO3 BT: K Difficulty: Easy TOT: 1 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

17. The products differ in how each are consumed by the customer. Services are consumed as they are provided; and not capitalized into inventory. Meals at a restaurant are the best example where they are consumed immediately by the customer. There could be a long lead time before the product is sold to a customer in a manufacturing environment.
LO4 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

18. The product costing techniques apply equally well to manufacturers and service companies. Each needs to keep track of the cost of production or services in order to know whether it is generating a profit. The techniques shown in this chapter, to accumulate manufacturing costs to determine manufacturing inventory, are equally useful for determining the cost of services.
LO4 BT: K Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

19. The value chain refers to all activities associated with providing a product or service. For a manufacturer, these include research and development, product design, acquisition of raw materials, production, sales and marketing, delivery, customer relations, and subsequent service. The value chain includes both manufacturing and nonmanufacturing activities and costs.
LO4 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Decision Modeling IMA: Strategic Planning

20. An enterprise resource planning (ERP) system is an integrated software system that provides a comprehensive, centralized resource for information. Its primary benefits are that it replaces the many individual systems typically used for receivables, payables, inventory, human resources, etc. Also, it can be used to get information from, and provide information to, the company's customers and suppliers.
LO4 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: System and Process Management IMA: Strategic Planning

21. In a just-in-time inventory system, the company has no extra inventory stored. Consequently, if some units that are produced are defective, the company will not have enough units to deliver to customers.
LO4 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: System and Process Management IMA: Strategic Planning

22. The balanced scorecard is called "balanced" because it strives to not over emphasize any one performance measure, but rather uses both financial and non-financial measures to evaluate all aspects of a company's operations in an integrated fashion.
LO4 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: System and Process Management IMA: Strategic Planning

23. Budgets are prepared by companies to provide future direction. Because the budget is also used as an evaluation tool, some managers may try to game the budgeting process by underestimating their division's predicted performance so that it will be easier to meet their performance targets. On the other hand, if the budget is set at unattainable levels, managers sometimes take unethical actions to meet targets to receive higher compensation or in some cases to keep their jobs.
LO4 BT: C Difficulty: Easy TOT: 3 min. AACSB: Ethics AICPA PC: Ethical Conduct IMA: Business Applications

24. According to the Sarbanes-Oxley Act of 2002, CEOs and CFOs must now certify that financial statements give a fair presentation of the company's operating results and its financial condition and that the company maintains an adequate system of internal controls. In addition, the composition of the board of directors and audit committees receives more scrutiny, and penalties for misconduct have increased.
LO4 BT: C Difficulty: Easy TOT: 3 min. AACSB: Ethics AICPA FC: Measurement, Analysis and Interpretation AICPA PC: Ethical Conduct IMA: FSA, Business Applications

25. Activity-based costing is an approach used to allocate overhead based on each product's relative use of activities in making the product. Activity-based costing is beneficial because it results in more accurate product costing and in more careful scrutiny of all activities in the value chain.
LO4 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost management

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 1.1

	Financial Accounting	Managerial Accounting
Primary users	**External users**	**Internal users**
Types of reports	**Financial statements**	**Internal reports**
Frequency of reports	**Quarterly and annually**	**As frequently as needed**
Purpose of reports	**General-purpose**	**Special-purpose information for specific decisions**
Content of reports	**Pertains to business as a whole.** **Highly aggregated.** **Limited to accrual accounting and cost data.** **Generally accepted accounting principles**	**Pertains to subunits of the business.** **Very detailed.** **Extends beyond accrual accounting to any relevant data.** **Evaluated based on relevance to decisions**
Verification process	**Annual audit by certified public accountant**	**No independent audits**

LO1 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 1.2

(a) 1. Planning.
(b) 2. Directing.
(c) 3. Controlling.

LO1 BT: C Difficulty: Easy TOT: 1 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 1.3

(a) DM Frames and tires used in manufacturing bicycles.
(b) DL Wages paid to production workers.
(c) MO Insurance on factory equipment and machinery.
(d) MO Depreciation on factory equipment.

LO2 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 1.4

(a) Direct materials.
(b) Direct materials.
(c) Direct labor.
(d) Manufacturing overhead.
(e) Manufacturing overhead.
(f) Direct materials.
(g) Direct materials.
(h) Manufacturing overhead.

LO2 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 1.5

(a) Product.
(b) Period.
(c) Period.
(d) Period.
(e) Product.
(f) Product.

LO2 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 1.6

	Product Costs		
	Direct Materials	Direct Labor	Manufacturing Overhead
(a)			X
(b)	X		
(c)			X
(d)		X	

LO2 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 1.7

(a)	**Direct materials used**	**$180,000**
	Direct labor	**209,000**
	Total manufacturing overhead	**208,000**
	Total manufacturing costs	**$597,000**

BRIEF EXERCISE 1.7 (Continued)

(b)	**Beginning work in process**	**$ 25,000**
	Total manufacturing costs	**597,000**
	Total cost of work in process	**$622,000**

($25,000 + $597,000 = $622,000)
(Beg. WIP + Tot. mfg. costs = Tot. cost in WIP)
LO3 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 1.8

ROLAND COMPANY
Balance Sheet (Partial)
December 31, 2022

ASSETS		
Current assets		
Cash		**$ 62,000**
Accounts receivable		**200,000**
Inventories		
Finished goods	**$91,000**	
Work in process	**87,000**	
Raw materials	**83,000**	**261,000**
Prepaid expenses		**38,000**
Total current assets		**$561,000**

LO3 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Reporting IMA: Cost Management
[$62,000 + $200,000 + ($91,000 + $87,000 + $83,000) + $38,000 = $561,000]
[Cash + Accts. rec. + (Fin. gds. + WIP + Raw mat.) + Prepd. exp. = Tot. current assets]

BRIEF EXERCISE 1.9

	Direct Materials Used	Direct Labor	Manufacturing Overhead	Total Manufacturing Costs
(1)				**$151,000[a]**
(2)	**$81,000[b]**			
(3)		**$144,000[c]**		

LO3 BT: AP Difficulty: Easy TOT: 2 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

(a) $40,000 + $61,000 + $50,000 = $151,000

(b) $296,000 - $140,000 - $75,000 = $81,000

(c) $310,000 - $55,000 - $111,000 = $144,000

BRIEF EXERCISE 1.10

	Total Manufacturing Costs	Work in Process (January 1)	Work in Process (December 31)	Cost of Goods Manufactured
(1)	$151,000*			$189,000[a]
(2)		$133,000[b]		
(3)			$58,000[c]	

***$40,000 + $61,000 + $50,000 (data from BE 1.9)**

LO3 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

(a) $151,000 + $120,000 - $82,000 = $189,000

(b) $331,000 + $98,000 - $296,000 = $133,000

(c) ($310,000 + $463,000) - $715,000 = $58,000

BRIEF EXERCISE 1.11

One implication of Sarbanes-Oxley Act of 2002 (SOX) was to clarify top management's responsibility for the company's financial statements. CEOs and CFOs must certify that financial statements give a fair presentation of the company's operating results and its financial condition. In addition, top managers must certify that the company maintains an adequate system of internal controls to ensure accurate financial reports. Also, more attention is now paid to the composition of the company's board of directors. In particular, the audit committee of the board of directors must be comprised entirely of independent members (that is, non-employees) and must contain at least one financial expert. Finally, to increase the likelihood of compliance with these and other new rules, the penalties for misconduct were substantially increased to include not only fines but also incarceration.

LO4 BT: C Difficulty: Easy TOT: 6 min. AACSB: Ethics, Communication AICPA PC: Ethical Conduct, Communication IMA: FSA, Business Applications

SOLUTIONS FOR DO IT! EXERCISES

DO IT! 1.1

1. **False. The board of directors' primary responsibility is to formulate the operating policies of the company.**
2. **False. Financial accounting reports pertain to the business as a whole and are highly aggregated (condensed).**
3. **False. Managerial account reports do not have to follow GAAP and are not audited by CPAs.**
4. **True**

LO1 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

DO IT! 1.2

Period costs:
Advertising
Salaries of sales representatives

Product costs:
Blank CDs (DM)
Depreciation of CD image burner (MO)
Salary of factory manager (MO)
Factory supplies used (MO)
Paper inserts for CD cases (DM)
CD plastic cases (DM)
Salaries of factory maintenance employees (MO)
Salaries of employees who burn music onto CDs (DL)

LO2 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

DO IT! 1.3

TOMLIN COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended April 30, 2022

Work in process, April 1			**$ 5,000**
Direct materials			
Raw materials, April 1	**$ 10,000**		
Raw materials purchases	**98,000**		
Total raw materials available for use	**108,000**		
Less: Raw materials, April 30	**14,000**		
Direct materials used		**$ 94,000**	
Direct labor		**80,000**	
Manufacturing overhead		**160,000**	
Total manufacturing costs			**334,000**
Total cost of work in process			**339,000**
Less: Work in process, April 30			**3,500**
Cost of goods manufactured			**$335,500**

LO3 BT: AP Difficulty: Easy TOT: 6 min. AACSB: Analytic AICPA FC: Reporting IMA: Cost Management
[$5,000 + (($10,000 + $98,000 - $14,000) + $80,000 + $160,000) - $3,500 = $335,500]
[Beg. WIP + ((Beg. raw mat. + Raw mat. purch. – End. raw mat.) + DL + MOH) – End. WIP = COGM]

DO IT! 1.4

1. f
2. a
3. c
4. d
5. e
6. b
7. g

LO4 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: None IMA: Cost Management

SOLUTIONS TO EXERCISES

EXERCISE 1.1

1. **False. Financial accounting focuses on providing information to *external* users.**
2. **False. *Line* positions are directly involved in the company's primary revenue-generating operating activities.**
3. **False. Preparation of budgets is part of *managerial* accounting.**
4. **False. Managerial accounting applies to *service*, merchandising and manufacturing companies.**
5. **True.**
6. **False. Managerial accounting reports are prepared as *frequently as needed*.**
7. **True.**
8. **True.**
9. **False. *Financial* accounting reports must comply with generally accepted accounting principles.**
10. **False. The company treasurer reports directly to the *vice president of finance/chief financial officer*.**

LO1 BT: C Difficulty: Easy TOT: 6 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.2

1. **(c) Manufacturing overhead.**
2. **(c) Manufacturing overhead.**
3. **(c) Manufacturing overhead.**
4. **(c) Manufacturing overhead.**
5. **(a) Direct materials.**
6. **(b) Direct labor.**
7. **(c) Manufacturing overhead.**
8. **(c) Manufacturing overhead.**
9. **(c) Manufacturing overhead.**
10. **(a) Direct materials.**

LO2 BT: C Difficulty: Easy TOT: 6 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.3

(a)

Bicycle components.....DM	Advertising expense.....Period
Depreciation on factory.....MOH	Property taxes on factory.....MOH
Property taxes on retail store.....Period	Customer delivery expense.....Period
Labor costs of assembly-line workers.....DL	Sales commissions.....Period
Factory supplies used.....MOH	Salaries paid to sales clerks. .Period

(b) Product costs are recorded as a part of the cost of inventory because they are an integral part of the cost of producing the bicycles. Product costs are not expensed until the bicycles are sold. Period costs are recognized as an expense when incurred.

LO2 BT: C Difficulty: Easy TOT: 8 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.4

(a)

Factory utilities.....	$ 15,500
Depreciation on factory equipment.....	12,650
Indirect factory labor.....	48,900
Indirect materials.....	80,800
Factory manager's salary.....	8,000
Property taxes on factory building.....	2,500
Factory repairs.....	2,000
Manufacturing overhead.....	$170,350

($15,500 + $12,650 + $48,900 + $80,800 + $8,000 + $2,500 + $2,000 = $170,350)
(Fact. util. + Depr. on fact. equip. + Ind. fact. labor + Ind. mat. + Fact. mgr's. sal. + Prop. tax. on fact. bldg.. + Fact. repairs = MOH)

(b)

Direct materials used.....	$137,600
Direct labor.....	69,100
Manufacturing overhead.....	170,350
Product costs.....	$377,050

(c)

Depreciation on delivery trucks.....	$ 3,800
Sales salaries.....	46,400
Repairs to office equipment.....	1,300
Advertising.....	15,000
Office supplies used.....	2,640
Period costs.....	$ 69,140

($3,800 + $46,400 + $1,300 + $15,000 + $2,640 = $69,140)
(Depr. on del. trks. + Sales sal. + Repairs on off. equip. + Advert. + Off. sup. used = Period costs)
LO2 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.5

1.	**(c)**	**3.**	**(a)**	**5.**	**(c)**	**7.**	**(a)**	**9.**	**(c)**
2.	**(c)**	**4.**	**(c)**	**6.**	**(d)**	**8.**	**(b)**	**10.**	**(c)**

LO2 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.6

1. (b)
2. (c)
3. (a)
4. (c) (Only for the portion that applies to the X-ray department)
5. (c)
6. (c)
7. (c)
8. (c)
9. (c)
10. (c) (Only for the portion that applies to the X-ray department)

LO2 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.7

(a) Delivery service (product) costs:

Indirect materials	**$ 6,400**
Depreciation on delivery equipment	**11,200**
Dispatcher's salary	**5,000**
Gas and oil for delivery trucks	**2,200**
Drivers' salaries	**16,000**
Delivery equipment repairs	**300**
Total	**$41,100**

($6,400 + $11,200 + $5,000 + $2,200 + $16,000 + $300 = $41,100)
(Ind. mat. + Depr. on del. equip. + Dispatch. sal. + Gas & oil for del. trks. + Drivers' sal. + Del. equip. repairs = Tot. product costs)

(b) Period costs:

Property taxes on office building	**$ 870**
CEO's salary	**12,000**
Advertising	**4,600**
Office supplies	**650**
Office utilities	**990**
Repairs on office equipment	**180**
Total	**$19,290**

LO2 BT: AP Difficulty: Easy TOT: 6 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.8

	Manufacturing			Non manufacturing	Product or Period
	Direct Materials	Direct Labor	Manufacturing Overhead		
Broom inspector's salaries			X		Product
Copy machine maintenance-headquarters				X	Period
Assembly worker hourly wages		X			Product
Research and development for new broom types				X	Period
Factory manager's salary			X		Product
Depreciation-broom assembly equipment			X		Product
CEO administrative assistant's salary				X	Period
Wood for handles	X				Product
Cleaning supplies-factory			X		Product
Lubricants for factory broom assembly equipment			X		Product
Customer service agents' salaries				X	Period
Factory maintenance crew salaries			X		Product
Sales team golf outings with customers				X	Period
Raw materials receiving department salaries			X		Product
Advertising				X	Period
Depreciation-CFO company car				X	Period
Straw for brooms	X				Product
Salespersons' salaries				X	Period
Shipping costs to customers				X	Period

LO2 BT: C Difficulty: Easy TOT: 10 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.9

(a) Work in process, January 1			**$ 12,000**
Direct materials used		**$120,000**	
Direct labor		**110,000**	
Manufacturing overhead			
Depreciation on factory	**$60,000**		
Factory supplies used	**23,000**		
Property taxes on factory	**14,000**		
Total manufacturing overhead		**97,000**	
Total manufacturing costs			**327,000**
Total cost of work in process			**339,000**
Less: Work in process, December 31			**15,500**
Cost of goods manufactured			**$323,500**

[$12,000 + (($120,000 + $110,000 + ($60,000 + $23,000 + $14,000)) - $15,500 = $323,500]
[Beg. WIP + ((DM used + DL + (Depr. on factory + Fact. sup. used + Prop. tax on factory)) – End. WIP = COGM]

(b) Finished goods, Jan. 1	**$ 60,000**
Cost of goods manufactured	**323,500**
Cost of goods available for sale	**383,500**
Less: Finished goods, inventory, Dec. 31	**45,600**
Cost of goods sold	**$337,900**

(c) The costs not include in either the Schedule of Cost of Goods Manufactured or the Schedule of Cost of Goods sold are: Property taxes on store, Advertising expense, Delivery expense, Sales commissions, and Salaries paid to sales clerks. They would all be classified as period costs, and as such, would be reported on the income statement under operating expenses.

LO3 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Reporting IMA: Cost management

EXERCISE 1.10

Total raw materials available for use:	
Direct materials used	**$180,000**
Add: Raw materials inventory, Dec. 31	**22,500**
Total raw materials available for use	**$202,500**

($180,000 + $22,500 = $202,500)
(DM used + End. raw mat. = Tot. raw mat. avail. for use)

EXERCISE 1.10 (Continued)

Raw materials inventory (Jan. 1):		
Total raw materials available for use:		
Direct materials used		**$180,000**
Add: Raw materials inventory, Dec. 31		**22,500**
Total raw materials available for use		**202,500**
Less: Raw materials purchases		**158,000**
Raw materials inventory, Jan. 1		**$ 44,500**

($180,000 + $22,500 - $158,000 = $44,500)
(DM used + End. raw mat. – Raw mat. purch. = Beg. raw mat.)

Total cost of work in process:		
Cost of goods manufactured		**$540,000**
Add: Work in process, Dec. 31		**81,000**
Total cost of work in process		**$621,000**

Total manufacturing costs:		
Total cost of work in process		**$621,000**
Less: Work in process, Jan. 1		**210,000**
Total manufacturing costs		**$411,000**

Direct labor:		
Total manufacturing costs		**$411,000**
Less: Total manufacturing overhead	**$122,000**	
Direct materials used	**180,000**	**302,000**
Direct labor		**$109,000**

[$411,000 – ($122,000 + $180,000) = $109,000]
[Tot. mfg. costs – (Tot. MOH + DM used) = DL]
LO3 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 1.11

Case A

a + $57,000 + $46,500 = $195,650
a = $92,150

$195,650 + b = $221,500
b = $25,850

$252,500 – $11,000 = f
f = $241,500

Case C

$130,000 + g + $102,000 = $253,700
g = $21,700

EXERCISE 1.11 (Continued)

$221,500 – c = $185,275
c = $36,225

$253,700 + h = $337,000
h = $83,300

Case B

$68,400 + $86,000 + $81,600 = d
d = $236,000

$337,000 – $70,000 = i
i = $267,000

$236,000 + $16,500 = e
e = $252,500

Additional explanation to EXERCISE 1.11 solution:

Case A

(a)	**Total manufacturing costs**		**$195,650**
	Less: Manufacturing overhead	**$46,500**	
	Direct labor	**57,000**	**103,500**
	Direct materials used		**$ 92,150**

[$195,650 – ($46,500 + $57,000) = $92,150]
[Tot. mfg. costs – (MOH + DL) = DM used]

(b)	**Total cost of work in process**	**$221,500**
	Less: Total manufacturing costs	**195,650**
	Work in process (1/1/22)	**$ 25,850**

(c)	**Total cost of work in process**	**$221,500**
	Less: Cost of goods manufactured	**185,275**
	Work in process (12/31/22)	**$ 36,225**

Case B

(d)	**Direct materials used**	**$ 68,400**
	Direct labor	**86,000**
	Manufacturing overhead	**81,600**
	Total manufacturing costs	**$236,000**

($68,400 + $86,000 + $81,600 = $236,000)
(DM used + DL + MOH = Tot. mfg. costs)

(e)	**Total manufacturing costs**	**$236,000**
	Work in process (1/1/22)	**16,500**
	Total cost of work in process	**$252,500**

EXERCISE 1.11 (Continued)

(f)	**Total cost of work in process**		**$252,500**
	Less: Work in process (12/31/22)		**11,000**
	Cost of goods manufactured		**$241,500**

Case C

(g)	**Total manufacturing costs**		**$253,700**
	Less: Manufacturing overhead	**$102,000**	
	Direct materials used	**130,000**	**232,000**
	Direct labor		**$ 21,700**

[$253,700 – ($102,000 + $130,000) = $21,700]
[Tot. mfg. costs – (MOH + DM used) = DL]

(h)	**Total cost of work in process**	**$337,000**
	Less: Total manufacturing costs	**253,700**
	Work in process (1/1/22)	**$ 83,300**

(i)	**Total cost of work in process**	**$337,000**
	Less: Work in process (12/31/22)	**70,000**
	Cost of goods manufactured	**$267,000**

LO3 BT: AN Difficulty: Easy TOT: 12 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 1.12

(a) (a) $117,000 + $140,000 + $87,000 = $344,000

(b) $344,000 + $33,000 – $360,000 = $17,000

($344,000 + $33,000 - $360,000 = $17,000)
(Tot. mfg. costs + Beg. WIP – COGM = End. WIP)

(c) $450,000 – ($200,000 + $132,000) = $118,000

(d) $40,000 + $470,000 – $450,000 = $60,000

($40,000 + $470,000 - $450,000 = $60,000)
(End. WIP + COGM – Tot. mfg. costs = Beg. WIP)

(e) $265,000 – ($80,000 + $100,000) = $85,000

(f) $265,000 + $60,000 – $80,000 = $245,000

($265,000 + $60,000 - $80,000 = $245,000)
(Tot. mfg. costs + Beg. WIP – End. WIP = COGM)

(g) $288,000 – ($70,000 + $75,000) = $143,000

(h) $288,000 + $45,000 – $270,000 = $63,000

EXERCISE 1.12 (Continued)

(b)

HORIZON COMPANY
Cost of Goods Manufactured Schedule
For the Year Ended December 31, 2022

Work in process, Jan. 1		$ 33,000
Direct materials used	$117,000	
Direct labor	140,000	
Manufacturing overhead	87,000	
Total manufacturing costs		344,000
Total cost of work in process		377,000
Less: Work in process inventory, Dec. 31		17,000
Cost of goods manufactured		$360,000

[($33,000 + ($117,000 + $140,000 + $87,000)) - $17,000 = $360,000]
[(Beg. WIP + (DM + DL + MOH)) – End. WIP = COGM]
LO3 BT: AN Difficulty: Easy TOT: 12 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 1.13

(a)

CEPEDA CORPORATION
Cost of Goods Manufactured Schedule
For the Month Ended June 30, 2022

Work in process, June 1			$ 3,000
Direct materials used		$20,000	
Direct labor		40,000	
Manufacturing overhead			
Indirect factory labor	$4,500		
Factory manager's salary	3,000		
Indirect materials used	2,200		
Maintenance, factory equipment	1,800		
Depreciation, factory equipment	1,400		
Factory utilities	400		
Total manufacturing overhead		13,300	
Total manufacturing costs			73,300
Total cost of work in process			76,300
Less: Work in process, June 30			3,800
Cost of goods manufactured			$72,500

[($3,000 + ($20,000 + $40,000 + ($4,500 + $3,000 + $2,200 + $1,800 + $1,400 + $400))) - $3,800 = $72,500]
[(Beg. WIP + (DM used + DL + (Ind. labor + Fact. mgrs.. sal. + Ind. mat. used + Maint., fact. equip. + Depr., fact. equip. + Fact. util.))) – End. WIP = COGM]

EXERCISE 1.13 (Continued)

(b)

CEPEDA CORPORATION
Income Statement (Partial)
For the Month Ended June 30, 2022

Sales revenue		$92,100
Cost of goods sold		
Finished goods inventory, June 1	$ 5,000	
Cost of goods manufactured [from (a)]	72,500	
Cost of goods available for sale	77,500	
Less: Finished goods inventory, June 30	7,500	
Cost of goods sold		70,000
Gross profit		$22,100

LO3 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 1.14

(a)

WASHINGTON CONSULTING
Schedule of Cost of Contract Services Performed
For the Month Ended August 31, 2022

Supplies used (direct materials)		$ 1,700
Salaries of professionals (direct labor)		15,600
Service overhead:		
Utilities for contract operations	$1,400	
Contract equipment depreciation	900	
Insurance on contract operations	800	
Janitorial services for professional offices	700	
Total overhead		3,800
Total cost of contract services provided		$21,100

[$1,700 + $15,600 + ($1,400 + $900 + $800 + $700) = $21,100]
[Supp. used + Sal. of profs. + (Util. on contract oper. + Contract equip. depr. + Ins. on contract oper. + Jan. srvs. for prof. off.) = $21,100]

(b) The costs not included in the Schedule of Cost of Contract Services Performed are: Supplies used in administrative offices, Depreciation used on administrative office equipment, Salaries of administrative office personnel, Janitorial services for administrative offices, Insurance on administrative operations, and Utilities for administrative offices. They would all be classified as period costs, and as such, they would be reported on the income statement under administrative expenses.

LO2, 3 BT: AP Difficulty: Easy TOT: 6 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 1.15

(a) Work in process, Jan. 1			**$ 13,500**
Direct materials			
Raw materials inventory, Jan. 1	**$ 21,000**		
Raw materials purchased	**150,000**		
Raw materials available for use	**171,000**		
Less: Raw materials inventory, Dec. 31	**30,000**		
Direct materials used		**$141,000**	
Direct labor		**220,000**	
Manufacturing overhead		**180,000**	
Total manufacturing costs			**541,000**
Total cost of work in process			**554,500**
Less: Work in process, Dec. 31			**17,200**
Cost of goods manufactured			**$537,300**

[$13,500 + (($21,000 + $150,000 - $30,000) + $220,000 + $180,000) - $17,200 = $537,300]
[Beg. WIP + ((Beg. RM + RM purch. – End. RM) + DL + MOH) – End. WIP = COGM]

AIKMAN COMPANY
Income Statement (Partial)
For the Year Ended December 31, 2022

(b) Sales revenue			**$910,000**
Cost of goods sold			
Finished goods inventory, Jan. 1		**$ 27,000**	
Cost of goods manufactured [From (a)]		**537,300**	
Cost of goods available for sale		**564,300**	
Less: Finished goods inventory, Dec. 31		**21,000**	
Cost of goods sold			**543,300**
Gross profit			**$366,700**

[$910,000 – ($27,000 + $537,300 - $21,000) = $366,700]
[Sales rev. – (Beg. FG inv. + COGM – End. FG inv.) = GP]

EXERCISE 1.15 (Continued)

AIKMAN COMPANY
Balance Sheet (Partial)
December 31, 2022

Assets

(c) Current assets		
Inventories		
Finished goods	**$21,000**	
Work in process	**17,200**	
Raw materials	**30,000**	**$68,200**

(d) In a merchandising company's income statement (using the periodic inventory system), the only difference would be in the computation of cost of goods sold. Beginning and ending finished goods inventory would be replaced by beginning and ending inventory, and cost of goods manufactured would be replaced by purchases. In a merchandising company's balance sheet, there would be one inventory account (inventory) instead of three.

LO3 BT: AP Difficulty: Easy TOT: 15 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 1.16

1.	**(a)**	**9.**	**(a)**
2.	**(a)**	**10.**	**(a), (b)**
3.	**(a), (c)**	**11.**	**(b)**
4.	**(b)**	**12.**	**(b)**
5.	**(a)**	**13.**	**(a)**
6.	**(a)**	**14.**	**(a)**
7.	**(a)**	**15.**	**(a)**
8.	**(b), (c)**	**16.**	**(a)**

LO3 BT: C Difficulty: Easy TOT: 8 min. AACSB: None AICPA FC: Reporting IMA: Reporting

EXERCISE 1.17

(a)

ROBERTS COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended June 30, 2022

Work in process inventory, June 1			$ 5,000
Direct materials			
Raw materials inventory, June 1	$ 9,000		
Raw materials purchases	54,000		
Total raw materials available for use	63,000		
Less: Raw materials inventory, June 30	13,100		
Direct materials used		$49,900	
Direct labor		47,000	
Manufacturing overhead			
Indirect labor	5,500		
Factory insurance	4,000		
Machinery depreciation	4,000		
Factory utilities	3,100		
Machinery repairs	1,800		
Miscellaneous factory costs	1,500		
Total manufacturing overhead		19,900	
Total manufacturing costs			116,800
Total cost of work in process			121,800
Less: Work in process inventory, June 30			7,000
Cost of goods manufactured			$114,800

[$5,000 + (($9,000 + $54,000 - $13,100) + $47,000 + ($5,500 + $4,000 + $4,000 + $3,100 + $1,800 + $1,500)) – $7,000 = $114,800]
[Beg. WIP + ((Beg. raw mat. + Raw mat. purch. – End. raw mat.) + DL + (Ind. labor + Fact. ins. + Mach. depr. + Fact. util. + Mach. repairs + Misc. fact. costs)) – End. WIP = COGM]

(b)

ROBERTS COMPANY
Balance Sheet (Partial)
June 30, 2022

ASSETS

Current assets		
Inventories		
Finished goods	$ 8,000	
Work in process	7,000	
Raw materials	13,100	$28,100

LO3 BT: AP Difficulty: Easy TOT: 8 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 1.18

(a)

Raw Materials account:	**(5,000 – 4,650) x $15 = $5,250**
Work in Process account:	**(4,600 x 10%) x $15 = $6,900**
Finished Goods account:	**(4,600 x 90% x 30%) x $15 = $18,630**
Cost of Goods Sold account:	**(4,600 x 90% x 70%) x $15 = $43,470**
Selling Expenses account:	**50 x $15 = $750**

Proof of cost of head lamps allocated (5,000 x $15 = $75,000)

Raw materials	**$ 5,250**
Work in process	**6,900**
Finished goods	**18,630**
Cost of goods sold	**43,470**
Selling expenses	**750**
Total	**$75,000**

[(Raw mat.: (5,000 – 4,650) x $15 = $5,250); (WIP: 4,600 x 10% x $15 = $6,900); (Fin. gds.: (4,600 x 90% x 30%) x $15 = $18,630); (CGS: (4,600 x 90% x 70%) x $15 = $43,470); (Sell. exp.: 50 x $15 = $750)]
[(Raw mat.: (Lamps purch. – Lamps withdrawn) x Unit cost = Acct. bal.); (WIP: (Lamps issued to production x % still in production) x Unit cost = Acct. bal.); (Fin. Gds.: (Lamps in production x % completed x % not sold) x Unit cost = Acct. bal.); (CGS: Lamps in production x % completed x % sold) x Unit cost = Acct. bal.); (Sell. exp.: Lamps in sales staff cars x Unit cost = Acct. bal.)]

(b) **To: Chief Accountant**

From: Student

Subject: Statement Presentation of Accounts

Two accounts will appear in the income statement. Cost of Goods Sold will be deducted from net sales in determining gross profit. Selling expenses will be shown under operating expenses and will be deducted from gross profit in determining net income. Sometimes, the calculation for Cost of Goods Sold is shown on the income statement. In these cases, the balance in Finished Goods inventory would also be reported on the income statement.

The other accounts associated with the head lamps are inventory accounts which contain end-of-period balances. Thus, they would be reported under inventories in the current assets section of the balance sheet in the following order: finished goods, work in process, and raw materials.

LO3 BT: AP Difficulty: Moderate TOT: 15 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 1.19

(a) 3. Balanced scorecard
(b) 4. Value chain
(c) 2. Just-in-time inventory
(d) 1. Activity-based costing

LO4 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: System and Process Management IMA: Strategic Planning

(a)

Cost Item	Product Costs: Direct Materials	Product Costs: Direct Labor	Product Costs: Manufacturing Overhead	Period Costs
Rent on factory equipment			$11,000	
Insurance on factory building			1,500	
Raw materials used	$75,000			
Utility costs for factory			900	
Supplies used for general office				$ 300
Wages for assembly-line workers		$58,000		
Depreciation on office equipment				800
Miscellaneous materials used			1,100	
Factory manager's salary			5,700	
Property taxes on factory building			400	
Advertising for helmets				14,000
Sales commissions				10,000
Depreciation on factory building			1,500	
	$75,000	$58,000	$22,100	$25,100

[(MOH: $11,000 + $1,500 + $900 + $1,100 + $5,700 + $400 + $1,500 = $22,100); (Period costs: $300 + $800 + $14,000 + $10,000 = $25,100)]

[(MOH: Rent, on fact. equip. + Ins., on fact. bldg. + Fact. util. + Misc. mat. + Fact. mgrs.. sal. + Prop. tax, fact. on bldg.. + Depr., fact. bldg. = Tot.); (Period costs: Gen. off. supp. + Depr., on off. equip. + Advert. for helmets + Sales comm. = Tot. period costs)]

(b) Total production costs

Direct materials	$ 75,000
Direct labor	58,000
Manufacturing overhead	22,100
Total production cost	$155,100

Production cost per helmet = $155,100/10,000 = $15.51.

LO2 BT: AP Difficulty: Easy TOT: 25 min. AACSB: Analytic AICPA FC: Measurement , Analysis and Interpretation IMA:

PROBLEM 1.2

(a)

Cost Item	Product Costs: Direct Materials	Product Costs: Direct Labor	Product Costs: Manufacturing Overhead	Period Costs
Direct materials (1)	$111,000			
Wages for workers (2)		$90,000		
Rent on equipment			$ 4,900	
Indirect materials (3)			7,500	
Factory supervisor's salary			3,000	
Janitorial costs			1,300	
Advertising				$9,500
Depreciation on factory building (4)			650	
Property taxes on factory building (5)			750	
	$111,000	$90,000	$18,100	$9,500

(1) $74 x 1,500 = $111,000.
(2) $12 x 5 x 1,500 = $90,000.
(3) $5 x 1,500 = $7,500.
(4) $7,800/12 = $650.
(5) $9,000/12 = $750.

[(MOH: $4,900 + ($5 x 1,500) + $3,000 + $1,300 + ($7,800/12) + ($9,000/12) = $18,100); (Period costs: $9,500)]
[(MOH: Rent, on equip. + (Ind. mat. cost/system x No. systems) + Fact. super. sal. + Jan. costs + (Ann. depr./mos. in a yr.) + (Ann. prop.tax./Mos. in a yr,) = Tot.); (Period costs: Advert.)]

(b) Total production costs

Direct materials	$111,000
Direct labor	90,000
Manufacturing overhead	18,100
Total production cost	$219,100

Production cost per system = $219,100/1,500 = $146.07. (rounded)

LO2 BT: AP Difficulty: Easy TOT: 25 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

PROBLEM 1.3

(a) Case 1

a = $9,600 + $5,000 + $8,000 = $22,600 Total manufacturing costs

$22,600 + $1,000 – B = $17,000
b = $22,600 + $1,000 – $17,000 = $6,600 Ending WIP inventory

$17,000 + C = $22,000
c = $22,000 – $17,000 = $5,000 Beginning F.G. inventory

d = $22,000 – $3,400 = $18,600 Cost of goods sold

e = ($24,500 – $2,500) – $18,600 = $3,400 Gross profit

f = $3,400 – $2,500 = $900 Net income

[(B: $22,600 + $1,000 - $17,000 = $6,600); (E: ($24,500 - $2,500) - $18,600 = $3,400)]
[(B: Tot. mfg. costs + Beg. WIP – COGM = End. WIP); (E: (Sales rev. – sales disc.) – CGS = GP)]

Case 2

g + $8,000 + $4,000 = $16,000
g = $16,000 – $8,000 – $4,000 = $4,000 D.M. used

$16,000 + h – $3,000 = $24,000
h = $24,000 + $3,000 – $16,000 = $11,000 Beginning WIP inventory

(I – $1,400) – k = $7,000
(I – $1,400) – $24,800 = $7,000
i = $1,400 + $24,800 + $7,000 = $33,200 Sales revenue

(Note: Item i can only be solved after item k is solved.)

j = $24,000 + $3,300 = $27,300 Cost of goods available for sale

k = $27,300 – $2,500 = $24,800 Cost of goods sold

$7,000 – l = $5,000
l = $2,000 Operating expenses

PROBLEM 1.3 (Continued)

[(H: $24,000 + $3,000 - $16,000 = $11,000); (I: $1,400 + $24,800 + $7,000 = $33,200); (K: $27,300 - $2,500 = $24,800)]
[(H: COGM + End. WIP – Tot. mfg. costs = Beg. WIP); (I: Sales disc. + CGS + GP = Sales rev.); (K: Gds. avail. for sale – End. fin. gds. = CGS)]

(b)

CASE 1
Cost of Goods Manufactured Schedule
For the Year Ended December 31, 2022

Work in process, beginning		$ 1,000
Direct materials	$9,600	
Direct labor	5,000	
Manufacturing overhead	8,000	
Total manufacturing costs		22,600
Total cost of work in process		23,600
Less: Work in process, ending		6,600
Cost of goods manufactured		$17,000

(c)

CASE 1
Income Statement
For the Year Ended December 31, 2022

Sales revenue	$24,500	
Less: Sales discounts	2,500	
Net sales		
$22,000		
Cost of goods sold		
Finished goods inventory, beginning	5,000	
Cost of goods manufactured	17,000	
Cost of goods available for sale	22,000	
Less: Finished goods inventory, ending	3,400	
Cost of goods sold		18,600
Gross profit		3,400
Operating expenses		2,500
Net income		$ 900

[($24,500 - $2,500) – ($5,000 + $17,000 - $3,400) - $2,500 = $900]
[(Sales rev. – Sales disc.) – (Beg. fin. gds. inv. + COGM – End. fin. gds. inv.) – Oper. exp. = Net inc.]

PROBLEM 1.3 (Continued)

CASE 1
Balance Sheet (Partial)
December 31, 2022

Assets		
Current assets		
Cash		**$ 3,000**
Accounts receivables (net)		**15,000**
Inventories		
Finished goods	**$3,400**	
Work in process	**6,600**	
Raw materials	**600**	**10,600**
Prepaid expenses		**400**
Total current assets		**$29,000**

LO3 BT: AN Difficulty: Moderate TOT: 40 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

PROBLEM 1.4

(a)

CLARKSON COMPANY
Cost of Goods Manufactured Schedule
For the Year Ended June 30, 2022

Work in process, July 1, 2021			$ 19,800
Direct materials			
Raw materials inventory, July 1, 2021	$ 48,000		
Raw materials purchases	96,400		
Total raw materials available for use	144,400		
Less: Raw materials inventory, June 30, 2022	39,600		
Direct materials used		$104,800	
Direct labor		139,250	
Manufacturing overhead			
Factory manager's salary	58,000		
Factory utilities	27,600		
Indirect labor	24,460		
Factory machinery depreciation	16,000		
Factory property taxes	9,600		
Factory insurance	4,600		
Factory repairs	1,400		
Total manufacturing overhead		141,660	
Total manufacturing costs			385,710
Total cost of work in process			405,510
Less: Work in process, June 30, 2022			18,600
Cost of goods manufactured			$386,910

[$19,800 + (($48,000 + $96,400 - $39,600) + $139,250 + ($58,000 + $27,600 + $24,460 + $16,000 + $9,600 + $4,600 + $1,400)) - $18,600 = $386,910]

[Beg. WIP + ((Beg. raw mat. + Raw mat. purch. – End. raw mat.) + DL + (Fact. mgrs.. sal. + Fact. util. + Ind. labor + Fact. mach. depr. + Fact. prop. tax. + Fact. ins. + Fact. repairs)) – End. WIP = COGM]

PROBLEM 1.4 (Continued)

(b)

CLARKSON COMPANY
Income Statement (Partial)
For the Year Ended June 30, 2022

Sales revenues		
Sales revenue	**$534,000**	
Less: Sales discounts	**4,200**	
Net sales		**$529,800**
Cost of goods sold		
Finished goods inventory, July 1, 2021	**96,000**	
Cost of goods manufactured [From (a)]	**386,910**	
Cost of goods available for sale	**482,910**	
Less: Finished goods inventory, June 30, 2022	**75,900**	
Cost of goods sold		**407,010**
Gross profit		**$122,790**

[($534,000 - $4,200) – ($96,000 + $386,910 - $75,900) = $122,790]
[(Sales rev. – Sales disc.) – (Beg. fin. gds. inv. + COGM – End. fin. gds. inv.) = GP]

(c)

CLARKSON COMPANY
Balance Sheet (Partial)
June 30, 2022

Assets		
Current assets		
Cash		**$ 32,000**
Accounts receivable		**27,000**
Inventories		
Finished goods	**$75,900**	
Work in process	**18,600**	
Raw materials	**39,600**	**134,100**
Total current assets		**$193,100**

LO3 BT: AP Difficulty: Moderate TOT: 35 AACSB: Analytic AICPA FC: Reporting IMA: Reporting

PROBLEM 1.5

(a)

EMPIRE COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended October 31, 2022

Work in process, October 1			$ 20,000
Direct materials			
Raw materials inventory, October 1	$ 18,000		
Raw materials purchases	264,000		
Total raw materials available for use	282,000		
Less: Raw materials inventory, October 31	29,000		
Direct materials used		$253,000	
Direct labor		190,000	
Manufacturing overhead			
Factory facility rent	60,000		
Depreciation on factory equipment	31,000		
Indirect labor	28,000		
Factory utilities*	9,000		
Factory insurance**	4,800		
Total manufacturing overhead		132,800	
Total manufacturing costs			575,800
Total cost of work in process			595,800
Less: Work in process, October 31.			14,000
Cost of goods manufactured			$581,800

*$12,000 x 75% = $9,000
**$ 8,000 x 60% = $4,800

[$20,000 + (($18,000 + $264,000 - $29,000) + $190,000 + ($60,000 + $31,000 + $28,000 + ($12,000 x 75%) + ($8,000 x 60%))) - $14,000 = $581,800]
[Beg. WIP + ((Beg. raw mat. inv. + Raw mat. purch. – End. raw mat. inv.) + DL + (Fact. facil. rent + Depr. on fact. equip. + Ind. labor + Fact. util. + Fact. ins.)) – End. WIP = COGM]

PROBLEM 1.5 (Continued)

(b)

EMPIRE COMPANY
Income Statement
For the Month Ended October 31, 2022

Sales revenue		$780,000
Cost of goods sold		
Finished goods inventory, October 1	$ 30,000	
Cost of goods manufactured [From (a)]	581,800	
Cost of goods available for sale	611,800	
Less: Finished goods inventory, October 31	50,000	
Cost of goods sold		561,800
Gross profit		218,200
Operating expenses		
Advertising expense	90,000	
Selling and administrative salaries	75,000	
Depreciation expense—sales equipment	45,000	
Insurance expense**	3,200	
Utilities expense*	3,000	
Total operating expenses		216,200
Net income		$ 2,000

*$12,000 x 25%

**$ 8,000 x 40%

LO3 BT: AN Difficulty: Moderate TOT: 35 AACSB: Analytic AICPA FC: Reporting IMA: Reporting

The answers to parts (a) and (b) may vary from student to student.

(a) What are the primary information needs of each manager?

Mike Cichanowski, CEO, needs to know the overall financial picture of the company. He also needs to have a general picture of sales by territory and product line, and of cost per unit by product line.

Diane Buswell, Controller, needs all accounting-related information.

Deb Welch, Purchasing Manager, needs to know the costs of the components for each product.

Bill Johnson, Sales Manager, needs to know sales by territory and product line.

Dave Thill, Kayak Factory Manager, needs to know all the costs of producing each type of kayak.

Rick Thrune, Production Manager for Composite Kayaks, needs to know the costs related to the composite kayak production.

CD1 (Continued)

(b) Name one special-purpose management accounting report that could be designed for each manager. Include the name of the report, the information it would contain, and how frequently it should be issued.

Manager	Name of report	Information report would contain	How frequently should it be issued?
Mike Cichanowski	Analysis of proposed new product line	Projected revenues and expenses for a possible new product line	As needed and requested
Diane Buswell	Company-wide budget analysis	Revenues, expenses, and net income compared to the budgeted amounts for each	Monthly
Deb Welch	Purchasing History	List of items purchased and most recent cost for each item	Monthly or available on-line
Bill Johnson	Sales Summary	Sales by product line and by customer	Monthly or weekly
Dave Thill	Cost of Production Report	Direct materials, direct labor, and manufacturing overhead costs assigned to each product line	Monthly or weekly
Rick Thrune	Cost of Production Report for Composite Kayaks	Detailed direct material and direct labor costs for the composite kayaks	Weekly

CD1 (Continued)

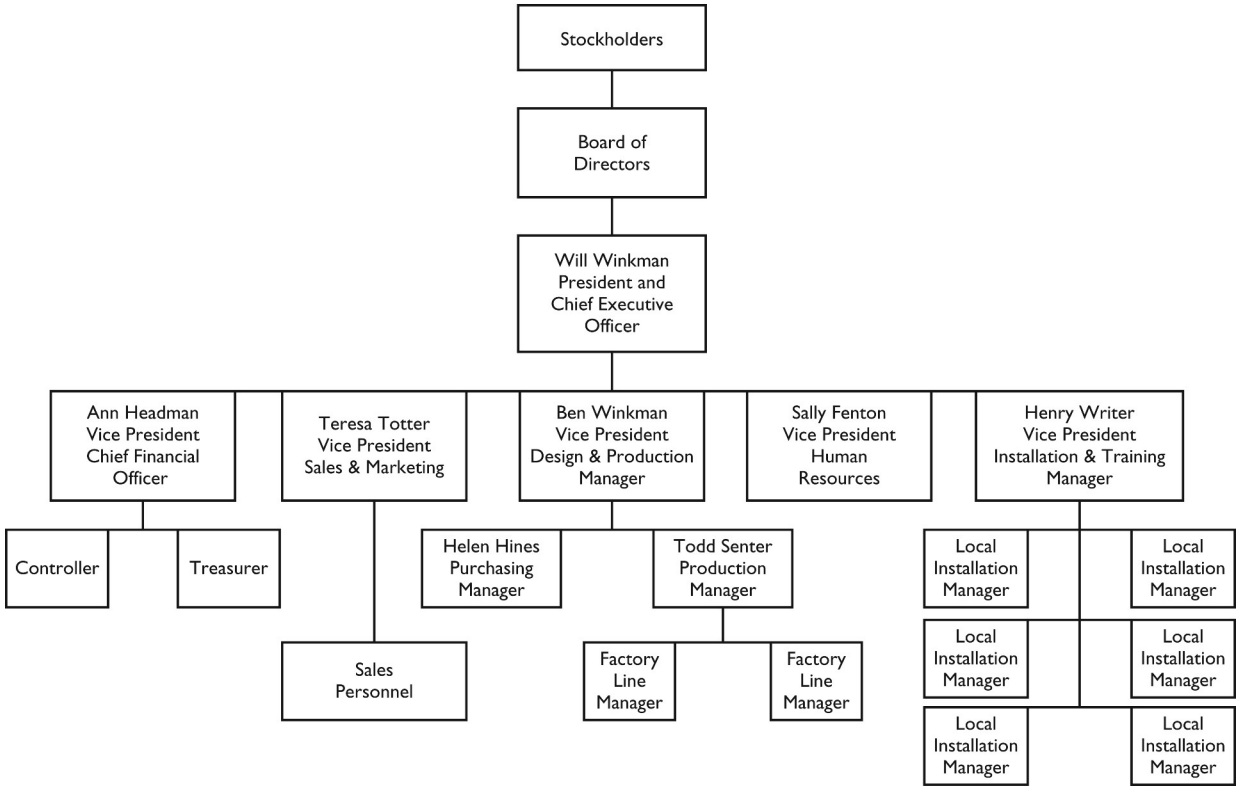
(c) When Diane Buswell, controller for Current Designs, reviewed the accounting records for a recent period, she noted the following items. Classify each item as a product cost or a period cost. If a cost is a product cost, note if it is a direct materials, direct labor, or manufacturing overhead item.

Payee	Purpose	Product Costs			Period Costs
		Direct Materials	Direct Labor	Manufacturing Overhead	
Winona Agency	Property insurance for the manufacturing factory			$3,200	
Bill Johnson (sales manager)	Payroll–payment to sales manager				$1,700
Xcel Energy	Electricity for manufacturing factory			450	
Winona Printing	Price lists for salespeople				85
Jim Kaiser (sales representative)	Sales commissions				1,250
Dave Thill (plant manager)	Payroll–payment to factory manager			1,450	
Dana Schultz (kayak assembler)	Payroll–payment to kayak assembler		$760		
Composite One	Bagging film used when kayaks are assembled; it is discarded after use.			260	
Fastenal	Shop supplies–brooms, paper towels, etc.			890	
Ravago	Polyethylene powder which is the main ingredient for the rotational molded kayaks	$3,170			
Winona County	Property taxes on manufacturing factory			5,480	
North American Composites	Kevlar® fabric for composite kayaks	4,930			
Waste Management	Trash disposal for the company office building				660
None	Record depreciation of manufacturing equipment			4,540	
Totals		$8,100	$760	$16,270	$3,695

LO1, 2 BT: AN Difficulty: Moderate TOT: 60 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management, Performance Measurement

a.

ORGANIZATIONAL CHART



WC 1 (Continued)

WATERWAYS CORPORATION
Cost of Goods Manufactured Schedule
For the Month of November, 2022

Work in process 10/31			**$ 52,700**
Direct materials			
Raw materials inventory 10/31	**$ 38,000**		
Raw material purchases	**184,500**		
Total raw materials available for use	**222,500**		
Less: Raw materials inventory 11/30	**52,700**		
Direct materials used		**$169,800**	
Direct labor		**42,000**	
Manufacturing overhead			
Depreciation—factory equipment	**16,800**		
Factory supplies used	**10,200**		
Factory utilities	**27,000**		
Indirect labor	**48,000**		
Rent—factory equipment	**47,000**		
Repairs—factory equipment	**4,500**		
Total factory overhead		**143,300**	
Total manufacturing costs			**355,100**
Total cost of work in process			**407,800**
Less: Work in process 11/30			**42,000**
Cost of goods manufactured			**$365,800**

WC 1 (Continued)

WATERWAYS CORPORATION
Income Statement
For the Month of November, 2022

Sales Revenue			**$1,350,000**
Cost of goods sold			
Finished goods inventory 10/31		**$ 72,550**	
Cost of goods manufactured		**365,800**	
Cost of goods available for sale		**438,350**	
Less: Finished goods inventory 11/30		**68,800**	
Cost of goods sold			**369,550**
Gross profit			**980,450**
Operating expenses			
Selling expenses			
Advertising expenses	**54,000**		
Sales commissions	**40,500**		
Total selling expenses		**94,500**	
Administrative expenses			
Depreciation—office equipment	**$ 2,400**		
Office supplies expense	**1,600**		
Other administrative expenses	**72,000**		
Office salaries	**325,000**		
Total administrative expenses		**401,000**	
Total operating expenses			**495,500**
Net income			**$ 484,950**

WATERWAYS CORPORATION
Balance Sheet (partial)
November 30, 2022

Assets

Current assets			
Cash			**$260,000**
Accounts receivable			**275,000**
Inventories			
Finished goods inventory	**$68,800**		
Work in process inventory	**42,000**		
Raw materials inventory	**52,700**	**163,500**	
Prepaid expenses			**41,250**
Total current assets			**$739,750**

SOLUTIONS TO DATA ANALYTICS IN ACTION

The solutions for the Data Analytics in Action problems are available in Excel. See the file Solutions: Excel Templates in the Instructor Resources.

CT 1.1 DECISION-MAKING ACROSS THE ORGANIZATION

Ending Raw Materials Inventory

Beginning raw materials + Raw materials purchased
= Raw materials available for use
= $19,000 + $365,000 = $384,000

Raw materials available for use – Ending raw materials inventory
= Direct materials used
$384,000 – Ending raw materials inventory = $350,000
Ending raw materials inventory = $384,000 – $350,000 = $34,000
($19,000 + $365,000 - $350,000 = $34,000)
(Beg. raw mat. + Raw mat. purch. – DM used = End. raw mat.)

Ending Work in Process Inventory

Direct materials used + Direct labor + Manufacturing overhead
= Total manufacturing costs
= $350,000 + $250,000 + ($250,000 X 60%) = $750,000

Beginning work in process inventory + Total manufacturing costs
= Total cost of work in process
= $25,000 + $750,000 = $775,000

Cost of goods manufactured + Beginning finished goods inventory
= Cost of goods available for sale
Cost of goods manufactured + $38,000 = $770,000
Cost of goods manufactured = $770,000 – $38,000 = $732,000

Total cost of work in process – Ending work in process inventory
= Cost of goods manufactured
$775,000 – Ending work in process inventory = $732,000
Ending work in process inventory = $775,000 – $732,000 = $43,000
[($25,000 + ($350,000 + $250,000 + ($250,000 x 60%)) = $775,000); ($770,000 - $38,000 = $732,000); ($775,000 - $732,000 = $43,000)]
[(Beg. WIP + (DM + DL + (DL x MOH rate)) = Tot. cost in WIP); (Cost of gds. avail. for sale – Beg. fin. gds. = COGM); (Tot. cost in WIP – COGM = End. WIP)]

Ending Finished Goods Inventory

Sales – Cost of goods sold = Gross profit
$1,240,000 – Cost of goods sold = $1,240,000 x 40%
Cost of goods sold = $1,240,000 – $496,000 = $744,000
Cost of goods available for sale – Ending finished goods inventory
= Cost of goods sold
$770,000 – Ending finished goods inventory = $744,000
Ending finished goods inventory = $770,000 – $744,000 = $26,000
LO3 BT: AN Difficulty: Moderate TOT: 40 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

CT 1.2 MANAGERIAL ANALYSIS

Since the questions were fairly open-ended, the following are only suggested results. The class may be able to think of others, or of more items for each one.

(a)	***Jason Dennis***	**Needs information on sales, perhaps by salesperson and by territory.**
	Peggy Groneman	**Needs cost information for her department.**
	Dave Marley	**Needs all manufacturing accounting information.**
	Kevin Carson	**Needs product cost information.**
	Sally Renner	**Needs information on component costs and costs for her department.**
(b)	***Jason Dennis***	**Income statement.**
	Peggy Groneman	**None.**
	Dave Marley	**All.**
	Kevin Carson	**Income statement and cost of goods manufactured schedule.**
	Sally Renner	**None.**
(c)	***Jason Dennis***	**Sales by Territory—Detailed information, possibly by product line, issued daily or weekly.**
	Peggy Groneman	**Cost of Computer Programs—Accumulated cost incurred for each major program used including maintenance and updates of program, issued monthly.**
	Dave Marley	**Cost of Preparing Reports—Detailed analysis of all reports provided, their frequency, time, and estimated cost to prepare, issued monthly.**
	Kevin Carson	**Cost of Product—Detailed cost by product line, including a comparison with estimated costs for that product. Issued as each batch of production is completed.**
	Sally Renner	**Cost of Product Design—Accumulated total costs of each new product, issued at end of each project.**

LO3 BT: AN Difficulty: Moderate TOT: 40 min. AACSB: Analytic AICPA FC: Reporting IMA: Cost Management, Performance Measurement

CT 1.3 REAL-WORLD FOCUS

(a) The IMA has more than 125,000 members. These members include business leaders, managers, and decision makers in accounting and finance.

(b) Student and Associate members receive most of the benefits of Regular membership at a significant savings.

- **Unique access to the professional designation, the Certified Management Accountant (CMA)**
- **Specialized learning opportunities**
- **Educational assistance, grants, educational competitions**
- **Around-the-Clock Networking**
- **Career management resources**

(c) The answer to this question will vary by school.

LO N/A BT: K Difficulty: Easy TOT: 20 min. AACSB: Technology AICPA PC: Communication IMA: None

CT 1.4 COMMUNICATION ACTIVITY

Ms. Shelly Phillips
President
Phillips Company

Dear Shelly:

As you requested, I corrected the income statement for October from the information you gave me. The corrected statement is enclosed and it shows that you actually earned net income of $2,000 for October. I also noticed that you did not have a cost of goods manufactured schedule, so I prepared one for you.

The income statement your assistant accountant prepared was not correct for two primary reasons. First, product costs were not separated from selling and administrative expenses. Second, and more importantly, the reported net loss did not reflect changes in inventories. This had the effect of treating these costs as expenses rather than assets. A reconciliation of the reported net loss of $23,000 to net income of $2,000 is as follows:

Net loss as reported		**$(23,000)**
Increase (decrease) in inventories		
Raw materials ($29,000 – $18,000)	**$11,000**	
Work in process ($14,000 – $20,000)	**(6,000)**	
Finished goods ($50,000 – $30,000)	**20,000**	
Total increase		**25,000**
Net income as corrected		**$ 2,000**

The changes in raw materials and work in process inventories are reported in the cost of goods manufactured schedule. You will see, for example, that the cost of direct materials used was $253,000, not $264,000 as reported by your accountant in the income statement. The difference is the change in raw materials inventories. Similarly, you will see that the $6,000 decrease in work in process inventories increases total manufacturing costs of $575,800 to produce cost of goods manufactured of $581,800.

The change in finished goods inventories is reported in the income statement. Notice that the change of $20,000 is subtracted from cost of goods manufactured of $581,800 to produce cost of goods sold of $561,800.

CT 1.4 (Continued)

I have also modified the form of the income statement to recognize the distinction between product costs (cost of goods sold) and period costs (operating expenses) as required by generally accepted accounting principles.

Thanks for letting me help. If I can be of further assistance, don't hesitate to call. I hope you find a replacement for your controller soon.

Sincerely,

LO3 BT: AN Difficulty: Moderate TOT: 15 min. AACSB: Analytic AICPA FC: Reporting AICPA PC: Communication IMA: Reporting

CT 1.5 ETHICS CASE

(a) The stakeholders in this situation are:

- **The users of Newton Industries' financial statements.**
- **Steve Morgan, controller.**
- **The vice-president of finance.**
- **The president of Newton Industries.**

(b) The ethical issues in this situation pertain to the adherence to sound and acceptable accounting principles. Intentional violation of generally accepted accounting principles in order to satisfy a practical short-term personal or company need and thus create misleading financial statements would be unethical. Selecting one acceptable method of accounting and reporting among other acceptable methods is not necessarily unethical.

(c) Ethically, the management of Newton Industries should be trying to report the financial condition and results of operations as fairly as possible; that is, in accordance with GAAP. Steve should inform management what is acceptable accounting and what is not. The basic concept to be supported in this advertising cost transaction is matching costs and revenues. Normally, advertising costs are expensed in the period in which they are incurred because it is very difficult to associate them with specific revenues.

LO2, 3 BT: E Difficulty: Moderate TOT: 20 min. AACSB: Ethics AICPA FC: Reporting AICPA PC: Ethical Conduct, Communication IMA: Business Applications, Reporting

CT 1.6 ALL ABOUT YOU

Student responses will vary. We have provided some basic examples that may represent common responses.

(a) Individuals must often make purchase decisions which involve choosing between an item that has a more expensive initial purchase price, but is expected to either last longer, or provides some form of cost savings. The question that the individual faces is whether the cost savings or additional benefit justifies the additional initial cost. For example, more expensive dishwashers and refrigerators also tend to be more energy efficient. The labels on these appliances provide information regarding the energy savings which can be used to make a break-even evaluation. (Chapter 5)

(b) In order to increase control over their financial situation and reduce the probability of financial hardship, all people should prepare personal budgets. Preparation of a personal budget requires the individual to plan for the future and to prioritize expenditures. (Chapter 9)

(c) Companies employ the balanced scorecard as a mechanism to ensure that their financial goals are consistent with their efforts. Use of the balanced scorecard requires clear articulation of goals, priorities, and strategies. By employing these same techniques in their everyday life, individuals can be better assured that they will expend effort on those things that really matter to them, rather than wasting efforts on less important distractions. (Chapter 11)

(d) Capital budgeting involves financial evaluation of long-term assets. Companies routinely make capital budgeting decisions, but so do individuals. The purchase of a home or car is a decision that has implications for your finances for many subsequent years. Buying a house or car is a very personal decision, influenced by many personal, nonfinancial, preferences. However, these decisions should also be subjected to a financial evaluation using capital budgeting techniques to ensure that the choice makes good economic sense. (Chapter 12)

LO N/A BT: C Difficulty: Moderate TOT: 25 min. AACSB: Communication AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management, Budget Preparation Performance Measurement

CT 1.7 CONSIDERING YOUR COSTS AND BENEFITS

Discussion guide: This is a difficult decision. While the direct costs of outsourced tax return preparation may in fact be lower, you must also consider other issues: Will the accuracy of the returns be as high? Will your relationships with your customers suffer due to the loss of direct contact? Will customers resent having their personal information shipped overseas? While you may not want to lay off six employees, you also don't want to put your firm at risk by not remaining competitive. Perhaps one solution would be to outsource the most basic tasks, and then provide training to the six employees so they can perform higher-skilled services such as tax planning. Many of the techniques that you learn in the remaining chapters of this text will help you evaluate the merits of your various options.

LO2 BT: E Difficulty: Moderate TOT: 25 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation AICPA PC: Communication IMA: Cost management