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 EXERCISES

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				X	Period

customers					

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

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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 1.12

(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)

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(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]

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(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

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

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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

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PROBLEM 1.1

(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:

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(a)

Cost Item	Product Costs: Direct Materials	Direct Labor	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

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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

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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

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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

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