## CHAPTER 1

## Managerial Accounting

## ASSIGNMENT CLASSIFICATION TABLE

| Lea | ing Objectives | Questions | Brief Exercises | Do It! | Exercises | A <br> Problems |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | Identify the features of managerial accounting and the functions of management. | $\begin{aligned} & 1,2,3,4,5, \\ & 6,7 \end{aligned}$ | 1, 2 | 1 | 1 |  |
| 2. | Describe the classes of manufacturing costs and the differences between product and period costs. | 8, 9, 10 | $3,4,5,6$ | 2 | $\begin{aligned} & 2,3,4,5,6 \\ & 7,13 \end{aligned}$ | 1A, 2A |
| 3. | Demonstrate how to compute cost of goods manufactured and prepare financial statements for a manufacturer. | $\begin{aligned} & 11,12,13,14, \\ & 15,16, \end{aligned}$ | 7, 8, 9, 10 | 3 | $\begin{aligned} & 8,9,10,11, \\ & 12,13,14,15, \\ & 16,17 \end{aligned}$ | 3A, 4A, 5A |
| 4. | Discuss trends in managerial accounting. | $\begin{aligned} & 17,18,19,20, \\ & 21,22,23,24, \\ & 25 \end{aligned}$ | 11 | 4 | 18 |  |


| Problem Number | Description | Difficulty Level | Time <br> Allotted (min.) |
| :---: | :---: | :---: | :---: |
| 1 A | Classify manufacturing costs into different categories and compute the unit cost. | Simple | 20-30 |
| 2 A | Classify manufacturing costs into different categories and compute the unit cost. | Simple | 20-30 |
| 3A | Indicate the missing amount of different cost items, and prepare a condensed cost of goods manufactured schedule, an income statement, and a partial balance sheet. | Moderate | 30-40 |
| 4A | Prepare a cost of goods manufactured schedule, a partial income statement, and a partial balance sheet. | Moderate | 30-40 |
| 5A | Prepare a cost of goods manufactured schedule and a correct income statement. | Moderate | 30-40 |

Correlation Chart between Bloom's Taxonomy, Learning Objectives and End-of-Chapter Exercises and Problems

| Learning Objective | Knowledge | Comprehension | Application |  | Analysis | Synthesis | Evaluation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. Identify the features of managerial accounting and the functions of management. |  | Q1-1  <br> Q1-2 BE1-1 <br> Q1-3 BE1-2 <br> Q1-4 D11-1 <br> Q1-5 E1-1 <br> Q1-6  |  |  |  |  |  |
| 2. Describe the classes of manufacturing costs and the differences between product and period costs. | Q1-10 | Q1-8 BE1-6 <br> Q1-9 DI1-2 <br>  E1-2 <br>  E1-3 <br> BE1-3 E1-5 <br> BE1-4  <br> BE1-5  <br> Q1-7  | $\begin{aligned} & E 1-4 \\ & E 1-7 \\ & E 1-13 \end{aligned}$ | $\begin{aligned} & \hline \text { P1-1A } \\ & \text { P1-2A } \end{aligned}$ |  |  |  |
| 3. Demonstrate how to compute cost of goods manufactured and prepare financial statements for a manufacturer. |  | $\begin{aligned} & \text { Q1-7 }{ }^{\text {Q1-12 }} \begin{array}{l} \text { Q1-11 } \\ \text { E1-15 } \end{array} \end{aligned}$ | $\begin{aligned} & \text { Q1-13 } \\ & \text { Q1-14 } \\ & \text { Q1-15 } \end{aligned}$ <br> BE1-7 <br> BE1-8 | BE1-9 E1-13 <br> BE1-10 E1-14 <br> D11-3 E1-16 <br> E1-8 E1-17 <br>  P1-4A <br> E1-12  | $\begin{array}{\|l} \mathrm{E} 1-9 \\ \mathrm{E} 1-10 \\ \mathrm{E} 111 \\ \mathrm{P} 1-3 \mathrm{~A} \\ \mathrm{P} 1-5 \mathrm{~A} \end{array}$ |  |  |
| 4. Discuss trends in managerial accounting. | Q1-16 | Q1-17 Q1-25 <br> Q1-19 BE1-11 <br> Q1-20 D11-4 <br> Q1-21 E1-18 <br> Q1-22  <br> Q1-23  <br> Q1-24  |  |  |  |  |  |
| Continuing Problems |  |  | $\begin{aligned} & \hline \text { CD1 } \\ & \text { WP1 } \end{aligned}$ |  |  |  |  |
| Expand Your Critical Thinking | CT1-3 | CT1-6 |  |  | $\begin{aligned} & \text { CT1-1 } \\ & \text { CT1-2 } \\ & \text { CT1-4 } \end{aligned}$ |  | $\begin{aligned} & \text { CT1-5 } \\ & \text { CT1-7 } \end{aligned}$ |

## ANSWERS TO QUESTIONS

1. (a) Disagree. 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 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. The 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 all users. The purpose of managerial accounting is to provide special-purpose information for specific decisions.
LO1 BT: C Difficulty: Easy TOT: 5 min . AACSB: None AICPA FC: Measurement IMA: Cost Management
3. Differences in the content of the reports are as follows:

## Financial

- Pertains to business as a whole and is highly aggregated.
- Limited to double-entry accounting and cost data.
- Generally accepted accounting principles.


## Managerial

- Pertains to subunits of the business and may be very detailed.
- Extends beyond double-entry 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 issued by managerial accountants.
LO1 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement 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 IMA: Cost Management
5. Disagree. 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 IMA: Cost Management
6. Employees with line positions are directly involved in the company's primary revenue generating operating activities. Examples would include plant managers and supervisors, and the vice president of operations. In contrast, employees with staff positions are not directly involved in revenuegenerating 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 IMA: Cost Management

## Questions Chapter 1 (Continued)

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 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 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 IMA: Cost management
10. Product costs, or inventoriable costs, are costs that are a necessary and integral part of producing the finished product. Period costs are costs that are identified with a specific time period rather than with a salable product. These costs relate to nonmanufacturing costs and therefore are not inventoriable costs.
LO2 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement IMA: Cost management
11. A merchandising company has beginning inventory, cost of goods purchased, and ending inventory. A manufacturing company has beginning finished goods inventory, cost of goods manufactured, and ending finished goods inventory.
LO3 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement IMA: Cost management
12. (a) $X=$ total cost of work in process.
(b) $\mathrm{X}=$ cost of goods manufactured.

LO3 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement IMA: Cost management
13. Raw materials inventory, beginning

Raw materials purchases
Total raw materials available for use.................................................................... 182,000

Raw materials inventory, ending
LO3 BT: AP Difficulty: Easy TOT: 3 min. AACSB: Analytic AICPA FC: Measurement 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 used ................................................................................................. 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 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 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 listing 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 IMA: Cost management

## Questions Chapter 1 (Continued)

17. The products differ in how each are consumed by the customer. Services are consumed immediately; the product is not put 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 consumed in a manufacturing environment.
LO4 BT: C Difficulty: Easy TOT: 3 min . AACSB: None AICPA FC: Measurement 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 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.
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: Decision Modeling 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: Decision Modeling 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: Decision Modeling 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 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: Professional Demeanor IMA: Business Applications
24. 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 AICPA PC: Professional Demeanor 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: Decision Modeling IMA: Cost management

## SOLUTIONS TO BRIEF EXERCISES

## BRIEF EXERCISE 1-1

|  | Financial Accounting |  |  |
| :--- | :--- | :--- | :--- |
| Primary users | External users |  | Internal users |

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 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 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 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 IMA: Cost Management
BRIEF EXERCISE 1-6
Product Costs

| Direct Materials | Direct <br> Labor | Factory Overhead |
| :---: | :---: | :---: |
|  |  | X |
| X |  |  |
|  |  | X |
|  | X |  |

BRIEF EXERCISE 1-7
(a) Direct materials used........................................................... \$180,000

Direct labor.......................................................................... 209,000
Total manufacturing overhead............................................ 208,000
Total manufacturing costs........................................... \$597,000
(b) Beginning work in process ................................................. \$ 25,000 Total manufacturing costs 597,000
Total cost of work in process \$622,000

# ROLAND COMPANY <br> Balance Sheet <br> December 31, 2020 

Current assets
Cash ..... \$ 62,000Accounts receivable200,000
Inventories
Finished goods

$\qquad$
\$91,000Work in process ........................................ 87,000Raw materials83,00038,000
Total current assets\$561,000LO3 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 <br> Materials Used | Direct <br> Labor Used | Factory Overhead | Total <br> Manufacturing Costs |
| :---: | :---: | :---: | :---: | :---: |
| (1) |  |  |  | \$151,000 |
| (2) | \$81,000 |  |  |  |
| (3) |  | \$144,000 |  |  |

BRIEF EXERCISE 1-10

|  | Total <br> Manufacturing Costs | Work in <br> Process <br> (January 1) | Work in Process (December 31) | Cost of Goods Manufactured |
| :---: | :---: | :---: | :---: | :---: |
| (1) | \$151,000* |  |  | \$189,000 |
| (2) |  | \$133,000 |  |  |
| (3) |  |  | \$58,000 |  |
| *\$40,000 + \$61,000 + \$50,000 (data from BE 1-9) |  |  |  |  |
|  |  |  |  |  |

## BRIEF EXERCISE 1-11

One implication of 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 safeguard the company's assets and 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.
LO4 BT: C Difficulty: Easy TOT: 6 min. AACSB: Analytic AICPA PC: Professional Demeanor, Communication IMA: FSA, Business Applications

## SOLUTIONS FOR DO IT! EXERCISES

## DO IT! 1-1

1. False
2. False
3. False
4. True

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

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



## 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 IMA: Cost Management
EXERCISE 1-2
11. (b) Direct labor.*
12. (c) Manufacturing overhead.
13. (c) Manufacturing overhead.
14. (c) Manufacturing overhead.
15. (a) Direct materials.
16. (b) Direct labor.
17. (c) Manufacturing overhead.
18. (c) Manufacturing overhead.
19. (c) Manufacturing overhead.
20. (a) Direct materials.
*or sometimes (c), depending on the circumstances
LO2 BT: C Difficulty: Easy TOT: 6 min . AACSB: None AICPA FC: Measurement IMA: Cost Management

## EXERCISE 1-3

(a) Bicycle components DM Advertising expense ..... Period
Depreciation on plant MOH Property taxes on plant ..... MOH
Property taxes on store Period Delivery expense ..... Period
Labor costs of assembly Sales commissions Periodline workers............................DL Salaries paid to sales clerks....Period
Factory supplies used...... MOH
MOH
(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 goods are sold. Period costs are recognized as an expense when incurred.
LO2 BT: C Difficulty: Easy TOT: 8 min . AACSB: None AICPA FC: Measurement 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 $=\mathrm{MOH}$ )
(b) Direct materials ..... \$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 IMA: Cost Management

1. (c)
2. (a)
3. (b)*
4. (a)
5. 

(c)
2. (c)
4. (c)
6. (d)
8. (b)
10.
(c)
*or sometimes (c), depending on the circumstances.
LO2 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement 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, 4 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement 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 | $\underline{300}$ |
| Total | $\underline{\$ 41,100}$ |

$(\$ 6,400+\$ 11,200+\$ 5,000+\$ 2,200+\$ 16,000+\$ 300=\$ 41,100)$
(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 |
| $\quad$ Total | $\underline{\$ 19,290}$ |

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

## EXERCISE 1-8

(a) Work in process, 1/1
Direct materials used
Direct labor
Manufacturing overhead
Depreciation on plant ..... \$60,000
Factory supplies used ..... 23,000
Property taxes on plant ..... 14,000
\$ 12,000
\$ 12,000 ..... \$120,000 ..... 110,000 ..... 110,000
110,000
110,000
Total manufacturing overhead ..... 97,000Total manufacturing costs.327,000
Total cost of work in process ..... 339,000
Less: ending work in process ..... 15,500Cost 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 plant + Fact. sup. used + Prop. tax on plant)) - End. WIP = COGM]
(b) Finished goods, 1/1 ..... \$ 60,000
Cost of goods manufactured ..... 323,500
Cost of goods available for sale ..... 383,500
Less: Finished goods, 12/31 ..... 45,600
Cost of goods sold ..... \$337,900
LO3 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Reporting IMA: Cost management
EXERCISE 1-9
Total raw materials available for use:
Direct materials used ..... \$180,000
Add: Raw materials inventory (12/31) ..... 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)
Raw materials inventory (1/1):
Total raw materials available for use:
Direct materials used ..... \$180,000
Add: Raw materials inventory (12/31) ..... 22,500
Total raw materials available for use ..... 202,500
Less: Raw materials purchases ..... 158,000
Raw materials inventory (1/1) \$44,500(\$180,000 + \$22,500-\$158,000 = \$44,500)(DM used + End. raw mat. - Raw mat. purch. = Beg. raw mat.)

## EXERCISE 1-9 (Continued)

Total cost of work in process:Cost of goods manufactured\$540,000Add: Work in process (12/31)81,000Total cost of work in process\$621,000
Total manufacturing costs:
Total cost of work in process ..... \$621,000
Less: Work in process (1/1) ..... 210,000
Total manufacturing costs
\$411,000
Direct labor:
Total manufacturing costs ..... \$411,000
Less: Total 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. OH + DM used) = DL]LO3 BT: AN Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting
EXERCISE 1-10

## Case A

A + \$57,000 + \$46,500 = \$195,650
$\mathrm{A}=\mathbf{\$ 9 2 , 1 5 0}$

$$
\$ 195,650+B=\$ 221,500
$$

$$
B=\$ 25,850
$$

\$221,500 - C = \$185,275
C = \$36,225

## Case B

$$
\begin{array}{ll}
\hline \$ 68,400+\$ 86,000+\$ 81,600=D & \$ 337,000-\$ 70,000=I \\
D=\$ 236,000 & I=\$ 267,000
\end{array}
$$

$\$ 252,500-\$ 11,000=F$
F = \$241,500

## Case C

\$130,000 + G + \$102,000 = \$253,700
$\mathbf{G}=\mathbf{\$ 2 1 , 7 0 0}$
\$253,700 + H = \$337,000
H = \$83,300
\$236,000 + \$16,500 = E

$$
\$ 236,000+\$ 16,500=E
$$

$$
E=\$ 252,500
$$

## Additional explanation to EXERCISE 1-10 solution:

## Case A

(a) Total manufacturing costs ..... \$195,650Less: Manufacturing overhead\$46,500
Direct labor 57,000103,500\$ 92,150
Direct materials used\$ 92,150
[ $\$ 195,650-(\$ 46,500+\$ 57,000)=\$ 92,150]$[Tot. mfg. costs $-(\mathrm{MOH}+\mathrm{DL})=\mathrm{DM}$ used]
(b) Total cost of work in process ..... \$221,500
Less: Total manufacturing costs

$\qquad$
Work in process (1/1/20) ..... 195,650
\$25,850
(c) Total cost of work in process ..... \$221,500
Less: Cost of goods manufactured
Work in process (12/31/20) \$ 36,225
Case B
(d) Direct materials used
Direct labor ..... \$ 68,400
Manufacturing overhead
Total manufacturing costs ..... 86,000 ..... 81,600
\$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 (1/1/20) ..... 16,500\$252,500
(f) Total cost of work in process ..... \$252,500
Less: Work in process (12/31/20)Cost of goods manufactured\$241,500
Case C
(g) Total manufacturing costs\$253,700
Less: Manufacturing overhead ..... \$102,000
Direct materials used ..... 130,000232,000
Direct labor\$21,700
[\$253,700 - (\$102,000 + \$130,000) = \$21,700]
[Tot. mfg. costs $-(\mathrm{MOH}+\mathrm{DM}$ used $)=\mathrm{DL}$ ]

## EXERCISE 1-10 (Continued)

(h) Total cost of work in process

Less: Total manufacturing costs
Work in process (1/1/20)
(i) Total cost of work in process

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

## EXERCISE 1-11

(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) $\quad \$ 265,000+\$ 60,000-\$ 80,000=\$ 245,000$
$(\$ 265,000+\$ 60,000-\$ 80,000=\$ 245,000)$
(Tot. mfg. costs + Beg. WIP - End. WIP = COGM)
(g) $\$ 288,000-(\$ 70,000+\$ 75,000)=\$ 143,000$
(h) $\$ 288,000+\$ 45,000-\$ 270,000=\$ 63,000$
Work in process, January 1 ..... \$ 33,000
Direct materials ..... \$117,000
Direct labor ..... 140,000
Manufacturing overhead ..... 87,000
Total manufacturing costs ..... 344,000377,000
Less: Work in process inventory, December 31 ..... 17,000
Cost of goods manufactured ..... \$360,000

## CEPEDA CORPORATION

## Cost of Goods Manufactured Schedule

For the Month Ended June 30, 2020

| Work in process, June 1.......................... |  | \$ 3,000 |
| :---: | :---: | :---: |
| Direct materials used.............................. | \$20,000 |  |
| Direct labor. | 40,000 |  |
| Manufacturing overhead |  |  |
| Indirect labor | \$4,500 |  |
| Factory manager's salary | 3,000 |  |
| Indirect materials. | 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 |
| $000+(\$ 20,000+\$ 40,000+(\$ 4,500+\$ 3,000+\$ 2,200+\$ 1,800$ g. WIP + (DM used + DL + (Ind. labor + Fact. mgrs.. sal. + Ind. ma act. util.))) - End. WIP = COGM] | $\$ 1,400+\$ 400))$ ) $-\$ 3,800=$ <br> + Maint., fact. equip. + Dep | $\begin{aligned} & \$ \overline{72,500]} . \text { fact. equip. } \end{aligned}$ |

## EXERCISE 1-12 (Continued)

(b)

# CEPEDA CORPORATION <br> Income Statement (Partial) <br> For the Month Ended June 30, 2020 

Sales revenue ..... \$92,100
Cost of goods soldFinished 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 ..... 7,500Cost of goods sold70,000
Gross profit\$22,100LO3 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting
EXERCISE 1-13
(a)
WASHINGTON CONSULTING
Schedule of Cost of Contract Services Performed For the Month Ended August 31, 2020
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 overheadCost 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 cost of contract services provided wouldall be classified as period costs. As such, they would be reported onthe income statement under administrative expenses.
LO3 BT: AP Difficulty: Easy TOT: 6 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

## EXERCISE 1-14

(a) Work in process, $1 / 1$

Direct materials
Materials inventory, 1/1................... \$ 21,000
Materials purchased........................ 150,000
Materials available for use.............. 171,000
Less: Materials inventory, 12/31..... 30,000
Direct materials used ............................. $\$ 141,000$
Direct labor
Manufacturing overhead 180,000
Total manufacturing costs
541,000
Total cost of work in process
554,500
Less: Work in process, 12/31 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. DM + DM purch. - End. DM $)+$ DL + MOH $)-$ End. WIP = COGM]

## AIKMAN COMPANY

 Income Statement (Partial)For the Year Ended December 31, 2020
(b) Sales revenue $\qquad$
Cost of goods sold
Finished goods, 1/1
\$ 27,000
Cost of goods manufactured
537,300
Cost of goods available for sale 564,300
Less: Finished goods, 12/31
Cost of goods sold.
Gross profit
\$366,700
$[\$ 910,000-(\$ 27,000+\$ 537,300-\$ 21,000)=\$ 366,700]$
[Sales rev. - (Beg. FG + COGM - End. FG) = GP]

## AIKMAN COMPANY

(Partial) Balance Sheet
December 31, 2020
(c) Current assets

Inventories
Finished goods.............................................. \$21,000
Work in process ............................................ 17,200
Raw materials................................................ 30,000
\$68,200

## EXERCISE 1-14 (Continued)

(d) In a merchandising company's income statement, the only difference would be in the computation of cost of goods sold. Beginning and ending finished goods 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 1-15

1. (a)
2. (a)
3. (a), (c)
4. (b)
5. (a)
6. (a)
7. (a)
8. (b), (c)

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

## ROBERTS COMPANY <br> Cost of Goods Manufactured Schedule <br> For the Month Ended June 30, 2020

| Work in process inventory, June 1 $\qquad$ Direct materials |  | \$ 5,000 |
| :---: | :---: | :---: |
|  |  |  |
| 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 |
| $\begin{aligned} & 000+((\$ 9,000+\$ 54,000-\$ 13,100)+\$ 47,000+(\$ 5,500+\$ 4,000+\$ 4,000+\$ 3,100+\$ 1,800+\$ 1,500))- \\ & 00=\$ 14,800] \end{aligned}$ |  |  |
| WIP + ((Beg. raw mat. + Raw mat. purch. - End. raw mat.) + DL + util. + Mach. repairs + Misc. fact. costs)) - End. WIP = COGM] | (Ind. labor + Fact. ins. + | ach. depr. + |

(b)

ROBERTS COMPANY (Partial) Balance Sheet

June 30, 2020

## Current assets

Inventories


## EXERCISE 1-17

(a) Raw Materials account: $\quad(5,000-4,650) \times \$ 15=\$ 5,250$ 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: $\quad 50 \times \$ 15=\$ 750$
Proof of cost of head lamps allocated $(5,000 \times \$ 15=\$ 75,000)$

Raw materials
Work in process
Finished goods
Cost of goods sold Selling expenses

Total
\$ 5,250
6,900
18,630
43,470
750
\$75,000
[(Raw mat.: $(5,000-4,650) \times \$ 15=\$ 5,250)$; (WIP: $4,600 \times 10 \% \times \$ 15=\$ 6,900)$; (Fin. gds.: $(4,600 \times 90 \% \times 30 \%)$ x $\$ 15=\$ 18,630)$; (CGS: $(4,600 \times 90 \% \times 70 \%) \times \$ 15=\$ 43,470)$; (Sell. $\exp .: 50 \times \$ 15=\$ 750)]$
[(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 shown on the income statement.

The other accounts associated with the head lamps are inventory accounts which contain end-of-period balances. Thus, they will 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 IMA: Cost Management

## EXERCISE 1-18

(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: Decision Modeling IMA: Strategic Planning

| Cost Item | Product Costs |  |  | Period Costs |
| :---: | :---: | :---: | :---: | :---: |
|  | Direct Materials | Direct Labor | Manufacturing Overhead |  |
| Rent on factory equipment |  |  | \$11,000 |  |
| Insurance on factory building |  |  | 1,500 |  |
| Raw materials | \$75,000 |  |  |  |
| Utility costs for factory |  |  | 900 |  |
| Supplies for general office |  |  |  | \$ 300 |
| Wages for assembly line workers |  | \$58,000 |  |  |
| Depreciation on office equipment |  |  |  | 800 |
| Miscellaneous materials |  |  | 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 |
| $[(\mathrm{MOH}: \$ 11,000+\$ 1,500+\$ 900+\$ 1,100+\$ 5,700$ $\$ 10,000=\$ 25,100)]$ | $+\overline{\$ 400+\$ 1,500}$ | = \$22,100); | riod costs: $\$ 300+\$ 80$ | $+\overline{\$ 14,000+}$ |
| [(MOH: Rent, fact. equip. + Ins., fact. bldg. + Fact. bldg. = Tot.); (Period costs: Supp., gen. off. + Depr. | + Misc. mat. + | ct. mgrs.. for helmet | + Prop. tax, fact. bldg <br> Sales comm. = Tot.) | Depr., fact. |

(b) Total production costs

| Direct materials | $\$ 75,000$ |
| :--- | ---: |
| Direct labor | 58,000 |
| Manufacturing overhead | $\mathbf{2 2 , 1 0 0}$ |
| Total production cost | $\underline{\$ 155,100}$ |

\$ 75,000 58,000
\$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 IMA: Cost Management


## PROBLEM 1-3A

## (a) Case 1

$A=\$ 9,600+\$ 5,000+\$ 8,000=\$ 22,600$
\$22,600 + \$1,000 - B = \$17,000
$B=\$ 22,600+\$ 1,000-\$ 17,000=\$ 6,600$
\$17,000 + C = \$22,000
C = \$22,000 $\mathbf{- \$ 1 7 , 0 0 0 = \$ 5 , 0 0 0 ~}$
$D=\$ 22,000-\$ 3,400=\$ 18,600$
$E=(\$ 24,500-\$ 2,500)-\$ 18,600=\$ 3,400$
$F=\$ 3,400-\$ 2,500=\$ 900$
[(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
$\mathrm{G}=\$ 16,000-\$ 8,000-\$ 4,000=\$ 4,000$
$\$ 16,000+\mathrm{H}-\$ 3,000=\$ 24,000$
H = \$24,000 + \$3,000 $\boldsymbol{-} \mathbf{\$ 1 6 , 0 0 0 = \$ 1 1 , 0 0 0}$
(I - \$1,400) - K = \$7,000
(I - \$1,400) - \$24,800 = \$7,000
I = \$1,400 + \$24,800 + \$7,000 = \$33,200
(Note: Item I can only be solved after item K is solved.)
$\mathbf{J}=\mathbf{\$ 2 4 , 0 0 0} \boldsymbol{+} \mathbf{\$ 3 , 3 0 0}=\mathbf{\$ 2 7 , 3 0 0}$
$K=\$ 27,300-\$ 2,500=\$ 24,800$
\$7,000 - L = \$5,000
$L=\$ 2,000$

## PROBLEM 1-3A (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

| 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

| 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 ............................. |  |  | 600 |
| Gross profit .................................................... |  |  | , 400 |
| Operating expenses........................................ |  |  | 500 |
| Net income ........ |  | \$ | 900 |
| $500-\$ 2,500)-(\$ 5,000+\$ 17,000-\$ 3,400)-\$ 2,500=\$ 900]$ <br> s rev. - Sales disc.) - (Beg. fin. gds. + COGM - End. fin. gds.) - Oper. exp |  |  |  |

## PROBLEM 1-3A (Continued)

## CASE 1

(Partial) Balance Sheet
Current assets
Cash ..... \$ 3,000
Receivables (net) ..... 15,000
Inventories
Finished goods ..... \$3,400Work in process.6,600Raw materials60010,600
Prepaid expenses. ..... 400Total current assets\$29,000

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

## PROBLEM 1-4A

## CLARKSON COMPANY <br> Cost of Goods Manufactured Schedule <br> For the Year Ended June 30, 2020

Work in process, July 1, 2019 ............ \$ 19,800
Direct materials
Raw materials inventory, July 1, 2019 .............................. \$ 48,000
Raw materials purchases
96,400
Total raw materials available for use

144,400
Less: Raw materials inventory,
June 30, 2020 .................. 39,600
Direct materials used
\$104,800
Direct labor 139,250
Manufacturing overhead Plant 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 $\qquad$ 141,660
Total manufacturing costs

385,710
405,510

Total cost of work in process
\$386,910 18,600

Cost of goods manufactured
$[\$ 19,800+((\$ 48,000+\$ 96,400-\$ 39,600)+\$ 139,250+(\$ 58,000+\$ 27,600+\$ 24,460+\$ 16,000+\$ 9,600+$ $\$ 4,600+\$ 1,400))-\$ 18,600=\$ 386,910]$
[Beg. WIP + ((Beg. raw mat. + Raw mat. purch. - End. raw mat.) + DL + (Plant mgrs.. sal. + Fact. util. + Ind. labor + Fact. mach. depr. + Fact. prop. tax. + Fact. ins. + Fact. repairs)) - End. WIP = COGM]

## PROBLEM 1-4A (Continued)

(b)

CLARKSON COMPANY
(Partial) Income Statement
For the Year Ended June 30, 2020
Sales revenues
Sales revenue ..... \$534,000
Less: Sales discounts ..... 4,200
Net sales ..... \$529,800
Cost of goods sold
Finished goods inventory,July 1, 201996,000
Cost of goods manufactured ..... 386,910
Cost of goods available for sale ..... 482,910
Less: Finished goods inventory, June 30, 2020 ..... 75,900
Cost of goods sold407,010
Gross profit ..... \$122,790
$[(\$ 534,000-\$ 4,200)-(\$ 96,000+\$ 386,910-\$ 75,900)=\$ 122,790]$[(Sales rev. - Sales disc.) - (Beg. fin. gds. + COGM - End. fin. gds.) = GP]
(c)
CLARKSON COMPANY(Partial) Balance SheetJune 30, 2020
Assets
Current assets
Cash ..... \$ 32,000
Accounts receivable ..... 27,000
Inventories
Finished goods ..... \$75,900
Work in process. ..... 18,600Raw materials39,600134,100
Total current assets \$193,100
LO3 BT: AP Difficulty: Moderate TOT: 35 AACSB: Analytic AICPA FC: Reporting IMA: Reporting

## PROBLEM 1-5A

(a)

## EMPIRE COMPANY Cost of Goods Manufactured Schedule For the Month Ended October 31, 2020

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

$\qquad$ ..... 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

[^0]
## PROBLEM 1-5A (Continued)

(b)

## EMPIRE COMPANY Income Statement <br> For the Month Ended October 31, 2020

Sales revenue ..... \$780,000
Cost of goods sold
Finished goods inventory, October 1 ..... \$ 30,000
Cost of goods manufactured ..... 581,800
Cost of goods available for sale ..... 611,800
Less: Finished goods inventory,October 31.................................... 50,000
Cost of goods sold

$\qquad$50,000
Gross profit218,200
Operating expenses
Advertising expense ..... 90,000
Selling and administrative salaries ..... 75,000
Depreciation expense-salesequipment45,000
Insurance expense** ..... 3,200
Utilities expense* ..... 3,000
Total operating expenses216,200
Net income\$ 2,000

## CURRENT DESIGNS

CD1

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 Plant 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 <br> report | Information report <br> would contain | How frequently <br> should it be <br> issued? |
| :--- | :--- | :--- | :--- |
| Mike Cichanowski | Analysis of <br> proposed <br> new product <br> line | Projected revenues <br> and expenses for a <br> possible new <br> product line | As needed and <br> requested |
| Diane Buswell | Company- <br> wide budget <br> analysis | Revenues, expenses, <br> and net income <br> compared to the <br> budgeted amounts <br> for each | Monthly |
| Deb Welch | Purchasing <br> History | List of items <br> purchased and most <br> recent cost for each <br> item | Monthly or <br> available on- <br> line |
| Bill Johnson | Sales <br> Summary | Sales by product <br> line and by <br> customer | Monthly or <br> weekly |
| Dave Thill | Cost of <br> Production <br> Report | Direct materials, <br> direct labor, and <br> manufacturing <br> overhead costs <br> assigned to each <br> product line | Monthly or <br> weekly |
| Rick Thrune | Cost of <br> Production <br> Report for <br> Composite <br> Kayaks | Detailed direct <br> material and direct <br> labor costs for the <br> 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 <br> Labor | Manufacturing Overhead |  |
| Winona Agency | Property insurance for the manufacturing plant |  |  | \$3,200 |  |
| Bill Johnson (sales manager) | Payroll-payment to sales manager |  |  |  | \$1,700 |
| Xcel Energy | Electricity for manufacturing plant |  |  | 450 |  |
| Winona Printing | Price lists for salespeople |  |  |  | 85 |
| Jim Kaiser (sales representative) | Sales commissions |  |  |  | 1,250 |
| Dave Thill (plant manager) | Payroll-payment to plant 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 plant |  |  | 5,480 |  |
| North American Composites | Kevlar® fabric for composite kayaks | 4,930 |  |  |  |
| Waste Management | Trash disposal for the company office building |  |  |  | 660 |
| None | Journal entry to 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 IMA: Cost Management, Performance Measurement

## 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 $=\mathbf{\$ 3 8 4 , 0 0 0}-\mathbf{\$ 3 5 0 , 0 0 0}=\underline{\underline{\$ 34,000}}$
(\$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 + Direct labor + Manufacturing overhead
= Total manufacturing costs
$=\$ 350,000+\$ 250,000+(\$ 250,000 \times 60 \%)=\$ 750,000$
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 $=\$ 775,000-\$ 732,000=\$ 43,000$
$[(\$ 25,000+(\$ 350,000+\$ 250,000+(\$ 250,000 \times 60 \%))=\$ 775,000) ;(\$ 770,000-\$ 38,000=\$ 732,000) ;$
(\$775,000-\$732,000 = \$43,000)]
$[($ Beg. WIP $+(\mathrm{DM}+\mathrm{DL}+(\mathrm{DL} \times$ 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 $=\$ 1,240,000-\$ 496,000=\$ 744,000$

## CT1-1 ( Continued)

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
Dave Marley
Kevin Carson
Sally Renner
(b) Jason Dennis

Peggy Groneman
Dave Marley
Kevin Carson

Sally Renner
(c) Jason Dennis

Peggy Groneman

Dave Marley

Kevin Carson

Sally Renner

Needs cost information for her department.
Needs all manufacturing accounting information.
Needs product cost information.
Needs information on component costs and costs for her department.
Income statement.
None.
All.
Income statement and cost of goods manufactured schedule.
None.
Sales by Territory—Detailed information, possibly by product line, issued daily or weekly.
Cost of Computer Programs-Accumulated cost incurred for each major program used including maintenance and updates of program, issued monthly.
Cost of Preparing Reports-Detailed analysis of all reports provided, their frequency, time, and estimated cost to prepare, issued monthly.
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.
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 Meaurement

## CT 1-3 <br> REAL-WORLD FOCUS

(a) The IMA has more than 85,000 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

Ms. Shelly Phillips<br>President<br>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.
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 IMA: Reporting

## CT 1-5 <br> 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: professional Demeanor, 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.
(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.
(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.
(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.
LO N/A BT: C Difficulty: Moderate TOT: 25 min . AACSB: None AICPA FC: Measurement 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 AICPA PC:
Communication IMA: Cost management


[^0]:    *\$12,000 X 75\% = \$9,000
    **\$ 8,000 X $60 \%=\$ 4,800$
    $[\$ 20,000+((\$ 18,000+\$ 264,000-\$ 29,000)+\$ 190,000+(\$ 60,000+\$ 31,000+\$ 28,000+(\$ 12,000 \times 75 \%)+$ $(\$ 8,000 \times 60 \%)))-\$ 14,000=\$ 581,800]$
    [Beg. WIP + ((Beg. raw mat. + Raw mat. purch. - End. raw mat. $)+$ DL + (Fact. facil. rent + Depr. on fact. equip. + Ind. labor + Fact. util. + Fact. ins.)) - End. WIP = COGM]

