

## **Chapter 02**

### **Basic Cost Management Concepts and Accounting for Mass Customization Operations**

#### **True / False Questions**

1. Inventoriable costs are expensed when incurred.

True   False

2. Finished goods inventory is ordinarily held for sale by a manufacturing company.

True   False

3. Indirect labor is not a component of manufacturing overhead.

True   False

4. The following equation -- Beginning finished goods + cost of goods manufactured - ending finished goods -- is used to calculate cost of goods sold during the period.

True   False

5. A suitable cost driver for the amount of direct materials used is the number of direct labor hours worked.

True   False

#### **Multiple Choice Questions**

6. Which of the following statements is true?

- A. The word "cost" has the same meaning in all situations in which it is used.
- B. Cost data, once classified and recorded for a specific application, are appropriate for use in any application.
- C. Different cost concepts and classifications are used for different purposes.
- D. All organizations incur the same types of costs.
- E. Costs incurred in one year are always meaningful in the following year.

7. Product costs are:

- A. expensed when incurred.
- B. inventoried.
- C. treated in the same manner as period costs.
- D. treated in the same manner as advertising costs.
- E. subtracted from cost of goods sold.

8. Which of the following is a product cost?

- A. Glass in an automobile.
- B. Advertising.
- C. The salary of the vice president-finance.
- D. Rent on a factory.
- E. Both "A" and "D."

9. Which of the following would not be classified as a product cost?

- A. Direct materials.
- B. Direct labor.
- C. Indirect materials.
- D. Insurance on a manufacturing plant.
- E. Sales commissions.

10. The accounting records of Georgia Company revealed the following costs: direct materials used, \$250,000; direct labor, \$425,000; manufacturing overhead, \$375,000; and selling and administrative expenses, \$220,000. Georgia's product costs total:

- A. \$1,050,000.
- B. \$830,000.
- C. \$895,000.
- D. \$1,270,000.
- E. some other amount.

11. Costs that are expensed when incurred are called:

- A. product costs.
- B. direct costs.
- C. inventoriable costs.
- D. period costs.
- E. indirect costs.

12. Which of the following is a period cost?

- A. Direct material.
- B. Advertising expense.
- C. Indirect Labor.
- D. Miscellaneous supplies used in production activities.
- E. Both "B" and "C."

13. Which of the following is not a period cost?

- A. Legal costs.
- B. Public relations costs.
- C. Sales commissions.
- D. Wages of assembly-line workers.
- E. The salary of a company's chief financial officer (CFO).

14. The accounting records of Reynolds Corporation revealed the following selected costs: Sales commissions, \$65,000; plant supervision, \$190,000; and administrative expenses, \$185,000. Reynolds's period costs total:

- A. \$250,000.
- B. \$440,000.
- C. \$375,000.
- D. \$255,000.
- E. \$185,000.

15. Yang Corporation recently computed total product costs of \$567,000 and total period costs of \$420,000, excluding \$35,000 of sales commissions that were overlooked by the company's administrative assistant. On the basis of this information, Yang's income statement should reveal operating expenses of:

- A. \$35,000.
- B. \$420,000.
- C. \$455,000.
- D. \$567,000.
- E. \$602,000.

16. Which of the following entities would most likely have raw materials, work in process, and finished goods?

- A. Exxon Corporation.
- B. Macy's Department Store.
- C. Wendy's.
- D. Southwest Airlines.
- E. Columbia University.

17. Selling and administrative expenses would likely appear on the balance sheet of:

- A. The Gap.
- B. Texas Instruments.
- C. Turner Broadcasting System.
- D. All of these firms.
- E. None of these firms.

18. Which of the following inventories would a discount retailer such as Wal-Mart report as an asset?

- A. Raw materials.
- B. Work in process.
- C. Finished goods.
- D. Merchandise inventory.
- E. All of these.

19. Which of the following inventories would a company ordinarily hold for sale?

- A. Raw materials.
- B. Work in process.
- C. Finished goods.
- D. Raw materials and finished goods.
- E. Work in process and finished goods.

20. Godfrey Corporation engages in mass customization and direct sales, the latter by accepting customer orders over the Internet. As a result, Godfrey:

- A. would probably begin the manufacturing process upon receipt of a customer's order.
- B. would typically have fairly low inventory levels for the amount of sales revenue generated.
- C. would typically have fairly high inventory levels for the amount of sales revenue generated.
- D. would likely find choices "A" and "B" to be applicable.
- E. would likely find choices "A" and "C" to be applicable.

21. Companies that engage in mass customization:

- A. tend to have a relatively low production volume.
- B. tend to have a high production volume that involves highly standardized end-products.
- C. tend to have a high production volume, many standardized components, and customer-specified combinations of components.
- D. tend to have a high production volume, many unique components, and customer-specified combinations of components.
- E. could be typified by the refining operations of Shell Oil.

22. Mideast Motors manufactures automobiles. Which of the following would not be classified as direct materials by the company?

- A. Wheel lubricant.
- B. Tires.
- C. Interior leather.
- D. CD player.
- E. Sheet metal used in the automobile's body.

23. Which of the following employees of a commercial printer/publisher would be classified as direct labor?

- A. Book binder.
- B. Plant security guard.
- C. Sales representative.
- D. Plant supervisor.
- E. Payroll supervisor.

24. Lake Appliance produces washers and dryers in an assembly-line process. Labor costs incurred during a recent period were: corporate executives, \$500,000; assembly-line workers, \$180,000; security guards, \$45,000; and plant supervisor, \$110,000. The total of Lake's direct labor cost was:

- A. \$110,000.
- B. \$180,000.
- C. \$155,000.
- D. \$235,000.
- E. \$735,000.

25. Which of the following employees would not be classified as indirect labor?

- A. Plant Custodian.
- B. Salesperson.
- C. Assembler of wooden furniture.
- D. Plant security guard.
- E. Choices "B" and "C."

26. Depreciation of factory equipment would be classified as:

- A. operating cost.
- B. "other" cost.
- C. manufacturing overhead.
- D. period cost.
- E. administrative cost.

27. Which of the following costs is not a component of manufacturing overhead?

- A. Indirect materials.
- B. Factory utilities.
- C. Factory equipment.
- D. Indirect labor.
- E. Property taxes on the manufacturing plant.

28. The accounting records of Diego Company revealed the following costs, among others:

|                                    |           |
|------------------------------------|-----------|
| Factory insurance                  | \$ 32,000 |
| Raw material used                  | 256,000   |
| Customer entertainment             | 15,000    |
| Indirect labor                     | 45,000    |
| Depreciation on salespersons' cars | 22,000    |
| Production equipment rental costs  | 72,000    |

Costs that would be considered in the calculation of manufacturing overhead total:

- A. \$149,000.
- B. \$171,000.
- C. \$186,000.
- D. \$442,000.
- E. some other amount.

29. Which of the following statements is (are) correct?

- A. Overtime premiums should be treated as a component of manufacturing overhead.
- B. Overtime premiums should be treated as a component of direct labor.
- C. Idle time should be treated as a component of direct labor.
- D. Idle time should be accounted for as a special type of loss.
- E. Both "B" and "C" are correct.

30. Conversion costs are:

- A. direct material, direct labor, and manufacturing overhead.
- B. direct material and direct labor.
- C. direct labor and manufacturing overhead.
- D. prime costs.
- E. period costs.

31. Prime costs are comprised of:

- A. direct materials and manufacturing overhead.
- B. direct labor and manufacturing overhead.
- C. direct materials, direct labor, and manufacturing overhead.
- D. direct materials and direct labor.
- E. direct materials and indirect materials.

32. Which of the following statements is true?

- A. Product costs affect only the balance sheet.
- B. Product costs affect only the income statement.
- C. Period costs affect only the balance sheet.
- D. Neither product costs nor period costs affect the Statement of Retained Earnings. This can also be a true statement if the period costs were prepaid (i.e., prepaid advertising, depreciation).
- E. Product costs eventually affect both the balance sheet and the income statement.

33. In a manufacturing company, the cost of goods completed during the period would include which of the following elements?

- A. Raw materials used.
- B. Beginning finished goods inventory.
- C. Marketing costs.
- D. Depreciation of delivery trucks.
- E. All of the above.

34. Which of the following equations is used to calculate cost of goods sold during the period?

- A. Beginning finished goods + cost of goods manufactured + ending finished goods.
- B. Beginning finished goods - ending finished goods.
- C. Beginning finished goods + cost of goods manufactured.
- D. Beginning finished goods + cost of goods manufactured - ending finished goods.
- E. Beginning finished goods + ending finished goods - cost of goods manufactured.

35. Work-in-process inventory is composed of:

- A. direct material and direct labor.
- B. direct labor and manufacturing overhead.
- C. direct material and manufacturing overhead.
- D. direct material, direct labor, and manufacturing overhead.
- E. direct material only.

36. Holden Industries began July with a finished-goods inventory of \$48,000. The finished-goods inventory at the end of July was \$56,000 and the cost of goods sold during the month was \$125,000. The cost of goods manufactured during July was:

- A. \$104,000.
- B. \$125,000.
- C. \$117,000.
- D. \$133,000.
- E. some other amount.

37. Carolina Plating Company reported a cost of goods manufactured of \$520,000, with the firm's year-end balance sheet revealing work in process and finished goods of \$70,000 and \$134,000, respectively. If supplemental information disclosed raw materials used in production of \$80,000, direct labor of \$140,000, and manufacturing overhead of \$240,000, the company's beginning work in process must have been:

- A. \$130,000.
- B. \$10,000.
- C. \$66,000.
- D. \$390,000.
- E. some other amount.

38. The accounting records of Bronco Company revealed the following information:

|                                  |           |
|----------------------------------|-----------|
| Raw materials used               | \$ 60,000 |
| Direct labor                     | 125,000   |
| Manufacturing overhead           | 360,000   |
| Work-in-process inventory, 1/1   | 50,000    |
| Finished-goods inventory, 1/1    | 189,000   |
| Work-in-process inventory, 12/31 | 76,000    |
| Finished-goods inventory, 12/31  | 140,000   |

Bronco's cost of goods manufactured is:

- A. \$519,000.
- B. \$522,000.
- C. \$568,000.
- D. \$571,000.
- E. some other amount.

39. The accounting records of Dolphin Company revealed the following information:

|                                    |           |
|------------------------------------|-----------|
| Total manufacturing costs          | \$530,000 |
| Work-in-process inventory, Jan. 1  | 56,000    |
| Work-in-process inventory, Dec. 31 | 78,000    |
| Finished-goods inventory, Jan. 1   | 146,000   |
| Finished-goods inventory, Dec. 31  | 123,000   |

Dolphin's cost of goods sold is:

- A. \$508,000.
- B. \$529,000.
- C. \$531,000.
- D. \$553,000.
- E. some other amount.

40. The accounting records of Brownwood Company revealed the following information:

|                                    |           |
|------------------------------------|-----------|
| Work-in-process inventory, Jan. 1  | \$ 58,000 |
| Work-in-process inventory, Dec. 31 | 49,000    |
| Finished-goods inventory, Jan. 1   | 125,000   |
| Finished-goods inventory, Dec. 31  | 158,000   |
| Cost of goods manufactured         | 754,000   |

Brownwood's cost of goods sold is:

- A. \$721,000.
- B. \$730,000.
- C. \$778,000.
- D. \$787,000.
- E. some other amount.

41. For the year just ended, Cole Corporation's manufacturing costs (raw materials used, direct labor, and manufacturing overhead) totaled \$1,500,000. Beginning and ending work-in-process inventories were \$60,000 and \$90,000, respectively. Cole's balance sheet also revealed respective beginning and ending finished-goods inventories of \$250,000 and \$180,000. On the basis of this information, how much would the company report as cost of goods manufactured (CGM) and cost of goods sold (CGS)?

- A. CGM, \$1,430,000; CGS, \$1,460,000.
- B. CGM, \$1,470,000; CGS, \$1,540,000.
- C. CGM, \$1,530,000; CGS, \$1,460,000.
- D. CGM, \$1,570,000; CGS, \$1,540,000.
- E. Some other amounts.

|                                            |          |
|--------------------------------------------|----------|
| Raw materials inventory, January 1, 2011   | \$32,500 |
| Raw materials inventory, December 31, 2011 | \$26,700 |

42. If purchases of raw materials were \$135,000 during the year, what was the amount of raw materials used during the year?

- A. \$129,200.
- B. \$140,800.
- C. \$135,000.
- D. \$146,600.
- E. some other amount.

43. If raw materials used during the year were \$135,000 what was the amount of raw materials purchased during the year?

- A. \$129,200.
- B. \$140,800.
- C. \$135,000.
- D. \$146,600.
- E. some other amount.

|                                              |           |
|----------------------------------------------|-----------|
| Work-in-process inventory, January 1, 2011   | \$43,000  |
| Work-in-process inventory, December 31, 2011 | \$48,500  |
| Conversion costs during the year             | \$415,000 |

44. If direct materials used during the year were \$135,000, what was cost of goods manufactured?

- A. \$140,500.
- B. \$539,000.
- C. \$409,500.
- D. \$544,500.
- E. some other amount.

45. If the cost of goods manufactured for the year was \$565,000, what was the amount of direct materials used during the year?

- A. \$155,500.
- B. \$140,500.
- C. \$150,000.
- D. \$145,500.
- E. some other amount.

|                                             |          |
|---------------------------------------------|----------|
| Finished goods inventory, January 1, 2011   | \$29,300 |
| Finished goods inventory, December 31, 2011 | \$24,100 |

46. If the cost of goods manufactured for the year was \$385,000, what was the cost of goods sold for the year?

- A. \$395,400.
- B. \$385,000.
- C. \$390,200.
- D. \$400,600.
- E. some other amount.

47. If the cost of goods sold for the year was \$427,500, what was the cost of goods manufactured for the year?

- A. \$402,100.
- B. \$422,300.
- C. \$417,100.
- D. \$427,500.
- E. some other amount.

48. Glass Industries reported the following data for the year just ended: sales revenue, \$1,750,000; cost of goods sold, \$980,000; cost of goods manufactured, \$560,000; and selling and administrative expenses, \$170,000. Glass' gross margin would be:

- A. \$940,000.
- B. \$1,190,000.
- C. \$1,020,000.
- D. \$380,000.
- E. \$770,000.

49. Pumpkin Enterprises began operations on January 1, 20x1, with all of its activities conducted from a single facility. The company's accountant concluded that the year's building depreciation should be allocated as follows: selling activities, 20%; administrative activities, 35%; and manufacturing activities, 45%. If Pumpkin sold 60% of 20x1 production during that year, what percentage of the depreciation would appear (either directly or indirectly) on the 20x1 income statement?

- A. 27%.
- B. 45%.
- C. 55%.
- D. 82%.
- E. 100%.

50. An employee accidentally overstated the year's advertising expense by \$50,000. Which of the following correctly depicts the effect of this error?

- A. Cost of goods manufactured will be overstated by \$50,000.
- B. Cost of goods sold will be overstated by \$50,000.
- C. Both cost of goods manufactured and cost of goods sold will be overstated by \$50,000.
- D. Cost of goods sold will be overstated by \$50,000, and cost of goods manufactured will be understated by \$50,000.
- E. None of these.

51. Which of the following would likely be a suitable cost driver for the amount of direct materials used?

- A. The number of units sold.
- B. The number of direct labor hours worked.
- C. The number of machine hours worked.
- D. The number of units produced.
- E. The number of employees working in the factory.

52. The choices below depict five costs of Benton Corporation and a possible driver for each cost. Which of these choices likely contains an inappropriate cost driver?

- A. Gasoline consumed; number of miles driven.
- B. Manufacturing overhead incurred in a heavily automated facility; direct labor hours.
- C. Sales commissions; gross sales revenue.
- D. Building maintenance cost; building square footage.
- E. Human resources department cost; number of employees.

53. Variable costs are costs that:

- A. vary inversely with changes in activity.
- B. vary directly with changes in activity.
- C. remain constant as activity changes.
- D. decrease on a per-unit basis as activity increases.
- E. increase on a per-unit basis as activity increases.

54. As activity decreases, unit variable cost:

- A. increases proportionately with activity.
- B. decreases proportionately with activity.
- C. remains constant.
- D. increases by a fixed amount.
- E. decreases by a fixed amount.

55. As activity increases, unit variable cost:

- A. increases proportionately with activity.
- B. decreases proportionately with activity.
- C. remains constant.
- D. increases by a fixed amount.
- E. decreases by a fixed amount.

56. Which of the following is not an example of a variable cost?

- A. Straight-line depreciation on a machine that has a five-year service life.
- B. Wages of manufacturing workers whose pay is based on hours worked.
- C. Tires used in the production of tractors.
- D. Aluminum used to make patio furniture.
- E. Commissions paid to sales personnel.

57. Fixed costs are costs that:

- A. vary directly with changes in activity.
- B. vary inversely with changes in activity.
- C. remain constant on a per-unit basis.
- D. remain constant as activity changes.
- E. increase on a per-unit basis as activity increases.

58. The fixed cost per unit:

- A. will increase as activity increases.
- B. will increase as activity decreases.
- C. will decrease as activity increases.
- D. will remain constant.
- E. will exhibit the behavior described in choices "B" and "C."

59. Which of the following is an example of a fixed cost?

- A. Paper used in the manufacture of textbooks.
- B. Property taxes paid by a firm to the City of Los Angeles.
- C. The wages of part-time workers who are paid \$8 per hour.
- D. Gasoline consumed by salespersons' cars.
- E. Surgical supplies used in a hospital's operating room.

60. The true statement about cost behavior is that:

- A. variable costs are constant on a per-unit basis and change in total as activity changes.
- B. fixed costs are constant on a per-unit basis and change in total as activity changes.
- C. fixed costs are constant on a per-unit basis and constant in total as activity changes.
- D. variable costs change on a per-unit basis and change in total as activity changes.
- E. variable costs are constant on a per-unit basis and are constant in total as activity changes.

61. The true statement about cost behavior is that:

- A. variable costs change on a per-unit basis and change in total as activity changes.
- B. fixed costs are constant on a per-unit basis and change in total as activity changes.
- C. fixed costs are constant on a per-unit basis and constant in total as activity changes.
- D. fixed costs change on a per-unit basis and are constant in total as activity changes.
- E. variable costs are constant on a per-unit basis and are constant in total as activity changes.

62. The variable costs per unit are \$6 when a company produces 12,000 units of product. What are the variable costs per unit when 14,000 units are produced?

- A. \$4.50.
- B. \$5.00.
- C. \$5.50.
- D. \$6.00.
- E. Some other amount.

63. The fixed costs per unit are \$10 when a company produces 10,000 units of product. What are the fixed costs per unit when 8,000 units are produced?

- A. \$12.50.
- B. \$10.00.
- C. \$8.00.
- D. \$6.50.
- E. \$5.50.

64. Total costs are \$180,000 when 10,000 units are produced; of this amount, variable costs are \$64,000. What are the total costs when 13,000 units are produced?

- A. \$199,200.
- B. \$214,800.
- C. \$234,000.
- D. Some other amount.
- E. Total costs cannot be calculated based on the information presented.

65. When 5,000 units are produced variable costs are \$35 per unit and total costs are \$200,000. What are the total costs when 8,000 units are produced?

- A. \$200,000.
- B. \$305,000.
- C. \$240,000.
- D. Some other amount.
- E. Total costs cannot be calculated based on the information presented.

66. Baxter Company, which pays a 10% commission to its salespeople, reported sales revenues of \$210,000 for the period just ended. If fixed and variable sales expenses totaled \$56,000, what would these expenses total at sales of \$168,000?

- A. \$16,800.
- B. \$35,000.
- C. \$44,800.
- D. \$51,800.
- E. Some other amount.

67. Which of the following would not be characterized as a cost object?

- A. An automobile manufactured by General Motors.
- B. The New York Fire Department.
- C. A Burger King restaurant located in Cleveland, Ohio.
- D. A Delta Airlines flight from Atlanta to Miami.
- E. All of these are examples of cost objects.

68. Costs that can be easily traced to a specific department are called:

- A. direct costs.
- B. indirect costs.
- C. product costs.
- D. manufacturing costs.
- E. processing costs.

69. Which of the following would not be considered a direct cost with respect to the service department of a new car dealership?

- A. Wages of repair technicians.
- B. Property taxes paid by the dealership.
- C. Repair parts consumed.
- D. Salary of the department manager.
- E. Depreciation on new equipment used to analyze engine problems.

70. Indirect costs:

- A. can be traced to a cost object.
- B. cannot be traced to a particular cost object.
- C. are not important.
- D. are always variable costs.
- E. may be indirect with respect to Disney World but direct with respect to one of its major components, Epcot Center.

71. The salary that is sacrificed by a college student who pursues a degree full time is a(n):

- A. sunk cost.
- B. out-of-pocket cost.
- C. opportunity cost.
- D. differential cost.
- E. marginal cost.

72. The tuition that will be paid next semester by a college student who pursues a degree is a(n):

- A. sunk cost.
- B. out-of-pocket cost.
- C. indirect cost.
- D. average cost.
- E. marginal cost.

73. Which of the following costs should be ignored when choosing among alternatives?

- A. Opportunity costs.
- B. Sunk costs.
- C. Out-of-pocket costs.
- D. Differential costs.
- E. None of these.

74. If the total cost of alternative A is \$50,000 and the total cost of alternative B is \$34,000, then \$16,000 is termed the:

- A. opportunity cost.
- B. average cost.
- C. sunk cost.
- D. out-of-pocket cost.
- E. differential cost.

Wee Care is a nursery school for pre-kindergarten children. The school has determined that the following biweekly revenues and costs occur at different levels of enrollment:

| <u>Number of<br/>Students Enrolled</u> | <u>Total Revenue</u> | <u>Total Costs</u> |
|----------------------------------------|----------------------|--------------------|
| 10                                     | \$3,000              | \$2,100            |
| 15                                     | 4,500                | 2,700              |
| 16                                     | 4,800                | 2,800              |
| 20                                     | 6,000                | 3,200              |
| 21                                     | 6,300                | 3,255              |

75. The marginal cost when the twenty-first student enrolls in the school is:

- A. \$55.
- B. \$155.
- C. \$300.
- D. \$3,045.
- E. \$3,255.

76. The average cost per student when 16 students enroll in the school is:

- A. \$100.
- B. \$125.
- C. \$175.
- D. \$300.
- E. \$400.

77. The costs that follow all have applicability for a manufacturing enterprise. Which of the choices listed correctly denotes the costs' applicability for a service provider?

|    | <u>Period Cost</u> | <u>Uncontrollable Cost</u> | <u>Opportunity Cost</u> |
|----|--------------------|----------------------------|-------------------------|
| A. | Applicable         | Applicable                 | Not applicable          |
| B. | Applicable         | Not applicable             | Applicable              |
| C. | Applicable         | Applicable                 | Applicable              |
| D. | Not applicable     | Applicable                 | Applicable              |
| E. | Not applicable     | Applicable                 | Not applicable          |

- A. Choice A
- B. Choice B
- C. Choice C
- D. Choice D
- E. Choice E

#### Essay Questions

78. Consider the three firms that follow: (1) Southwest Airlines, (2) BMW, and (3) Target. These firms, examples of service providers, manufacturers, and merchandisers, tend to have different characteristics with respect to costs and financial-statement disclosures.

Required:

Determine which of the preceding firms (1, 2, and/or 3) would likely:

- A. Disclose operating expenses on the income statement.
- B. Have product costs.
- C. Have period costs.
- D. Disclose cost of cost good sold on the income statement.
- E. Have no meaningful investment in inventory.
- F. Maintain raw-material, work-in-process, and finished-goods inventories.
- G. Have variable and fixed costs.

79. Consider the following cost items:

1. Sales commissions earned by a company's sales force.
2. Raw materials purchased during the period.
3. Current year's depreciation on a firm's manufacturing facilities.
4. Year-end completed production of a carpet manufacturer.
5. The cost of products sold to customers of an apparel store.
6. Wages earned by machine operators in a manufacturing plant.
7. Income taxes incurred by an airline.
8. Marketing costs of an electronics manufacturer.
9. Indirect labor costs incurred by a manufacturer of office equipment.

Required:

- A. Evaluate the costs just cited and determine whether the associated dollar amounts would appear on the firm's balance sheet, income statement, or schedule of cost of goods manufactured.
- B. What major asset will normally be insignificant for service enterprises and relatively substantial for retailers, wholesalers, and manufacturers? Briefly discuss.
- C. Briefly explain the similarity and difference between the merchandise inventory of a retailer and the finished-goods inventory of a manufacturer.

80. Calamari Manufacturing produces small electric engines. Identify the following costs as direct materials (DM), direct labor (DL), manufacturing overhead (MOH), or a period cost (PC). Also indicate whether the cost is variable (V) or fixed (F) with respect to behavior.

- A. Commissions paid to salespeople
- B. Straight-line depreciation on the factory building
- C. Salary of the plant supervisor
- D. Wages of the assembly-line workers
- E. Machine lubricant used in production activities
- F. Engine casings used in production activities
- G. Advertising placed in trade journals
- H. Lease payments for the president's automobile
- I. Property taxes paid on the factory facilities

81. Consider the following items:

- A. Tomatoes used in the manufacture of Hunts ketchup
- B. Administrative salaries of executives employed by Jet Blue Airlines
- C. Wages of assembly-line workers at a Ford plant
- D. Marketing expenditures of the Atlanta Braves baseball club
- E. Commissions paid to Coca-Cola's salespeople
- F. Straight-line depreciation on manufacturing equipment owned by Dell Computer
- G. Shipping charges incurred by Office Depot on out-going orders
- H. Speakers used in Sony home-theater systems
- I. Insurance costs related to a Mary Kay Cosmetics' manufacturing plant

Required:

Complete the table that follows and classify each of the costs listed as (1) a product or period cost and (2) a variable or fixed cost by placing an "X" in the appropriate column.

| Item | Product or Period Cost |        | Variable or Fixed Cost |       |
|------|------------------------|--------|------------------------|-------|
|      | Product                | Period | Variable               | Fixed |
| A    |                        |        |                        |       |
| B    |                        |        |                        |       |
| C    |                        |        |                        |       |
| D    |                        |        |                        |       |
| E    |                        |        |                        |       |
| F    |                        |        |                        |       |
| G    |                        |        |                        |       |
| H    |                        |        |                        |       |
| I    |                        |        |                        |       |

82. The following selected costs were extracted from the accounting records of Louisiana Machining (LAM):

1. Direct materials used in production
2. Wages of machine operators
3. Factory utilities
4. Sales commissions
5. Salary of LAM's president
6. Factory depreciation
7. Wages of plant security guards
8. Uncollectible accounts expense
9. Machine lubricant used in production

A. 1, 2, 3, 6, 7, 9

B. 3, 6, 7, 9

C. 4, 5, 8

D. 2, 3, 6, 7, 9

E. 8

F. 1, 2, 3, 6, 7, 9

Required:

By the use of numbers, identify the costs that would be used to calculate:

83. Parrish's Manufacturing had the following data for the period just ended:

|                          |           |
|--------------------------|-----------|
| Work in process, Jan. 1  | \$ 21,000 |
| Work in process, Dec. 31 | 40,000    |
| Finished goods, Jan. 1   | 70,000    |
| Finished goods, Dec. 31  | 61,000    |
| Direct materials used    | 126,000   |
| Direct labor             | 260,000   |
| Factory depreciation     | 80,000    |
| Sales                    | 945,000   |
| Advertising expense      | 52,000    |
| Factory utilities        | 27,000    |
| Indirect materials       | 19,000    |
| Indirect labor           | 35,000    |

Required:

- A. Calculate Parrish's cost of goods manufactured.
- B. Calculate Parrish's cost of goods sold.

84. Hamilton Company had the following inventory balances at the beginning and end of the year:

|                 | <u>January 1</u> | <u>December 31</u> |
|-----------------|------------------|--------------------|
| Raw material    | \$ 50,000        | \$ 35,000          |
| Work in process | 130,000          | 170,000            |
| Finished goods  | 280,000          | 255,000            |

During the year, the company purchased \$100,000 of raw material and incurred \$340,000 of direct labor costs. Other data: manufacturing overhead incurred, \$450,000; sales, \$1,560,000; selling and administrative expenses, \$90,000; income tax rate, 30%.

Required:

- A. Calculate cost of goods manufactured.
- B. Calculate cost of goods sold.
- C. Determine Hamilton's net income.

85. The following selected information was extracted from the 20x3 accounting records of Midina Products

|                                           |           |
|-------------------------------------------|-----------|
| Raw materials used                        | \$284,000 |
| Direct labor                              | 178,000   |
| Indirect labor                            | 35,000    |
| Selling and administrative salaries       | 250,000   |
| Building depreciation*                    | 330,000   |
| Other selling and administrative expenses | 80,000    |
| Other factory costs                       | 620,000   |

\*Seventy percent of the company's building was devoted to production activities; the remaining 30% was used for selling and administrative functions.

Midina's beginning and ending work-in-process inventories amounted to \$306,000 and \$245,000, respectively. The company's beginning and ending finished-goods inventories were \$450,000 and \$440,000, respectively.

Required:

- A. Calculate Midina's manufacturing overhead for the year.
- B. Calculate Midina's cost of goods manufactured.
- C. Compute Midina's cost of goods sold.

86. The selected amounts that follow were taken from Kandace Corporation's accounting records:

|                                     |           |
|-------------------------------------|-----------|
| Raw material used                   | \$ 27,000 |
| Direct labor                        | 35,000    |
| Total manufacturing costs           | 104,000   |
| Work-in-process inventory, 1/1      | 19,000    |
| Cost of goods manufactured          | 100,000   |
| Cost of goods available for sale    | 175,000   |
| Finished-goods inventory, 12/31     | 60,000    |
| Sales revenue                       | 300,000   |
| Selling and administrative expenses | 125,000   |
| Income tax expense                  | 18,000    |

Required:

Compute the following:

- A. Manufacturing overhead.
- B. Work-in-process inventory, 12/31.
- C. Finished-goods inventory, 1/1.
- D. Cost of goods sold.
- E. Gross margin.
- F. Net income.

87. The Perez Company recorded the following transactions for February 20x1:

|                                                                             | <u>Materials</u> | <u>Work in Process</u> | <u>Finished Goods</u> |
|-----------------------------------------------------------------------------|------------------|------------------------|-----------------------|
| Purchases                                                                   | \$100,000        |                        |                       |
| Beginning inventory                                                         | 18,000           | \$ 8,000               | \$ E                  |
| Ending inventory                                                            | A                | 20,000                 | 30,000                |
| Direct materials used                                                       |                  | 90,000                 |                       |
| Direct labor                                                                |                  | B                      |                       |
| Manufacturing overhead<br>(includes indirect materials used<br>of \$10,000) |                  | 115,000                |                       |
| Transferred to finished goods                                               |                  | C                      |                       |
| Cost of goods sold                                                          |                  |                        | D                     |

Sales were \$560,000, with sales prices determined by adding a 40% markup to the firm's manufacturing cost. The total cost of direct materials used, direct labor, and manufacturing overhead during the month was \$285,000.

Note: The materials account includes both direct materials and indirect materials.

Required:

Calculate the missing values.

88. Heathrow Corporation sold 12,500 units of its single product during the year, reporting a cost of good sold that totaled \$250,000. A review of the company's accounting records disclosed the following information:

|                                             |           |
|---------------------------------------------|-----------|
| Cost of goods sold as a percentage of sales |           |
| revenue                                     | 40%       |
| Finished-goods inventory, 1/1               | \$ 87,000 |
| Work-in-process inventory, 12/31            | 55,000    |
| Cost of goods manufactured                  | 241,000   |
| Raw materials used                          | 40,000    |
| Direct labor                                | 74,000    |
| Manufacturing overhead                      | 122,000   |
| Selling and administrative expenses         | 310,000   |

Heathrow is subject to a 30% income tax rate.

Required:

A. Determine the selling price per unit.

B. Management established a goal at the beginning of the year to reduce the company's investment in finished-goods inventory and work-in-process inventory.

1. Analyze cost of goods sold and determine if management's goal was achieved with respect to finished-goods inventory. Show computations.

2. Analyze the firm's manufacturing costs and determine if management's goal was achieved with respect to work-in-process inventory. Show computations.

C. Is the company profitable? Show calculations.

89. Aurora Muffler, Inc. operates an automobile service facility. The table below shows the cost incurred during a month when 500 mufflers were replaced.

|                                    | Number of Muffler Replacements |                 |            |
|------------------------------------|--------------------------------|-----------------|------------|
|                                    | <u>400</u>                     | <u>500</u>      | <u>600</u> |
| Total costs:                       |                                |                 |            |
| Fixed costs                        | A                              | \$ 9,000        | C          |
| Variable costs                     | <u>B</u>                       | <u>6,000</u>    | <u>D</u>   |
| Total costs                        | <u>E</u>                       | <u>\$15,000</u> | <u>F</u>   |
| Cost per muffler replacement:      |                                |                 |            |
| Fixed cost                         | G                              | H               | I          |
| Variable cost                      | <u>J</u>                       | <u>K</u>        | <u>L</u>   |
| Total cost per muffler replacement | <u>M</u>                       | <u>N</u>        | <u>O</u>   |

Required:

Fill in the missing amounts, labeled A through O, in the table above.

90. Giraldo Systems began business on January 1 of the current year, producing a single product that is popular with home builders. Demand was very strong, allowing the company to sell its entire manufacturing output of 80,000 units. The following unit costs were incurred:

|                                   |      |
|-----------------------------------|------|
| Manufacturing costs:              |      |
| Direct materials                  | \$15 |
| Direct labor                      | 8    |
| Variable overhead                 | 11   |
| Fixed overhead                    | 6    |
| Selling and administrative costs: |      |
| Variable                          | 5    |
| Fixed                             | 2    |

Giraldo anticipates an increase in productive output to 100,000 units and sales of 95,000 units in the next accounting period. The company uses appropriate drivers to determine cost behavior and estimates.

Required:

- A. Assuming that present cost behavior patterns continue, compute the total expected costs in the upcoming accounting period.
- B. Ben Levy is about to prepare a graph that shows the unit cost behavior for variable selling and administrative cost. If the graph's horizontal axis is volume and the vertical axis is dollars, briefly describe what Levy's graph should look like.
- C. Determine whether the following costs are variable or fixed in terms of behavior:
  1. Yearly lease payments for a state-of-the-art cutting machine.
  2. A fee paid to a consultant who provided advice about quality issues. The fee was based on the number of consulting hours provided.
  3. Cost of an awards dinner for "star" salespeople.

91. Xi Manufacturing, which began operations on January 1 of the current year, produces an industrial scraper that sells for \$325 per unit. Information related to the current year's activities follows.

|                             |           |
|-----------------------------|-----------|
| Number of scrapers produced | 20,000    |
| Number of scrapers sold     | 17,000    |
| Variable costs per unit:    |           |
| Direct materials            | \$25      |
| Direct labor                | 35        |
| Manufacturing overhead      | 60        |
| Annual fixed costs:         |           |
| Manufacturing overhead      | \$400,000 |
| Selling and administrative  | 140,000   |

Xi carries its finished-goods inventory at the average unit cost of production. There was no work in process at year-end.

Required:

- A. Compute the company's average unit cost of production.
- B. Determine the cost of the December 31 finished-goods inventory.
- C. Compute the company's cost of goods sold.
- D. If next year's production increases to 23,000 units and general cost behavior patterns do not change, what is the likely effect on:
  1. The direct-labor cost of \$35 per unit? Why?
  2. The fixed manufacturing overhead cost of \$400,000? Why?

92. The following terms are used to describe various economic characteristics of costs:

|                    |                   |
|--------------------|-------------------|
| Opportunity cost   | Differential cost |
| Out-of-pocket cost | Marginal cost     |
| Sunk cost          | Average cost      |

Required:

Choose one of the preceding terms to characterize each of the amounts described below. Each term may be used only once.

- A. The cost of including one extra child in a day-care center.
- B. The cost of merchandise inventory purchased five years ago. The goods are now obsolete.
- C. The cost of feeding 300 children in a public school cafeteria is \$450 per day, or \$1.50 per child per day. What economic term describes this \$1.50 cost?
- D. The management of a high-rise office building uses 3,000 square feet of space in the building for its own administrative functions. This space could be rented for \$30,000. What economic term describes this \$30,000 of lost rental revenue?
- E. The cost of building an automated assembly line in a factory is \$700,000; a manually operated assembly line would cost \$250,000. What economic term is used to describe the \$450,000 variation between these two amounts?
- F. Refer to the preceding question and assume that the firm is currently building the assembly line for \$700,000. What economic term is used to describe the \$700,000 construction cost?

93. Madi and Sohn Corporation has a single facility that it uses for manufacturing, sales, and administrative activities. Should the company's building depreciation charge be expensed in its entirety or is a different accounting procedure appropriate? Explain.

94. Manufacturers have established a cost classification called product costs. Define the term "product cost" and note where these costs appear in the financial statements. Be specific.

95. The income statements and balance sheets of service, retailing, and manufacturing businesses tend to differ.

Required:

A. Which of these businesses will disclose a cost-of-goods-sold figure on the income statement? Why?

B. Briefly describe the difference between a retailing firm and manufacturer's disclosure of inventories on the balance sheet.

96. Briefly define and discuss the terms in each of the pairs that follow.

A. Direct and indirect costs

B. Direct materials and indirect materials

C. Manufacturing overhead and direct labor

97. In discussing the operation of her automobile, a doctor once observed that gasoline is a fixed cost because the cost per gallon is relatively stable. Insurance, on the other hand, is a variable cost because the cost per mile varies inversely with the number of miles driven. Comment on the doctor's observation.

98. Describe the economic characteristics of sunk costs and opportunity costs, and explain the impact that these costs may have on decisions.

## Chapter 02 Basic Cost Management Concepts and Accounting for Mass Customization Operations **Answer Key**

### **True / False Questions**

1. Inventoriable costs are expensed when incurred.

**FALSE**

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

2. Finished goods inventory is ordinarily held for sale by a manufacturing company.

**TRUE**

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Difficulty: Medium*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

3. Indirect labor is not a component of manufacturing overhead.

**FALSE**

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

4. The following equation -- Beginning finished goods + cost of goods manufactured - ending finished goods -- is used to calculate cost of goods sold during the period.

**TRUE**

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

5. A suitable cost driver for the amount of direct materials used is the number of direct labor hours worked.

**FALSE**

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Difficulty: Easy*

*Learning Objective: 02-07 Understand the importance of identifying an organization's cost drivers.*

### **Multiple Choice Questions**

6. Which of the following statements is true?

- A. The word "cost" has the same meaning in all situations in which it is used.
- B. Cost data, once classified and recorded for a specific application, are appropriate for use in any application.
- C. Different cost concepts and classifications are used for different purposes.**
- D. All organizations incur the same types of costs.
- E. Costs incurred in one year are always meaningful in the following year.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Easy*

*Learning Objective: 02-01 Explain what is meant by the word cost.*

7. Product costs are:

- A. expensed when incurred.
- B. inventoried.**
- C. treated in the same manner as period costs.
- D. treated in the same manner as advertising costs.
- E. subtracted from cost of goods sold.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Easy*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

8. Which of the following is a product cost?

- A. Glass in an automobile.
- B. Advertising.
- C. The salary of the vice president-finance.
- D. Rent on a factory.
- E.** Both "A" and "D."

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

9. Which of the following would not be classified as a product cost?

- A. Direct materials.
- B. Direct labor.
- C. Indirect materials.
- D. Insurance on a manufacturing plant.
- E.** Sales commissions.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC, N*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

10. The accounting records of Georgia Company revealed the following costs: direct materials used, \$250,000; direct labor, \$425,000; manufacturing overhead, \$375,000; and selling and administrative expenses, \$220,000. Georgia's product costs total:

- A. \$1,050,000.
- B. \$830,000.
- C. \$895,000.
- D. \$1,270,000.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

11. Costs that are expensed when incurred are called:

- A. product costs.
- B. direct costs.
- C. inventoriable costs.
- D. period costs.
- E. indirect costs.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

12. Which of the following is a period cost?
- A. Direct material.
  - B. Advertising expense.**
  - C. Indirect Labor.
  - D. Miscellaneous supplies used in production activities.
  - E. Both "B" and "C."

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

13. Which of the following is not a period cost?
- A. Legal costs.
  - B. Public relations costs.
  - C. Sales commissions.
  - D. Wages of assembly-line workers.**
  - E. The salary of a company's chief financial officer (CFO).

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC, N*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

14. The accounting records of Reynolds Corporation revealed the following selected costs: Sales commissions, \$65,000; plant supervision, \$190,000; and administrative expenses, \$185,000. Reynolds's period costs total:

- A. \$250,000.
- B. \$440,000.
- C. \$375,000.
- D. \$255,000.
- E. \$185,000.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

15. Yang Corporation recently computed total product costs of \$567,000 and total period costs of \$420,000, excluding \$35,000 of sales commissions that were overlooked by the company's administrative assistant. On the basis of this information, Yang's income statement should reveal operating expenses of:

- A. \$35,000.
- B. \$420,000.
- C. \$455,000.
- D. \$567,000.
- E. \$602,000.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

16. Which of the following entities would most likely have raw materials, work in process, and finished goods?

- A. Exxon Corporation.
- B. Macy's Department Store.
- C. Wendy's.
- D. Southwest Airlines.
- E. Columbia University.

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

17. Selling and administrative expenses would likely appear on the balance sheet of:

- A. The Gap.
- B. Texas Instruments.
- C. Turner Broadcasting System.
- D. All of these firms.
- E. None of these firms.

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: N*

*Difficulty: Medium*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

18. Which of the following inventories would a discount retailer such as Wal-Mart report as an asset?

- A. Raw materials.
- B. Work in process.
- C. Finished goods.
- D. Merchandise inventory.
- E. All of these.

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

19. Which of the following inventories would a company ordinarily hold for sale?

- A. Raw materials.
- B. Work in process.
- C. Finished goods.**
- D. Raw materials and finished goods.
- E. Work in process and finished goods.

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

20. Godfrey Corporation engages in mass customization and direct sales, the latter by accepting customer orders over the Internet. As a result, Godfrey:

- A. would probably begin the manufacturing process upon receipt of a customer's order.
- B. would typically have fairly low inventory levels for the amount of sales revenue generated.
- C. would typically have fairly high inventory levels for the amount of sales revenue generated.
- D. would likely find choices "A" and "B" to be applicable.**
- E. would likely find choices "A" and "C" to be applicable.

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-04 List five types of manufacturing operations and describe mass customization.*

21. Companies that engage in mass customization:

- A. tend to have a relatively low production volume.
- B. tend to have a high production volume that involves highly standardized end-products.
- C. tend to have a high production volume, many standardized components, and customer-specified combinations of components.
- D. tend to have a high production volume, many unique components, and customer-specified combinations of components.
- E. could be typified by the refining operations of Shell Oil.

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Risk Analysis*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-04 List five types of manufacturing operations and describe mass customization.*

22. Mideast Motors manufactures automobiles. Which of the following would not be classified as direct materials by the company?

- A. Wheel lubricant.
- B. Tires.
- C. Interior leather.
- D. CD player.
- E. Sheet metal used in the automobile's body.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

23. Which of the following employees of a commercial printer/publisher would be classified as direct labor?

- A.** Book binder.
- B. Plant security guard.
- C. Sales representative.
- D. Plant supervisor.
- E. Payroll supervisor.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

24. Lake Appliance produces washers and dryers in an assembly-line process. Labor costs incurred during a recent period were: corporate executives, \$500,000; assembly-line workers, \$180,000; security guards, \$45,000; and plant supervisor, \$110,000. The total of Lake's direct labor cost was:

- A. \$110,000.
- B.** \$180,000.
- C. \$155,000.
- D. \$235,000.
- E. \$735,000.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

25. Which of the following employees would not be classified as indirect labor?

- A. Plant Custodian.
- B. Salesperson.
- C. Assembler of wooden furniture.
- D. Plant security guard.
- E. Choices "B" and "C."**

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

26. Depreciation of factory equipment would be classified as:

- A. operating cost.
- B. "other" cost.
- C. manufacturing overhead.**
- D. period cost.
- E. administrative cost.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

27. Which of the following costs is not a component of manufacturing overhead?

- A. Indirect materials.
- B. Factory utilities.
- C. Factory equipment.**
- D. Indirect labor.
- E. Property taxes on the manufacturing plant.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

28. The accounting records of Diego Company revealed the following costs, among others:

|                                    |           |
|------------------------------------|-----------|
| Factory insurance                  | \$ 32,000 |
| Raw material used                  | 256,000   |
| Customer entertainment             | 15,000    |
| Indirect labor                     | 45,000    |
| Depreciation on salespersons' cars | 22,000    |
| Production equipment rental costs  | 72,000    |

Costs that would be considered in the calculation of manufacturing overhead total:

- A. \$149,000.
- B. \$171,000.
- C. \$186,000.
- D. \$442,000.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

29. Which of the following statements is (are) correct?

- A. Overtime premiums should be treated as a component of manufacturing overhead.
- B. Overtime premiums should be treated as a component of direct labor.
- C. Idle time should be treated as a component of direct labor.
- D. Idle time should be accounted for as a special type of loss.
- E. Both "B" and "C" are correct.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

30. Conversion costs are:

- A. direct material, direct labor, and manufacturing overhead.
- B. direct material and direct labor.
- C. direct labor and manufacturing overhead.
- D. prime costs.
- E. period costs.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

31. Prime costs are comprised of:

- A. direct materials and manufacturing overhead.
- B. direct labor and manufacturing overhead.
- C. direct materials, direct labor, and manufacturing overhead.
- D. direct materials and direct labor.
- E. direct materials and indirect materials.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

32. Which of the following statements is true?

- A. Product costs affect only the balance sheet.
- B. Product costs affect only the income statement.
- C. Period costs affect only the balance sheet.
- D. Neither product costs nor period costs affect the Statement of Retained Earnings. This can also be a true statement if the period costs were prepaid (i.e., prepaid advertising, depreciation).
- E.** Product costs eventually affect both the balance sheet and the income statement.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

33. In a manufacturing company, the cost of goods completed during the period would include which of the following elements?

- A.** Raw materials used.
- B. Beginning finished goods inventory.
- C. Marketing costs.
- D. Depreciation of delivery trucks.
- E. All of the above.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

34. Which of the following equations is used to calculate cost of goods sold during the period?

- A. Beginning finished goods + cost of goods manufactured + ending finished goods.
- B. Beginning finished goods - ending finished goods.
- C. Beginning finished goods + cost of goods manufactured.
- D.** Beginning finished goods + cost of goods manufactured - ending finished goods.
- E. Beginning finished goods + ending finished goods - cost of goods manufactured.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

35. Work-in-process inventory is composed of:

- A. direct material and direct labor.
- B. direct labor and manufacturing overhead.
- C. direct material and manufacturing overhead.
- D.** direct material, direct labor, and manufacturing overhead.
- E. direct material only.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

36. Holden Industries began July with a finished-goods inventory of \$48,000. The finished-goods inventory at the end of July was \$56,000 and the cost of goods sold during the month was \$125,000. The cost of goods manufactured during July was:

- A. \$104,000.
- B. \$125,000.
- C. \$117,000.
- D. \$133,000.**
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

37. Carolina Plating Company reported a cost of goods manufactured of \$520,000, with the firm's year-end balance sheet revealing work in process and finished goods of \$70,000 and \$134,000, respectively. If supplemental information disclosed raw materials used in production of \$80,000, direct labor of \$140,000, and manufacturing overhead of \$240,000, the company's beginning work in process must have been:

- A. \$130,000.**
- B. \$10,000.
- C. \$66,000.
- D. \$390,000.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

38. The accounting records of Bronco Company revealed the following information:

|                                  |           |
|----------------------------------|-----------|
| Raw materials used               | \$ 60,000 |
| Direct labor                     | 125,000   |
| Manufacturing overhead           | 360,000   |
| Work-in-process inventory, 1/1   | 50,000    |
| Finished-goods inventory, 1/1    | 189,000   |
| Work-in-process inventory, 12/31 | 76,000    |
| Finished-goods inventory, 12/31  | 140,000   |

Bronco's cost of goods manufactured is:

- A. \$519,000.
- B. \$522,000.
- C. \$568,000.
- D. \$571,000.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

39. The accounting records of Dolphin Company revealed the following information:

|                                    |           |
|------------------------------------|-----------|
| Total manufacturing costs          | \$530,000 |
| Work-in-process inventory, Jan. 1  | 56,000    |
| Work-in-process inventory, Dec. 31 | 78,000    |
| Finished-goods inventory, Jan. 1   | 146,000   |
| Finished-goods inventory, Dec. 31  | 123,000   |

Dolphin's cost of goods sold is:

- A. \$508,000.
- B. \$529,000.
- C. \$531,000.
- D. \$553,000.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

40. The accounting records of Brownwood Company revealed the following information:

|                                    |           |
|------------------------------------|-----------|
| Work-in-process inventory, Jan. 1  | \$ 58,000 |
| Work-in-process inventory, Dec. 31 | 49,000    |
| Finished-goods inventory, Jan. 1   | 125,000   |
| Finished-goods inventory, Dec. 31  | 158,000   |
| Cost of goods manufactured         | 754,000   |

Brownwood's cost of goods sold is:

- A. \$721,000.
- B. \$730,000.
- C. \$778,000.
- D. \$787,000.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

41. For the year just ended, Cole Corporation's manufacturing costs (raw materials used, direct labor, and manufacturing overhead) totaled \$1,500,000. Beginning and ending work-in-process inventories were \$60,000 and \$90,000, respectively. Cole's balance sheet also revealed respective beginning and ending finished-goods inventories of \$250,000 and \$180,000. On the basis of this information, how much would the company report as cost of goods manufactured (CGM) and cost of goods sold (CGS)?

- A. CGM, \$1,430,000; CGS, \$1,460,000.
- B. CGM, \$1,470,000; CGS, \$1,540,000.
- C. CGM, \$1,530,000; CGS, \$1,460,000.
- D. CGM, \$1,570,000; CGS, \$1,540,000.
- E. Some other amounts.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

## Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

|                                            |          |
|--------------------------------------------|----------|
| Raw materials inventory, January 1, 2011   | \$32,500 |
| Raw materials inventory, December 31, 2011 | \$26,700 |

42. If purchases of raw materials were \$135,000 during the year, what was the amount of raw materials used during the year?

- A. \$129,200.
- B. \$140,800.**
- C. \$135,000.
- D. \$146,600.
- E. some other amount.

*AACSB: Analytic*  
*AICPA BB: Critical Thinking*  
*AICPA FN: Measurement*  
*Bloom's: A*  
*Difficulty: Medium*  
*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*  
*Learning Objective: a schedule of cost of goods sold*  
*Learning Objective: and an income statement for a manufacturer.*

43. If raw materials used during the year were \$135,000 what was the amount of raw materials purchased during the year?

- A. \$129,200.**
- B. \$140,800.
- C. \$135,000.
- D. \$146,600.
- E. some other amount.

*AACSB: Analytic*  
*AICPA BB: Critical Thinking*  
*AICPA FN: Measurement*  
*Bloom's: A*  
*Difficulty: Hard*  
*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*  
*Learning Objective: a schedule of cost of goods sold*  
*Learning Objective: and an income statement for a manufacturer.*

|                                              |           |
|----------------------------------------------|-----------|
| Work-in-process inventory, January 1, 2011   | \$43,000  |
| Work-in-process inventory, December 31, 2011 | \$48,500  |
| Conversion costs during the year             | \$415,000 |

44. If direct materials used during the year were \$135,000, what was cost of goods manufactured?

- A. \$140,500.
- B. \$539,000.
- C. \$409,500.
- D.** \$544,500.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

45. If the cost of goods manufactured for the year was \$565,000, what was the amount of direct materials used during the year?

- A.** \$155,500.
- B. \$140,500.
- C. \$150,000.
- D. \$145,500.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

|                                             |          |
|---------------------------------------------|----------|
| Finished goods inventory, January 1, 2011   | \$29,300 |
| Finished goods inventory, December 31, 2011 | \$24,100 |

46. If the cost of goods manufactured for the year was \$385,000, what was the cost of goods sold for the year?

- A. \$395,400.
- B. \$385,000.
- C. \$390,200.**
- D. \$400,600.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

47. If the cost of goods sold for the year was \$427,500, what was the cost of goods manufactured for the year?

- A. \$402,100.
- B. \$422,300.**
- C. \$417,100.
- D. \$427,500.
- E. some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

48. Glass Industries reported the following data for the year just ended: sales revenue, \$1,750,000; cost of goods sold, \$980,000; cost of goods manufactured, \$560,000; and selling and administrative expenses, \$170,000. Glass' gross margin would be:

- A. \$940,000.
- B. \$1,190,000.
- C. \$1,020,000.
- D. \$380,000.
- E. \$770,000.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

49. Pumpkin Enterprises began operations on January 1, 20x1, with all of its activities conducted from a single facility. The company's accountant concluded that the year's building depreciation should be allocated as follows: selling activities, 20%; administrative activities, 35%; and manufacturing activities, 45%. If Pumpkin sold 60% of 20x1 production during that year, what percentage of the depreciation would appear (either directly or indirectly) on the 20x1 income statement?

- A. 27%.
- B. 45%.
- C. 55%.
- D. 82%.
- E. 100%.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Reporting*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

50. An employee accidentally overstated the year's advertising expense by \$50,000. Which of the following correctly depicts the effect of this error?

- A. Cost of goods manufactured will be overstated by \$50,000.
- B. Cost of goods sold will be overstated by \$50,000.
- C. Both cost of goods manufactured and cost of goods sold will be overstated by \$50,000.
- D. Cost of goods sold will be overstated by \$50,000, and cost of goods manufactured will be understated by \$50,000.
- E.** None of these.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Reporting*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

51. Which of the following would likely be a suitable cost driver for the amount of direct materials used?

- A. The number of units sold.
- B. The number of direct labor hours worked.
- C. The number of machine hours worked.
- D.** The number of units produced.
- E. The number of employees working in the factory.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-07 Understand the importance of identifying an organization's cost drivers.*

52. The choices below depict five costs of Benton Corporation and a possible driver for each cost. Which of these choices likely contains an inappropriate cost driver?

- A. Gasoline consumed; number of miles driven.
- B. Manufacturing overhead incurred in a heavily automated facility; direct labor hours.**
- C. Sales commissions; gross sales revenue.
- D. Building maintenance cost; building square footage.
- E. Human resources department cost; number of employees.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-07 Understand the importance of identifying an organization's cost drivers.*

53. Variable costs are costs that:

- A. vary inversely with changes in activity.
- B. vary directly with changes in activity.**
- C. remain constant as activity changes.
- D. decrease on a per-unit basis as activity increases.
- E. increase on a per-unit basis as activity increases.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Easy*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

54. As activity decreases, unit variable cost:

- A. increases proportionately with activity.
- B. decreases proportionately with activity.
- C. remains constant.**
- D. increases by a fixed amount.
- E. decreases by a fixed amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Easy*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

55. As activity increases, unit variable cost:

- A. increases proportionately with activity.
- B. decreases proportionately with activity.
- C. remains constant.**
- D. increases by a fixed amount.
- E. decreases by a fixed amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Easy*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

56. Which of the following is not an example of a variable cost?

- A. Straight-line depreciation on a machine that has a five-year service life.**
- B. Wages of manufacturing workers whose pay is based on hours worked.
- C. Tires used in the production of tractors.
- D. Aluminum used to make patio furniture.
- E. Commissions paid to sales personnel.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

57. Fixed costs are costs that:

- A. vary directly with changes in activity.
- B. vary inversely with changes in activity.
- C. remain constant on a per-unit basis.
- D. remain constant as activity changes.**
- E. increase on a per-unit basis as activity increases.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Easy*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

58. The fixed cost per unit:

- A. will increase as activity increases.
- B. will increase as activity decreases.
- C. will decrease as activity increases.
- D. will remain constant.
- E. will exhibit the behavior described in choices "B" and "C."**

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

59. Which of the following is an example of a fixed cost?

- A. Paper used in the manufacture of textbooks.
- B. Property taxes paid by a firm to the City of Los Angeles.**
- C. The wages of part-time workers who are paid \$8 per hour.
- D. Gasoline consumed by salespersons' cars.
- E. Surgical supplies used in a hospital's operating room.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

60. The true statement about cost behavior is that:

- A. variable costs are constant on a per-unit basis and change in total as activity changes.**
- B. fixed costs are constant on a per-unit basis and change in total as activity changes.
- C. fixed costs are constant on a per-unit basis and constant in total as activity changes.
- D. variable costs change on a per-unit basis and change in total as activity changes.
- E. variable costs are constant on a per-unit basis and are constant in total as activity changes.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

61. The true statement about cost behavior is that:

- A. variable costs change on a per-unit basis and change in total as activity changes.
- B. fixed costs are constant on a per-unit basis and change in total as activity changes.
- C. fixed costs are constant on a per-unit basis and constant in total as activity changes.
- D.** fixed costs change on a per-unit basis and are constant in total as activity changes.
- E. variable costs are constant on a per-unit basis and are constant in total as activity changes.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

62. The variable costs per unit are \$6 when a company produces 12,000 units of product. What are the variable costs per unit when 14,000 units are produced?

- A. \$4.50.
- B. \$5.00.
- C. \$5.50.
- D.** \$6.00.
- E. Some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

63. The fixed costs per unit are \$10 when a company produces 10,000 units of product. What are the fixed costs per unit when 8,000 units are produced?

- A. \$12.50.
- B. \$10.00.
- C. \$8.00.
- D. \$6.50.
- E. \$5.50.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

64. Total costs are \$180,000 when 10,000 units are produced; of this amount, variable costs are \$64,000. What are the total costs when 13,000 units are produced?

- A. \$199,200.
- B. \$214,800.
- C. \$234,000.
- D. Some other amount.
- E. Total costs cannot be calculated based on the information presented.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

65. When 5,000 units are produced variable costs are \$35 per unit and total costs are \$200,000. What are the total costs when 8,000 units are produced?

A. \$200,000.

**B. \$305,000.**

C. \$240,000.

D. Some other amount.

E. Total costs cannot be calculated based on the information presented.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Medium*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

66. Baxter Company, which pays a 10% commission to its salespeople, reported sales revenues of \$210,000 for the period just ended. If fixed and variable sales expenses totaled \$56,000, what would these expenses total at sales of \$168,000?

A. \$16,800.

B. \$35,000.

C. \$44,800.

**D. \$51,800.**

E. Some other amount.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

67. Which of the following would not be characterized as a cost object?

- A. An automobile manufactured by General Motors.
- B. The New York Fire Department.
- C. A Burger King restaurant located in Cleveland, Ohio.
- D. A Delta Airlines flight from Atlanta to Miami.
- E.** All of these are examples of cost objects.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Decision Making*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-09 Distinguish among direct*

*Learning Objective: and uncontrollable costs.*

*Learning Objective: controllable*

*Learning Objective: indirect*

68. Costs that can be easily traced to a specific department are called:

- A.** direct costs.
- B. indirect costs.
- C. product costs.
- D. manufacturing costs.
- E. processing costs.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Easy*

*Learning Objective: 02-09 Distinguish among direct*

*Learning Objective: and uncontrollable costs.*

*Learning Objective: controllable*

*Learning Objective: indirect*

69. Which of the following would not be considered a direct cost with respect to the service department of a new car dealership?

- A. Wages of repair technicians.
- B. Property taxes paid by the dealership.**
- C. Repair parts consumed.
- D. Salary of the department manager.
- E. Depreciation on new equipment used to analyze engine problems.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Medium*

*Learning Objective: 02-09 Distinguish among direct*

*Learning Objective: and uncontrollable costs.*

*Learning Objective: controllable*

*Learning Objective: indirect*

70. Indirect costs:

- A. can be traced to a cost object.
- B. cannot be traced to a particular cost object.**
- C. are not important.
- D. are always variable costs.
- E. may be indirect with respect to Disney World but direct with respect to one of its major components, Epcot Center.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC, N*

*Difficulty: Easy*

*Learning Objective: 02-09 Distinguish among direct*

*Learning Objective: and uncontrollable costs.*

*Learning Objective: controllable*

*Learning Objective: indirect*

71. The salary that is sacrificed by a college student who pursues a degree full time is a(n):

- A. sunk cost.
- B. out-of-pocket cost.
- C. opportunity cost.**
- D. differential cost.
- E. marginal cost.

*AACSB: Reflective Thinking*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

72. The tuition that will be paid next semester by a college student who pursues a degree is a(n):

- A. sunk cost.
- B. out-of-pocket cost.**
- C. indirect cost.
- D. average cost.
- E. marginal cost.

*AACSB: Reflective Thinking*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

73. Which of the following costs should be ignored when choosing among alternatives?

- A. Opportunity costs.
- B. Sunk costs.**
- C. Out-of-pocket costs.
- D. Differential costs.
- E. None of these.

*AACSB: Reflective Thinking*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

74. If the total cost of alternative A is \$50,000 and the total cost of alternative B is \$34,000, then \$16,000 is termed the:

- A. opportunity cost.
- B. average cost.
- C. sunk cost.
- D. out-of-pocket cost.
- E. differential cost.**

*AACSB: Reflective Thinking*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Easy*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

Wee Care is a nursery school for pre-kindergarten children. The school has determined that the following biweekly revenues and costs occur at different levels of enrollment:

| <u>Number of<br/>Students Enrolled</u> | <u>Total Revenue</u> | <u>Total Costs</u> |
|----------------------------------------|----------------------|--------------------|
| 10                                     | \$3,000              | \$2,100            |
| 15                                     | 4,500                | 2,700              |
| 16                                     | 4,800                | 2,800              |
| 20                                     | 6,000                | 3,200              |
| 21                                     | 6,300                | 3,255              |

75. The marginal cost when the twenty-first student enrolls in the school is:

- A. \$55.
- B. \$155.
- C. \$300.
- D. \$3,045.
- E. \$3,255.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

76. The average cost per student when 16 students enroll in the school is:

- A. \$100.
- B. \$125.
- C. \$175.
- D. \$300.
- E. \$400.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

77. The costs that follow all have applicability for a manufacturing enterprise. Which of the choices listed correctly denotes the costs' applicability for a service provider?

|    | <u>Period Cost</u> | <u>Uncontrollable Cost</u> | <u>Opportunity Cost</u> |
|----|--------------------|----------------------------|-------------------------|
| A. | Applicable         | Applicable                 | Not applicable          |
| B. | Applicable         | Not applicable             | Applicable              |
| C. | Applicable         | Applicable                 | Applicable              |
| D. | Not applicable     | Applicable                 | Applicable              |
| E. | Not applicable     | Applicable                 | Not applicable          |

A. Choice A

B. Choice B

C. Choice C

D. Choice D

E. Choice E

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Hard*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

**Essay Questions**

78. Consider the three firms that follow: (1) Southwest Airlines, (2) BMW, and (3) Target. These firms, examples of service providers, manufacturers, and merchandisers, tend to have different characteristics with respect to costs and financial-statement disclosures.

Required:

Determine which of the preceding firms (1, 2, and/or 3) would likely:

- A. Disclose operating expenses on the income statement.
- B. Have product costs.
- C. Have period costs.
- D. Disclose cost of cost good sold on the income statement.
- E. Have no meaningful investment in inventory.
- F. Maintain raw-material, work-in-process, and finished-goods inventories.
- G. Have variable and fixed costs.

- A. 1, 2, 3
- B. 2, 3
- C. 1, 2, 3
- D. 2, 3
- E. 1
- F. 2
- G. 1, 2, 3

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: N*

*Difficulty: Hard*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: and expenses.*

*Learning Objective: in total and on a per-unit basis.*

*Learning Objective: period costs*

79. Consider the following cost items:

1. Sales commissions earned by a company's sales force.
2. Raw materials purchased during the period.
3. Current year's depreciation on a firm's manufacturing facilities.
4. Year-end completed production of a carpet manufacturer.
5. The cost of products sold to customers of an apparel store.
6. Wages earned by machine operators in a manufacturing plant.
7. Income taxes incurred by an airline.
8. Marketing costs of an electronics manufacturer.
9. Indirect labor costs incurred by a manufacturer of office equipment.

Required:

- A. Evaluate the costs just cited and determine whether the associated dollar amounts would appear on the firm's balance sheet, income statement, or schedule of cost of goods manufactured.
- B. What major asset will normally be insignificant for service enterprises and relatively substantial for retailers, wholesalers, and manufacturers? Briefly discuss.
- C. Briefly explain the similarity and difference between the merchandise inventory of a retailer and the finished-goods inventory of a manufacturer.

A. 1. Income statement

2. Schedule of cost of goods manufactured

3. Schedule of cost of goods manufactured

4. Balance sheet

5. Income statement

6. Schedule of cost of goods manufactured

7. Income statement

8. Income statement

9. Schedule of cost of goods manufactured

B. The asset that differs among these businesses is inventory. Service businesses typically carry no (or very little) inventory. Retailers and wholesalers normally stock considerable inventory. Manufacturers also carry significant inventories, typically subdivided in three categories: raw materials, work in process, and finished goods.

C. The similarity: Both inventories are carried for sale by the respective businesses. The difference: Retailers purchase merchandise inventory; in contrast, manufacturing firms produce their goods.

*AACSB: Reflective Thinking*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: N*

*Difficulty: Hard*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

80. Calamari Manufacturing produces small electric engines. Identify the following costs as direct materials (DM), direct labor (DL), manufacturing overhead (MOH), or a period cost (PC). Also indicate whether the cost is variable (V) or fixed (F) with respect to behavior.

- A. Commissions paid to salespeople
- B. Straight-line depreciation on the factory building
- C. Salary of the plant supervisor
- D. Wages of the assembly-line workers
- E. Machine lubricant used in production activities
- F. Engine casings used in production activities
- G. Advertising placed in trade journals
- H. Lease payments for the president's automobile
- I. Property taxes paid on the factory facilities

- A. PC, V
- B. MOH, F
- C. MOH, F
- D. DL, V
- E. MOH, V
- F. DM, V
- G. PC, F
- H. PC, F
- I. MOH, F

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Hard*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: and expenses.*

*Learning Objective: in total and on a per-unit basis.*

*Learning Objective: period costs*

81. Consider the following items:

- A. Tomatoes used in the manufacture of Hunts ketchup
- B. Administrative salaries of executives employed by Jet Blue Airlines
- C. Wages of assembly-line workers at a Ford plant
- D. Marketing expenditures of the Atlanta Braves baseball club
- E. Commissions paid to Coca-Cola's salespeople
- F. Straight-line depreciation on manufacturing equipment owned by Dell Computer
- G. Shipping charges incurred by Office Depot on out-going orders
- H. Speakers used in Sony home-theater systems
- I. Insurance costs related to a Mary Kay Cosmetics' manufacturing plant

Required:

Complete the table that follows and classify each of the costs listed as (1) a product or period cost and (2) a variable or fixed cost by placing an "X" in the appropriate column.

| Item | Product or Period Cost |        | Variable or Fixed Cost |       |
|------|------------------------|--------|------------------------|-------|
|      | Product                | Period | Variable               | Fixed |
| A    |                        |        |                        |       |
| B    |                        |        |                        |       |
| C    |                        |        |                        |       |
| D    |                        |        |                        |       |
| E    |                        |        |                        |       |
| F    |                        |        |                        |       |
| G    |                        |        |                        |       |
| H    |                        |        |                        |       |
| I    |                        |        |                        |       |

| Item | Product or Period Cost |        | Variable or Fixed Cost |       |
|------|------------------------|--------|------------------------|-------|
|      | Product                | Period | Variable               | Fixed |
| A    | X                      |        | X                      |       |
| B    |                        | X      |                        | X     |
| C    | X                      |        | X                      |       |
| D    |                        | X      |                        | X     |
| E    |                        | X      | X                      |       |
| F    | X                      |        |                        | X     |
| G    |                        | X      | X                      |       |
| H    | X                      |        | X                      |       |
| I    | X                      |        |                        | X     |

## Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Hard*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: and expenses.*

*Learning Objective: in total and on a per-unit basis.*

*Learning Objective: period costs*

82. The following selected costs were extracted from the accounting records of Louisiana Machining (LAM):

1. Direct materials used in production
2. Wages of machine operators
3. Factory utilities
4. Sales commissions
5. Salary of LAM's president
6. Factory depreciation
7. Wages of plant security guards
8. Uncollectible accounts expense
9. Machine lubricant used in production

A. 1, 2, 3, 6, 7, 9

B. 3, 6, 7, 9

C. 4, 5, 8

D. 2, 3, 6, 7, 9

E. 8

F. 1, 2, 3, 6, 7, 9

Required:

By the use of numbers, identify the costs that would be used to calculate:

A. cost of goods manufactured.

B. manufacturing overhead.

C. total period costs.

D. total conversion costs.

E. total direct costs of LAM's credit and collections department.

F. LAM's inventory cost.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Hard*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: 02-09 Distinguish among direct*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

*Learning Objective: and expenses.*

*Learning Objective: and uncontrollable costs.*

*Learning Objective: controllable*

*Learning Objective: indirect*

*Learning Objective: period costs*

83. Parrish's Manufacturing had the following data for the period just ended:

|                          |           |
|--------------------------|-----------|
| Work in process, Jan. 1  | \$ 21,000 |
| Work in process, Dec. 31 | 40,000    |
| Finished goods, Jan. 1   | 70,000    |
| Finished goods, Dec. 31  | 61,000    |
| Direct materials used    | 126,000   |
| Direct labor             | 260,000   |
| Factory depreciation     | 80,000    |
| Sales                    | 945,000   |
| Advertising expense      | 52,000    |
| Factory utilities        | 27,000    |
| Indirect materials       | 19,000    |
| Indirect labor           | 35,000    |

Required:

A. Calculate Parrish's cost of goods manufactured.

B. Calculate Parrish's cost of goods sold.

|                                  |                  |
|----------------------------------|------------------|
| A. Direct materials used         | \$126,000        |
| Direct labor                     | 260,000          |
| Manufacturing overhead:          |                  |
| Factory depreciation             | 80,000           |
| Factory utilities                | 27,000           |
| Indirect materials               | 19,000           |
| Indirect labor                   | <u>35,000</u>    |
| Total manufacturing costs        | \$547,000        |
| Add: Work in process, Jan. 1     | <u>21,000</u>    |
|                                  | \$568,000        |
| Deduct: Work in process, Dec. 31 | <u>40,000</u>    |
| Cost of goods manufactured       | <u>\$528,000</u> |
| <br>B. Finished goods, Jan. 1    | <br>\$ 70,000    |
| Add: Cost of goods manufactured  | <u>528,000</u>   |
| Goods available for sale         | \$598,000        |
| Deduct: Finished goods, Dec. 31  | <u>61,000</u>    |
| Cost of goods sold               | <u>\$537,000</u> |

## Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

84. Hamilton Company had the following inventory balances at the beginning and end of the year:

|                 | <u>January 1</u> | <u>December 31</u> |
|-----------------|------------------|--------------------|
| Raw material    | \$ 50,000        | \$ 35,000          |
| Work in process | 130,000          | 170,000            |
| Finished goods  | 280,000          | 255,000            |

During the year, the company purchased \$100,000 of raw material and incurred \$340,000 of direct labor costs. Other data: manufacturing overhead incurred, \$450,000; sales, \$1,560,000; selling and administrative expenses, \$90,000; income tax rate, 30%.

Required:

- A. Calculate cost of goods manufactured.
- B. Calculate cost of goods sold.
- C. Determine Hamilton's net income.

A. Direct materials used:

|                                  |                |                   |
|----------------------------------|----------------|-------------------|
| Raw materials, Jan. 1            | \$ 50,000      |                   |
| Add: Purchases                   | <u>100,000</u> |                   |
| Raw materials available for use  | \$150,000      |                   |
| Deduct: Raw material, Dec. 31    | <u>35,000</u>  |                   |
| Raw material used                |                | \$ 115,000        |
| Direct labor                     |                | 340,000           |
| Manufacturing overhead           |                | <u>450,000</u>    |
| Total manufacturing costs        |                | \$ 905,000        |
| Add: Work in process, Jan. 1     |                | <u>130,000</u>    |
|                                  |                | \$1,035,000       |
| Deduct: Work in process, Dec. 31 |                | <u>170,000</u>    |
| Cost of goods manufactured       |                | <u>\$ 865,000</u> |

|                                  |                   |
|----------------------------------|-------------------|
| B. Finished goods, Jan. 1        | \$ 280,000        |
| Add: Cost of goods manufactured  | <u>865,000</u>    |
| Cost of goods available for sale | \$1,145,000       |
| Deduct: Finished goods, Dec. 31  | <u>255,000</u>    |
| Cost of goods sold               | <u>\$ 890,000</u> |

|                                           |                   |
|-------------------------------------------|-------------------|
| C. Sales revenue                          | \$1,560,000       |
| Less: Cost of goods sold                  | <u>890,000</u>    |
| Gross margin                              | \$ 670,000        |
| Less: Selling and administrative expenses | <u>90,000</u>     |
| Income before taxes                       | \$ 580,000        |
| Income tax expense (\$580,000 x 30%)      | <u>174,000</u>    |
| Net income                                | <u>\$ 406,000</u> |

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Bloom's: A

Difficulty: Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured

Learning Objective: a schedule of cost of goods sold

Learning Objective: and an income statement for a manufacturer.

85. The following selected information was extracted from the 20x3 accounting records of Midina Products

|                                           |           |
|-------------------------------------------|-----------|
| Raw materials used                        | \$284,000 |
| Direct labor                              | 178,000   |
| Indirect labor                            | 35,000    |
| Selling and administrative salaries       | 250,000   |
| Building depreciation*                    | 330,000   |
| Other selling and administrative expenses | 80,000    |
| Other factory costs                       | 620,000   |

\*Seventy percent of the company's building was devoted to production activities; the remaining 30% was used for selling and administrative functions.

Midina's beginning and ending work-in-process inventories amounted to \$306,000 and \$245,000, respectively. The company's beginning and ending finished-goods inventories were \$450,000 and \$440,000, respectively.

Required:

- Calculate Midina's manufacturing overhead for the year.
- Calculate Midina's cost of goods manufactured.
- Compute Midina's cost of goods sold.

|                                                   |                    |
|---------------------------------------------------|--------------------|
| A. Indirect labor                                 | \$ 35,000          |
| Building depreciation ( $\$330,000 \times 70\%$ ) | 231,000            |
| Other factory costs                               | <u>620,000</u>     |
| Total                                             | <u>\$ 886,000</u>  |
| <br>B. Raw material used                          | <br>\$ 284,000     |
| Direct labor                                      | 178,000            |
| Manufacturing overhead                            | <u>886,000</u>     |
| Total manufacturing costs                         | \$1,348,000        |
| Add: Work in process, beg.                        | <u>306,000</u>     |
|                                                   | \$1,654,000        |
| Deduct: Work in process, end.                     | <u>245,000</u>     |
| Cost of goods manufactured                        | <u>\$1,409,000</u> |
| <br>C. Finished goods, beg.                       | <br>\$ 450,000     |
| Add: Cost of goods manufactured                   | <u>1,409,000</u>   |
| Cost of goods available for sale                  | \$1,859,000        |
| Deduct: Finished goods, end.                      | <u>440,000</u>     |
| Cost of goods sold                                | <u>\$1,419,000</u> |

## Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

86. The selected amounts that follow were taken from Kandace Corporation's accounting records:

|                                     |           |
|-------------------------------------|-----------|
| Raw material used                   | \$ 27,000 |
| Direct labor                        | 35,000    |
| Total manufacturing costs           | 104,000   |
| Work-in-process inventory, 1/1      | 19,000    |
| Cost of goods manufactured          | 100,000   |
| Cost of goods available for sale    | 175,000   |
| Finished-goods inventory, 12/31     | 60,000    |
| Sales revenue                       | 300,000   |
| Selling and administrative expenses | 125,000   |
| Income tax expense                  | 18,000    |

Required:

Compute the following:

- A. Manufacturing overhead.
- B. Work-in-process inventory, 12/31.
- C. Finished-goods inventory, 1/1.
- D. Cost of goods sold.
- E. Gross margin.
- F. Net income.

Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

|    |                                           |               |                  |
|----|-------------------------------------------|---------------|------------------|
| A. | Total manufacturing costs                 |               | \$104,000        |
|    | Less: Raw material used                   | \$27,000      |                  |
|    | Direct labor                              | <u>35,000</u> | <u>62,000</u>    |
|    | Manufacturing overhead                    |               | <u>\$ 42,000</u> |
| B. | Total manufacturing costs                 |               | \$104,000        |
|    | Add: Work-in-process inventory, 1/1       |               | <u>19,000</u>    |
|    |                                           |               | \$123,000        |
|    | Less: Cost of goods manufactured          |               | <u>100,000</u>   |
|    | Work-in-process inventory, 12/31          |               | <u>\$ 23,000</u> |
| C. | Cost of goods available for sale          |               | \$175,000        |
|    | Less: Cost of goods manufactured          |               | <u>100,000</u>   |
|    | Finished-goods inventory, 1/1             |               | <u>\$ 75,000</u> |
| D. | Cost of goods available for sale          |               | \$175,000        |
|    | Less: Finished-goods inventory, 12/31     |               | <u>60,000</u>    |
|    | Cost of goods sold                        |               | <u>\$115,000</u> |
| E. | Sales revenue                             |               | \$300,000        |
|    | Less: Cost of goods sold                  |               | <u>115,000</u>   |
|    | Gross margin                              |               | <u>\$185,000</u> |
| F. | Gross margin                              |               | \$185,000        |
|    | Less: Selling and administrative expenses | \$125,000     |                  |
|    | Income tax expense                        | <u>18,000</u> | <u>143,000</u>   |
|    | Net income                                |               | <u>\$ 42,000</u> |

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Bloom's: A

Difficulty: Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured

Learning Objective: a schedule of cost of goods sold

Learning Objective: and an income statement for a manufacturer.

87. The Perez Company recorded the following transactions for February 20x1:

|                                                                             | <u>Materials</u> | <u>Work in Process</u> | <u>Finished Goods</u> |
|-----------------------------------------------------------------------------|------------------|------------------------|-----------------------|
| Purchases                                                                   | \$100,000        |                        |                       |
| Beginning inventory                                                         | 18,000           | \$ 8,000               | \$ E                  |
| Ending inventory                                                            | A                | 20,000                 | 30,000                |
| Direct materials used                                                       |                  | 90,000                 |                       |
| Direct labor                                                                |                  | B                      |                       |
| Manufacturing overhead<br>(includes indirect materials used<br>of \$10,000) |                  | 115,000                |                       |
| Transferred to finished goods                                               |                  | C                      |                       |
| Cost of goods sold                                                          |                  |                        | D                     |

Sales were \$560,000, with sales prices determined by adding a 40% markup to the firm's manufacturing cost. The total cost of direct materials used, direct labor, and manufacturing overhead during the month was \$285,000.

Note: The materials account includes both direct materials and indirect materials.

Required:

Calculate the missing values.

*Item A:*

|                               |                  |
|-------------------------------|------------------|
| Beginning materials           | \$ 18,000        |
| Add: Purchases                | 100,000          |
| Less: Direct materials used   | (90,000)         |
| Less: Indirect materials used | <u>(10,000)</u>  |
| Ending materials              | <u>\$ 18,000</u> |

*Item B:*

|                              |                  |
|------------------------------|------------------|
| Total production costs       | \$ 285,000       |
| Less: Direct materials used  | (90,000)         |
| Less: Manufacturing overhead | <u>(115,000)</u> |
| Direct labor                 | <u>\$ 80,000</u> |

*Item C:*

|                               |                  |
|-------------------------------|------------------|
| Beginning work in process     | \$ 8,000         |
| Add: Total production costs   | 285,000          |
| Less: Ending work in process  | <u>(20,000)</u>  |
| Transferred to finished goods | <u>\$273,000</u> |

*Item D:*

|                    |                  |
|--------------------|------------------|
| Sales              | \$560,000        |
| Divided by rate    | <u>÷ 140%</u>    |
| Cost of goods sold | <u>\$400,000</u> |

*Item E:*

|                                     |                  |
|-------------------------------------|------------------|
| Ending finished goods               | \$ 30,000        |
| Add: Cost of goods sold             | 400,000          |
| Less: Transferred to finished goods | <u>(273,000)</u> |
| Beginning finished goods            | <u>\$157,000</u> |

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Bloom's: A

Difficulty: Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured

Learning Objective: a schedule of cost of goods sold

Learning Objective: and an income statement for a manufacturer.

88. Heathrow Corporation sold 12,500 units of its single product during the year, reporting a cost of good sold that totaled \$250,000. A review of the company's accounting records disclosed the following information:

|                                             |           |
|---------------------------------------------|-----------|
| Cost of goods sold as a percentage of sales |           |
| revenue                                     | 40%       |
| Finished-goods inventory, 1/1               | \$ 87,000 |
| Work-in-process inventory, 12/31            | 55,000    |
| Cost of goods manufactured                  | 241,000   |
| Raw materials used                          | 40,000    |
| Direct labor                                | 74,000    |
| Manufacturing overhead                      | 122,000   |
| Selling and administrative expenses         | 310,000   |

Heathrow is subject to a 30% income tax rate.

Required:

A. Determine the selling price per unit.

B. Management established a goal at the beginning of the year to reduce the company's investment in finished-goods inventory and work-in-process inventory.

1. Analyze cost of goods sold and determine if management's goal was achieved with respect to finished-goods inventory. Show computations.

2. Analyze the firm's manufacturing costs and determine if management's goal was achieved with respect to work-in-process inventory. Show computations.

C. Is the company profitable? Show calculations.

A. Let  $X$  = sales revenue

$$0.4X = \$250,000$$

$$X = \$625,000$$

$$\text{Sales revenue } (\$625,000) \div \text{units sold } (12,500) = \$50 \text{ selling price}$$

B.

1. Cost of goods sold:

|                                  |                  |
|----------------------------------|------------------|
| Finished goods, Jan. 1           | \$ 87,000        |
| Add: Cost of goods manufactured  | <u>241,000</u>   |
| Cost of goods available for sale | \$328,000        |
| Deduct: Finished goods, Dec. 31  | <u>???????</u>   |
| Cost of goods sold               | <u>\$250,000</u> |

Ending finished-goods inventory totals \$78,000 (\$328,000 - \$250,000), which means that inventory was reduced by \$9,000 (\$87,000 - \$78,000) and management was successful in achieving its goal.

2. Cost of goods manufactured:

|                                  |                  |
|----------------------------------|------------------|
| Raw materials used               | \$ 40,000        |
| Direct labor                     | 74,000           |
| Manufacturing overhead           | <u>122,000</u>   |
| Total manufacturing costs        | \$236,000        |
| Add: Work in process, Jan. 1     | <u>???????</u>   |
|                                  | <u>\$???????</u> |
| Deduct: Work in process, Dec. 31 | <u>55,000</u>    |
| Cost of goods manufactured       | <u>\$241,000</u> |

Let  $X$  = work in process, Jan. 1

$$\$236,000 + X - \$55,000 = \$241,000$$

$$X = \$60,000$$

Yes, management achieved its goal because work-in-process inventory fell by \$5,000 (\$60,000 - \$55,000).

C.

|                                           |                  |
|-------------------------------------------|------------------|
| Sales revenue                             | \$625,000        |
| Less: Cost of goods sold                  | <u>250,000</u>   |
| Gross margin                              | \$375,000        |
| Less: Selling and administrative expenses | <u>310,000</u>   |
| Income before taxes                       | \$ 65,000        |
| Income tax expense (\$65,000 x 30%)       | <u>19,500</u>    |
| Net income                                | <u>\$ 45,500</u> |

Yes, the company is profitable.

## Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A, N*

*Difficulty: Hard*

*Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured*

*Learning Objective: a schedule of cost of goods sold*

*Learning Objective: and an income statement for a manufacturer.*

89. Aurora Muffler, Inc. operates an automobile service facility. The table below shows the cost incurred during a month when 500 mufflers were replaced.

|                                    | Number of Muffler Replacements |                 |            |
|------------------------------------|--------------------------------|-----------------|------------|
|                                    | <u>400</u>                     | <u>500</u>      | <u>600</u> |
| Total costs:                       |                                |                 |            |
| Fixed costs                        | A                              | \$ 9,000        | C          |
| Variable costs                     | <u>B</u>                       | <u>6,000</u>    | <u>D</u>   |
| Total costs                        | <u>E</u>                       | <u>\$15,000</u> | <u>F</u>   |
| Cost per muffler replacement:      |                                |                 |            |
| Fixed cost                         | G                              | H               | I          |
| Variable cost                      | <u>J</u>                       | <u>K</u>        | <u>L</u>   |
| Total cost per muffler replacement | <u>M</u>                       | <u>N</u>        | <u>O</u>   |

Required:

Fill in the missing amounts, labeled A through O, in the table above.

|                                    | Number of Muffler Replacements |                    |                    |
|------------------------------------|--------------------------------|--------------------|--------------------|
|                                    | <u>400</u>                     | <u>500</u>         | <u>600</u>         |
| Total costs:                       |                                |                    |                    |
| Fixed costs                        | \$ 9,000.00                    | \$ 9,000.00        | \$ 9,000.00        |
| Variable costs                     | <u>4,800.00</u>                | <u>6,000.00</u>    | <u>7,200.00</u>    |
| Total costs                        | <u>\$13,800.00</u>             | <u>\$15,000.00</u> | <u>\$16,200.00</u> |
| Cost per muffler replacement:      |                                |                    |                    |
| Fixed cost                         | \$ 22.50                       | \$ 18.00           | \$ 15.00           |
| Variable cost                      | <u>12.00</u>                   | <u>12.00</u>       | <u>12.00</u>       |
| Total cost per muffler replacement | <u>\$ 34.50</u>                | <u>\$ 30.00</u>    | <u>\$ 27.00</u>    |

*Explanatory notes:*

A and C each equal \$9,000, since fixed costs do not vary with activity.

J, K, and L each equal \$12 ( $\$6,000 \div 500$ ), since variable cost per replacement remains constant.

B equals \$4,800 ( $400 \times \$12$ )

D equals \$7,200 ( $600 \times \$12$ )

G equals \$22.50 ( $\$9,000 \div 400$ )

H equals \$18.00 ( $\$9,000 \div 500$ )

I equals \$15.00 ( $\$9,000 \div 600$ )

## Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A*

*Difficulty: Hard*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

90. Giraldo Systems began business on January 1 of the current year, producing a single product that is popular with home builders. Demand was very strong, allowing the company to sell its entire manufacturing output of 80,000 units. The following unit costs were incurred:

|                                   |      |
|-----------------------------------|------|
| Manufacturing costs:              |      |
| Direct materials                  | \$15 |
| Direct labor                      | 8    |
| Variable overhead                 | 11   |
| Fixed overhead                    | 6    |
| Selling and administrative costs: |      |
| Variable                          | 5    |
| Fixed                             | 2    |

Giraldo anticipates an increase in productive output to 100,000 units and sales of 95,000 units in the next accounting period. The company uses appropriate drivers to determine cost behavior and estimates.

Required:

- A. Assuming that present cost behavior patterns continue, compute the total expected costs in the upcoming accounting period.
- B. Ben Levy is about to prepare a graph that shows the unit cost behavior for variable selling and administrative cost. If the graph's horizontal axis is volume and the vertical axis is dollars, briefly describe what Levy's graph should look like.
- C. Determine whether the following costs are variable or fixed in terms of behavior:
  1. Yearly lease payments for a state-of-the-art cutting machine.
  2. A fee paid to a consultant who provided advice about quality issues. The fee was based on the number of consulting hours provided.
  3. Cost of an awards dinner for "star" salespeople.

|                                                    |                    |
|----------------------------------------------------|--------------------|
| A.                                                 |                    |
| Direct materials (100,000 x \$15)                  | \$1,500,000        |
| Direct labor (100,000 x \$8)                       | 800,000            |
| Variable overhead (100,000 x \$11)                 | 1,100,000          |
| Fixed overhead (80,000 x \$6)                      | 480,000            |
| Variable selling and administrative (95,000 x \$5) | 475,000            |
| Fixed selling and administrative (80,000 x \$2)    | 160,000            |
| Total costs                                        | <u>\$4,515,000</u> |

B. The variable selling and administrative costs are constant at \$5 per unit. Thus, the graph is a straight, horizontal line.

- C. 1. Fixed
2. Variable
3. Variable

## Chapter 02 - Basic Cost Management Concepts and Accounting for Mass Customization Operations

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: A, N*

*Difficulty: Hard*

*Learning Objective: 02-07 Understand the importance of identifying an organization's cost drivers.*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

91. Xi Manufacturing, which began operations on January 1 of the current year, produces an industrial scraper that sells for \$325 per unit. Information related to the current year's activities follows.

|                             |           |
|-----------------------------|-----------|
| Number of scrapers produced | 20,000    |
| Number of scrapers sold     | 17,000    |
| Variable costs per unit:    |           |
| Direct materials            | \$25      |
| Direct labor                | 35        |
| Manufacturing overhead      | 60        |
| Annual fixed costs:         |           |
| Manufacturing overhead      | \$400,000 |
| Selling and administrative  | 140,000   |

Xi carries its finished-goods inventory at the average unit cost of production. There was no work in process at year-end.

Required:

- A. Compute the company's average unit cost of production.
- B. Determine the cost of the December 31 finished-goods inventory.
- C. Compute the company's cost of goods sold.
- D. If next year's production increases to 23,000 units and general cost behavior patterns do not change, what is the likely effect on:
  1. The direct-labor cost of \$35 per unit? Why?
  2. The fixed manufacturing overhead cost of \$400,000? Why?

- A. Fixed manufacturing overhead per unit:  
 $\$400,000 \div 20,000 \text{ scrapers produced} = \$20$

Average unit manufacturing cost:

|                                 |              |
|---------------------------------|--------------|
| Direct materials                | \$ 25        |
| Direct labor                    | 35           |
| Variable manufacturing overhead | 60           |
| Fixed manufacturing overhead    | <u>20</u>    |
| Average unit cost               | <u>\$140</u> |

|                                         |               |
|-----------------------------------------|---------------|
| B. Production (units)                   | 20,000        |
| Sales (units)                           | <u>17,000</u> |
| Ending finished-goods inventory (units) | <u>3,000</u>  |

$$3,000 \text{ units} \times \$140 = \$420,000$$

|                                                               |                    |
|---------------------------------------------------------------|--------------------|
| C. Finished goods, Jan. 1                                     | \$ ---             |
| Add: Cost of goods manufactured (20,000 units $\times$ \$140) | <u>2,800,000</u>   |
| Cost of goods available for sale                              | \$2,800,000        |
| Deduct: Finished goods, Dec. 31                               | <u>420,000</u>     |
| Cost of goods sold                                            | <u>\$2,380,000</u> |

- D. 1. No change. Direct labor is a variable cost, and the cost per unit will remain constant.  
 2. No change. Despite the increase in the number of units produced, this is a fixed cost, which remains the same in total.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Bloom's: A

Difficulty: Hard

Learning Objective: 02-05 Give examples of three types of manufacturing costs.

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured

Learning Objective: 02-08 Describe the behavior of variable and fixed costs

Learning Objective: a schedule of cost of goods sold

Learning Objective: and an income statement for a manufacturer.

Learning Objective: in total and on a per-unit basis.

92. The following terms are used to describe various economic characteristics of costs:

|                    |                   |
|--------------------|-------------------|
| Opportunity cost   | Differential cost |
| Out-of-pocket cost | Marginal cost     |
| Sunk cost          | Average cost      |

Required:

Choose one of the preceding terms to characterize each of the amounts described below. Each term may be used only once.

- A. The cost of including one extra child in a day-care center.
- B. The cost of merchandise inventory purchased five years ago. The goods are now obsolete.
- C. The cost of feeding 300 children in a public school cafeteria is \$450 per day, or \$1.50 per child per day. What economic term describes this \$1.50 cost?
- D. The management of a high-rise office building uses 3,000 square feet of space in the building for its own administrative functions. This space could be rented for \$30,000. What economic term describes this \$30,000 of lost rental revenue?
- E. The cost of building an automated assembly line in a factory is \$700,000; a manually operated assembly line would cost \$250,000. What economic term is used to describe the \$450,000 variation between these two amounts?
- F. Refer to the preceding question and assume that the firm is currently building the assembly line for \$700,000. What economic term is used to describe the \$700,000 construction cost?

- A. Marginal cost
- B. Sunk cost
- C. Average cost
- D. Opportunity cost
- E. Differential cost
- F. Out-of-pocket cost

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Hard*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*

93. Madi and Sohn Corporation has a single facility that it uses for manufacturing, sales, and administrative activities. Should the company's building depreciation charge be expensed in its entirety or is a different accounting procedure appropriate? Explain.

The company's depreciation charge is, in part, a period cost and, in part, a product cost. The portion that relates to selling and administrative activities should be expensed when incurred. In contrast, the portion that relates to manufacturing should be attached to the goods produced, with the costs now inventoried on the balance sheet.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

94. Manufacturers have established a cost classification called product costs. Define the term "product cost" and note where these costs appear in the financial statements. Be specific.

Product costs are costs that relate to the manufacturing process and consist of direct materials, direct labor, and manufacturing overhead. Simply stated, these are costs incurred to make a product.

Product costs are attached to the units produced (i.e., work in process) and, thus, inventoried on the balance sheet. These costs are later charged to finished goods when the goods are completed. Another transfer occurs when the finished units are sold, with the costs now transferred to cost of goods sold on the income statement.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Reporting*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-02 Distinguish among product costs*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

*Learning Objective: and expenses.*

*Learning Objective: period costs*

95. The income statements and balance sheets of service, retailing, and manufacturing businesses tend to differ.

Required:

- A. Which of these businesses will disclose a cost-of-goods-sold figure on the income statement? Why?
- B. Briefly describe the difference between a retailing firm and manufacturer's disclosure of inventories on the balance sheet.

A. Retailers and manufacturers will disclose a cost-of-goods-sold figure because both of these entities sell goods. Service businesses, in contrast, do not given that such firms provide services.

B. A retailer will typically disclose inventories as one-line item entitled merchandise inventories. Manufacturers, on the other hand, carry three different types of inventories: raw materials, work in process, and finished goods.

*AACSB: Analytic*

*AICPA BB: Industry*

*AICPA FN: Reporting*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-03 Describe the role of costs in published financial statements.*

96. Briefly define and discuss the terms in each of the pairs that follow.

- A. Direct and indirect costs
- B. Direct materials and indirect materials
- C. Manufacturing overhead and direct labor

A. Direct costs are logically and practically related (i.e., easily traceable) to a particular cost object. An indirect cost, on the other hand, is not. Whether a cost is direct or indirect depends on the cost object under consideration. A cost may be easily traceable to a company, for example, but not easily traced to a department of that firm.

B. Direct materials form an integral part of the finished product and, at the same time, are easily traced to that product. Indirect materials, which are part of manufacturing overhead, generally do not meet these guidelines. Note, though, that some indirect material may be easily traced to the product (e.g., five squirts of wood glue in a piece of furniture) but it may be too costly to do so.

C. Manufacturing overhead consists of indirect materials, indirect labor, plant depreciation, factory utilities, and other factory-related costs. This cost component reflects all manufacturing costs other than direct materials and direct labor. Direct labor, in contrast, consists of wages of those employees who work directly on the goods in production (machine operators, assembly-line workers, and so forth).

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-05 Give examples of three types of manufacturing costs.*

*Learning Objective: 02-09 Distinguish among direct*

*Learning Objective: and uncontrollable costs.*

*Learning Objective: controllable*

*Learning Objective: indirect*

97. In discussing the operation of her automobile, a doctor once observed that gasoline is a fixed cost because the cost per gallon is relatively stable. Insurance, on the other hand, is a variable cost because the cost per mile varies inversely with the number of miles driven. Comment on the doctor's observation.

The doctor's observations are incorrect, as gasoline is a variable cost and insurance is a fixed cost. Gasoline cost will increase with the number of miles driven, whereas insurance outlays will remain the same. The doctor seems to have confused the "total" perspective, as defined by accountants, with the notion of per-unit cost behavior.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: N*

*Difficulty: Hard*

*Learning Objective: 02-08 Describe the behavior of variable and fixed costs*

*Learning Objective: in total and on a per-unit basis.*

98. Describe the economic characteristics of sunk costs and opportunity costs, and explain the impact that these costs may have on decisions.

Sunk costs have already been incurred. They are part of history and cannot be altered. Therefore, sunk costs are not relevant for any current or future management decision. Opportunity costs, in contrast, are relevant for current and future decisions. Such costs are defined as the net benefits from a decision alternative that was not selected—that is, the benefits were sacrificed to pursue another option.

*AACSB: Analytic*

*AICPA BB: Critical Thinking*

*AICPA FN: Measurement*

*Bloom's: RC*

*Difficulty: Medium*

*Learning Objective: 02-10 Define and give examples of an opportunity cost*

*Learning Objective: a differential cost*

*Learning Objective: a marginal cost*

*Learning Objective: a sunk cost*

*Learning Objective: an out-of-pocket cost*

*Learning Objective: and an average cost.*