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## Chapter 02: Basic Cost Management Concepts

### 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. Advertising and rent on a factory.

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. None of the other answers are correct.

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. Advertising expense and indirect labor.

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 the other answers are correct.

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. Which of the four items listed below is not a type of production process?

- A. Batch.
- B. Job Shop.
- C. Continuous Flow.
- D. Job Flow.

21. Which type of production process is ideal for a low production volume and one of a kind products?

- A. Batch.
- B. Continuous Flow.
- C. Job Shop.
- D. Assembly.

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. Salesperson and assembler of wooden furniture.

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. None of the other answers are correct.

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. Overtime premiums should be treated as a component of direct labor and idle time should be treated as a component of direct labor.

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 other answers are correct.

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. None of the other answers are correct.

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. None of the other answers are correct.

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. None of the other answers are correct.

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. None of the other answers are correct.

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. None of the other answers are correct.
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.

42.	Raw materials inventory, January 1, 2011	\$32,500
	Raw materials inventory, December 31, 2011	\$26,700

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. None of the other answers are correct.

43.	Raw materials inventory, January 1, 2011	\$32,500
	Raw materials inventory, December 31, 2011	\$26,700

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. None of the other answers are correct.



44.	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

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. None of the other answers are correct.

45.	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

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. None of the other answers are correct.

46. Finished goods inventory, January 1, 2011	\$29,300
Finished goods inventory, December 31, 2011	\$24,100

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. None of the other answers are correct.

47. Finished goods inventory, January 1, 2011	\$29,300
Finished goods inventory, December 31, 2011	\$24,100

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. None of the other answers are correct.

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 the other answers are correct.

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 increase as activity decreases and will decrease as activity increases.

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 are 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. None of the other answers are correct.
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. None of the other answers are correct.
  - 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. None of the other answers are correct.
  - 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. None of the other answers are correct.
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 the other answers are correct.

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.

75. 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 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

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. 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 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

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 Medina 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.

Medina'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 Medina's manufacturing overhead for the year.
- B. Calculate Medina's cost of goods manufactured.
- C. Compute Medina'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 (includes indirect materials used 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  
Out-of-pocket cost  
Sunk cost

Differential cost  
Marginal 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 **Answer Key**

### True / False Questions

1. Inventoriable costs are expensed when incurred.

FALSE

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Remember

Difficulty: 1 Easy

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

TRUE

AACSB: Reflective Thinking

AICPA BB: Industry

AICPA FN: Reporting

Blooms: Remember

Difficulty: 1 Easy

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

Blooms: Remember

Difficulty: 1 Easy

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

Blooms: Remember

Difficulty: 1 Easy

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

Blooms: Remember

Difficulty: 1 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

Blooms: Remember

Difficulty: 1 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

Blooms: Remember

Difficulty: 1 Easy

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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. Advertising and rent on a factory.

AACSB: Analytic

AICPA BB: Industry

AICPA FN: Measurement

Blooms: Remember

Difficulty: 1 Easy

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Blooms: Remember

Difficulty: 1 Easy

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 2 Medium

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Blooms: Remember

Difficulty: 1 Easy

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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. Advertising expense and indirect labor.

AACSB: Analytic  
AICPA BB: Critical Thinking  
AICPA FN: Measurement  
Blooms: Remember  
Difficulty: 1 Easy

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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  
Blooms: Remember  
Difficulty: 1 Easy

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Blooms: Remember

Difficulty: 1 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

Blooms: Understand

Difficulty: 2 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 the other answers are correct.

AACSB: Reflective Thinking

AICPA BB: Industry

AICPA FN: Reporting

Blooms: Understand

Difficulty: 2 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

Blooms: Understand

Difficulty: 2 Medium

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

20. Which of the four items listed below is not a type of production process?

- A. Batch.
- B. Job Shop.
- C. Continuous Flow.
- D. Job Flow.

AACSB: Reflective Thinking

AICPA BB: Industry

AICPA FN: Decision Making

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-04 List and describe four types of manufacturing operations.

21. Which type of production process is ideal for a low production volume and one of a kind products?

- A. Batch.
- B. Continuous Flow.
- C. Job Shop.
- D. Assembly.

AACSB: Reflective Thinking

AICPA BB: Industry

AICPA FN: Decision Making

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-04 List and describe four types of manufacturing operations.

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

Blooms: Understand

Difficulty: 1 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

Blooms: Remember

Difficulty: 1 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

Blooms: Apply

Difficulty: 3 Hard

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. Salesperson and assembler of wooden furniture.

AACSB: Analytic

AICPA BB: Industry

AICPA FN: Measurement

Blooms: Remember

Difficulty: 1 Easy

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

Blooms: Remember

Difficulty: 1 Easy

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

Blooms: Understand

Difficulty: 2 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Industry

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

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. Overtime premiums should be treated as a component of direct labor and idle time should be treated as a component of direct labor.

AACSB: Analytic

AICPA BB: Industry

AICPA FN: Measurement

Blooms: Understand

Difficulty: 2 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

Blooms: Remember

Difficulty: 1 Easy

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  
Blooms: Remember  
Difficulty: 1 Easy

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  
Blooms: Understand  
Difficulty: 2 Medium

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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 other answers are correct.

AACSB: Analytic

AICPA BB: Industry

AICPA FN: Measurement

Blooms: Understand

Difficulty: 2 Medium

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

Blooms: Understand

Difficulty: 2 Medium

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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Industry

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

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

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; and an income statement for a manufacturer.

42.	Raw materials inventory, January 1, 2011	\$32,500
	Raw materials inventory, December 31, 2011	\$26,700

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. None of the other answers are correct.

AACSB: Analytic  
 AICPA BB: Critical Thinking  
 AICPA FN: Measurement  
 Blooms: Apply  
 Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; and an income statement for a manufacturer.

43.	Raw materials inventory, January 1, 2011	\$32,500
	Raw materials inventory, December 31, 2011	\$26,700

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. None of the other answers are correct.

AACSB: Analytic



AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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
44.	Conversion costs during the year	\$415,000

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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; and an income statement for a manufacturer.

45.	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

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. None of the other answers are correct.

AACSB: Analytic  
AICPA BB: Critical Thinking  
AICPA FN: Measurement  
Blooms: Apply  
Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; and an income statement for a manufacturer.

46.	Finished goods inventory, January 1, 2011	\$29,300
	Finished goods inventory, December 31, 2011	\$24,100

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. None of the other answers are correct.

AACSB: Analytic  
 AICPA BB: Critical Thinking  
 AICPA FN: Measurement  
 Blooms: Apply  
 Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; and an income statement for a manufacturer.

47.	Finished goods inventory, January 1, 2011	\$29,300
	Finished goods inventory, December 31, 2011	\$24,100

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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

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

Blooms: Apply

Difficulty: 3 Hard

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

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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 the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Reporting

Blooms: Analyze

Difficulty: 3 Hard

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

Blooms: Analyze

Difficulty: 3 Hard

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

Blooms: Analyze

Difficulty: 3 Hard

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

Blooms: Understand

Difficulty: 2 Medium

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

Blooms: Understand

Difficulty: 2 Medium

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

Blooms: Understand

Difficulty: 2 Medium

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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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  
Blooms: Understand  
Difficulty: 2 Medium

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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 increase as activity decreases and will decrease as activity increases.

AACSB: Analytic  
AICPA BB: Critical Thinking  
AICPA FN: Measurement  
Blooms: Remember  
Difficulty: 1 Easy

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

Blooms: Remember

Difficulty: 1 Easy

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

Blooms: Understand

Difficulty: 2 Medium

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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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  
Blooms: Apply  
Difficulty: 2 Medium

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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. None of the other answers are correct.
- E. Total costs cannot be calculated based on the information presented.

AACSB: Analytic  
AICPA BB: Critical Thinking  
AICPA FN: Measurement  
Blooms: Apply  
Difficulty: 2 Medium

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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. None of the other answers are correct.
- E. Total costs cannot be calculated based on the information presented.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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. None of the other answers are correct.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 Hard

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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-09 Distinguish among direct; indirect; controllable; and uncontrollable costs.

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

Blooms: Remember

Difficulty: 1 Easy

Learning Objective: 02-09 Distinguish among direct; indirect; controllable; and uncontrollable 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.

AACSB: Analytic  
AICPA BB: Critical Thinking  
AICPA FN: Measurement  
Blooms: Understand  
Difficulty: 2 Medium

Learning Objective: 02-09 Distinguish among direct; indirect; controllable; and uncontrollable costs.

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  
Blooms: Remember  
Difficulty: 1 Easy

Learning Objective: 02-09 Distinguish among direct; indirect; controllable; and uncontrollable costs.

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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; 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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; 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 the other answers are correct.

AACSB: Reflective Thinking

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; 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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; and an average cost.

75. 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 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

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

Blooms: Analyze

Difficulty: 3 Hard

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; and an average cost.

76. 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 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

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

Blooms: Analyze

Difficulty: 3 Hard

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; 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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; 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

Blooms: Analyze

Difficulty: 3 Hard

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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; in total and on a per-unit basis.

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

Blooms: Analyze

Difficulty: 3 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; a schedule of cost of goods sold; 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

Blooms: Analyze

Difficulty: 3 Hard

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; in total and on a per-unit basis.



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

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Analyze

Difficulty: 3 Hard

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; in total and on a per-unit basis.

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

Blooms: Analyze

Difficulty: 3 Hard

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; and an income statement for a manufacturer.

Learning Objective: 02-09 Distinguish among direct; indirect; controllable; and uncontrollable 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>
B. Finished goods, Jan. 1	\$ 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>

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Analyze

Difficulty: 3 Hard

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

<b>A. Direct materials used:</b>		
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>B. Finished goods, Jan. 1</b>		\$ 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>
<b>C. Sales revenue</b>		\$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

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; and an income statement for a manufacturer.



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

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

A. Indirect labor	\$ 35,000
Building depreciation (\$330,000 x 70%)	231,000
Other factory costs	<u>620,000</u>
Total	<u>\$ 886,000</u>
B. Raw material used	\$ 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>
C. Finished goods, beg.	\$ 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>

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Apply

Difficulty: 3 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; a schedule of cost of goods sold; 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.

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

Blooms: Apply

Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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 (includes indirect materials used 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.

<i>Item A:</i>	
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>

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

<i>Item C:</i>	
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>

<i>Item D:</i>	
Sales	\$560,000
Divided by rate	<u>÷ 140%</u>
Cost of goods sold	<u>\$400,000</u>

<i>Item E:</i>	
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  
Blooms: Apply  
Difficulty: 3 Hard

Learning Objective: 02-06 Prepare a schedule of cost of goods manufactured; a schedule of cost of goods sold; 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>
	\$???????
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.

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Evaluate

Difficulty: 3 Hard

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

	<u>Number of Muffler Replacements</u>		
	<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.

	<u>Number of Muffler Replacements</u>		
	<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 ( $\$9,000 \div 600$ )

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Analyze

Difficulty: 3 Hard

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; 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)	<u>160,000</u>
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

AACSB: Analytic

AICPA BB: Critical Thinking

AICPA FN: Measurement

Blooms: Evaluate

Difficulty: 3 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; 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

Blooms: Evaluate

Difficulty: 3 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; a schedule of cost of goods sold; and an income statement for a manufacturer.

Learning Objective: 02-08 Describe the behavior of variable and fixed costs; in total and on a per-unit basis.

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

Opportunity cost  
Out-of-pocket cost  
Sunk cost

Differential cost  
Marginal 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  
Blooms: Apply  
Difficulty: 3 Hard

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; 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  
Blooms: Evaluate  
Difficulty: 3 Hard

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-02 Distinguish among product costs; period costs; and expenses.

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

Blooms: Understand

Difficulty: 2 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

Blooms: Understand

Difficulty: 2 Medium

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

Learning Objective: 02-09 Distinguish among direct; indirect; controllable; and uncontrollable costs.

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

Blooms: Analyze

Difficulty: 3 Hard

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

Blooms: Understand

Difficulty: 2 Medium

Learning Objective: 02-10 Define and give examples of an opportunity cost; an out-of-pocket cost; a sunk cost; a differential cost; a marginal cost; and an average cost.