

Chapter 2--Measuring Product Costs

Student: _____

1. Which of the following is **not** one of the three major manufacturing cost categories?

- A. Direct materials costs that can be easily traced to a product
- B. Direct labor costs of workers who transform materials into finished products and whose time can be easily traced to a product
- C. Manufacturing overhead costs which represents all other manufacturing costs that do not fit into the other categories
- D. Opportunity costs which are the manufacturing costs forgone by accepting another production alternative

2. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as cleaning supplies which are **not** easily traced to a specific customized baseball bat fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

3. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs, such as the wages for janitorial staff to sweep and mop the floors, that are **not** easily traced to a specific customized baseball bat fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

4. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as the cost of the high quality hard woods specifically selected by the customer for producing their own customized baseball bat fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

5. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as the cost of production supervisors overseeing the production of several different products fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

6. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as depreciation and insurance for the factory building, as well as heat, light, power, and similar expenses incurred to keep the factory operating, fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

7. Which of the following statements reflects the basic cost flow equation?

- A. Beginning Balance plus Transfers In equals Transfers Out plus Ending Balance.
- B. Beginning Balance minus Transfers In equals Transfers Out minus Ending Balance.
- C. Beginning Balance plus Transfers In equals Transfers Out minus Ending Balance.
- D. Beginning Balance minus Transfers In equals Transfers Out plus Ending Balance.

8. In recording costs by departments, the accounting system has served its functions of providing data for department performance evaluation, and also assigns costs to products for managerial decision making, such as

- A. evaluating a product's quality.
- B. evaluating a product's profitability.
- C. evaluating a product's integrity.
- D. evaluating a product's effectiveness.

9. The Work-in-Process account both describes the transformation of inputs into outputs in a company and accounts for the costs incurred in the process. The key equation in symbols is

- A. $BB + TI = TO + EB$.
- B. $EB + TI = TO + BB$.
- C. $BB + TO = TI + EB$.
- D. None of the answers is correct.

10. Which of the following is **not** normally added to the work-in-process account?

- A. Direct labor.
- B. Depreciation on factory equipment.
- C. General factory labor.
- D. Depreciation on office equipment.

11. The basic cost flow equation is used by

- A. independent auditors to perform reasonableness checks on the data they receive from clients.
- B. companies to check that the amount of inventory recorded on the books matches the physical count of inventory.
- C. independent auditors and companies to check for thefts or financial fraud.
- D. All of the answers are correct.

12. Which of the following statements is **true** if a company overstates the ending balance of inventory?

- A. Cost of Goods Sold and profits will be overstated and Gross Margin will be understated.
- B. Cost of Goods Sold, Gross Margin, and profits will be understated.
- C. Cost of Goods Sold, Gross Margin, and profits will be overstated.
- D. Cost of Goods Sold will be understated, Gross Margin and profits will be overstated.

13. A company manager intentionally commits fraud by overstating the ending balance of inventory in order to improve his current period's performance evaluation and resulting bonus. Which of the following statements is **true**?

- A. All accounting frauds do not require repeated misrepresentation period after period and the overstatement of income in one period does not cause a lower income in a subsequent period.
- B. All accounting frauds do not require repeated misrepresentation period after period and the manager will most likely escape detection if internal controls are poor.
- C. All accounting frauds require repeated misrepresentation period after period or else the overstatement of income in one period causes a lower income in a subsequent period.
- D. According to Generally Accepted Auditing Standards, the independent auditors must report all accounting frauds, regardless of amount, directly to the Securities and Exchange Commission within 3 days of discovery.

14. Which of the following is **not** a fraudulent practice for assigning costs?

- A. Misstating the stage of completion of jobs
- B. Charging costs to the wrong jobs or categories
- C. Comparing actual with estimated costs for pricing future jobs
- D. Misrepresenting the costs of jobs

15. Your supervisor at a consulting firm asks you to allocate the time you actually spent on jobs now in danger of exceeding their cost estimates to other jobs less likely to overrun cost estimates. Which of the following statements is **true**?

- A. This practice misleads managers who rely on accurate cost information for pricing, cost control, and other decisions.
- B. This practice cheats people who may be paying for a job on a cost-plus-fee basis, where the job has cost less than the producer claims.
- C. This practice avoids the appearance of cost overruns on some jobs and is unethical.
- D. All of the answers are correct.

16. In a service organization, accounting charges overhead to jobs based on hours worked on the job. Actual overhead incurred is \$15,000. Actual hours worked for client A is 200 hours, for client B is 100 hours, and unbillable is 100 hours. Calculate the overhead rate.

- A. \$30 per hour.
- B. \$40 per hour.
- C. \$50 per hour.
- D. \$60 per hour.

17. Which of the following statements is **true** concerning a normalized overhead rate?

- A. A normalized overhead rate should be used whenever the firm does not prepare a master budget.
- B. A normalized overhead rate is employed so that wide fluctuations and variations in the level of production will not influence unit costs.
- C. A normalized overhead rate is used by firms that have a normal production schedule.
- D. A normalized overhead rate results in distorting the income figures of the firm.

18. Accounting for factory overhead costs involves averaging in

<u>Job Order Costing</u>	<u>Process Costing</u>
A. Yes	No
B. Yes	Yes
C. No	Yes
D. No	No

19. Normal costing uses actual direct material and direct labor costs, plus an amount representing "normal"

- A. manufacturing overhead.
- B. indirect overhead.
- C. direct overhead.
- D. selling commissions.

20. Under normal costing, the Predetermined Manufacturing Overhead Rate equals

- A. Actual Manufacturing Overhead divided by the Actual Activity Level.
- B. Actual Manufacturing Overhead divided by the Normal (or Estimated) Activity Level.
- C. Estimated Manufacturing Overhead divided by the Normal (or Estimated) Activity Level.
- D. None of the answers is correct.

21. Normal costing does **not** use which of the following to measure product costs?

- A. Actual direct material costs
- B. Actual direct labor costs
- C. An amount representing "normal" manufacturing overhead
- D. Actual manufacturing overhead

22. Actual costing does **not** use which of the following to measure product costs?

- A. Actual direct material costs
- B. Actual direct labor costs
- C. An amount representing "normal" manufacturing overhead
- D. Actual manufacturing overhead

23. Which costing methodology derives a rate for applying overhead to units produced before the production period, then uses this "predetermined rate" in applying overhead to each unit as they produce it?

- A. Normal costing
- B. Actual costing
- C. Predetermined costing
- D. Imputed production costing

24. Which of the following is **true** regarding normal costing?

- A. Normal costing assigns to products actual direct material and direct labor costs plus an amount representing “normal” manufacturing overhead.
- B. Under normal costing, a firm derives a rate for applying overhead to units produced before the production period begins.
- C. Under normal costing, a firm uses a predetermined overhead rate in applying overhead to each unit as the firm produces it throughout the year.
- D. All of the answers are correct.

25. Which of the following is **false** regarding normal costing?

- A. Normal costing assigns to products actual direct material and direct labor costs plus an amount representing “normal” manufacturing overhead.
- B. Under normal costing, a firm derives a rate for applying overhead to units produced before the production period begins.
- C. Under normal costing, a firm uses a predetermined overhead rate in applying overhead to each unit as the firm produces it throughout the year.
- D. Under normal costing, a firm uses the actual overhead costs incurred because this is the “normal” procedure in the United States.

26. Which of the following is the appropriate procedure to apply overhead to production using normal costing?

- A. Assign actual direct material and direct labor costs plus an amount representing “normal” manufacturing overhead to products.
- B. Assign “normal” direct material and direct labor costs plus an amount representing “normal” manufacturing overhead to products.
- C. Assign actual direct material and direct labor costs plus an amount representing actual manufacturing overhead to products.
- D. All of the answers are correct.

27. Which of the following is/are a benefit of normal costing?

- A. Normal costing enable companies to smooth out, or normalize, seasonal production fluctuations.
- B. Under normal costing, a firm can quickly calculate the cost of items manufactured.
- C. Under normal costing, a firm uses a predetermined overhead rate in applying overhead to each unit as the firm produces it throughout the year, rather than wait for the actual overhead rate to be determined at the end of the year.
- D. All of the answers are correct.

28. Which of the following is **true** regarding cost drivers?

- A. Cost drivers are the allocation base for applying overhead to production.
- B. Cost drivers cause an activity’s cost.
- C. Cost drivers are the allocation base for applying overhead to production, *and* cost drivers cause an activity’s cost.
- D. None of the answers is correct.

29. In a normal costing system, how is the predetermined overhead rate calculated?

- A. Divide actual manufacturing overhead by the normal (or estimated) activity level.
- B. Divide estimated manufacturing overhead by the actual activity level.
- C. Divide estimated manufacturing overhead by the normal (or estimated) activity level.
- D. Divide actual manufacturing overhead by the actual activity level.

30. In a normal costing system, how is the predetermined variable manufacturing overhead rate calculated?

- A. Divide actual variable manufacturing overhead by the normal (or estimated) activity level.
- B. Divide estimated variable manufacturing overhead by the actual activity level.
- C. Divide estimated variable manufacturing overhead by the normal (or estimated) activity level.
- D. Divide actual variable manufacturing overhead by the actual activity level.

31. In a normal costing system, how is the predetermined fixed manufacturing overhead rate calculated?

- A. Divide actual fixed manufacturing overhead by the normal (or estimated) activity level.
- B. Divide estimated fixed manufacturing overhead by the actual activity level.
- C. Divide estimated fixed manufacturing overhead by the normal (or estimated) activity level.
- D. Divide actual fixed manufacturing overhead by the actual activity level.

32. Assume a normal costing system. Calculate the predetermined overhead rate based on the following assumptions:

Estimated Manufacturing Overhead	\$500,000
Actual Manufacturing Overhead	\$450,000
Estimated Activity	50,000 machine hours
Actual Activity	48,000 machine hours

- A. \$9.00 per machine hour
- B. \$10.00 per machine hour
- C. \$9.375 per machine hour
- D. \$10.42 per machine hour

33. Assume a normal costing system. Calculate the predetermined overhead rate based on the following assumptions:

Estimated Manufacturing Overhead	\$75,000
Actual Manufacturing Overhead	\$85,000
Estimated Activity	10,000 machine hours
Actual Activity	9,000 machine hours

- A. \$8.33 per machine hour
- B. \$8.50 per machine hour
- C. \$7.50 per machine hour
- D. \$9.44 per machine hour

34. Safa Visual Works, Inc. estimated its overhead costs for the current year to be as follows: fixed, \$175,000; variable, \$4 per unit. Safa expected to produce 350,000 units during the year. During the year, the company incurred overhead costs of \$1,600,000 and produced 400,000 units. Calculate the rate to be used to apply manufacturing overhead costs to products.

- A. \$3.50
- B. \$4.50
- C. \$5.50
- D. \$9.00

35. An effective cost system has which of the following characteristic(s)?

- A. Decision focus
- B. Different costs for different purposes
- C. Cost benefit test
- D. All of the answers are correct.

36. Which of the following is **not** a characteristic of an effective cost system?

- A. Decision focus
- B. Different costs for different purposes
- C. Cost-benefit test
- D. Generally accepted accounting principles compliant

37. Which of the following is an example of an organization that would use job-order accounting?

- A. a custom construction company.
- B. an oil refinery.
- C. a cereal processor.
- D. None of the answers is correct.

38. Which of the following represents an example of an organization that would use continuous flow processing methods?

- A. a chemical manufacturer.
- B. a custom home builder.
- C. a hospital.
- D. a custom jeweler.

39. Job costing is most appropriate for

<u>Type of Product</u>	<u>Length of Production Run</u>
A. Customized	Short
B. Customized	Long
C. Standardized	Short
D. Standardized	Long

40. Continuous flow processing is most appropriate for

<u>Type of Product</u>	<u>Length of Production Run</u>
A. Customized	Short
B. Customized	Long
C. Standardized	Short
D. Standardized	Long

41. Which of the following costing system is appropriate for a company that produces customized products?

- A. job costing.
- B. process costing
- C. operation costing.
- D. standard costing.

42. Which of the following costing system has characteristics of both job and process costing?

- A. normal costing.
- B. actual costing
- C. operation costing.
- D. standard costing.

43. Which of the following costing system is appropriate for a company that mass-produces homogeneous products (continuous flow processing)?

- A. job costing.
- B. process costing.
- C. operation costing.
- D. dynamic costing.

44. What costing method should a manufacturing company use when it produces batches of products where the value and quality of direct material varies by batch, but the direct labor and time spent are standardized?
- A. Job costing
 - B. Process costing
 - C. Operation costing
 - D. Dynamic costing
45. Operation costing is a hybrid of which of the following two costing methods?
- A. batch costing and backflush costing.
 - B. job costing and process costing.
 - C. job costing and backflush costing.
 - D. process costing and backflush costing.
46. Operation cost is a hybrid of job and process costing, where the materials differ by type of product but
- A. labor and overhead amounts are different.
 - B. labor amounts are the same and overhead amounts are different.
 - C. labor and overhead amounts are the same.
 - D. labor amounts are different and overhead amounts are the same.
47. What is the method of costing used by companies that use a combination of job and process costing?
- A. hybrid costing.
 - B. standard costing.
 - C. sunk costing.
 - D. combination costing
48. Which statement is **true** concerning job costing?
- A. Firms collect costs for each unit produced.
 - B. Firms accumulate costs in a department or production process during the accounting period.
 - C. Firms spread costs evenly over the units produced during the period.
 - D. The equation for determining average unit cost is Total Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.
49. Which of the following is **false** about process costing?
- A. Firms collect costs for each unit produced.
 - B. Firms accumulate costs in a department or production process during the accounting period
 - C. Firms spread costs evenly over the units produced during the period, to determine an average cost per unit.
 - D. The equation for determining average unit cost is Total Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.

50. Which costing system is generally used by companies producing high value, customized products?

- A. a process costing system.
- B. a variable costing system.
- C. a job costing system.
- D. a direct costing system.

51. Which costing system is generally used by companies who provide professional services to their clients, such as accountants and lawyers?

- A. process costing system.
- B. variable costing system.
- C. job costing system.
- D. direct costing system.

52. Which costing system is generally used by companies who mass-produce homogeneous products, such as a petroleum refining company?

- A. process costing system.
- B. variable costing system.
- C. job costing system.
- D. direct costing system.

53. Which costing system would be most appropriate for use by a soft drink bottling company?

- A. process costing system.
- B. variable costing system.
- C. job costing system.
- D. direct costing system.

54. To record the cost of producing the same type of tables made of different materials, but undergoing the same manufacturing process, a furniture manufacturing company would most likely use a(n)

- A. process costing system.
- B. variable costing system.
- C. job costing system.
- D. operation costing system.

55. Which of the following is **true**?

- A. In job costing, firms collect costs for each “unit” produced.
- B. In process costing, firms accumulate costs in a department or production process during the accounting period, then spread those costs evenly over the units produced that period, computing an average unit cost.
- C. Process costing does not require as much record keeping as job costing system because it does not require keeping track of the cost of each job.
- D. All of the answers are correct.

56. Why do firms collect costs by job?

- A. For performance evaluation
- B. To provide information for cost control
- C. To compare actual with estimated costs for pricing future jobs
- D. All of the answers are correct.

57. In process costing, what is the equation for determining average unit cost?

- A. Total Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.
- B. Average Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.
- C. Total Manufacturing Cost Incurred during the Period divided by Average Units Produced during the period.
- D. Average Manufacturing Cost Incurred during the Period divided by Average Units Produced during the period.

58. Which of the following is a deficiency of process costing?

- A. In process costing, decision makers are informed about the average cost of the units, but not the actual cost of each particular unit or job.
- B. In process costing, firms accumulate costs in a department or production process during the accounting period, then spread those costs evenly over the units produced that period, computing an average unit cost.
- C. Process costing does not require as much record keeping as job costing system because it does not require keeping track of the cost of each job.
- D. None of the answers is a deficiency.

59. What is important to recognize when comparing the cost-benefit considerations of job versus process costing?

- A. Job costing provides less detailed information than process costing and job costing costs more to implement than process costing.
- B. Job costing provides less detailed information than process costing and job costing costs less to implement than process costing.
- C. Job costing provides more detailed information than process costing and job costing costs less to implement than process costing.
- D. Job costing provides more detailed information than process costing and job costing costs more to implement than process costing.

60. What can be said of the relationship between cost of goods sold and the cost of goods manufactured when finished goods inventories increase? (Assume no change in unit prices.)
- A. They are equal.
 - B. Cost of Goods Sold greater than Cost of Goods Manufactured
 - C. Cost of Goods Manufactured greater than Cost of Goods Sold
 - D. Nothing can be said without additional information.
61. What can be said of the relationship between total manufacturing costs and the cost of goods manufactured when work-in-process inventories decrease during the period? (Assume no change in per unit costs.)
- A. They are equal.
 - B. Total Manufacturing Costs greater than Cost of Goods Manufactured
 - C. Cost of Goods Manufactured greater than Total Manufacturing Costs
 - D. Nothing can be said without additional information.
62. Which statement is **true** concerning just-in-time inventory systems?
- A. Just-in-time systems deal only with defective and reworked units.
 - B. Just-in-time systems require the use of many suppliers.
 - C. Just-in-time systems keep inventory to a minimum by careful planning.
 - D. Just-in-time systems work better for small companies than for large companies.
63. Which of the following represents a reason management would use JIT methods?
- A. To keep large amounts of materials on hand for production.
 - B. To provide finished goods just in time for sale.
 - C. To hide defective units.
 - D. To prevent laying off workers during slow times.
64. Which of the following statements is **true**?
- A. JIT requires workers to immediately correct a process making defective units.
 - B. JIT requires hiding of defective units.
 - C. JIT requires debiting various inventory accounts as goods are processed.
 - D. JIT requires crediting various inventory accounts as goods are processed.
65. Which of the following is **not** a component of just-in-time (JIT) production methods?
- A. Management uses JIT methods to obtain materials just in time for production.
 - B. Management provides finished goods just in time for sale.
 - C. JIT requires that workers immediately correct a process making defective unit.
 - D. Workers and supervisors can hide defective units in inventory.

66. What method of production eliminates the need for inventories because no production takes place until the firm knows that it will sell the item?

- A. First-in, last-out methods
- B. Last-in, first-out methods
- C. Just-in-time methods
- D. Next-in, first-out methods

67. Which is **not** correct for just-in-time (JIT) methods?

- A. JIT attempts to obtain materials just in time for production and to provide finished goods just in time for sale.
- B. JIT reduces, or potentially eliminates, inventories and the cost of carrying them.
- C. JIT compels workers to immediately correct a process making defective units.
- D. JIT relies on cheap, low quality materials from multiple suppliers, to meet production objectives.

68. Just-in-time (JIT) methods

- A. do not start production until the firm receives an order for the finished product.
- B. do not order raw materials until the firm receives an order for the finished product.
- C. ends production as soon as an order for the finished product is filled.
- D. All of the answers are correct.

69. Accounting in a JIT environment charges all costs directly to Cost of Goods Sold and charges them to Inventory accounts when needed using which of the following costing methods?

- A. job order costing.
- B. process costing.
- C. hybrid costing.
- D. backflush costing.

70. Which method of costing is used to record all manufacturing costs directly in Cost of Goods Sold, and if any inventories occur at the end of the accounting period, the appropriate costs are transferred back to the inventory accounts?

- A. Put-back costing
- B. Traditional costing
- C. Reverse costing
- D. Backflush costing

71. Which of the following is **true** regarding waste and spoilage?

- A. Accountants typically include the cost of normal waste in the cost of goods manufactured during the period.
- B. Accountants typically treat the cost of abnormal waste as an expense during the period.
- C. Companies concerned about quality production do not treat waste or spoiled goods as normal and remove all waste and spoilage costs from the product cost.
- D. All of the answers are correct.

72. Companies concerned about quality production do **not** treat waste or spoiled goods as a normal cost of production and remove all waste and spoilage costs from the product cost. Some companies have found that waste or spoilage costs range from

- A. 1 to 5 percent of their total product costs.
- B. 5 to 10 percent of their total product costs.
- C. 10 to 20 percent of their total product costs.
- D. 20 to 30 percent of their total product costs.

73. Which costing system uses equivalent units in the computation of costs?

- A. Job costing
- B. Process costing
- C. Both a and b
- D. Neither a nor b

74. Using the following information, calculate equivalent units of production for XYZ Company using the FIFO method:

Beginning Inventory: 50,000 units, 70% complete

Units started & completed: 100,000 units

Units in ending inventory: 25,000 units, 40% complete

- A. 175,000
- B. 150,000
- C. 145,000
- D. 125,000

75. Using the following information, calculate equivalent units of production for Jetton Manufacturing using the FIFO method:

Beginning Inventory: 30,000 units, 40% complete

Units started & completed: 75,000 units

Units in ending inventory: 20,000 units, 70% complete

- A. 93,000
- B. 107,000
- C. 105,000
- D. 125,000

76. Which of the following companies would most likely use a job costing system?

- A. Pillsbury (flour)
- B. Heinz (catsup)
- C. Universal Studios (movies)
- D. Budweiser (beer)

77. Which of the following companies would most likely use a process costing system?

- A. PriceWaterhouseCoopers (auditing engagements)
- B. Accenture (consulting)
- C. Universal Studios (movies)
- D. Miller Brewing Company (beer)

78. Different types of companies use different types of cost systems. An effective cost system must have all of the following characteristics **except**:

- A. Benefits from the cost system that exceed its costs.
- B. Different costs for different purposes.
- C. Decision focus.
- D. Costs from the cost system that exceed benefits.

79. Which of the following costs is **not** part of manufacturing overhead?

- A. Depreciation of factory equipment
- B. Health insurance for sales staff
- C. Salaries for the production supervisors
- D. Electricity for the factory

80. Which of the following accounts does **not** appear on the balance sheet?

- A. Raw Materials Inventory
- B. Work in Process Inventory
- C. Cost of Goods Sold
- D. Finished Goods Inventory

81. If the balance in the Finished Goods Inventory account increased by \$30,000 during the period and the cost of goods manufactured was \$220,000, what was the cost of goods sold?

- A. \$190,000
- B. \$220,000
- C. \$250,000
- D. \$110,000

82. Which of the following lists presents the accounts in the order in which product costs flow?
- A. Work in Process Inventory, Finished Goods Inventory, Cost of Goods Sold, Raw Materials Inventory
 - B. Raw Materials Inventory, Work in Process Inventory, Finished Goods Inventory, Cost of Goods Sold
 - C. Cost of Goods Sold, Work in Process Inventory, Raw Materials Inventory, Finished Goods Inventory
 - D. Raw Materials Inventory, Finished Goods Inventory, Work in Process Inventory, Cost of Goods Sold

83. Michael Visual Works, Inc. uses a normal costing system and estimated its overhead costs for the current year to be as follows: fixed, \$525,000; variable, \$4 per unit. Michael expected to produce 350,000 units during the year. During the year, the company incurred overhead costs of \$2,100,000 and produced 400,000 units. Calculate the rate to be used to apply manufacturing overhead costs to products.

84. Leon Manufacturing Company

Leon Manufacturing Company uses a normal costing system. During the current year, the following events took place:

1.	Purchased direct materials	\$100,000
2.	Incurred direct labor costs of	\$ 60,000
3.	Incurred indirect labor costs of	\$ 30,000
4.	Incurred utilities, rent, and depreciation of	\$ 50,000
5.	Direct materials issued to production	\$ 85,000
6.	Applied overhead at 150 percent of direct labor costs	
7.	Transferred to finished goods	\$210,000
8.	Cost of goods sold during period	\$190,000

Refer to Leon Manufacturing Company. Calculate the direct materials ending inventory (there was no beginning direct materials inventory).

85. Leon Manufacturing Company

Leon Manufacturing Company uses a normal costing system. During the current year, the following events took place:

1.	Purchased direct materials	\$100,000
2.	Incurred direct labor costs of	\$ 60,000
3.	Incurred indirect labor costs of	\$ 30,000
4.	Incurred utilities, rent, and depreciation of	\$ 50,000
5.	Direct materials issued to production	\$ 85,000
6.	Applied overhead at 150 percent of direct labor costs	
7.	Transferred to finished goods	\$210,000
8.	Cost of goods sold during period	\$190,000

Refer to Leon Manufacturing Company. Calculate the work-in-process ending inventory (there was no beginning work-in-process inventory).

86. Leon Manufacturing Company

Leon Manufacturing Company uses a normal costing system. During the current year, the following events took place:

1.	Purchased direct materials	\$100,000
2.	Incurred direct labor costs of	\$ 60,000
3.	Incurred indirect labor costs of	\$ 30,000
4.	Incurred utilities, rent, and depreciation of	\$ 50,000
5.	Direct materials issued to production	\$ 85,000
6.	Applied overhead at 150 percent of direct labor costs	
7.	Transferred to finished goods	\$210,000
8.	Cost of goods sold during period	\$190,000

Refer to Leon Manufacturing Company. Calculate the finished goods ending inventory (there was no beginning finished goods inventory).

87. Jenkins Company

Jenkins Company applies overhead costs to products at a rate of 50 percent of direct labor costs. The following data relate to the manufacturing activities of Jenkins Company during April:

	<u>April 1</u>	<u>April 30</u>
Direct materials inventory	60,250	61,750
Work-in-process inventory	44,000	43,500
Finished goods inventory	24,150	23,000

Factory costs incurred during the month were:

Direct materials purchased	\$155,000
Direct labor costs incurred	\$270,000
Factory utilities	\$ 35,000
Factory rent	\$ 52,000
Factory supervisor	\$ 43,000
Depreciation on factory equipment	\$ 25,000

Refer to Jenkins Company. Calculate the cost of direct materials used during April.

88. Jenkins Company

Jenkins Company applies overhead costs to products at a rate of 50 percent of direct labor costs. The following data relate to the manufacturing activities of Jenkins Company during April:

	<u>April 1</u>	<u>April 30</u>
Direct materials inventory	60,250	61,750
Work-in-process inventory	44,000	43,500
Finished goods inventory	24,150	23,000

Factory costs incurred during the month were:

Direct materials purchased	\$155,000
Direct labor costs incurred	\$270,000
Factory utilities	\$ 35,000
Factory rent	\$ 52,000
Factory supervisor	\$ 43,000
Depreciation on factory equipment	\$ 25,000

Refer to Jenkins Company. Using **actual** costing, calculate the cost of the units completed during April and transferred to the finished goods storeroom.

89. Jenkins Company

Jenkins Company applies overhead costs to products at a rate of 50 percent of direct labor costs. The following data relate to the manufacturing activities of Jenkins Company during April:

	<u>April 1</u>	<u>April 30</u>
Direct materials inventory	60,250	61,750
Work-in-process inventory	44,000	43,500
Finished goods inventory	24,150	23,000

Factory costs incurred during the month were:

Direct materials purchased	\$155,000
Direct labor costs incurred	\$270,000
Factory utilities	\$ 35,000
Factory rent	\$ 52,000
Factory supervisor	\$ 43,000
Depreciation on factory equipment	\$ 25,000

Refer to Jenkins Company. Using **normal** costing, calculate the cost of units completed during April and transferred to the finished goods storeroom.

90. For the month of May, Straight & Narrow, CPAs, worked 300 hours for client A and 400 hours for client B. Straight & Narrow bills clients at the rate of \$120 per hour. The accounting staff is paid \$75 per hour. The accounting staff worked a total of 800 hours during the month, but 100 of these hours were unbillable. Service overhead costs paid during the month totaled \$5,600. Service overhead is assigned to clients based proportionally on direct labor hours. The company also spent \$3,000 in marketing and administrative costs. Calculate the overhead rate and the amounts allocated to clients A & B.

91. Use this information to answer the following question(s):

Assume the following facts:

Beginning materials inventory	\$50
Beginning work-in-process inventory	29
Beginning finished goods inventory	80
Direct materials requisitioned	80
Direct labor	67
Manufacturing overhead	53
Ending materials inventory	12
Ending work-in-process inventory	31
Ending finished goods inventory	27

Refer to the above information; determine the amount of materials purchased during the period.

92. Use this information to answer the following question(s):

Assume the following facts:

Beginning materials inventory	\$50
Beginning work-in-process inventory	29
Beginning finished goods inventory	80
Direct materials requisitioned	80
Direct labor	67
Manufacturing overhead	53
Ending materials inventory	12
Ending work-in-process inventory	31
Ending finished goods inventory	27

Refer to the above information; determine the cost of goods manufactured during the period.

93. Use this information to answer the following question(s):

Assume the following facts:

Beginning materials inventory	\$50
Beginning work-in-process inventory	29
Beginning finished goods inventory	80
Direct materials requisitioned	80
Direct labor	67
Manufacturing overhead	53
Ending materials inventory	12
Ending work-in-process inventory	31
Ending finished goods inventory	27

Refer to the above information; determine the cost of goods sold during the period.

94. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the company's predetermined overhead rate using direct labor hours as the base?

95. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the overhead assigned to job #115?

96. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the overhead assigned to job #205?

97. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the total manufacturing cost of job #115?

98. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the total manufacturing cost of job #205?

99. The Mega-Audits Accounting Firm uses a job costing system. For Year 6, the firm estimated total overhead to be \$80,000 and the number of direct labor hours to be 20,000. In the last quarter, the firm completed the following audit jobs:

Job	<u>No. 242</u>	<u>No. 301</u>
Supplies	\$ 200	\$ 600
Direct labor costs	\$11,000	\$14,000
Direct labor hours	220 hours	280 hours

Calculate the predetermined overhead rate.

100. **Susan Johnson Products Company**

The Susan Johnson Products Company uses a job costing system. For Year 4, the firm estimated total overhead to be \$40,000 and the number of direct labor hours to be 10,000.

Refer to the Susan Johnson Products Company. Calculate the predetermined overhead rate.

101. Susan Johnson Products Company

The Susan Johnson Products Company uses a job costing system. For Year 4, the firm estimated total overhead to be \$40,000 and the number of direct labor hours to be 10,000.

Refer to the Susan Johnson Products Company. Job 247 is a special order of 100 special-design tables. The work-in-process inventory account for this job shows raw material costs of \$4,600 and direct labor costs of \$7,600. The firm has charged 1,200 direct labor hours to the job. What is the total cost of Job 247?

102. Describe the cost accumulation process for a manufacturer. Is it different for a service organization?

103. Explain the importance of product cost information for managers.

104. Explain the need for recording costs by department and assigning costs to products.

105. Compare and contrast normal costing and actual costing.

106. Compare and contrast job costing and process costing. Provide specific examples of the types of companies that might use one over the other.

107. Describe the similarities among and the differences between product costing in service organizations and manufacturing companies.

108. Explain the components of JIT production methods. Discuss how accountants adapt costing systems to these components.

109. Describe the three major manufacturing cost categories.

110. How does the Work-in-Process account both describe the transformation of inputs into outputs in a company and account for the costs incurred in the process?

111. Describe various production methods and the different accounting systems each requires.

112. Briefly explain the concepts of customer costing and profitability analysis.

113. Identify ethical issues in job costing.

114. Explain how to compute end-of-period inventory book value using equivalent units of production.

115. **Cost flow model.** Oxford Penley's accountant resigned and left the books a mess. Oxford is trying to compute unknown values in inventory accounts in four regions. Knowing of your expertise in cost flows, he asks for your help and provides you with the following information about each store:

	North	South	East	West
Beginning inventory	?	\$60,000	?	\$70,000
Transfers into inventory accounts	\$200,000	200,000	\$160,000	?
Transfers out of inventory accounts	180,000	220,000	150,000	125,000
Ending inventory	\$60,000	?	40,000	35,000

Required: Tell Oxford what the missing values (?) are for each region.

116. Just-in-time methods. Carmen Products uses just-in-time production methods. To produce 1,200 units for an order, the company purchased and used materials costing \$36,000 and incurred other manufacturing costs of \$24,000, of which \$10,000 was labor. All costs were on account. After Carmen completed production on the 1,200 units and shipped 1,100 units, management recorded the Finished Goods Inventory balance for the 100 units remaining in inventory for financial statement preparation.

Required: Prepare journal entries and T-accounts for these transactions using backflush costing.

117. Job costs in a service organization. Adams and Associates, a CPA firm, uses job costing. During January, the firm provided audit services for two clients and billed those clients for the services performed. Paxton Productions was billed for 4,000 hours at \$140 per hour, and Young Industries in was billed for 2,000 hours at \$140 per hour. Direct labor costs were \$75 per hour. Of the 6,400 hours worked in January, 400 hours were not billable. The firm assigns overhead to jobs at the rate of \$25 per billable hour. During January, the firm incurred actual overhead of \$155,000. The firm incurred marketing and administrative costs of \$35,000. All transactions were on account.

Required:

- a.** Show how Adams and Associates' accounting system would record these revenues and costs using journal entries.
- b.** Prepare an income statement for January like the one in Exhibit 2.5 in the text.

118. Computing equivalent units (Appendix 2.1). The Assembly Department had 80,000 units 65 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 150,000 units. The department started another 42,000 units and completed 25 percent as of the end of April.

Required: Compute the equivalent units of work performed during April using FIFO.

119. Computing equivalent units (Appendix 2.1). The Assembly Department had 90,000 units 75 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 110,000 units. The department started another 46,000 units and completed 20 percent as of the end of April.

Required: Compute the equivalent units of work performed during April using FIFO.

120. Computing product costs with incomplete products (Appendix 2.1). The Assembly Department had 80,000 units 65 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 150,000 units. The department started another 42,000 units and completed 25 percent as of the end of April. Assume that the cost assigned to beginning inventory on April 1 was \$84,000 and that the department incurred \$276,000 of production costs during April.

Required: Prepare a production cost report like the one shown in Exhibit 2.10 in the text. Assume the department incurred production costs evenly throughout processing.

121. Computing product costs with incomplete products (Appendix 2.1). The Assembly Department had 90,000 units 75 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 110,000 units. The department started another 46,000 units and completed 20 percent as of the end of April.

Assume that the cost assigned to beginning inventory on April 1 was \$78,000 and that the department incurred \$298,000 of production costs during April.

Required: Prepare a production cost report like the one shown in Exhibit 2.10 in the text. Assume the department incurred production costs evenly throughout processing.

122. Actual costs and normal costs. Canyon Ridge Company uses a predetermined rate for applying overhead to production using normal costing. The rates for Year 1 follow: variable, 200 percent of direct labor dollars; fixed, 300 percent of direct labor dollars. Actual overhead costs incurred follow: variable, \$20,000; fixed, \$26,000. Actual direct materials costs were \$5,000, and actual direct labor costs were \$9,000. Canyon Ridge produced one job in Year 1.

Required:

- a. Calculate actual costs of the job.
- b. Calculate normal costs of the job using predetermined overhead rates.

123. **Actual costs and normal costs.** Barefoot Bay Company uses a predetermined rate for applying overhead to production using normal costing. The rates for Year 1 follow: variable, 150 percent of direct labor dollars; fixed, 250 percent of direct labor dollars. Actual overhead costs incurred follow: variable, \$22,000; fixed, \$25,000. Actual direct materials costs were \$7,500, and actual direct labor costs were \$12,000. Canyon Ridge produced one job in Year 1.

Required:

- a. Calculate actual costs of the job.
- b. Calculate normal costs of the job using predetermined overhead rates.

124. **Applied overhead in a bank.** On January 1, a bank estimated its production capacity to be 950 million units and used that estimate to compute its predetermined overhead rate of \$0.012 per transaction (one unit = one transaction). The units produced for the four quarters follow:

Quarter	Actual Units of Production (in millions)
1st	300 Transactions
2nd	250 Transactions
3rd	200 Transactions
4th	100 Transactions

Required:

- a. Compute the amount of total overhead applied under normal costing for each quarter.
- b. What was the estimated overhead for the year for the predicted capacity of 950 million units?

125. **Analyzing costs in an engineering company.** On June 1, XEON Engineering, which oversees the cleanup of asbestos condemned buildings, had two jobs in process with the following costs incurred to date:

	Direct Materials	Direct Labor
University A (name kept confidential)	\$1,000	\$4,000
Muldoon Community Center Project	800	3,200

In addition, overhead is applied to these jobs at the rate of 100 percent of direct labor costs.
As of June 1, XEON had incurred direct materials costs as shown in the table, mostly for laboratory testing materials.

During June, XEON completed both jobs and recorded them as Cost of Goods Sold.

The University A job required no more direct materials in June, but it did require \$1,200 of direct labor to complete. The Muldoon Community Center Project job required \$400 of direct materials and \$2,000 of direct labor to complete.

XEON started a new job, Sea Breeze Elementary Project, during June and put \$1,600 of direct labor costs into this job and \$400 of direct materials. The Sea Breeze Project has not been completed as of the end of June.

Required: Provide the cost of direct materials, direct labor, and overhead (at 150 percent of direct labor cost) for the three jobs.

126. Compare just-in-time to a traditional accounting system. Clarion, Inc., produces GPS units. The company received an order for 8,000 GPS Units. The company purchased and used \$600,000 of materials for this order. The company incurred labor costs of \$350,000 and overhead costs of \$900,000. The company credits all costs to “Wages and Accounts Payable.” The accounting period ended before the company completed the order. The firm had 15 percent of the total costs incurred still in Work-in-Process Inventory and 25 percent of the total costs incurred still in Finished Goods Inventory.

Required:

- a. Use journal entries to show the flow of costs using backflush costing.
- b. Use journal entries to show the flow of costs using a traditional costing system.

Chapter 2--Measuring Product Costs **Key**

1. Which of the following is **not** one of the three major manufacturing cost categories?

- A. Direct materials costs that can be easily traced to a product
- B. Direct labor costs of workers who transform materials into finished products and whose time can be easily traced to a product
- C. Manufacturing overhead costs which represents all other manufacturing costs that do not fit into the other categories
- D.** Opportunity costs which are the manufacturing costs forgone by accepting another production alternative

2. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as cleaning supplies which are **not** easily traced to a specific customized baseball bat fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C.** manufacturing overhead costs.
- D. opportunity costs.

3. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs, such as the wages for janitorial staff to sweep and mop the floors, that are **not** easily traced to a specific customized baseball bat fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C.** manufacturing overhead costs.
- D. opportunity costs.

4. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as the cost of the high quality hard woods specifically selected by the customer for producing their own customized baseball bat fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

5. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as the cost of production supervisors overseeing the production of several different products fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

6. Little League Baseball Manufacturer

The Little League Baseball Manufacturer purchases materials for the production of customized little league baseball bats, hires workers to convert the materials to customized finished baseball bats, and then offers the customized baseball bats for sale to little league teams and the general public.

Refer to Little League Baseball Manufacturer.

Manufacturing costs such as depreciation and insurance for the factory building, as well as heat, light, power, and similar expenses incurred to keep the factory operating, fall into which of the following categories?

- A. direct material costs.
- B. direct labor costs.
- C. manufacturing overhead costs.
- D. opportunity costs.

7. Which of the following statements reflects the basic cost flow equation?

- A.** Beginning Balance plus Transfers In equals Transfers Out plus Ending Balance.
- B. Beginning Balance minus Transfers In equals Transfers Out minus Ending Balance.
- C. Beginning Balance plus Transfers In equals Transfers Out minus Ending Balance.
- D. Beginning Balance minus Transfers In equals Transfers Out plus Ending Balance.

8. In recording costs by departments, the accounting system has served its functions of providing data for department performance evaluation, and also assigns costs to products for managerial decision making, such as

- A. evaluating a product's quality.
- B.** evaluating a product's profitability.
- C. evaluating a product's integrity.
- D. evaluating a product's effectiveness.

9. The Work-in-Process account both describes the transformation of inputs into outputs in a company and accounts for the costs incurred in the process. The key equation in symbols is

- A.** $BB + TI = TO + EB$.
- B. $EB + TI = TO + BB$.
- C. $BB + TO = TI + EB$.
- D. None of the answers is correct.

10. Which of the following is **not** normally added to the work-in-process account?

- A. Direct labor.
- B. Depreciation on factory equipment.
- C. General factory labor.
- D.** Depreciation on office equipment.

11. The basic cost flow equation is used by

- A. independent auditors to perform reasonableness checks on the data they receive from clients.
- B. companies to check that the amount of inventory recorded on the books matches the physical count of inventory.
- C. independent auditors and companies to check for thefts or financial fraud.
- D.** All of the answers are correct.

12. Which of the following statements is **true** if a company overstates the ending balance of inventory?

- A. Cost of Goods Sold and profits will be overstated and Gross Margin will be understated.
- B. Cost of Goods Sold, Gross Margin, and profits will be understated.
- C. Cost of Goods Sold, Gross Margin, and profits will be overstated.
- D.** Cost of Goods Sold will be understated, Gross Margin and profits will be overstated.

13. A company manager intentionally commits fraud by overstating the ending balance of inventory in order to improve his current period's performance evaluation and resulting bonus. Which of the following statements is **true**?

- A. All accounting frauds do not require repeated misrepresentation period after period and the overstatement of income in one period does not cause a lower income in a subsequent period.
- B. All accounting frauds do not require repeated misrepresentation period after period and the manager will most likely escape detection if internal controls are poor.
- C.** All accounting frauds require repeated misrepresentation period after period or else the overstatement of income in one period causes a lower income in a subsequent period.
- D. According to Generally Accepted Auditing Standards, the independent auditors must report all accounting frauds, regardless of amount, directly to the Securities and Exchange Commission within 3 days of discovery.

14. Which of the following is **not** a fraudulent practice for assigning costs?

- A. Misstating the stage of completion of jobs
- B. Charging costs to the wrong jobs or categories
- C.** Comparing actual with estimated costs for pricing future jobs
- D. Misrepresenting the costs of jobs

15. Your supervisor at a consulting firm asks you to allocate the time you actually spent on jobs now in danger of exceeding their cost estimates to other jobs less likely to overrun cost estimates. Which of the following statements is **true**?

- A. This practice misleads managers who rely on accurate cost information for pricing, cost control, and other decisions.
- B. This practice cheats people who may be paying for a job on a cost-plus-fee basis, where the job has cost less than the producer claims.
- C. This practice avoids the appearance of cost overruns on some jobs and is unethical.
- D.** All of the answers are correct.

16. In a service organization, accounting charges overhead to jobs based on hours worked on the job. Actual overhead incurred is \$15,000. Actual hours worked for client A is 200 hours, for client B is 100 hours, and unbillable is 100 hours. Calculate the overhead rate.

- A. \$30 per hour.
- B. \$40 per hour.
- C.** \$50 per hour.
- D. \$60 per hour.

17. Which of the following statements is **true** concerning a normalized overhead rate?

- A. A normalized overhead rate should be used whenever the firm does not prepare a master budget.
- B.** A normalized overhead rate is employed so that wide fluctuations and variations in the level of production will not influence unit costs.
- C. A normalized overhead rate is used by firms that have a normal production schedule.
- D. A normalized overhead rate results in distorting the income figures of the firm.

18. Accounting for factory overhead costs involves averaging in

<u>Job Order Costing</u>	<u>Process Costing</u>
A. Yes	No
B. Yes	Yes
C. No	Yes
D. No	No

19. Normal costing uses actual direct material and direct labor costs, plus an amount representing "normal" **A.** manufacturing overhead.

B. indirect overhead.

C. direct overhead.

D. selling commissions.

20. Under normal costing, the Predetermined Manufacturing Overhead Rate equals

A. Actual Manufacturing Overhead divided by the Actual Activity Level.

B. Actual Manufacturing Overhead divided by the Normal (or Estimated) Activity Level.

C. Estimated Manufacturing Overhead divided by the Normal (or Estimated) Activity Level.

D. None of the answers is correct.

21. Normal costing does **not** use which of the following to measure product costs?

A. Actual direct material costs

B. Actual direct labor costs

C. An amount representing "normal" manufacturing overhead

D. Actual manufacturing overhead

22. Actual costing does **not** use which of the following to measure product costs?

A. Actual direct material costs

B. Actual direct labor costs

C. An amount representing "normal" manufacturing overhead

D. Actual manufacturing overhead

23. Which costing methodology derives a rate for applying overhead to units produced before the production period, then uses this "predetermined rate" in applying overhead to each unit as they produce it?

A. Normal costing

B. Actual costing

C. Predetermined costing

D. Imputed production costing

24. Which of the following is **true** regarding normal costing?

- A. Normal costing assigns to products actual direct material and direct labor costs plus an amount representing “normal” manufacturing overhead.
- B. Under normal costing, a firm derives a rate for applying overhead to units produced before the production period begins.
- C. Under normal costing, a firm uses a predetermined overhead rate in applying overhead to each unit as the firm produces it throughout the year.
- D.** All of the answers are correct.

25. Which of the following is **false** regarding normal costing?

- A. Normal costing assigns to products actual direct material and direct labor costs plus an amount representing “normal” manufacturing overhead.
- B. Under normal costing, a firm derives a rate for applying overhead to units produced before the production period begins.
- C. Under normal costing, a firm uses a predetermined overhead rate in applying overhead to each unit as the firm produces it throughout the year.
- D.** Under normal costing, a firm uses the actual overhead costs incurred because this is the “normal” procedure in the United States.

26. Which of the following is the appropriate procedure to apply overhead to production using normal costing?

- A.** Assign actual direct material and direct labor costs plus an amount representing “normal” manufacturing overhead to products.
- B. Assign “normal” direct material and direct labor costs plus an amount representing “normal” manufacturing overhead to products.
- C. Assign actual direct material and direct labor costs plus an amount representing actual manufacturing overhead to products.
- D. All of the answers are correct.

27. Which of the following is/are a benefit of normal costing?

- A. Normal costing enable companies to smooth out, or normalize, seasonal production fluctuations.
- B. Under normal costing, a firm can quickly calculate the cost of items manufactured.
- C. Under normal costing, a firm uses a predetermined overhead rate in applying overhead to each unit as the firm produces it throughout the year, rather than wait for the actual overhead rate to be determined at the end of the year.
- D.** All of the answers are correct.

28. Which of the following is **true** regarding cost drivers?

- A. Cost drivers are the allocation base for applying overhead to production.
- B. Cost drivers cause an activity’s cost.
- C.** Cost drivers are the allocation base for applying overhead to production, *and* cost drivers cause an activity’s cost.
- D. None of the answers is correct.

29. In a normal costing system, how is the predetermined overhead rate calculated?
- A. Divide actual manufacturing overhead by the normal (or estimated) activity level.
 - B. Divide estimated manufacturing overhead by the actual activity level.
 - C.** Divide estimated manufacturing overhead by the normal (or estimated) activity level.
 - D. Divide actual manufacturing overhead by the actual activity level.

30. In a normal costing system, how is the predetermined variable manufacturing overhead rate calculated?
- A. Divide actual variable manufacturing overhead by the normal (or estimated) activity level.
 - B. Divide estimated variable manufacturing overhead by the actual activity level.
 - C.** Divide estimated variable manufacturing overhead by the normal (or estimated) activity level.
 - D. Divide actual variable manufacturing overhead by the actual activity level.

31. In a normal costing system, how is the predetermined fixed manufacturing overhead rate calculated?
- A. Divide actual fixed manufacturing overhead by the normal (or estimated) activity level.
 - B. Divide estimated fixed manufacturing overhead by the actual activity level.
 - C.** Divide estimated fixed manufacturing overhead by the normal (or estimated) activity level.
 - D. Divide actual fixed manufacturing overhead by the actual activity level.

32. Assume a normal costing system. Calculate the predetermined overhead rate based on the following assumptions:

Estimated Manufacturing Overhead	\$500,000
Actual Manufacturing Overhead	\$450,000
Estimated Activity	50,000 machine hours
Actual Activity	48,000 machine hours

- A. \$9.00 per machine hour
- B.** \$10.00 per machine hour
- C. \$9.375 per machine hour
- D. \$10.42 per machine hour

33. Assume a normal costing system. Calculate the predetermined overhead rate based on the following assumptions:

Estimated Manufacturing Overhead	\$75,000
Actual Manufacturing Overhead	\$85,000
Estimated Activity	10,000 machine hours
Actual Activity	9,000 machine hours

- A. \$8.33 per machine hour
- B. \$8.50 per machine hour
- C.** \$7.50 per machine hour
- D. \$9.44 per machine hour

34. Safa Visual Works, Inc. estimated its overhead costs for the current year to be as follows: fixed, \$175,000; variable, \$4 per unit. Safa expected to produce 350,000 units during the year. During the year, the company incurred overhead costs of \$1,600,000 and produced 400,000 units. Calculate the rate to be used to apply manufacturing overhead costs to products.

- A. \$3.50
- B.** \$4.50
- C. \$5.50
- D. \$9.00

35. An effective cost system has which of the following characteristic(s)?

- A. Decision focus
- B. Different costs for different purposes
- C. Cost benefit test
- D.** All of the answers are correct.

36. Which of the following is **not** a characteristic of an effective cost system?

- A. Decision focus
- B. Different costs for different purposes
- C. Cost-benefit test
- D.** Generally accepted accounting principles compliant

37. Which of the following is an example of an organization that would use job-order accounting?

- A.** a custom construction company.
- B. an oil refinery.
- C. a cereal processor.
- D. None of the answers is correct.

38. Which of the following represents an example of an organization that would use continuous flow processing methods?

- A.** a chemical manufacturer.
- B. a custom home builder.
- C. a hospital.
- D. a custom jeweler.

39. Job costing is most appropriate for

<u>Type of Product</u>	<u>Length of Production Run</u>
A. Customized	Short
B. Customized	Long
C. Standardized	Short
D. Standardized	Long

40. Continuous flow processing is most appropriate for

<u>Type of Product</u>	<u>Length of Production Run</u>
A. Customized	Short
B. Customized	Long
C. Standardized	Short
D. Standardized	Long

41. Which of the following costing system is appropriate for a company that produces customized products?

- A.** job costing.
- B. process costing
- C. operation costing.
- D. standard costing.

42. Which of the following costing system has characteristics of both job and process costing?

- A. normal costing.
- B. actual costing
- C.** operation costing.
- D. standard costing.

43. Which of the following costing system is appropriate for a company that mass-produces homogeneous products (continuous flow processing)?

- A. job costing.
- B.** process costing.
- C. operation costing.
- D. dynamic costing.

44. What costing method should a manufacturing company use when it produces batches of products where the value and quality of direct material varies by batch, but the direct labor and time spent are standardized?
- A. Job costing
 - B. Process costing
 - C. Operation costing**
 - D. Dynamic costing
45. Operation costing is a hybrid of which of the following two costing methods?
- A. batch costing and backflush costing.
 - B. job costing and process costing.**
 - C. job costing and backflush costing.
 - D. process costing and backflush costing.
46. Operation cost is a hybrid of job and process costing, where the materials differ by type of product but
- A. labor and overhead amounts are different.
 - B. labor amounts are the same and overhead amounts are different.
 - C. labor and overhead amounts are the same.**
 - D. labor amounts are different and overhead amounts are the same.
47. What is the method of costing used by companies that use a combination of job and process costing?
- A. hybrid costing.**
 - B. standard costing.
 - C. sunk costing.
 - D. combination costing
48. Which statement is **true** concerning job costing?
- A. Firms collect costs for each unit produced.**
 - B. Firms accumulate costs in a department or production process during the accounting period.
 - C. Firms spread costs evenly over the units produced during the period.
 - D. The equation for determining average unit cost is Total Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.
49. Which of the following is **false** about process costing?
- A. Firms collect costs for each unit produced.**
 - B. Firms accumulate costs in a department or production process during the accounting period
 - C. Firms spread costs evenly over the units produced during the period, to determine an average cost per unit.
 - D. The equation for determining average unit cost is Total Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.

50. Which costing system is generally used by companies producing high value, customized products?

- A. a process costing system.
- B. a variable costing system.
- C. a job costing system.**
- D. a direct costing system.

51. Which costing system is generally used by companies who provide professional services to their clients, such as accountants and lawyers?

- A. process costing system.
- B. variable costing system.
- C. job costing system.**
- D. direct costing system.

52. Which costing system is generally used by companies who mass-produce homogeneous products, such as a petroleum refining company?

- A. process costing system.**
- B. variable costing system.
- C. job costing system.
- D. direct costing system.

53. Which costing system would be most appropriate for use by a soft drink bottling company?

- A. process costing system.**
- B. variable costing system.
- C. job costing system.
- D. direct costing system.

54. To record the cost of producing the same type of tables made of different materials, but undergoing the same manufacturing process, a furniture manufacturing company would most likely use a(n)

- A. process costing system.
- B. variable costing system.
- C. job costing system.
- D. operation costing system.**

55. Which of the following is **true**?

- A. In job costing, firms collect costs for each “unit” produced.
- B. In process costing, firms accumulate costs in a department or production process during the accounting period, then spread those costs evenly over the units produced that period, computing an average unit cost.
- C. Process costing does not require as much record keeping as job costing system because it does not require keeping track of the cost of each job.
- D.** All of the answers are correct.

56. Why do firms collect costs by job?

- A. For performance evaluation
- B. To provide information for cost control
- C. To compare actual with estimated costs for pricing future jobs
- D.** All of the answers are correct.

57. In process costing, what is the equation for determining average unit cost?

- A.** Total Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.
- B. Average Manufacturing Cost Incurred during the Period divided by Total Units Produced during the period.
- C. Total Manufacturing Cost Incurred during the Period divided by Average Units Produced during the period.
- D. Average Manufacturing Cost Incurred during the Period divided by Average Units Produced during the period.

58. Which of the following is a deficiency of process costing?

- A.** In process costing, decision makers are informed about the average cost of the units, but not the actual cost of each particular unit or job.
- B. In process costing, firms accumulate costs in a department or production process during the accounting period, then spread those costs evenly over the units produced that period, computing an average unit cost.
- C. Process costing does not require as much record keeping as job costing system because it does not require keeping track of the cost of each job.
- D. None of the answers is a deficiency.

59. What is important to recognize when comparing the cost-benefit considerations of job versus process costing?

- A. Job costing provides less detailed information than process costing and job costing costs more to implement than process costing.
- B. Job costing provides less detailed information than process costing and job costing costs less to implement than process costing.
- C. Job costing provides more detailed information than process costing and job costing costs less to implement than process costing.
- D.** Job costing provides more detailed information than process costing and job costing costs more to implement than process costing.

60. What can be said of the relationship between cost of goods sold and the cost of goods manufactured when finished goods inventories increase? (Assume no change in unit prices.)
- A. They are equal.
 - B. Cost of Goods Sold greater than Cost of Goods Manufactured
 - C.** Cost of Goods Manufactured greater than Cost of Goods Sold
 - D. Nothing can be said without additional information.
61. What can be said of the relationship between total manufacturing costs and the cost of goods manufactured when work-in-process inventories decrease during the period? (Assume no change in per unit costs.)
- A. They are equal.
 - B. Total Manufacturing Costs greater than Cost of Goods Manufactured
 - C.** Cost of Goods Manufactured greater than Total Manufacturing Costs
 - D. Nothing can be said without additional information.
62. Which statement is **true** concerning just-in-time inventory systems?
- A. Just-in-time systems deal only with defective and reworked units.
 - B. Just-in-time systems require the use of many suppliers.
 - C.** Just-in-time systems keep inventory to a minimum by careful planning.
 - D. Just-in-time systems work better for small companies than for large companies.
63. Which of the following represents a reason management would use JIT methods?
- A. To keep large amounts of materials on hand for production.
 - B.** To provide finished goods just in time for sale.
 - C. To hide defective units.
 - D. To prevent laying off workers during slow times.
64. Which of the following statements is **true**?
- A.** JIT requires workers to immediately correct a process making defective units.
 - B. JIT requires hiding of defective units.
 - C. JIT requires debiting various inventory accounts as goods are processed.
 - D. JIT requires crediting various inventory accounts as goods are processed.
65. Which of the following is **not** a component of just-in-time (JIT) production methods?
- A. Management uses JIT methods to obtain materials just in time for production.
 - B. Management provides finished goods just in time for sale.
 - C. JIT requires that workers immediately correct a process making defective unit.
 - D.** Workers and supervisors can hide defective units in inventory.

66. What method of production eliminates the need for inventories because no production takes place until the firm knows that it will sell the item?

- A. First-in, last-out methods
- B. Last-in, first-out methods
- C. Just-in-time methods**
- D. Next-in, first-out methods

67. Which is **not** correct for just-in-time (JIT) methods?

- A. JIT attempts to obtain materials just in time for production and to provide finished goods just in time for sale.
- B. JIT reduces, or potentially eliminates, inventories and the cost of carrying them.
- C. JIT compels workers to immediately correct a process making defective units.
- D. JIT relies on cheap, low quality materials from multiple suppliers, to meet production objectives.**

68. Just-in-time (JIT) methods

- A. do not start production until the firm receives an order for the finished product.
- B. do not order raw materials until the firm receives an order for the finished product.
- C. ends production as soon as an order for the finished product is filled.
- D. All of the answers are correct.**

69. Accounting in a JIT environment charges all costs directly to Cost of Goods Sold and charges them to Inventory accounts when needed using which of the following costing methods?

- A. job order costing.
- B. process costing.
- C. hybrid costing.
- D. backflush costing.**

70. Which method of costing is used to record all manufacturing costs directly in Cost of Goods Sold, and if any inventories occur at the end of the accounting period, the appropriate costs are transferred back to the inventory accounts?

- A. Put-back costing
- B. Traditional costing
- C. Reverse costing
- D. Backflush costing**

71. Which of the following is **true** regarding waste and spoilage?

- A. Accountants typically include the cost of normal waste in the cost of goods manufactured during the period.
- B. Accountants typically treat the cost of abnormal waste as an expense during the period.
- C. Companies concerned about quality production do not treat waste or spoiled goods as normal and remove all waste and spoilage costs from the product cost.
- D.** All of the answers are correct.

72. Companies concerned about quality production do **not** treat waste or spoiled goods as a normal cost of production and remove all waste and spoilage costs from the product cost. Some companies have found that waste or spoilage costs range from

- A. 1 to 5 percent of their total product costs.
- B. 5 to 10 percent of their total product costs.
- C. 10 to 20 percent of their total product costs.
- D.** 20 to 30 percent of their total product costs.

73. Which costing system uses equivalent units in the computation of costs?

- A. Job costing
- B.** Process costing
- C. Both a and b
- D. Neither a nor b

74. Using the following information, calculate equivalent units of production for XYZ Company using the FIFO method:

Beginning Inventory: 50,000 units, 70% complete

Units started & completed: 100,000 units

Units in ending inventory: 25,000 units, 40% complete

- A. 175,000
- B. 150,000
- C. 145,000
- D.** 125,000

75. Using the following information, calculate equivalent units of production for Jetton Manufacturing using the FIFO method:

Beginning Inventory: 30,000 units, 40% complete

Units started & completed: 75,000 units

Units in ending inventory: 20,000 units, 70% complete

- A. 93,000
- B.** 107,000
- C. 105,000
- D. 125,000

76. Which of the following companies would most likely use a job costing system?

- A. Pillsbury (flour)
- B. Heinz (catsup)
- C. Universal Studios (movies)**
- D. Budweiser (beer)

77. Which of the following companies would most likely use a process costing system?

- A. PriceWaterhouseCoopers (auditing engagements)
- B. Accenture (consulting)
- C. Universal Studios (movies)
- D. Miller Brewing Company (beer)**

78. Different types of companies use different types of cost systems. An effective cost system must have all of the following characteristics **except**:

- A. Benefits from the cost system that exceed its costs.
- B. Different costs for different purposes.
- C. Decision focus.
- D. Costs from the cost system that exceed benefits.**

79. Which of the following costs is **not** part of manufacturing overhead?

- A. Depreciation of factory equipment
- B. Health insurance for sales staff**
- C. Salaries for the production supervisors
- D. Electricity for the factory

80. Which of the following accounts does **not** appear on the balance sheet?

- A. Raw Materials Inventory
- B. Work in Process Inventory
- C. Cost of Goods Sold**
- D. Finished Goods Inventory

81. If the balance in the Finished Goods Inventory account increased by \$30,000 during the period and the cost of goods manufactured was \$220,000, what was the cost of goods sold?

- A. \$190,000**
- B. \$220,000
- C. \$250,000
- D. \$110,000

82. Which of the following lists presents the accounts in the order in which product costs flow?

- A. Work in Process Inventory, Finished Goods Inventory, Cost of Goods Sold, Raw Materials Inventory
- B. Raw Materials Inventory, Work in Process Inventory, Finished Goods Inventory, Cost of Goods Sold**
- C. Cost of Goods Sold, Work in Process Inventory, Raw Materials Inventory, Finished Goods Inventory
- D. Raw Materials Inventory, Finished Goods Inventory, Work in Process Inventory, Cost of Goods Sold

83. Michael Visual Works, Inc. uses a normal costing system and estimated its overhead costs for the current year to be as follows: fixed, \$525,000; variable, \$4 per unit. Michael expected to produce 350,000 units during the year. During the year, the company incurred overhead costs of \$2,100,000 and produced 400,000 units. Calculate the rate to be used to apply manufacturing overhead costs to products.

Fixed overhead rate	=	1.50 (\$525,000/350,000 units)
Variable overhead rate	=	<u>4.00</u> (given)
Total overhead rate	=	<u>5.50 per unit</u>

84. Leon Manufacturing Company

Leon Manufacturing Company uses a normal costing system. During the current year, the following events took place:

1.	Purchased direct materials	\$100,000
2.	Incurred direct labor costs of	\$ 60,000
3.	Incurred indirect labor costs of	\$ 30,000
4.	Incurred utilities, rent, and depreciation of	\$ 50,000
5.	Direct materials issued to production	\$ 85,000
6.	Applied overhead at 150 percent of direct labor costs	
7.	Transferred to finished goods	\$210,000
8.	Cost of goods sold during period	\$190,000

Refer to Leon Manufacturing Company. Calculate the direct materials ending inventory (there was no beginning direct materials inventory).

Direct materials purchases	\$100,000
Less direct materials used	<u>(85,000)</u>
Direct materials ending inventory	<u>\$ 15,000</u>

85. Leon Manufacturing Company

Leon Manufacturing Company uses a normal costing system. During the current year, the following events took place:

1.	Purchased direct materials	\$100,000
2.	Incurred direct labor costs of	\$ 60,000
3.	Incurred indirect labor costs of	\$ 30,000
4.	Incurred utilities, rent, and depreciation of	\$ 50,000
5.	Direct materials issued to production	\$ 85,000
6.	Applied overhead at 150 percent of direct labor costs	
7.	Transferred to finished goods	\$210,000
8.	Cost of goods sold during period	\$190,000

Refer to Leon Manufacturing Company. Calculate the work-in-process ending inventory (there was no beginning work-in-process inventory).

Direct materials used	\$ 85,000
Direct labor	60,000
Factory overhead applied (150 percent direct labor)	<u>90,000</u>
Total manufacturing costs	\$235,000
Less transferred to finished goods	<u>210,000</u>
Work-in-process ending inventory	\$ 25,000

86. Leon Manufacturing Company

Leon Manufacturing Company uses a normal costing system. During the current year, the following events took place:

1.	Purchased direct materials	\$100,000
2.	Incurred direct labor costs of	\$ 60,000
3.	Incurred indirect labor costs of	\$ 30,000
4.	Incurred utilities, rent, and depreciation of	\$ 50,000
5.	Direct materials issued to production	\$ 85,000
6.	Applied overhead at 150 percent of direct labor costs	
7.	Transferred to finished goods	\$210,000
8.	Cost of goods sold during period	\$190,000

Refer to Leon Manufacturing Company. Calculate the finished goods ending inventory (there was no beginning finished goods inventory).

Transferred to finished goods	\$210,000
Sold during period	<u>190,000</u>
Finished goods ending inventory	\$ 20,000

87. Jenkins Company

Jenkins Company applies overhead costs to products at a rate of 50 percent of direct labor costs. The following data relate to the manufacturing activities of Jenkins Company during April:

	<u>April 1</u>	<u>April 30</u>
Direct materials inventory	60,250	61,750
Work-in-process inventory	44,000	43,500
Finished goods inventory	24,150	23,000

Factory costs incurred during the month were:

Direct materials purchased	\$155,000
Direct labor costs incurred	\$270,000
Factory utilities	\$ 35,000
Factory rent	\$ 52,000
Factory supervisor	\$ 43,000
Depreciation on factory equipment	\$ 25,000

Refer to Jenkins Company. Calculate the cost of direct materials used during April.

Beginning direct materials inventory	\$ 60,250
Direct materials purchases	<u>155,000</u>
Direct materials available	\$215,250
Less ending direct materials inventory	<u>61,750</u>
Direct materials used	<u>\$153,500</u>

88. Jenkins Company

Jenkins Company applies overhead costs to products at a rate of 50 percent of direct labor costs. The following data relate to the manufacturing activities of Jenkins Company during April:

	<u>April 1</u>	<u>April 30</u>
Direct materials inventory	60,250	61,750
Work-in-process inventory	44,000	43,500
Finished goods inventory	24,150	23,000

Factory costs incurred during the month were:

Direct materials purchased	\$155,000
Direct labor costs incurred	\$270,000
Factory utilities	\$ 35,000
Factory rent	\$ 52,000
Factory supervisor	\$ 43,000
Depreciation on factory equipment	\$ 25,000

Refer to Jenkins Company. Using **actual** costing, calculate the cost of the units completed during April and transferred to the finished goods storeroom.

Direct materials used		153,500
Direct labor		270,000
Actual overhead:		
Factory utilities	35,000	
Factory rent	52,000	
Factory supervisor	43,000	
Factory depreciation	<u>25,000</u>	<u>155,000</u>
Total manufacturing costs		\$578,500
Beginning work-in-process inventory		<u>44,000</u>
Total In Process		\$622,500
Less ending work-in-process inventory		<u>(43,500)</u>
Cost of goods manufactured		<u>\$579,000</u>

89. Jenkins Company

Jenkins Company applies overhead costs to products at a rate of 50 percent of direct labor costs. The following data relate to the manufacturing activities of Jenkins Company during April:

	<u>April 1</u>	<u>April 30</u>
Direct materials inventory	60,250	61,750
Work-in-process inventory	44,000	43,500
Finished goods inventory	24,150	23,000

Factory costs incurred during the month were:

Direct materials purchased	\$155,000
Direct labor costs incurred	\$270,000
Factory utilities	\$ 35,000
Factory rent	\$ 52,000
Factory supervisor	\$ 43,000
Depreciation on factory equipment	\$ 25,000

Refer to Jenkins Company. Using **normal** costing, calculate the cost of units completed during April and transferred to the finished goods storeroom.

Direct materials used	153,500
Direct labor	270,000
Applied overhead (50 percent of direct labor)	<u>135,000</u>
Total manufacturing costs	\$558,500
Plus beginning work-in-process inventory	<u>44,000</u>
Total In Process	\$602,500
Less ending work-in-process inventory	<u>43,500</u>
Cost of goods manufactured	<u>\$559,000</u>

90. For the month of May, Straight & Narrow, CPAs, worked 300 hours for client A and 400 hours for client B. Straight & Narrow bills clients at the rate of \$120 per hour. The accounting staff is paid \$75 per hour. The accounting staff worked a total of 800 hours during the month, but 100 of these hours were unbillable. Service overhead costs paid during the month totaled \$5,600. Service overhead is assigned to clients based proportionally on direct labor hours. The company also spent \$3,000 in marketing and administrative costs. Calculate the overhead rate and the amounts allocated to clients A & B.

Overhead $\$5,600/700$ billable hours = \$8 per hour

Assigned to client A = \$2,400 ($\8×300 hours)

Assigned to client B = \$3,200 ($\8×400 hours)

91. Use this information to answer the following question(s):

Assume the following facts:

Beginning materials inventory	\$50
Beginning work-in-process inventory	29
Beginning finished goods inventory	80
Direct materials requisitioned	80
Direct labor	67
Manufacturing overhead	53
Ending materials inventory	12
Ending work-in-process inventory	31
Ending finished goods inventory	27

Refer to the above information; determine the amount of materials purchased during the period.

\$12 [$50 + X - (80 + 12) = 12$]

92. Use this information to answer the following question(s):

Assume the following facts:

Beginning materials inventory	\$50
Beginning work-in-process inventory	29
Beginning finished goods inventory	80
Direct materials requisitioned	80
Direct labor	67
Manufacturing overhead	53
Ending materials inventory	12
Ending work-in-process inventory	31
Ending finished goods inventory	27

Refer to the above information; determine the cost of goods manufactured during the period.

\$198 ($29 + 80 + 67 + 53 - 31$)

93. Use this information to answer the following question(s):

Assume the following facts:

Beginning materials inventory	\$50
Beginning work-in-process inventory	29
Beginning finished goods inventory	80
Direct materials requisitioned	80
Direct labor	67
Manufacturing overhead	53
Ending materials inventory	12
Ending work-in-process inventory	31
Ending finished goods inventory	27

Refer to the above information; determine the cost of goods sold during the period.

$$\$251 (80 + 198 - 27)$$

94. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the company's predetermined overhead rate using direct labor hours as the base?

$$\$100,000/20,000 \text{ hours} = \$5/\text{direct labor hour}$$

95. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the overhead assigned to job #115?

$$1,500 \text{ hours @ } \$5 \text{ per hour} = \$7,500$$

96. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the overhead assigned to job #205?

$$1,250 \text{ hours @ } \$5 \text{ per hour} = \$6,250$$

97. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the total manufacturing cost of job #115?

$$\$11,000 + \$23,000 + \$7,500 = \$41,500$$

98. Fisher Products Company

The Fisher Products Company uses a job costing system. The company estimated its annual overhead to be \$100,000, and the number of direct labor hours for the year to be 20,000 hours. In the first month, the following jobs were completed:

	<u>Job #115</u>	<u>Job #205</u>
Direct materials used	\$11,000	\$14,500
Direct labor cost	\$23,000	\$12,500
Direct labor hours	1,500 hours	1,250 hours

Refer to the Fisher Products Company. What is the total manufacturing cost of job #205?

$$\$14,500 + \$12,500 + \$6,250 = \$33,250$$

99. The Mega-Audits Accounting Firm uses a job costing system. For Year 6, the firm estimated total overhead to be \$80,000 and the number of direct labor hours to be 20,000. In the last quarter, the firm completed the following audit jobs:

Job	<u>No. 242</u>	<u>No. 301</u>
Supplies	\$ 200	\$ 600
Direct labor costs	\$11,000	\$14,000
Direct labor hours	220 hours	280 hours

Calculate the predetermined overhead rate.

$$\text{Predetermined overhead rate: } \$80,000/20,000 = \$4 \text{ per Direct labor hour}$$

100. Susan Johnson Products Company

The Susan Johnson Products Company uses a job costing system. For Year 4, the firm estimated total overhead to be \$40,000 and the number of direct labor hours to be 10,000.

Refer to the Susan Johnson Products Company. Calculate the predetermined overhead rate.

$$\$4 \text{ per direct hour: } \$40,000/10,000 \text{ hours}$$

101. Susan Johnson Products Company

The Susan Johnson Products Company uses a job costing system. For Year 4, the firm estimated total overhead to be \$40,000 and the number of direct labor hours to be 10,000.

Refer to the Susan Johnson Products Company. Job 247 is a special order of 100 special-design tables. The work-in-process inventory account for this job shows raw material costs of \$4,600 and direct labor costs of \$7,600. The firm has charged 1,200 direct labor hours to the job. What is the total cost of Job 247?

Raw material	\$ 4,600
Direct labor	7,600
Overhead (1,200 × \$4)	<u>4,800</u>
Total cost	\$17,000

102. Describe the cost accumulation process for a manufacturer. Is it different for a service organization?

A manufacturer normally has three inventory accounts. They consist of materials inventory, work-in-process inventory, and finished goods inventory. Purchases of materials are recorded in the materials inventory. When materials are used in the manufacturing process, the cost of materials is transferred out of the materials inventory account and into the work-in-process inventory. Direct labor and manufacturing overhead costs are charged to the product produced during the period. The cost of completed goods is transferred out of the work-in-process account and into finished goods inventory account. When goods are sold, the cost is transferred out of the finished goods inventory account and into the cost of goods sold account. The basic cost flow equation applies to all inventory accounts and can be used to determine amounts transferred in or out of one inventory account and into the other. This formula is: beginning balance + transfers in = transfers out + ending balance.

A service organization has no inventory accounts for products, only for supplies. Costs are usually collected by departments, job, or clients.

103. Explain the importance of product cost information for managers.

Product cost information is helpful in pricing decisions, planning and evaluation. Product cost information is usually involved in most managerial decisions about the product line.

104. Explain the need for recording costs by department and assigning costs to products.

In recording costs by departments, the accounting system has served its function of providing data for departmental performance evaluation. The accounting system also assigns costs to products for managerial decision making, such as evaluating a product's profitability.

105. Compare and contrast normal costing and actual costing.

Actual costing measures product costs using actual costs incurred. Normal costing uses actual direct material and direct labor, plus an amount representing "normal" manufacturing overhead. Under normal costing, a firm derives a rate for applying overhead to units produced before the production period, then uses this "predetermined rate" in applying overhead to each unit as the firm produces it.

106. Compare and contrast job costing and process costing. Provide specific examples of the types of companies that might use one over the other.

In job costing, firms collect costs for each unit produced. Companies that manufacture unique products whose costs can be easily tracked will generally use job costing. Service companies also use job costing.

In process costing, firms accumulate costs in a department or production process during an accounting period, then spread those costs evenly over the units produced during that period, to determine an average cost per unit. Companies that produce fairly homogeneous products over a long period of time will likely use process costing.

Job costing provides more detailed information than process costing and the costs of record keeping under job costing systems exceed those under process costing.

107. Describe the similarities among and the differences between product costing in service organizations and manufacturing companies.

Service companies, like manufacturing companies, need accurate, relevant, and timely management accounting information. Service organizations often collect costs by departments for performance evaluation, and also by job or client. Service organizations differ in that they do not show inventories on the financial statements.

108. Explain the components of JIT production methods. Discuss how accountants adapt costing systems to these components.

Management uses JIT methods to obtain materials just in time for production and to provide finished goods just in time for sale. JIT requires that workers immediately correct a process making defective units because there is no inventory where defective units can be hidden. Accounting in a JIT environment charges all costs directly to Cost of Goods Sold, creating a significant savings in administrative time and costs, and charges them to Inventory accounts at the end of the accounting period, using backflush costing.

109. Describe the three major manufacturing cost categories.

The three major categories of manufacturing costs are (1) direct materials that can be easily traced to a product, (2) direct labor of workers who transform materials into finished products and whose time can be easily traced to a product, and (3) manufacturing overhead which represents all other manufacturing costs that do not fit into the first two categories.

110. How does the Work-in-Process account both describe the transformation of inputs into outputs in a company and account for the costs incurred in the process?

A key factor in a company's success is how well it controls the conversion costs (direct labor and overhead). Companies closely monitor those costs in the Work-in-Process Inventory account. The key equation in words is Beginning Balance plus Transfers In equals Transfers Out plus Ending Balance. In symbols, we write $BB + TI = TO + EB$.

111. Describe various production methods and the different accounting systems each requires.

Companies that produce customized products (or *jobs*) use job costing. Companies that mass-produce homogeneous products (continuous flow *processing*) use process costing. Companies that produce batches of products using standardized methods (*operations*) use operation costing. Operation cost is a hybrid of job and process costing, where the materials differ by type of product but labor and overhead amounts are the same.

112. Briefly explain the concepts of customer costing and profitability analysis.

Companies often track revenues and costs by customer to determine the profitability of each customer. Management uses these data in making strategic decisions related to customers.

113. Identify ethical issues in job costing.

Some organizations commit improprieties in the way they assign costs to jobs. To avoid the appearance of cost overruns on jobs, job supervisors sometimes ask employees to charge costs to wrong jobs.

114. Explain how to compute end-of-period inventory book value using equivalent units of production.

The five steps to compute inventory book value are: (1) summarize the flow of physical units, (2) compute equivalent units, (3) summarize cost to be accounted for, (4) compute unit costs for the current period, and (5) compute the costs of goods completed and transferred out of Work-In-Process Inventory.

115. **Cost flow model.** Oxford Penley's accountant resigned and left the books a mess. Oxford is trying to compute unknown values in inventory accounts in four regions. Knowing of your expertise in cost flows, he asks for your help and provides you with the following information about each store:

	North	South	East	West
Beginning inventory	?	\$60,000	?	\$70,000
Transfers into inventory accounts	\$200,000	200,000	\$160,000	?
Transfers out of inventory accounts	180,000	220,000	150,000	125,000
Ending inventory	\$60,000	?	40,000	35,000

Required: Tell Oxford what the missing values (?) are for each region.

In general, apply the following model:

$$BB + TI = TO + EB$$

NORTH

$$BB + \$200,000 = \$180,000 + \$60,000$$

$$BB = \$180,000 + \$60,000 - \$200,000$$

$$BB = \$40,000$$

SOUTH

$$\$60,000 + \$200,000 = \$220,000 + EB$$

$$EB = \$60,000 + \$200,000 - \$220,000$$

$$EB = \$40,000$$

EAST

$$BB + \$160,000 = \$150,000 + \$40,000$$

$$BB = \$150,000 + \$40,000 - \$160,000$$

$$BB = \$30,000$$

WEST

$$\$70,000 + TI = \$125,000 + \$35,000$$

$$BB = \$125,000 + \$35,000 - \$70,000$$

$$BB = \$90,000$$

116. **Just-in-time methods.** Carmen Products uses just-in-time production methods. To produce 1,200 units for an order, the company purchased and used materials costing \$36,000 and incurred other manufacturing costs of \$24,000, of which \$10,000 was labor. All costs were on account. After Carmen completed production on the 1,200 units and shipped 1,100 units, management recorded the Finished Goods Inventory balance for the 100 units remaining in inventory for financial statement preparation.

Required: Prepare journal entries and T-accounts for these transactions using backflush costing.

Journal Entries:

Cost of Goods Sold		60,000	
	Accounts Payable—Materials		36,000
	Accounts Payable—Other Manufacturing Costs		14,000
	Wages Payable		10,000
To record costs of production.			
Finished Goods Inventory	5,000		
	Cost of Goods Sold		5,000
To record inventory. \$5,000 = 100 units at \$50.00 per unit. (\$50.00 = \$60,000/1,200 units.)			

117. **Job costs in a service organization.** Adams and Associates, a CPA firm, uses job costing. During January, the firm provided audit services for two clients and billed those clients for the services performed. Paxton Productions was billed for 4,000 hours at \$140 per hour, and Young Industries in was billed for 2,000 hours at \$140 per hour. Direct labor costs were \$75 per hour. Of the 6,400 hours worked in January, 400 hours were not billable. The firm assigns overhead to jobs at the rate of \$25 per billable hour. During January, the firm incurred actual overhead of \$155,000. The firm incurred marketing and administrative costs of \$35,000. All transactions were on account.

Required:

- a. Show how Adams and Associates' accounting system would record these revenues and costs using journal entries.
- b. Prepare an income statement for January like the one in Exhibit 2.5 in the text.

(Adams and Associates; job costs in a service organization.)

a. **Journal Entries:**

Work in Process—Paxton Productions		300,000	
Work in Process – Young Industries		150,000	
Direct Labor—Unbillable		30,000	
	Wages Payable		480,000

Work in Process—Paxton Productions		100,000	
Work in Process – Young Industries		50,000	
	Overhead (APPLIED)		150,000
Overhead		155,000	
	Wages and Accounts Payable		155,000
Marketing and Administrative Costs		35,000	
	Wages and Accounts Payable		35,000
Accounts Receivable		840,000	
	Revenue		840,000
Cost of Services Billed		600,000	
	Work in Process—Paxton Productions		400,000
	Work in Process – Young Industries		200,000

ADAMS AND ASSOCIATES	
Income Statement	
For the Month Ending January 31	
Revenue from Services	\$ 840,000
Less Cost of Services Billed	600,000
Gross Margin	\$ 240,000
Less:	
Direct Labor—Unbillable	(30,000)
Overhead—Underapplied	(5,000)*
Marketing and Administrative	(35,000)
Operating Profit	<u>\$ 170,000</u>

* \$155,000 actual – \$150,000 applied.

118. **Computing equivalent units (Appendix 2.1).** The Assembly Department had 80,000 units 65 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 150,000 units. The department started another 42,000 units and completed 25 percent as of the end of April.

Required: Compute the equivalent units of work performed during April using FIFO.

(Computing equivalent units.)

To Complete Beginning Inventory: $[(1.0 - .65) \times 80,000 \text{ Units}]$	28,000 E.U.
Started and Completed	150,000 E.U.
In Ending Inventory: $.25 \times 42,000 \text{ Units}$	10,500 E.U.
Total.	188,500 E.U.

119. **Computing equivalent units (Appendix 2.1).** The Assembly Department had 90,000 units 75 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 110,000 units. The department started another 46,000 units and completed 20 percent as of the end of April.

Required: Compute the equivalent units of work performed during April using FIFO.

(Computing equivalent units.)

To Complete Beginning Inventory: $[(1.0 - .75) \times 90,000 \text{ Units}]$	22,500 E.U.
Started and Completed	110,000 E.U.
In Ending Inventory: $.20 \times 46,000 \text{ Units}$	9,200 E.U.
Total.	141,700 E.U.

120. **Computing product costs with incomplete products (Appendix 2.1).** The Assembly Department had 80,000 units 65 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 150,000 units. The department started another 42,000 units and completed 25 percent as of the end of April. Assume that the cost assigned to beginning inventory on April 1 was \$84,000 and that the department incurred \$276,000 of production costs during April.

Required: Prepare a production cost report like the one shown in Exhibit 2.10 in the text. Assume the department incurred production costs evenly throughout processing.

(Computing product costs with incomplete products.)

	Physical Units	% Completed During Period	Equivalent Units
Units to account for:			
Beginning WIP	80,000	35%	28,000
Started & Completed	150,000	100%	150,000
Ending WIP	42,000	25%	10,500
	<u>272,000</u>		<u>188,500</u>
Costs to be accounted for:			
Beginning WIP	\$84,000		
Current Period Costs	276,000		
Total costs to be accounted for:	\$360,000		
Cost per E.U. done this period $\$276,000 \div 188,500$ E.U.			\$1.46419 per E.U.
Costs assigned to units transferred out:			
Costs from beginning WIP		\$84,000	
Current costs added to complete beginning WIP ($\$1.46419 \times 28,000$)		40,997	
Current costs of units started & completed ($\$1.46419 \times 150,000$)		219,629	
Total costs transferred out		\$344,626	
Costs assigned to ending WIP ($\$1.46419 \times 10,500$ E.U.) :			\$15,374
Total costs accounted for:		\$360,000	

121. **Computing product costs with incomplete products (Appendix 2.1).** The Assembly Department had 90,000 units 75 percent complete in Work-in-Process Inventory at the beginning of April. During April, the department started and completed 110,000 units. The department started another 46,000 units and completed 20 percent as of the end of April.

Assume that the cost assigned to beginning inventory on April 1 was \$78,000 and that the department incurred \$298,000 of production costs during April.

Required: Prepare a production cost report like the one shown in Exhibit 2.10 in the text. Assume the department incurred production costs evenly throughout processing.

(Computing product costs with incomplete products.)

	Physical Units	% Completed During Period	Equivalent Units
Units to account for:			
Beginning WIP	90,000	25%	22,500
Started & Completed	110,000	100%	110,000
Ending WIP	46,000	25%	9,200
	<u>246,000</u>		<u>141,700</u>
Costs to be accounted for:			
Beginning WIP	\$78,000		
Current Period Costs	298,000		
Total costs to be accounted for:	\$376,000		
Cost per E.U. done this period $\$298,000 \div 141,700$ E.U.			\$2.10303 per E.U.
Costs assigned to units transferred out:			
Costs from beginning WIP		\$78,000	
Current costs added to complete beginning WIP ($\$2.10303 \times 22,500$)		47,318	
Current costs of units started & completed ($\$2.10303 \times 110,000$)		231,333	
Total costs transferred out		\$356,651	
Costs assigned to ending WIP ($\$2.10303 \times 9,200$ E.U.) :			\$19,348
Total costs accounted for:		\$375,999 (due to rounding)	

122. **Actual costs and normal costs.** Canyon Ridge Company uses a predetermined rate for applying overhead to production using normal costing. The rates for Year 1 follow: variable, 200 percent of direct labor dollars; fixed, 300 percent of direct labor dollars. Actual overhead costs incurred follow: variable, \$20,000; fixed, \$26,000. Actual direct materials costs were \$5,000, and actual direct labor costs were \$9,000. Canyon Ridge produced one job in Year 1.

Required:

- a. Calculate actual costs of the job.
- b. Calculate normal costs of the job using predetermined overhead rates.

(Canyon Ridge Company; actual costs and normal costs.)

a. Actual Costs

Direct Materials	\$ 5,000
Direct Labor	9,000
Variable Manufacturing Overhead	20,000
Fixed Manufacturing Overhead	26,000
Total Cost	\$ 60,000

b. Normal Costs

Direct Materials	\$ 5,000
Direct Labor	9,000
Variable Manufacturing Overhead (200% x \$9,000)	18,000
Fixed Manufacturing Overhead (300% x \$9,000)	27,000
Total Cost	\$ 59,000

123. **Actual costs and normal costs.** Barefoot Bay Company uses a predetermined rate for applying overhead to production using normal costing. The rates for Year 1 follow: variable, 150 percent of direct labor dollars; fixed, 250 percent of direct labor dollars. Actual overhead costs incurred follow: variable, \$22,000; fixed, \$25,000. Actual direct materials costs were \$7,500, and actual direct labor costs were \$12,000. Canyon Ridge produced one job in Year 1.

Required:

- a. Calculate actual costs of the job.
- b. Calculate normal costs of the job using predetermined overhead rates.

(Barefoot Bay Company; actual costs and normal costs.)

a. Actual Costs

Direct Materials	\$ 7,500
Direct Labor	12,000
Variable Manufacturing Overhead	22,000
Fixed Manufacturing Overhead	25,000
Total Cost	\$ 66,500

b. Normal Costs

Direct Materials	\$ 7,500
Direct Labor	12,000
Variable Manufacturing Overhead (150% x \$12,000)	18,000
Fixed Manufacturing Overhead (250% x \$12,000)	30,000
Total Cost	\$ 67,500

124. **Applied overhead in a bank.** On January 1, a bank estimated its production capacity to be 950 million units and used that estimate to compute its predetermined overhead rate of \$0.012 per transaction (one unit = one transaction). The units produced for the four quarters follow:

Quarter	Actual Units of Production (in millions)
1st	300 Transactions
2nd	250 Transactions
3rd	200 Transactions
4th	100 Transactions

Required:

- Compute the amount of total overhead applied under normal costing for each quarter.
- What was the estimated overhead for the year for the predicted capacity of 950 million units?

a. Total overhead applied.

Quarter	Normal Overhead
1st	300 million X \$0.012 = \$3,600,000
2nd	250 million X \$0.012 = \$3,000,000
3rd	200 million X \$0.012 = \$2,400,000
4th	100 million X \$0.012 = \$1,200,000
TOTAL	\$10,200,000

b. Estimated overhead for the Year:

$\$0.012 = \text{estimated overhead} / 950 \text{ million}$

$950 \text{ million} \times \$0.012 = \text{estimated overhead}$

$950 \text{ million} \times \$0.012 = \$11,400,000$

125. Analyzing costs in an engineering company. On June 1, XEON Engineering, which oversees the cleanup of asbestos condemned buildings, had two jobs in process with the following costs incurred to date:

	Direct Materials	Direct Labor
University A (name kept confidential)	\$1,000	\$4,000
Muldoon Community Center Project	800	3,200

In addition, overhead is applied to these jobs at the rate of 100 percent of direct labor costs. As of June 1, XEON had incurred direct materials costs as shown in the table, mostly for laboratory testing materials.

During June, XEON completed both jobs and recorded them as Cost of Goods Sold.

The University A job required no more direct materials in June, but it did require \$1,200 of direct labor to complete. The Muldoon Community Center Project job required \$400 of direct materials and \$2,000 of direct labor to complete.

XEON started a new job, Sea Breeze Elementary Project, during June and put \$1,600 of direct labor costs into this job and \$400 of direct materials. The Sea Breeze Project has not been completed as of the end of June.

Required: Provide the cost of direct materials, direct labor, and overhead (at 150 percent of direct labor cost) for the three jobs.

	University A	Muldoon Community Center Project	Sea Breeze Elementary Project
Account Balance as of June 1:			
Direct Materials	\$ 1,000	\$800	
Direct Labor	4,000	3,200	
Overhead	<u>6,000</u>	<u>4,800</u>	
	<u>\$11,000</u>	<u>\$8,800</u>	
Added in June:			
Direct Materials	\$ 0	\$ 400	\$ 400
Direct Labor	1,200	2,000	1,600
Overhead	1,800	3,000	2,400
	<u>\$ 3,000</u>	<u>\$ 5,400</u>	<u>\$4,400</u>
Total Cost of Job	<u>\$14,000</u>	<u>\$14,200</u>	<u>\$4,400</u>

126. **Compare just-in-time to a traditional accounting system.** Clarion, Inc., produces GPS units. The company received an order for 8,000 GPS Units. The company purchased and used \$600,000 of materials for this order. The company incurred labor costs of \$350,000 and overhead costs of \$900,000. The company credits all costs to “Wages and Accounts Payable.” The accounting period ended before the company completed the order. The firm had 15 percent of the total costs incurred still in Work-in-Process Inventory and 25 percent of the total costs incurred still in Finished Goods Inventory.

Required:

- a. Use journal entries to show the flow of costs using backflush costing.
- b. Use journal entries to show the flow of costs using a traditional costing system.

(Compare just-in-time to a traditional accounting system.)

a. Backflush Costing

Cost of Goods Sold		1,850,000	
	Wages and Accounts Payable		1,850,000

Work in Process Inventory (15% of costs)		277,500	
Finished Goods Inventory (25% of costs)		462,500	
	Cost of Goods Sold		740,000

b. Traditional Costing

Material Inventory		600,000	
	Wages and Accounts Payable		600,000

Work in Process Inventory		600,000	
	Materials Inventory		600,000

Work in Process Inventory		1,250,000	
	Wages and Accounts Payable		1,250,000

(For Labor and overhead)

Finished Goods Inventory (85% of costs)		1,572,500	
	Work in Process Inventory		1,572,500

Cost of Goods Sold (60% of costs)		1,110,000	
	Finished Goods Inventory		1,110,000