

Cost Accounting, Cdn. Ed., 7e (Horngren)
Chapter 5 Activity-Based Costing and Management

5.1 Identify the basic elements of activity-based costing systems as distinguished from traditional systems, and explain how preventable undercosting and overcosting of products and services affects profitability.

1) Peanut butter costing involves assigning costs in a non uniform manner to reflect the different utilization of resources by different products or services.

Answer: FALSE

Explanation: The term **peanut butter costing** describes a particular costing approach that uses broad averages for assigning (or spreading, as in spreading peanut butter) the cost of resources uniformly to cost.

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-1

2) Using a broad average to assign costs to products or services may lead to undercosting or overcosting.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-1

3) A top-selling product might actually result in recorded losses for the company.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-1

4) If a company undercosts one of its products from indirect cost smoothing, then it will overcost at least one of its other products.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-1

5) Product-cost cross-subsidization means that if a company undercosts one of its products, it will gain market share due to a more competitive price.

Answer: FALSE

Explanation: Product-cost cross-subsidization means that if a company undercosts one of its products, it will overcost at least one of its other products.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-1

6) Inaccurate product costs can expose a company to the risk of losing market share to competitors.

Answer: TRUE

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-1

7) Using a broad average to allocate costs to products is called

A) activity-based costing.

B) refined costing.

C) peanut butter costing.

D) product undercoating.

E) job costing.

Answer: C

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-1

8) Which of the following statements is TRUE concerning product costing systems?

A) Companies that undercost products always sell products at a loss.

B) Companies that overcost run the risk of losing customers.

C) Undercosting or overcosting does not relate to product cost cross-subsidization.

D) Peanut butter costing is another term for direct costing.

E) Companies that overcost will make more profit by passing along higher prices to customers.

Answer: B

Diff: 1 Type: MC

Skill: Understand

Objective: LO 5-1

9) Uniformly assigning the costs of resources to cost objects when those resources are actually used in a non-uniform way is called

A) activity-based costing.

B) menu-based costing.

C) full product-cost allocation.

D) variable product-cost allocation.

E) broad averaging or peanut butter costing.

Answer: E

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-1

10) A product that consumes a relatively low level of resources but is reported to have a relatively high cost, is an example of

- A) increased market share.
- B) product marketing.
- C) product undercosting.
- D) product overcosting.
- E) product sub-optimization.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-1

11) A product that consumes a relatively high level of resources but is reported to have a relatively low cost, is an example of

- A) increased market share.
- B) product marketing.
- C) product undercosting.
- D) product overcosting.
- E) product sub-optimization.

Answer: C

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-1

12) Which of the following is a sign that a "smoothing out" costing system exists?

- A) Managers rely on data originated by the cost system.
- B) The company wins bids they thought had low margins.
- C) A batch consumes a relatively high level of input materials and conversion activities and is reported to have a relatively high cost.
- D) A batch consumes a relatively low level of input materials and conversion activities and is reported to have a relatively low cost.
- E) The company loses bids they thought had low margins.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-1

13) The term used to describe a situation when at least one miscosted product causes other products to be miscosted in the organization is known as

- A) cross-subsidization.
- B) product marketing.
- C) product overcosting.
- D) product undercosting.
- E) product sub-optimization.

Answer: A

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-1

- 14) Provided a single allocation base is used, jobs are typically overcosted if
- A) jobs consume proportionately less of the indirect activity but is reported to have higher cost.
 - B) jobs require more employees.
 - C) jobs consume proportionately more of the indirect activity and is reported to have higher cost.
 - D) jobs consume proportionately more of the indirect activity but is reported to have lower cost.
 - E) jobs cannot be overcosted; only products or service can be overcosted.

Answer: A

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-1

- 15) The use of a single indirect cost rate is more likely to
- A) undercost high volume simple products.
 - B) undercost low volume complex products.
 - C) undercost lower priced products.
 - D) overcost higher priced products.
 - E) overcost low volume complex products.

Answer: B

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-1

16) A busy law office has a central administration set up, with the administration work for all lawyers shared by the clerical staff. Clients are billed at the firm's hourly rate by the firm. The arrangement is that whenever there is administration work to be done, it is assigned to whoever is available at the time. One of the lawyers has complained that she hardly ever uses the administration services, and so her year end bonus should be larger than those who require the administration services. Therefore they are considering tracking the administration work done for each lawyer separately so that they know how many hours of administration services is being used by each lawyer. At the end of the year, the bonus of each lawyer would be reduced by a charge reflecting the administration services she/he used in the year. If the firm institutes this new approach, this will mean that

- A) there will be no more cross subsidization.
- B) there will still be cross-subsidization between lawyers but not between their clients.
- C) the new information gathered will enable the firm to be able to reduce its costs.
- D) there will still be cross-subsidization between clients but not between lawyers.
- E) they will be using a departmental costing system.

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-1

- 17) Indications that a product cost system needs revision include
- A) the product line consists of a products which are produced at different locations.
 - B) the product costing computer system does not use the latest technology.
 - C) the company uses a single allocation base system developed long ago.
 - D) prime cost represent the vast majority of product cost.
 - E) managers lose bids they expected to win and win bids they expected to lose.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-1

- 18) Simple cost systems distort product costs because
- A) they do not know how to identify the appropriate units.
 - B) competitive pricing is ignored.
 - C) they emphasize financial accounting requirements.
 - D) they apply average support costs to each unit of product.
 - E) they assign direct costs using direct cost tracing.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-1

- 19) Explain how a top-selling product may actually result in losses for the company.

Answer: If indirect costs are not properly allocated to the products, a product may appear to cost less than it actually does cost to produce. If the selling price is based on these lower costs, the selling price may actually be lower than the costs needed to produce the product resulting in losses for the company.

Diff: 1 Type: ES

Skill: Understand

Objective: LO 5-1

- 20) Explain how traditional (simple) cost systems, using a single unit-level cost rate, may distort product costs.

Answer: Unit-level measures can distort product costing because the demand for indirect activities may be driven by batch-level, product-sustaining, customer-sustaining, or facility-sustaining activities. Cost distortions are larger when the traditional systems' unit-level cost drivers and the alternative activity-cost drivers differ proportionately more from each other. Traditional systems are likely to undercost products with lower production volumes (relatively fewer units of production) and overcost products with higher production volumes (relatively greater units of production).

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-1

5.2 Identify and explain the problem of over- and undercosting.

1) When ever possible use the number of units produced as the cost-allocation base for homogeneous indirect cost pools.

Answer: FALSE

Explanation: Whenever possible, use the cost driver (the cause of indirect costs) as the cost-allocation base for each homogeneous indirect-cost pool (the effect).

Diff: 2 Type: TF

2) In a homogeneous cost pool, all costs have a similar cause-and-effect relationship with the cost-allocation base.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-2

3) Direct cost tracing will accomplish which of the following?

A) identify homogeneous costs

B) classify more costs as indirect

C) focus on the cause-and-effect criterion when choosing allocation bases

D) expand the number of indirect cost pools

E) classify as many of the costs as direct costs, as is economically feasible

Answer: E

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-2

4) How does direct cost tracing improve cost accuracy?

A) It identifies the cause-and-effect relationship between direct costs and indirect costs.

B) It identifies the cause-and-effect relationship between activities and non-activities.

C) It reclassifies costs or costs pools that vary with the quantity of a single activity cost driver as direct.

D) It makes no assumptions about the cause-and-effect relationship between direct costs and activities.

E) Because with a greater number of cost pools, it does not have to be concerned with the overhead costs used by different products.

Answer: C

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-2

5) All costs in a homogeneous cost pool have

A) only one cost driver that will accurately represent the relationship between the costs and the activity.

B) to be adjusted at year end to actual costs.

C) the same cost behaviour.

D) the same or a similar cause-and-effect (or benefits-received) relationship with a single cost driver that is used as the cost-allocation base.

E) a causal relationship with manufacturing costs.

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-2

6) Cecelia Schell is taking four clients (who are not related) on a tour of her retirement development. The clients incurred the following expenses while on the tour. All tour expenses are paid by Cecelia because she has business discounts for most of her business dealings. These expenses will be billed to the clients by Cecelia.

<u>Expense</u>	<u>Anna</u>	<u>Jim</u>	<u>Frank</u>	<u>Bud</u>	<u>Totals</u>
Bus ticket	\$80	\$80	\$80	\$80	\$320
Morning break	8	10	16	6	40
Lunch	24	20	28	20	88
Afternoon break	10	4	8	10	32
Cecelia's overhead	<u>56</u>	<u>56</u>	<u>56</u>	<u>56</u>	<u>224</u>
Totals	\$178	\$170	\$188	\$172	\$704

Required:

Compute the total average cost per client showing average indirect (overhead) and average direct (other) charges separately.

Answer: Average direct costs = $(\$320 + \$40 + \$88 + \$32)/4 = \$120$ per client

Average indirect costs = $\$224/4 = \56 per client

Average total costs = $\$120 + \$56 = \$176$ per client

Diff: 1 Type: ES

Skill: Apply

Objective: LO 5-2

7) The Celestial Group (CG) provides financial advice to individuals and corporations. CG charges clients for (a) direct professional time, and (b) support services. The three professionals in CG and their rates per professional hour are as follows:

<u>Professional</u>	<u>Billing Rate per Hour</u>
Sandra Lockheart	\$250
Jamie Sanders	225
James Liu	200

Monthly support service costs are as follows:

	<u>Monthly Cost</u>
Reception	\$3,900
Associates	18,750

Clients are charged a standard support service fee of \$200 per month.

There is one receptionist who covers the office and spends her time equally on each of the companies sixty clients. The three associate advisors work together on client files. They work a total of 500 hours per month on client accounts. During June they worked a total of 0 hours on the XB Corp file; and, 18 hours on the JN Corp file.

The associates provide support for the professional advisors and give advice to clients on matters that do not require a securities license.

CG has just prepared the June bills for two client corporations owned by the same person.:

	<u>XB Corp</u>	<u>JN Corp</u>
Sandra Lockheart	\$ 3,000	\$13,750
Jamie Sanders	900	1,350
James Liu	0	1,800
Support Services	<u>200</u>	<u>200</u>
Total	<u>\$ 4,100</u>	<u>\$ 16,900</u>

The owner of the two corporations has questioned the June bill. She is wondering why support services is the same amount when XB Corp required no support service for the month.

Required:

Prepare more appropriate bills for June using the activity-based costing approach.

Answer:		<u>XB Corp</u>	<u>IN Corp</u>
	Sandra Lockheart	\$ 3,000	\$13,750
	Jamie Sanders	900	1,350
	James Liu	0	1,800
	Associate services*	0	675
	Support Services	<u>65</u>	<u>65</u>
	Total	<u>\$ 3,965</u>	<u>\$ 17,640</u>

*Associate billing rate = \$18,750/500 hours = \$37.50

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-2

8) List and describe the purposes of the three main guidelines for refining a cost system.

Answer:

1. *Direct-cost tracing.* Identify as many direct costs as is economically feasible. This guideline aims to reduce the amount of costs classified as indirect, thereby minimizing the extent to which costs have to be allocated, rather than traced.
2. *Indirect-cost pools.* Expand the number of indirect-cost pools until each pool is more homogeneous. All costs in a homogeneous cost pool have the same or a similar cause- and-effect (or benefits-received) relationship with a single cost driver that is used as the cost-allocation base.
3. *Cost-allocation bases.* Use the cost driver (the cause of indirect costs) as the cost-allocation base for each homogeneous indirect-cost pool (the effect).

Diff: 2 Type: ES

Skill: Remember

Objective: LO 5-2

5.3 Apply the cost hierarchy to develop and activity-based costing (ABC) system.

1) An ABC system results in a better measure of the nonuniformity of a company's resources by jobs, products, or services than by using broad averages to assign costs.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-3

2) By defining activities and identifying the costs of performing each activity, ABC systems provide detailed information regarding how an organization utilizes its available resources.

Answer: TRUE

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-3

3) Improved *direct cost tracing* is a benefit of activity-based costing.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-3

4) A critical distinction in activity-based costing is the difference between an activity and an event.

Answer: FALSE

Explanation: An activity is an event, task, or unit of work with a specified purpose.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-3

5) Activity-based costing relies heavily on broad averages to assign costs to jobs, products, and services.

Answer: FALSE

Explanation: Structuring activity cost pools with cost drivers for each activity leads to more accurate costing of activities.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-3

6) One of the benefits of an ABC system is that by highlighting different activities, you can ignore the different levels of activities, such as individual units of output versus batches of output.

Answer: FALSE

Explanation: A **cost hierarchy** categorizes various activity cost pools on the basis of the different types of cost drivers, or cost-allocation bases, or different degrees of difficulty in determining cause-and-effect (or benefits-received) relationships.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-3

7) A cost hierarchy is a categorization of costs into different cost pools on the basis of different classes of cost drivers or different degrees of difficulty in determining cause-and-effect relationships.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-3

8) Output unit-level cost is identical to batch-level cost in a system that costs based on activities.

Answer: FALSE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-3

9) Batch-level costs are resources sacrificed on activities undertaken to support specific products or services.

Answer: FALSE

Explanation: Output unit-level costs are the costs of activities performed on each individual unit of a product or service.

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-3

10) Product-sustaining (service-sustaining) costs are the costs of resources sacrificed on activities undertaken to support specific services.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-3

11) Product-sustaining (service-sustaining),and facility-sustaining costs are equivalent terms in ABC systems.

Answer: FALSE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-3

12) Understanding the hierarchy of costs is critical when allocating costs to products.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-3

13) In a cost system that does not consider the cost hierarchy unit-level measures can distort product costing because the demand for overhead resources may be driven by batch-level or product-sustaining activities.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-3

14) Output unit-level costs cannot be determined unless you know how many units are in a given batch.

Answer: FALSE

Explanation: Output unit-level costs are the costs of the activities performed on each individual unit whereas batch-level costs are the costs of activities related to a group of units.

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-3

15) Using multiple unit-level cost drivers generally constitutes an effective activity-based cost system.

Answer: FALSE

Explanation: In addition to unit-level cost drivers, an effective activity-based cost system usually uses batch-level, product-sustaining, and facility-sustaining cost drivers.

Diff: 2 Type: TF

Skill: Understand

Objective: LO 5-3

16) A cost accounting system should be revised when

- A) the existing cost accounting system provides information that is representative of operations.
- B) the existing cost accounting system could be updated, just to keep ahead.
- C) the existing cost accounting system does not produce information that reflects the way various products use scarce resources.
- D) management wants to change the system, even though the information is relevant and correct.
- E) a new system would be easier to understand but would not be reliable.

Answer: C

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

17) Which of the following statements is TRUE regarding activity-based costing systems?

- A) ABC systems accumulate overhead costs by departments.
- B) ABC costing systems are less complex and, therefore, less costly than traditional systems.
- C) ABC costing systems can be used in manufacturing firms only.
- D) ABC costing systems have multiple indirect cost allocation rates for each activity.
- E) ABC systems provide a greater level of detail to understand how an organization uses its common inputs differently for distinct products.

Answer: E

Diff: 1 Type: MC

Skill: Understand

Objective: LO 5-3

18) When using activity-based costing in a manufacturing setting, its distinctive feature is the focus on

- A) activities as the fundamental cost objects.
- B) minimizing the number of journal entries related to the manufacturing process.
- C) minimizing manufacturing costs.
- D) materials handling.
- E) materials sorting.

Answer: A

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

19) Which of the following statements about activity-based costing is TRUE?

- A) It does not affect cost control.
- B) Indirect cost allocation bases are unlikely to be cost drivers.
- C) It provides less information than traditional cost systems.
- D) It provides similar results to traditional costing when one activity creates a substantial amount of total cost.
- E) It provides similar results to traditional costing when different products use resources from different activities in different proportions.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

20) Which of the following statements does not represent the logic of an ABC system?

- A) Activity cost allocation bases are the activity cost drivers of costs in the activity cost pools.
- B) A strong cause-and-effect relationship between overhead costs and the cost allocation base is essential.
- C) The requirement to measure cost allocation bases of different activities used by different products is essential.
- D) The overhead used by different products is not important, as it is a fixed cost.
- E) A greater level of detailed information concerning costs will help organizations be more efficient.

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

21) In an activity-cost pool

- A) a measure of the activity performed serves as the cost allocation base.
- B) the costs have a cause-and-effect relationship with the cost-allocation base for that activity.
- C) the cost pools are homogeneous over time.
- D) costs in a cost pool can always be traced directly to products.
- E) each pool pertains to a narrow and focused set of costs.

Answer: B

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-3

22) Activity-based costing is a technique to improve the reliability of cost assignment

- A) to work-in-process inventory.
- B) from direct cost pools to distinct types of outputs.
- C) from both direct and indirect cost pools to distinct types of outputs.
- D) to all types of inventory.
- E) from indirect cost pools to distinct types of outputs.

Answer: E

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

23) Which of the following is NOT an activity under an ABC system?

- A) an event
- B) a task
- C) a unit of work
- D) a process
- E) indirect cost

Answer: E

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

24) Which of the following is NOT an activity under an ABC system?

- A) designing products
- B) engineering
- C) setting up equipment
- D) distributing products
- E) customers

Answer: E

Diff: 1 Type: MC

Skill: Understand

Objective: LO 5-3

25) A costing system which focuses on individual event or tasks as the cost pool to be allocated is called

- A) activity-based costing.
- B) direct costing.
- C) job costing.
- D) process costing.
- E) normal costing.

Answer: A

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

26) Which of the following is relevant concerning cost hierarchies?

- A) activity levels
- B) determining whether costs are variable or fixed
- C) costing on the value chain
- D) separating inventoriable costs from period costs
- E) minimum cost required for a particular process

Answer: A

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

27) A four-part cost hierarchy includes

- A) market-sustaining costs.
- B) research and development costs.
- C) manufacturing-level costs.
- D) output unit-level costs.
- E) period costs.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

28) If the cost of an activity increases with each hour of machine time, it is which of the following?

- A) market-sustaining cost
- B) output unit-level cost
- C) batch-level cost
- D) product-sustaining (service-sustaining) costs
- E) facility-sustaining cost

Answer: B

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

29) If the cost of an activity increases with the number of purchase orders placed, rather than to the quantity of items purchased, it is which of the following?

- A) market-sustaining cost
- B) output unit-level cost
- C) facility-sustaining cost
- D) product-sustaining (service-sustaining) costs
- E) batch-level cost

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

30) If the cost of an activity increases with the quantity of items used, it is which of the following?

- A) market-sustaining cost
- B) output unit-level cost
- C) batch-level cost
- D) product-sustaining (service-sustaining) costs
- E) facility-sustaining cost

Answer: B

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

31) Engineering costs incurred to change product designs are which of the following?

- A) market-sustaining costs
- B) output unit-level costs
- C) batch-level costs
- D) product-sustaining (service-sustaining) costs
- E) facility-sustaining costs

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

32) Resources sacrificed on activities undertaken to support product lines are which of the following?

- A) market-sustaining costs
- B) output unit-level costs
- C) batch-level costs
- D) facility-sustaining costs
- E) product-sustaining (service-sustaining) costs

Answer: E

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

33) A division of a company manufactures two products, which are in high demand in the defence industry. Product A is stamped out in a machine press, at the rate of 10,000 per hour. Product B is identical to product A, with the exception that it is made from thicker steel, and requires the machine press to be recalibrated. Product A is produced on the day shift and product B is produced on the afternoon shift, allowing set up changes to be done between shifts.

In this case, set up hours are related to which of the following?

- A) units of output
- B) batches of output
- C) the number of customers
- D) machine hours
- E) labour hours

Answer: B

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

34) Resources sacrificed on activities that cannot be traced to individual products or services, but which support the organization as a whole are which of the following?

- A) output unit-level costs
- B) service-sustaining costs
- C) batch-level costs
- D) product-sustaining costs
- E) facility-sustaining costs

Answer: E

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-3

35) The costs of hiring building security would be which of the following?

- A) output unit-level costs
- B) batch-level costs
- C) general-level costs
- D) product-sustaining costs
- E) facility-sustaining costs

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

36) Activity-based cost systems create

- A) one large cost pool.
- B) homogeneous activity-related cost pools.
- C) activity-cost pools with a broad focus.
- D) activity-cost pools containing many direct costs.
- E) heterogenous activity-related cost pools.

Answer: B

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

37) Activity-based cost systems

- A) apply average support costs to each unit of product.
- B) limit cost drivers to units of output.
- C) allocate costs based on the overall level of activity.
- D) generally undercost complex products.
- E) highlight the different levels of activities.

Answer: E

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-3

38) A cost hierarchy describes

- A) a technique for direct cost tracing.
- B) the process of arranging costs by importance.
- C) the logic of segregating costs by value-chain classification.
- D) the logic of separating one indirect cost pool into multiple pools according to activity level.
- E) a technique of differentiating fixed and variable costs.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-3

39) Which of the following is NOT a characterization of activity-based costing?

- A) identification of only variable costs
- B) a focus on both operating and strategic decisions
- C) identifying all resources used by activities regardless of how individual costs behave in the short run
- D) using the cost hierarchy to allocate costs to products
- E) identification of all costs used by activities

Answer: A

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-3

40) Installing a new control panel on a factory production machine would be classified in the ABC cost hierarchy as a (an)

- A) output unit-level cost.
- B) batch-level cost.
- C) product-sustaining cost.
- D) facility-sustaining cost.
- E) period cost because it is not related to the cost hierarchy.

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

41) Designing a new model of washing machine would be classified in the ABC cost hierarchy as a (an)

- A) output unit-level cost.
- B) batch-level cost.
- C) product-sustaining cost.
- D) facility-sustaining cost.
- E) period cost because it is not related to the cost hierarchy.

Answer: C

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-3

42) Analyze the two costing systems below and determine which one is an ABC system, stating the reasons for your choice.

System A

Total indirect costs	\$3,250,000
Costs per unit	\$64.21
Total direct costs	\$4,565,000
# of Indirect cost pools	10
Direct cost categories	4

System B

Total indirect costs	\$2,750,000
Costs per unit	\$47.25
Total direct costs	\$5,065,000
# of Indirect cost pools	1
Direct cost categories	2

Answer: System A has the indications of a refined cost system using activity-based costing. Indications are; greater number of direct cost categories (direct-cost tracing), greater number of indirect-cost pools (homogeneous cost pools with allocation bases having a strong cause-and-effect relationship are easier to establish when the number of pools increases). The fact that more of the costs are categorized as direct also suggests that the cost system has been refined.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-3

43) Bottle Company operates many bottling plants around the globe. At its Toronto plant, where nine different brands are bottled, the following costs were incurred in the current year to produce 15,000,000 cans of soft drink:

1. Development costs of adding the new product "Soda Plus" amounted to \$614,000.
2. Material handling costs of inspecting and handling concentrate, bottles, packages, and so forth amounted to \$433,500. These costs are allocated to each production run.
3. Incoming materials purchase costs that can be directly traced to individual products being canned and packaged. These costs are purely variable with output level and amounted to \$2,213,000.
4. Executive salaries and other central administration overhead amounted to \$423,000.
5. Plant overhead including costs related to: supervision, safety, energy and plant insurance amounted to \$623,000.
6. The cost of cleaning and calibrating equipment for each production run amounted to \$171,500.

Required:

- a. Classify each of the preceding costs as output unit-level, batch-level, product-sustaining, or facility-sustaining.
- b. Compute the cost per unit for the total manufacturing cost.

Answer:

- a. Output unit-level: material purchase costs
Batch-level: material handling; cleaning and calibrating equipment
Product-sustaining: new product development and plant overhead
Facility-sustaining: executive salaries and central administration overhead
- b. $(\$614,000 + \$433,500 + \$2,213,000 + \$623,000 + \$171,500) / 15,000,000 = \0.27 per can

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-3

44) Brewery Company operates many bottling plants around the globe. At its Montreal plant, where six different brands are bottled, the following costs were incurred in 2012 to produce 10,000,000 bottles of beer:

1. Development costs of adding the new product "Light Beer Plus" amounted to \$307,000.
2. Material handling costs of inspecting and handling concentrate, bottles, packages, and so forth amounted to \$216,750. These costs are allocated to each production run.
3. Incoming materials purchase costs that can be directly traced to individual products being bottled and packaged. These costs are purely variable with output level and amounted to \$1,106,500.
4. Executive salaries and other central administration overhead amounted to \$396,000.
5. Plant overhead including costs related to: supervision, safety, energy and plant insurance amounted to \$311,500.
6. The cost of cleaning and calibrating equipment for each production run amounted to \$85,750.

Required:

- a. Classify each of the preceding costs as output unit-level, batch-level, product-sustaining, or facility-sustaining.
- b. Compute the cost per unit for the total manufacturing cost.

Answer:

- a. Output unit-level: material purchase costs
Batch-level: material handling; cleaning and calibrating equipment
Product-sustaining: new product development and plant overhead
Facility-sustaining: executive salaries and central administration overhead
- b. $(\$307,000 + \$216,750 + 1,106,500 + 311,500 + \$85,750)/10,000,000 = \$0.203$ per bottle

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-3

45) For each of the following activities identify an appropriate activity-cost driver.

- a. machine maintenance
- b. machine setup
- c. quality control
- d. material ordering
- e. production scheduling
- f. warehouse expense
- g. engineering design

Answer: Any one of the listed cost drivers is correct.

<u>Activity</u>			
<u>A. Machine Maintenance</u>	# of machines	Machine hours	Actual times for various maintenances of various machines
<u>B. Machine Setup</u>	# of setups	Setup hours	Actual times for various setups for various machines
<u>C. Quality Control</u>	# of inspections	Inspection hours	Actual times for various inspections for various controls
<u>D. Material Ordering</u>	# of orders	Ordering hours	Actual times for various orders for various material
<u>E. Production Scheduling</u>	# of runs	Scheduling hours	Actual times for various runs for various schedules
<u>F. Warehousing</u>	# of bins, aisles	Picking hours	Actual times for various parts for various warehousing activities
<u>G. Engineering Design</u>	# of engineers # of designs	Engineering hours	Actual times for various engineering designs

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-3

46) The plant manager has come to you, as the new management accountant, for assistance. The plant manufactures sailboards, operating two shifts per day. During March through July, a third shift is added. The company has to train new machine operators each summer as the demands for its products is very seasonal. Training always occurs on the day shift, and the plant allocates the costs of training (e.g., extra supervision required), based on machine hours. This year, the three shift managers cannot agree on who should be charged for the training. The day shift manager is angry because she has discovered that machine hours are highest on the day shift. The other two managers argue that the hours are higher due to the training, so the day shift should be charged for those costs.

Required:

Provide a recommendation to the plant manager? Include in your recommendation two options as an allocation base for training costs.

Answer: It is possible that the training costs should just be split evenly between the three shift manager's budgets, but some analysis is required to determine if a cause-and-effect relationship can be identified, or if the costs may be treated as facility-sustaining cost and simply deducted from income. Labour hours or machine hours could be used as an allocation base. There isn't enough information to make a strong case for one over the other.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-3

47) Hans Sorensen, controller of Franklin Production, has the choice of allocating indirect manufacturing cost using either direct manufacturing labour hours or manufacturing machine hours. If he uses labour hours for the month of January, Product A receives \$312,000 in manufacturing overhead charges and Product B receives \$448,000. When machine hours are used Product A receives \$352,000 in manufacturing overhead charges while Product B receives only \$408,000.

Required: You are the department manager in charge of Product A and are strongly in favour of using labour hours. Of course, your co-manager, who is in charge of Product B, is strongly in favour of machine hours. What are some arguments you may be able to give for the allocation base that favours your department's product?

Answer: Arguments that may be favourable to your department include:

1. Direct manufacturing labour is a better measure of indirect manufacturing costs than is manufacturing machine hours. The machines often run when no products are being processed through them.
2. Labour hours reflect a stronger cause and effect relationship to what is being done to the products than do machine hours. The manufacturing process is labour intensive rather than machine-processing intensive.
3. Labour hours are easier to collect than machine hours because the information can be taken directly from the payroll information.
4. Most of the manufacturing overhead items relate to the labourers rather than to the machines; for example, lighting is for people—machines can work in the dark.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-2, 3

48) How are cost drivers selected in activity-based costing systems?

Answer: First, indirect costs are divided into homogeneous cost pools and classified as output unit-level, batch-level, product-sustaining (service sustaining), or facility-sustaining costs. The cost pools correspond to activities. Costs are allocated to products, services, or customers using activity drivers (cost allocation bases) that have a cause-and-effect relationship with each cost pool.

Choices about how to economize on the number of activity cost drivers, how to isolate events (because activities triggered by the same event often can use the same activity cost driver), and which cost drivers to select are influenced by the fact that the benefit of obtaining cost driver information needs to exceed implementation costs.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-2, 3

49) The new manager of the insurance division does not understand how the company can have so many overhead rates for assigning costs to the activities of the company's life insurance underwriters. There is one rate schedule for average assignable costs when agents write standard policies. There is another rate schedule which the agents must complete when they write special policies, and these policies are costed out differently from those that are categorized as standard policies.

Required:

- a. Why might the company have different costing systems with different overhead rates for the standard and specialized policies?
- b. Which rate (standard or specialized) would cross-subsidize the other if the company used only one set of overhead rates for costing its policies?

Answer:

a. Because the standard policies are written the same way each time, the company knows how long it takes to complete such a policy and the average effort expended by the agents in doing standard policy work. Special policies, on the other hand, are different and the amount of effort and time to complete such a policy is difficult to standardize. The agents are thus required to keep track of their time and expenses in completing such policies.

b. The standard policy rates would probably cross-subsidize the special policy rates because the average assignable costs would probably be greater than the real cost of the standard policies. For example, if the actual cost to write a standard policy was \$100 and the assignable rate was \$125, the standard policies would be subsidizing the special policies by \$25 every time a standard policy was written.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-2, 3

50) ABC provides a cost-benefit analysis of the unequally shared benefits of a support activity. The technique also discloses the scope of business functions where cost control will have a positive effect.

Required:

Provide three benefits that the identification of the scope of cost control focused on different activity levels should lead to.

Answer: Any three of:

Increased reliability of the costs and benefits measures of various support activities.

Deeper understanding of interdependencies among costs and activities throughout the value chain.

Clearer diagnoses of costing problems and identification of more effective remedies.

Refined, more reliable predicted (budgeted) future costs.

Superior methods to predict (budget) future outcomes, particularly profitability.

Diff: 3 Type: ES

Skill: Understand

Objective: LO 5-3

51) Describe each of the four cost hierarchies used to define levels for activities in activity-based costing.

Answer: The four parts of the cost hierarchy are output unit-level costs, batch-level costs, product (or service) sustaining costs, and facility-sustaining costs. Output unit-level costs are costs of activities performed on each individual unit of a product or service. Batch-level costs are the costs of activities related to a group of units of products or services rather than to each individual unit of product or service. Product (or service) sustaining costs are the costs of activities undertaken to support individual products or services regardless of the number of units or batches in which the products are produced. Facility-sustaining costs are the costs of activities that cannot be traced to individual products or services but support the organization as a whole. When compared to the fixed-variable dichotomy, which considers only units of output as a cost driver, the four part cost hierarchy provides opportunity to model many different cost drivers. For example, batch-level costs and product (or service) sustaining costs are driven by the number of batches of a product and the number of different products. Neither of these class of cost drivers are able to be considered in a simple fixed-variable dichotomy.

Diff: 2 Type: ES

Skill: Remember

Objective: LO 5-3

Match the cost driver in the right column below to the appropriate function in the left column.

- A) Number of customers
- B) Number of purchase orders
- C) Number of invoices
- D) Number of desktop computers
- E) Number of shipments
- F) Number of employees

52) Purchasing
Diff: 1 Type: MA
Skill: Understand
Objective: LO 5-3

53) Billing
Diff: 1 Type: MA
Skill: Understand
Objective: LO 5-3

54) Shipping
Diff: 1 Type: MA
Skill: Understand
Objective: LO 5-3

55) Computer Support
Diff: 1 Type: MA
Skill: Understand
Objective: LO 5-3

56) Personnel
Diff: 1 Type: MA
Skill: Understand
Objective: LO 5-3

57) Customer Service
Diff: 1 Type: MA
Skill: Understand
Objective: LO 5-3

Answers: 52) B 53) C 54) E 55) D 56) F 57) A

5.4 Assign costs using activity-based costing (ABC).

1) ABC systems seek a cost-allocation base that has a cause-and-effect relationship with costs in the cost pool.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-4

2) Homogeneous cost pools and the choice of cost-allocation bases are not tied to the cost hierarchy.

Answer: FALSE

Explanation: Homogeneous cost pools and the choice of cost-allocation bases are tied to the cost hierarchy.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-4

3) The benefit of an ABC system is that it provides information to make better decisions at a lower costs than traditional (simple) cost systems.

Answer: FALSE

Explanation: The benefit of an ABC system is that it provides information to make better decisions. But this benefit must be weighed against the measurement and implementation costs of an ABC system.

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-4

4) Significant amounts of direct costs allocated using only one or two cost pools is evidence that a company may benefit from implementing ABC.

Answer: FALSE

Explanation: Significant amounts of indirect costs allocated using only one or two cost pools is evidence that a company may benefit from implementing ABC.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 5-4

5) Which of the following does not characterize an ABC system, as compared to a traditional costing system?

A) smaller cost pools

B) more cost drivers

C) more homogeneous cost pools

D) focus on activities

E) less expensive to set up and maintain

Answer: E

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-4

6) With simple costing systems, products manufactured in small batches and in small annual volumes may be _____ because batch-related and product-sustaining costs are assigned using unit-related drivers.

- A) overcosted
- B) fairly costed
- C) costed the same as in activity-based costing
- D) undercosted
- E) ignored

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-4

7) Which of the following is a sign that an ABC system may be useful?

- A) There are small amounts of indirect costs.
- B) Products make diverse demands on resources because of differences in volume, process steps, batch size, or complexity.
- C) Products that a company is well-suited to make and sell show large profits; whereas products that a company is less suited to produce and sell show small profits.
- D) Operations staff agrees with accountants about the costs of manufacturing and marketing products and services.
- E) Almost none of the indirect costs are identified as output unit-level costs.

Answer: B

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-4

8) Which of the following is TRUE concerning selecting a cost-allocation base in an ABC system?

- A) Cost-allocation bases are not relevant in defining the number of activity pools.
- B) All costs can be directly identified with a specific activity.
- C) The allocation base chosen may be constrained by the availability of reliable data.
- D) Costs may need to be allocated to services first, before the costs of services can be allocated to activities.
- E) Output unit-level costs cannot be related to a cost-allocation base.

Answer: C

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-4

Use the information below to answer the following question(s).

A transportation company provides bussing, limo and taxi service. The company charges: \$350 per day for bussing service; \$2.00 per kilometre for taxi service; and, \$3.50 per kilometre for limo service. Two individual clients, the school board and the city government offices use the majority of the limo service on a contract agreement. Bussing services are used exclusively by the school board, and the taxi service is used almost exclusively by the general public, although the school board uses the taxi services when individual students have to be transported on occasion. Indirect costs are accumulated on internal records at \$1.50 per kilometre for limo use and \$1.00 per kilometre for taxi use, and \$195 per day for each of the twenty buses.

The company's costing system has tracked the following activities for the month:

<u>Client</u>	<u>Limo Km</u>	<u>Taxi Km</u>	<u>Average Days/Bus</u>
School board	360	90	19
City gov't	1,943	125	n/a

9) Compute the billing to each major client for the month.

- A) School Board, \$134,440.00; City Gov't, \$7,050.50
- B) School Board, \$8,090.00; City Gov't, \$134,440.00
- C) School Board, \$134,440.00; City Gov't, \$4,323.50
- D) School Board, \$7,050.50; City Gov't, \$7,685.00
- E) School Board, \$8,090.00; City Gov't, \$7,050.50

Answer: A

Explanation: A) School board: $[360 \times \$3.50] + [90 \times \$2.00] + [19 \times 20 \times \$350] = \$134,440.00$

City gov't: $[1,943 \times \$3.50] + [125 \times \$2.00] = \$7,050.50$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

10) What indirect costs were accumulated for each major client for the month?

- A) School Board, \$74,730.00; City Gov't, \$3,039.50
- B) School Board, \$7,050.50; City Gov't, \$74,730.00
- C) School Board, \$74,730.00; City Gov't, \$7,050.50
- D) School Board, \$7,050.50; City Gov't, \$7,685.00
- E) School Board, \$6,925.50; City Gov't, \$141,420.00

Answer: A

Explanation: A) School board: $[360 \times \$1.50] + [90 \times \$1.00] + [19 \times 20 \times \$195] = \$74,730.00$

City gov't: $[1,943 \times \$1.50] + [125 \times \$1.00] = \$3,039.50$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

11) The previous controller at the transportation company had always estimated the indirect costs at 25% of billings. What indirect costs were accumulated for each major client for the month under this assumption?

- A) School Board, \$33,610.00; City Gov't, \$1,080.88
- B) School Board, \$2,022.50; City Gov't, \$33,610.00
- C) School Board, \$33,610.00; City Gov't, \$1,762.63
- D) School Board, \$1,762.63; City Gov't, \$1,921.25
- E) School Board, \$2,022.50; City Gov't, \$1,762.63

Answer: C

Explanation: C) School board: $([360 \times \$3.50] + [90 \times \$2.00] + [19 \times 20 \times \$350]) \times 25\% = \$33,610.00$

City gov't: $([1,943 \times \$3.50] + [125 \times \$2.00]) \times 25\% = \$1,762.63$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

Use the information below to answer the following question(s).

Fran Ferry Company had the following activities, pooled costs, and physical flow of driver units. The company uses activity-based costing.

<u>Activities</u>	<u>Pooled Costs</u>	<u>Physical Flow of Driver Units</u>
Account inquiry (hours)	\$200,000	5,000 hours
Account billing (lines)	\$140,000	2,000,000 lines
Account verification (accounts)	\$5,000	20,000 accounts
Correspondence (letters)	\$25,000	2,000 letters

The above activities are used by departments A and B as follows:

	A	B
Account inquiry (hours)	1,000	2,000
Account billing (lines)	200,000	100,000
Account verification (accounts)	5,000	4,000
Correspondence (letters)	500	800

12) How much of the account inquiry cost will be assigned to Department A?

- A) \$200,000
- B) \$80,000
- C) \$66,667
- D) \$133,334
- E) \$40,000

Answer: E

Explanation: E) $(\$200,000/5,000) \times 1,000 = \$40,000$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

13) How much of the account billing cost will be assigned to Department B?

- A) \$7,000
- B) \$14,000
- C) \$46,667
- D) \$93,333
- E) \$140,000

Answer: A

Explanation: A) $(\$140,000/2,000,000) \times 100,000 = \$7,000$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

Use the information below to answer the following question(s).

Bill Cobb Corporation had the following activities, pooled costs, and physical flow of driver units. The company uses activity-based costing.

<u>Activities</u>	<u>Pooled Costs</u>	<u>Physical Flow of Driver Units</u>
Account inquiry (hours)	\$400,000	5,000
Account billing (lines)	\$280,000	2,000,000
Account verification (accounts)	\$150,000	20,000
Correspondence (letters)	\$50,000	2,000

The above activities are used by departments X and Y as follows:

	X	Y
Account inquiry (hours)	500 hours	800 hours
Account billing (lines)	250,000 lines	200,000 lines
Account verification (accounts)	2,000 accounts	1,000 accounts
Correspondence (letters)	200 letters	1,000 letters

14) How much of the correspondence cost will be assigned to Department X?

- A) \$10,000
- B) \$8,333
- C) \$25,000
- D) \$5,000
- E) \$50,000

Answer: D

Explanation: D) $(\$50,000/2,000) \times 200 = \$5,000$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

15) How much of the account verification cost will be assigned to Department Y?

- A) \$15,000
- B) \$7,500
- C) \$100,000
- D) \$10,000
- E) \$50,000

Answer: B

Explanation: A)

B) $(\$150,000/20,000) \times 1,000 = \$7,500$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

16) Babcock Industries uses departmental overhead rates to allocate its manufacturing overhead to jobs. The company has two departments: Assembly and Sanding. The Assembly Department uses a departmental overhead rate of \$20 per machine hour, while the Sanding Department uses a departmental overhead rate of \$15 per direct labour hour. Job 396 used the following direct labour hours and machine hours in the two departments:

	Assembly Department	Sanding Department
Actual results		
Direct labour hours used	4	3
Machine hours used	9	5

The cost for direct labour is \$25 per direct labour hour and the cost of the direct materials used by Job 396 is \$1,200.

What was the total cost of Job 396 if Babcock Industries used the departmental overhead rates to allocate manufacturing overhead?

- A) \$1,375
- B) \$1,425
- C) \$1,500
- D) \$1,600
- E) \$1,630

Answer: D

Explanation: D) Labour $(\$25 \times 4 \text{ hrs}) + (\$25 \times 3 \text{ hrs}) = 175.00$

Materials = 1,200.00

Overhead

Assembly dept. $\$20 \times 9 \text{ hrs} = 180.00$

Sanding dept. $\$15 \times 3 \text{ hrs} = 45.00$

Total = 1,600.00

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

17) Leonard Industries uses departmental overhead rates to allocate its manufacturing overhead to jobs. The company has two departments: Building and Inspection. The Building Department uses a departmental overhead rate of \$18 per machine hour, while the Inspection Department uses a departmental overhead rate of \$15 per direct labour hour. Job 611 used the following direct labour hours and machine hours in the two departments:

Actual results	Building Department	Inspection Department
Direct labour hours used	6	2
Machine hours used	10	0

The cost for direct labour is \$25 per direct labour hour and the cost of the direct materials used by Job 611 is \$1,500.

What was the total cost of Job 611 if Leonard Industries used the departmental overhead rates to allocate manufacturing overhead?

- A) \$1,700
- B) \$1,844
- C) \$1,880
- D) \$1,838
- E) \$1,910

Answer: E

Explanation: E) Labour ($\$25 \times 6 \text{ hrs}$) + ($\$25 \times 6 \text{ hrs}$) = 200.00

Materials = 1,500.00

Overhead

Bldg dept $\$18 \times 10 \text{ hrs} = 180.00$

Inspect dep $\$15 \times 2 \text{ hrs} = 30.00$

Total = 1,910.00

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

Answer the following question(s) using the information below.

Ernsting Printers has contracts to complete weekly supplements required by forty-six customers. For the year 2015, manufacturing overhead cost estimates total \$420,000 for an annual production capacity of 12 million pages.

For 2015 Ernsting Printers has decided to evaluate the use of additional cost pools. After analyzing manufacturing overhead costs, it was determined that number of design changes, setups, and inspections are the primary manufacturing overhead cost drivers. The following information was gathered during the analysis:

<u>Cost pool</u>	<u>Manufacturing overhead costs</u>	<u>Activity level</u>
Design changes	\$60,000	300 design changes
Setups	320,000	5,000 setups
Inspections	40,000	8,000 inspections
Total manufacturing overhead costs	\$420,000	

During 2015, two customers, Wealth Managers and Health Systems, are expected to use the following printing services:

<u>Activity</u>	<u>Wealth Managers</u>	<u>Health Systems</u>
Pages	60,000	76,000
Design changes	10	0
Setups	20	10
Inspections	30	38

18) What is the cost driver rate if manufacturing overhead costs are considered one large cost pool and are assigned based on 12 million pages of production capacity?

- A) \$0.05 per page
- B) \$0.035 per page
- C) \$0.35 per page
- D) \$0.025 per page
- E) \$0.045 per page

Answer: B

Explanation: B) \$0.035 per page = (\$420,000/12,000,000 pages)

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

19) Using pages printed as the only overhead cost driver, what is the manufacturing overhead cost estimate for Wealth Managers during 2015?

- A) \$2,500
- B) \$21,000
- C) \$1,500
- D) \$2,700
- E) \$2,100

Answer: E

Explanation: E) $\$2,100 = [60,000 \text{ pages} \times (\$420,000/12,000,000)]$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

20) Assuming activity-cost pools are used, what are the activity-cost driver rates for design changes, setups, and inspections cost pools?

- A) \$200 per change, \$64 per setup, \$5 per inspection
- B) \$180 per change, \$76 per setup, \$4 per inspection
- C) \$150 per change, \$64 per setup, \$4 per inspection
- D) \$180 per change, \$76 per setup, \$5 per inspection
- E) \$200 per change, \$5 per setup, \$64 per inspection

Answer: A

Explanation: A) Design changes: $\$200 \text{ per change} = (\$60,000/300 \text{ design changes})$

Setups: $\$64 \text{ per setup} = (\$320,000/5,000 \text{ setups})$

Inspections: $\$5 \text{ per inspection} = (\$40,000/8,000 \text{ inspections})$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

21) Using activity-based costing to allocate overhead costs, what is the total manufacturing overhead cost estimate for Wealth Managers during 2015?

- A) \$6,850
- B) \$3,250
- C) \$4,020
- D) \$3,430
- E) \$5,096

Answer: D

Explanation: D) $\$3,430 = (10 \times \$200 \text{ per change} = \$2,000) + (20 \times \$64 \text{ per setup} = \$1,280) + (30 \times \$5 \text{ per inspection} = \$150)$

Diff: 3 Type: MC

Skill: Apply

Objective: LO 5-4

22) When selling price is cost plus 25% and costs are assigned using the single cost driver, number of pages printed, then

- A) Ernsting Printers will want to drop Wealth Managers as a customer.
- B) Wealth Managers will likely seek to do business with competitors.
- C) Wealth Managers is unfairly over billed for its use of printing resources.
- D) Wealth Managers is under billed for the job, while other jobs will be unfairly over billed.
- E) All customers will be under billed for their jobs.

Answer: D

Diff: 3 Type: MC

Skill: Understand

Objective: LO 5-4

Answer the following question(s) using the information below.

Wallace Printing has contracts to complete weekly supplements required by forty-six customers. For the year 2016, manufacturing overhead cost estimates total \$420,000 for an annual production capacity of 10 million pages.

For 2016 Wallace Printing decided to evaluate the use of additional cost pools. After analyzing manufacturing overhead costs, it was determined that number of design changes, setups, and inspections are the primary manufacturing overhead cost drivers. The following information was gathered during the analysis:

<u>Cost pool</u>	<u>Manufacturing overhead costs</u>	<u>Activity level</u>
Design changes	\$60,000	200 design changes
Setups	320,000	4,000 setups
Inspections	40,000	16,000 inspections
Total manufacturing overhead costs	\$420,000	

During 2016, two customers, Wayward Insurance and Hapless Systems, are expected to use the following printing services:

<u>Activity</u>	<u>Wayward Insurance</u>	<u>Hapless Systems</u>
Pages	60,000	76,000
Design changes	10	2
Setups	20	10
Inspections	30	38

23) If manufacturing overhead costs are considered one large cost pool and are assigned based on 10 million pages of production capacity, what is the cost driver rate?

- A) \$0.25 per page
- B) \$0.05 per page
- C) \$0.025 per page
- D) \$0.042 per page
- E) \$0.42 per page

Answer: D

Explanation: D) \$0.042 per page = (\$420,000/10,000,000 pages)

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

24) Using pages printed as the only overhead cost driver, what is the manufacturing overhead cost estimate for Hapless Systems during 2016?

- A) \$19,000
- B) \$3,800
- C) \$1,900
- D) \$2,520
- E) \$3,192

Answer: E

Explanation: E) $\$3,192 = 76,000 \text{ pages} \times (\$420,000/10,000,000 \text{ pages})$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

25) Assuming activity-cost pools are used, what are the activity-cost driver rates for design changes, setups, and inspections cost pools?

- A) \$300 per change, \$80 per setup, \$2.50 per inspection
- B) \$250 per change, \$80 per setup, \$3.75 per inspection
- C) \$210 per change, \$2.50 per setup, \$26.25 per inspection
- D) \$300 per change, \$125 per setup, \$4.00 per inspection
- E) \$300 per change, \$2.50 per setup, \$80 per inspection

Answer: A

Explanation: A) Design changes: $\$300 \text{ per change} = (\$60,000/200 \text{ design changes})$

Setups: $\$80 \text{ per setup} = (\$320,000/4,000 \text{ setups})$

Inspections: $\$2.50 \text{ per inspection} = (\$40,000/16,000 \text{ inspections})$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

26) Using activity-based costing to allocate overhead costs, what is the total manufacturing overhead cost estimate for Hapless Systems during 2016?

- A) \$3,113.75
- B) \$1,495.00
- C) \$2,068.00
- D) \$3,412.50
- E) \$3,665.00

Answer: B

Explanation: B) $\$1,495 = (2 \times \$300 \text{ per change}) + (10 \times \$80 \text{ per setup}) + (38 \times \$2.50 \text{ per inspection})$

Diff: 3 Type: MC

Skill: Apply

Objective: LO 5-4

27) When selling prices are based on costs assigned using the single cost driver, number of pages printed, then Hapless Systems

- A) is fairly billed because resources are allocated uniformly to all jobs.
- B) is grossly under billed for the job, while other jobs will be unfairly over billed.
- C) will be pleased because all customers will be under billed for their jobs.
- D) will contribute too little to profits, and Wallace Printing will not want to accept additional work. from the company
- E) will likely seek to do business with competitors.

Answer: E

Diff: 3 Type: MC

Skill: Understand

Objective: LO 5-4

Answer the following question(s) using the information below.

Products S5 and CP8 each are assigned \$50.00 in indirect costs by a traditional costing system. An activity analysis revealed that although production requirements are identical, S5 requires 45 minutes less setup time than CP8.

28) Compared to an activity-based cost system, CP8 is _____ under the traditional system.

- A) undercosted
- B) overcosted
- C) fairly costed
- D) accurately costed
- E) costed the same

Answer: A

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-4

29) According to an ABC system, S5 uses a disproportionately

- A) smaller amount of unit-level costs.
- B) larger amount of unit-level costs.
- C) smaller amount of product-sustaining costs.
- D) larger amount of batch-level costs.
- E) smaller amount of batch-level costs.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-4

Answer the following questions using the information below:

Gregory Enterprises has identified three cost pools to allocate overhead costs. The following estimates are provided for the coming year:

<u>Cost Pool</u>	<u>Overhead Costs</u>	<u>Cost driver</u>	<u>Activity level</u>
Supervision of direct labour	\$320,000	Direct labour hours	800,000
Machine maintenance	\$120,000	Machine hours	960,000
Facility rent	<u>\$200,000</u>	Square metres of area	100,000
Total overhead costs	<u>\$640,000</u>		

The accounting records show the Mossman Job consumed the following resources:

<u>Cost driver</u>	<u>Actual level</u>
Direct labour-hours	200
Machine-hours	1,600
Square metres of area	50

30) If Gregory Enterprises uses a simple cost system based on direct labour hours then what amount of indirect costs will be allocated to the Mossman job?

- A) \$60
- B) \$240
- C) \$100
- D) \$160
- E) \$80

Answer: D

Explanation: D) $OVR = \$640,000 / 800,000 \text{ hrs.} = \0.80 per DL hour

$200 \text{ DL hrs.} \times \$0.80 = \$160$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

31) If Gregory Enterprises uses an ABC system then what amount of indirect costs will be allocated to the Mossman job?

- A) \$240
- B) \$420
- C) \$80
- D) \$160
- E) \$380

Answer: E

Explanation: E) DL rate = $\$320,000/800,000 \text{ hrs.} = \0.40 per DL hour

$200 \text{ DL hrs.} \times \$0.40 = \$80$

MH rate = $\$120,000/960,000 \text{ hrs.} = \0.125 per MH

$1,600 \text{ MH} \times \$0.125 = \$200$

Rent rate = $\$200,000/100,000 \text{ sq. m.} = \2 per metre

$50 \text{ sq. m.} \times \$2 = \$100$

Total = $\$80 + \$200 + \$100 = \380

Diff: 2 Type: MC

Skill: Apply

Objective: LO 5-4

32) When selling prices are based on costs assigned using the single cost driver, direct labour hours, then the Mossman job

- A) is fairly billed because resources are allocated uniformly to all jobs.
- B) is grossly under billed for the job, while other jobs will be unfairly over billed.
- C) may increase overall sales as other jobs will be cross-subsidized.
- D) will contribute too little to profits, and Gregory Enterprises will not want to accept additional work from the company.
- E) will likely seek to do business with competitors.

Answer: B

Diff: 3 Type: MC

Skill: Understand

Objective: LO 5-4

33) Eastern Star Nursing Home has been using an indirect overhead job cost system for allocating general and nursing overhead charges to all patients. However, during the past few months the facility has been losing patients because a competing nursing home charges much less for some classes of patients. It seems that Eastern Star is keeping the well patients and losing those who require special attention. The facilities manager believes that a refined costing system can improve the allocation of charges to all patients. Hopefully this will reduce the charges to the more ill patients.

The accounting staff provided information for September. The costs have traditionally been allocated to patients based on nursing days. However, the accounting staff can separate nursing days by nursing category. At the request of the facilities manager, the following information was furnished concerning nursing days.

	Critical Care <u>Days</u>	Special Care <u>Days</u>	General Care <u>Days</u>	Daily <u>Pay Rate</u>
Senior RN	1,600	1,000	1,600	\$150
RN	4,000	2,600	2,000	135
Senior PN	2,000	1,400	5,200	120
PN	400	1,000	4,400	100
Nurse's aide	<u>0</u>	<u>0</u>	<u>1,800</u>	80
Total days	<u>8,000</u>	<u>6,000</u>	<u>15,000</u>	
Overhead rate/day	\$110	\$100	\$90	

Hazel Jones, a long-time patient, spent 5 days in Critical Care, 4 days in Special Care, and 21 days in General Care during September. Her monthly assignment of nursing days was: 2 for Senior RN, 6 for RN, 10 for PN, and 12 for Nurse's aide.

Required:

- Determine the amount of cost to be covered by Hazel Jones if the daily pay rates presented in the table are used for staff services and overhead is added on a care area per day basis.
- For each patient care area determine the total cost per day to be charged to patients using the weighted average staff services cost for the daily pay rate portion of total costs. What is cost to be covered by Hazel Jones' charge for the month of September?

Answer:

a. Hazel Jones:

Critical care	$\$110 \times 5 \text{ days} =$	\$550
Special care	$\$100 \times 4 \text{ days} =$	400
General care	$\$90 \times 21 \text{ days} =$	1,890
Sr. RN	$\$150 \times 2 \text{ day} =$	300
RN	$\$135 \times 6 \text{ days} =$	810
PN	$\$100 \times 10 \text{ days} =$	1,000
Nurse's aide	$\$80 \times 12 \text{ days} =$	960
Total charges		<u>\$5,910</u>

b. Total rate basis:

	<u>Critical care</u>	<u>Special care</u>
Sr RN	$1,600 \times \$150 = \$240,000$	$1,000 \times \$150 = \$150,000$
RN	$4,000 \times 135 = 540,000$	$2,600 \times 135 = 351,000$
Sr PN	$2,000 \times 120 = 240,000$	$1,400 \times 120 = 168,000$
PN	$400 \times 100 = 40,000$	$1,000 \times 100 = 100,000$
Aide	$0 \times 80 = 0$	$0 \times 80 = 0$
Totals	<u>\$1,060,000</u>	<u>\$769,000</u>

Weighted avg.	$\$1,060,000/8,000$	$\$769,000/6,000$
	= \$132.50	= \$128.17

Overhead other	<u>110.00</u>	<u>100.00</u>
Total rate	<u>\$242.50</u>	<u>\$228.17</u>

General care

Sr. RN	$1,600 \times \$150 =$	\$240,000
RN	$2,000 \times 135 =$	270,000
Sr PN	$5,200 \times 120 =$	624,000
PN	$4,400 \times 100 =$	440,000
Aide	$1,800 \times 80 =$	<u>144,000</u>
Total		<u>\$1,718,000</u>

Weighted avg. $\$1,718,000/15,000 = \114.53

Overhead other 90.00

Total rate \$204.53

Hazel Jones:

Critical care	$\$242.50 \times 5 \text{ days} =$	\$1,212.50
Special care	$\$228.17 \times 4 \text{ days} =$	912.68
General care	$\$204.53 \times 21 \text{ days} =$	<u>4,295.13</u>
Total charges		<u>\$6,420.31</u>

Diff: 3 Type: ES

Skill: Apply

Objective: LO 5-4

34) The Marionettes Company is noted for an exceptionally impressive line of Mardi Gras masks. Marionettes has established the following selling and distribution support activity-cost pools and their corresponding activity drivers for the year 2012:

<u>Activity</u>	<u>Cost</u>	<u>Cost driver</u>
Marketing	\$30,000	\$500,000 of sales
Customer service	10,000	5,000 customer
Order execution	5,000	100 orders
Warehousing	5,000	50 product lines

Required:

- Determine the activity cost driver rate for each of the four selling and distribution activities.
- Under what circumstances is it appropriate to use each of the activity cost drivers?
- Describe at least one possible negative behavioral consequence for each of the four activity cost drivers.

Answer:

- Activity cost driver rate for Marketing = 6% of sales = $\$30,000/\$500,000$.
Activity cost driver rate for Customer Service = \$2 per customer = $\$10,000/5,000$.
Activity cost driver rate for Order Execution = \$50 per order = $\$5,000/100$.
Activity cost driver rate for Warehousing = \$100 per order = $\$5,000/50$.
- For marketing, using 6% of stipulated sales is appropriate when management wants to limit marketing costs to a budgeted proportion to sales. Using the number of customers for customer service is appropriate when the customer service costs are similar enough to use the average for all customers. Using the number of orders for order execution is appropriate when all orders are sufficiently alike in terms of resources used that they can be averaged. Using the number of product lines for warehousing is appropriate when each product line requires similar proportions of the warehousing efforts.
- For marketing, using 6% of sales limits the marketing activities to an arbitrary amount without consideration for potential opportunities. Using the number of customers for customer service can lead to customer service initiatives to limit the amount of time servicing each customer to cause the number of customers serviced to increase. Using the number of orders for order execution can result in purchasers splitting orders to increase the numbers of orders executed. Using the number of product lines for warehousing can lead warehouse personnel to designate more product line differences in the warehouse.

Diff: 3 Type: ES

Skill: Understand

Objective: LO 5-3, 4

35) At Deutschland Electronics, product lines are charged for call centre support costs based on sales revenue. Last year's summary of call centre operations revealed the following:

	<u>Surveillance Products</u>	<u>Specialty Products</u>
Number of calls for information	1,000	4,000
Average call length for information	3 minutes	8 minutes
Number of calls for warranties	300	1,200
Average call length for warranties	7 minutes	15 minutes
Sales revenue	\$8,000,000	\$5,000,000

Deutschland Electronics currently allocates call centre support costs using a rate of 0.5% of sales revenue.

Required:

- Compute the amount of call centre support costs allocated to each product line under the current system.
- Assume Deutschland decides to use the *average call length for information* to assign last year's support costs. Does this allocation method seem more appropriate than percentage of sales? Why or why not?
- Assume Deutschland decides to use the *numbers of calls for information and for warranties* to assign last year's support costs of \$65,000. Compute the amount of call centre support costs assigned to each product line under this revised ABC system.
- Deutschland Electronics assigns bonuses based on departmental profits. How might the Specialty Products manager try to obtain higher profits for next year if support costs are assigned based on the average call length for information?
- Discuss the barriers for implementing ABC for this call centre.

Answer:

- Call centre support costs allocated to surveillance products is \$40,000 = $0.005 \times \$8,000,000$ and to specialty products is \$25,000 = $0.005 \times \$5,000,000$.
- Yes, average call length appears to be a more appropriate allocation method because it allocates more support costs to specialty products, which consume a greater portion of the call centre's resources.
- \$65,000 of support costs/6,500 total calls (Surveillance 1,000 + 300 + Specialty 4,000 + 1,200) = \$10 per call. Call centre support costs allocated to surveillance products is \$13,000 = 1,300 calls \times \$10 per call, and to specialty products is \$52,000 = 5,200 calls \times \$10 per call.
- To increase profits, Specialty Product managers would want less cost allocated to their departments. Therefore, if support cost allocation were based on length of call, Specialty Products management may emphasize keeping calls for their department short and to the point, rather than emphasizing understanding and helping the caller.
- Poor model design or poor analytical interpretation and accountability consequences may function as barriers to using ABC assignments for the call centre activities. It is also important to recognize that the call volumes from this year may be an anomaly so that in an average year, the current allocation rate on sales may not be as distortive as it appears for this year.

Diff: 3 Type: ES

Skill: Apply

Objective: LO 5-3, 4

36) Asian Tools, a manufacturer of precision hand tools, is concerned with the apparent lack of controls over cost incurrence in its Hand Tool Division. The division has always used a plant-wide rate for allocating manufacturing overhead to its products. However, some products cost substantially more than competitors' retail prices while others are substantially less. The division manager believes that a better cost allocation method can be developed.

With the assistance of a plant supervisor, the accounting department has been able to establish the following relationships between production activities and the indirect costs of the activities:

<u>Activity</u>	<u>Cost Driver</u>	<u>Allocation Rate</u>
Material handling	Number of parts	\$2.60 per part
Machine stamping	Machine hours	\$60.00 per hour
Finishing Time	Finishing minutes	\$4.00 per minute

The traditional allocation method is based upon direct manufacturing labour hours, and if that method is used the rate is \$28 per hour.

Required:

Compute the unit indirect manufacturing costs of a batch of 200 tools if the batch required 220 parts, 8 machine hours, 52 minutes of finishing time, and 46 direct labour hours:

Answer:

a. Traditional method:

46 hours × \$28 = \$1,288 per batch

or \$1,288/200 = 6.44 per unit

b. Activity base method:

Material handling (\$2.60 × 220) \$572

Machine stamping (\$60 × 8) 480

Finishing (\$4 × 52) 208

Batch total \$1,260

Unit costs \$1,260/200 = \$6.30 per unit

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-4

37) A company manufactures household items sold at trade shows. The items, classified as either Trinkets or Widgets are manufactured on a common assembly line. Although different direct materials are used, the direct labour cost is the same for each product line.

The plant-wide rate for allocating manufacturing overhead to its products is no longer acceptable. The production manager has heard about activity-based costing and has assembled some information for use in changing the cost system to a cost driver concept.

With the help of the accounting department, the manager has been able to establish the following relationships between production costs and some of the indirect manufacturing activities for August, along with the production data for the two product lines:

<u>Activity</u>	<u>Cost Driver</u>	<u>Allocation Rate</u>	<u>Trinkets</u>	<u>Widgets</u>
Material handling	Number of parts	\$1.00 per part	2,000	1,300
Machining	Machine hours	\$15.00 per hour	205	300
Assembly	Units began	\$1.60 per unit	1,000	1,300
Inspection	Number tested	\$2.00 per unit	100	1,200

Direct costs:

	<u>Trinkets</u>	<u>Widgets</u>
Labour	\$12,000	\$12,000
Materials	\$5,200	\$2,600

Required:

Using activity-based costing determine the total production cost of each of the two product lines for August and the cost per unit assuming all units started were completed.

Answer: Trinkets Widgets

Direct manufacturing costs:

Direct labour	\$12,000	\$12,000
Direct materials	<u>5,200</u>	<u>2,600</u>
Total direct costs	17,200	14,600

Indirect manufacturing costs:

Material handling (\$1.00 × 2,000) =	2,000	(\$1.00 × 1,300) =	1,300
Machining (\$15.00 × 205) =	3,075	(\$15.00 × 300) =	4,500
Assembly (\$1.60 × 1,000) =	1,600	(\$1.60 × 1,300) =	2,080
Inspection (\$2.00 × 100) =	<u>200</u>	(\$2.00 × 1,200) =	<u>2,400</u>
Total indirect costs	<u>6,875</u>		<u>10,280</u>
Total manufacturing costs	<u>\$24,075</u>		<u>\$24,880</u>
Unit manufacturing costs	\$24,075	\$24,880	
	÷ 1,000	÷ 1,300	
	<u>\$24,075</u>	<u>19,138</u>	

Diff: 3 Type: ES

Skill: Apply

Objective: LO 5-4

39) Brilliant Accents Company manufactures and sells three styles of kitchen faucets: Brass, Chrome, and White. Production takes 25, 25, and 10 machine hours to manufacture 1,000-unit batches of brass, chrome and white faucets, respectively. The following additional data apply:

	<u>Brass</u>	<u>Chrome</u>	<u>White</u>
Projected sales in units	30,000	50,000	40,000

Per Unit data:

Selling price	\$40	\$20	\$30
Direct materials	\$8	\$4	\$8
Direct labour	\$15	\$3	\$9
Overhead cost based on direct labour hours (traditional system)	\$12	\$3	\$9

Hours per 1000-unit batch:

Direct labour hours	40	10	30
Machine hours	25	25	10
Setup hours	1.0	0.5	1.0
Inspection hours	30	20	20

Total overhead costs and activity levels for the year are estimated as follows:

<u>Activity</u>	<u>Overhead costs</u>	<u>Activity levels</u>
Direct labour hours		2,900 hours
Machine hours		2,400 hours
Setups	\$465,500	95 setup hours
Inspections	<u>\$405,000</u>	2,700 inspection hours
	<u>\$870,500</u>	

Required:

- a. Using the traditional (simple) costing system, determine the operating profit per unit for the brass style of faucet.
- b. Determine the activity cost driver rate for setup costs and inspection costs.
- c. Using the ABC system, for the brass style of faucet:
 1. compute the estimated overhead costs per unit.
 2. compute the estimated operating profit per unit.
- d. Explain the difference between the profits obtained from the traditional system and the ABC system. Which system provides a better estimate of profitability? Why?

Answer:

a. Traditional system:

Operating profit per unit for Brass faucets is \$5 = \$40 - (\$8 + 15 + 12).

b. Set-up costs: \$465,500/95 setup hours = \$4,900 per setup hour

Inspection costs: \$405,000/2,700 inspection hours = \$150 per inspection hour

c. ABC system:

Overhead costs per unit for Brass faucets are \$9.40 per unit.

30,000 units in projected sales/1000 units per batch = 30 batches;

30 batches × 1 setup hour per batch = 30 setup hours;

30 batches × 30 inspection hours per batch = 900 inspection hours.

30 setup hours × \$4,900 = \$147,000/30,000 units = \$4.90/unit

900 inspection hours × \$150 = \$135,000/30,000 units = \$4.50/unit

Overhead costs for Brass faucets (\$4.90 + \$4.50) = \$9.40 per unit.

Operating profit per unit for Brass faucets is \$7.60 = \$40 - (\$8 + 15 + 9.40).

d. Traditional system: Operating profit per unit for Brass faucets is \$5.00.

ABC system: Operating profit per unit for Brass faucets is \$7.60.

Because the products do not all require the same proportionate shares of the support resources of setup hours and inspection hours, the ABC system provides different results than the traditional system which allocates overhead costs on the basis of direct labour hours. The ABC system considers some important differences in overhead resource requirements and thus provides a better picture of the profitability from each faucet style provided that the activity measures are fairly estimated.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-2, 4

40) Aunt Ethel's Fancy Cookie Company manufactures and sells three flavors of cookies: Macaroon, Sugar, and Buttercream. The batch size for the cookies is limited to 1,000 cookies based on the size of the ovens and cookie molds owned by the company. Based on budgetary projections, the information listed below is available:

	<u>Macaroon</u>	<u>Sugar</u>	<u>Buttercream</u>
Projected sales in units	500,000	800,000	600,000

Per Unit data:

Selling price	\$0.80	\$0.75	\$0.60
Direct materials	\$0.20	\$0.15	\$0.14
Direct labour	\$0.04	\$0.02	\$0.02
Overhead cost based on direct labour hours (traditional system)	\$0.30	\$0.15	\$0.15

Hours per 1000-unit batch:

Direct labour hours	2	1	1
Oven hours	1	1	1
Packaging hours	0.5	0.5	0.5

Total overhead costs and activity levels for the year are estimated as follows:

<u>Activity</u>	<u>Overhead costs</u>	<u>Activity levels</u>
Direct labour	2,400 hours	
Oven	210,000	1,900 oven hours
Packaging	<u>\$150,000</u>	950 packaging hours
+	<u>\$360,000</u>	

Required:

- Using the traditional (simple) costing system, determine the operating profit per unit for the sugar cookie.
- Determine the activity cost driver rate for oven costs and packaging costs.
- Using the ABC system, for the sugar cookie:
 - compute the estimated overhead costs per unit.
 - compute the estimated operating profit per unit.
- Explain the difference between the profits obtained from the traditional system and the ABC system. Which system provides a better estimate of profitability? Why?

Answer:

a. Traditional system:

Operating profit per unit for sugar cookies is $\$0.43 = \$0.75 - (\$0.15 + \$0.02 + \$0.15)$.

b. The activity cost driver rate for oven costs is $\$110.53$ per oven hour = $\$210,000/1,900$ oven hours; for packaging costs is $\$157.90$ per inspection hour = $\$150,000/950$ packaging hours

c. ABC system:

Overhead costs per unit for sugar cookies are $\$0.19$ per unit.

$800,000$ units in projected sales/ 1000 units per batch = 800 batches;

800 batches \times 1 oven hour per batch = 800 oven hours;

800 batches \times 0.5 packaging hours per batch = 400 packaging hours.

800 oven hours \times $\$110.53 = \$88,424/800,000$ units = $\$0.11/\text{unit}$

400 packaging hours \times $\$157.90 = \$63,160/800,000$ units = $\$0.08/\text{unit}$

Overhead costs for Brass faucets ($\$0.11 + \0.08) = $\$0.19$ per unit.

Operating profit per unit for Brass faucets is $\$0.39 = \$0.75 - (\$0.15 + \$0.02 + \$0.19)$.

d. Traditional system: Operating profit per batch of sugar cookies is $\$430$

ABC system: Operating profit per batch of sugar cookies is $\$390$

Because the products do not all require the same proportionate shares of the direct labour resources, the allocation of the total overhead on that basis is not as accurate as using the ABC system. The ABC system allocates the overhead based on activity levels for the specific categories as well as activity usage by the product lines.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-2, 4

41) Come-On-In Manufacturing produces two types of entry doors: Deluxe and Standard. The assignment basis for support costs has been direct labour dollars. For 2012, Come-On-In compiled the following data for the two products:

	<u>Deluxe</u>	<u>Standard</u>
Sales units	50,000	400,000
Sales price per unit	\$650.00	\$475.00
Direct material and labour costs per unit	\$180.00	\$130.00
Manufacturing support costs per unit	\$80.00	\$120.00

Last year, Come-On-In Manufacturing purchased an expensive robotics system to allow for more decorative door products in the deluxe product line. The CFO suggested that an ABC analysis could be valuable to help evaluate a product mix and promotion strategy for the next sales campaign. She obtained the following ABC information:

		<u>Activity Cost</u>	<u>Driver</u>	<u>Cost</u>	<u>Total</u>	<u>Deluxe</u>	<u>Standard</u>
Setups	# of setups	\$500,000	500	400	100		
Machine related	# of machine hours	\$4,000,000	600,000	300,000	300,000		
Packing	# of shipments	\$5,000,000	250,000	50,000	200,000		

Required:

- a. Using the current traditional (simple) costing system, determine the estimated:
 1. total cost of manufacturing one unit for each type of door
 2. profit per unit for each type of door
- b. Using the current traditional cost system, estimated manufacturing overhead costs per unit are less for the deluxe door (\$80 per unit) than the standard door (\$120 per unit). What is a likely explanation for this?
- c. Review the machine related costs above. What is a likely explanation for machine related costs being so high? What might explain why total machining hours for the deluxe doors (300,000 hours) are the same as for the standard doors (300,000 hours)?
- d. Using the activity-based costing data presented above,
 1. compute the cost driver rate for each overhead activity
 2. compute the revised manufacturing overhead cost per unit for each type of entry door
 3. compute the revised total cost to manufacture one unit of each type of entry door
- e. Is the deluxe door as profitable as the original data estimated? Why or why not?

Answer:

a.

Currently estimated deluxe-entry door total cost per unit is $\$260 = \$180 + \$80$.

Currently estimated standard-entry door total cost per unit is $\$250 = \$130 + \$120$.

Currently estimated deluxe-entry door profit per unit is $\$390 = \$650 - \$260$.

Currently estimated standard-entry door profit per unit is $\$225 = \$475 - \$250$.

b. Support manufacturing costs are currently allocated based on direct labour dollars. Because the deluxe doors are manufactured using the new robotics system, it appears that less direct labour is needed to manufacture each unit in the deluxe product line.

c. The high machine related costs are probably a result of purchasing the new robotics equipment for the deluxe product line. Yes, the total number of machine hours is the same for each product line, but the deluxe line uses 6 machine hours per unit (300,000 mh/50,000 units), while the standard product line only uses 0.75 machine hours per unit (300,000 mh/400,000 units). By evaluating machine hours per unit rather than total machine hours, these numbers make more sense.

d.

1. Manufacturing overhead cost driver rates:

Setup activity is $\$1,000/\text{setup} = \$500,000/500 \text{ setups}$.

Machine-related activity is $\$73.33/\text{machine hour} = \$44,000,000/600,000 \text{ machine hours}$.

Packing activity is $\$20/\text{shipment} = \$5,000,000/250,000 \text{ shipments}$.

2. Revised overhead costs per unit:

Deluxe-entry door is $\$467.98 \text{ per unit} = [(\$1,000 \times 400) + (\$73.33 \times 300,000) + (\$20 \times 50,000)]/50,000 \text{ units}$.

Standard-entry door is $\$65.25 \text{ per unit} = [(\$1,000 \times 100) + (\$73.33 \times 300,000) + (\$20 \times 200,000)]/400,000 \text{ units}$.

3. Revised total cost per unit for the deluxe-entry door is $\$647.98 = \$180.00 + \$467.98$.

Revised total cost per unit for the standard-entry door is $\$195.25 = \$130.00 + \$65.25$.

e. No, the deluxe door is not as profitable as originally estimated because the deluxe door requires a disproportionate share of the overhead activities (the robotics system) and thus, more of the overhead costs are assigned to the deluxe door when using an ABC system.

Diff: 3 Type: ES

Skill: Apply

Objective: LO 5-2, 4

42) Summer Daze Corporation manufactures two products, Bocce Ball Sets and Croquet Sets. Croquet Sets were added as a product line two years ago. Croquet Sets are the more complex of the two products, requiring one hour of direct labour time per unit to manufacture, compared to one-half hours of direct labour time for Bocce Ball Set. Croquet Sets are produced on an automated production line.

Indirect costs are currently allocated to the products on the basis of direct labour hours. The company estimated it would incur \$332,500 in manufacturing overhead costs and produce 6,000 units of Croquet Sets and 20,000 units of Bocce Ball Sets during the current year.

Unit costs for materials and direct labour are:

	<u>Bocce Ball Set</u>	<u>Croquet Set</u>
Direct labour	\$9	\$18
Direct materials	\$12	\$16

Indirect costs are:

	<u>Estimated Indirect Costs</u>	<u>Estimated Activity Bocce Ball Sets</u>	<u>Estimated Activity Croquet Sets</u>	<u>Total</u>
Activity cost pools/drivers:				
Machine setups	\$153,000	700	1,000	1,700
Purchase orders	27,500	300	200	500
Machine hours	128,000	5,000	11,000	16,000
Maintenance requests	24,000	200	300	500
Total	\$332,500			

Required:

- Determine the unit cost of a Bocce Ball Set using traditional (simple) costing with units as the allocation base.
- Determine the unit cost of a Bocce Ball Set using activity-based costing.

Answer:

a. Traditional Costing

	Bocce Ball Set	Croquet Set
Direct labour	\$9.00	\$18.00
Direct materials	12.00	16.00
Indirect cost	<u>12.79</u>	<u>12.79</u>
Total	\$33.79	\$46.79

b. Activity-Based Costing

	Estimated Activity Bocce Ball Sets A	Estimated Activity Croquet Sets B	Allocation Rate C	Indirect Cost Bocce Ball Sets D = A * C	Indirect Cost Croquet Sets E = B * C
Activity cost pools:					
Machine setups	700	1,000	\$90.00	\$63,000	\$90,000
Purchase orders	300	200	\$55.00	\$16,500	\$11,000
Machine hours	5,000	11,000	\$8.00	\$40,000	\$88,000
Maintenance requests	200	300	\$48.00	\$9,600	\$14,400
Total				\$129,100	\$203,400
# of units				6,000	20,000
Indirect \$/unit				\$21.52	\$10.17

	Bocce Ball Set	Croquet Set
Direct labour	\$9.00	\$18.00
Direct materials	12.00	16.00
Indirect cost	<u>21.52</u>	<u>10.17</u>
Total	\$42.52	\$44.17

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-2, 4

43) Whitman Printing Ltd. has contracts to complete weekly supplements required by its' customers. For the current year, manufacturing overhead cost estimates total \$336,000 for an annual production capacity of 12 million pages.

Whitman Printing decided to evaluate the use of additional cost pools. After analyzing manufacturing overhead costs, it was determined that number of design changes, setups, and inspections are the primary manufacturing overhead cost drivers. The following information was gathered during the analysis:

<u>Cost pool</u>	<u>Manufacturing overhead costs</u>	<u>Activity level</u>
Design changes	\$ 60,000	200 design changes
Setups	96,000	8,000 setups
Inspections	180,000	12,000 inspections
Total manufacturing overhead costs	<u>\$336,000</u>	

Two customers, Money Managers and Hospital Systems, are expected to use the following printing services:

<u>Activity</u>	<u>Money Managers</u>	<u>Hospital Systems</u>
Pages	80,000	96,000
Design changes	10	0
Setups (one per job)	50	12
Inspections	40	12
Designs (one per job)	50	12

Pages are a direct cost at \$0.03 per page. Design costs per job average \$1,000 and \$1,200 for Money Managers and Hospital Systems, respectively. Whitman Printing sets prices at \$0.10 per page plus 120% of design costs.

Assume that all costs are variable.

Required:

Prepare income statements in contribution margin format for both customers using:

- Traditional (simple) costing with overhead applied on a page capacity basis
- Activity-based costing
- How much a page should Money Managers be charged if Whitman Printing wants to breakeven on this customer? Assume that manufacturing overhead costs are fixed and that they are allocated to customers based on pages sold as a percentage of production capacity; and, that design costs are also fixed.

Answer: Traditional costing overhead rate = $\$336,000/12,000,000$ pages = \$0.028 per page

Activity costs:

Design changes = $\$60,000/200$ = \$300 per change

Setups = $\$96,000/8,000$ = \$12 per setup

Inspections = $\$180,000/12,000$ = \$15 per inspection

a.

Whitman Printing
Income Statement Using Traditional Costing
For the Current Year

	<u>Money Managers</u>	<u>Hospital Systems</u>
Revenues	\$ 68,000	\$ 26,880
Variable costs:		
Pages	2,400	2,880
Designs	50,000	14,400
Overhead	<u>2,240</u>	<u>2,688</u>
Contribution margin	<u>\$ 13,360</u>	<u>\$ 6,912</u>

b.

Whitman Printing
Income Statement Using ABC
For the Current Year

	<u>Money Managers</u>	<u>Hospital Systems</u>
Revenues	\$ 68,000	\$ 26,880
Variable costs:		
Pages	2,400	2,880
Designs	50,000	14,400
Design changes	3,000	0
Setups	600	144
Inspections	<u>600</u>	<u>180</u>
Contribution margin	<u>\$ 11,400</u>	<u>\$ 9,276</u>

c.

Fixed cost = $((80,000/12,000,000) \times \$336,000) + \$50,000 = \$52,240$

Variable cost = $\$0.03 \times 80,000$ pages = \$2,400

Breakeven in dollars = $\$52,240 + \$2,400 = \$54,640$

Breakeven charge per page = $\$54,640/80,000$ pages = \$0.683 or \$0.69 per page

Diff: 3 Type: ES

Skill: Apply

Objective: LO 3-4 & 5-4

44) Rogers Printing Ltd. has contracts to complete weekly supplements required by its' customers. For the current year, manufacturing overhead cost estimates total \$580,000 for an annual production capacity of 14,500,000 pages.

Rogers Printing decided to evaluate the use of additional cost pools. After analyzing manufacturing overhead costs, it was determined that number of design changes, setups, and inspections are the primary manufacturing overhead cost drivers. The following information was gathered during the analysis:

<u>Cost pool</u>	<u>Manufacturing overhead costs</u>	<u>Activity level</u>
Design changes	\$ 125,000	500 design changes
Setups	180,000	9,000 setups
Inspections	<u>275,000</u>	11,000 inspections
Total manufacturing overhead costs	<u>\$580,000</u>	

Two customers, Jackson Sports and Beaufort Travel, are expected to use the following printing services:

<u>Activity</u>	<u>Jackson Sports</u>	<u>Beaufort Travel</u>
Pages	450,000	720,000
Design changes	10	0
Setups (one per job)	50	12
Inspections	40	12
Designs (one per job)	50	12

Pages are a direct cost at \$0.02 per page. Design costs per job average \$1,500 and \$1,700 for Jackson Sports and Beaufort Travel, respectively. Rogers Printing sets prices at \$0.11 per page plus 120% of design costs.

Assume that all costs are variable.

Required:

Prepare income statements in contribution margin format for both customers using:

- Traditional (simple) costing with overhead applied on a page capacity basis
- Activity-based costing
- How much a page should Jackson Sports be charged if Rogers Printing wants to breakeven on this customer? Assume that manufacturing overhead costs are fixed and that they are allocated to customers based on pages sold as a percentage of production capacity; and, that design costs are also fixed.

Answer: Traditional costing overhead rate = $\$336,000/12,000,000$ pages = \$0.04 per page

Activity costs:

Design changes = $\$125,000/500$ = \$250 per change

Setups = $\$180,000/9,000$ = \$20 per setup

Inspections = $\$275,000/11,000$ = \$25 per inspection

a.

Rogers Printing
Income Statement Using Traditional Costing
For the Current Year

	<u>Jackson Sports</u>	<u>Beaufort Travel</u>
Revenues	\$ 139,500	\$ 103,680
Variable costs:		
Pages	9,000	14,400
Designs	75,000	20,400
Overhead	<u>18,000</u>	<u>28,800</u>
Contribution margin	<u>\$ 37,500</u>	<u>\$ 40,080</u>

b.

Rogers Printing
Income Statement Using ABC
For the Current Year

	<u>Jackson Sports</u>	<u>Beaufort Travel</u>
Revenues	\$ 139,500	\$ 103,680
Variable costs:		
Pages	9,000	14,400
Designs	75,000	20,400
Design changes	2,500	0
Setups	1,000	240
Inspections	<u>1,000</u>	<u>300</u>
Contribution margin	<u>\$ 51,000</u>	<u>\$ 68,340</u>

c.

Fixed cost = $((450,000/14,500,000) \times \$580,000) + \$75,000 = \$93,000$

Variable cost = $\$0.02 \times 450,000$ pages = \$ 9,000

Breakeven in dollars = $\$93,000 + \$9,000 = \$102,000$

Breakeven charge per page = $\$102,000/450,000$ pages = \$0.227 or \$0.23 per page

Diff: 3 Type: ES

Skill: Apply

Objective: LO 3-4 & 5-4

45) In the monthly management meeting, each manager was asked to come up with suggestions for controlling costs. Some managers favoured a simple across-the-board cut in expenditures, with every department accepting the same percentage reduction in their budget. This was supported by several managers as the fairest means to save costs. Your assistant attended the meeting in your absence and suggested that the company consider switching to activity-based costing. Unfortunately, the more he explained, the less support he received, particularly when he mentioned that more information would have to be collected, there would be implementation costs, and that what really mattered were nonfinancial variables, called activities. The meeting ended with everyone wondering how such an idea could lead to cost savings.

Required: Explain how an ABC system should be able to save money, even though it focuses on activities, rather than just costs. Compare your assistant's suggestion to an across-the-board cut as a means to save money.

Answer: An across the board cut is a temporary savings at best, and does nothing to address any costs that may be excessive. It provides neither information nor analysis as to the root causes of costs, which is the best means of cost reduction. Simply cutting all costs will very likely have a negative impact on all of the functional areas of the company, purchasing, administration, production, marketing and so on. An ABC system will enable the company to identify activities which can be controlled, and areas where miscosting has occurred due to a lack of information. An ABC system should accomplish more than just reducing costs. Identifying activities provides more flexibility in that the company can control costs by controlling activities than simply limiting expenditures without any reasoning, and support activity-based management, which uses activity-based costing information to improve operations, provide better customer service, and generate profits. Lastly, while there are costs to implementing an ABC system, it should only be done on a cost and benefit basis.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-4

46) Explain how activity-based costing systems can provide more accurate product costs than traditional (simple) cost systems.

Answer: A key reason for assigning indirect costs using an ABC system rather than a traditional system is that ABC cost systems reflect differences required by different processes. Activity-based costing systems provide better product costs when they identify and cost more indirect cost differences among products. Activity-based costing seeks to distinguish batch-level, product-sustaining, and facility-sustaining costs especially when they are not proportionate to one another.

Unit-level drivers in traditional cost systems distort product costs because, effectively, these systems assume that all indirect activities affect all products. Thus, these systems assign each unit of product an average cost that fails to recognize the specific activities that are required to produce that product.

Activity-based costing differs from traditional costing systems in that products are not cross-subsidized by support costs being shared by everyone. Activity-based costing is more likely to result in major differences from traditional costing systems if the firm manufactures multiple products rather than only one product.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-4

47) Do activity-based costing systems always provide more accurate product costs than conventional cost systems? Why or why not?

Answer: No. Traditional systems contain smaller and fewer cost distortions when the traditional systems' unit-level assignments and the alternative activity-cost drivers are relatively similar in proportion to each other. Still, the use of unit-level measures to assign indirect costs is more likely to undercost low-volume products and more complex products. Both traditional product costing systems and ABC product costing systems seek to assign all manufacturing costs to products. Cost distortions occur when a mismatch (incorrect association) occurs between the way support costs are incurred and the basis for their assignment to individual products.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-4

5.5 Explain the benefits of activity-based costing (ABC) systems for activity-based management (ABM).

1) Management can identify and evaluate new designs to improve performance by evaluating how product and process designs affect activities and costs.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-5

2) Activity-based costing is not adaptable to merchandising organizations.

Answer: FALSE

Explanation: ABC has many applications in service and merchandising companies.

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-5

3) One of the aspects of ABM is eliminating activities that do not add value.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-5

4) Activity-based costing can "unlock" savings, not apparent when traditional costing is used, because the system requires a closer examination of operations.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 5-5

5) Activity-based management describes management decisions that use activity-based costing information to

- A) improve product pricing, cost reduction and design.
- B) identify potential customers.
- C) smooth indirect costs.
- D) eliminate activities that add value but are not cost drivers.
- E) anticipate changes in the market.

Answer: A

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-5

6) A primary reason for assigning selling and distribution costs to products for analytical purposes is

- A) to justify a varied product mix.
- B) that controllers are required to assign all costs when valuing inventories.
- C) that selling and distribution costs are also primary costs.
- D) that all indirect costs must be assigned.
- E) that different processes, products, and customers require different quantities of selling and distribution activities.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-5

7) An ABC system is one building block of activity-based management (ABM). The second building block is

- A) that senior management support is crucial.
- B) understanding the components of indirect cost pools.
- C) knowing the limitations of allocating indirect costs.
- D) the ability for managers to understand that the demand for output is central to profitability.
- E) automating the costing system.

Answer: D

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-5

8) Determining what activities add customer value is an example of what facet of activity-based management?

- A) increase effective coordination among business function activities
- B) reduce costs of non-value-added activities
- C) improve selection of process activities to enhance profit
- D) match the company's use of resources to customer demand
- E) achieve planned growth

Answer: C

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-5

9) Outsourcing the accounting function is an example of what facet of activity-based management?

- A) increase effective coordination among business function activities
- B) reduce costs of non-value-added activities
- C) improve selection of process activities to enhance profit
- D) match the company's use of resources to customer demand
- E) achieve planned growth

Answer: B

Diff: 1 Type: MC

Skill: Remember

Objective: LO 5-5

10) Activity-based costing information

- A) should be used when services place similar demands on resources.
- B) usually results in peanut butter costing.
- C) will yield inaccurate cost numbers when products are similar.
- D) helps management reduce costs along the value chain.
- E) is best used when overhead costs are minimal.

Answer: D

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-5

11) Which of the following is NOT a decision within the framework of Activity-based management (ABM)?

- A) pricing and product mix
- B) smoothing costs
- C) reducing costs
- D) manufacturing design
- E) changing processes

Answer: B

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-5

12) Traditional cost systems can be used to

- A) reveal activities that can be eliminated.
- B) help control nonfinancial items such as number of setup hours.
- C) help identify new designs to reduce costs.
- D) can be used to enhance budgeting.
- E) accurately assign direct costs.

Answer: E

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-5

- 13) Companies use activity-based management to
- A) allocate the cost of activities to cost objects.
 - B) forecast customer demand.
 - C) develop systems for direct cost tracing and indirect cost allocation.
 - D) plan and organize the implementation of activity-based costing.
 - E) eliminate non-value added activities.

Answer: E

Diff: 2 Type: MC

Skill: Remember

Objective: LO 5-5

- 14) The benefits of adopting ABC/ABM are higher for companies in competitive markets because
- A) accurate product cost information is essential to be competitive, regardless of the cost.
 - B) ABM can pinpoint opportunities for cost savings, which increase the company's profit or are passed on to customers through lower prices.
 - C) ABM allows managers to ignore competition when making pricing decisions thus making more accurate decisions.
 - D) the more competitive the market, the more likely the competition is using ABC.
 - E) ABC/ABM should not be used in a competitive market because traditional costing is less expensive allowing for lower prices.

Answer: B

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-5

- 15) A well designed, activity-based cost system helps managers make better decisions because information derived from an ABC analysis
- A) can be used to improve the efficiency of activities.
 - B) is easy to analyze and interpret.
 - C) takes the choices and judgement challenges away from managers.
 - D) emphasizes how managers can achieve higher sales.
 - E) helps identify trends in the market place.

Answer: A

Diff: 2 Type: MC

Skill: Understand

Objective: LO 5-5

16) The Guy Fawkes Company is noted for an exceptionally impressive line of Mardi Gras masks. Guy Fawkes has established the following selling and distribution support activity-cost pools and their corresponding activity drivers for the current year:

<u>Activity</u>	<u>Cost</u>	<u>Cost driver</u>
Marketing	\$60,000	\$500,000 of sales
Customer service	20,000	5,000 customer
Order execution	10,000	100 orders
Warehousing	10,000	50 product lines

Required:

- Determine the activity-cost-driver rate for each of the four selling and distribution activities.
- Under what circumstances is it appropriate to use each of the activity-cost drivers?
- Describe at least one possible negative behavioral consequence for each of the four activity-cost drivers.

Answer:

- Activity-cost driver rate for Marketing = 12% of sales = $\$60,000/\$500,000$.
Activity-cost driver rate for Customer Service = \$4 per customer = $\$20,000/5,000$.
Activity-cost driver rate for Order Execution = \$100 per order = $\$10,000/100$.
Activity-cost driver rate for Warehousing = \$200 per order = $\$10,000/50$.
- For marketing, using 12% of stipulated sales is appropriate when management wants to limit marketing costs to a budgeted proportion to sales. Using the number of customers for customer service is appropriate when the customer service costs are similar enough to use the average for all customers. Using the number of orders for order execution is appropriate when all orders are sufficiently alike in terms of resources used that they can be averaged. Using the number of product lines for warehousing is appropriate when each product line requires similar proportions of the warehousing efforts.
- For marketing, using 12% of sales limits the marketing activities to an arbitrary amount without consideration for potential opportunities. Using the number of customers for customer service can lead to customer service initiatives to limit the amount of time servicing each customer to cause the number of customers serviced to increase. Using the number of orders for order execution can result in purchasers splitting orders to increase the numbers of orders executed. Using the number of product lines for warehousing can lead warehouse personnel to designate more product line differences in the warehouse.

Diff: 3 Type: ES

Skill: Apply

Objective: LO 5-5

17) What is activity-based management and how can it be used to improve the profitability of a company?

Answer: Activity-based management is a method of management decision making that uses activity-based costing information to improve customer satisfaction and profitability. Some of the typical issues that require a refined costing system (such as ABC) are pricing and product mix decisions, cost reduction initiatives, streamlining of processes, and decisions that can lead to improved product design based on knowledge of detailed costs of the existing product lines. The gathering of timely and accurate information is one of the crucial steps in the decision-making process. A properly designed ABC system will be likely to efficiently provide detailed costing information to managers in companies that manufacture and distribute diverse product lines.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 5-5

18) List four ways that activity-based management can be effective.

Answer:

1. Reduce costs and improve processes
2. Improve selection of process activities in price and product mix decisions
3. Assist in making design decisions
4. Achieve planned growth.

Diff: 2 Type: ES

Skill: Remember

Objective: LO 5-5