

Cost Accounting: A Managerial Emphasis, 16e, Global Edition (Horngren)
Chapter 5 Activity-Based Costing and Activity-Based Management

5.1 Objective 5.1

1) Which of the following statements is true of a peanut-butter costing system?

- A) A peanut-butter costing system typically has more-homogeneous indirect cost pools.
- B) A peanut-butter costing system broadly averages or spreads the cost of resources uniformly to cost objects.
- C) A peanut-butter costing system assumes that all costs are variable.
- D) In a peanut-butter costing system, costs of activities are used to assign costs to other cost objects such as products or services based on the activities the products or services consume.

Answer: B

Diff: 2

Objective: 1

AACSB: Analytical thinking

2) Overcosting a particular product may result in:

- A) pricing the product too high
- B) pricing the product too low
- C) operating efficiencies
- D) understating total product costs

Answer: A

Diff: 2

Objective: 1

AACSB: Analytical thinking

3) For a company with diverse products, undercosting overhead of a product will lead to product-cross - subsidization which means that:

- A) direct labor costs of the product are misallocated
- B) direct material costs of the product are misallocated
- C) indirect costs of another product are misallocated
- D) direct costs of another product are misallocated

Answer: C

Diff: 2

Objective: 1

AACSB: Analytical thinking

EA

4) Aqua Company produces two products—Alpha and Beta. Alpha has a high market share and is produced in bulk. Production of Beta is based on customer orders and is custom designed. Also, 55% of Beta's cost is shared between design and setup costs, while Alpha's major portions of costs are direct costs. Alpha is using a single cost pool to allocate indirect costs. Which of the following statements is true of Aqua?

- A) Aqua will overcost Beta's direct costs as it is using a single cost pool to allocate indirect costs.
- B) Aqua will undercost Alpha's indirect costs because alpha has high direct costs.
- C) Aqua will overcost Alpha's indirect costs as it is using a single cost pool to allocate indirect costs.
- D) Aqua will overcost Beta's indirect costs because beta has high indirect costs.

Answer: C

Diff: 2

Objective: 1

AACSB: Analytical thinking

5) Product-cost cross-subsidization means that:

- A) when one product is overcosted, it results in more than one other product being overcosted
- B) when a company undercosts more than one of its products, it will overcost more than one of its other products
- C) when a company undercosts one of its products, it will overcost at least one of its other products
- D) when one product is overcosted it results in all other products being overcosted

Answer: C

Diff: 2

Objective: 1

AACSB: Analytical thinking

6) Which of the following has accelerated need for refined cost systems?

- A) global monopolies
- B) rising prices
- C) intense competition
- D) a shift toward increased direct costs

Answer: C

Diff: 2

Objective: 1

AACSB: Analytical thinking

7) Uniformly assigning the costs of resources to cost objects when those resources are actually used in a nonuniform way is called activity based costing.

Answer: FALSE

Explanation: Peanut butter costing occurs when costs are assigned uniformly amount multiple products using average costs that do not take into account the nonuniform way the resources are consumed to produce the different products.

Diff: 1

Objective: 1

AACSB: Analytical thinking

EA

8) Product-cost cross-subsidization is very common when costs are uniformly spread across various products.

Answer: TRUE

Diff: 2

Objective: 1

AACSB: Analytical thinking

9) Companies that overcost products risk becoming less effective on pricing and losing market share when competition utilizes more accurate cost systems.

Answer: TRUE

Diff: 1

Objective: 1

AACSB: Analytical thinking

10) If companies increase market share in a given product line because their reported costs are less than their actual costs, they will become more profitable in the long run.

Answer: FALSE

Explanation: The actual costs will increase because of the additional sales and the other product lines (which are subsidizing the undercosting of the growing product line) will suffer. The net result will be the company having a lower operating income than it could have had.

Diff: 2

Objective: 1

AACSB: Analytical thinking

11) As product diversity and indirect costs increase, it is usually best to switch away from a broad averaging system to an activity-based cost system.

Answer: TRUE

Diff: 1

Objective: 1

AACSB: Analytical thinking

12) The risk of peanut-butter costing rises when broad averages are used across multiple products without managers considering the true amounts of resources consumed in the making of each product.

Answer: TRUE

Diff: 2

Objective: 1

AACSB: Analytical thinking

13) 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. This would make undercosted products appear more profitable and therefore making marketing efforts to promote the undercosted product counter productive.

Diff: 2

Objective: 1

AACSB: Analytical thinking

5.2 Objective 5.2

1) Refining a cost system involves which of the following?

- A) classifying as many costs as indirect costs as is feasible
- B) creating as many cost pools as possible to capture all costs
- C) identifying the activities involved in a process and understanding how those activities consume resources
- D) Seeking an easier and more cost effective way to calculate average costs

Answer: C

Diff: 1

Objective: 2

AACSB: Analytical thinking

2) Which of the following is true of refinement of a costing system?

- A) While refining a costing system, companies should identify as many indirect costs as is economically feasible.
- B) A homogeneous cost pool will use multiple cost drivers to allocate costs.
- C) It reduces the use of broad averages for assigning the cost of resources to cost objects.
- D) It is likely to yield the most decision-making benefits when direct costs are a high percentage of total costs.

Answer: C

Diff: 2

Objective: 2

AACSB: Analytical thinking

3) Which of the following is a reason that has accelerated the demand for refinements to the costing system?

- A) The declining demand for customized products has led managers to decrease the variety of products and services their companies offer.
- B) The use of product and process technology has led to an increase in indirect costs and a decrease in direct costs.
- C) The increased of automated processes has led to the increase in direct manufacturing cost leading to a decrease in break even point.
- D) The increasing competition in product markets has led to an increase in contribution margin resulting in a decrease of break even point.

Answer: B

Diff: 3

Objective: 2

AACSB: Analytical thinking

4) Demand for refinements to the costing system has accelerated due to _____.

- A) increase in direct costs
- B) decrease in product diversity
- C) decrease in indirect costs
- D) competition in product markets

Answer: D

Diff: 1

Objective: 2

AACSB: Analytical thinking

5) Johnson Superior Products Inc. produces hospital equipment and the setup requirements vary from product to product. Johnson produces its products based on customer orders and uses ABC costing. In one of its indirect cost pools, setup costs and distribution costs are pooled together. Costs in this pool are allocated using number of customer orders for the easiness of costing operations. Based on the information provided, which of the following arguments is valid?

- A) Johnson has clearly failed to identify as many direct costs as is economically feasible.
- B) All costs in a homogeneous cost pool have the same or a similar cause-and-effect relationship with the single cost driver that is used as the cost-allocation base for Johnson.
- C) Johnson has unnecessarily wasted resources by classifying setup and distribution costs as they could have been considered as direct costs.
- D) Johnson has failed to use the correct cost driver as the cost-allocation base for setup costs.

Answer: D

Diff: 1

Objective: 2

AACSB: Application of knowledge

6) Increased used of automation, computer integrated manufacturing, and utilization of robots have lead to an increase in indirect costs relative to direct costs.

Answer: TRUE

Diff: 2

Objective: 2

AACSB: Analytical thinking

7) Modern manufacturing practices have helped reduce overhead costs relative to direct costs as the reliance on support resources such as scheduling, design, and engineering has diminished.

Answer: FALSE

Explanation: Managing complex technology and producing diverse products require additional support functions such as production scheduling, product and process design, and engineering.

Diff: 1

Objective: 2

AACSB: Analytical thinking

8) Indirect labor and distribution costs would most likely be in the same activity-cost pool.

Answer: FALSE

Explanation: Indirect labor and distribution costs would *not* be in the same activity-cost pool because their cost drivers are very dissimilar. A cost driver of indirect labor would include direct labor hours, while a cost driver of distribution costs would include, for example, cubic feet of cargo moved.

Diff: 2

Objective: 2

AACSB: Analytical thinking

9) Managers should look for evidence of cause-and-effect when choosing a cost driver with the driver being the cause and the effect being the cost incurred.

Answer: TRUE

Diff: 1

Objective: 2

AACSB: Analytical thinking

EA

10) Identification of a cost-allocation base is not a critical element when using a strategy that will refine a costing system.

Answer: FALSE

Explanation: Managers refine their cost systems by looking for effective cost=allocation basis (cost driver) and seek evidence of cause-and-effect when choosing a cost driver with the driver being the cause and the effect being the cost incurred.

Diff: 1

Objective: 2

AACSB: Analytical thinking

11) What are the factors that are causing many companies to refine their costing systems to obtain more accurate measures of the costs of their products?

Answer: The first cause is increasing product diversity. Companies are producing many more products than they used to, placing strains on more simple, older cost systems. A second cause is the overall increased in indirect costs and the relative decline of direct costs. The indirect nature of these costs requires allocation, and any inaccuracies in allocation of these costs become magnified as these indirect costs increase. A third cause would be advances in information technology that makes complex allocation of indirect costs less burdensome. Finally, increased competition from both national and international competitors has resulted in more pressure to reduce costs, as well as increasing the need for and value of information to support responses to these new threats.

Diff: 2

Objective: 2

AACSB: Analytical thinking

5.3 Objective 5.3

1) ABC 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

Answer: B

Diff: 1

Objective: 3

AACSB: Analytical thinking

2) Activity based costing system differs from traditional costing systems in the treatment of _____.

- A) direct labor costs
- B) direct material costs
- C) prime costs
- D) indirect costs

Answer: D

Diff: 1

Objective: 3

AACSB: Analytical thinking

3) The fundamental cost objects of ABC are _____.

- A) activities
- B) cost drivers
- C) products
- D) services

Answer: A

Diff: 2

Objective: 3

AACSB: Analytical thinking

4) Which of the following statements is true of activity-based costing?

- A) In activity-based costing, direct labor-hours is always the best allocation base to allocate all non-manufacturing indirect costs.
- B) Activity based costing is more suited to companies with high product diversity than companies with single product line.
- C) Activity based costing broadly averages or spreads the cost of resources uniformly to cost objects such as products or services.
- D) The main advantage of activity-based costing over peanut-butter costing is the accurate distribution of all direct costs to the products.

Answer: B

Diff: 2

Objective: 3

AACSB: Analytical thinking

5) A single indirect-cost rate distorts product costs because _____.

- A) there is an assumption that all support activities affect all products in a uniform way
- B) it recognizes specific activities that are required to produce a product
- C) competitive pricing is ignored
- D) it assumes all costs are product costs

Answer: A

Diff: 2

Objective: 3

AACSB: Analytical thinking

6) Extracts from cost information of Hebar Corp.:

	Simple L3 Pack	Complex L7 Pack	Total
Setup cost allocated using direct labor-hours	\$19,250	\$5,750	\$25,000
Setup cost allocated using setup-hours	\$13,400	\$11,600	\$25,000

Assuming that setup-hours is considered a more effective cost drive for allocating setup costs than direct labor-hours. Which of the following statements is true of Hebar's setup costs under traditional costing?

- A) L3 pack is undercosted by \$5,850
- B) L7 pack is undercosted by \$5,750
- C) L3 pack is overcosted by \$5,850
- D) L7 pack is overcosted by \$5,850

Answer: C

Explanation: Setup cost allocated using direct labor-hours - Setup cost allocated using setup-hours
= \$19,250 - \$13,400 = \$5,850

Diff: 2

Objective: 3

AACSB: Application of knowledge

7) Which of the following is true with activity based cost accounting?

- A) Activity-based costing ignores the allocation of marketing and distribution costs.
- B) Activity-based costing is more likely to result in major differences from traditional costing systems if the firm manufactures only one product rather than multiple products.
- C) The focus is on activities that account for a sizable fraction of indirect costs .
- D) Chances of product-cost cross-subsidization are higher in activity-based costing compared to traditional costing systems.

Answer: C

Diff: 2

Objective: 3

AACSB: Analytical thinking

8) Activity-based costing (ABC) can eliminate cost distortions because ABC systems _____.

- A) establish a cause-and-effect relationship with the activities performed
- B) use single cost pool for all overhead costs, thereby enabling simplicity
- C) use a broad average to allocate all overhead costs
- D) never consider interactions between different departments in assigning support costs

Answer: A

Diff: 2

Objective: 3

AACSB: Analytical thinking

EA

9) When "available time" (i.e., setup-hours) is used to calculate a cost of a resource and to allocate costs to cost objects, the system is called:

- A) job costing
- B) process costing
- C) hybrid costing
- D) time-driven activity based costing

Answer: D

Diff: 2

Objective: 3

AACSB: Analytical thinking

10) Extreme Manufacturing Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Account inquiry	\$320,000	16,000 hours
Account billing	\$200,000	4,000,000 lines
Account verification accounts	\$173,250	70,000 accounts
Correspondence letters	<u>\$24,000</u>	4,000 letters
Total costs	<u>\$717,250</u>	

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

	<u>Department A</u>	<u>Department B</u>
Account inquiry hours	2,700 hours	4,200 hours
Account billing lines	900,000 lines	750,000 lines
Account verification accounts	8,000 accounts	6,000 accounts
Correspondence letters	1,400 letters	1,800 letters

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

- A) \$54,000
- B) \$320,000
- C) \$160,000
- D) \$84,000

Answer: A

Explanation: Account inquiry costs - Department A = $(\$320,000 \div 16,000) \times 2,700 = \$54,000$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

11) Extreme Manufacturing Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Account inquiry	\$320,000	16,000 hours
Account billing	\$220,000	4,000,000 lines
Account verification accounts	\$182,000	80,000 accounts
Correspondence letters	<u>\$25,000</u>	4,000 letters
Total costs	<u>\$747,000</u>	

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

	<u>Department A</u>	<u>Department B</u>
Account inquiry hours	2,200 hours	3,700 hours
Account billing lines	600,000 lines	450,000 lines
Account verification accounts	5,000 accounts	3,000 accounts
Correspondence letters	1,000 letters	1,400 letters

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

A) \$220,000

B) \$110,000

C) \$24,750

D) \$33,000

Answer: C

Explanation: Billing costs - Department B = $(\$220,000 \div 4,000,000) \times 450,000 = \$24,750$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

12) Extreme Manufacturing Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Account inquiry	\$420,000	14,000 hours
Account billing	\$225,000	5,000,000 lines
Account verification accounts	\$95,000	40,000 accounts
Correspondence letters	<u>\$46,000</u>	8,000 letters
Total costs	<u>\$786,000</u>	

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

	<u>Department A</u>	<u>Department B</u>
Account inquiry hours	2,900 hours	4,400 hours
Account billing lines	600,000 lines	450,000 lines
Account verification accounts	12,000 accounts	10,000 accounts
Correspondence letters	1,800 letters	2,200 letters

How much of account verification costs will be assigned to Department A?

A) \$23,750

B) \$28,500

C) \$95,000

D) \$47,500

Answer: B

Explanation: Account verification costs - Department A = $(\$95,000 / 40,000) \times 12,000 = \$28,500$

Diff: 2

Objective: 3

AACSB: Analytical thinking

EA

13) Extreme Manufacturing Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Account inquiry	\$390,000	13,000 hours
Account billing	\$275,000	5,000,000 lines
Account verification accounts	\$130,500	60,000 accounts
Correspondence letters	<u>\$22,000</u>	4,000 letters
Total costs	<u>\$817,500</u>	

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

	<u>Department A</u>	<u>Department B</u>
Account inquiry hours	2,500 hours	4,000 hours
Account billing lines	800,000 lines	650,000 lines
Account verification accounts	9,000 accounts	7,000 accounts
Correspondence letters	2,000 letters	2,400 letters

How much of correspondence costs will be assigned to Department A?

A) \$22,000

B) \$49,500

C) \$11,000

D) \$11,242

Answer: C

Explanation: Correspondence costs - Department A = $(\$22,000 \div 4,000) \times 2,000 = \$11,000$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

14) Extreme Manufacturing Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Account inquiry	\$280,000	14,000 hours
Account billing	\$350,000	7,000,000 lines
Account verification accounts	\$93,750	50,000 accounts
Correspondence letters	<u>\$29,000</u>	4,000 letters
Total costs	<u>\$752,750</u>	

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

	<u>Department A</u>	<u>Department B</u>
Account inquiry hours	2,100 hours	3,600 hours
Account billing lines	500,000 lines	350,000 lines
Account verification accounts	7,000 accounts	5,000 accounts
Correspondence letters	1,200 letters	1,600 letters

How much of the total costs will be assigned to Department A?

- A) \$88,825
- B) \$118,825
- C) \$120,000
- D) \$85,075

Answer: A

Explanation: Account inquiry costs	=	$(\$280,000 \div 14,000) \times 2,100$	=	\$42,000
Billing costs	=	$(\$350,000 \div 7,000,000) \times 500,000$	=	\$25,000
Account verification costs	=	$(\$93,750 \div 50,000) \times 7,000$	=	\$13,125
Correspondence costs	=	$(\$29,000 \div 4,000) \times 1,200$	=	<u>\$8,700</u>
				<u>\$88,825</u>

Diff: 3

Objective: 3

AACSB: Application of knowledge

EA

15) Extreme Manufacturing Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Account inquiry	\$750,000	15,000 hours
Account billing	\$250,000	5,000,000 lines
Account verification accounts	\$173,250	70,000 accounts
Correspondence letters	<u>\$42,000</u>	7,000 letters
Total costs	<u>\$1,215,250</u>	

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

	<u>Department A</u>	<u>Department B</u>
Account inquiry hours	2,000 hours	3,500 hours
Account billing lines	900,000 lines	750,000 lines
Account verification accounts	9,000 accounts	7,000 accounts
Correspondence letters	1,200 letters	1,600 letters

How much of the total costs will be assigned to Department B?

- A) \$282,460
- B) \$246,925
- C) \$239,425
- D) \$256,825

Answer: C

Explanation: Account inquiry costs	= (\$750,000 ÷ 15,000) × 3,500	= \$175,000
Billing costs	= (\$250,000 ÷ 5,000,000) × 750,000	= \$37,500
Account verification costs	= (\$173,250 ÷ 70,000) × 7,000	= \$17,325
Correspondence costs	= (\$42,000 ÷ 7,000) × 1,600	= <u>\$9,600</u>
		<u>\$239,425</u>

Diff: 3

Objective: 3

AACSB: Application of knowledge

16) Dalrymple Company produces a special spray nozzle. The budgeted indirect total cost of inserting the spray nozzle is \$68,750. The budgeted number of nozzles to be inserted is 11,000. What is the budgeted indirect cost allocation rate for this activity?

- A) \$0.16
- B) \$0.32
- C) \$1.16
- D) \$6.25

Answer: D

Explanation: $\$68,750 / 11,000 = \6.25

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

17) Activity-based costing is most likely to yield benefits for companies _____.

- A) with complex product design processes that vary significantly from product to product
- B) with operations that remain fairly consistent across product lines
- C) in a monopolistic market
- D) having nominal percentage of indirect costs

Answer: A

Diff: 1

Objective: 3

AACSB: Analytical thinking

18) Which of the following statements is true of ABC systems?

- A) ABC systems are time-driven cost systems.
- B) ABC systems classify some direct costs as indirect costs and some indirect costs as direct costs.
- C) ABC systems provide valuable information to managers beyond accurate product costs.
- D) ABC systems assume all costs are variable costs.

Answer: C

Diff: 2

Objective: 2

AACSB: Analytical thinking

19) Columbus Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Labor	\$392,000	8,000 hours
Gas	\$30,000	5,000 gallons
Invoices	<u>\$180,000</u>	7,500 invoices
Total costs	<u>\$602,000</u>	

The above activities used by their three departments are:

	<u>Lawn Department</u>	<u>Bush Department</u>	<u>Plowing Department</u>
Labor	2,600 hours	1,300 hours	4,100 hours
Gas	1,800 gallons	1,000 gallons	2,200 gallons
Invoices	1,600 invoices	100 invoices	5,800 invoices

How much of the labor cost will be assigned to the Bush Department?

- A) \$127,400
- B) \$63,700
- C) \$200,900
- D) \$97,825

Answer: B

Explanation: Labor cost assigned = $(\$392,000 \div 8,000) \times 1,300 = \$63,700$

Diff: 2

Objective: 3

AACSB: Analytical thinking

EA

20) Columbus Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Labor	\$336,000	8,000 hours
Gas	\$84,000	7,000 gallons
Invoices	<u>\$180,000</u>	7,500 invoices
Total costs	<u>\$600,000</u>	

The above activities used by their three departments are:

	<u>Lawn Department</u>	<u>Bush Department</u>	<u>Plowing Department</u>
Labor	3,100 hours	1,500 hours	3,400 hours
Gas	1,900 gallons	900 gallons	4,200 gallons
Invoices	1,300 invoices	400 invoices	5,800 invoices

If labor hours are used to allocate the non-labor, overhead costs, what is the overhead allocation rate?

- A) \$75.00 per hour
- B) \$26.67 per hour
- C) \$42.00 per hour
- D) \$33.00 per hour

Answer: D

Explanation: Overhead allocation rate = $(\$84,000 + \$180,000) \div 8,000 = \$33.00$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

21) Columbus Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Labor	\$384,000	8,000 hours
Gas	\$36,000	6,000 gallons
Invoices	<u>\$180,000</u>	7,500 invoices
Total costs	<u>\$600,000</u>	

The above activities used by their three departments are:

	<u>Lawn Department</u>	<u>Bush Department</u>	<u>Plowing Department</u>
Labor	2,500 hours	1,400 hours	4,100 hours
Gas	1,800 gallons	1,000 gallons	3,200 gallons
Invoices	1,300 invoices	300 invoices	5,900 invoices

How much of invoice cost will be assigned to the Bush Department?

- A) \$7,200
- B) \$141,600
- C) \$31,200
- D) \$180,000

Answer: A

Explanation: $(\$180,000 / 7,500 \text{ invoices}) \times 300 \text{ invoices} = \$7,200$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

22) Columbus Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Labor	\$352,000	8,000 hours
Gas	\$8,000	4,000 gallons
Invoices	<u>\$110,000</u>	5,500 invoices
Total costs	<u>\$470,000</u>	

The above activities used by their three departments are:

	<u>Lawn Department</u>	<u>Bush Department</u>	<u>Plowing Department</u>
Labor	3,200 hours	1,200 hours	3,600 hours
Gas	1,900 gallons	900 gallons	1,200 gallons
Invoices	1,500 invoices	300 invoices	3,700 invoices

How much of the gas cost will be assigned to the Lawn Department?

- A) \$1,800
- B) \$3,800
- C) \$2,400
- D) \$8,000

Answer: B

Explanation: Gas cost = $(\$8,000 \div 4,000 \text{ gallons}) \times 1,900 \text{ gallons} = \$3,800$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

23) Columbus Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Labor	\$490,000	10,000 hours
Gas	\$18,000	3,000 gallons
Invoices	<u>\$56,000</u>	3,500 invoices
Total costs	<u>\$564,000</u>	

The above activities used by their three departments are:

	<u>Lawn Department</u>	<u>Bush Department</u>	<u>Plowing Department</u>
Labor	2,800 hours	1,400 hours	5,800 hours
Gas	1,800 gallons	900 gallons	300 gallons
Invoices	1,600 invoices	300 invoices	1,600 invoices

How much of the total cost will be assigned to the Plowing Department?

- A) \$564,000
- B) \$311,600
- C) \$188,000
- D) \$173,600

Answer: B

$$\begin{aligned} \text{Explanation: } & (\$490,000 / 10,000) \times 5,800 = \$284,200 \\ & (\$18,000 / 3,000) \times 300 = \$1,800 \\ & (\$56,000 / 3,500) \times \underline{1,600} = \$25,600 \\ & \qquad \qquad \qquad \underline{\$311,600} \end{aligned}$$

Diff: 3

Objective: 3

AACSB: Application of knowledge

EA

24) Columbus Company provides the following ABC costing information:

<u>Activities</u>	<u>Total Costs</u>	<u>Activity-cost drivers</u>
Labor	\$384,000	8,000 hours
Gas	\$40,000	4,000 gallons
Invoices	<u>\$40,000</u>	2,500 invoices
Total costs	<u>\$464,000</u>	

The above activities used by their three departments are:

	<u>Lawn Department</u>	<u>Bush Department</u>	<u>Plowing Department</u>
Labor	2,800 hours	1,500 hours	3,700 hours
Gas	1,800 gallons	900 gallons	1,300 gallons
Invoices	1,400 invoices	300 invoices	800 invoices

How much of the total costs will be assigned to the Lawn Department?

- A) \$192,000
- B) \$464,000
- C) \$174,800
- D) \$154,667

Answer: C

Diff: 3

Objective: 3

AACSB: Application of knowledge

25) Milan Manufacturing Company 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 labor	\$539,000	Direct labor-hours	920,000
Machine maintenance	\$120,000	Machine-hours	1,000,000
Facility rent	<u>\$215,000</u>	Square feet of area	160,000
Total overhead costs	<u>\$874,000</u>		

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

<u>Cost driver</u>	<u>Actual level</u>
Direct labor-hours	300
Machine-hours	1,675
Square feet of area	70

If direct labor-hours are considered the only overhead cost driver, what is the single cost driver rate for Milan?

- A) \$1.05 per direct labor-hour
- B) \$0.59 per direct labor-hour
- C) \$0.95 per direct labor-hour
- D) \$1.71 per direct labor-hour

Answer: C

Explanation: Cost driver rate = $\$874,000 \div 920,000 = 0.95$ per dlh

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

26) Milan Company 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 labor	\$624,000	Direct labor-hours	940,000
Machine maintenance	\$100,000	Machine-hours	840,000
Facility rent	<u>\$216,000</u>	Square feet of area	140,000
Total overhead costs	<u>\$940,000</u>		

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

<u>Cost driver</u>	<u>Actual level</u>
Direct labor-hours	290
Machine-hours	1,681.68
Square feet of area	50

Under activity-based costing, what is the amount of machine maintenance costs allocated to the Mossman Job? (Do not round any intermediary calculations.)

- A) \$1,881.88
- B) \$200.20
- C) \$1,681.68
- D) \$210.45

Answer: B

Explanation: Machine maintenance costs = 1,681.68 mh × (\$100,000 ÷ 840,000) = \$200.20

Diff: 2

Objective: 3

AACSB: Application of knowledge

27) Velshi Printers has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$1,500,000 for an annual production capacity of 10 million pages.

For 2018 Velshi 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	\$100,000	400 design changes
Setups	1,300,000	3,000 setups
Inspections	<u>100,000</u>	10,000 inspections
Total manufacturing overhead costs	<u>\$1,500,000</u>	

During 2018, 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	90,000	106,000
Design changes	13	0
Setups	18	8
Inspections	30	38

What is the cost driver rate if manufacturing overhead costs are considered one large cost pool and are assigned based on 10 million pages of production capacity?

- A) \$0.01 per page
- B) \$0.15 per page
- C) \$0.14 per page
- D) \$0.13 per page

Answer: B

Explanation: \$0.15 per page = (\$1,500,000 / 10,000,000 pages)

Diff: 2

Objective: 3

AACSB: Application of knowledge

28) Velshi Printers has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$600,000 for an annual production capacity of 12 million pages.

For 2018 Velshi 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	\$120,000	500 design changes
Setups	380,000	4,000 setups
Inspections	<u>100,000</u>	9,000 inspections
Total manufacturing overhead costs	<u>\$600,000</u>	

During 2018, 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	70,000	86,000
Design changes	12	0
Setups	17	7
Inspections	26	34

Using pages printed as the only overhead cost driver, what is the manufacturing overhead cost estimate for Money Managers during 2018?

- A) \$4,300
- B) \$2,800
- C) \$3,500
- D) \$4,784

Answer: C

Explanation: $\$3,500 = [70,000 \text{ pages} \times (\$600,000 / 12,000,000)]$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

29) Xylon Corp. has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$900,000 for an annual production capacity of 10 million pages.

For 2018, Xylon 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	\$190,000	200 design changes
Setups	550,000	5,000 setups
Inspections	<u>160,000</u>	16,000 inspections
Total manufacturing overhead costs	<u>\$900,000</u>	

During 2018, 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	70,000	86,000
Design changes	15	7
Setups	18	8
Inspections	25	63

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? (Round the final answer to three decimal places.)

- A) \$0.078 per page
- B) \$0.035 per page
- C) \$0.055 per page
- D) \$0.09 per page

Answer: D

Explanation: Cost driver rate = ($\$900,000 \div 10$ million pages) = \$0.09 per page

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

30) Xylon Corp. has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$940,000 for an annual production capacity of 10 million pages.

For 2018, Xylon 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	\$160,000	500 design changes
Setups	692,000	2,000 setups
Inspections	<u>88,000</u>	8,000 inspections
Total manufacturing overhead costs	<u>\$940,000</u>	

During 2018, 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	70,000	86,000
Design changes	11	3
Setups	19	9
Inspections	26	64

Under ABC costing, what is the inspection cost allocated to Hospital Systems?

- A) \$704
- B) \$80
- C) \$286
- D) \$6,574

Answer: A

Explanation: Inspection cost = $(\$88,000 \div 8,000 \text{ inspections}) \times 64 = \704

Diff: 2

Objective: 3

AACSB: Application of knowledge

31) Only indirect costs are included in the cost pools of ABC.

Answer: FALSE

Explanation: Both direct and indirect costs are included in the cost pools associated with activities.

Diff: 2

Objective: 3

AACSB: Analytical thinking

32) When allocating the total indirect cost pool to cost pools such as setup costs including depreciation and maintenance costs of setup equipment, wages of setup employees, and allocation of supervisors is called a second-stage allocation.

Answer: FALSE

Explanation: What is described is a first-stage allocation.

Diff: 1

Objective: 3

AACSB: Analytical thinking

33) In activity based costing systems, limiting cost-allocation bases to only units of output strengthens the cause-and-effect relationship between the cost-allocation base and the costs in a cost pool.

Answer: FALSE

Explanation: Limiting cost-allocation bases to only units of output weakens the cause-and-effect relationship between the cost-allocation base and the costs in a cost pool.

Diff: 2

Objective: 3

AACSB: Analytical thinking

34) Activity-based costing attempts to identify the most relevant cause-and-effect relationship for each activity pool without restricting the cost driver to only units of output or variables related to units of output.

Answer: TRUE

Diff: 2

Objective: 3

AACSB: Analytical thinking

35) Explain how activity-based costing systems can provide more accurate product costs than traditional 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

Objective: 3

AACSB: Analytical thinking

5.4 Objective 5.4

1) _____ is an example of an output unit-level cost in the cost hierarchy.

- A) Factory rent expense
- B) Building security costs
- C) Top management compensation costs
- D) Machine depreciation

Answer: D

Diff: 1

Objective: 4

AACSB: Analytical thinking

2) For a company which produce its products in batches, the CEO's salary is a(n) _____ cost.

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

Answer: C

Diff: 2

Objective: 4

AACSB: Analytical thinking

3) Top management compensation cost is an example of _____ in the cost hierarchy.

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

Answer: D

Diff: 1

Objective: 4

AACSB: Analytical thinking

4) _____ costs support the organization as a whole.

- A) Unit-level
- B) Batch-level
- C) Product-sustaining
- D) Facility-sustaining

Answer: D

Diff: 1

Objective: 4

AACSB: Analytical thinking

EA

5) It is usually difficult to find good cost driver (cause-and-effect relationship) between _____ and a cost allocation base.

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

Answer: D

Diff: 1

Objective: 4

AACSB: Analytical thinking

6) Facility-sustaining costs are the costs of activities _____.

- A) undertaken to support individual products or services regardless of the number of units or batches in which the units are produced
- B) related to a group of units of a product or services, rather than each individual unit of product or service
- C) that managers cannot trace to individual products or services but that support the organization as a whole
- D) performed on each individual unit of a product or service such as the cost of energy, machine depreciation, and repair

Answer: C

Diff: 2

Objective: 4

AACSB: Analytical thinking

7) _____ are the costs of activities undertaken to support individual products or services regardless of the number of units or batches in which the units are produced.

- A) Unit-level costs
- B) Batch-level costs
- C) Product-sustaining costs
- D) Facility-sustaining costs

Answer: C

Diff: 1

Objective: 4

AACSB: Analytical thinking

8) Advanced Technology Products produces 10 different fasteners. Each time a type of fastener is produced, the equipment must be stopped and items such as filters and drill bits must be changed, oil must be added to the equipment and some parts need lubrication. This work must be done before the products can be produced, the costs related to this activity would be part of which cost pool?

- A) Output-level costs
- B) Batch-level costs
- C) Product-sustaining costs
- D) Service-sustaining costs

Answer: B

Diff: 2

Objective: 4

AACSB: Analytical thinking

EA

9) With traditional 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) undercosted
- D) ignored

Answer: C

Diff: 2

Objective: 4

AACSB: Analytical thinking

10) Which of the following ordering of the levels best depicts the cost hierarchy within an ABC system?

- A) batch-level, output unit-level, product-sustaining level, and facility-sustaining level
- B) batch-level, output unit-level, facility-sustaining levels, product-sustaining levels
- C) output unit-level, batch-level, product-sustaining level, and facility-sustaining level
- D) facility-sustaining level, output unit-level, batch-level, product-sustaining level

Answer: C

Diff: 2

Objective: 4

AACSB: Application of knowledge

11) Service-sustaining costs are the costs of activities that managers cannot trace to individual services but that support the organization as a whole.

Answer: FALSE

Explanation: Service-sustaining costs are the costs of activities undertaken to support individual services regardless of the number of units or batches in which the units are produced. they are similar to the product-sustaining costs in a manufacturing setting.

Diff: 2

Objective: 4

AACSB: Analytical thinking

12) Quality-inspection costs is an example of batch-level costs.

Answer: TRUE

Diff: 1

Objective: 4

AACSB: Analytical thinking

13) An effective activity-based cost system always ignores facility-sustaining cost drivers.

Answer: FALSE

Explanation: An effective activity-based cost system usually uses facility-sustaining cost drivers along with other cost drivers. Facility-sustaining cost drivers are ignored only when it is difficult to find a good cause-and-effect relationship between these costs and the cost-allocation base.

Diff: 2

Objective: 4

AACSB: Analytical thinking

14) Over time, the cost of design activities depend largely on the time designers spend on designing and modifying the product not on the number of products made or the number of batches produced.

Answer: TRUE

Diff: 1

Objective: 4

AACSB: Analytical thinking

15) Is it advisable to ignore facility-sustaining cost drivers during product costing?

Answer: Facility-sustaining cost drivers are ignored only when it is difficult to find a good cause-and-effect relationship between these costs and the cost-allocation base. So, some companies deduct facility-sustaining costs as a separate lump-sum amount from operating income rather than allocate them to products. Managers who follow this approach need to keep in mind that when making decisions based on costs (such as pricing), some lump-sum costs have not been allocated. They must set prices that are much greater than the allocated costs to recover some of the unallocated facility-sustaining costs. Allocating all costs to products or services ensures that managers have taken into account all costs when making decisions based on costs.

Diff: 2

Objective: 4

AACSB: Analytical thinking

16) What are the four parts of the cost hierarchy. Briefly explain each part, and contrast this cost hierarchy to the fixed-variable dichotomy?

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

Objective: 4

AACSB: Analytical thinking

5.5 Objective 5.5

1) Put the following ABC implementation steps in order _____.

- A Compute the allocation rates.
- B Compute the total cost of the products.
- C Identify the products that are the cost objects.
- D Select the cost allocation bases.

- A) DACB
- B) DBCA
- C) BADC
- D) CDAB

Answer: D

Diff: 2

Objective: 5

AACSB: Analytical thinking

2) _____ is considered while choosing a cost allocation base for activity costs in ABC costing.

- A) Marketing strategy and material price level
- B) Availability of reliable data and measures
- C) Product price level
- D) Market share of a product

Answer: B

Diff: 1

Objective: 5

AACSB: Analytical thinking

3) Which of the following cost and cost allocation base have a strong cause and effect relationship?

- A) administration costs and cubic feet
- B) setup costs and square feet
- C) quality control costs and the number of inspections
- D) machine maintenance and setup hours

Answer: C

Diff: 2

Objective: 5

AACSB: Analytical thinking

4) Management accountants use the cost hierarchy to first calculate the _____.

- A) labor costs of each product and then they compute material costs
- B) overhead costs of each product and then they compute prime costs
- C) factory costs of each product and then they compute labor costs
- D) total costs of each product and then they compute per-unit costs

Answer: D

Diff: 2

Objective: 5

AACSB: Analytical thinking

EA

5) For a business that offers customers a store where product can be purchased and picked up or a delivery service that can ship the product directly to the customer, which of the following would most likely be the best cost allocation base for distribution costs?

- A) number of customer service phone calls and emails per period
- B) number of pounds of product shipped or delivered
- C) Electricity costs for the period
- D) Number of products sold

Answer: B

Diff: 2

Objective: 5

AACSB: Analytical thinking

6) For a manufacturing firm that produces multiple families of products requiring various combinations of different types of parts, what would be the best allocation base for human resource administration costs?

- A) direct labor hours
- B) electricity costs
- C) number of parts purchased
- D) machine hours

Answer: A

Diff: 1

Objective: 5

AACSB: Analytical thinking

7) Comfort Corporation manufactures two models of office chairs, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	18	6	265
Deluxe	29	12	200
Overhead costs	\$61,100	\$64,800	

Assume a traditional costing system applies the overhead costs based on direct labor hours. What is the total amount of overhead costs assigned to the standard model? (Do not round interim calculations.

Round the final answer to the nearest whole dollar.)

- A) \$62,950
- B) \$54,151
- C) \$71,749
- D) \$36,929

Answer: C

Explanation: Total amount of overhead costs = $[(\$61,100 + \$64,800) \div (265 + 200)] \times 265 = \$71,749$

Diff: 2

Objective: 5

AACSB: Application of knowledge

EA

8) Dartmouth Corporation manufactures two models of office chairs, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	11	5	265
Deluxe	35	15	200
Overhead costs	\$82,800	\$74,000	

Assume a traditional costing system applies the overhead costs based on direct labor hours. What is the total amount of overhead costs assigned to the deluxe model?

- A) \$31,828
- B) \$67,441
- C) \$35,613
- D) \$78,400

Answer: B

Explanation: The total amount of overhead costs = $[(\$82,800 + \$74,000) \div (265 + 200)] \times 200 = \$67,441$

Diff: 3

Objective: 5

AACSB: Application of knowledge

9) Dartmouth Corporation manufactures two models of office chairs, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	18	9	275
Deluxe	32	14	215
Overhead costs	\$75,000	\$87,400	

Number of setups and number of components are identified as activity-cost drivers for overhead.

Assuming an activity-based costing system is used, what is the total amount of overhead costs assigned to the standard model?

- A) \$81,200
- B) \$81,900
- C) \$61,200
- D) \$101,200

Answer: C

Explanation: Setups: $\$75,000 \div (18 + 32) = \$1,500$

Components: $\$87,400 \div (9 + 14) = \$3,800$

Total amount of overhead costs = $(\$1,500 \times 18) + (\$3,800 \times 9) = \$61,200$

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

10) Dartmouth Corporation manufactures two models of office chairs, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	11	6	295
Deluxe	29	13	205
Overhead costs	\$60,000	\$58,900	

Number of setups and number of components are identified as activity-cost drivers for overhead. Assuming an activity-based costing system is used, what is the total amount of overhead costs assigned to the deluxe model?

- A) \$59,450
- B) \$83,800
- C) \$56,800
- D) \$62,100

Answer: B

Explanation: Setups: $\$60,000 \div (11 + 29) = \$1,500$

Components: $\$58,900 \div (6 + 13) = \$3,100$

Total amount of overhead costs = $(\$1,500 \times 29) + (\$3,100 \times 13) = \$83,800$

Diff: 3

Objective: 5

AACSB: Application of knowledge

11) Dartmouth Corporation manufactures two models of motorized go-carts, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	17	6	790
Deluxe	31	15	400
Overhead costs	\$18,240	\$21,000	

Assume a traditional costing system applies the \$39,240 of overhead costs based on direct labor hours. What is the total amount of overhead cost assigned to the standard model? (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$13,190
- B) \$26,050
- C) \$25,343
- D) \$13,898

Answer: B

Explanation: $[\$39,240 / (790 + 400)] \times 790 = \$26,050$

Diff: 2

Objective: 5

AACSB: Application of knowledge

EA

12) North Street Corporation manufactures two models of motorized go-carts, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	17	6	710
Deluxe	27	18	420
Overhead costs	\$15,400	\$22,560	

Assume a traditional costing system applies the \$37,960 of overhead costs based on direct labor hours. What is the total amount of overhead cost assigned to the deluxe model? (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

A) \$14,109

B) \$23,851

C) \$23,294

D) \$14,666

Answer: A

Explanation: $[\$37,960 / (710 + 420)] \times 420 = \$14,109$

Diff: 2

Objective: 5

AACSB: Application of knowledge

13) North Street Corporation manufactures two models of motorized go-carts, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	20	5	720
Deluxe	29	17	460
Overhead costs	\$17,150	\$19,800	

Number of setups and number of components are identified as activity-cost drivers for overhead.

Assuming an activity-based costing system is used, what is the total amount of overhead cost assigned to the standard model? (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

A) \$18,475

B) \$11,500

C) \$19,750

D) \$25,450

Answer: B

Explanation: Setups: $17,150 \div (20 + 29) = \350

Components: $\$19,800 \div (5 + 17) = \900

Total amount of overhead cost = $(\$350 \times 20) + (\$900 \times 5) = \$11,500$

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

14) North Street Corporation manufactures two models of motorized go-carts, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	17	7	720
Deluxe	33	12	410
Overhead costs	\$16,000	\$18,050	

Number of setups and number of components are identified as activity-cost drivers for overhead.

Assuming an activity-based costing system is used, what is the total amount of overhead cost assigned to the deluxe model?

A) \$21,960

B) \$17,025

C) \$16,840

D) \$17,210

Answer: A

Explanation: Setups: $16,000 \div (17 + 33) = \320

Components: $\$18,050 \div (7 + 12) = \950

Total amount of overhead cost = $(\$320 \times 33) + (\$950 \times 12) = \$21,960$

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

15) Tiger Pride produces two product lines: T-shirts and Sweatshirts. Product profitability is analyzed as follows:

	<u>T-SHIRTS</u>	<u>SWEATSHIRTS</u>
Production and sales volume	180,000 units	24,000 units
Selling price	\$20.00	\$29.00
Direct material	\$1.80	\$ 5.00
Direct labor	\$4.70	\$ 7.20
Manufacturing overhead	<u>\$6.00</u>	<u>\$ 3.00</u>
Gross profit	\$ 7.50	\$13.80
Selling and administrative	<u>\$4.30</u>	<u>\$ 7.00</u>
Operating profit	<u>\$3.20</u>	<u>\$ 6.80</u>

Tiger Pride's managers have decided to revise their current assignment of overhead costs to reflect the following ABC cost information:

Activity	Activity cost	Activity-cost driver
Supervision	\$97,200	Direct labor hours (DLH)
Inspection	\$164,050	Inspections

Activities demanded	
T-SHIRTS	SWEATSHIRTS
0.25 DLH/unit	1.50 DLH/unit
45,000 DLHs	36,000 DLHs
80,000 inspections	16,500 inspections

Under the revised ABC system, the activity-cost driver rate for the supervision activity is _____.

- A) \$1.70
- B) \$2.70
- C) \$2.16
- D) \$1.2

Answer: D

Explanation: $\$97,200 / (45,000 \text{ dlh} + 36,000 \text{ dlh}) = \1.2 per dlh

Diff: 2

Objective: 5

AACSB: Application of knowledge

EA

16) Tiger Pride produces two product lines: T-shirts and Sweatshirts. Product profitability is analyzed as follows:

	<u>T-SHIRTS</u>	<u>SWEATSHIRTS</u>
Production and sales volume	192,000 units	24,000 units
Selling price	\$17.00	\$29.00
Direct material	\$1.70	\$ 5.00
Direct labor	\$4.30	\$ 7.20
Manufacturing overhead	<u>\$3.50</u>	<u>\$ 3.00</u>
Gross profit	\$ 7.50	\$13.80
Selling and administrative	<u>\$4.10</u>	<u>\$ 7.00</u>
Operating profit	<u>\$3.40</u>	<u>\$ 6.80</u>

Tiger Pride's managers have decided to revise their current assignment of overhead costs to reflect the following ABC cost information:

Activity	Activity cost	Activity-cost driver
Supervision	\$123,480	Direct labor hours (DLH)
Inspection	\$104,800	Inspections

Activities demanded	
T-SHIRTS	SWEATSHIRTS
0.25 DLH/unit	1.50 DLH/unit
48,000 DLHs	36,000 DLHs
50,000 inspections	15,500 inspections

Under the revised ABC system, supervision costs allocated to Sweatshirts will be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$52,920
- B) \$104,800
- C) \$123,480
- D) None of these answers are correct.

Answer: A

Explanation: $\$123,480 / (48,000 \text{ dlh} + 36,000 \text{ dlh}) = \$1.47 \text{ per dlh} \times 36,000 \text{ dlh} = \$52,920$

Diff: 2

Objective: 5

AACSB: Application of knowledge

EA

17) Tiger Pride produces two product lines: T-shirts and Sweatshirts. Product profitability is analyzed as follows:

	<u>T-SHIRTS</u>	<u>SWEATSHIRTS</u>
Production and sales volume	72,000 units	26,250 units
Selling price	\$15.00	\$29.00
Direct material	\$1.50	\$ 5.00
Direct labor	\$4.20	\$ 7.20
Manufacturing overhead	<u>\$1.80</u>	<u>\$ 3.00</u>
Gross profit	\$ 7.50	\$13.80
Selling and administrative	<u>\$3.60</u>	<u>\$ 7.00</u>
Operating profit	<u>\$3.90</u>	<u>\$ 6.80</u>

Tiger Pride's managers have decided to revise their current assignment of overhead costs to reflect the following ABC cost information:

Activity	Activity cost	Activity-cost driver
Supervision	\$108,480	Direct labor hours (DLH)
Inspection	\$93,000	Inspections

Activities demanded	
T-SHIRTS	SWEATSHIRTS
0.75 DLH/unit	1.60 DLH/unit
54,000 DLHs	42,000 DLHs
60,000 inspections	17,500 inspections

Under the revised ABC system, total overhead costs allocated to Sweatshirts will be _____.

- A) \$47,460
- B) \$68,460
- C) \$201,480
- D) None of these answers are correct.

Answer: B

Explanation: $\$93,000 / (60,000 \text{ inspections} + 17,500 \text{ inspections}) = \$1.20 \text{ per inspection} \times 17,500 = \$21,000$
plus

$\$108,480 / (54,000 \text{ dlh} + 42,000 \text{ dlh}) = \$1.13 \text{ per dlh} \times 42,000 \text{ dlh} = \$47,460$;

$\$21,000 + \$47,460 = \$68,460$

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

18) Tiger Pride produces two product lines: T-shirts and Sweatshirts. Product profitability is analyzed as follows:

	<u>T-SHIRTS</u>	<u>SWEATSHIRTS</u>
Production and sales volume	64,000 units	40,000 units
Selling price	\$16.00	\$29.00
Direct material	\$2.50	\$ 5.00
Direct labor	\$4.30	\$ 7.20
Manufacturing overhead	<u>\$1.70</u>	<u>\$ 3.00</u>
Gross profit	\$ 7.50	\$13.80
Selling and administrative	<u>\$4.30</u>	<u>\$ 7.00</u>
Operating profit	<u>\$3.20</u>	<u>\$ 6.80</u>

Tiger Pride's managers have decided to revise their current assignment of overhead costs to reflect the following ABC cost information:

Activity	Activity cost	Activity-cost driver
Supervision	\$107,520	Direct labor hours (DLH)
Inspection	\$70,200	Inspections

Activities demanded	
T-SHIRTS	SWEATSHIRTS
0.75 DLH/unit	1.20 DLH/unit
48,000 DLHs	48,000 DLHs
40,000 inspections	18,500 inspections

Under the revised ABC system, overhead costs per unit for the Sweatshirts will be _____. (Do not round interim calculations. Round the final answer to the nearest cent)

- A) \$1.19 per unit
- B) \$1.20 per unit
- C) \$1.90 per unit
- D) \$1.58 per unit

Answer: C

Explanation: $\$70,200 / (40,000 \text{ inspections} + 18,500 \text{ inspections}) = \$1.20 \text{ per inspection} \times 18,500 = \$22,200$
 plus $\$107,520 / (48,000 \text{ dlh} + 48,000 \text{ dlh}) = \$1.12 \text{ per dlh} \times 48,000 \text{ dlh} = \$53,760$
 $\$22,200 + \$53,760 = \$75,960$

$\$75,960 / 40,000 \text{ sweatshirts} = \1.90

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

19) Tiger Pride produces two product lines: T-shirts and Sweatshirts. Product profitability is analyzed as follows:

	<u>T-SHIRTS</u>	<u>SWEATSHIRTS</u>
Production and sales volume	204,000 units	34,000 units
Selling price	\$18.00	\$29.00
Direct material	\$1.60	\$ 5.00
Direct labor	\$4.30	\$ 7.20
Manufacturing overhead	<u>\$4.60</u>	<u>\$ 3.00</u>
Gross profit	\$ 7.50	\$13.80
Selling and administrative	<u>\$3.50</u>	<u>\$ 7.00</u>
Operating profit	<u>\$4.00</u>	<u>\$ 6.80</u>

Tiger Pride's managers have decided to revise their current assignment of overhead costs to reflect the following ABC cost information:

Activity	Activity cost	Activity-cost driver
Supervision	\$130,560	Direct labor hours (DLH)
Inspection	\$69,300	Inspections

Activities demanded	
T-SHIRTS	SWEATSHIRTS
0.25 DLH/unit	1.50 DLH/unit
51,000 DLHs	51,000 DLHs
30,000 inspections	19,500 inspections

Using an ABC system, next year's estimates show manufacturing overhead costs will total \$227,300 for 46,000 T-shirts. If all other T-shirt costs and sales prices remain the same, the profitability that can be expected is _____. (Round the final answer to the nearest whole cent.)

- A) \$8.60 per t-shirt
- B) \$4.94 per t-shirt
- C) \$3.66 per t-shirt
- D) (\$0.27) per t-shirt

Answer: C

Explanation: $[46,000 (\$18.00 - \$1.60 - \$4.30 - \$3.50)] - \$227,300 = \$168,300 / 46,000 = \$3.66$

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

20) Canton Corp. manufactures two sizes of ceramic paperweights, regular and jumbo. The following information applies to their expectations for the planning period:

<u>Cost Pool</u>	<u>Overhead Costs</u>	<u>Activity-cost driver</u>
Materials handling	\$46,000	94,000 orders
Machine maintenance	\$310,000	20,000 maintenance hours
Setups	\$261,000	45,000 setups
Inspections	<u>\$132,370</u>	21,700 inspections
Total support costs	<u>\$749,370</u>	

Production Estimates

Production units:

Regular	= 8,000,000 units
Jumbo	= 16,000,000 units
Machine-hours	= 500,000 mh
Labor-hours	= 1,000,000 dlh

Expected direct costs amounts to \$942,000 for the period. Support cost requirements of both products are substantially different from one another. Canton uses an ABC costing system.

The setups activity-cost driver rate is _____.

- A) \$6.10 per setup
- B) \$5.80 per setup
- C) \$4.15 per setup
- D) \$15.50 per setup

Answer: B

Explanation: Setups activity-cost driver rate = $\$261,000 \div 45,000 \text{ setups} = \5.80 per setup

Diff: 2

Objective: 5

AACSB: Application of knowledge

21) Canton Corp. manufactures two sizes of ceramic paperweights, regular and jumbo. The following information applies to their expectations for the planning period:

<u>Cost Pool</u>	<u>Overhead Costs</u>	<u>Activity-cost driver</u>
Materials handling	\$46,000	97,000 orders
Machine maintenance	\$360,000	19,000 maintenance hours
Setups	\$258,780	45,400 setups
Inspections	<u>\$149,800</u>	21,400 inspections
Total support costs	<u>\$814,580</u>	

Production Estimates

Production units:

Regular	= 12,000,000 units
Jumbo	= 24,000,000 units
Machine-hours	= 400,000 mh
Labor-hours	= 800,000 dlh

Expected direct costs amounts to \$927,000 for the period. Support cost requirements of both products are substantially different from one another. Zitriks uses an ABC costing system.

Which of the following is true of Canton's overhead costing?

- A) Multiple cost pools are appropriate for Canton's because of high direct costs.
- B) Single cost pool is appropriate for Canton's because of high direct costs.
- C) Multiple cost pools are appropriate for Canton's because of diverse support costs.
- D) Single cost pool is appropriate for Canton's because of diverse support costs.

Answer: C

Diff: 2

Objective: 5

AACSB: Application of knowledge

EA

22) Canton's Corp. manufactures two sizes of ceramic paperweights, regular and jumbo. The following information applies to their expectations for the planning period:

<u>Cost Pool</u>	<u>Overhead Costs</u>	<u>Activity-cost driver</u>
Materials handling	\$42,000	96,000 orders
Machine maintenance	\$360,000	16,000 maintenance hours
Setups	\$236,600	45,500 setups
Inspections	<u>\$135,780</u>	21,900 inspections
Total support costs	<u>\$774,380</u>	

Production Estimates

Production units:

Regular	= 11,000,000 units
Jumbo	= 22,000,000 units
Machine-hours	= 300,000 mh
Labor-hours	= 600,000 dlh

Expected direct costs amounts to \$928,000 for the period. Support cost requirements of both products are substantially different from one another. Canton's uses an ABC costing system.

The inspections activity-cost driver rate is _____.

- A) \$0.44
- B) \$5.70
- C) \$6.20
- D) \$13.08

Answer: C

Explanation: Inspections activity-cost driver rate = $\$135,780 \div 21,900$ inspections = \$6.20 per inspection

Diff: 2

Objective: 5

AACSB: Application of knowledge

23) Canton's Corp. manufactures two sizes of ceramic paperweights, regular and jumbo. The following information applies to their expectations for the planning period:

<u>Cost Pool</u>	<u>Overhead Costs</u>	<u>Activity-cost driver</u>
Materials handling	\$43,000	98,000 orders
Machine maintenance	\$400,000	15,000 maintenance hours
Setups	\$269,630	45,700 setups
Inspections	<u>\$144,840</u>	21,300 inspections
Total support costs	<u>\$857,470</u>	

Production Estimates

Production units:

Regular	= 11,000,000 units
Jumbo	= 22,000,000 units
Machine-hours	= 600,000 mh
Labor-hours	= 1,200,000 dlh

Expected direct costs amounts to \$9,130,000 for the period. Support cost requirements of both products are substantially different from one another. Canton uses an ABC costing system.

Which of the following statements is true of implementing an ABC system?

- A) Managers should never compromise on the cause-and-effect relationship of cost drivers and costs.
- B) The three guidelines for refining costing systems should be ignored while implementing an ABC costing system.
- C) The heterogeneous cost pools give managers greater confidence in the activity and product cost numbers from the ABC system.
- D) Identifying the cost-allocation bases defines the number of activity pools into which costs must be grouped in an ABC system.

Answer: D

Diff: 2

Objective: 5

AACSB: Analytical thinking

EA

24) Nichols Inc. manufactures remote controls. Currently the company uses a plant-wide rate for allocating manufacturing overhead. The plant manager is considering switching-over to ABC costing system and has asked the accounting department to identify the primary production activities and their cost drivers which are as follows:

<u>Activities</u>	<u>Cost driver</u>	<u>Allocation Rate</u>
Material handling	Number of parts	\$1 per part
Assembly	Labor hours	\$20 per hour
Inspection	Time at inspection station	\$10 per minute

The current traditional cost method allocates overhead based on direct manufacturing labor hours using a rate of \$30 per labor hour.

Nichols' management is considering to implement ABC system because _____.

- A) ABC system can be implemented cheaply
- B) ABC system provides more accurate direct cost figures
- C) ABC system is a highly refined costing system
- D) ABC system requires minimal expertise to operate

Answer: C

Diff: 2

Objective: 5

AACSB: Application of knowledge

25) Nichols Inc. manufactures remote controls. Currently the company uses a plant-wide rate for allocating manufacturing overhead. The plant manager is considering switching-over to ABC costing system and has asked the accounting department to identify the primary production activities and their cost drivers which are as follows:

<u>Activities</u>	<u>Cost driver</u>	<u>Allocation Rate</u>
Material handling	Number of parts	\$5 per part
Assembly	Labor hours	\$20 per hour
Inspection	Time at inspection station	\$10 per minute

The current traditional cost method allocates overhead based on direct manufacturing labor hours using a rate of \$20 per labor hour.

What are the indirect manufacturing costs per remote control assuming an activity-based-costing method is used and a batch of 10 remote controls are produced? The batch requires 100 parts, 5 direct manufacturing labor hours, and 3 minutes of inspection time.

- A) \$2.00 per remote control
- B) \$63.00 per remote control
- C) \$35.00 per remote control
- D) \$630.00 per remote control

Answer: B

Explanation: $(\$5 \times 100) + (\$20 \times 5) + (\$10 \times 3) = \630 per batch / 10 units per batch = \$63.00 per unit

Diff: 2

Objective: 5

AACSB: Application of knowledge

26) Nichols Inc. manufactures remote controls. Currently the company uses a plant-wide rate for allocating manufacturing overhead. The plant manager is considering switching-over to ABC costing system and has asked the accounting department to identify the primary production activities and their cost drivers which are as follows:

<u>Activities</u>	<u>Cost driver</u>	<u>Allocation Rate</u>
Material handling	Number of parts	\$2 per part
Assembly	Labor hours	\$10 per hour
Inspection	Time at inspection station	\$20 per minute

The current traditional cost method allocates overhead based on direct manufacturing labor hours using a rate of \$600 per labor hour.

What are the indirect manufacturing costs per remote control assuming an activity-based-costing method is used and a batch of 100 remote controls are produced? The batch requires 460 parts, 5 direct manufacturing labor hours, and 18 minutes of inspection time.

- A) \$6.00 per remote control
- B) \$13.30 per remote control
- C) \$32.00 per remote control
- D) \$1,330.00 per remote control

Answer: B

Explanation: Cost per batch = $(\$2 \times 460) + (\$10 \times 5) + (\$20 \times 18) = \$1,330.00$ per batch

Cost per remote control = $\$1,330.00$ per batch \div 100 units per batch = \$13.30 per unit

Diff: 3

Objective: 5

AACSB: Application of knowledge

27) Nile Corp. 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 labor	\$474,000	Direct labor-hours	790,000
Machine maintenance	\$147,200	Machine-hours	920,000
Facility rent	<u>\$243,000</u>	Square feet of area	135,000
Total overhead costs	<u>\$864,200</u>		

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

<u>Cost driver</u>	<u>Actual level</u>
Direct labor-hours	240
Machine-hours	1,700
Square feet of area	50

If Nile Corp. uses the three activity cost pools to allocate overhead costs, what are the activity-cost driver rates for supervision of direct labor, machine maintenance, and facility rent, respectively?

- A) \$0.60 per dlh; \$0.16 per mh; \$1.70 per sq ft
- B) \$1.67 per dlh; \$6.25 per mh; \$0.56 per sq ft
- C) \$0.60 per dlh; \$0.16 per mh; \$1.80 per sq ft
- D) \$0.50 per dlh; \$0.16 per mh; \$1.88 per sq ft

Answer: C

Explanation: Supervision cost driver rate = $474,000 \div 790,000 \text{ dlh} = \0.60 per dlh

Machine maintenance cost driver rate = $\$147,200 \div 920,000 \text{ mh} = \0.16 per mh

Facility rent cost driver rate = $\$243,000 \div 135,000 \text{ sq ft} = \1.80 per sq ft

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

28) Nile Corp. 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 labor	\$304,000	Direct labor-hours	760,000
Machine maintenance	\$153,600	Machine-hours	960,000
Facility rent	<u>\$165,000</u>	Square feet of area	110,000
Total overhead costs	<u>\$622,600</u>		

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

<u>Cost driver</u>	<u>Actual level</u>
Direct labor-hours	260
Machine-hours	1,500
Square feet of area	70

Using the three cost pools to allocate overhead costs, what is the total amount of overhead costs to be allocated to the Mossman Job?

- A) \$442.00
- B) \$449.00
- C) \$10,071.67
- D) \$428.60

Answer: B

Explanation: Supervision cost driver rate = $304,000 \div 760,000$ dlh = \$0.40 per dlh

Machine maintenance cost driver rate = $\$153,600 \div 960,000$ mh = \$0.16 per mh

Facility rent cost driver rate = $\$165,000 \div 110,000$ sq ft = \$1.50 per sq ft

Total amount of overhead costs to be allocated to the Mossman Job

= $(260 \times \$0.40 \text{ per dlh}) + (1,500 \times \$0.16 \text{ per mh}) + (70 \times \$1.50 \text{ per sq ft}) = \449.00

Diff: 3

Objective: 5

AACSB: Application of knowledge

29) Velshi Printers has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$1,760,000 for an annual production capacity of 16 million pages.

For 2018 Velshi 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	\$160,000	200 design changes
Setups	1,530,000	5,000 setups
Inspections	<u>70,000</u>	7,000 inspections
Total manufacturing overhead costs	<u>\$1,760,000</u>	

During 2018, 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	60,000	76,000
Design changes	14	0
Setups	16	6
Inspections	25	33

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

- A) \$800.00 per change, \$306.00 per setup, \$10.00 per inspection
- B) \$800.00 per change, \$14.00 per setup, \$218.57 per inspection
- C) \$32.00 per change, \$10.00 per setup, \$306.00 per inspection
- D) \$22.86 per change, \$306.00 per setup, \$350 per inspection

Answer: A

Explanation: Design changes: $\$800.00 \text{ per change} = (\$160,000 / 200 \text{ design changes})$

Setups: $\$306.00 \text{ per setup} = (\$1,530,000 / 5,000 \text{ setups})$

Inspections: $\$10.00 \text{ per inspection} = (\$70,000 / 7,000 \text{ inspections})$

Diff: 3

Objective: 5

AACSB: Application of knowledge

30) Velshi Printers has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$1,800,000 for an annual production capacity of 20 million pages.

For 2018 Velshi 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	\$200,000	400 design changes
Setups	1,550,000	2,000 setups
Inspections	50,000	11,000 inspections
Total manufacturing overhead costs	<u>\$1,800,000</u>	

During 2018, 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	13	0
Setups	18	8
Inspections	29	37

Using the three cost pools to allocate overhead costs, what is the total manufacturing overhead cost estimate for Money Managers during 2018? (Do not round interim calculations. Round the final answer to the nearest cent.)

A) \$23,856.82

B) \$6,240.91

C) \$20,581.82

D) \$11,036.36

Answer: C

Explanation: $\$20,581.82 = (13 \times \$500.00 \text{ per change} = \$6,500.00) + (18 \times \$775.00 \text{ per setup} = \$13,950.00 + (29 \times \$4.55 \text{ per inspection} = \$131.82)$

Diff: 3

Objective: 5

AACSB: Application of knowledge

EA

31) Answer the following questions using the information below:
Eagle Eye Company produces two types of lenses—L7 and L9.

	Single Indirect-Cost Pool System	ABC System
Total direct costs	\$78,500	\$53,000
Total indirect costs	\$32,500	(a)
Total costs assigned to L7	\$68,000	\$58,500
Total costs assigned to L9	(b)	\$55,500

What is the total indirect costs (a) under ABC system?

- A) \$43,000
- B) \$58,000
- C) \$55,500
- D) \$46,000

Answer: B

Explanation: Total costs = \$78,500 + \$32,500 = \$111,000

Total indirect costs under ABC system = \$111,000 – \$53,000 = \$58,000

Diff: 2

Objective: 5

AACSB: Application of knowledge

32) Answer the following questions using the information below:
Eagle Eye Company produces two types of lenses—L7 and L9.

	Single Indirect-Cost Pool System	ABC System
Total direct costs	\$77,000	\$50,000
Total indirect costs	\$37,000	(a)
Total costs assigned to L7	\$68,000	\$50,500
Total costs assigned to L9	(b)	\$32,500

What is the total costs assigned to L9 (b) under single indirect-cost pool system?

- A) \$46,000
- B) \$64,000
- C) \$32,500
- D) \$45,500

Answer: A

Explanation: A) The total costs assigned to L9 (b) under single indirect-cost pool system = \$114,000 – \$68,000 = \$46,000

Diff: 2

Objective: 5

AACSB: Application of knowledge

EA

33) If the separate activities of design, process design, and prototyping are combined into one activity called "design" in an ABC system, management is forming one homogeneous cost pool.

Answer: TRUE

Diff: 1

Objective: 5

AACSB: Analytical thinking

34) Distribution can be a cost-driver for a manufacturing company under ABC system.

Answer: FALSE

Explanation: Distribution is an activity cost rather than a cost driver.

Diff: 1

Objective: 5

AACSB: Analytical thinking

35) ABC systems attempt to trace more costs as indirect costs.

Answer: FALSE

Explanation: ABC systems attempt to trace more costs as direct costs.

Diff: 1

Objective: 5

AACSB: Analytical thinking

36) The cost data produced by an ABC system for either a service or a product are only derived from indirect costs.

Answer: FALSE

Explanation: The final step in an ABC system is to add all direct and indirect costs assigned to the cost object by the ABC system.

Diff: 2

Objective: 5

AACSB: Analytical thinking

37) Implementing activity-based costing system involves use of different cost rates for different activities to compute indirect costs of a product.

Answer: TRUE

Diff: 1

Objective: 5

AACSB: Analytical thinking

38) Managers consider the accuracy gained by converting from a traditional cost accounting system to the cost of implementation and measurement required by ABC.

Answer: TRUE

Diff: 1

Objective: 5

AACSB: Analytical thinking

39) 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 materials
<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: 3

Objective: 5

AACSB: Analytical thinking

5.6 Objective 5.6

1) 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 labor	\$320,000	Direct labor-hours	800,000
Machine maintenance	\$120,000	Machine-hours	960,000
Facility rent	<u>\$200,000</u>	Square feet 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 labor-hours	200
Machine-hours	1,600
Square feet of area	50

Which method of allocation probably best estimates actual overhead costs used? Why?

- A) Single direct labor-hours cost driver because it is best to allocate total costs uniformly to individual jobs.
- B) Single direct labor-hours cost driver because it is easiest to analyze and interpret.
- C) Three activity-cost drivers because they best reflect the relative consumption of resources.
- D) Three activity-cost drivers because product costs can be significantly cross-subsidized.

Answer: C

Diff: 2

Objective: 6

AACSB: Application of knowledge

2) It only makes sense to implement an ABC system when _____.

- A) a single product is produced in bulk
- B) its benefits exceed its implementation costs
- C) it traces more costs as direct costs
- D) production process is labor-intensive

Answer: B

Diff: 1

Objective: 6

AACSB: Analytical thinking

EA

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

- A) Significant amounts of indirect costs are allocated using multiple cost pools.
- B) Products make similar demands on resources because of similarities in volume, process steps, batch size, or complexity.
- C) Many indirect costs are described as batch-level costs, product-sustaining costs, or facility-sustaining costs.
- D) Operations staff disagrees with accountants about the costs of manufacturing and marketing products and services.

Answer: D

Diff: 2

Objective: 6

AACSB: Analytical thinking

4) Which of the following statements is true of ABC systems?

- A) ABC systems provide less insight than traditional systems into the management of the indirect costs.
- B) ABC systems are used by managers for strategic decisions rather than for inventory valuation in merchandising companies.
- C) Service companies find great value from ABC because a vast majority of their cost structure is composed of direct costs.
- D) ABC systems is valuable for pricing decisions but not for understanding, managing, and reducing costs in government institutions.

Answer: B

Diff: 2

Objective: 6

AACSB: Analytical thinking

5) Which of the following statements about ABC is not true?

- A) A byproduct of ABC implementation can improve the efficiency of operations
- B) ABC should be implemented solely by the accountants as they are the guardians of the accounting information system
- C) ABC may empower employees to also implement cost saving projects
- D) Although implementation of ABC can be a refinement of a cost system, it has its limitations

Answer: B

Diff: 2

Objective: 6

AACSB: Analytical thinking

6) Which of the following statements is true of ABC systems?

- A) ABC system will always result in higher product costs.
- B) ABC system employs multiple activity-cost drivers.
- C) ABC system is least suited for service companies.
- D) ABC system is simpler compared to traditional systems.

Answer: B

Diff: 2

Objective: 6

AACSB: Analytical thinking

EA

7) Recognizing ABC information is not always perfect because _____.

- A) it mostly uses far too many indirect cost pools than what is actually required
- B) it balances the need for better information against the costs of creating a complex system
- C) it lacks the simplicity that traditional systems used to have to allocate overhead costs
- D) it never measures how the resources of an organization are used

Answer: B

Diff: 2

Objective: 6

AACSB: Analytical thinking

8) Which of the following is a sign that an ABC system will provide benefits?

- A) There are relatively few indirect cost pools associated with the product and the indirect costs are a small percentage of total product cost
- B) All the products produced are similar and sell in equal proportions (sales mix)
- C) Operations staff has no substantial disagreements with the reported costs of manufacturing and marketing products and services.
- D) All or most indirect costs are treated as output-unit level costs.

Answer: D

Diff: 2

Objective: 6

AACSB: Analytical thinking

Answer the following questions using the information below:

Cannady produces six products. Under their traditional cost system using one cost driver, SR6 costs \$168.00 per unit. An analysis of the activities and their costs revealed that three cost drivers would be used under the new ABC system. The new cost of SR6 was determined to be \$178.00 per unit.

9) The total amount of indirect costs assigned to product SR6 using the traditional method is _____ the total amount assigned using ABC.

- A) more than
- B) less than
- C) equal to
- D) more accurate than

Answer: B

Diff: 1

Objective: 6

AACSB: Application of knowledge

EA

10) Given this change in the cost _____.

- A) SR6 will now command a higher sales price
- B) SR6 has benefited from the new system
- C) SR6 is definitely more accurately costed
- D) the costing results for SR6 under the new system depend on the adequacy and quality of the estimated cost drivers and costs used by the system

Answer: D

Diff: 2

Objective: 6

AACSB: Application of knowledge

Answer the following questions using the information below:

Chess Woods Limited produces two products: wooden chess pieces and wooden inlaid chess boards. Under their traditional cost system using one cost driver (direct manufacturing labor hours), the cost of a set of wooden chess pieces is \$325.00. An analysis of the activities and their costs revealed that three cost drivers would be used under a new ABC system. These cost drivers would be equipment usage, storage area for the material, and type of woods used. The new cost of a set of chess pieces was determined to be \$298.00 per set.

11) The reduction in cost per unit of wooden chess pieces under ABC system is due to difference in allocation of _____.

- A) labor costs
- B) prime costs
- C) indirect costs
- D) material costs

Answer: C

Diff: 2

Objective: 6

AACSB: Application of knowledge

12) Given this change in the cost structure _____.

- A) The costing results for chess pieces under the new system depend on the adequacy and quality of the estimated cost drivers and costs used by the system.
- B) Chess pieces have benefited from the new system.
- C) Chess pieces are definitely more accurately costed.
- D) Chess will now have a lower sales price.

Answer: A

Diff: 2

Objective: 6

AACSB: Application of knowledge

EA

13) The goal of a properly constructed ABC system is to _____.

- A) have the most accurate cost system
- B) identify more indirect costs
- C) develop the best cost system that meets the cost/benefit test
- D) have separate allocation rates for each department

Answer: C

Diff: 2

Objective: 6

AACSB: Analytical thinking

14) As ABC systems get very detailed and more cost pools are created, more allocations are necessary to calculate activity costs for each cost pool, which increases the chances of misidentifying the costs of different activity cost pools.

Answer: TRUE

Diff: 2

Objective: 6

AACSB: Analytical thinking

15) ABC system are likely to provide the most benefits to a company with significant amounts of indirect costs that are allocated using just one or two costs pools and products that make diverse demands on resources.

Answer: TRUE

Diff: 1

Objective: 6

AACSB: Analytical thinking

16) For an ABC system to be useful, it must allocated costs from all "links "of the value chain.

Answer: FALSE

Explanation: Global surveys show that ABC implementation varies among companies but that its framework and concepts help managers improve costing systems . Some companies choose very comprehensive and detailed implementation of ABC while other companies may focus the system on certain divisions and while advances in information technology and the accompany decline in the cost of cost measurement continues, more detailed and refined systems will pass the cost/benefit test.

Diff: 2

Objective: 6

AACSB: Analytical thinking

17) Rachel's Pet Supply Corporation manufactures two models of grooming stations, a standard and a deluxe model. The following activity and cost information has been compiled:

<u>Product</u>	<u>Number of Setups</u>	<u>Number of Components</u>	<u>Number of Direct Labor Hours</u>
Standard	3	30	650
Deluxe	7	50	150
Overhead costs	\$40,000	\$120,000	

Assume a traditional costing system applies the \$160,000 of overhead costs based on direct labor hours.

- What is the total amount of overhead costs assigned to the standard model?
- What is the total amount of overhead costs assigned to the deluxe model?

Assume an activity-based costing system is used and that the number of setups and the number of components are identified as the activity-cost drivers for overhead.

- What is the total amount of overhead costs assigned to the standard model?
- What is the total amount of overhead costs assigned to the deluxe model?
- Explain the difference between the costs obtained from the traditional costing system and the ABC system. Which system provides a better estimate of costs? Why?

Answer:

a. $[\$160,000 / (650 + 150)] \times 650 = \$130,000$

b. $[\$160,000 / (650 + 150)] \times 150 = \$30,000$

c. Setups: $\$40,000 / (3 + 7) = \$4,000$
 Components: $\$120,000 / (30 + 50) = \$1,500$
 $(\$4,000 \times 3) + (\$1,500 \times 30) = \$57,000$

d. $(\$4,000 \times 7) + (\$1,500 \times 50) = \$103,000$

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

Diff: 3

Objective: 6

AACSB: Application of knowledge

18) Luzent Company produces two types of entry doors: Deluxe and Standard. The assignment basis for support costs has been direct labor dollars. For 2018, Luzent 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
Prime costs per unit	\$180.00	\$130.00
Direct materials cost per unit	\$95.00	\$75.00
Direct labor costs per unit	\$75.00	\$55.00
Manufacturing support costs per unit	\$ 80.00	\$120.00

Last year, Luzent 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 for 2018:

<u>Activity</u>	<u>Cost 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	\$44,000,000	600,000	300,000	300,000
Packing	of shipments	\$ 5,000,000	250,000	50,000	200,000

Required:

- a. Using the current system, what is 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 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. "ABC systems may result in misallocation of indirect costs." Do you agree? Give reasons for your answer.
- d. What considerations need to be examined when determining a sales mix strategy?
- e. While implementing an ABC system for the first time, achieving a significant change overnight is difficult and this may demotivate employees. How can managers overcome this problem?

EA

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 labor dollars. Because the deluxe doors are manufactured using the new robotics system, it appears that less direct labor is needed to manufacture each unit in the deluxe product line.

c. When ABC systems get very detailed and more cost pools are created, more allocations are necessary to calculate activity costs for each cost pool, which increases the chances of misidentifying the costs of different activity cost pools. For example, supervisors are more prone to incorrectly identify the time they spend on different activities if they have to allocate their time over five activities rather than only two activities.

Occasionally, managers are also forced to use allocation bases for which data are readily available rather than allocation bases they would have liked to use. When incorrect cost-allocation bases are used, activity-cost information can be misleading. For example, if the cost per load moved decreases, a company may conclude that it has become more efficient in its materials-handling operations. In fact, the lower cost per load may have resulted solely from moving many lighter loads over shorter distances.

d. First, the sales-mix strategy ought to consider the current and future market demands for the two types of entry doors. Other considerations include the capacity-related constraints of the robotics system, other equipment, and the facilities. The fact that customers may be willing to pay more for the deluxe doors should be considered when evaluating the profitability of each product line. Costs do not drive a sales-mix strategy.

e. In many situations, achieving a significant change overnight is difficult. However, showing how ABC information has helped improve a process and save costs, even if only in small ways, motivates the team to stay on course and build momentum. The credibility gained from small victories leads to additional and bigger improvements involving larger numbers of people and different parts of the organization. Eventually ABC becomes rooted in the culture of the organization. Sharing short-term successes also helps motivate employees to be innovative.

Diff: 3

Objective: 6

AACSB: Application of knowledge

EA

19) 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
<u>PER UNIT data:</u>			
Selling price	\$40	\$20	\$30
Direct materials	\$ 8	\$ 4	\$ 8
Direct labor	\$15	\$ 3	\$ 9
Overhead cost based on direct labor hours (traditional system)	\$12	\$ 3	\$ 9
<u>Hours per 1000-unit batch:</u>			
Direct labor 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 labor 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 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?

EA

Answer:

a. Traditional system:

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

b. The activity-cost-driver rate for setup costs is $\$4,900$ per setup hour = $\$465,500/95$, and for inspection costs is $\$150$ per inspection hour = $\$405,000/2,700$.

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 \times 1 setup hour per batch = 30 setup hours;

30 batches \times 30 inspection hours per batch = 900 inspection hours.

30 setup hours \times $\$4,900 = \$147,000/30,000$ units = $\$4.90/\text{unit}$

900 inspection hours \times $\$150 = \$135,000/30,000$ units = $\$4.50/\text{unit}$

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 labor 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: 3

Objective: 6

AACSB: Application of knowledge

EA

20) 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 1000-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
<u>PER UNIT data:</u>			
Selling price	\$40	\$20	\$30
Direct materials	\$ 8	\$ 4	\$ 8
Direct labor	\$15	\$ 3	\$ 9
Overhead cost based on direct labor hours (traditional system)	\$12	\$ 3	\$ 9
<u>Hours per 1000-unit batch:</u>			
Direct labor 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 labor 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 system, determine the operating profit per unit for each style of faucet.
- b. Determine the activity-cost-driver rate for setup costs and inspection costs.
- c. Using the ABC system, for each style of faucet
 1. compute the estimated overhead costs per unit.
 2. compute the estimated operating profit per unit.
- d. Explain the differences between the profits obtained from the traditional system and the ABC system. Which system provides a better estimate of profitability? Why?

EA

Answer:

a. Traditional system:

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

Operating profit per unit for Chrome faucets is $\$10 = \$20 - (\$4 + \$3 + \$3)$

Operating profit per unit for White faucets is $\$4 = \$30 - (\$8 + \$9 + \$9)$

b. The activity-cost-driver rate for setup costs is $\$4,900$ per setup hour = $\$465,500/95$, and for inspection costs is $\$150$ per inspection hour = $\$405,000/2,700$.

c. ABC system:

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

30,000 units in projected sales / 1,000 units per batch = 30 batches;

30 batches \times 1 setup hour per batch = 30 setup hours;

30 batches \times 30 inspection hours per batch = 900 inspection hours

30 setup hours \times $\$4,900 = \$147,000/30,000$ units = $\$4.90/\text{unit}$

900 inspection hours \times $\$150 = \$135,000/30,000$ units = $\$4.50/\text{unit}$

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

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

Overhead costs per unit for *Chrome faucets* are $\$5.45$ per unit.

50,000 units in projected sales / 1,000 units per batch = 50 batches;

50 batches \times .5 setup hour per batch = 25 setup hours;

50 batches \times 20 inspection hours per batch = 1,000 inspection hours

25 setup hours \times $\$4,900 = \$122,500/50,000$ units = $\$2.45/\text{unit}$

1,000 inspection hours \times $\$150 = \$150,000/50,000$ units = $\$3.00/\text{unit}$

Overhead costs for Chrome faucets ($\$2.45 + \3.00) = $\$5.45$ per unit

Operating profit per unit for Chrome faucets is $\$7.55 = \$20 - (\$4 + \$3 + \$5.45)$.

Overhead costs per unit for *White faucets* are $\$7.90$ per unit.

40,000 units in projected sales / 1,000 units per batch = 40 batches;

40 batches \times 1 setup hour per batch = 40 setup hours;

40 batches \times 20 inspection hours per batch = 800 inspection hours

40 setup hours \times $\$4,900 = \$196,000/40,000$ units = $\$4.90/\text{unit}$

800 inspection hours \times $\$150 = \$120,000/40,000$ units = $\$3.00/\text{unit}$

Overhead costs for white faucets ($\$4.90 + \3.00) = $\$7.90$ per unit.

Operating profit per unit for White faucets is $\$5.10 = \$30 - (\$8 + \$9 + \$7.90)$.

d. Traditional system:

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

Operating profit per unit for Chrome faucets is $\$10 = \$20 - (\$4 + \$3 + \$3)$.

Operating profit per unit for White faucets is $\$4 = \$30 - (\$8 + \$9 + \$9)$.

ABC system:

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

Operating profit per unit for Chrome faucets is $\$7.55 = \$20 - (\$4 + \$3 + \$5.45)$.

Operating profit per unit for White faucets is $\$5.10 = \$30 - (\$8 + \$9 + \$7.90)$.

Because the products do not all require the same proportionate shares of the overhead 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 labor 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: 3

Objective: 6

AACSB: Application of knowledge

EA

21) 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
<u>PER UNIT data:</u>			
Selling price	\$0.80	\$0.75	\$0.60
Direct materials	\$0.20	\$0.15	\$0.14
Direct labor	\$0.04	\$0.02	\$0.02
<u>Hours per 1000-unit batch:</u>			
Direct labor 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 labor		2,400 hours
Oven	\$210,000	1,900 oven hours
Packaging	<u>\$150,000</u>	950 packaging hours
	<u>\$360,000</u>	

Required:

- Determine the activity-cost-driver rate for packaging costs.
- Using the ABC system, for the sugar cookie:
 - compute the estimated overhead costs per thousand cookies.
 - compute the estimated operating profit per thousand cookies.
- Using a traditional system (with direct labor hours as the overhead allocation base), for the sugar cookie:
 - compute the estimated overhead costs per thousand cookies.
 - compute the estimated operating profit per thousand cookies.
- Explain the difference between the profits obtained from the traditional system and the ABC system. Which system provides a better estimate of profitability? Why?

EA

Answer:

a.

$$\begin{aligned}\text{activity-cost-driver rate} &= \text{packaging overhead} / \text{packaging hours} \\ &= \$150,000 / 950 \text{ hours} \\ &= \$157.89 \text{ per packaging hour}\end{aligned}$$

b.

1. To compute the estimated overhead costs for a batch of sugar cookies (using the ABC system), first calculate the activity-cost-driver rate for the oven activity.

$$\begin{aligned}\text{activity-cost-driver rate} &= \text{oven overhead} / \text{oven hours} \\ &= \$210,000 / 1,900 \text{ hours} \\ &= \$110.53 \text{ per oven hour}\end{aligned}$$

Then calculate the overhead for a 1,000 cookie batch by multiplying the number of activity hours per batch by the appropriate activity-cost-driver rate for each of the relevant overhead activities and sum to get the total overhead for the batch.

$$(1 \times \$110.53) + (.5 \times \$157.89) = \$189.48$$

2. To compute the estimated operating profit for a batch of sugar cookies (using the ABC system), subtract the costs from the revenues:

Revenue	= 1,000 × \$0.75	= \$ 750.00
Direct Material	= 1,000 × \$.015	= (\$150.00)
Direct Labor	= 1,000 × \$.02	= (\$ 20.00)
Overhead		= <u>(\$189.48)</u>
Operating Profit		= \$ 390.52

c. 1. To compute the estimated overhead costs for a batch of sugar cookies (using the traditional system), first calculate the overhead rate per direct labor hour.

$$\begin{aligned}\text{Overhead per direct labor hour} &= \text{Total Overhead} / \text{Total Direct Labor Hours} \\ &= \$ 360,000 / 2,400 \text{ hours} \\ &= \$ 150.00 \text{ per direct labor hour}\end{aligned}$$

Since it takes 1 direct labor hour per 1,000 sugar cookies, the overhead is \$150.00

EA

2. To compute the estimated operating profit for a batch of sugar cookies (using the traditional system), subtract the costs from the revenues:

Revenue	= 1,000 × \$0.75	= \$ 750.00
Direct Material	= 1,000 × \$.015	= (\$150.00)
Direct Labor	= 1,000 × \$.02	= (\$ 20.00)
Overhead		= <u>(\$150.00)</u>
Operating Profit		= \$ 430.00

- d. Traditional system: Operating profit per batch of sugar cookies is \$430.00.
ABC system: Operating profit per batch of sugar cookies is \$390.52.

Because the products do not all require the same proportionate shares of the direct labor 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: 3

Objective: 6

AACSB: Application of knowledge

5.7 Objective 5.7

1) Excellent Printers has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$840,000 for an annual production capacity of 12 million pages.

For 2018 Excellent 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	\$ 120,000	300 design changes
Setups	640,000	5,000 setups
Inspections	80,000	8,000 inspections
Total manufacturing overhead costs	<u>\$840,000</u>	

During 2018, 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	60,000	76,000
Design changes	10	0
Setups	20	10
Inspections	30	38

When costs are assigned using the single cost driver, number of pages printed, then _____.

- A) Excellent Printers will want to retain this highly profitable customer
- B) Money Managers will likely seek to do business with competitors
- C) Money Managers is unfairly over billed for its use of printing resources
- D) Money Managers is grossly under billed for the job, while other jobs will be unfairly over billed

Answer: D

Diff: 2

Objective: 7

AACSB: Application of knowledge

EA

2) Excellent Printing has contracts to complete weekly supplements required by forty-six customers. For the year 2018, manufacturing overhead cost estimates total \$840,000 for an annual production capacity of 12 million pages.

For 2018, Excellent 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	\$ 120,000	200 design changes
Setups	640,000	4,000 setups
Inspections	<u>80,000</u>	16,000 inspections
Total manufacturing overhead costs	<u>\$840,000</u>	

During 2018, 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	60,000	76,000
Design changes	10	2
Setups	20	10
Inspections	30	38

When costs are assigned using the single cost driver, number of pages printed, then Hospital 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 likely seek to do business with competitors
- D) will contribute too little to profits, and Wallace Printing will not want to accept additional work from the company

Answer: C

Diff: 2

Objective: 7

AACSB: Application of knowledge

3) Activity-based costing information can be used for _____.

- A) product-mix decisions
- B) pricing decisions
- C) advertisement decisions
- D) inventory valuation

Answer: B

Diff: 2

Objective: 7

AACSB: Analytical thinking

EA

4) Which of the following statements is true of costing systems?

- A) Single-indirect cost pool systems always result in overcosting of products.
- B) Single-indirect cost pool systems classify some direct costs as indirect costs.
- C) ABC systems always result in overcosting of products.
- D) ABC systems classify some indirect costs as direct costs helping to improve processes

Answer: D

Diff: 2

Objective: 7

AACSB: Analytical thinking

5) Lavender Company is a logistics company and has recently implemented ABC system. Using activity-based information, it decides to reduce the bulkiness of the packages delivered, thereby reducing costs. This suggests that ABC system helps managers in _____ decisions.

- A) pricing
- B) product-mix
- C) process-improvement
- D) product-design

Answer: C

Diff: 2

Objective: 7

AACSB: Application of knowledge

6) ABC and traditional systems are quite similar in _____.

- A) the treatment of direct costs
- B) the allocation of overheads
- C) evaluating performance
- D) the identification of cost pools

Answer: A

Diff: 2

Objective: 7

AACSB: Analytical thinking

7) It is important that the product costs reflect as much of the diversity and complexity of the manufacturing process so that _____.

- A) total costs reflect market price
- B) value-added costs can be eliminated
- C) there is high likelihood of cross-subsidizing of product costs
- D) product-pricing errors are minimal

Answer: D

Diff: 2

Objective: 7

AACSB: Analytical thinking

EA

8) A well-designed, activity-based cost system helps managers make better decisions because information derived from an ABC analysis _____.

- A) can be used to eliminate nonvalue-added activities
- B) is easy to analyze and interpret
- C) takes the choices and judgment challenges away from the managers
- D) emphasizes how managers can achieve higher sales

Answer: A

Diff: 2

Objective: 7

AACSB: Analytical thinking

9) One reason for assigning selling and distribution costs to products for analytical purposes is _____.

- A) to justify a varied product-mix
- B) that these costs should be included in the cost of goods sold in the income statement
- C) to ensure that all costs are considered
- D) that all direct costs must be assigned

Answer: C

Diff: 2

Objective: 7

AACSB: Analytical thinking

10) ABC systems help managers to _____.

- A) value ending inventory more accurately
- B) identify new designs to reduce costs
- C) evaluate direct material costs more efficiently
- D) improve the inventory turnaround time

Answer: B

Diff: 2

Objective: 7

AACSB: Analytical thinking

11) ABC reveals opportunities to reduce costs on nonvalue added activities.

Answer: TRUE

Diff: 1

Objective: 7

AACSB: Analytical thinking

12) Activity-based management refers to the use of information derived from ABC analysis to analyze and improve operations.

Answer: TRUE

Diff: 1

Objective: 7

AACSB: Analytical thinking

EA

13) Managers implementing ABC systems for the first time always start by analyzing budgeted costs to identify activity-cost pools.

Answer: FALSE

Explanation: Most managers implementing ABC systems for the first time start by analyzing actual costs to identify activity-cost pools.

Diff: 2

Objective: 7

AACSB: Analytical thinking

14) ABC costing systems cannot be used in marketing decisions.

Answer: FALSE

Explanation: Management can identify which products are more profitable using ABC systems and market those products.

Diff: 2

Objective: 7

AACSB: Analytical thinking

5.8 Objective 5.8

1) Which of the following reasons explain why ABC concepts may be of great value to service companies?

A) It allows for more accurate cost accounting for inventory

B) It promotes more accurate cost of goods sold reporting

C) It helps make financial reporting more accurate

D) A significant portion of the cost structure of a service firm is composed of indirect costs

Answer: D

Diff: 1

Objective: 8

AACSB: Analytical thinking

2) Using department indirect-cost rates to allocate costs will result in results similar to ABC if:

A) a single activity accounts for a sizable portion of the costs of the department

B) several activities cause a sizable portion of the costs of the department

C) a single activity accounts for a small portion of the costs of the department

D) several activities cause a small portion of the costs of the department

Answer: A

Diff: 1

Objective: 8

AACSB: Analytical thinking

3) The following conditions with departmental indirect-cost rates will result in allocation of costs similar to ABC costing except:

A) a single activity accounts for a sizable portion of the costs of the department

B) Significant costs are incurred on different activities within a department

C) several activities cause a sizable portion of the costs of the department

D) significant costs are incurred for different activities with different cost-allocation bases within a department

Answer: C

Diff: 2

Objective: 8

AACSB: Analytical thinking

EA

4) High Traffic Products Corporation has two departments, Small and Large. Central costs could be allocated to the two departments in various ways.

	<u>Small Department</u>	<u>Large Department</u>
Square footage	6,850	17,750
Number of employees	1,120	500
Sales	\$320,000	\$1,740,000

If advertising expense of \$432,600 is allocated on the basis of sales, the cost per cost driver rate would be _____.

- A) \$0.2 per dollar of sales
- B) \$0.21 per dollar of sales
- C) \$0.23 per dollar of sales
- D) \$0.22 per dollar of sales

Answer: B

Explanation: Cost per cost driver rate = $\$432,600 \div (\$320,000 + \$1,740,000) = \0.21

Diff: 2

Objective: 8

AACSB: Application of knowledge

5) High Traffic Products Corporation has two departments, Small and Large. Central costs could be allocated to the two departments in various ways.

	<u>Small Department</u>	<u>Large Department</u>
Square footage	6,700	17,750
Number of employees	1,000	410
Sales	\$370,000	\$1,800,000

If total advertising expense of \$629,300 is allocated on the basis of sales, the amount allocated to the Large Department would be _____.

- A) \$107,300
- B) \$558,000
- C) \$522,000
- D) \$314,650

Answer: C

Explanation: Amount allocated to the Large Department = $\$629,300 \times (\$1,800,000 / \$2,170,000) = \$522,000$

Diff: 3

Objective: 8

AACSB: Application of knowledge

EA

6) High Traffic Products Corporation has two departments, Small and Large. Central costs could be allocated to the two departments in various ways.

	<u>Small Department</u>	<u>Large Department</u>
Square footage	6,550	17,600
Number of employees	1,040	400
Sales	\$350,000	\$1,740,000

If total payroll processing costs of \$34,560 are allocated on the basis of number of employees, the amount allocated to the Small Department would be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$24,960
- B) \$28,560
- C) \$17,280
- D) \$9,600

Answer: A

Explanation: Amount allocated to the Small Department = $\$34,560 \times (1,040 \div (1,040 + 400)) = \$24,960$

Diff: 3

Objective: 8

AACSB: Application of knowledge

7) High Traffic Products Corporation has two departments, Small and Large. Central costs could be allocated to the two departments in various ways.

	<u>Small Department</u>	<u>Large Department</u>
Square footage	6,600	17,350
Number of employees	1,030	510
Sales	\$350,000	\$1,750,000

If total payroll processing costs of \$64,680 are allocated on the basis of number of employees, the amount allocated to the Large Department would be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$32,026
- B) \$21,420
- C) \$32,340
- D) \$43,260

Answer: B

Explanation: Amount allocated to the Large Department = $\$64,680 \times (510 \div (1,030 + 510)) = \$21,420$

Diff: 3

Objective: 8

AACSB: Application of knowledge

EA

8) High Traffic Products Corporation has two departments, Small and Large. Central costs could be allocated to the two departments in various ways.

	<u>Small Department</u>	<u>Large Department</u>
Square footage	6,550	17,300
Number of employees	1,080	470
Sales	\$330,000	\$1,700,000

If total rent expense of \$71,550 is allocated on the basis of square footage, the amount allocated to the Small Department would be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$51,900
- B) \$19,650
- C) \$35,775
- D) \$27,090

Answer: B

Explanation: Amount allocated to the Small Department
= $\$71,550 \times (6,550 \div (6,550 + 17,300)) = \$19,650$

Diff: 3

Objective: 8

AACSB: Application of knowledge

9) High Traffic Products Corporation has two departments, Small and Large. Central costs could be allocated to the two departments in various ways.

	<u>Small Department</u>	<u>Large Department</u>
Square footage	6,850	17,200
Number of employees	1,180	460
Sales	\$300,000	\$1,790,000

If total rent expense of \$144,300 is allocated on the basis of square footage, the amount allocated to the Large Department would be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$103,000
- B) \$41,100
- C) \$72,150
- D) \$103,200

Answer: D

Explanation: Amount allocated to the Large Department
= $\$144,300 \times (17,200 \div (6,850 + 17,200)) = \$103,200$

Diff: 3

Objective: 8

AACSB: Application of knowledge

EA

10) Stark Corporation has two departments, Car Rental and Truck Rental. Central costs may be allocated to the two departments in various ways.

	<u>Car Rental</u>	<u>Truck Rental</u>
Number of Vehicles in fleet	900	460
Number of employees	145	55
Sales	\$700,000	\$390,000

If administrative expense of \$62,800.00 is allocated on the basis of number of employees, the cost per cost driver rate would be _____.

- A) \$433.10
- B) \$314.00
- C) \$1,141.82
- D) \$46.18

Answer: B

Explanation: Cost per cost driver rate = $\$62,800.00 \div (145 + 55) = \314.00

Diff: 2

Objective: 8

AACSB: Application of knowledge

11) Stark Corporation has two departments, Car Rental and Truck Rental. Central costs may be allocated to the two departments in various ways.

	<u>Car Rental</u>	<u>Truck Rental</u>
Number of Vehicles in fleet	880	450
Number of employees	125	60
Sales	\$700,000	\$395,000

If administrative expense of \$77,500 is allocated on the basis of number of employees, the amount allocated to the Car Rental Department would be _____.

- A) \$38,750.00
- B) \$52,364.86
- C) \$25,135.14
- D) \$51,278.20

Answer: B

Explanation: The amount allocated to the Car Rental Department = $\$77,500 \times [125 \div (125 + 60)] = \$52,364.86$

Diff: 3

Objective: 8

AACSB: Application of knowledge

EA

12) Stark Corporation has two departments, Car Rental and Truck Rental. Central costs may be allocated to the two departments in various ways.

	<u>Car Rental</u>	<u>Truck Rental</u>
Number of Vehicles in fleet	830	460
Number of employees	120	70
Sales	\$720,000	\$370,000

If advertising expense of \$140,000 is allocated on the basis of sales, the amount allocated to the Car Rental Department would be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$92,477.06
- B) \$47,522.94
- C) \$90,077.52
- D) \$88,421.05

Answer: A

Explanation: The amount allocated to the Car Rental Department = $\$140,000 \times [\$720,000 \div (\$720,000 + \$370,000)] = \$92,477.06$

Diff: 3

Objective: 8

AACSB: Application of knowledge

13) Stark Corporation has two departments, Car Rental and Truck Rental. Central costs may be allocated to the two departments in various ways.

	<u>Car Rental</u>	<u>Truck Rental</u>
Number of Vehicles in fleet	880	410
Number of employees	105	50
Sales	\$760,000	\$380,000

If advertising expense of \$456,000 is allocated on the basis of sales, the cost per cost driver rate would be _____.

- A) \$0.60
- B) \$1.20
- C) \$0.40
- D) \$0.43

Answer: C

Explanation: The cost per cost driver rate = $\$456,000 \div (\$760,000 + \$380,000) = \0.40

Diff: 2

Objective: 8

AACSB: Application of knowledge

EA

14) Stark Corporation has two departments, Car Rental and Truck Rental. Central costs may be allocated to the two departments in various ways.

	<u>Car Rental</u>	<u>Truck Rental</u>
Number of Vehicles in fleet	900	480
Number of employees	110	75
Sales	\$720,000	\$380,000

If the facility lease expense of \$380,000 is allocated on the basis of vehicles in the fleet, the amount allocated to the Truck Rental Department would be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$131,273
- B) \$247,826
- C) \$132,174
- D) \$190,000

Answer: C

Explanation: The amount allocated to the Truck Rental Department
= $\$380,000 \times [480 \div (900 + 480)] = \$132,174$

Diff: 2

Objective: 8

AACSB: Application of knowledge

15) Stark Corporation has two departments, Car Rental and Truck Rental. Central costs may be allocated to the two departments in various ways.

	<u>Car Rental</u>	<u>Truck Rental</u>
Number of Vehicles in fleet	870	460
Number of employees	125	55
Sales	\$720,000	\$380,000

If the facility lease expense of \$381,000 is allocated on the basis of vehicles in the fleet, the amount allocated to the Car Rental Department would be _____. (Do not round interim calculations. Round the final answer to the nearest whole dollar.)

- A) \$381,000
- B) \$249,226
- C) \$190,500
- D) \$249,382

Answer: B

Explanation: The amount allocated to the Car Rental Department
= $\$381,000 \times [870 \div (870 + 460)] = \$249,226$

Diff: 2

Objective: 8

AACSB: Application of knowledge

EA

16) Using activity-cost rates rather than department indirect-cost rates to allocate costs results in different product costs when _____.

- A) a single activity accounts for a sizable portion of department costs
- B) there are several homogeneous cost pools
- C) different activities have the same cost-allocation base
- D) different products use different resources in the same proportion

Answer: B

Diff: 2

Objective: 8

AACSB: Analytical thinking

17) Service companies, in particular, find great value from ABC because a vast majority of their cost structure is composed of _____ costs.

- A) prime
- B) factory
- C) indirect
- D) committed

Answer: C

Diff: 1

Objective: 8

AACSB: Analytical thinking

18) ABC systems and department costing systems use totally different approaches towards indirect cost allocation and can never be used together.

Answer: FALSE

Explanation: ABC systems, with its focus on specific activities, are a further refinement of department costing systems. Companies often use ABC systems and department costing systems together.

Diff: 2

Objective: 8

AACSB: Analytical thinking

19) Companies often use costing systems that have features of ABC systems but that do not emphasize individual activities.

Answer: TRUE

Diff: 1

Objective: 8

AACSB: Analytical thinking

20) Department costing systems always properly recognize how resources are used by products as they require the creation of multiple indirect cost pools.

Answer: FALSE

Explanation: Department costing systems need not always properly recognize how resources are used by products as they require the creation of multiple indirect cost pools. This is because the drivers of costs within departments may not have been identified properly.

Diff: 2

Objective: 8

AACSB: Analytical thinking

21) ABC systems provide greater insight than traditional systems into the management of indirect costs.

Answer: TRUE

Diff: 1

Objective: 8

AACSB: Analytical thinking

22) At New England Goods Inc., product lines are charged for call center support costs based on sales revenue. Last year's summary of call center 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

New England Goods Inc. currently allocates call center support costs using a rate of 0.6% of sales revenue.

Required:

- a. Compute the amount of call center support costs allocated to each product line under the current system.
- b. Assume New England 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?
- c. Assume New England 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 center support costs assigned to each product line under this revised ABC system.
- d. New England Goods 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?
- e. Discuss the barriers for implementing ABC for this call center.

Answer: a. Call center support costs allocated to surveillance products is \$48,000 = $0.006 \times \$8,000,000$ and to specialty products is \$30,000 = $0.006 \times \$5,000,000$.

b. 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 center's resources.

c. \$85,000 of support costs / 6,500 total calls (Surveillance 1,000 + 300 + Specialty 4,000 + 1,200) = \$13.08 per call. Call center support costs allocated to surveillance products is \$17,004 = 1,300 calls \times \$13.08 per call, and to specialty products is \$68,016 = 5,200 calls \times \$13.08 per call.

d. To increase profits, New England Goods managers would want less cost allocated to their departments. Therefore, if support cost allocation were based on length of call, New England Goods management may emphasize keeping calls for their department short and to the point, rather than emphasizing understanding and helping the caller.

e. Poor model design or poor analytical interpretation and accountability consequences may function as barriers to using ABC assignments for the call center 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

Objective: 8

AACSB: Application of knowledge

23) The Chapeau Company is noted for an exceptionally impressive line of one-size fits-all men's hats. Chapeau has established the following selling and distribution support activity-cost pools and their corresponding activity drivers for the year 2018:

<u>Activity</u>	<u>Cost</u>	<u>Cost driver</u>
Marketing	\$160,000	\$1,450,000 of sales
Customer service	70,000	10,000 customer
Order execution	5,000	200 orders
Warehousing	15,000	125 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 = $\$160,000 \div \$1,450,000 = 11\%$ of sales
 Activity-cost driver rate for Customer Service = $\$70,000 \div 10,000 = \7 per customer
 Activity-cost driver rate for Order Execution = $\$5,000 \div 200 = \25 per order
 Activity-cost driver rate for Warehousing = $\$15,000 \div 125 = \120 per order
- For marketing, using 11% 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 11% 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

Objective: 8

AACSB: Application of knowledge

24) 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, or facility-sustaining costs. The cost pools correspond to activities. Costs are allocated to products, services, or customers using activity drivers or 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

Objective: 8

AACSB: Analytical thinking

25) 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

Objective: 8

AACSB: Analytical thinking

26) Even though there are no inventories for service companies, ABC systems are of great use for service companies. Explain why and how.

Answer: Service companies find great value from ABC because a vast majority of their cost structure is composed of indirect costs. A major benefit of ABC is its ability to assign indirect costs to cost objects by identifying activities and cost drivers. Thus, ABC systems provide greater insight than traditional systems into the management of these indirect costs. The widespread use of ABC systems in service companies reinforces the idea that ABC systems are used by managers for strategic decisions rather than for inventory valuation. When it comes to public service institutions, activity-based costing is valuable for understanding, managing, and reducing costs but not for pricing decisions.

Diff: 2

Objective: 8

AACSB: Analytical thinking

27) How does ABC costing system help service companies?

Answer: The widespread use of ABC systems in service and merchandising companies reinforces the idea that ABC systems are used by managers for strategic decisions rather than for inventory valuation. Service companies, in particular, find great value from ABC because a vast majority of their cost structure is composed of indirect costs. ABC helps to assign indirect costs to cost objects by identifying activities and cost drivers. As a result, ABC systems provide greater insight than traditional systems into the management of these indirect costs.

Diff: 2

Objective: 8

AACSB: Analytical thinking