Ch. 7 Practice Quiz

Use the following to answer questions 1-2:

Abrams Company uses activity-based costing. The company has two products: A and B. The annual production and sales of Product A is 300 units and of Product B is 1,000 units. There are three activity cost pools, with estimated costs and expected activity as follows:

		Expected Activity		
Activity Cost Pool	**Estimated Cost**	**Product A**	**Product B**	**Total**
Activity 1	$7,356	200	200	400
Activity 2	$30,555	1,400	700	2,100
Activity 3	$16,169	90	300	390

Handwritten notes:

Rate   Activity A   Cost A

$18.39 × 200 = $3,678
$14.55 × 1400 = $20,370
$41.46 × 90 = $3,731.4

$27,779.4

$92.60 = 27,779.4 / 300. units A
per unit of A

1. The activity rate for Activity 3 is closest to:
   A) $53.906
   B) $138.67
   C) $41.46
   D) $18.71

   $16,169 / 390 = $41.46

   Answer: C   Level: Medium   LO: 3

2. The cost per unit of Product A is closest to:
   A) $41.60
   B) $92.60
   C) $12.44
   D) $68.00
   Answer: B   Level: Hard   LO: 3,4

Carsten Wedding Fantasy Company makes very elaborate wedding cakes to order. The owner of the company has provided the following data concerning the activity rates in its activity-based costing system:
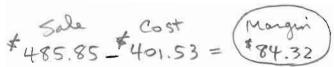
Activity Cost Pools	Activity Rate	
Size-related	$0.75	per guest
Complexity-related	$34.41	per tier
Order-related	$84.03	per order

The measure of activity for the size-related activity cost pool is the number of planned guests at the wedding reception. The greater the number of guests, the larger the cake. The measure of complexity is the number of tiers in the cake. The activity measure for the order-related cost pool is the number of orders. (Each wedding involves one order.) The activity rates include the costs of raw ingredients such as flour, sugar, eggs, and shortening. The activity rates do not include the costs of purchased decorations such as miniature statues and wedding bells, which are accounted for separately. Data concerning two recent orders appear below:

	Ruise Wedding	Karmo Wedding	Total
Number of reception guests	79 +	164 =	243
Number of tiers on the cake	2	4	
Cost of purchased decorations for cake	$17.30	$56.86	

3. Assuming that all of the costs listed above are avoidable costs in the event that an order is turned down, what amount would the company have to charge for the Ruise wedding cake to just break even?
    A) $229.40
    B) $84.03
    C) $277.57
    D) $17.30
    Answer: A   Level: Medium   LO: 4,5

Handwritten work:

	Ruise	Rate	
guests	79	× $0.75	= $59.25
tiers	2	× $34.41	= $68.82
orders	1	× $84.03	= $84.03
decorations	1	× $17.30	= $17.30
		cost	$229.40

Sale   Cost   Margin

$485.85 - $401.53 = $84.32

4. Assuming that the company charges $485.85 for the Karmo wedding cake, what would be the overall margin on the order?

Karmo   Rate

guests   164 × $0.75 = $123.00
tiers   4 × $34.41 = 137.64
orders   1 × $84.03 = 84.03
decorations   1 × $56.86 = 56.86
                     401.53

- A) $84.32
- B) $141.18
- C) $401.53
- D) $168.35

Answer: A Level: Medium LO: 4,5

5. Suppose that the company decides that the present activity-based costing system is too complex and that all costs (except for the costs of purchased decorations) should be allocated on the basis of the number of guests. In that event, what would you expect to happen to the costs of cakes?
- A) The cost of cakes for receptions with more than the average number of guests would go down.
- B) The cost of cakes for receptions with fewer than the average number of guests would go down.
- C) The costs of all cakes would go down.
- D) The costs of all cakes would go up.

Answer: B Level: Medium LO: 6

6. Cosgrove Company manufactures two products, Product K-7 and Product L-15. Product L-15 is of fairly recent origin, having been developed as an attempt to enter a market closely related to that of Product K-7. Product L-15 is the more complex of the two products, requiring 2.0 hours of direct labor time per unit to manufacture compared to 1.0 hour of direct labor time for Product K-7. Product L-15 is produced on an automated production line.

Overhead currently is applied to the products on the basis of direct labor-hours. The company estimated it would incur $510,000 in manufacturing overhead costs and produce 10,000 units of Product L-15 and 40,000 units of Product K- 7 during the current year.
Unit costs for materials and labor are:

	Product K-7	Product L-15
Direct material	$11	$24
Direct labor..............	$6	$12

Required:

a. Compute the predetermined overhead rate under the current method, and determine the unit product cost of each product for the current year.

b. The company is considering the use of activity-based costing as an alternative to its traditional costing method for manufacturing overhead. Data relating to the company's activity cost pools for the current year are given below:

Activity Cost Pool	Total Cost	Total Activity		
		Product K-7	Product L-15	Total
Machine setups required	$204,000	800	1,600	2,400
Purchase orders issued.................	43,500	500	100	600
Machine-hours required..............	105,000	7,000	10,500	17,500
Maintenance requests issued.......	157,500	650	850	1,500
	$510,000			

Using the data above, determine the unit product cost of each product for the current year.

c. What items of overhead cost make Product L-15 so costly to produce according to the activity-based costing system? What influence might the activity-based costing data have on management's opinions regarding the profitability of Product L-15?

a. The company expects to work 60,000 direct labor-hours during the current year, computed as follows:

Product K-7: 40,000 units × 1 hour........... 40,000 hours
Product L-15: 10,000 units × 2 hours ...... 20,000 hours
Total direct labor-hours........................... 60,000 hours

Using these hours as a base, the predetermined overhead using direct labor-hours would be:
Predetermined overhead rate = Estimated overhead cost ÷ Estimated direct labor-hours
= $510,000 ÷ 60,000 hours = $8.50 per hour

Using this overhead rate, the unit product cost of each product would be:

	Product K-7	Product L-15
Direct materials..........................	$11.00	$24.00
Direct labor...............................	6.00	12.00
Manufacturing overhead:		
Product K-7, 1.0 hour	8.50	
Product L-15, 2.0 hours		17.00
Total unit product cost.............	$25.50	$53.00

b. The activity rates for each activity cost pool are as follows:

	Total Cost	Total Activity		Activity Rate	
Machine setups.....................	$204,000	2,400	setups	$85.00	per setup
Purchase orders	$43,500	600	orders	$72.50	per order
Machine-hours	$105,000	17,500	hours	$6.00	per hour
Maintenance requests	$157,500	1,500	requests	$105.00	per request

The overhead cost charged to Product K-7 is:

	Activity Rate		Activity		ABC Cost
Machine setups...................	$85.00	per setup	800	setups	$ 68,000
Purchase orders..................	$72.50	per order	500	orders	36,250
Machine-hours	$6.00	per hour	7,000	hours	42,000
Maintenance requests........	$105.00	per request	650	requests	68,250
Total overhead cost............					$214,500

The overhead cost charged to Product L-15 is:

	Activity Rate		Activity		ABC Cost
Machine setups....................	$85.00	per setup	1,600	setups	$136,000
Purchase orders..................	$72.50	per order	100	orders	7,250
Machine-hours	$6.00	per hour	10,500	hours	63,000
Maintenance requests........	$105.00	per request	850	requests	89,250
Total overhead cost............					$295,500

Overhead cost per unit:

Product K-7: $214,500 ÷ 40,000 units = $5.3625 per unit

Product L-15: $295,500 ÷ 10,000 units = $29.5500 per unit

Using activity based costing, the unit product cost of each product would be:

	Product K-7	Product L-15
Direct materials.........................	$11.0000	$24.00
Direct labor...............................	6.0000	12.00
Manufacturing overhead........	5.3625	29.55
Total unit product cost............	$22.3625	$65.55

c. Product L-15 accounts for 20% of the company's total product, but requires two-thirds of the total machine set-ups and sixty percent of the machine-hours worked in addition to more than half of the maintenance requests. These factors are concealed when direct labor-hours are used to assign overhead cost to product. Activity-based costing, however, assigns a larger amount of overhead cost to Product L-15. Indeed, Product L-15 may be less profitable than the company has been led to believe under the traditional direct labor approach.

AACSB: Analytic
AICPA BB: Critical Thinking
AICPA FN: Measurement
Bloom's: Application
Learning Objective: 07-01 Understand activity-based costing and how it differs from a traditional costing system.
Learning Objective: 07-03 Compute activity rates for cost pools.
Learning Objective: 07-04 Assign costs to a cost object using a second-stage allocation.
Level: Hard