

12.1 Discuss the major influences on pricing decisions.

1) The three major influences on pricing decisions are: costs, competitors, and customers.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-1

2) Managers have little discretion in setting prices in market situations which are not competitive.

Answer: FALSE

Explanation: A company without a competitor is free to set prices.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-1

3) In less competitive markets where products can be differentiated by their features the pricing decision depends on the pricing strategies of competitors.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 12-1

4) Relevant costs for pricing decisions include manufacturing costs, but not costs from other value-chain functions.

Answer: FALSE

Explanation: Relevant costs for pricing decisions include costs from all value-chain functions, from R&D to customer service.

Diff: 2 Type: TF

Skill: Understand

Objective: LO 12-1

5) Relevant pricing information for the short-run and long-run should be the same.

Answer: FALSE

Explanation: Short-run and long-run pricing decisions can have different objectives resulting in different relevant information being required.

Diff: 2 Type: TF

Skill: Understand

Objective: LO 12-1

- 6) The three major influences on pricing decisions are
- A) competition, costs, and customers.
 - B) competition, demand, and production efficiency.
 - C) continuous improvement, customer satisfaction, and a dual internal/external focus.
 - D) variable costs, fixed costs, and mixed costs.
 - E) economic, qualitative, and costs.

Answer: A

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-1

- 7) Pricing for one-time-only special orders is, typically
- A) a pricing decision using the time horizon.
 - B) a short-run decision.
 - C) a long-run decision.
 - D) higher in variable costs than usual.
 - E) based on fixed costs alone.

Answer: B

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-1

- 8) Target pricing is based on
- A) engineered cost.
 - B) variable manufacturing and nonmanufacturing costs.
 - C) full product cost.
 - D) what customers are willing to pay.
 - E) full manufacturing cost.

Answer: D

Diff: 2 Type: MC

Skill: Remember

Objective: LO 12-1

9) The controller and sales manager are at odds over the pricing of a new product. What major influences should be considered in pricing the new product? Discuss each briefly.

Answer: The major influences are customers, competitors, and costs.

Customers: Managers must always examine pricing problems through the eyes of their customers. A price increase may cause customers to reject a company's product and choose a competing or substitute product.

Competitors: Competitors' reactions influence pricing decisions. At one extreme, a rival's prices and products may force a business to lower its prices to be competitive. At the other extreme, a business without a rival in a given situation can set higher prices. A business with knowledge of its rivals' technology, plant capacity, and operating policies is able to estimate its rivals' costs, which is valuable information in setting competitive prices.

Costs: Companies price products to exceed the costs of making them. The study of cost-behaviour patterns gives insight into the income that results from different combinations of price and output quantities sold for a particular product.

Diff: 2 Type: ES

Skill: Remember

Objective: LO 12-1

12.2 Understand how companies make short-run pricing decisions.

1) Special orders increase income if the revenue from the order exceeds the incremental variable and fixed costs incurred to fill the order.

Answer: TRUE

Diff: 1 Type: TF

Skill: Understand

Objective: LO 12-2

2) In deciding whether to accept a special sales order, any fixed costs that would remain unchanged are considered irrelevant data.

Answer: TRUE

Diff: 1 Type: TF

Skill: Understand

Objective: LO 12-2

3) Short-run pricing decisions include adjusting product mix and output volume in a competitive market.

Answer: TRUE

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-2

4) All costs are relevant in short-run pricing decisions.

Answer: FALSE

Explanation: Many costs are irrelevant in short-run pricing decisions.

Diff: 2 Type: TF

Objective: LO 12-2

5) A price-bidding decision for a one-time-only special order includes an analysis of

- A) only marketing costs.
- B) all cost drivers.
- C) all costs of each function in the value chain.
- D) only fixed manufacturing costs.
- E) indirect costs of each category in the value chain.

Answer: C

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-2

6) Decisions on the price to bid on a one-time-only special order should include

- A) only cost data.
- B) only the potential bids of competitors.
- C) existing fixed manufacturing overhead.
- D) cost data, and the use of variable costing income statements.
- E) cost data and potential bids of competitors.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-2

7) Your company produces 700,000 widgets per year but has the capacity to produce 950,000 units.

Company records show the following; full product costs = \$85 per unit, which includes fixed manufacturing overhead of \$11, and variable overhead of \$4 per unit, and direct variable costs of \$22, all based on the current 700,000 production run. If the company wanted to bid on a special one-time order, based on the above information only, what would be its minimum bid?

- A) \$59
- B) \$81
- C) \$63
- D) \$74
- E) \$85

Answer: D

Explanation: D) $\$85 - \$11 = \$74$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

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

Action Mopeds manufactures mopeds. The following information pertains to the company's normal operations per month:

Output units	15,000 mopeds
Machine-hours	4,000 hours
Direct manufacturing labour hours	5,000 hours
Direct manufacturing labour per hour	\$24
Direct materials per unit	\$200
Variable manufacturing overhead costs	\$322,500
Fixed costs:	
Fixed manufacturing overhead costs	\$1,200,000
Marketing and distribution costs	\$1,125,000
Research and development costs	\$900,000

8) What is the unit cost for establishing a minimum bid on a one-time-only special order of 1,000 mopeds from an overseas city if all cost relationships remain the same except for a one-time setup charge of \$40,000?

- A) \$269.50
- B) \$309.50
- C) \$285.50
- D) \$360.50
- E) \$344.50

Answer: A

Explanation: A) Direct materials \$200.00

Direct manufacturing labour 8.00

Variable manufacturing OVH 21.50

Setup 40.00

Total \$269.50

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

9) What is the unit cost when establishing a long-run price for mopeds?

- A) \$309.50
- B) \$325.48
- C) \$444.50
- D) \$484.50
- E) \$470.00

Answer: C

Explanation: C) Direct materials	\$200.00
Direct manufacturing labour ($\$24 \times 5,000$)/15,000	8.00
Variable manufacturing ($\$322,500/15,000$)	21.50
Fixed manufacturing ($\$1,200,000/15,000$)	80.00
Marketing and distribution ($\$1,125,000/15,000$)	75.00
Research and development ($\$900,000/15,000$)	<u>60.00</u>
Total	<u>\$444.50</u>

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

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

Rogers' Heaters is approached by Ms. Yukki, a new customer, to fulfill a large one-time-only special order for a product similar to one offered to regular customers. Rogers' Heaters has excess capacity. The following per unit data apply for sales to regular customers:

Direct materials	\$200
Direct manufacturing labour	60
Variable manufacturing support	30
Fixed manufacturing support	<u>100</u>
Total manufacturing costs	390
Markup (30%)	<u>117</u>
Estimated selling price	<u>\$507</u>

10) For Rogers' Heaters, what is the minimum acceptable price of this one-time-only special order?

- A) \$290
- B) \$390
- C) \$260
- D) \$507
- E) \$377

Answer: A

Explanation: A) $\$200 + \$60 + \$30 = \290

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

11) If Ms. Yukki wanted a long-term commitment for supplying this product, what price would most likely be quoted to her?

- A) \$290
- B) \$390
- C) \$260
- D) \$377
- E) \$507

Answer: E

Explanation: E) The estimated selling price of \$507.

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

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

Gerry's Generator Supply is approached by Mr. Gladstone, a new customer, to fulfill a large one-time-only special order for a product similar to one offered to regular customers. Gerry's Generator Supply has excess capacity. The following per unit data apply for sales to regular customers:

Direct materials	\$850
Direct manufacturing labour	50
Variable manufacturing support	100
Fixed manufacturing support	<u>75</u>
Total manufacturing costs	1,075
Markup (20%)	<u>215</u>
Estimated selling price	<u><u>\$1,290</u></u>

12) For Gerry's Generators, what is the minimum acceptable price of this one-time-only special order?

- A) \$900
- B) \$1,000
- C) \$1,075
- D) \$1,290
- E) \$1,200

Answer: B

Explanation: A)

B) $\$850 + \$50 + \$100 = \$1,000$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

13) If Mr. Gladstone wanted a long-term commitment for supplying this product, what price would most likely be quoted to him?

- A) \$1,000
- B) \$1,200
- C) \$1,290
- D) \$1,400
- E) \$1,075

Answer: C

Explanation: C) The estimated selling price of \$1,290.

D)

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

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

Welch Manufacturing is approached by a European customer to fulfill a one-time-only special order for a product similar to one offered to domestic customers. Welch Manufacturing has a policy of adding a 10% markup to full costs and currently has excess capacity. The following per unit data apply for sales to regular customers:

<i>Variable costs:</i>	
<i>Direct materials</i>	\$30
<i>Direct labour</i>	10
<i>Manufacturing overhead</i>	15
<i>Sales commission</i>	5
<i>Fixed costs:</i>	
Manufacturing overhead	100
Marketing costs	20
Total costs	180
Markup (10%)	18
Estimated selling price	<u>\$198</u>

14) For Welch Manufacturing, what is the minimum acceptable price of this one-time-only special order?

- A) \$40
- B) \$55
- C) \$60
- D) \$66
- E) \$86

Answer: C

Explanation: C) $\$30 + \$10 + \$15 + \$5 = \$60$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

15) What is the full cost of the product per unit?

- A) \$60
- B) \$180
- C) \$198
- D) \$66
- E) \$155

Answer: B

Explanation: B) $\$30 + \$10 + \$15 + \$5 + \$100 + \$20 = \$180$

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-2

16) If the European customer wanted a long-term commitment for supplying this product, what price would most likely be quoted?

- A) \$66
- B) \$180
- C) \$155
- D) \$217
- E) \$198

Answer: E

Explanation: E) The estimated selling price of \$198.

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

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

Ferryman Products manufactures coffee tables. Ferryman Products has a policy of adding a 20% markup to full costs and currently has excess capacity. The following information pertains to the company's normal operations per month:

Output units	30,000	tables
Machine-hours	8,000	hours
Direct manufacturing labour-hours	10,000	hours
Direct materials per unit	\$100	
Direct manufacturing labour per hour	\$12	
Variable manufacturing overhead costs	\$322,500	
Fixed manufacturing overhead costs	\$1,200,000	
Product and process design costs	\$900,000	
Marketing and distribution costs	\$1,125,000	

17) Ferryman Products is approached by an overseas customer to fulfill a one-time-only special order for 1,000 units. All cost relationships remain the same except for a one-time setup charge of \$20,000. No additional design, marketing, or distribution costs will be incurred. What is the minimum acceptable bid per unit on this one-time-only special order?

- A) \$134.75
- B) \$457.25
- C) \$114.75
- D) \$161.70
- E) \$122.75

Answer: A

Explanation: A) Direct materials \$100.00
Direct manufacturing labour $\$12 \times (10,000/30,000) \times 1,000$ 4.00
Variable manufacturing ($\$322,500/30,000$) 10.75
Setup (one time charge \$20,000) 20.00

Minimum acceptable bid \$134.75

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

18) What is the Ferryman Products full product cost for long-run pricing purposes?

A) \$134.75

B) \$242.25

C) \$262.25

D) \$122.75

E) \$222.25

Answer: E

Explanation: A) Direct materials \$100.00

Direct manufacturing labour $\$12 \times (10,000/30,000) \times 1,000$ 4.00

Variable manufacturing (\$322,500/30,000) 10.75

Fixed manufacturing overhead costs (\$1,200,000/30,000) 40.00

Product and process design costs (\$900,000/30,000) 30.00

Marketing and distribution costs (\$1,125,000/30,000) 37.50

Total \$222.25

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-2

19) Schlickau Company manufactures basketball backboards. The following information pertains to the company's normal operations per month:

Output units	15,000 boards
Machine-hours	4,000 hours
Direct manufacturing labour-hours	5,000 hours
Direct manufacturing labour per hour	\$12
Direct materials per unit	\$100
Variable manufacturing overhead costs	\$150,000
Fixed manufacturing overhead costs	\$300,000
Product and process design costs	\$200,000
Marketing and distribution costs	\$250,000

Required:

- For long-run pricing, what is the full-cost base per unit?
- Schlickau Company is approached by an overseas city to fulfill a one-time-only special order for 1,000 units. All cost relationships remain the same except for an additional one-time setup charge of \$40,000. No additional design, marketing, or distribution costs will be incurred. What is the minimum acceptable bid per unit on this one-time-only special order?

Answer:

a.

Direct materials	\$100.00
Direct manufacturing labour (\$12 × 5,000)/15,000	4.00
Variable manufacturing (\$150,000/15,000)	10.00
Fixed manufacturing (\$300,000/15,000)	2.00
Marketing and distribution (\$250,000/15,000)	16.67
Research and development (\$200,000/15,000)	<u>13.33</u>
Total	<u>\$146.00</u>

b.

Direct materials	\$100.00
Direct manufacturing labour	4.00
Variable manufacturing	10.00
Setup (\$40,000/1,000)	<u>40.00</u>
Total	<u>\$154.00</u>

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-2

20) Muskoka Travel offers guided tours through the lake system. Muskoka Travel provides a guide, necessary equipment, and food for a fee of \$75 per person per day. Currently the company is providing an average of 600 guide-days per month. Based on available equipment and guides the maximum capacity is 950 guide-days (customers taken on the equivalent of an all day tour) per month.

Variable costs per guide-day for the year were as follows:

Food	\$7.50	Guide's salary	\$37.50
Supplies	3.00	Insurance	12.00

Fixed costs per month during the year were as follows:

Equipment rental	\$7,500	Marketing	\$3,000
Administration	6,000	Customer service	1,500

Required:

A group of foreign tourists has offered Muskoka Travel a proposal of 300 guide-days in July if they will cut the fee to \$67.50 per guide-day. They have their own food and do not want to use the Muskoka Travel menus. Muskoka Travel will incur \$300 in additional costs for busing the tourists back and forth to the camp site. If fixed costs would not increase, should Muskoka Travel accept the special offer?

Answer: Yes.

Special tickets ($300 \times \$67.50$)		\$20,250
Relevant Costs:		
Guide salaries ($300 \times \$37.50$)	\$11,250	
Supplies ($300 \times \$3$)	900	
Insurance ($300 \times \$12$)	3,600	
Special costs	<u>300</u>	<u>16,050</u>
Increase in operating income		<u>\$4,200</u>

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-2

21) Brady Lumber Company, a producer of oak lumber for furniture companies has an offer to supply a special load of lumber for an exporter. It will take three months to fill the order of 1,000,000 board metres. During the three months half of its production capacity will be utilized for the special order. The total fixed costs for the three months will be \$6,000,000. Variable costs per 1,000 board metres will be \$2,500.

The marketing manager believes that half of the capacity taken up by the special order can be utilized with regular business which will generate income of \$240,000.

Required:

Determine the minimum price that needs to be charged for the special order.

Answer: Opportunity costs to be recovered:

$\$240,000 + \text{Variable costs } [\$2,500 \times (1,000,000/1,000)] = \$2,500,000$

= Relevant cost (minimum revenue needed) = \$2,740,000

Price = $\$2,740,000/1,000 = \$2,740$ per 1,000 board metres.

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-2

22) Backwoods Incorporated manufactures rustic furniture. The cost accounting system estimates manufacturing costs to be \$80 per table, consisting of 70% variable costs and 30% fixed costs. The company has surplus capacity available. It is Backwoods' policy to add a 50% markup to full costs.

Required:

a. Backwoods Incorporated is invited to bid on an order to supply 100 rustic tables. What is the lowest price Backwoods should bid on this one-time-only special order?

b. A large hotel chain is currently expanding and has decided to decorate all new hotels using the rustic style. Backwoods Incorporated is invited to submit a bid to the hotel chain. What is the lowest price per unit Backwoods should bid on this long-term order?

Answer:

a. The lowest price Backwoods should bid on the 100 table one-time special order is \$5,600 = Variable costs ($\$80 \times .70 \times 100$ tables), the short-term incremental costs.

b. The lowest price Backwoods should bid on the long-term hotel chain order is \$120 per table = Full costs $\$80 + 50\%$ markup, the long-term targeted price.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-2

23) Delgreco Products manufactures high-tech cell phones. Delgreco Products has a policy of adding a 30% markup to full costs and currently has excess capacity. The following information pertains to the company's normal operations per month:

Output units	10,000	phones
Machine-hours	8,000	hours
Direct manufacturing labour-hours	5,000	hours
Direct materials per unit	\$25	
Direct manufacturing labour per hour	\$15	
Variable manufacturing overhead costs	\$175,000	
Fixed manufacturing overhead costs	\$425,000	
Product and process design costs	\$400,000	
Marketing and distribution costs	\$475,000	

Delgreco Products is approached by an overseas customer to fulfill a one-time-only special order for 1,000 units. All cost relationships remain the same except for a one-time setup charge of \$15,000. No additional design, marketing, or distribution costs will be incurred.

Required:

- What is the minimum acceptable bid per unit on this one-time-only special order?
- What is the full product cost?

Answer:

- Minimum acceptable bid price per unit

Direct materials	\$25.00
Direct manufacturing labour $(5,000/10,000) \times \$15$	7.50
Variable manufacturing $(\$175,000/10,000)$	17.50
Setup $(\$15,000/1000)$	<u>15.00</u>
Minimum acceptable bid	<u>\$65.00</u>

- Full product cost

From a. above	\$65.00
Fixed costs $(\$425,000 + \$400,000 + \$475,000)/10,000$	<u>130.00</u>
	<u>\$195.00</u>

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-2

24) At a management meeting, you just finished presenting your cost analysis report, showing unit costs last year for 60,000 widgets produced were \$435.00. The sales manager then complained that she was going to lose a special overseas sale because the customer had indicated they could only pay \$425.00. She knew from sources that no competitor would be bidding below \$440, and she complained that if the company had better cost control, there would be more profit for everyone. The production manager also would like to take the extra job, since even with the extra production, the plant would be under-capacity. Required: What type of information would you need in order to be able to determine if the extra order could be profitably produced if the selling price was held to \$425 per unit?

Answer: Unit costs are often misleading, usually because of the influence of fixed costs. You would need to determine whether the fixed costs for an order that did not exceed the plant's capacity, were already accounted for or not in the \$425.00 figure, that is, assume that fixed cost per unit had been calculated based on full capacity utilization. If this is the case, then the \$425 figure will likely hold. If however, the unit cost was calculated at only actual production, then increasing production would lower unit costs.

Secondly, since the production manager is eager to increase production, he or she would likely be very interested in reducing costs, using say, continuous improvement. The company could set a target cost and seek ways to attain it.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-2

25) Explain the differences between short-run pricing decisions and long-run pricing decisions.

Answer: Short-run pricing decisions typically have a time horizon of less than a year and include such decisions such as (a) pricing a one-time-only special order with no long-run implications and (b) adjusting product mix and output volume in a competitive market place. Two key differences affect pricing for the long-run versus the short-run.

1. Fixed costs are often irrelevant for the short-run and are generally relevant in the long-run because they can be altered in the long-run.

2. Profit Margins in the long-run pricing decisions are often set to earn a reasonable return on investment. Short-run pricing decisions is more opportunistic. Prices are decreased when demand is weak and increased when demand is strong.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 12-2

12.3 Understand how companies make long-run pricing decisions.

- 1) When prices are set in a competitive marketplace, product costs are the most important influence on pricing decisions.

Answer: FALSE

Explanation: When prices are set in a competitive marketplace, companies have no control over setting prices and must accept the price determined by the market.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-3

2) Companies that produce high quality products do not have to pay attention to the actions of their competitors.

Answer: FALSE

Explanation: No business operates in a vacuum. Companies must always be aware of the actions of their competitors.

Diff: 2 Type: TF

Skill: Understand

Objective: LO 12-3

3) Relevant costs for pricing decisions include manufacturing costs, but not costs from other value-chain functions.

Answer: FALSE

Explanation: Relevant costs for pricing decisions include costs from all value-chain functions, from R&D to customer service.

Diff: 2 Type: TF

Skill: Understand

Objective: LO 12-3

4) Profit margins are often set to earn a reasonable return on investment for short-term pricing decisions, but not long-term pricing decisions.

Answer: FALSE

Explanation: Profit margins are often set to earn a reasonable return on investment for long-term pricing decisions, but not short-term pricing decision.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-3

5) Knowledge of long-run product costs helps guide decisions about entering or remaining in the market for a given product when in a highly competitive price-setting situation.

Answer: TRUE

Diff: 2 Type: TF

Skill: Understand

Objective: LO 12-3

6) Long-run pricing is a strategic decision designed to build long-run relationships with customers in competitive markets.

Answer: FALSE

Explanation: Long-run pricing is a strategic decision designed to build long-run relationships with customers based on stable and predictable prices.

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-3

- 7) For long-run pricing decisions, using stable prices has the advantage of
- A) helping build buyer-seller relationships.
 - B) reducing the need to change cost structures frequently.
 - C) reducing competition.
 - D) minimizing the need to monitor competitors prices frequently.
 - E) increasing margins.

Answer: A

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-3

- 8) For setting long-term prices a company should use full product costs. Full product costs for pricing purposes
- A) include direct costs only.
 - B) include all manufacturing costs only.
 - C) does not include fixed overhead.
 - D) equals manufacturing and selling costs.
 - E) include all direct costs plus an appropriate allocation of the indirect costs of all business functions.

Answer: E

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-3

- 9) A company uses a long-run time horizon to price its product, an electronic component used in aircraft. To produce a normal production run for a year of 100,000 units direct materials are \$90,000; direct labour is \$180,000; and, rent on leased equipment is \$106,000 per year. Currently re-work is running at 4% of production, after testing. The company has the capacity to test 10 units per hour. Manufacturing Overhead has two cost drivers: testing (cost driver is testing hours at \$2.50 per hour); and, rework (cost driver is units reworked at \$80 per unit re-worked).

Calculate current total manufacturing costs for 100,000 units.

- A) \$320,000
- B) \$376,000
- C) \$396,000
- D) \$401,000
- E) \$721,000

Answer: E

Explanation: E) $\$90,000 + \$180,000 + \$106,000 + (\$2.50 \times 100,000 \div 10) + (\$80 \times 100,000 \times 4\%) = \$721,000$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-3

- 10) Which of the following is TRUE of alternative long-run pricing approaches?
- A) A market-based approach only considers how customers will react.
 - B) A cost-based approach only considers how customers will react.
 - C) A market-based approach only considers costs.
 - D) A market-based approach is more logical in a competitive market.
 - E) In cost-plus pricing, selling price ignores market forces when setting the markup.

Answer: D

Diff: 2 Type: MC

Skill: Remember

Objective: LO 12-3

11) Valley West Amusement Park is evaluating its ticket prices. It is open during the summer months for 15 weeks. The following information pertains to last year's tourist season.

Costs are expected to remain the same for this year.

Average tourists per day on Friday thru Tuesday	2,500
Average tourists per day on Wednesday and Thursday	1,000
Variable operating costs per day when open	\$4,100
Fixed overhead costs per year	\$180,000
Marketing costs per year	\$62,500
Customer service costs per year	\$5,000

Required:

What is the unit cost when establishing a long-run price for tour tickets?

Answer: Attendance = $(15 \times 5 \times 2,500) + (15 \times 2 \times 1,000) = \underline{217,500}$

Variable costs $(15 \times 7 \times \$4,100)$	\$430,500
Fixed	180,000
Marketing	62,500
Customer service	<u>5,000</u>
Total	<u>\$678,000</u>

Average cost per tourist = $\$678,000 / 217,500 = \3.12

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-3

12) Hitz Video Rental is evaluating rental prices. Historical data show that Friday and Saturday have twice the rentals of other days of the week. The following information pertains to the store's normal operations per week:

Average rentals per day on Friday and Saturday	1,150
Average rentals per day on Sunday through Thursday	500
Store hours per day	12
Total units available for rent	10,000
Variable operating costs per hour	\$ 40
Marketing costs per week	\$1,500
Customer service costs per week	\$ 250

Required:

What is the unit cost when establishing a long-run price for rentals?

Answer: Variable costs ($\$40 \times 12 \times 7$) \$3,360

Marketing 1,500

Customer service 250

Total costs per week **\$5,110**

Average rental cost per customer $\$5,110 / [(2 \times 1,150) + (5 \times 500)] = \1.0645

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-3

13) Taylor Stadium is evaluating ticket prices for its baseball games. Studies have shown that Monday and Tuesday ball games average less than half the fans of games on other days. The following information pertains to the stadium's normal operations per season.

Average fans per game	5,000 fans
Average fans per Monday/Tuesday game	2,000 fans
Stadium operating hours per season for baseball	300 hours
Stadium capacity	7,000 seats
Variable operating costs per hour	\$2,000
Fixed overhead costs per year for all events	\$450,000
Marketing costs per season for baseball	\$212,500
Customer service costs per season for baseball	\$25,000

The stadium is open for 5 hours on each day a game is played. The stadium is available for some type of use 300 days a year. All employees work by the hour except for the administrators. In addition, only one game is played per day and each fan would have only one ticket per game.

Required:

What is the unit cost when establishing a long-run price for ball games assuming all tickets are priced the same?

Answer: Games = 300 hrs./5 hrs. per game = 60 games

Attendance = 60 × 5,000 = 300,000 fans

Percent use per year for baseball 60/300 = 0.20

Variable costs 300 × \$2,000	\$600,000
Fixed \$450,000 × 0.20	90,000
Marketing	212,500
Customer service	<u>25,000</u>
Total	<u>\$927,500</u>

Average cost per fan = \$927,500/300,000 = \$3.09

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-3

14) The Maize Eagles are evaluating ticket prices for its basketball games. Studies show that Friday and Saturday night games average more than twice the fans of games on other days. The following information pertains to the stadium's normal operations per season:

Average fans per game (all games)	2,500 fans
Average fans per Friday and Saturday night games	3,500 fans
Number of home games per season	30 games
Stadium capacity	3,500 seats
Variable operating costs per operating hour	\$2,000
Marketing costs per season for basketball	\$138,750
Customer-service costs per season for basketball	\$25,000

The stadium is open for 5 operating hours on each day a game is played. All employees work by the hour except for the administrators. A maximum of one game is played per day and each fan has only one ticket per game.

Required:

What is the unit cost when establishing a long-run price for ball games assuming all tickets are priced the same?

Answer: Variable operating costs ($30 \times 5 \times \$2,000$)\$300,000

Marketing 138,750

Customer service 25,000

Total \$463,750

Attendance = $30 \times 2,500 = 75,000$ fans

Minimum price is $\$463,750/75,000 = \6.1833

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-3

15) Explain the differences between short-run pricing decisions and long-run pricing decisions.

Answer: Short-run pricing decisions typically have a time horizon of less than a year and include such decisions such as (a) pricing a one-time-only special order with no long-run implications and (b) adjusting product mix and output volume in a competitive market place. Two key differences affect pricing for the long-run versus the short-run.

1. Fixed costs are often irrelevant for the short-run and are generally relevant in the long-run because they can be altered in the long-run.

2. Profit Margins in the long-run pricing decisions are often set to earn a reasonable return on investment. Short-run pricing decisions is more opportunistic. Prices are decreased when demand is weak and increased when demand is strong.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 12-2, 3

12.4 Price products using the target-costing approach.

1) Value engineering is a time-and-motion system that can result in: improvements in product designs, changes in material specifications, or modifications in process methods.

Answer: FALSE

Explanation: Value engineering is a systematic evaluation of all aspects of the value chain.

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-4

2) Financial reporting systems emphasize cost incurrence by recognizing and recording costs only when a resource is sacrificed or consumed.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-4

3) Locked-in costs are costs that have been incurred.

Answer: FALSE

Explanation: Locked-in costs (or designed-in costs) are those costs that have not yet been incurred but that will be incurred in the future on the basis of decisions that have already been made.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-4

4) Target pricing includes: (1) developing a needed product, (2) choosing a target price, (3) deriving a target cost per unit, and (4) performing cost analysis.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-4

5) Reverse engineering has the objective of reducing costs while still satisfying customer needs.

Answer: FALSE

Explanation: Value engineering has the objective of reducing costs while still satisfying customer needs. Reverse engineering is a means of obtaining information about a companies competitors by disassembling and analyzing the competitor products to determine the design, materials, and technology used.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-4

6) The strategy in which companies systematically evaluate all aspects of the value-chain business functions with the objective of reducing costs to meet customers' needs is referred to as

- A) full costing.
- B) value engineering.
- C) designed-in costs.
- D) value analysis.
- E) cost incurrence.

Answer: B

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-4

7) Eliminating non-value added activities by reducing their cost drivers, is referred to as

- A) value-added pricing.
- B) value-added activity base pricing.
- C) cost incurrence costing.
- D) price engineering.
- E) value engineering.

Answer: E

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-4

8) When are a product's direct materials cost most likely to be locked in?

- A) when the product is designed
- B) when purchasing commits to buying the materials
- C) when the bill for the materials is paid
- D) when the materials are used in production
- E) when materials are received from the supplier

Answer: A

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-4

9) In a graph with cumulative costs per unit as the Y-axis, with two curves, one being the cumulative costs locked-in, and a second curve showing the cumulative costs per unit incurred in different business functions, which of the following is TRUE?

- A) The graph will show the divergence between the amount of locked-in costs and costs incurred, by the end of the production cycle.
- B) Locked-in costs rise much slower initially than the incurred cost, but joining the incurred cost line at the completion of the value chain functions.
- C) The two cost lines will run parallel.
- D) No differences unless the product is manufactured inefficiently.
- E) Both curves deal with the same cumulative cost per unit.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-4

- 10) Which of the following is TRUE concerning value-engineering?
- A) The goal of value-engineering is to eliminate locked-in costs.
 - B) After a product's design has been value-engineered, costs are difficult to influence.
 - C) When and how costs are locked in are more important than when and how costs are incurred.
 - D) Value-engineering does not work when dealing with direct costs.
 - E) Value-engineering activities reduce both value-added and non-value-added costs.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-4

- 11) Most of a product's life-cycle costs are locked in by decisions made during the _____ business function of the value chain.

- A) design
- B) manufacturing
- C) customer-service
- D) marketing
- E) research

Answer: A

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-4

- 12) When target costing and target pricing are used together
- A) the target cost is established first, then the target price.
 - B) the target cost per unit is the estimated long-run price per unit that enables a product or service to achieve the target profit per unit.
 - C) the target price is set to undercut the competition.
 - D) target costs are higher than current costs because of inflation over time.
 - E) target price is the estimated price for a product or service that a potential customer will be willing to pay.

Answer: E

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-4

- 13) The target pricing approach is easier when
- A) products highly differentiated and the consumer life cycle is shorter.
 - B) products highly differentiated and the consumer life cycle is longer.
 - C) products are not well differentiated and the consumer life cycle is shorter.
 - D) products are not well differentiated and the consumer life cycle is longer.
 - E) little is known about market factors.

Answer: D

Diff: 3 Type: MC

Skill: Understand

Objective: LO 12-4

14) When the firm uses the target-costing approach to pricing, the target cost per unit is the difference between the per unit target price and the per unit target

- A) contribution margin.
- B) operating income.
- C) production costs.
- D) gross margin.
- E) fixed costs.

Answer: B

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-4

15) CIMA Engineering uses a manufacturing costing system with one direct cost category (direct materials) and three indirect cost categories:

- Setup, production order, and materials-handling costs that vary with the number of batches.
- Manufacturing operations costs that vary with machine-hours.
- Costs of engineering changes that vary with the number of engineering changes made.

In response to competitive pressures at the end of 2016, Medical Instruments used value-engineering techniques to reduce manufacturing costs. Actual information for 2015 and 2016 is:

	<u>2015</u>	<u>2016</u>
Setup, production order, and materials-handling costs per batch	\$ 6,000	\$ 5,500
Total manufacturing-operations cost per machine-hour	\$ 50	\$ 45
Cost per engineering change	\$ 4,000	\$4,400

The management of CIMA Engineering wants to evaluate whether value engineering has succeeded in reducing the target manufacturing cost per unit of one of its flow controllers by 10%. Actual results for 2015 and 2016 for the flow controller are:

	<u>2015</u>	<u>2016</u>
Flow controllers produced	2,900	3,300
Direct material cost per unit	\$1,700	\$1,600
Total number of batches required	110	120
Total number of machine-hours required	7,200	7,100
Number of engineering changes made	7	8

Required:

- Calculate the manufacturing cost for both years.
- Did the company achieve the target manufacturing cost per unit in 2016? Explain.

Answer:

a.

	2015	2015	2016	2016
	Total	Per Unit	Total	Per Unit
DM (2,900 × \$1,700); (3,300 × \$1,600)	\$4,930,000	\$1,700	\$5,280,000	\$1,600
Batch (110 × \$6,000); (120 × \$5,500)	\$ 660,000	\$ 228	\$ 660,000	\$ 200
Ops (7,200 × \$50); (7,100 × \$45)	\$ 360,000	\$ 124	\$ 319,500	\$ 97
Engin (7 × \$4,000); (8 × \$4,400)	\$ 28,000	\$ 10	\$ 35,200	\$ 11
Total	\$5,978,000	\$2,062	\$6,294,700	\$1,908

- Target for 2016 = \$2,062 × 90% = \$1,859; therefore target not achieved

Although cost per unit decreased in every category except engineering the size of the cost reductions were not sufficient.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 5-4, 12-4

16) Explain the difference between locked in costs and costs incurred. Which of these types of costs does a traditional accounting system emphasize? At which stage of the value chain are most costs locked-in? At which stage of the value chain are most costs incurred? What implication does this have for good cost management?

Answer: Locked-in costs are costs that have not been incurred yet, but based on decisions that have already been made, will be incurred in the future. Traditional accounting systems focus upon incurred costs, or costs as they happen. Most costs are actually locked-in at the design stage, but they are not incurred until the manufacturing stage. Good cost management depends, therefore, on a great deal of attention given to costs at the design stage since it may not be possible to influence costs at the manufacturing stage because the costs are locked-in at that time.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 12-4

17) What is the primary reason a firm would adopt target costing?

Answer: The primary reason a firm would adopt target costing is to reduce costs. Its unique approach is to design costs out of products during the design stage in the product life cycle. Many firms are adopting this approach when they cannot reduce costs further using traditional costing methods, which focus on cost reductions in manufacturing.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 12-4

18) In target costing, what are at least two techniques used to achieve target costing goals?

Answer: In target costing, techniques used to achieve target-costing goals include value engineering, cross-functional teams, and value analysis.

Diff: 2 Type: ES

Skill: Remember

Objective: LO 12-4

19) Describe the five steps in developing target pricing and target costs.

Answer: Step 1: Develop a product that satisfies the needs of potential customers.

Step 2: Choose a target price.

Step 3: Derive a target cost per unit by subtracting target operating income per unit from the target price.

Step 4: Perform cost analysis.

Step 5: Perform value engineering to achieve target cost.

Diff: 2 Type: ES

Skill: Remember

Objective: LO 12-4

12.5 Price products using the cost-plus approach.

1) Including unit fixed costs for pricing is often used because of its simplicity.

Answer: TRUE

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-5

2) The target rate of return on investment is the target operating income that an organization must earn divided by invested capital.

Answer: TRUE

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-5

3) Survey evidence suggest that most companies use which type of cost when making pricing decisions?

A) cost-plus

B) absorption product costing

C) variable product costs

D) variable manufacturing costs

E) manufacturing function costs

Answer: B

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-5

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

Pershing Company budgeted the following costs for the production of its one and only product, blades, for the next fiscal year:

Direct materials	\$187,500
Direct labour	130,000
Factory overhead:	
Variable	140,000
Fixed	107,500
Selling and administrative:	
Variable	60,000
Fixed	80,000
Total costs	\$705,000

Pershing has a target profit of \$150,000.

4) What is the target profit percentage as a percentage of total manufacturing costs?

A) 61%

B) 21%

C) 47%

D) 27%

E) 35%

Answer: D

Explanation: D) $(\$187,500 + \$130,000 + \$140,000 + \$107,500) = 565,000$

$\$565,000 \div \$150,000 = 26.5$ percent

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-4, 5

5) If total invested capital is \$1,000,000, what is the company's target rate of return on investment?

- A) 15 %
- B) 20 %
- C) 25 %
- D) 30 %
- E) 35 %

Answer: A

Explanation: A) $\$150,000 \div 1,000,000 = 15\%$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

6) The target profit percentage for setting prices as a percentage of total variable costs would be

- A) 47%.
- B) 33%.
- C) 29%.
- D) 38%.
- E) 61%.

Answer: C

Explanation: C) $\$150,000 / (\$187,500 + \$130,000 + \$140,000 + \$60,000) = 29\%$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

7) The target profit percentage for setting prices as a percentage of total costs would be

- A) 61%.
- B) 21%.
- C) 47%.
- D) 27%.
- E) 35%.

Answer: B

Explanation: B) $\$150,000 / \$705,000 = 21.3 \text{ percent}$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

8) Which of the following best describes the cost-plus pricing approach?

- A) Cost base + Markup component = Prospective selling price
- B) Prospective selling price + Cost base = Markup component
- C) Cost base + Gross margin = Prospective selling price
- D) Variable cost + Fixed cost + Contribution margin = Prospective selling price
- E) Cost base plus markup $\div 100\% = \text{selling profit percentage}$

Answer: A

Diff: 1 Type: MC

Skill: Understand

Objective: LO 12-5

9) The current selling price for the Pluto, a mid-sized car, is \$19,000. For next year it is anticipated that Pluto will have a \$12,000 cost base. What is its prospective selling price, using cost-plus pricing, if the company desires a markup component of 15 percent?

- A) \$10,200
- B) \$13,800
- C) \$19,000
- D) \$30,000
- E) \$31,000

Answer: B

Explanation: B) $\$12,000 + (\$12,000 \times 0.15) = \$13,800$

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-5

10) Seneca Company has invested \$1,000,000 in a plant to make gas pumps for service stations. The average long-run income desired from the plant is \$150,000 annually. The annual cost base for each pump is \$1,000. What should be the prospective selling price for each pump if the company uses a target return on investment as the markup base?

- A) \$1,150
- B) \$2,500
- C) \$16,000
- D) \$17,000
- E) \$17,500

Answer: A

Explanation: A) Target return = $\$150,000 / \$1,000,000 = 0.15$

Prospective selling price = $\$1,000 + (\$1,000 \times 0.15) = \$1,150$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

11) A product's markup percentage would need to cover fixed manufacturing costs if

- A) the company has only fixed manufacturing costs.
- B) the company wants to break-even during the fiscal period.
- C) the company wants to make a profit.
- D) the cost base does not include fixed manufacturing costs.
- E) the cost base includes fixed manufacturing costs as well as variable costs.

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-5

12) Johnson Petroleum Company is considering pricing its 5,000 litre petroleum tanks using either variable manufacturing or full product costs as the base. The variable cost base provides a prospective price of \$2,800 and the full cost base provides a prospective price of \$2,850. The difference between the two prices is

- A) the amount of profit to be included.
- B) due to the fact that the variable cost base must estimate all fixed costs, other variable costs, and desired profit while the full cost base must estimate only desired profit.
- C) known as price discrimination.
- D) caused by the inability of most companies to estimate fixed cost per unit with any degree of reliability.
- E) known as peak pricing.

Answer: B

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-5

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

Acorn Products currently sells small boats for \$360. It has costs currently assigned to it of \$280. A competitor is bringing a new small boat to market that will sell for \$300. Management believes it must lower the price to \$300 to compete in the market for small boats. Marketing believes that the new price will cause sales to increase by 10 percent, even with a new competitor in the market. Acorn's sales are currently 100,000 per year.

13) What is the target cost if target profit is 25 percent of the competitor's selling price?

- A) \$75
- B) \$90
- C) \$225
- D) \$270
- E) \$280

Answer: C

Explanation: C) $\$300 - \$300(0.25) = \$225$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

14) Under cost-plus pricing, what is the required selling price to achieve a 15% markup?

- A) \$285
- B) \$6300
- C) \$310
- D) \$315
- E) \$322

Answer: E

Explanation: E) $280 \times 1.15 = \$322$

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-5

15) What is Acorn's target selling price if costs cannot be reduced and target profit is changed cost plus 20 percent?

- A) \$280.00
- B) \$336.00
- C) \$350.00
- D) \$353.33
- E) \$360.00

Answer: C

Explanation: C) $\$280/0.80 = \350

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

16) What is Acorn's target cost if the company wants to maintain its same income level, and marketing is correct?

- A) \$280.00
- B) \$270.00
- C) \$252.00
- D) \$236.27
- E) \$227.27

Answer: E

Explanation: E) Current income = $100,000 \times (\$360 - \$280) = \$8,000,000$

Target cost y: $\$8,000,000 = (110,000 \times \$300) - 110,000y$

$y = \$25,000,000/110,000$

$y = \$227.27$

Diff: 3 Type: MC

Skill: Apply

Objective: LO 12-5

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

After conducting a market research study, Schultz Manufacturing decided to produce a new interior door to complement its exterior door line. It is estimated that the new interior door can be sold at a target price of \$60. The annual target sales volume for interior doors is 20,000. Schultz has target operating income of 20% of sales.

17) What are target sales revenues?

- A) \$960,000
- B) \$2,000,000
- C) \$1,800,000
- D) \$1,000,000
- E) \$1,200,000

Answer: E

Explanation: E) $\$60 \times 20,000 = \$1,200,000$

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-5

18) What is the target operating income?

- A) \$240,000
- B) \$360,000
- C) \$200,000
- D) \$192,000
- E) \$400,000

Answer: A

Explanation: A) $\$1,200,000 \times 20\% = \$240,000$

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-5

19) What is the target cost?

- A) \$800,000
- B) \$960,000
- C) \$1,440,000
- D) \$1,600,000
- E) \$768,000

Answer: B

Explanation: B) $\$1,200,000 - (\$1,200,000 \times 20\%) = \$960,000$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

20) What is the target cost for each interior door?

- A) \$48
- B) \$72
- C) \$80
- D) \$38
- E) \$40

Answer: A

Explanation: A) $[\$1,200,000 - (\$1,200,000 \times 20\%)] / 20,000 = \48

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

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

After conducting a market research study, Potter Products decided to produce an electric coffee pot to complement its line of kitchen products. It is estimated that the new coffee pot can be sold at a target price of \$46. The annual target sales volume for the coffee pot is 300,000. Potter has target operating income of 18% of sales.

21) What are the target sales revenues?

- A) \$1,380,000
- B) \$13,800,000
- C) \$11,316,000
- D) \$12,000,000
- E) \$16,284,000

Answer: B

Explanation: B) $\$46 \times 300,000 = \$13,800,000$

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-5

22) What is the target operating income?

- A) \$2,931,120
- B) \$2,160,000
- C) \$2,036,880
- D) \$2,484,000
- E) \$248,400

Answer: D

Explanation: A)

D) $\$46 \times 300,000 \times 18\% = \$2,484,000$

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-5

23) What is the total target cost?

- A) \$9,840,000
- B) \$11,316,000
- C) \$13,352,000
- D) \$9,279,120
- E) \$1,131,600

Answer: B

Explanation: B) $\$46 \times 300,000 \times (1 - .18) = \$11,316,000$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

24) What is the target cost for each coffee pot?

- A) \$32.80
- B) \$44.51
- C) \$30.93
- D) \$3.77
- E) \$37.72

Answer: E

Explanation: E) $\$46 \times (1 - .18) = \37.72

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

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

Sheltar's TV currently sells small televisions for \$180. It has costs of \$140. A competitor is bringing a new small television to market that will sell for \$150. Management believes it must lower the price to \$150 to compete in the market for small televisions. Marketing believes that the new price will cause sales to increase by 10%, even with a new competitor in the market. Sheltar's sales are currently 100,000 televisions per year.

25) What is the target cost if target operating income is 25% of sales?

- A) \$105.00
- B) \$145.00
- C) \$140.00
- D) \$135.00
- E) \$112.50

Answer: E

Explanation: E) $\$150 - (\$150 \times 0.25) = \$112.50$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

26) What is the change in operating income if marketing is correct and only the sales price is changed?

- A) \$125,000
- B) \$950,000
- C) \$(3,450,000)
- D) \$(2,900,000)
- E) \$2,350,000

Answer: D

Explanation: D) $[100,000 \times (\$180 - \$140)] - [110,000 \times (\$150 - \$140)] = \$(2,900,000)$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

27) What is the target cost if the company wants to maintain its same income level, and marketing is correct (rounded to the nearest cent)?

- A) \$112.50
- B) \$113.64
- C) \$123.34
- D) \$140.00
- E) \$135.00

Answer: B

Explanation: B) Current income = $100,000 \times (\$180 - \$140) = \$4,000,000$

Target cost y: $\$4,000,000 = (110,000 \times \$150) - 110,000y$

$y = \$12,500,000 / 110,000 = \113.6363

Diff: 3 Type: MC

Skill: Apply

Objective: LO 12-5

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

Block Island TV currently sells large televisions for \$360. It has costs of \$280. A competitor is bringing a new large television to market that will sell for \$300. Management believes it must lower the price to \$300 to compete in the market for large televisions. Marketing believes that the new price will cause sales to increase by 10%, even with a new competitor in the market. Block Island TV sales are currently 100,000 televisions per year.

28) What is the target cost if target operating income is 25% of the new sales price?

- A) \$75
- B) \$90
- C) \$225
- D) \$270
- E) \$280

Answer: C

Explanation: C) $\$300 - (\$300 \times 0.25) = \$225$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

29) What is the change in operating income if marketing is correct and only the sales price is changed?

- A) \$2,200,000
- B) \$600,000
- C) \$(2,200,000)
- D) \$(5,800,000)
- E) \$(1,900,000)

Answer: D

Explanation: D) $[100,000 \times (\$360 - \$280)] - [110,000 \times (\$300 - \$280)] = \$(5,800,000)$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

30) What is the target cost if the company wants to maintain its same income level, and marketing is correct (rounded to the nearest cent)?

- A) \$225.00
- B) \$227.27
- C) \$246.68
- D) \$280.00
- E) \$270

Answer: B

Explanation: B) Current income = $100,000 \times (\$360 - \$280) = \$8,000,000$

Target cost y: $\$8,000,000 = (110,000 \times \$300) - 110,000y$

$y = \$25,000,000 / 110,000 = \227.27

Diff: 3 Type: MC

Skill: Apply

Objective: LO 12-5

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

Frank's Computer Monitors Inc., currently sells 17" monitors for \$270. It has costs of \$210. A competitor is bringing a new 17" monitor to market that will sell for \$225. Management believes it must lower the price to \$225 to compete in the market for 17" monitors. Marketing believes that the new price will cause sales to increase by 10%, even with a new competitor in the market. Frank's sales are currently 10,000 monitors per year.

31) What is the target cost if operating income is 25% of sales?

- A) \$189.00
- B) \$41.25
- C) \$210.00
- D) \$202.50
- E) \$168.75

Answer: E

Explanation: E) $\$225 - (\$225 \times 0.25) = \$168.75$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

32) What is the change in operating income if marketing is correct and only the sales price is changed?

- A) \$1,421,250
- B) \$(204,000)
- C) \$(352,500)
- D) \$(435,000)
- E) \$18,750

Answer: D

Explanation: D) $[10,000 \times (\$270 - \$210)] - [11,000 \times (\$225 - \$210)] = (\$435,000)$

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-5

33) What is the target cost if the company wants to maintain its same income level, and marketing is correct (rounded to the nearest cent)?

- A) \$168.75
- B) \$170.46
- C) \$185.00
- D) \$210.00
- E) \$202.50

Answer: B

Explanation: B) Current income = $10,000 \times (\$270 - \$210) = \$600,000$

Target cost y: $\$600,000 = (11,000 \times \$225) - 11,000y$

$y = \$1,875,000/11,000 = \170.4545

Diff: 3 Type: MC

Skill: Apply

Objective: LO 12-5

34) Frost Inc. has budgeted sales of \$150,000 with the following budgeted costs:

Direct materials	\$31,500
Direct labour	20,500
Factory overhead:	
Variable	18,500
Fixed	28,000
Selling and administrative expenses:	
Variable	12,000
Fixed	16,000

Compute the target profit percentage for setting prices as a percentage of:

- a. Total costs
- b. Total variable costs
- c. Variable manufacturing costs
- d. Total manufacturing costs

Answer:

a. $\$31,500 + \$20,500 + \$18,500 + \$28,000 + \$12,000 + \$16,000 = \$126,500$

$(\$150,000 - \$126,500)/\$126,500 = 19 \text{ percent}$

b. $\$31,500 + \$20,500 + \$18,500 + \$12,000 = \$82,500$

$(\$150,000 - \$82,500)/\$82,500 = 82 \text{ percent}$

c. $\$31,500 + \$20,500 + \$18,500 = \$70,500$

$(\$150,000 - \$70,500)/\$70,500 = 113 \text{ percent}$

d. $\$31,500 + \$20,500 + \$18,500 + \$28,000 = \$98,500$

$(\$150,000 - \$98,500)/\$98,500 = 52 \text{ percent}$

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-5

35) Nancy Company has budgeted sales of \$300,000 with the following budgeted costs:

Direct materials	\$60,000
Direct manufacturing labour	40,000
Factory overhead:	
Variable	30,000
Fixed	50,000
Selling and administrative expenses:	
Variable	20,000
Fixed	30,000

Compute the average markup percentage for setting prices as a percentage of:

- The full cost of the product
- The variable cost of the product
- Variable manufacturing costs
- Total manufacturing costs

Answer:

- $\$60,000 + \$40,000 + \$30,000 + \$50,000 + \$20,000 + \$30,000 = \$230,000$
 $(\$300,000 - \$230,000)/\$230,000 = 30.4\%$
- $\$60,000 + \$40,000 + \$30,000 + \$20,000 = \$150,000$
 $(\$300,000 - \$150,000)/\$150,000 = 100\%$
- $\$60,000 + \$40,000 + \$30,000 = \$130,000$
 $(\$300,000 - \$130,000)/\$130,000 = 130.8\%$
- $\$60,000 + \$40,000 + \$30,000 + \$50,000 = \$180,000$
 $(\$300,000 - \$180,000)/\$180,000 = 66.7\%$

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-5

36) Ellingson Company has budgeted sales of \$487,500 with the following budgeted costs:

Direct materials	\$105,000
Direct labour	82,500
Factory overhead:	
Variable	\$60,000
Fixed	67,500
Selling and administrative expenses:	
Variable	\$45,000
Fixed	62,500

Compute the target profit percentage for setting prices as a percentage of:

- a. Total manufacturing costs
- b. Total variable costs
- c. Total costs
- d. Variable manufacturing costs

Answer:

- a. $\$105,000 + \$82,500 + \$60,000 + \$67,500 = \$315,000$
 $(\$487,500 - \$315,000)/\$315,000 = 55 \text{ percent}$
- b. $\$105,000 + \$82,500 + \$60,000 + \$45,000 = \$292,500$
 $(\$487,500 - \$292,500)/\$292,500 = 67 \text{ percent}$
- c. $\$105,000 + \$82,500 + \$60,000 + \$67,500 + \$45,000 + \$62,500 = \$422,500$
 $(\$487,500 - \$422,500)/\$422,500 = 15 \text{ percent}$
- d. $\$105,000 + \$82,500 + \$60,000 = \$247,500$
 $(\$487,500 - \$247,500)/\$247,500 = 97 \text{ percent}$

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-5

37) Timothy Company has budgeted sales of \$780,000 with the following budgeted costs:

Direct materials	\$168,000
Direct manufacturing labour	132,000
Factory overhead:	
Variable	96,000
Fixed	108,000
Selling and administrative expenses:	
Variable	72,000
Fixed	100,000

Compute the average markup percentage for setting prices as a percentage of:

- Total manufacturing costs
- The variable cost of the product
- The full cost of the product
- Variable manufacturing costs

Answer:

- $\$168,000 + \$132,000 + \$96,000 + \$108,000 = \$504,000$
 $(\$780,000 - \$504,000)/\$504,000 = 54.8\%$
- $\$168,000 + \$132,000 + \$96,000 + \$72,000 = \$468,000$
 $(\$780,000 - \$468,000)/\$468,000 = 66.7\%$
- $\$168,000 + \$132,000 + \$96,000 + \$108,000 + \$72,000 + \$100,000 = \$676,000$
 $(\$780,000 - \$676,000)/\$676,000 = 15.4\%$
- $\$168,000 + \$132,000 + \$96,000 = \$396,000$
 $(\$780,000 - \$396,000)/\$396,000 = 97\%$

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-5

38) Bridget, a college student, plans to operate a hot dog stand at the beach during the summer for three months. Her fixed costs for the booth, which include utilities, will be \$2,600. Variable costs per hot dog will be \$1.50 for materials and \$0.40 for a franchise fee from the hot dog supplier. This year's sales are expected to be 20,000 units based upon the operation of the same booth the prior year. Bridget needs to earn \$10,000 so that she can pay part of her college expenses for the coming academic year. Based on competitor's prices, her target price is \$2.40

Required:

Determine whether she can expect to earn the \$10,000 at the target price.

Answer: Variable expenses [(\$1.50 + \$0.40)] =	\$1.90
Fixed cost per unit at 20,000 units = \$2,600 ÷ 20,000 units	0.13
Target operating income per unit = \$10,000 ÷ 20,000 units =	<u>0.50</u>
	\$2.53

No, she will not meet her target at a selling price of \$2.40.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-5

39) Do-It Company manufactures sinker molds for fishing. A sinker mold has a price of \$7.00, and costs currently assigned to it of \$5.44. A competitor is introducing a new sinker mold that will sell for \$6.00. Management believes it must lower the price to \$6.00 in order to compete in the highly cost-conscious sinker mold market. Marketing believes that the new price will maintain the current sales level. Do-It Company's sales are currently 200,000 molds per year.

Required:

- What is the target cost for the new price if target profit is 20 percent of sales?
- What is the target selling price if costs cannot be reduced and target profit is changed to 15 percent of sales?
- What is the change in operating income for the year if \$6.00 is the new price and costs remain the same?
- What is the target cost per unit if the selling price is reduced to \$6.00 and the company wants to maintain its same income level?

Answer:

- $\$6.00 - \$6.00(0.20) = \$4.80$
- $\$5.44/0.85 = \6.40
- $$\begin{aligned} \text{Change} &= (200,000 \times (\$7.00 - \$5.44)) - (200,000 \times (\$6.00 - \$5.44)) \\ &= \$312,000 - \$112,000 \\ &= \$200,000 \text{ reduction in income.} \end{aligned}$$
- $$\begin{aligned} \text{Current income} &= 200,000 \times (\$7.00 - \$5.44) = \$312,000 \\ \text{Target cost per unit:} \\ \$312,000 &= (200,000 \times \$6.00) - 200,000y \\ 200,000y &= \$888,000 \\ y &= \$4.44 \end{aligned}$$

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-5

40) Steven Corporation manufactures fishing poles that have a price of \$42.00. It has costs of \$32.64. A competitor is introducing a new fishing pole that will sell for \$36.00. Management believes it must lower the price to \$36.00 to compete in the highly cost-conscious fishing pole market. Marketing believes that the new price will maintain the current sales level. Steven Corporation's sales are currently 200,000 poles per year.

Required:

- What is the target cost for the new price if target operating income is 20% of sales?
- What is the change in operating income for the year if \$36.00 is the new price and costs remain the same?
- What is the target cost per unit if the selling price is reduced to \$36.00 and the company wants to maintain its same income level?

Answer:

$$a. \quad \$36.00 - (\$36.00 \times 0.20) = \$28.80$$

$$b. \quad \begin{aligned} \text{Change} &= 200,000 \times (\$42.00 - \$32.64) - [200,000 \times (\$36.00 - \$32.64)] \\ &= \$1,872,000 - \$672,000 \\ &= \$1,200,000 \text{ reduction in income} \end{aligned}$$

$$c. \quad \text{Current income} = 200,000 \times (\$42.00 - \$32.64) = \$1,872,000$$

Target cost per unit:

$$\begin{aligned} \$1,872,000 &= (200,000 \times \$36.00) - 200,000y \\ 200,000y &= \$5,328,000 \\ y &= \$26.64 \end{aligned}$$

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-5

41) Robert's Medical Equipment Company manufactures hospital beds. Its' most popular model, Deluxe, sells for \$5,000. It has variable costs of \$2,800 and fixed costs of \$1,000 per unit, base on an average production run of 5,000 units. It normally has four production runs a year, with \$400,000 in setup costs each time. Plant capacity can handle up to six runs a year for a total of 30,000 beds.

A competitor is introducing a new hospital bed similar to Deluxe that will sell for \$4,000. Management believes it must lower the price to compete. Marketing believes that the new price will increase sales by 25% a year. The plant manager thinks that production can increase by 25% with the same level of fixed costs. The company currently sells all the Deluxe beds it can produce.

Required:

- What is the annual operating income from Deluxe at the current price of \$5,000 and normal production?
- What is the annual operating income from Deluxe if the price is reduced to \$4,000 and sales in units increase by 25%?
- What is the target cost per unit for the new price if target operating income is 20% of sales?

Answer:

a.

Sales (20,000 × \$5,000)		\$100,000,000
Costs:		
Variable costs (20,000 × \$2,800)	\$56,000,000	
Fixed costs (\$1,000 × 5,000 × 4)	20,000,000	
Setup costs (\$400,000 × 4)	<u>1,600,000</u>	<u>77,600,000</u>
Operating income		<u>\$22,400,000</u>

b.

Sales (25,000 × \$4,000)		\$100,000,000
Costs:		
Variable costs (25,000 × \$2,800)	\$70,000,000	
Fixed costs, same	20,000,000	
Setup costs (\$400,000 × 5)	<u>2,000,000</u>	<u>92,000,000</u>
Operating income		<u>\$8,000,000</u>

- c. $\$4,000 - (\$4,000 \times 0.20) = \$3,200$

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-5

42) Reuter Avionics currently sells radios for \$1,800. It has costs of \$1,400. A competitor is bringing a new radio to market that will sell for \$1,600. Management believes it must lower the price to \$1,600 to compete in the market for radios. Marketing believes that the new price will cause sales to increase by 10%, even with a new competitor in the market. Reuter's sales are currently 1,000 radios per year.

Required:

- What is the target cost if target operating income is 25% of sales?
- What is the change in operating income if marketing is correct and only the sales price is changed?
- What is the target cost if the company wants to maintain its same income level, and marketing is correct?

Answer:

- $\$1,600 - (\$1,600 \times 0.25) = \$1,200$
- $(1,000 \times (\$1,800 - \$1,400)) - (1,100 \times (\$1,600 - \$1,400)) = \$180,000$
- Current income = $1,000 \times (\$1,800 - \$1,400) = \$400,000$
 Target cost y: $\$400,000 = (1,100 \times \$1,600) - 1,100y$
 $y = \$1,360,000/1,100$
 $y = \$1,236.36$

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-5

43) Warthog Avionics currently sells radios for \$3,600. It has costs of \$2,800. A competitor is bringing a new radio to market that will sell for \$3,200. Management believes it must lower the price to \$3,200 to compete in the market for radios. Marketing believes that the new price will cause sales to increase by 10%, even with a new competitor in the market. Warthog's sales are currently 1,000 radios per year.

Required:

- What is the target cost if target operating income is 25% of sales?
- What is the change in operating income if marketing is correct and only the sales price is changed?
- What is the target cost if the company wants to maintain its same income level, and marketing is correct?

Answer:

- $\$3,200 - (\$3,200 \times 0.25) = \$2,400$
- $(1,000 \times (\$3,600 - \$2,800)) - (1,100 \times (\$3,200 - \$2,800)) = \text{Decrease } \$360,000$
- Current income = $1,000 \times (\$3,600 - \$2,800) = \$800,000$
 Target cost y: $\$800,000 = (1,100 \times \$3,200) - 1,100y$
 $y = \$2,720,000/1,100$
 $y = \$2,472.72$

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-5

44) Central Dental Company manufactures dental chairs. Its most popular model, Deluxe, sells for \$2,500. It has variable costs totaling \$1,400 and fixed costs of \$500 per unit based on an average production run of 5,000 units. It normally has four production runs a year with \$200,000 setup costs each time. Plant capacity can handle up to six runs a year for a total of 30,000 chairs.

A competitor is introducing a new dental chair similar to Deluxe that will sell for \$2,000. Management believes it must lower the price in order to compete. Marketing believes that the new price will increase sales by 25 percent a year. The plant manager thinks that production can increase by 25 percent with the same level of fixed costs. The company currently sells all the Deluxe chairs it can produce.

Required:

What is the target cost per unit for the new price if target profit is 20 percent of sales?

Answer: $\$2,000 - \$2,000(0.20) = \$1,600$

Diff: 1 Type: ES

Skill: Apply

Objective: LO 12-5

45) Steven Corporation manufactures fishing poles that have a price of \$21.00. It has costs of \$16.32. A competitor is introducing a new fishing pole that will sell for \$18.00. Management believes it must lower the price to \$18.00 to compete in the highly cost-conscious fishing pole market. Marketing believes that the new price will maintain the current sales level. Steven Corporation's sales are currently 200,000 poles per year.

Required:

- What is the target cost for the new price if target operating income is 20% of sales?
- What is the change in operating income for the year if \$18.00 is the new price and costs remain the same?
- What is the target cost per unit if the selling price is reduced to \$18.00 and the company wants to maintain its same income level?

Answer:

a. $\$18.00 - (\$18.00 \times 0.20) = \$14.40$

b. $\text{Change} = 200,000 \times (\$21.00 - \$16.32) - [200,000 \times (\$18.00 - \$16.32)]$
 $= \$936,000 - \$336,000$
 $= \$600,000 \text{ reduction in income}$

c. $\text{Current income} = 200,000 \times (\$21.00 - \$16.32) = \$936,000$

Target cost per unit:

$$\$936,000 = (200,000 \times \$18.00) - 200,000y$$

$$200,000y = \$2,664,000$$

$$y = \$13.32$$

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-5

46) Kezer Crafts currently sells motor boats for \$6,000. It has costs of \$4,650. A competitor is bringing a new motor boat to the market that will sell for \$5,500. Management believes it must lower the price to \$5,500 to compete in the market for motor boats. Marketing believes that the new price will cause sales to increase by 12.5%, even with a new competitor in the market. Kezer Crafts' sales are currently 2,000 motor boats per year.

Required:

- What is the target cost if target operating income is 25% of sales?
- What is the change in operating income if marketing is correct and only the sales price is changed?
- What is the target cost if the company wants to maintain its same income level, and marketing is correct?

Answer:

- $\$5,500 - (\$5,500 \times 0.25) = \$4,125$
- $(2,000 \times (\$6,000 - \$4,650)) - (2,250 \times (\$5,500 - \$4,650)) = \$787,500$ less operating income
- Current income = $2,000 \times (\$6,000 - \$4,650) = \$2,700,000$
 Target cost y: $\$2,700,000 = (2,250 \times \$5,500) - 2,250y$
 $y = \$9,675,000 / 2,250$
 $y = \$4,300$

Diff: 3 Type: ES

Skill: Apply

Objective: LO 12-5

47) List three advantages for including unitized fixed costs for pricing decisions.

Answer:

- Full product cost recovery
- Price stability
- Simplicity

Diff: 2 Type: ES

Skill: Remember

Objective: LO 12-5

12.6 Use life-cycle budgeting and costing when making pricing decisions.

1) A business that engages in predatory pricing violates Canadian law.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

2) Dumping occurs when a company is trying to get rid of out-of-style products and substantially reduces their prices.

Answer: FALSE

Explanation: Dumping occurs when a non-Canadian company sells goods in Canada at a price below the market value in the home country; receives a government subsidy; and, the action materially injures or threatens to materially injure an industry in Canada

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

3) Collusive pricing occurs when companies in an industry conspire in their pricing and output decisions to achieve a price above the competitive price.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

4) Peak-load pricing focuses on direct costs when setting prices for peak and nonpeak periods.

Answer: FALSE

Explanation: Peak load pricing is the practice of charging a higher price for the same product or service when demand approaches physical capacity limits.

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

5) Price discrimination is the practice of charging some customers a higher price than is charged to other customers.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

6) Life-cycle budgeting is necessary before a company can determine the product life cycle of a given product.

Answer: FALSE

Explanation: Determining the life cycle must come before budgeting.

Diff: 2 Type: TF

Skill: Remember

Objective: LO 12-6

7) Developing life-cycle reports for each product requires tracking both costs and revenues on a product-by-product basis over a number of accounting periods.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

8) Customer life-cycle costs focus on the total costs to a customer of acquiring and using a product or service until it is replaced.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

9) Life-cycle costing, from an environmental sustainability perspective, considers the end of a products life-cycle to include disposal and recycling costs.

Answer: TRUE

Diff: 1 Type: TF

Skill: Remember

Objective: LO 12-6

10) Predatory pricing is a type of price discrimination that

A) allows prices to be cut to the level of variable costs.

B) is required when a company declares bankruptcy so that it can sell its remaining goods quickly.

C) is used in the food industry for perishable goods.

D) deliberately sets prices very low, sometimes even below costs, so as to minimize competition.

E) actually ensures more supply access as high prices reduce demand.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-6

11) To minimize the chances of violating pricing laws, a company should

A) maintain records that permit easy compilation of variable costs.

B) use a variable cost plus markup method of pricing.

C) keep a record of the upstream costs associated with low cost products.

D) use dumping only when a product is at the end of its life-cycle.

E) ensure that prices do not exceed variable costs plus fixed costs.

Answer: A

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-6

12) Collusive pricing occurs when

A) a company wants two products to sell for the same, or almost the same, amount.

B) a company wants a product to sell for the same as a competitor's product.

C) two or more companies agree to sell a product at a price higher than should be expected.

D) competitors are part of the same large parent organization.

E) one large company dominates an industry.

Answer: C

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-6

13) Price discrimination to customers is the practice of

- A) setting different prices for different products.
- B) charging different prices for quantity amounts.
- C) using variable costing for some products and full costing for other products when setting prices.
- D) charging different prices to different customers or clients for the same products or services.
- E) changing prices frequently.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-6

14) An airline charges business and pleasure travellers different amounts. This is an example of

- A) customer-preference pricing.
- B) high-load pricing.
- C) peak-load pricing.
- D) price discrimination.
- E) off-load pricing.

Answer: C

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-6

15) Life-cycle budgeting differs from life-cycle costing in that

- A) budgeting includes revenues and costs, and costing includes only the costs.
- B) budgeting includes all products of a company and costing is only for individual products.
- C) budgeting is for the development and production of a product while costing is for only the production activities.
- D) budgeting is for one accounting period and is a total dollar concept while costing is a per unit concept.
- E) budgeting includes revenues, and costing includes only the costs.

Answer: A

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-6

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

Satellite Inc. is in the process of evaluating its new products. A new signal receiver has two production runs each year, each with \$20,000 in setup costs. The new receiver incurred \$60,000 in development costs and is expected to be produced for three years. The direct costs of producing the receivers are \$80,000 per run of 5,000 receivers. Indirect manufacturing costs charged to each run are \$90,000. Destination charges for each receiver average \$2.00. Customer service expenses average \$0.40 per receiver. The receivers are going to sell for \$50 the first year and increase by \$6 each year thereafter. Sales units equal production units each year.

16) What is the Satellite Inc. life cycle budgeted revenue?

- A) \$500,000
- B) \$560,000
- C) \$1,620,000
- D) \$1,680,000
- E) \$1,500,000

Answer: D

Explanation: D) First year $10,000 \times \$50$	\$500,000
Second year $10,000 \times \$56$	560,000
Third year $10,000 \times \$62$	<u>620,000</u>
Total	<u>\$1,680,000</u>

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-6

17) What are the Satellite Inc. life cycle budgeted costs?

- A) \$424,000
- B) \$1,272,000
- C) \$639,000
- D) \$1,392,000
- E) \$298,000

Answer: B

Explanation: B) Development costs	\$60,000
Setup costs $(2 \times \$20,000) \times 3$	120,000
Direct costs $(2 \times \$80,000) \times 3$	480,000
Indirect manufacturing costs $(2 \times \$90,000) \times 3$	540,000
Destination costs $(\$2.00 \times 10,000) \times 3 =$	60,000
Customer service $(\$0.40 \times 10,000) \times 3$	<u>12,000</u>
	<u>\$1,272,000</u>

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-6

18) What is the Satellite Inc. life cycle operating income?

A) \$408,000

B) \$76,000

C) \$388,000

D) \$348,000

E) \$288,000

Answer: A

Explanation: A) First year $10,000 \times \$50$	\$500,000
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Second year $10,000 \times \$56$	560,000
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Third year $10,000 \times \$62$	<u>620,000</u>
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Total	\$1,680,000
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Development costs	\$60,000
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Setup costs $(2 \times \$20,000) \times 3$	120,000
--	---------

Direct costs $(2 \times \$80,000) \times 3$	480,000
---	---------

Indirect manufacturing costs $(2 \times \$90,000) \times 3$	540,000
---	---------

Destination costs $(\$2.00 \times 10,000) \times 3$	60,000
---	--------

Customer service $(\$0.40 \times 10,000) \times 3$	<u>12,000</u>
--	---------------

	\$1,272,000
--	-------------

Life-cycle operating income	<u>\$408,000</u>
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Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-6

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

N-C Associates is in the process of evaluating its new client services for the business consulting division. Estate Planning, a new service, incurred \$600,000 in development costs and employee training. The direct costs of providing this service, which is all labour, averages \$100 per hour. Other costs for this service are estimated at \$2,000,000 per year. The current program for estate planning is expected to last for two years. At that time a new law will be in place which will require new operating guidelines for the tax consulting. Customer service expenses average \$400 per client, with each job lasting an average of 400 hours. The current staff expects to bill 40,000 hours for each of the two years the program is in effect. Billing averages \$140 per hour.

19) What is the N-C Associates' life-cycle budgeted revenue?

- A) \$5,600,000
- B) \$8,000,000
- C) \$11,200,000
- D) \$22,400,000
- E) \$28,500,000

Answer: C

Explanation: C) First year 40,000 × \$140	\$5,600,000
Second year 40,000 × \$140	<u>5,600,000</u>
Total	\$11,200,000

Diff: 1 Type: MC

Skill: Apply

Objective: LO 12-6

20) What is the N-C Associates' life-cycle operating income (loss)?

- A) \$(1,480,000)
- B) \$(1,440,000)
- C) \$(2,080,000)
- D) \$11,200,000
- E) \$5,600,000

Answer: A

Explanation: A)	Year 1	Year 2	Totals
Life-cycle revenue	\$5,600,000	\$5,600,000	\$11,200,000
Life-cycle costs:			
Development	\$600,000		\$600,000
Direct costs	4,000,000	\$4,000,000	8,000,000
Indirect costs	2,000,000	2,000,000	4,000,000
Customer service	<u>40,000</u>	<u>40,000</u>	<u>80,000</u>
Total costs	\$6,640,000	\$6,040,000	\$12,680,000

Life-cycle operating loss \$(1,480,000)

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-6

21) Knowledge Transfer Associates is in the process of evaluating its new client services for the business systems consulting division.

- Server Planning, a new service, incurred \$250,000 in development costs.
- The direct costs of providing the service, which is all labour, averages \$50 per hour.
- Other costs for this service are estimated at \$300,000 per year.
- The current program for server planning is expected to last for two years. At that time, expected new operating systems are likely to make the service non viable.
- Customer service expenses average \$250 per client, with each job lasting an average of 40 hours. The current staff expects to bill 15,000 hours for each of the two years the program is in effect. Billing averages \$90 per hour.

What is the estimated life-cycle operating income for both years combined?

- A) \$206,250
- B) \$162,500
- C) \$(43,750)
- D) \$(87,500)
- E) \$412,500

Answer: B

Explanation: B)

	<u>Year 1</u>	<u>Year 2</u>	<u>Totals</u>
Life-cycle revenue	\$1,350,000	\$1,350,000	\$2,700,000
Life-cycle costs:			
Development		250,000	250,000
Direct costs		750,000	1,500,000
Indirect costs		300,000	600,000
Customer service		<u>93,750</u>	<u>187,500</u>
Total costs		<u>\$1,393,750</u>	<u>\$2,537,500</u>
Life-cycle operating income			<u>\$162,500</u>

Diff: 2 Type: MC

Skill: Apply

Objective: LO 12-6

22) The life-cycle reporting process

- A) is the same as traditional accounting reporting.
- B) matches the company's normal fiscal year reporting.
- C) usually includes several accounting reporting periods.
- D) tracks costs, but not revenues, from the beginning to the end of a product's or service's life.
- E) is used only when yearly costs are not definable.

Answer: C

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-6

23) Which of the following is TRUE concerning life cycle budgeting?

- A) It obscures revenues in minor business functions.
- B) It highlights only costs for the life cycle.
- C) It has a calendar year focus.
- D) It assumes that selling price is the same over the life cycle of the product.
- E) It helps in setting prices to cover costs in all business functions.

Answer: E

Diff: 2 Type: MC

Skill: Remember

Objective: LO 12-6

24) Which of the following is NOT a benefit of life cycle reporting?

- A) The full set of revenues associated with each product becomes visible.
- B) The full set of costs associated with each product becomes visible.
- C) The differences between products in the percentage of their total costs incurred at early stages in the life cycle are highlighted.
- D) Upstream costs, such as R & D, are the only costs that need to be added in when a life cycle report is complete.
- E) Interrelationships among business function cost categories are highlighted.

Answer: D

Diff: 2 Type: MC

Skill: Understand

Objective: LO 12-6

25) Which of the following is TRUE of products with a long life cycle?

- A) Their costs are more difficult to manage, early in their life cycle.
- B) It is not as important to have accurate predictions of revenues.
- C) They highlight the interrelationships with other parts of the life cycle.
- D) They are highly visible and therefore must be carefully controlled.
- E) A smaller fraction of the total life costs are actually incurred at the time when costs are locked-in.

Answer: E

Diff: 3 Type: MC

Skill: Understand

Objective: LO 12-6

26) Customer life-cycle costs

- A) are the costs the selling company incurs to satisfy the customer.
- B) are the costs to the customer of buying and using a product until it is replaced.
- C) are the same as the selling life-cycle prices.
- D) are the replacement costs of using a product or service.
- E) focus on marketing costs.

Answer: B

Diff: 2 Type: MC

Skill: Remember

Objective: LO 12-6

- 27) Dumping is closely related to predatory pricing and occurs when
- A) companies get rid of obsolete inventory at prices below cost.
 - B) a business drops a large order at a customer location at a lower price if the customer accepts the order.
 - C) a Canadian company sells its products in another province below the variable cost.
 - D) a foreign company sells goods in Canada at a price below the market value in the home country.
 - E) a Canadian or foreign company sells its products below the variable cost.

Answer: D

Diff: 1 Type: MC

Skill: Remember

Objective: LO 12-6

28) Image Products is in the process of evaluating its new cosmetic products. One new product, Nice Hair, has one production run each month with \$8,000 in setup costs. Nice Hair incurred \$20,000 in development costs and is expected to be produced for three years. The direct costs of producing Nice Hair are \$28,000 per run of 15,000 bottles. Indirect manufacturing costs charged to each run are \$44,000. Destination charges for each batch average \$9,000. Nice Hair sells for \$10 in Canada and \$20 in all other countries. Sales are one-third domestic and two-thirds exported. Assume everything produced is sold.

Required:

What is the life-cycle budgeted operating income?

Answer: Domestic ($\$10 \times 12 \text{ months} \times 15,000 \times 3 \text{ yrs.} \times 1/3$) \$1,800,000

Export ($\$20 \times 12 \text{ months} \times 15,000 \times 3 \text{ yrs.} \times 2/3$) 7,200,000

Total life-cycle budgeted revenue \$9,000,000

Life-cycle costs:

Development \$20,000

Setup ($12 \times \$8,000$) $\times 3$ 288,000

Direct ($12 \times \$28,000$) $\times 3$ 1,008,000

Indirect ($12 \times \$44,000$) $\times 3$ 1,584,000

Destination ($12 \times \$9,000$) $\times 3$ 324,000

Total life-cycle budgeted costs 3,224,000

Life-cycle budgeted operating income \$5,776,000

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-6

29) Max and Marv are starting a new business venture and are in the process of evaluating their product lines. One new product, hand-made wooden tables, has incurred \$30,000 in development costs. These costs are to be amortized over a three-year period, the expected product life cycle. The direct costs of each table averages \$90. Other costs for making the tables are estimated at \$100,000 per year. The current sales program for tables is expected to change every six months. At that time a new pattern will be put in place with \$7,000 of setup costs. Each table requires 12 labour hours and 2 machine hours. Current annual sales are expected to be 2,000 units of each table at \$140 each. Customer service expenses average \$10 per table.

Required:

What is the life-cycle operating income?

Answer: Revenue ($2,000 \times \$140 \times 3$)		\$840,000
Development costs	\$30,000	
Direct costs ($2,000 \times \$90 \times 3$)	540,000	
Other costs ($\$100,000 \times 3$)	300,000	
Setup ($\$7,000 \times 2 \times 3$)	42,000	
Customer service ($2,000 \times \$10 \times 3$)	<u>60,000</u>	<u>972,000</u>
Life cycle Operating income/(loss)		<u><u>\$ (132,000)</u></u>

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-6

30) Henderson Company is in the process of evaluating a new part using the following information.

- Part SLC2002 has one production run each month, each with \$16,000 in setup costs.
- Part SLC2002 incurred \$40,000 in development costs and is expected to be produced over the next three years.
- Direct costs of producing Part SLC2002 are \$56,000 per run of 24,000 parts each.
- Indirect manufacturing costs charged to each run are \$88,000.
- Destination charges for each run average \$18,000.
- Part SLC2002 is selling for \$12.50 in the Canada and \$25 in all other countries. Sales are one-third domestic and two-thirds exported.
- Sales units equal production units each year.

Required:

- a. What are the estimated life-cycle revenues?
- b. What is the estimated life-cycle operating income if the product life cycle is one year?

Answer:

a.

Domestic ($\$12.50 \times 12 \text{ months} \times 24,000 \times 3 \text{ yrs.} \times 1/3$)	\$3,600,000
Export ($\$25 \times 12 \text{ months} \times 24,000 \times 3 \text{ yrs.} \times 2/3$)	<u>14,400,000</u>

Estimated life-cycle revenues	<u>\$18,000,000</u>
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b.

Sales

Domestic ($\$12.50 \times 12 \text{ months} \times 24,000 \times 1/3$)	\$1,200,000
Export ($\$25 \times 12 \text{ months} \times 24,000 \times 2/3$)	<u>4,800,000</u>
Total Sales	\$6,000,000

Costs:

Development costs	\$40,000	
Setup costs ($12 \times \$16,000$)	192,000	
Direct manufacturing costs ($12 \times \$56,000$)	672,000	
Indirect manufacturing costs ($12 \times \$88,000$)	1,056,000	
Destination costs ($12 \times \$18,000$)	<u>216,000</u>	<u>2,176,000</u>

Estimated life-cycle operating income, first year	<u>\$3,824,000</u>
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Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-6

31) Stone and Bicker are starting a new business venture and are in the process of evaluating their product lines. Information for one new product, hand-made lamps, is as follows:

- Every six months a new lamp pattern will be put into production. Each new pattern will require \$11,200 in setup costs.
- The lamp product line incurred \$48,000 in development costs and is expected to be produced over the next six years.
- Direct costs of producing the lamps average \$144 each. Each lamp requires 12 labour-hours and 2 machine-hours.
- Indirect manufacturing costs are estimated at \$160,000 per year.
- Customer service expenses average \$16 per lamp.
- Current sales are expected to be 2,000 units of each lamp pattern. Each lamp sells for \$224.
- Sales units equal production units each year.

Required:

- a. What are the estimated life-cycle revenues?
- b. What is the estimated life-cycle operating income if the product life cycle is one year?

Answer:

a.

Estimated life-cycle revenues:

(2,000 × 2 patterns per year × \$224 per lamp)	\$896,000	
		<u>× 6 years</u>
		<u>\$5,376,000</u>

b.

Annual revenues (2,000 × \$224 × 2)	\$896,000	
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Setup costs (\$11,200 × 2) \$22,400

Development costs 48,000

Direct manufacturing costs (2,000 × \$144 × 2) 576,000

Indirect manufacturing costs 160,000

Customer service costs (\$16 × 2,000 lamps × 2) 64,000 870,400

Estimated life-cycle operating income for the first year	\$25,600	<u>\$25,600</u>
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Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-6

32) Bicker, Inc., is in the process of evaluating a new product using the following information:

- A new transformer has two production runs each year, each with \$10,000 in setup costs.
- The new transformer incurred \$30,000 in development costs and is expected to be produced over the next three years.
- Direct costs of producing the transformers are \$40,000 per run of 5,000 transformers each.
- Indirect manufacturing costs charged to each run are \$45,000.
- Destination charges for each transformer average \$1.00.
- Customer service expenses average \$0.20 per transformer.
- The transformers are selling for \$25 the first year and will increase by \$3 each year thereafter.
- Sales units equal production units each year.

Required:

- a. What are the estimated life-cycle revenues?
- b. What is the estimated life-cycle operating income if the product life cycle is one year?

Answer:

a. Life-cycle revenues:

First year ($5,000 \times 2 \text{ runs} \times \25)	\$250,000
Second year ($5,000 \times 2 \times \$28$)	280,000
Third year ($5,000 \times 2 \times \$31$)	<u>310,000</u>
Total	<u>\$840,000</u>

b. Life-cycle operating income for year one

Sales ($5,000 \text{ units} \times 2 \text{ runs} \times \25)		\$250,000
Development costs	\$30,000	
Setup costs ($2 \times \$10,000$)	20,000	
Direct manufacturing costs ($2 \times \$40,000$)	80,000	
Indirect manufacturing costs ($2 \times \$45,000$)	90,000	
Destination charges ($\$1.00 \times 10,000$)	10,000	
Customer service ($\$0.20 \times 10,000$)	<u>2,000</u>	<u>232,000</u>

Estimated life-cycle operating income for the first year	<u>\$ 18,000</u>
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Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-6

33) Grace Greeting Cards Incorporated is starting a new business venture and are in the process of evaluating its product lines. Information for one new product, traditional parchment grade cards, is as follows:

- Sixteen times each year, a new card design will be put into production. Each new design will require \$600 in setup costs.
- The parchment grade card product line incurred \$75,000 in development costs and is expected to be produced over the next four years.
- Direct costs of producing the designs average \$0.50 each.
- Indirect manufacturing costs are estimated at \$50,000 per year.
- Customer service expenses average \$0.10 per card.
- Current sales are expected to be 2,500 units of each card design. Each card sells for \$3.50.
- Sales units equal production units each year.

Required:

- a. What are the estimated life-cycle revenues?
- b. What is the estimated life-cycle operating income if the product life cycle is one year?
- c. What is the estimated life-cycle operating income per year for the years after the first year if all of the development costs are charged to the first year?
- d. What is the total estimated life-cycle operating income?

Answer:

a.

Estimated life-cycle revenues:

(2,500 × 16 designs per year × \$3.50 per card sold)	\$140,000
	<u>× 4 years</u>
	<u>\$560,000</u>

b.

Annual revenues (2,500 × \$3.50 × 16)	\$140,000
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Development costs	\$75,000	
Setup costs (\$600 × 16)	9,600	
Direct manufacturing costs (2,500 × \$0.50 × 16)	20,000	
Indirect manufacturing costs	50,000	
Customer service costs (\$0.10 × 2,500 cards × 16)	<u>4,000</u>	<u>158,600</u>

Estimated life-cycle operating income (loss) for the first year	<u><u>\$(18,600)</u></u>
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c.

Annual revenues ($2,500 \times \$3.50 \times 16$)		\$140,000
Setup costs ($\$600 \times 16$)	\$9,600	
Direct manufacturing costs ($2,500 \times \$0.50 \times 16$)	20,000	
Indirect manufacturing costs	50,000	
Customer service costs ($\$0.10 \times 2,500 \text{ cards} \times 16$)	<u>4,000</u>	<u>83,600</u>
Estimated life-cycle operating income (loss) per year		<u>\$56,400</u>

d.

Estimated life-cycle operating income for all four years	<u>\$150,600</u>
$(3 \times \$56,400 - \$18,600)$	
Diff: 2 Type: ES	
Skill: Apply	
Objective: LO 12-6	

34) Ski Vallet provides materials that let people teach themselves how to snow ski. It has six different skill-level programs. Each one includes visual and audio learning aids along with a workbook that can be submitted to the company for grading and evaluation purposes, if the person so desires.

The accounting system of Ski Vallet is very traditional in its reporting functions with the calendar year being the company's fiscal year. It does include an abundance of information that can be used for various reporting purposes.

The company has found that any new idea soon runs its course with an effective life of about three years. Therefore, the company is always in the development stage of some new program. Program development requires experts in the area to provide the know-how of the item being developed and a development team that puts together the video, audio, and workbook materials. The actual costs of reproducing the packages is relatively cheap when compared to the development costs.

Required:

How might product-life-cycle reporting aid the company in improving its overall operations?

Answer: Because the product cycle for Ski Vallet extends over several traditional accounting periods, it is critical for the company to consider a reporting concept that evaluates each one of its products during its entire life cycle. Reporting procedures that highlight an entire life cycle can include items for overall profitability, and which products might be repeated in a few years. With a large portion of their expenses in the development area, life cycle reporting can assist in predicting the sales needs for the entire life of a product. It is probably more important for the company to evaluate itself over a product basis rather than year-to-year. Life cycle reporting would allow the company to compare products to each other rather than just comparing one year to the next.

Diff: 2 Type: ES

Skill: Apply

Objective: LO 12-6

35) What advice would you give a company to avoid the appearance of predatory pricing?

Answer: Useful advice for a company to avoid the appearance of predatory pricing would be (1) Collect data and keep detailed records of variable costs for all value chain functions; and (2) Review all proposed prices below variable cost in advance, with a presumption that claims of predatory intent would occur.

Diff: 2 Type: ES

Skill: Understand

Objective: LO 12-6

36) Under section 50(1) of the Competition Act companies cannot engage in price discrimination between two customers with the intent to reduce or obstruct competition among customers. Provide the four key elements of the price discrimination laws in Canada.

Answer:

1. They apply to manufacturers, not service providers.
2. Different pricing to different customers is not an offence unless there is intent to obstruct competition among customers.
3. Different pricing to different customers on the basis of different costs of production is not an offence.
4. Illegality hinges on the intent to obstruct or destroy competition when a manufacturer engages in price discrimination.

Diff: 3 Type: ES

Skill: Remember

Objective: LO 12-6