Cost Accounting, 14e **(Horngren/Datar/Rajan)**
Chapter 3   Cost-Volume-Profit Analysis

Objective 3.1

1) Cost-volume-profit analysis is used primarily by management:
A) as a planning tool
B) for control purposes
C) to prepare external financial statements
D) to attain accurate financial results
Answer: A
Diff: 1
Terms: cost-volume-profit (CVP)
Objective: 1
AACSB: Communication

2) One of the first steps to take when using CVP analysis to help make decisions is:
A) finding out where the total costs line intersects with the total revenues line on a graph.
B) identifying which costs are variable and which costs are fixed.
C) calculation of the degree of operating leverage for the company.
D) estimating how many products will have to be sold to make a decent profit.
Answer: B
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Reflective thinking

3) Cost-volume-profit analysis assumes all of the following EXCEPT:
A) all costs are variable or fixed
B) units manufactured equal units sold
C) total variable costs remain the same over the relevant range
D) total fixed costs remain the same over the relevant range
Answer: C
Diff: 2
Terms: cost-volume-profit (CVP)
Objective: 1
AACSB: Reflective thinking

4) Which of the following items is NOT an assumption of CVP analysis?
A) Total costs can be divided into a fixed component and a component that is variable with respect to the level of output.
B) When graphed, total costs curve upward.
C) The unit-selling price is known and constant.
D) All revenues and costs can be added and compared without taking into account the time value of money.
Answer: B
Diff: 3
Terms: cost-volume-profit (CVP)
Objective: 1
AACSB: Reflective thinking

5) Which of the following items is NOT an assumption of CVP analysis?
A) Costs may be separated into separate fixed and variable components.
B) Total revenues and total costs are linear in relation to output units.
C) Unit selling price, unit variable costs, and unit fixed costs are known and remain constant.
D) Proportion of different products will remain constant when multiple products are sold.
Answer: C
Diff: 3
Terms: cost-volume-profit (CVP)
Objective: 1
AACSB: Reflective thinking

6) A revenue driver is defined as:
A) any factor that affects costs and revenues
B) any factor that affects revenues
C) only factors that can influence a change in selling price
D) only factors that can influence a change in demand
Answer: B
Diff: 1
Terms: revenue driver
Objective: 1
AACSB: Reflective thinking

7) Operating income calculations use:
A) net income
B) income tax expense
C) cost of goods sold and operating costs
D) nonoperating revenues and nonoperating expenses
Answer: C
Diff: 2
Terms: revenue driver
Objective: 1
AACSB: Reflective thinking

8) Which of the following statements about net income (NI) is true?
A) NI = operating income plus nonoperating revenue.
B) NI = operating income plus operating costs.
C) NI = operating income less income taxes.
D) NI = operating income less cost of goods sold.
Answer: C
Diff: 1
Terms: net income
Objective: 1
AACSB: Reflective thinking

9) Which of the following is true about the assumptions underlying basic CVP analysis?
A) Only selling price is known and constant.
B) Only selling price and variable cost per unit are known and constant.
C) Only selling price, variable cost per unit, and total fixed costs are known and constant.
D) Selling price, variable cost per unit, fixed cost per unit, and total fixed costs are known and constant.
Answer: C
Diff: 2
Terms: cost-volume-profit (CVP)
Objective: 1
AACSB: Reflective thinking

10) The contribution income statement:
A) reports gross margin
B) is allowed for external reporting to shareholders
C) categorizes costs as either direct or indirect
D) can be used to predict future profits at different levels of activity
Answer: D
Diff: 1
Terms: contribution income statement
Objective: 1
AACSB: Reflective thinking

11) Contribution margin equals:
A) revenues minus period costs
B) revenues minus product costs
C) revenues minus variable costs
D) revenues minus fixed costs
Answer: C
Diff: 1
Terms: contribution margin
Objective: 1
AACSB: Reflective thinking

Answer the following questions using the information below:

Sherry's Custom Jewelry sells a single product. 700 units were sold resulting in $7,000 of sales revenue, $2,800 of variable costs, and $1,200 of fixed costs.

12) Contribution margin per unit is:
A) $4.00
B) $4.29
C) $6.00
D) None of these answers are correct.
Answer: C
Explanation: C) ($7,000 - $2,800) / 700 units = $6 per unit
Diff: 2
Terms: contribution margin per unit
Objective: 1
AACSB: Analytical skills

13) If sales increase by $25,000, operating income will increase by:
A) $10,000
B) $15,000
C) $22,200
D) None of these answers are correct.
Answer: B
Explanation: B) [($7,000 - $2,800) / $7,000] × $25,000 = $15,000
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

Answer the following questions using the information below:

Holly's Ham, Inc. sells hams during the major holiday seasons. During the current year 11,000 hams were sold resulting in $220,000 of sales revenue, $55,000 of variable costs, and $24,000 of fixed costs.

14) Contribution margin per ham is:
A) $5.00
B) $15.00
C) $20.00
D) None of these answers are correct.
Answer: B
Explanation: B) ($220,000 - $55,000) / 11,000 hams = $15 per ham
Diff: 2
Terms: contribution margin per unit
Objective: 1
AACSB: Analytical skills

15) If sales increase by $40,000, operating income will increase by:
A) $10,000
B) $20,000
C) $30,000
D) None of these answers are correct.
Answer: C
Explanation: C) Price = $220,000/11,000 = $20.00
Sales in hams = $40,000/$20.00 = 2,000 hams
Operating Income increase = 2,000 hams x $15.00 per = $30,000
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

16) Kenefic Company sells its only product for $9 per unit, variable production costs are $3 per unit, and selling and administrative costs are $1.50 per unit. Fixed costs for 10,000 units are $5,000. The contribution margin is:
A) $6 per unit
B) $4.50 per unit
C) $5.50 per unit
D) $4 per unit
Answer: B
Explanation: B) $9 - $3 - $1.60 = $4.50
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

17) The contribution income statement highlights:
A) gross margin
B) products costs and period costs
C) different product lines
D) variable and fixed costs
Answer: D
Diff: 2
Terms: contribution income statement
Objective: 1
AACSB: Communication

18) Fixed costs equal $12,000, unit contribution margin equals $20, and the number of units sold equal 1,600. Operating income is:
A) $12,000
B) $20,000
C) $32,000
D) $40,000
Answer: B
Explanation: B) (1,600 × $20) - $12,000 = $20,000
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

19) If selling price per unit is $30, variable costs per unit are $20, total fixed costs are $10,000, the tax rate is 30%, and the company sells 5,000 units, net income is:
A) $12,000
B) $14,000
C) $28,000
D) $40,000
Answer: C
Explanation: C) [(($30 - $20) × 5,000) - $10,000] × (1.0 - .3) = $28,000
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

Answer the following questions using the information below:

Northenscold Company sells several products. Information of average revenue and costs is as follows:

Selling price per unit $20.00
Variable costs per unit:
    Direct material $4.00
    Direct manufacturing labor $1.60
    Manufacturing overhead $0.40
    Selling costs $2.00
Annual fixed costs $96,000

20) The contribution margin per unit is:
A) $6
B) $8
C) $12
D) $14
Answer: C
Explanation: C) $20 - $4 - $1.60 - $0.40 - $2 = $12
Diff: 2
Terms: contribution margin per unit
Objective: 1
AACSB: Analytical skills

21) All of the following are assumed in the above analysis EXCEPT:
A) a constant product mix
B) fixed costs increase when activity increases
C) cost and revenue relationships are reflected accurately
D) all costs can be classified as either fixed or variable
Answer: B
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Reflective thinking

Answer the following questions using the information below:

Franscioso Company sells several products. Information of average revenue and costs is as follows:

Selling price per unit	$28.50
Variable costs per unit:	
Direct material	$5.25
Direct manufacturing labor	$1.15
Manufacturing overhead	$0.25
Selling costs	$1.85
Annual fixed costs	$110,000

22) The contribution margin per unit is:
A) $15
B) $20
C) $22
D) $125
Answer: B
Explanation: B) $28.50 - $5.25 - $1.15 -$0.25 - $1.85
Diff: 2
Terms: contribution margin per unit
Objective: 1
AACSB: Analytical skills

23) All of the following are assumed in the above analysis EXCEPT:
A) a constant product mix
B) all costs can be classified as either fixed or variable
C) cost and revenue relationships are reflected accurately
D) per unit variable costs increase when activity increases
Answer: D
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

Answer the following questions using the information below:

Dr. Charles Hunter, MD, performs a certain outpatient procedure for $1,000. His fixed costs are $20,000, while his variable costs are $500 per procedure. Dr. Hunter currently plans to perform 200 procedures this month.

24) What is the budgeted revenue for the month assuming that Dr. Hunter plans to perform this procedure 200 times?
A) $100,000
B) $200,000
C) $300,000
D) $400,000
Answer: B
Explanation: B) 200 × $1,000 = $200,000
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

25) What is the budgeted operating income for the month assuming that Dr. Hunter plans to perform the procedure 200 times?
A) $200,000
B) $100,000
C) $80,000
D) $40,000
Answer: C
Explanation: C) $200,000 - [(200 × $500) + $20,000]; $200,000 - $120,000 = $80,000
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

Answer the following questions using the information below:

Nancy's Niche sells a single product. 8,000 units were sold resulting in $80,000 of sales revenue, $20,000 of variable costs, and $10,000 of fixed costs.

26) The contribution margin percentage is:
A) 12.5%
B) 25.0%
C) 37.5%
D) 75.0%
Answer: D
Explanation: D) ($80,000 - $20,000) / $80,000 = 75%
Diff: 2
Terms: contribution margin percentage
Objective: 1
AACSB: Analytical skills

27) To achieve $100,000 in operating income, sales must total:
A) $440,000
B) $160,000
C) $130,000
D) None of these answers are correct.
Answer: D
Explanation: D) ($100,000 + $10,000) / 75% = $146,667 in sales
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

28) Gross margin is:
A) sales revenue less variable costs
B) sales revenue less cost of goods sold
C) contribution margin less fixed costs
D) contribution margin less variable costs
Answer: B
Diff: 1
Terms: gross margin percentage
Objective: 1
AACSB: Reflective thinking

29) In the merchandising sector:
A) only variable costs are subtracted to determine gross margin
B) fixed overhead costs are subtracted to determine gross margin
C) fixed overhead costs are subtracted to determine contribution margin
D) all operating costs are subtracted to determine contribution margin
Answer: A
Diff: 2
Terms: gross margin percentage
Objective: 1
AACSB: Reflective thinking

30) In the manufacturing sector:
A) only variable costs are subtracted to determine gross margin
B) fixed overhead costs are subtracted to determine gross margin
C) fixed overhead costs are subtracted to determine contribution margin
D) all operating costs are subtracted to determine contribution margin
Answer: B
Diff: 2
Terms: gross margin percentage
Objective: 1
AACSB: Reflective thinking

31) To determine contribution margin use:
A) only variable manufacturing costs
B) only fixed manufacturing costs
C) both variable and fixed manufacturing costs
D) both variable manufacturing costs and variable nonmanufacturing costs
Answer: D
Diff: 2
Terms: contribution margin
Objective: 1
AACSB: Reflective thinking

32) To perform cost-volume-profit analysis, a company must be able to separate costs into fixed and variable components.
Answer: TRUE
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

33) Contribution margin = Contribution margin percentage * Revenues (in dollars)
Answer: TRUE
Diff: 1
Terms: contribution margin
Objective: 1
AACSB: Analytical skills

34) It is assumed in CVP analysis that the unit selling price, unit variable costs, and unit fixed costs are known and constant.
Answer: FALSE
Explanation: It is assumed in CVP analysis that the unit selling price, unit variable costs, and *total* fixed costs are known and constant.
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

35) In CVP analysis, the number of output units is the only revenue driver.
Answer: TRUE
Diff: 2
Terms: cost-volume-profit (CVP) analysis, revenue driver
Objective: 1
AACSB: Reflective thinking

36) Many companies find even the simplest CVP analysis helps with strategic and long-range planning.
Answer: TRUE
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Analytical skills

37) The difference between total revenues and total variable costs is called contribution margin.
Answer: TRUE
Diff: 2
Terms: contribution margin
Objective: 1
AACSB: Reflective thinking

38) In CVP analysis, variable costs include direct variable costs, but do NOT include indirect variable costs.
Answer: FALSE
Explanation: In CVP analysis variable costs include direct variable costs and indirect variable costs.
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Reflective thinking

39) In CVP analysis, an assumption is made that the total revenues are linear with respect to output units, but that total costs are non-linear with respect to output units.
Answer: FALSE
Explanation: In CVP analysis, an assumption is made that the total revenues and the total costs are non-linear with respect to output units.
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1
AACSB: Reflective thinking

40) A revenue driver is defined as a variable that causes changes in prices.
Answer: FALSE
Explanation: A revenue driver is defined as a variable that causes changes in revenues.
Diff: 2
Terms: revenue driver
Objective: 1
AACSB: Reflective thinking

41) If the selling price per unit is $50 and the contribution margin percentage is 40%, then the variable cost per unit must be $20.
Answer: FALSE
Explanation: Then the variable cost per unit must be $30, [$50 - (.40 × $50)] = $30.
Diff: 2
Terms: contribution margin
Objective: 1
AACSB: Analytical skills

42) Total revenues less total fixed costs equal the contribution margin.
Answer: FALSE
Explanation: Total revenues less total variable costs equal the *contribution margin*.
Diff: 1
Terms: contribution margin
Objective: 1
AACSB: Reflective thinking

43) Gross margin is reported on the contribution income statement.
Answer: FALSE
Explanation: Gross margin is reported on the absorption costing income statement.
Diff: 1
Terms: contribution income statement
Objective: 1
AACSB: Analytical skills

44) If the selling price per unit of a product is $30, variable costs per unit are $20, and total fixed costs are $10,000 and a company sells 5,000 units, operating income would be $40,000.
Answer: TRUE
Diff: 2
Terms: contribution income statement
Objective: 1
AACSB: Analytical skills

45) Service sector companies will never report gross margin on an income statement.
Answer: TRUE
Diff: 2
Terms: gross margin percentage
Objective: 1
AACSB: Communication

46) For merchandising firms, contribution margin will always be a lesser amount than gross margin.
Answer: TRUE
Explanation: True, because all variable costs are subtracted to compute contribution margin, but only COGS is subtracted to compute gross margin.
Diff: 3
Terms: contribution margin
Objective: 1
AACSB: Analytical skills

47) Contribution margin and gross margin are terms that can be used interchangeably.
Answer: FALSE
Explanation: Contribution margin and gross margin refer to different amounts.
Revenues - all variable costs = contribution margin; Revenues - COGS = gross margin
Diff: 1
Terms: contribution margin
Objective: 1
AACSB: Communication

48) Gross Margin will always be greater than contribution margin.
Answer: FALSE
Explanation: If variable costs are low and/or manufacturing fixed costs are high, then contribution margin can easily be greater than gross margin.
Revenues - all variable costs = contribution margin; Revenues - COGS = gross margin
Diff: 1
Terms: contribution margin
Objective: 1
AACSB: Reflective thinking

49) Jacob's Manufacturing sales is equal to production. If Jacob's Manufacturing presented a Financial Accounting Income Statement emphasizing gross margin showing operating income of $180,000, a Contribution Income Statement emphasizing contribution margin would show a different operating income.
Answer: FALSE
Explanation: If Jacob's Manufacturing presented a Financial Accounting Income Statement emphasizing gross margin showing operating income of $180,000, a Contribution Income Statement emphasizing contribution margin would show the same operating income.
Diff: 2
Terms: contribution income statement
Objective: 1
AACSB: Communication

50) Jennifer's Stuffed Animals reported the following:

Revenues	$2,000
Variable manufacturing costs	$ 400
Variable nonmanufacturing costs	$ 460
Fixed manufacturing costs	$ 300
Fixed nonmanufacturing costs	$ 280

Required:
a. Compute contribution margin.
b. Compute gross margin.
c. Compute operating income.
Answer:
a. Contribution margin $2,000 - $400 - $460 = $1,140
b. Gross margin $2,000 - $400 - $300 = $1,300
c. Operating income $2000 - $400 - $460 - $300 - $280 = $560
Diff: 2
Terms: contribution margin
Objective: 1
AACSB: Analytical skills

51) Arthur's Plumbing reported the following:

Revenues	$4,500
Variable manufacturing costs	$ 900
Variable nonmanufacturing costs	$ 810
Fixed manufacturing costs	$ 630
Fixed nonmanufacturing costs	$ 545

Required:
a. Compute contribution margin.
b. Compute contribution margin percentage.
c. Compute gross margin.
d. Compute gross margin percentage.
e. Compute operating income.
Answer:
a. Contribution margin $4,500 - $900 - $810 = $2,790
b. Contribution margin percentage = ($2,790/$4,500) x 100 = 62%
c. Gross margin $4,500 - $900 - $630 = $2,970
d. Gross margin percentage = ($2,970/$4,500) x 100 = 66%
e. Operating income $4,500 - $900 - $810 - $630 - $545 = $1,615
Diff: 2
Terms: contribution margin percentage, gross margin percentage
Objective: 1
AACSB: Analytical skills

Objective 3.2

1) The selling price per unit less the variable cost per unit is the:
A) fixed cost per unit
B) gross margin
C) margin of safety
D) contribution margin per unit
Answer: D
Diff: 1
Terms: contribution margin
Objective: 2
AACSB: Reflective thinking

Answer the following questions using the information below:

Sherry's Custom Jewelry sells a single product. 700 units were sold resulting in $7,000 of sales revenue, $2,800 of variable costs, and $1,200 of fixed costs.

2) Breakeven point in units is:
A) 200 units
B) 300 units
C) 500 units
D) None of these answers are correct.
Answer: A
Explanation: A) ($7,000 - $2,800)/700 = $6 Contribution Margin Per Unit. $1,200/$6 = 200 units
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

3) The number of units that must be sold to achieve $6,000 of operating income is:
A) 1,000 units
B) 1,166 units
C) 1,200 units
D) None of these answers are correct.
Answer: C
Explanation: C) ($7,000 - $2,800)/700 = $6.   ($1,200 + $6,000)/$6 = 1,200 units
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Holly's Ham, Inc. sells hams during the major holiday seasons. During the current year 11,000 hams were sold resulting in $220,000 of sales revenue, $55,000 of variable costs, and $24,000 of fixed costs.

4) Breakeven point in units is:
A) 1,000 hams
B) 1,200 hams
C) 1,600 hams
D) None of these answers are correct.
Answer: C
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

5) The number of hams that must be sold to achieve $75,000 of operating income is:
A) 6,600 hams
B) 7,500 hams
C) 8,400 hams
D) None of these answers are correct.
Answer: A
Explanation: A) $20X - 5X - 24,000 = 75,000$; $X = 6,600$ hams
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

6) At the breakeven point of 2,000 units, variable costs total $4,000 and fixed costs total $6,000. The 2,001st unit sold will contribute _____ to profits.
A) $1
B) $2
C) $3
D) $5
Answer: C
Explanation: C) Fixed costs of $6,000/2,000 units = Contribution Margin of $3 per unit.
Diff: 3
Terms: contribution margin
Objective: 2
AACSB: Analytical skills

7) The breakeven point is the activity level where:
A) revenues equal fixed costs
B) revenues equal variable costs
C) contribution margin equals variable costs
D) revenues equal the sum of variable and fixed costs
Answer: D
Diff: 3
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

8) Breakeven point is:
A) total costs divided by variable costs per unit
B) contribution margin per unit divided by revenue per unit
C) fixed costs divided by contribution margin per unit
D) the sum of fixed and variable costs divided by contribution margin per unit
Answer: C
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

9) Sales total $200,000 when variable costs total $150,000 and fixed costs total $30,000. The breakeven point in sales dollars is:
A) $200,000
B) $120,000
C) $ 40,000
D) $ 30,000
Answer: B
Explanation: B) ($200,000 - $150,000) / $200,000 = 25% CM%; $30,000 / 0.25 = $120,000 BE sales
Diff: 3
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

10) The breakeven point in CVP analysis is defined as:
A) when fixed costs equal total revenues
B) fixed costs divided by the contribution margin per unit
C) revenues less variable costs equal operating income
D) when the contribution margin percentage equals total revenues divided by variable costs
Answer: B
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

11) Which of the following statements about determining the breakeven point is FALSE?
A) Operating income is equal to zero.
B) Contribution margin - fixed costs is equal to zero.
C) Revenues equal fixed costs plus variable costs.
D) Breakeven revenues equal fixed costs divided by the variable cost per unit.
Answer: D
Diff: 3
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

12) What is the breakeven point in units, assuming a product's selling price is $100, fixed costs are $8,000, unit variable costs are $20, and operating income is $3,200?
A) 100 units
B) 300 units
C) 400 units
D) 500 units
Answer: A
Explanation: A) Unit Selling Price of $100 - Unit Variable Cost $20 = Unit Contribution Margin of $80. Fixed Costs of $8,000 /$80 = 100 units
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

13) If unit outputs exceed the breakeven point:
A) there is a loss
B) total sales revenue exceeds total costs
C) there is a profit
D) Both total sales revenue exceeds total costs and there is a profit.
Answer: D
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

14) How many units would have to be sold to yield a target operating income of $22,000, assuming variable costs are $15 per unit, total fixed costs are $2,000, and the unit selling price is $20?
A) 4,800 units
B) 4,400 units
C) 4,000 units
D) 3,600 units
Answer: A
Explanation: A) ($2,000 + $22,000) / ($20 - $15) = 4,800 units
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

15) If the breakeven point is 1,000 units and each unit sells for $50, then:
A) selling 1,250 units will result in a profit
B) sales of $40,000 will result in a loss
C) sales of $50,000 will result in zero profit
D) All of these answers are correct.
Answer: D
Explanation: D) 1,000 × $50 - $50,000 of BE sales
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

16) If breakeven point is 1,000 units, each unit sells for $30, and fixed costs are $10,000, then on a graph the:
A) total revenue line and the total cost line will intersect at $30,000 of revenue
B) total cost line will be zero at zero units sold
C) revenue line will start at $10,000
D) All of these answers are correct.
Answer: A
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

17) When fixed costs are $40,000 and variable costs are 20% of the selling price, then breakeven sales are:
A) $40,000
B) $50,000
C) $200,000
D) indeterminable
Answer: B
Explanation: B) $40,000 / (1- 0.20) = $50,000 in BE sales
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Ruben intends to sell his customers a special round-trip airline ticket package. He is able to purchase the package from the airline carrier for $150 each. The round-trip tickets will be sold for $200 each and the airline intends to reimburse Ruben for any unsold ticket packages. Fixed costs include $5,000 in advertising costs.

18) What is the contribution margin per ticket package?
A) $50
B) $100
C) $150
D) $200
Answer: A
Explanation: A) $200 - $150 = $50
Diff: 1
Terms: contribution margin per unit
Objective: 2
AACSB: Analytical skills

19) How many ticket packages will Ruben need to sell to break even?
A) 34 packages
B) 50 packages
C) 100 packages
D) 150 packages
Answer: C
Explanation: C) $200X - $150X - $5,000 = 0; X = 100
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

20) How many ticket packages will Ruben need to sell in order to achieve $60,000 of operating income?
A) 367 packages
B) 434 packages
C) 1,100 packages
D) 1,300 packages
Answer: D
Explanation: D) $200X - $150X - $5,000 = $60,000; X = 1,300
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

21) For every $25,000 of ticket packages sold, operating income will increase by:
A) $6,250
B) $12,500
C) $18,750
D) an indeterminable amount
Answer: A
Explanation: A) $25,000 × [($200 - $150 / $200)] = $6,250
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Northenscold Company sells several products. Information of average revenue and costs is as follows:

Selling price per unit	$20.00
Variable costs per unit:	
Direct material	$4.00
Direct manufacturing labor	$1.60
Manufacturing overhead	$0.40
Selling costs	$2.00
Annual fixed costs	$96,000

22) The number of units that Northenscold's must sell each year to break even is:
A) 8,000 units
B) 12,000 units
C) 16,000 units
D) indeterminable
Answer: A
Explanation: A) $20X - $8X - $96,000 = 0; X = 8,000 units
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

23) The number of units that Northenscold's must sell annually to make a profit of $144,000 is:
A) 12,000 units
B) 18,000 units
C) 20,000 units
D) 30,000 units
Answer: C
Explanation: C) $20X - $8X - $96,000 = $144,000; X = 20,000 units
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Franscioso Company sells several products. Information of average revenue and costs is as follows:

Selling price per unit	$28.50
Variable costs per unit:	
Direct material	$5.25
Direct manufacturing labor	$1.15
Manufacturing overhead	$0.25
Selling costs	$1.85
Annual fixed costs	$110,000

24) The number of units that Franscioso must sell each year to break even is:
A) 1,000 units
B) 4,000 units
C) 5,500 units
D) indeterminable
Answer: C
Explanation: C) 28.5 X - 8.5 X - 110,000 = 0; X = 5,500 units
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

25) The number of units that Franscioso must sell annually to make a profit of $90,000 is:
A) 10,000 units
B) 12,000 units
C) 15,000 units
D) 20,000 units
Answer: A
Explanation: A) 28.5 X - 8.5 X - 90,000 = 0; X = 10,000 units
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

The following information is for Nichols Company:

Selling price	$50 per unit
Variable costs	$30 per unit
Total fixed costs	$100,000

26) The number of units that Nichols Company must sell to reach targeted operating income of $30,000 is:
A) 5,000 units
B) 6,500 units
C) 3,334 units
D) 4,334 units
Answer: B
Explanation: B) ($100,000 + $30,000)/($50 - $30) = 6,500 units
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

27) If targeted operating income is $40,000, then targeted sales revenue is:
A) $350,000
B) $233,333
C) $166,667
D) $250,000
Answer: A
Explanation: A) ($100,000 + $40,000) / [($50 - $30) / $50] = $350,000
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Stephanie's Bridal Shoppe sells wedding dresses. The average selling price of each dress is $1,000, variable costs are $400, and fixed costs are $90,000.

28) What is the Bridal Shoppe's operating income when 200 dresses are sold?
A) $30,000
B) $80,000
C) $200,000
D) $100,000
Answer: A
Explanation: A) 200($1,000) - 200($400) - $90,000 = $30,000
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

29) How many dresses are sold when operating income is zero?
A) 225 dresses
B) 150 dresses
C) 100 dresses
D) 90 dresses
Answer: B
Explanation: B) $1,000N - $400N - $90,000 = 0; $600N = $90,000; N = 150 dresses
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Dr. Charles Hunter, MD, performs a certain outpatient procedure for $1,000. His fixed costs are $20,000, while his variable costs are $500 per procedure. Dr. Hunter currently plans to perform 200 procedures this month.

30) What is the breakeven point for the month assuming that Dr. Hunter plans to perform the procedure 200 times?
A) 40 times
B) 30 times
C) 20 times
D) 10 times
Answer: A
Explanation: A) $1,000N - $500N - $20,000 = 0; $500N = $20,000; N = 40 times
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Nancy's Niche sells a single product. 8,000 units were sold resulting in $80,000 of sales revenue, $20,000 of variable costs, and $10,000 of fixed costs.

31) The breakeven point in total sales dollars is:
A) $40,000
B) $13,334
C) $100,000
D) None of these answers are correct.
Answer: B
Explanation: B) $10,000 / 0.75 = $13,334 (rounded up)
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Martha Manufacturing produces a single product that sells for $80. Variable costs per unit equal $32. The company expects total fixed costs to be $72,000 for the next month at the projected sales level of 2,000 units. In an attempt to improve performance, management is considering a number of alternative actions. Each situation is to be evaluated separately.

32) What is the current breakeven point in terms of number of units?
A) 1,500 units
B) 2,250 units
C) 3,333 units
D) None of these answers are correct.
Answer: A
Explanation: A) $80X - $32X - $72,000 = 0; X = 1,500 units
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

Answer the following questions using the information below:

Bush Manufacturing produces a single product that sells for $100. Variable costs per unit equal $25. The company expects total fixed costs to be $60,000 for the next month at the projected sales level of 1,000 units. In an attempt to improve performance, management is considering a number of alternative actions. Each situation is to be evaluated separately.

33) What is the current breakeven point in terms of number of units?
A) 800 units
B) 900 units
C) 2,400 units
D) None of these answers are correct.
Answer: A
Explanation: A) $60,000/($100-$25)
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

34) The selling price per unit is $25, variable cost per unit $15, and fixed cost per unit is $4. When this company operates above the breakeven point, the sale of one more unit will increase net income by $6.
Answer: FALSE
Explanation: The sale of one more unit will increase net income by $10, ($25 - $15 = $10).
Diff: 2
Terms: contribution income statement
Objective: 2
AACSB: Analytical skills

35) A company with sales of $50,000, variable costs of $35,000, and fixed costs of $25,000 will reach its breakeven point if sales are increased by $20,000.
Answer: FALSE
Explanation: $25,000 / 0.30 = $83,333 of total sales are needed to break even.
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Analytical skills

36) Breakeven point is NOT a good planning tool since the goal of business is to make a profit.
Answer: FALSE
Explanation: Breakeven point is an important planning tool that helps managers determine volume of sales/production needed to be profitable.
Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

37) Breakeven point is that quantity of output where total revenues equal total costs.
Answer: TRUE
Diff: 1
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

38) In the graph method of CVP analysis, the breakeven point is the (X-axis) quantity of units sold for which the total revenues line crosses the total costs line.
Answer: TRUE
Diff: 1
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

39) In the graph method of CVP analysis, the total revenue line can be calculated by determining the total revenue at only one real output level because the starting point of the line is always the intersection of the X and Y axes.
Answer: TRUE
Diff: 1
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

40) A profit-volume graph shows the impact on operating income from changes in the output level.
Answer: TRUE
Diff: 1
Terms: PV Graph
Objective: 2
AACSB: Reflective thinking

41) If the selling price per unit of a product is $50, variable costs per unit are $40, and total fixed costs are $50,000, a company must sell 6,000 units to make a target operating income of $10,000.
Answer: TRUE
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 2
AACSB: Analytical skills

42) Gilley, Inc., sells a single product. The company's most recent income statement is given below.

Sales (4,000 units)	$120,000
Less variable expenses	(68,000)
Contribution margin	52,000
Less fixed expenses	(40,000)
Net income	$ 12,000

Required:

a. Contribution margin per unit is $ _____ per unit

b. If sales are doubled to $240,000,
    total variable costs will equal $ _____

c. If sales are doubled to $240,000,
    total fixed costs will equal $ _____

d. If 10 more units are sold, profits will increase by $ _____

e. Compute how many units must be sold to break even.   # _____

f. Compute how many units must be sold
    to achieve profits of $20,000.   # _____

Answer:
a. Contribution margin per unit is $30 - $17 = $13
b. $68,000 × 2 = $136,000
c. $40,000
d. Contribution margin of $13 × 10 units = $130
e. Fixed costs of $40,000 / Contribution margin per unit $13 = 3,077 units
f. (Fixed costs of $40,000 + Profits $20,000) / CM per unit $13 = 4,616 units
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1, 2
AACSB: Analytical skills

43) Black Pearl, Inc., sells a single product. The company's most recent income statement is given below.

Sales	$50,000
Less variable expenses	(30,000)
Contribution margin	20,000
Less fixed expenses	(12,500)
Net income	$ 7,500

Required:

a. Contribution margin ratio is   _____ %

b. Breakeven point in total sales dollars is $ _____

c. To achieve $40,000 in net income, sales must total $ _____

d. If sales increase by $50,000, net income will increase by $ _____

Answer:
a.   Contribution margin ratio is $20,000 / $50,000 = 40%
b.   Fixed costs $12,500 / 0.40 CM% = $31,250 in sales
c.   [Fixed costs $12,500 + Net income $40,000] / 0.40 CM% = $131,250 in sales
d. $50,000 × 0.40 CM% = $20,000 increase in net income
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 1, 2
AACSB: Analytical skills

44) Berhannan's Cellular sells phones for $100. The unit variable cost per phone is $50 plus a selling commission of 10%. Fixed manufacturing costs total $1,250 per month, while fixed selling and administrative costs total $2,500.

Required:
a. What is the contribution margin per phone?
b. What is the breakeven point in phones?
c. How many phones must be sold to earn pretax income of $7,500?

Answer:

a. CM per phone = $100 - $50 - 0.1($100) = $40

b. N = Breakeven in phones
$100N - $50N - $10N - $1,250 - $2,500 = 0
$40N - $3,750 = 0
N = $3,750 / $40 = 93.75 phones
Breakeven is 94 phones

c. N = Phones to be sold
$100N - $50N - $10N - $1,250 - $2,500 = $7,500
$40N = $11,250
N = $11,250 / $40 = 281.25 phones
282 phones must be sold

Diff: 2
Terms: contribution margin per unit
Objective: 2
AACSB: Analytical skills

45) What is meant by the term breakeven point? Why should a manager be concerned about the breakeven point?

Answer: The breakeven point is the level of production and sales at which total revenues equal total costs. Managers should be concerned about the breakeven point because it helps determine when a business venture will be profitable. Breakeven point shows a company how far sales can decline before a net loss will be incurred. It helps to assess the risk of loss.

Diff: 2
Terms: breakeven point (BEP)
Objective: 2
AACSB: Reflective thinking

Objective 3.3

Answer the following questions using the information below:

Stephanie's Bridal Shoppe sells wedding dresses. The average selling price of each dress is $1,000, variable costs are $400, and fixed costs are $90,000.

1) How many dresses must the Bridal Shoppe sell to yield after-tax net income of $18,000, assuming the tax rate is 40%?
A) 200 dresses
B) 170 dresses
C) 150 dresses
D) 145 dresses
Answer: A
Explanation: A) $1,000N - $400N - $90,000 = $18,000 / (1 - 0.4); $600N - $90,000 = $30,000; N = 200 units
Diff: 3
Terms: net income
Objective: 3
AACSB: Analytical skills

Answer the following questions using the information below:

Assume the following cost information for Fernandez Company:

Selling price	$120 per unit
Variable costs	$80 per unit
Total fixed costs	$80,000
Tax rate	40%

2) What minimum volume of sales dollars is required to earn an aftertax net income of $30,000?
A) $465,000
B) $330,000
C) $390,000
D) $165,000
Answer: C
Explanation: C) [$80,000 + ($30,000/0.6)] / [($120 - $80) / $120] = $390,000
Diff: 3
Terms: net income
Objective: 3
AACSB: Analytical skills

3) What is the number of units that must be sold to earn an after-tax net income of $42,000?
A) 3,750 units
B) 4,625 units
C) 3,050 units
D) 1,875 units
Answer: A
Explanation: A) [$80,000 + ($42,000 / 0.6)] / ($120 - $80) = 3,750 units
Diff: 3
Terms: net income
Objective: 3
AACSB: Analytical skills

4) In CVP analysis, focusing on target net income rather than operating income:
A) will increase the breakeven point
B) will decrease the breakeven point
C) will not change the breakeven point
D) does not allow calculation of breakeven point
Answer: C
Diff: 2
Terms: net income
Objective: 3
AACSB: Reflective thinking

5) To determine the effect of income tax on a decision, managers should evaluate:
A) target operating income
B) contribution margin
C) target net income
D) selling price
Answer: C
Diff: 1
Terms: net income
Objective: 3
AACSB: Ethical reasoning

6) If the tax rate is t, it is possible to calculate planned operating income by:
A) dividing net income by t
B) dividing net income by $1- t$
C) multiplying net income by t
D) multiplying net income by $1- t$
Answer: B
Diff: 2
Terms: net income
Objective: 3
AACSB: Reflective thinking

7) If Bel Air Realtor plans an operating income of $210,000 and the tax rate is 30%, then Bel Air's planned net income should be:
A) $63,000
B) $147,000
C) $273,000
D) $357,000
Answer: B
Explanation: B) $210,000 - ($210,000 × .3) = $147,000
Diff: 2
Terms: net income
Objective: 3
AACSB: Analytical skills

8) The Marietta Company has fixed costs of $40,000 and variable costs are 75% of the selling price. To realize profits of $10,000 from sales of 50,000 units, the selling price per unit:
A) must be $1.00
B) must be $1.33
C) must be $4.00
D) is indeterminable
Answer: C
Explanation: C) ($40,000 + $10,000) / .25 = $200,000 in sales / 50,000 units = $4 per unit
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 3
AACSB: Analytical skills

9) An increase in the tax rate will increase the breakeven point.
Answer: FALSE
Explanation: A change in the tax rate will not change the breakeven point.
Diff: 2
Terms: net income
Objective: 3
AACSB: Analytical skills

10) When making net income evaluations, CVP calculations for target income must be stated in terms of target operating income instead of target net income.
Answer: FALSE
Explanation: Target net income must be used as income taxes will reduce the operating income.
Diff: 2
Terms: net income
Objective: 3
AACSB: Reflective thinking

11) If operating income is $40,000 and the income tax rate is 30%, then net income will be $28,000.
Answer: TRUE
Diff: 1
Terms: net income
Objective: 3
AACSB: Analytical skills

12) If planned net income is $30,000 and the tax rate is 30%, then planned operating income would be $39,000.
Answer: FALSE
Explanation: If planned net income is $30,000 and the tax rate is 30%, then planned operating income would be $42,857, [$30,000 / (1.0 - .3) = $42,857].
Diff: 2
Terms: net income
Objective: 3
AACSB: Analytical skills

13) The Holiday Card Company, a producer of specialty cards, has asked you to complete several calculations based upon the following information:

Income tax rate	30%
Selling price per unit	$6.60
Variable cost per unit	$5.28
Total fixed costs	$46,200.00

Required:
a. What is the breakeven point in cards?
b. What sales volume is needed to earn an after-tax net income of $13,028.40?
c. How many cards must be sold to earn an after-tax net income of $18,480?
Answer:
a. $46,200/($6.60 - $5.28) = 35,000 units

b. $13,028.40/0.70 = $18,612
   $18,612 + $46,200 = $64,812
   $64,812/$1.32 = 49,100 units
   49,100 units × $6.60 = $324,060

c. $18,480/0.70 = $26,400
   $26,400 + $46,200 = $72,600
   $72,600/$1.32 = 55,000 units
Diff: 2
Terms: breakeven point (BEP), net income
Objective: 2, 3
AACSB: Analytical skills

14) James Corporation gathered the following information:

Variable costs	$550,000
Income tax rate	40%
Contribution-margin ratio	30%

Required:
a.   Compute total fixed costs assuming a breakeven volume in dollars of $2,000,000.
b.   Compute sales volume in dollars to produce an after-tax net income of $150,000.
Answer:
a. $2,000,000 × 0.30 = $600,000

b.   ($600,000 + ($150,000 x (1-.40))/.30 = $2,833,333.33
       or $2,833,334 units rounding up to the next whole unit.
Diff: 3
Terms: cost-volume-profit (CVP) analysis, net income
Objective: 2, 3
AACSB: Analytical skills

15) What effect, and why, would an increase in the tax rate have on a company's breakeven point?
Answer: An increase in the tax rate would have no effect on the breakeven point. At the breakeven point, before-tax net income would be zero, so after-tax net income would also be zero regardless of the tax rate.
Diff: 2
Terms: breakeven point (BEP), net income
Objective: 3
AACSB: Reflective thinking

Objective 3.4

1) Assume only the specified parameters change in a cost-volume-profit analysis. If the contribution margin increases by $6 per unit, then operating profits will:
A) also increase by $6 per unit
B) increase by less than $6 per unit
C) decrease by $6 per unit
D) be indeterminable
Answer: A
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Analytical skills

2) The breakeven point decreases if:
A) the variable cost per unit increases
B) total fixed costs decrease
C) the contribution margin per unit decreases
D) the selling price per unit decreases
Answer: B
Diff: 3
Terms: breakeven point (BEP)
Objective: 4
AACSB: Reflective thinking

3) (CPA adapted, November 1992) The strategy most likely to reduce the breakeven point would be to:
A) increase both the fixed costs and the contribution margin
B) decrease both the fixed costs and the contribution margin
C) decrease the fixed costs and increase the contribution margin
D) increase the fixed costs and decrease the contribution margin
Answer: C
Diff: 3
Terms: breakeven point (BEP)
Objective: 4
AACSB: Reflective thinking

4) Assume only the specified parameters change in a CVP analysis. The contribution margin percentage increases when:
A) total fixed costs increase
B) total fixed costs decrease
C) variable costs per unit increase
D) variable costs per unit decrease
Answer: D
Diff: 3
Terms: contribution margin percentage
Objective: 4
AACSB: Reflective thinking

5) Which of the following will increase a company's breakeven point?
A) increasing variable cost per unit
B) increasing contribution margin per unit
C) reducing its total fixed costs
D) increasing the selling price per unit
Answer: A
Diff: 3
Terms: breakeven point (BEP)
Objective: 4
AACSB: Reflective thinking

6) Assume there is a reduction in the selling price and all other CVP parameters remain constant. This change will:
A) increase contribution margin
B) reduce fixed costs
C) increase variable costs
D) reduce operating income
Answer: D
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Reflective thinking

7) Assume there is an increase in advertising expenditures and all other CVP parameters remain constant. This change will:
A) reduce operating income
B) reduce contribution margin
C) increase variable costs
D) increase selling price
Answer: A
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Analytical skills

8) Bassman Company operates on a contribution margin of 30% and currently has fixed costs of $400,000. Next year, sales are projected to be $2,000,000. An advertising campaign is being evaluated that costs an additional $60,000. How much would sales have to increase to justify the additional expenditure?
A) $120,000
B) $180,000
C) $200,000
D) $600,000
Answer: C
Explanation: C) $60,000 / .3 = $200,000
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Analytical skills

Answer the following questions using the information below:

Martha Manufacturing produces a single product that sells for $80. Variable costs per unit equal $32. The company expects total fixed costs to be $72,000 for the next month at the projected sales level of 2,000 units. In an attempt to improve performance, management is considering a number of alternative actions. Each situation is to be evaluated separately.

9) Suppose management believes that a $16,000 increase in the monthly advertising expense will result in a considerable increase in sales. Sales must increase by how much to justify this additional expenditure?
A) 200 units
B) 334 units
C) 500 units
D) None of these answers are correct.
Answer: B
Explanation: B) $80X - $32X - $16,000 = 0; X = 334 units to cover the expenditures
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Analytical skills

10) Suppose that management believes that a 10% reduction in the selling price will result in a 10% increase in sales. If this proposed reduction in selling price is implemented:
A) operating income will decrease by $8,000
B) operating income will increase by $8,000
C) operating income will decrease by $16,000
D) operating income will increase by $16,000
Answer: A
Explanation:
A) $80 × 10% = $8 × 2,000 units =   ($16,000)
2,000 units × 10% = 200 units × ($72 - $32) =   8,000
    Change in operating income   ($8,000)
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Analytical skills

Answer the following questions using the information below:

Bush Manufacturing produces a single product that sells for $100. Variable costs per unit equal $25. The company expects total fixed costs to be $60,000 for the next month at the projected sales level of 1,000 units. In an attempt to improve performance, management is considering a number of alternative actions. Each situation is to be evaluated separately.

11) Suppose that management believes that a $24,000 increase in the monthly advertising expense will result in a considerable increase in sales. Sales must increase by how much to justify this additional expenditure?
A) 320 units
B) 1,120 units
C) 240 units
D) None of these answers are correct.
Answer: A
Explanation: A) $24,000/($100 - $25) = 320 units to cover the expenditures
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Analytical skills

12) Suppose that management believes that a 20% reduction in the selling price will result in a 20% increase in sales. If this proposed reduction in selling price is implemented:
A) operating income will decrease by $9,000
B) operating income will increase by $9,000
C) operating income will decrease by $20,000
D) operating income will increase by $15,000
Answer: A
Explanation: A) Original contribution margin per unit $75 x 1,000 units = $75,000 - $60,000 fixed costs = Operating Income $15,000
$100 - 20% = $80 new sales price per unit
$80 - $25 = $55 new contribution margin per unit
1,000 units + 20% increase in sales = 1,200 units
$55 x 1,200 units = $66,000 - $60,000 fixed costs = $6,000 new operating income
Change in operating income ($9,000)
Diff: 3
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Analytical skills

13) If contribution margin decreases by $1 per unit, then operating profits will increase by $1 per unit.
Answer: FALSE
Explanation: If contribution margin decreases by $1 per unit, then operating profits will *decrease* by $1 per unit.
Diff: 2
Terms: contribution margin per unit
Objective: 4
AACSB: Reflective thinking

14) If variable costs per unit increase, then the breakeven point will decrease.
Answer: FALSE
Explanation: If variable costs per unit increase, then the breakeven point will also *increase*.
Diff: 3
Terms: breakeven point (BEP)
Objective: 4
AACSB: Reflective thinking

15) A planned increase in advertising would be considered an increase in fixed costs in CVP analysis.
Answer: TRUE
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Reflective thinking

16) A planned decrease in selling price would be expected to cause an increase in the quantity sold.
Answer: TRUE
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: 4
AACSB: Reflective thinking

17) In 2011, Grant Company has sales of $800,000, variable costs of $200,000, and fixed costs of $300,000. In 2012, the company expects annual property taxes to decrease by $15,000.

Required:
a. Calculate operating income and the breakeven point for 2011.
b. Calculate the breakeven point for 2012.
Answer:
a. In 2011, operating income is $800,000 sales revenue - $200,000 variable costs - $300,000 fixed costs = $300,000.

    The breakeven point for 2011 is $400,000 in total sales dollars.
    $600,000 CM / $800,000 sales revenue = 0.75 CM ratio. $300,000 total fixed costs / 0.75 CM ratio = $400,000 in total sales to break even.

b. The breakeven point for 2012 is $380,000 in total sales dollars.

    $300,000 fixed costs - $15,000 reduction in property taxes = $285,000 estimated fixed costs for 2012. $285,000 total fixed costs / 75% CM ratio = $380,000 in total sales to break even.
Diff: 2
Terms: breakeven point (BEP)
Objective: 1, 4
AACSB: Analytical skills

18) Furniture, Inc., sells lamps for $30. The unit variable cost per lamp is $22. Fixed costs total $9,600.

Required:
a. What is the contribution margin per lamp?
b. What is the breakeven point in lamps?
c. How many lamps must be sold to earn a pretax income of $8,000?
d. What is the margin of safety, assuming 1,500 lamps are sold?
Answer:
a. Contribution margin per lamp = $30 - $22 = $8

b. N = Breakeven point in lamps
$30N - $22N - $9,600 = 0
$8N - $9,600 = 0
N = $9,600/$8 = 1,200 lamps

c. N = Target sales in lamps
$30N - $22N - $9,600 - $8,000 = 0
$8N - $17,600 = 0
N = $17,600/$8 = 2,200 lamps

d. Margin of safety = Sales - Breakeven sales
= ($30.00 × 1,500) - $36,000 = $9,000
Diff: 3
Terms: contribution margin per unit, margin of safety, breakeven point (BEP)
Objective: 2, 4
AACSB: Analytical skills

19) Tom's Tire Tower, Inc., sells tires for $110. The unit variable cost per tire is $85. Fixed costs total $475,000.

Required:
a. What is the contribution margin per tire?
b. What is the breakeven point in tires?
c. How many tires must be sold to earn a pretax income of $450,000?
d. What is the margin of safety, assuming 33,000 tires are sold?
Answer:
a. Contribution margin per tire = $110 - $85 = $25

b. N = Breakeven point in tires
   $110N - $85N - $475,000 = 0
   $25N - $475,000 = 0
   N = $475,000/$25 = 19,000 tires

c. N = Target sales in tires
   $110N - $85N - $450,000 -$ 475,000 = 0
   $25N - $925,000 = 0
   N = $925,000/$25 = 37,000 tires

d. Margin of safety = Sales - Breakeven sales
                     = ($110 × 33,000) - ($110 × 19,000) = $1,540,000
Diff: 3
Terms: contribution margin per unit, margin of safety, breakeven point (BEP)
Objective: 2, 4
AACSB: Analytical skills

Objective 3.5

1) _____ is the process of varying key estimates to identify those estimates that are the most critical to a decision.
A) The graph method
B) A sensitivity analysis
C) The degree of operating leverage
D) Sales mix
Answer: B
Diff: 1
Terms: sensitivity analysis
Objective: 5
AACSB: Reflective thinking

2) The margin of safety is the difference between:
A) budgeted expenses and breakeven expenses
B) budgeted revenues and breakeven revenues
C) actual operating income and budgeted operating income
D) actual contribution margin and budgeted contribution margin
Answer: B
Diff: 1
Terms: margin of safety
Objective: 5
AACSB: Reflective thinking

Answer the following questions using the information below:

Dr. Charles Hunter, MD, performs a certain outpatient procedure for $1,000. His fixed costs are $20,000, while his variable costs are $500 per procedure. Dr. Hunter currently plans to perform 200 procedures this month.

3) What is the margin of safety assuming 100 procedures are budgeted?
A) $40,000 or 40 times
B) $50,000 or 50 times
C) $60,000 or 60 times
D) $100,000 or 100 times
Answer: C
Explanation:
C) Breakeven in number of procedures = $20,000 / ($1,000 - $500) = 40 times
    Actual sales   100 times × $1,000 = $100,000
    Breakeven sales 40 times × $1,000 = $40,000
    Margin of safety 60 times $60,000
Diff: 3
Terms: margin of safety
Objective: 5
AACSB: Analytical skills

Answer the following questions using the information below:

Nancy's Niche sells a single product. 8,000 units were sold resulting in $80,000 of sales revenue, $20,000 of variable costs, and $10,000 of fixed costs.

4) If variable costs decrease by $1 per unit, the new breakeven point is:
A) 1,539 units.
B) 492 units.
C) $11,765 in total sales dollars.
D) None of these answers are correct.
Answer: C
Explanation: C) [$10 - ($2.50 - $1.00)] / $10 = 85%; $10,000 / 0.85 = $11,765
Diff: 3
Terms: breakeven point (BEP)
Objective: 5
AACSB: Analytical skills

5) If a change is made in one parameter of CVP analysis, it is an example of:
A) sensitivity analysis
B) incremental budgeting
C) operating leverage
D) multiple cost drivers
Answer: A
Diff: 1
Terms: sensitivity analysis
Objective: 5
AACSB: Communication

6) Sensitivity analysis is a "what-if" technique that managers use to examine how a result will change if the originally predicted data are NOT achieved or if an underlying assumption changes.
Answer: TRUE
Diff: 1
Terms: sensitivity analysis
Objective: 5
AACSB: Reflective thinking

7) Margin of safety measures the difference between budgeted revenues and breakeven revenues.
Answer: TRUE
Diff: 1
Terms: margin of safety
Objective: 5
AACSB: Reflective thinking

8) If a company's breakeven revenue is $1,000 and its budgeted revenue is $1,250, then its margin of safety percentage is 25%.
Answer: FALSE
Explanation: The margin of safety percentage is 20% as the denominator of the ratio is the budgeted level and not the breakeven level.
Diff: 2
Terms: margin of safety
Objective: 5
AACSB: Analytical skills

9) Sensitivity analysis helps to evaluate the risk associated with decisions.
Answer: TRUE
Diff: 1
Terms: sensitivity analysis
Objective: 5
AACSB: Ethical reasoning

10) Alex Miller, Inc., sells car batteries to service stations for an average of $30 each. The variable cost of each battery is $20 and monthly fixed manufacturing costs total $10,000. Other monthly fixed costs of the company total $8,000.

Required:
a. What is the breakeven point in batteries?
b. What is the margin of safety, assuming sales total $60,000?
c. What is the breakeven level in batteries, assuming variable costs increase by 20%?
d. What is the breakeven level in batteries, assuming the selling price goes up by 10%, fixed manufacturing costs decline by 10%, and other fixed costs decline by $100?
Answer:
a. N = Breakeven units
$30N - $20N - $10,000 - $8,000 = 0
$10N - $18,000 = 0
N = $18,000/$10 = 1,800 batteries

b. Margin of safety = $60,000 - ($30 × 1,800) = $6,000

c. N = Breakeven units
$30N - $24N - $10,000 - $8,000 = 0
$6N - $18,000 = 0
N = $18,000/$6 = 3,000 batteries

d. N = Breakeven units
$33N - $20N - $9,000 - $7,900 = 0
$13N - $16,900 = 0 N = $16,900/$13 = 1,300 batteries
Diff: 2
Terms: cost-volume-profit (CVP) analysis, breakeven point (BEP), margin of safety
Objective: 2, 4, 5
AACSB: Analytical skills

11) Explain when a manager would use cost-volume-profit analysis and sensitivity analysis.
Answer: Cost-volume-profit analysis is helpful for evaluating the profit impact of management decisions that affect production and sales volume.

Sensitivity analysis is helpful for identifying those estimates most critical for a decision.
Diff: 2
Terms: cost-volume-profit (CVP) analysis, sensitivity analysis
Objective: 1, 5
AACSB: Reflective thinking

Objective 3.6

Answer the following questions using the information below:

Southwestern College is planning to hold a fundraising banquet at one of the local country clubs. It has two options for the banquet:

> OPTION 1:   *Crestview Country Club*
> a. Fixed rental cost of $1,000
> b. $12 per person for food

> OPTION 2:   *Tallgrass Country Club*
> a. Fixed rental cost of $3,000
> b. A caterer who charges $8.00 per person for food

Southwestern College has budgeted $1,800 for administrative and marketing expenses. It plans to hire a band which will cost another $800. Tickets are expected to be $30 per person. Local business supporters will donate any other items required for the event.

1) Which option provides the least amount of risk?
A) Option one
B) Option two
C) Both options provide the same amount of risk.
D) Neither option has risks.
Answer: A
Diff: 1
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

2) Which option has the lowest breakeven point?
A) Option one
B) Option two
C) Both options have the same breakeven point.
D) The lowest breakeven point cannot be determined.
Answer: A
Explanation: A) Option 1: $30X - $12X - $1,000 - $1,800 - $800 = 0; X = $200
Option 2: $30X - $8X - $3,000 - $1,800 - $800 = 0; X = $255
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

3) Which option provides the greatest operating income if 600 people attend?
A) Option one
B) Option two
C) Operating incomes are identical.
D) Operating income is indeterminable.
Answer: B
Explanation: B) Option 1: $18 \times 600 - \$3,600 = \$7,200$; Option 2: $22 \times 600 - \$5,600 = \$7,600$
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

4) Which option provides the greatest degree of operating leverage if 600 people attend?
A) Option one
B) Option two
C) Both options provide equal degrees of operating leverage.
D) Operating leverage is indeterminable.
Answer: B
Explanation: B) Option 1: $18 \times 600 / \$7,200 = 1.50$; Option 2: $22 \times 600 / \$7,600 = 1.74$
Diff: 3
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

5) Option 1: Fixed costs of $10,000 and a breakeven point of 500 units.
Option 2: Fixed costs of $20,000 and a breakeven point of 700 units.
Which option should you choose if you are expecting to produce 600 units?
A) Option one
B) Option two
C) Both options are equally desirable.
D) The best option is indeterminable.
Answer: A
Explanation: A) Option 1 will result in operating income while Option 2 will result in an operating loss.
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

6) Mrs. Tannenbaum is going to sell Christmas tree lights for $40 a box. The lights cost Mrs. Tannenbaum $10 a box and any unsold lights can be returned for a full refund. She is planning to rent a booth at the upcoming Happy Holidays Convention, which offers three options:
1. paying a fixed fee of $3,000, or
2. paying a $1,000 fee plus 10% of revenues made at the convention, or
3. paying 25% of revenues made at the convention.

Which of the following statements is FALSE?
A) Her decision will determine the risk she faces.
B) Contribution margin will vary depending upon the option chosen.
C) One of the options will allow Mrs. Tannenbaum to break even, even if she doesn't sell any lights.
D) Operating income will be the greatest for Option 3.
Answer: D
Diff: 3
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

7) In a company with low operating leverage:
A) fixed costs are high and variable costs are low
B) large changes in sales volume result in small changes in net income
C) there is a higher possibility of net loss than a higher-leveraged firm
D) less risk is assumed than in a highly leveraged firm
Answer: D
Diff: 3
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

8) If the contribution margin ratio is 0.40, targeted operating income is $80,000, and targeted sales volume in dollars is $500,000, then total fixed costs are:
A) $80,000
B) $100,000
C) $120,000
D) $200,000
Answer: C
Explanation: C) (X + $80,00)/0.40 = $500,000; X = $120,000
Diff: 3
Terms: contribution margin ratio
Objective: 6
AACSB: Analytical skills

9) If the contribution margin ratio is 0.40, targeted operating income is $50,000, and fixed costs are $75,000, then sales volume in dollars is:
A) $250,000
B) $312,500
C) $275,000
D) $350,000
Answer: B
Explanation: B) X = (50,000 + 75,000)/.4; X = $312,500
Diff: 3
Terms: contribution margin ratio
Objective: 6
AACSB: Analytical skills

10) If the contribution margin ratio is 0.25, targeted operating income is $25,000, and targeted sales volume in dollars is $200,000, then total fixed costs are:
A) $50,000
B) $100,000
C) $75,000
D) $25,000
Answer: D
Explanation: D) (X + $25,000)/0.25 = $200,000; X = 25,000
Diff: 3
Terms: contribution margin ratio
Objective: 6
AACSB: Analytical skills

11) Fixed costs:
A) are considered variable costs over the long run
B) provide less operating leverage
C) reduce the risk of loss
D) are graphed as a steeply sloped line
Answer: A
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

12) When a greater proportion of costs are fixed costs, then:
A) a small increase in sales results in a small decrease in operating income
B) when demand is low the risk of loss is high
C) when demand is high the breakeven point is increased
D) a decrease in sales reduces the cost per unit
Answer: B
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

13) Companies with a greater proportion of fixed costs have a greater risk of loss than companies with a greater proportion of variable costs.
Answer: TRUE
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

14) The degree of operating leverage at a specific level of sales helps the managers calculate the effect that potential changes in sales will have on operating income.
Answer: TRUE
Diff: 1
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

15) If a company increases fixed costs, then the breakeven point will be lower.
Answer: FALSE
Explanation: If a company increases fixed costs, then the breakeven point will be *higher*.
Diff: 3
Terms: breakeven point (BEP)
Objective: 6
AACSB: Reflective thinking

16) Companies that are substituting fixed costs for variable costs receive a greater per unit return above the breakeven point.
Answer: TRUE
Diff: 3
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

17) A company with a low degree of operating leverage is at greater risk during downturns in the economy.
Answer: FALSE
Explanation: A company with a low degree of operating leverage is at *lesser* risk during downturns in the economy.
Diff: 3
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

18) Whether the purchase cost of a machine is treated as fixed or variable depends heavily on the time horizon being considered.
Answer: TRUE
Diff: 1
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

19) If a company has a degree of operating leverage of 4.0, that means a 10% increase in sales will result in a 40% increase in variable costs.
Answer: FALSE
Explanation: If a company has a degree of operating leverage of 2.0, that means a 20% increase in sales will result in a 40% increase in operating income.
Diff: 3
Terms: operating leverage
Objective: 6
AACSB: Analytical skills

20) When a company has at least some fixed costs, the degree of operating leverage is different at different levels of sales.
Answer: TRUE
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

21) Query Company sells pillows for $25.00 each. The manufacturing cost, all variable, is $10 per pillow. The company is planning on renting an exhibition booth for both display and selling purposes at the annual crafts and art convention. The convention coordinator allows three options for each participating company. They are:
     1.   paying a fixed booth fee of $5,010, or
     2.   paying an $4,000 fee plus 10% of revenue made at the convention, or
     3.   paying 20% of revenue made at the convention.

Required:
a. Compute the breakeven sales in pillows of each option.
b. Which option should Query Company choose, assuming sales are expected to be 800 pillows?
Answer:
a. Option 1 N = Breakeven in pillows
      $25N - $10N - $5,010 = 0
      $15N - $5,010 = 0
      N = $5,010/$15 = 334 pillows

    Option 2 N = Breakeven in pillows
      $25N - $10N - 0.10($25N) - $4,000 = 0
      $12.5N - $4,000 = 0
      N = $4,000/$12.5 = 320 pillows

    Option 3 N = Breakeven in pillows
      $25N - $10N - 0.20($25N) = 0
      $10N - $0 = 0
      N = $0/$10 = 0 pillows

b. Option 1 profit for 800 pillows = $15 × 800 - $5,010 = $6,990
    Option 2 profit for 800 pillows = $12.5 × 800 - 4,000 = $6,000
    Option 3 profit for 800 pillows = $10 × 800 = $8,000
    Option 3 is the best choice.

Diff: 3
Terms: breakeven point (BEP), sensitivity analysis
Objective: 2, 6
AACSB: Analytical skills

22) Auto Tires has been in the tire business for four years. It rents a building but owns all of its equipment. All employees are paid a fixed salary except for the busy season (April-June), when temporary help is hired by the hour. Utilities and other operating charges remain fairly constant during each month except those in the busy season.

Selling prices per tire average $75 except during the busy season. Because a large number of customers buy tires prior to winter, discounts run above average during the busy season. A 15% discount is given when two tires are purchased at one time. During the busy months, selling prices per tire average $60.

The president of Auto Tires is somewhat displeased with the company's management accounting system because the cost behavior patterns displayed by the monthly breakeven charts are inconsistent; the busy months' charts are different from the other months of the year. The president is never sure if the company has a satisfactory margin of safety or if it is just above the breakeven point.

Required:
a. What is wrong with the accountant's computations?
b. How can the information be presented in a better format for the president?

Answer:
a. The accounting system includes some assumptions about the CVP model that does not hold for Auto Tire. The CVP model requires cost and revenue to be linear. During the busy months, the company has costs and revenues which behave differently than during the other months of the year. The revenue line turns down (less slope) with the average selling price per tire decreasing from $75 to $60. The variable costs line probably turns upward (increasing slope) with the additional hourly workers being added to the work force.

b. The accountant may want to present two sets of information regarding the revenue and cost behaviors of the company: one for the busy season and one for the other months of the year. It would show that while the breakeven point actually increases during the busy months (a negative), the marginal income increases because of increased sales (a positive).
Diff: 2
Terms: breakeven point (BEP)
Objective: 2, 6
AACSB: Reflective thinking

23) Dolph and Evan started the DE Restaurant in 20X3. They rented a building, bought equipment, and hired two employees to work full time at a fixed monthly salary. Utilities and other operating charges remain fairly constant during each month.

During the past two years, the business has grown with average sales increasing 1% a month. This situation pleases both Dolph and Evan, but they do not understand how sales can grow by 1% a month while profits are increasing at an even faster pace. They are afraid that one day they will wake up to increasing sales but decreasing profits.

Required:
Explain why the profits have increased at a faster rate than sales. Use the terms variable costs and fixed costs in your response.
Answer: The fixed cost per meal served is decreasing with increased volumes, while the contribution margin per meal served remains constant. Apparently, most of the restaurant's expenses are fixed. Therefore, as sales pass the breakeven point the profit will increase even faster because the fixed expenses have already been covered. This allows sales to cover only variable expenses before contributing to the profit margin, thereby causing it to increase at a faster rate.
Diff: 2
Terms: operating leverage, cost-volume-profit (CVP) analysis
Objective: 2, 6
AACSB: Reflective thinking

24) Freddie's company has mostly fixed costs and Valerie's company has mostly variable costs. Which company has the greatest risk of a net loss? Explain why
Answer: Freddie's company has the greatest risk of net loss because more units are required to reach breakeven point than for Valerie.
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

25) Suppose a company decided to automate a production line. Explain what effects this would have on a company's cost structure using CVP terminology. Could these changes have any possible negative effect on the firm?
Answer: An automated production line would increase fixed costs through extra depreciation on the new machinery and also decrease variable costs due to the elimination of direct labor as a result of automation. This would increase the breakeven point. This could possibly have a negative effect on the firm if demand for the product produced by this production line is expected to decline in the future. With high fixed costs and low demand, a decline in profits might be more severe due to the presence of unchanging fixed costs as volume drops.
Diff: 2
Terms: operating leverage
Objective: 6
AACSB: Reflective thinking

Objective 3.7

Answer the following questions using the information below:

The following information is for Barnett Corporation:

Product X: Revenue	$10.00
Variable Cost	$2.50
Product Y: Revenue	$15.00
Variable Cost	$5.00
Total fixed costs	$50,000

1) What is the breakeven point assuming the sales mix consists of two units of Product X and one unit of Product Y?
A) 1,000 units of Y and 2,000 units of X
B) 1,013 units of Y and 2,025 units of X
C) 2,013 units of Y and 4,025 units of X
D) 2,000 units of Y and 4,000 units of X
Answer: D
Explanation:
D) N = units of product Y; and 2N = units of product X;
   ($10.00 - $2.50)2N + ($15.00 - $5.00) N - $50,000 = 0
   $15N + $10N = $50,000
   $25N = $50,000
   N = 2,000 units
Product Y = 2,000 units; Product X = 4,000 units
Diff: 3
Terms: sales mix
Objective: 7
AACSB: Analytical skills

2) What is the operating income, assuming actual sales total 150,000 units, and the sales mix is two units of Product X and one unit of Product Y?
A) $1,200,000
B) $1,250,000
C) $1,750,000
D) None of these answers are correct.
Answer: A
Explanation:

A)	Product X	Product Y	Total
Sales units	100,000	50,000	150,000
Revenue	$1,000,000	$750,000	$1,750,000
Var. costs	250,000	250,000	500,000
CM	$750,000	$500,000	$1,250,000
Fixed costs			50,000
			$1,200,000

Diff: 3
Terms: sales mix
Objective: 7
AACSB: Analytical skills

3) If the sales mix shifts to one unit of Product X and two units of Product Y, then the weighted-average contribution margin will:
A) increase per unit
B) stay the same
C) decrease per unit
D) be indeterminable
Answer: A
Diff: 2
Terms: sales mix
Objective: 7
AACSB: Reflective thinking

4) If the sales mix shifts to one unit of Product X and two units of Product Y, then the breakeven point will:
A) increase
B) stay the same
C) decrease
D) be indeterminable
Answer: C
Diff: 2
Terms: sales mix
Objective: 7
AACSB: Analytical skills

Answer the following questions using the information below:

The following information is for the Jeffries Corporation:

      Product A: Revenue $16.00
           Variable Cost $12.00

      Product B: Revenue $24.00
           Variable Cost $16.00

      Total fixed costs $75,000

5) What is the breakeven point, assuming the sales mix consists of three units of Product A and one unit of Product B?
A) 10,000 units of A and 5,000 units of B
B) 11,250 units of A and 3,750 units of B
C) 12,000 units of A and 4,000 units of B
D) 4,000 units of A and 12,000 units of B
Answer: B
Explanation:
B) N = units of product B; and 3N = units of product A;
   ($16.00 - $12.00)3N + ($24.00 - $16.00) N - $75,000 = 0
   $12N + $8N = $75,000
   $20N = $75,000
   N = 3,750 units
Product A = 11,250 units; Product B = 3,750 units
Diff: 3
Terms: sales mix
Objective: 7
AACSB: Analytical skills

6) What is the operating income, assuming actual sales total 25,000 units, and the sales mix is three units of Product A and one unit of Product B?
A) $50,000
B) $60,000
C) $75,000
D) None of these answers are correct.
Answer: A
Explanation:

A)	**Product A**	**Product B**	**Total**
Sales units	18,750	6,250	25,000
Revenue	$300,000	$150,000	$450,000
Var. costs	225,000	100,000	325,000
CM	$75,000	$50,000	$125,000
Fixed costs			75,000
			$50,000

Diff: 3
Terms: sales mix
Objective: 7
AACSB: Analytical skills

7) If the sales mix shifts to four units of Product A and one unit of Product B, then the weighted-average contribution margin will:
A) increase per unit
B) stay the same
C) decrease per unit
D) be indeterminable
Answer: C
Diff: 2
Terms: sales mix
Objective: 7
AACSB: Analytical skills

8) If the sales mix shifts to four units of Product A and one unit of Product B, then the breakeven point will:
A) increase
B) stay the same
C) decrease
D) be indeterminable
Answer: A
Diff: 2
Terms: sales mix
Objective: 7
AACSB: Analytical skills

9) Assuming a constant mix of 3 units of Small for every 1 unit of Large.

	Small	Large	Total
Sales	$20	$30	
VC	14	18	
Total fixed costs			$48,000

The breakeven point in units would be:
A) 4,800 units of Small and 1,600 units of Large
B) 1,200 units of Small and 400 units of Large
C) 1,600 units of Small and 4,800 units of Large
D) 400 units of Small and 1,200 units of Large
Answer: A
Explanation:

A)	Small	Large
Sales	$20	$30
Variable costs	14	18
Contribution margin	$6	$12
Sales mix	× 3	× 1
Contribution margin per mix	$18	$12

Total contribution margin per mix = $18 + $12 = $30

Breakeven point in composite units = $48,000/$30 = 1,600

Small: 1,600 × 3 = 4,800 units
Large: 1,600 × 1 = 1,600 units
Diff: 3
Terms: sales mix
Objective: 7
AACSB: Analytical skills

10) In multiproduct situations, when sales mix shifts toward the product with the lowest contribution margin then:
A) total revenues will increase
B) breakeven quantity will decrease
C) total contribution margin will increase
D) operating income will decrease
Answer: D
Diff: 3
Terms: sales mix
Objective: 7
AACSB: Reflective thinking

11) If a company has a degree of operating leverage of 3.0 and sales increase by 25%, then:
A) total variable costs will increase by 75%
B) total variable costs will not change
C) profit will increase by 30%
D) profit will increase by 75%
Answer: D
Explanation: D) 3.0 x 25% = 75%
Diff: 2
Terms: operating leverage
Objective: 7
AACSB: Analytical skills

12) If a company would like to increase its degree of operating leverage it should:
A) increase its inventories relative to its receivables
B) increase its receivables relative to its inventories
C) increase its variable costs relative to its fixed costs
D) increase its fixed costs relative to its variable costs
Answer: D
Diff: 2
Terms: operating leverage
Objective: 7
AACSB: Reflective thinking

13) Passenger-miles are a potential measure of output for the airline industry.
Answer: TRUE
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: 7
AACSB: Reflective thinking

14) Pounds of yeast used by a bake shop is a potential measure of output for the bakery industry.
Answer: FALSE
Explanation: Loaves of bread or dozens of doughnuts are examples of outputs; yeast is an input that would be part of the variable cost of the product.
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: 7
AACSB: Analytical skills

15) In multiproduct situations when sales mix shifts toward the product with the lowest contribution margin, the breakeven quantity will decrease.
Answer: FALSE
Explanation: In multiproduct situations when sales mix shifts toward the product with the lowest contribution margin, the breakeven quantity will *increase*.
Diff: 3
Terms: sales mix
Objective: 7
AACSB: Reflective thinking

16) In multiproduct situations when sales mix shifts toward the product with the highest contribution margin, operating income will be higher.
Answer: TRUE
Diff: 3
Terms: sales mix
Objective: 7
AACSB: Reflective thinking

17) To calculate the breakeven point in a multiproduct situation, one must assume that the sales mix of the various products remains constant.
Answer: TRUE
Diff: 2
Terms: sales mix
Objective: 7
AACSB: Ethical reasoning

18) If a company's sales mix is 2 units of product A for every 3 units of product B, and the company sells 3,000 units in total of both products, only 2,000 units of product A will be sold.
Answer: FALSE
Explanation: If a company's sales mix is 2 units of product A for every 3 units of product B, and the company sells 3,000 units in total of both products, 1,200 units of product A will be sold and 1,800 units of product B will be sold.
Diff: 2
Terms: sales mix
Objective: 7
AACSB: Analytical skills

19) Ken's Beer Emporium sells beer and ale in both pint and quart sizes. If Ken's sells twice as many pints as it sells quarts, and sells 2,400 items total, it will sell 800 quarts of ale.
Answer: TRUE
Diff: 2
Terms: sales mix
Objective: 7
AACSB: Analytical skills

20) Karen Hefner, a florist, operates retail stores in several shopping malls. The average selling price of an arrangement is $30 and the average cost of each sale is $18. A new mall is opening where Karen wants to locate a store, but the location manager is not sure about the rent method to accept. The mall operator offers the following three options for its retail store rentals:
1. paying a fixed rent of $15,000 a month, or
2. paying a base rent of $9,000 plus 10% of revenue received, or
3. paying a base rent of $4,800 plus 20% of revenue received up to a maximum rent of $25,000.

Required:
a. For each option, compute the breakeven sales and the monthly rent paid at break-even.
b. Beginning at zero sales, show the sales levels at which each option is preferable up to 5,000 units.
Answer:
a. Option 1   N = Breakeven units
        $30N - $18N - $15,000 = 0
        $12N - $15,000 = 0
        N = $15,000/$12 = 1,250 units
    Rent at breakeven = $15,000

    Option 2   N = Breakeven units
        $30N - $18N - 0.10($30N) - $9,000 = 0
        $9N - $9,000 = 0
        N = $9,000/$9 = 1,000 units
    Rent at breakeven = $9,000 + (0.10 × $30 × 1,000) = $12,000

    Option 3   N = Breakeven units
        $30N - $18N - 0.20($30N) - $4,800 = 0
        $6N - $4,800 = 0
        N = $4,800/$6 = 800 units
    Rent at breakeven = $4,800 + (0.20 × $30 × 800) = $9,600

b. Option 3 from 0 to 1,400 units for $4,800 plus $6 per unit.
    Option 2 from 1,401 to 2,000 for $9,000 plus $3 per unit.
    Option 1 above 2,000 for $15,000.

    Option 1 equals Option 2 when sales are 2,000 and favors Option 1 above 2,000 units.
        $15,000 = $9,000 + 0.10($30N); $6,000 = $3N;   N = 2,000

    Option 1 equals Option 3 when sales are 1,700 and favors Option 1 above 1,700 units.
        $15,000 = $4,800 + 0.20($30N); $10,200 = $6N;   N = 1,700 units
Diff: 3
Terms: breakeven point (BEP)
Objective: 2, 7
AACSB: Analytical skills

21) Sprint Manufacturing Company produces two products, X and Y. The following information is presented for both products:

	X	**Y**
Selling price per unit	$30	$20
Variable cost per unit	20	5

Total fixed costs are $292,500.

Required:
a. Calculate the contribution margin for each product.
b. Calculate breakeven point in units of both X and Y if the sales mix is 3 units of X for every unit of Y.
c. Calculate breakeven volume in total dollars if the sales mix is 2 units of X for every 3 units of Y.

Answer:
a. X: $30 - $20 = $10
    Y: $20 - $5 = $15

b. (3 × $10) + (1 × $15) = $45
    $292,500/$45 = 6,500 units
    X: 6,500 × 3 = 19,500 units
    Y: 6,500 × 1 = 6,500 units

c. (2 × $10) + (3 × $15) = $65
    $292,500/$65 = 4,500 units
    X: 4,500 × 2 = 9,000 × $30 = $270,000
    Y: 4,500 × 3 = 13,500 × $20 = 270,000
    Total dollar sales = $540,000

Diff: 3
Terms: sales mix, breakeven point (BEP), sensitivity analysis
Objective: 2, 7
AACSB: Analytical skills

22) Ballpark Concessions currently sells hot dogs. During a typical month, the stand reports a profit of $9,000 with sales of $50,000, fixed costs of $21,000, and variable costs of $0.64 per hot dog.

Next year, the company plans to start selling nachos for $3 per unit. Nachos will have a variable cost of $0.72 and new equipment and personnel to produce nachos will increase monthly fixed costs by $8,808. Initial sales of nachos should total 5,000 units. Most of the nacho sales are anticipated to come from current hot dog purchasers, therefore, monthly sales of hot dogs are expected to decline to $20,000.

After the first year of nacho sales, the company president believes that hot dog sales will increase to $33,750 a month and nacho sales will increase to 7,500 units a month.

Required:
a. Determine the monthly breakeven sales in dollars before adding nachos.
b. Determine the monthly breakeven sales during the first year of nachos sales, assuming a constant sales mix of 1 hotdog and 2 units of nachos.

Answer:
a. Contribution margin = Fixed costs + Profit
  = $21,000 + $9,000 = $30,000

  Variable costs = Sales - Contribution margin
  = $50,000 - $30,000
  = $20,000

  Units sold = $20,000/$0.64 = 31,250 units
  Selling price = $50,000/31,250 = $1.60 per unit
  Unit Variable costs = $20,000/31,250 = $0.64
  N = Breakeven units

  $1.60N - $0.64N - $21,000 = 0
  $0.96N - $21,000 = 0
  N = $21,000/$0.96 = 21,875 units

b. Ratio equal to 1 hot dog to 2 units of nachos.
   N = Breakeven number of units of hot dogs
   2N = Breakeven number of units of nachos

   $3(2)N + $1.60N - $0.72(2N) - $0.64N - $29,808 = 0
   $7.60N - $2.08N - $29,808 = 0
   N = $29,808/$5.52 = 5,400 hot dogs

   Therefore, 5,400 hot dogs and 10,800 units of nachos need to be sold to break even.
Diff: 3
Terms: breakeven point (BEP), sales mix
Objective: 2, 7
AACSB: Analytical skills

23) Bob's Textile Company sells shirts for men and boys. The average selling price and variable cost for each product are as follows:

	Men's		Boys'
Selling Price	$28.80	Selling Price	$24.00
Variable Cost	$20.40	Variable Cost	$16.80

Fixed costs are $38,400.

Required:
a. What is the breakeven point in units for each type of shirt, assuming the sales mix is 2:1 in favor of men's shirts?
b. What is the operating income, assuming the sales mix is 2:1 in favor of men's shirts, and sales total 9,000 shirts?

Answer:
a. N = breakeven in boys' shirts   2N = breakeven in men's shirts

$24N + $28.80(2N) - $16.80N - $20.40(2N) - $38,400 = 0
$81.6N - $57.6N - $38,400 = 0
$24N - $38,400 = 0
N = $38,400/$24 = 1,600 shirts

Therefore, to break even, 1,600 boys' shirts and 3,200 men's shirts need to be sold.

b.

	Boys'	Men's	Total
Sales in units	3,000	6,000	9,000
Revenue	$72,000	$172,800	$244,800
Variable costs	50,400	122,400	172,800
Contribution margin	$21,600	$50,400	$72,000
Fixed costs			38,400
Operating income			$33,600

Diff: 3
Terms: sales mix, breakeven point (BEP)
Objective: 7
AACSB: Analytical skills

24) Mount Carmel Company sells only two products, Product A and Product B.

	Product A	Product B	Total
Selling price	$40	$50	
Variable cost per unit	$24	$40	
Total fixed costs			$840,000

Mount Carmel sells two units of Product A for each unit it sells of Product B. Mount Carmel faces a tax rate of 30%.

Required:
a. What is the breakeven point in units for each product assuming the sales mix is 2 units of Product A for each unit of Product B?
b. What is the breakeven point if Mount Carmel's tax rate is reduced to 25%, assuming the sales mix is 2 units of Product A for each unit of Product B?
c. How many units of each product would be sold if Mount Carmel desired an after-tax net income of $73,500, facing a tax rate of 30%?

Answer:
a. N = breakeven in product B   2N = breakeven in product A

($40 × 2N) + ($50 × N) - ($24 × 2N) - ($40 × N) - $840,000 = 0
($130 × N) - ($88 × N) - $840,000 = 0
$42N - $840,000 = 0
N = $840,000 / $42 = 20,000

Therefore, to break even, 40,000 units of Product A and 20,000 units of Product B need to be sold.

b. The breakeven point would be the same. At the breakeven point there is no pre-tax income, so the tax rate change is irrelevant in this situation.

c. N = number of units of product B   2N = number of units of product A

($40 × 2N) + ($50 × N) - ($24 × 2N) - ($40 × N) - $840,000 =
$73,500 / (1 - .3)
($130 × N) - ($88 × N) - $840,000 = $105,000
$42N - $945,000 = 0
N = $945,000 / $42 =22,500

Therefore, to meet the profit goal, 2 × N = 45,000 units of Product A and N = 22,500 units of Product B need to be sold.
Diff: 3
Terms: sales mix, breakeven point (BEP), net income
Objective: 7
AACSB: Analytical skills

25) Atlanta Radio Supply sells only two products, Product X and Product Y.

	Product X	Product Y	Total
Selling price	$25	$45	
Variable cost per unit	$20	$35	
Total fixed costs			$350,000

Atlanta Radio Supply sells three units of Product X for each two units it sells of Product Y. Atlanta Radio Supply has a tax rate of 25%.

Required:
a.   What is the breakeven point in units for each product, assuming the sales mix is 3 units of Product X for each two units of Product Y?
b.   How many units of each product would be sold if Atlanta Radio Supply desired an after-tax net income of $210,000, using its tax rate of 25%?

Answer:
a. $3N$ = breakeven in product X $2N$ = breakeven in product Y

   ($25 - $20) × $3N$ + ($45 - $35) x $2N$ - $350,000 = 0
   $15N + $20N- $350,000 = 0
   $35N - $350,000 = 0
   N = $350,000 / $35 = 10,000

   Therefore, to break even, 30,000 (10,000 x 3) units of Product X and 20,000 (10,000 x 2) units of Product Y need to be sold.

b. $3N$ = number of units of product X $2N$ = number of units of product Y

   ($25 - $20) × $3N$ + ($45 - $35) x $2N$ - $350,000 = $210,000 / (1 - .25)
   $15N + $20N- $350,000 = $280,000
   $35N- $350,000 = $280,000
   $35N - $630,000 = 0
   N = $630000 / $35 = 18,000

Therefore, to meet the profit goal, $3 × N$ = 54,000 units of Product X and $2 x N$ = 36,000 units of Product Y need to be sold.
Diff: 3
Terms: sales mix, breakeven point (BEP), net income
Objective: 7
AACSB: Analytical skills

26) Pennsylvania Valve Company makes three types of valves: Speedy Flow, Sure Flow, and Fine Flow. Each of the three products has a different contribution margin, and the proportions of the three products sold have remained steady over the years. How could Pennsylvania valve compute a breakeven point given this situation?

Answer: Pennsylvania Valve could consider that it makes a single composite product that represents all three products given the constant sales mix. For example, if the ratio is 3 Speedy, 2 Sure Flow, and 1 Fine Flow, Pennsylvania Valve could calculate a weighted average contribution margin for the composite product based on the contribution margins of the individual products using the relative sales mix as weights. Pennsylvania Valve could then divide the fixed costs by this composite contribution margin to determine how many composite units would be needed to be sold to cover the fixed costs. Then the sales mix could be used to determine how many units of each real product is in each composite units. Thus, if 10,000 composite units were required to breakeven and the sales mix is 3 Speedy, 2 Sure Flow, and 1 Fine Flow, Pennsylvania Valve would need to sell 30,000 units of Speedy, 20,000 units of Sure Flow and 10,000 units of Fine Flow to breakeven.

Diff: 3
Terms: breakeven point (BEP), sales mix
Objective: 7
AACSB: Reflective thinking

Objective 3.A

1) Multiple cost drivers:
A) have only one revenue driver
B) can utilize the simple CVP formula
C) have no unique breakeven point
D) are the result of multiple products
Answer: C
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: A
AACSB: Reflective thinking

2) A nonprofit organization aids the unemployed by supplementing their incomes by $3,200 annually, while they seek new employment skills. The organization has fixed costs of $240,000 and the budgeted appropriation for the year totals $800,000. How many individuals can receive financial assistance this year?
A) 175 people
B) 130 people
C) 100 people
D) 75 people
Answer: A
Explanation: A) $800,000 - $3,200N - $240,000 = 0; $560,000 = $3,200N; N = 175 people
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: A
AACSB: Analytical skills

3) Helping Hands is a nonprofit organization that supplies electric fans during the summer for individuals in need. Fixed costs are $200,000. The fans cost $20.00 each. The organization has a budgeted appropriation of $480,000. How many people can receive a fan during the summer?
A) 12,000 people
B) 14,000 people
C) 24,000 people
D) 34,000 people
Answer: B
Explanation: B) $480,000 - $20N - $200,000 = 0; $280,000 = $20N; N = 14,000 people
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: A
AACSB: Analytical skills

4) Mount Carmel Company sells only two products, Product A and Product B.

	Product A	Product B	Total
Selling price	$40	$50	
Variable cost per unit	$24	$40	
Total fixed costs			$840,000

Mount Carmel sells two units of Product A for each unit it sells of Product B. Mount Carmel faces a tax rate of 30%. Mount Carmel desires a net after-tax income of $73,500. The breakeven point in units would be:
A) 21,750 units of Product A and 43,500 units of Product B
B) 22,500 units of Product A and 45,000 units of product B
C) 43,500 units of Product A and 21,750 units of Product B
D) 45,000 units of Product A and 22,500 units of Product B
Answer: D
Explanation: D) Desired pre-tax net income $73,500 / (1.0 - .3) = $105,000
Weighted contribution margin [2 × ($40 - $24)] + [1 × ($50 - $40)] = $42
Breakeven point in composite units is ($105,000 + $840,000) / $42 = 22,500
22,500 composite units is (2 × 22,500) = 45,000 units of A and
(1 × 22,500) = 22,500 units of B
Diff: 3
Terms: sales mix
Objective: A
AACSB: Analytical skills

5) "Uncertainty" may be defined as:
A) the possibility that an actual amount will be the same as an expected amount
B) the possibility that an actual amount will be either higher or lower than the expected amount
C) the possibility that a budgeted amount will be higher than the estimated amount
D) the possibility that the budgeted amount will be lower than the estimated amount
Answer: B
Diff: 1
Terms: uncertainty
Objective: A
AACSB: Reflective thinking

6) Events, as distinguished from actions, would include:
A) personnel policy options
B) decisions on time schedules
C) decisions on direct material vendors
D) a financial recession
Answer: D
Diff: 3
Terms: uncertainty
Objective: A
AACSB: Ethical reasoning

7) Expected monetary value may be defined as:
A) the probability that each outcome will occur
B) the probability that each outcome will not occur
C) the weighted average of the outcomes with the probability of each outcome serving as the weight
D) the average of all possible outcomes
Answer: C
Diff: 1
Terms: expected monetary value
Objective: A
AACSB: Reflective thinking

8) What would be the expected monetary value for the following data using the probability method?

Probability	Cash Inflows
0.20	$200,000
0.30	$160,000
0.15	$120,000
0.35	$0

A) $40,000
B) $188,000
C) $106,000
D) $60,000
Answer: C
Explanation: C) 0.20($200,000) + 0.30($160,000) + 0.15($120,000) = $106,000
Diff: 2
Terms: expected monetary value
Objective: A
AACSB: Analytical skills

9) Lobster Liquidators will make $500,000 if the fishing season weather is good, $200,000 if the weather is fair, and would actually lose $50,000 if the weather is poor during the season. If the weather service gives a 40% probability of good weather, a 25% probability of fair weather, and a 35% probability of poor weather, what is the expected monetary value for Lobster Liquidators?
A) $500,000
B) $232,500
C) $267,500
D) $200,000
Answer: B
Explanation: B) 0.40($500,000) + 0.25($200,000) + 0.35(-$5,0000) = $232,500
Diff: 2
Terms: expected monetary value
Objective: A
AACSB: Analytical skills

Answer the following questions using the information below:

Patrick Ross has three booth rental options at the county fair where he plans to sell his new product. The booth rental options are:

Option 1: $1,000 fixed fee, or
Option 2: $750 fixed fee + 5% of all revenues generated at the fair, or
Option 3:   20% of all revenues generated at the fair.

The product sells for $37.50 per unit. He is able to purchase the units for $12.50 each.

10) How many actions and events will a decision table contain?
A) 1 action and 3 events
B) 1 action and 6 events
C) 2 actions and 3 events
D) 3 actions and 6 events
Answer: D
Diff: 2
Terms: decision table
Objective: A
AACSB: Analytical skills

11) Which option should Patrick choose to maximize income assuming there is a 40% probability that 70 units will be sold and a 60% probability that 40 units will be sold?
A) Option 1
B) Option 2
C) Option 3
D) All options maximize income equally.
Answer: C
Explanation:
C) Expected revenues = 0.4(70 × $37.50) + 0.6(40 × $37.50) = $1,950
Expected CM before options = 0.4(70 × $25) + 0.6(40 × $25) = $1,300

Option 1: $1,300 - $1,000 = $300
Option 2: $1,300 - $750 - 0.05($1,950) = $452.50
Option 3: $1,300 - 0.2($1,950) = $910*

* = maximization of income
Diff: 3
Terms: decision table
Objective: A
AACSB: Analytical skills

12) There is no unique breakeven point when there are multiple cost drivers.
Answer: TRUE
Diff: 2
Terms: cost-volume-profit (CVP) analysis
Objective: A
AACSB: Analytical skills

13) When there are multiple cost drivers the simple CVP formula of Q = (FC + OI)/CMU can still be used.
Answer: FALSE
Explanation: When there are multiple cost drivers the simple CVP formula no longer applies.
Diff: 1
Terms: cost-volume-profit (CVP) analysis
Objective: A
AACSB: Reflective thinking

14) An expected value is the weighted average of the outcomes, with the probability of each outcome serving as the weight.
Answer: TRUE
Diff: 2
Terms: expected value
Objective: A
AACSB: Communication

15) Produce Company needs to know the pounds of apples to have on hand each day. Each pound of apples costs $0.50 and can be sold for $0.80. Unsold apples are worthless at the end of the day. The following demands were found after studying the last six months' sales:

200 pounds of apples 30% of the time
300 pounds of apples 40% of the time
400 pounds of apples 30% of the time

Required:
Determine whether Produce Company should order 200, 300, or 400 pounds of apples.
Answer:

Quantity Ordered	Demand Probability			Expected Value
	200	**300**	**400**	
200	$60	$60	$60	$60.00
300	10	90	90	66.00
400	(40)	40	120	40.00
p	0.30	0.40	0.30	

Demand example: 300 units ordered; but demand is either 300 or 400 units:
    ($0.80 × 300) - ($0.50 × 300) = $90
Expected value example:
    Order 400: ($(40) × 0.30) + ($40 × 0.40) + ($120 × 0.30) = $40
Answer: Should order 300 pounds of apples to maximize profit.
Diff: 3
Terms: expected value
Objective: A
AACSB: Analytical skills

16) Lauren had been a manager of a major hotel chain for 15 years. Due to a hotel owner's illness, Lauren was offered the opportunity to purchase a hotel near a vacation area she had often visited. After obtaining a lawyer and an accountant to assist her, Lauren did an analysis of the business and evaluated several contingencies relating to various scenarios that might occur based on economic and weather season circumstances. Since the expected monetary value of the various scenarios was much higher than the price of the hotel, she decided to purchase the hotel. She resigned her position, obtained a loan, and purchased the hotel. The following year, there was a severe economic downturn and also a very bad weather season that reduced the number of guests and also caused a resulting mold situation in the hotel building that required expensive repair work. Lauren ran short of cash, became emotionally distraught, and eventually had to sell the hotel at a significant loss. Was it a bad decision for her to purchase the hotel instead of keeping her other managerial position? Explain.

Answer: It was not necessarily a bad decision for Lauren to purchase the hotel. Decisions are made based on information that is available at the time of evaluating and making the decision. By definition, the nature of uncertainty rules out any guarantees regarding the specific outcome that will be obtained. There are some cases where a bad outcome is obtained even when a good decision has been made. Although the best protection against a bad outcome is a good decision, you can never be 100% certain of a good outcome.
Diff: 3
Terms: outcome
Objective: A
AACSB: Reflective thinking

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