Managerial Accounting for Managers 5th edition Noreen Test Bank

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Managerial Accounting for Managers, 5e **(Noreen)**
Chapter 2 Cost–Volume–Profit Relationships

1) Incremental analysis is an analytical approach that focuses only on those revenues and costs that will not change as a result of a decision.

Answer: FALSE
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

2) When expressed on a per unit basis, fixed costs can mislead decision makers into thinking of them as variable costs.

Answer: TRUE
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Understand
AACSB: Analytical Thinking
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3) To estimate what the profit will be at various levels of activity, multiply the number of units to be sold above or below the break-even point by the unit contribution margin.

Answer: TRUE
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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4) In a CVP graph (sometimes called a break-even chart), unit volume is represented on the horizontal (X) axis and dollars on the vertical (Y) axis.

Answer: TRUE
Difficulty: 1 Easy
Topic: CVP Relationships in Graphic Form
Learning Objective: 02-02 Prepare and interpret a cost-volume-profit (CVP) graph and a profit graph.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

5) On a CVP graph for a profitable company, the total expense line will be steeper than the total revenue line.

Answer: FALSE
Difficulty: 2 Medium
Topic: CVP Relationships in Graphic Form
Learning Objective: 02-02 Prepare and interpret a cost-volume-profit (CVP) graph and a profit graph.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

6) In a CVP graph, the anticipated profit or loss at any given level of sales is measured by the vertical distance between the total revenue line (sales) and the total fixed expense line.

Answer: FALSE
Difficulty: 2 Medium
Topic: CVP Relationships in Graphic Form
Learning Objective: 02-02 Prepare and interpret a cost-volume-profit (CVP) graph and a profit graph.
Bloom's: Understand
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7) A shift in the sales mix from low-margin items to high-margin items will decrease total profits even though total sales increase.

Answer: FALSE
Difficulty: 2 Medium
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

8) A shift in the sales mix from high-margin items to low-margin items can cause total profits to decrease even though total sales may increase.

Answer: TRUE
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Remember
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

9) In two companies making the same product and with the same total sales and total expenses, the contribution margin ratio will be lower in the company with a higher proportion of fixed expenses in its cost structure.

Answer: FALSE
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Understand
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10) If the variable expense per unit decreases, and all other factors remain the same, the contribution margin ratio will increase.

Answer: TRUE
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

11) The smaller the contribution margin ratio, the smaller the amount of sales required to cover a given amount of fixed expenses.

Answer: FALSE
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

12) For a given level of sales, a low contribution margin ratio will produce more net operating income than a high contribution margin ratio.

Answer: FALSE
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

13) If fixed expenses increase by $10,000 per year, then the sales needed to break even will generally increase by more than $10,000.

Answer: TRUE
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Understand
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14) A decrease in the number of units sold will decrease the break-even point.

Answer: FALSE
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

15) The break-even point in units can be obtained by dividing total fixed expenses by the unit contribution margin.

Answer: TRUE
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

16) The break-even point can be determined by simply adding together all of the expenses from the income statement.

Answer: FALSE
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

17) An increase in the number of units sold will decrease a company's break-even point.

Answer: FALSE
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Understand
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18) For a capital intensive, automated company the break-even point will tend to be higher and the margin of safety will be lower than for a less capital intensive company with the same sales.

Answer: TRUE
Difficulty: 2 Medium
Topic: Break-Even Analysis; The Margin of Safety
Learning Objective: 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
Bloom's: Analyze
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

19) The total volume in sales dollars that would be required to attain a given target profit is determined by dividing the target profit by the contribution margin ratio.

Answer: FALSE
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

20) Two companies with the same margin of safety in dollars will also have the same total contribution margin.

Answer: FALSE
Difficulty: 2 Medium
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

21) Fawn Company's margin of safety is $90,000. If the company's sales drop by $80,000, it will still have positive net operating income.

Answer: TRUE
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Remember
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22) The margin of safety is the amount by which sales can decrease before losses are incurred by the company.

Answer: TRUE
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

23) The margin of safety percentage is equal to the margin of safety in dollars divided by total contribution margin.

Answer: FALSE
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

24) The degree of operating leverage in a company is smallest at the break-even point and increases as sales rise.

Answer: FALSE
Difficulty: 2 Medium
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

25) The degree of operating leverage is computed by dividing sales by the contribution margin.

Answer: FALSE
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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26) A company with high operating leverage will experience a larger reduction in net operating income in a period of declining sales than a company with low operating leverage.

Answer: TRUE
Difficulty: 2 Medium
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

27) A shift in the sales mix from products with high contribution margin ratios toward products with low contribution margin ratios will raise the break-even point for the company as a whole.

Answer: TRUE
Difficulty: 2 Medium
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Understand
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

28) If the contribution margin is not sufficient to cover fixed expenses:
A) total profit equals total expenses.
B) contribution margin is negative.
C) a loss occurs.
D) variable expenses equal contribution margin.

Answer: C
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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29) Which of the following statements is correct with regard to a CVP graph?
A) A CVP graph shows the maximum possible profit.
B) A CVP graph shows the break-even point as the intersection of the total sales revenue line and the total expense line.
C) A CVP graph assumes that total expense varies in direct proportion to unit sales.
D) A CVP graph shows the operating leverage as the gap between total sales revenue and total expense at the actual level of sales.

Answer: B
Difficulty: 1 Easy
Topic: CVP Relationships in Graphic Form
Learning Objective: 02-02 Prepare and interpret a cost-volume-profit (CVP) graph and a profit graph.
Bloom's: Remember
AACSB: Reflective Thinking
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30) Which of the following is correct? The break-even point occurs on the CVP graph where:
A) total profit equals total expenses.
B) total profit equals total fixed expenses.
C) total contribution margin equals total fixed expenses.
D) total variable expenses equal total contribution margin.

Answer: C
Difficulty: 2 Medium
Topic: CVP Relationships in Graphic Form
Learning Objective: 02-02 Prepare and interpret a cost-volume-profit (CVP) graph and a profit graph.
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31) Which of the following is true regarding the contribution margin ratio of a company that produces only a single product?
A) As fixed expenses decrease, the contribution margin ratio increases.
B) The contribution margin ratio multiplied by the selling price per unit equals the contribution margin per unit.
C) The contribution margin ratio will decline as unit sales decline.
D) The contribution margin ratio equals the selling price per unit less the variable expense ratio.

Answer: B
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Understand
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32) Mossfeet Shoe Corporation is a single product firm. The company is predicting that a price increase next year will not cause unit sales to decrease. What effect would this price increase have on the following items for next year?

	Contribution Margin Ratio	Break-even Point
A)	Increase	Decrease
B)	Decrease	Decrease
C)	Increase	No effect
D)	Decrease	No effect

A) Choice A
B) Choice B
C) Choice C
D) Choice D

Answer: A
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.
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33) If a company increases its selling price by $2 per unit due to an increase in its variable labor cost of $2 per unit, the break-even point in units will:
A) decrease.
B) increase.
C) not change.
D) change but direction cannot be determined.

Answer: C
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Analyze
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

34) Break-even analysis assumes that:
A) Total revenue is constant.
B) Unit variable expense is constant.
C) Unit fixed expense is constant.
D) Selling prices must fall in order to generate more revenue.

Answer: B
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

35) Which of the following would not affect the break-even point?
A) number of units sold
B) variable expense per unit
C) total fixed expense
D) selling price per unit

Answer: A
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Analyze
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36) A $2.00 increase in a product's variable expense per unit accompanied by a $2.00 increase in its selling price per unit will:
A) decrease the degree of operating leverage.
B) decrease the contribution margin.
C) have no effect on the break-even volume.
D) have no effect on the contribution margin ratio.

Answer: C
Difficulty: 3 Hard
Topic: Operating Leverage; Break-Even Analysis
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.; 02-05 Determine the break-even point.
Bloom's: Analyze
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

37) To obtain the dollar sales volume necessary to attain a given target profit, which of the following formulas should be used?
A) (Fixed expenses + Target net profit)/Total contribution margin
B) (Fixed expenses + Target net profit)/Contribution margin ratio
C) Fixed expenses/Contribution margin per unit
D) Target net profit/Contribution margin ratio

Answer: B
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

38) If sales volume increases and all other factors remain constant, then the:
A) contribution margin ratio will increase.
B) break-even point will decrease.
C) margin of safety will increase.
D) net operating income will decrease.

Answer: C
Difficulty: 2 Medium
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Understand
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39) If the degree of operating leverage is 4, then a one percent change in quantity sold should result in a four percent change in:
A) unit contribution margin.
B) revenue.
C) variable expense.
D) net operating income.

Answer: D
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Remember
AACSB: Reflective Thinking
AICPA: BB Critical Thinking; FN Measurement

40) Which of the following is an assumption underlying standard CVP analysis?
A) In multiproduct companies, the sales mix is constant.
B) In manufacturing companies, inventories always change.
C) The price of a product or service is expected to change as volume changes.
D) Fixed expenses will change as volume increases.

Answer: A
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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41) Rovinsky Corporation, a company that produces and sells a single product, has provided its contribution format income statement for November.

Sales (5,700 units)	$	319,200
Variable expenses		188,100
Contribution margin		131,100
Fixed expenses		106,500
Net operating income	$	24,600

If the company sells 5,300 units, its net operating income should be closest to:
A) $24,600
B) $2,200
C) $22,874
D) $15,400

Answer: D
Explanation: Selling price per unit = Sales ÷ Quantity sold

= $319,200 ÷ 5,700 units = $56 per unit

Variable expenses per unit = Variable expenses ÷ Quantity sold

= $188,100 ÷ 5,700 units = $33 per unit

Unit CM = Selling price per unit – Variable expenses per unit

= $56 per unit – $33 per unit = $23 per unit

Profit = (Unit CM × Q) – Fixed expenses

= ($23 per unit × 5,300 units) – $106,500 = $121,900 – $106,500 = $15,400
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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42) Sorin Inc., a company that produces and sells a single product, has provided its contribution format income statement for January.

Sales (4,200 units)	$	155,400
Variable expenses		100,800
Contribution margin		54,600
Fixed expenses		42,400
Net operating income	$	12,200

If the company sells 4,600 units, its total contribution margin should be closest to:
A) $54,600
B) $59,800
C) $69,400
D) $13,362

Answer: B
Explanation: Selling price per unit = Sales ÷ Quantity sold

= $155,400 ÷ 4,200 units = $37 per unit

Variable expenses per unit = Variable expenses ÷ Quantity sold

Variable expenses per unit = $100,800 ÷ 4,200 units = $24 per unit

Unit CM = Selling price per unit – Variable expenses per unit

= $37 per unit – $24 per unit = $13 per unit

Total CM = Unit CM × Quantity sold

= $13 per unit × 4,600 units = $59,800
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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43) Schister Systems uses the following data in its Cost-Volume-Profit analyses:

	Total
Sales	$ 400,000
Variable expenses	280,000
Contribution margin	120,000
Fixed expenses	100,000
Net operating income	$ 20,000

What is total contribution margin if sales volume increases by 20%?
A) $80,000
B) $158,400
C) $200,000
D) $144,000

Answer: D
Explanation: CM ratio = Contribution margin ÷ Sales = $120,000 ÷ $400,000 = 0.30

Contribution margin = CM ratio × Sales

Contribution margin = 0.30 × (1.2 × $400,000) = $144,000
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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44) Kelchner Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$	180,000
Variable expenses		108,000
Contribution margin		72,000
Fixed expenses		62,400
Net operating income	$	9,600

The contribution margin ratio is closest to:
A) 67%
B) 40%
C) 33%
D) 60%

Answer: B
Explanation: CM ratio = Contribution margin ÷ Sales = $72,000 ÷ $180,000 = 40%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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45) Nocum Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$ 120,000
Variable expenses	90,000
Contribution margin	30,000
Fixed expenses	21,000
Net operating income	$ 9,000

If sales decline to 2,900 units, the net operating income would be closest to:
A) $29,000
B) $1,000
C) $8,700
D) $8,000

Answer: D
Explanation:

Selling price per unit ($120,000 ÷ 3,000 units)	$ 40
Variable cost per unit ($90,000 ÷ 3,000 units)	30
Unit contribution margin	$ 10

Unit contribution margin (a)	$ 10	per unit
Unit sales (b)	2,900	units
Contribution margin (a) × (b)	$ 29,000	
Fixed expenses	21,000	
Net operating income	$ 8,000	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
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46) Stauffer Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (8,000 units)	$	320,000
Variable expenses		192,000
Contribution margin		128,000
Fixed expenses		118,400
Net operating income	$	9,600

The variable expense ratio is closest to:
A) 60%
B) 40%
C) 67%
D) 33%

Answer: A
Explanation: Variable expense ratio = Variable expenses ÷ Sales = $192,000 ÷ $320,000 = 60%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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47) Carver Corporation produces a product which sells for $40. Variable manufacturing costs are $18 per unit. Fixed manufacturing costs are $5 per unit based on the current level of activity, and fixed selling and administrative costs are $4 per unit. A selling commission of 15% of the selling price is paid on each unit sold. The contribution margin per unit is:
A) $7
B) $17
C) $22
D) $16

Answer: D
Explanation: Variable cost per unit = $18 per unit + (0.15 × $40 per unit) = $24 per unit

Unit CM = $40 per unit – $24 per unit = $16 per unit
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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48) Coultrap Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$	180,000
Variable expenses		117,000
Contribution margin		63,000
Fixed expenses		48,300
Net operating income	$	14,700

The contribution margin per unit is closest to:
A) $21.00
B) $60.00
C) $39.00
D) $4.90

Answer: A
Explanation:

Total contribution margin (a)	$	63,000	
Total unit sales (b)		3,000	units
Unit contribution margin (a) ÷ (b)	$	21	per unit

Alternatively,

Selling price per unit ($180,000 ÷ 3,000 units)	$ 60
Variable cost per unit ($117,000 ÷ 3,000 units)	39
Unit contribution margin	$ 21

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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49) Escareno Corporation has provided its contribution format income statement for June. The company produces and sells a single product.

Sales (8,400 units)	$	764,400
Variable expenses		445,200
Contribution margin		319,200
Fixed expenses		250,900
Net operating income	$	68,300

If the company sells 8,200 units, its total contribution margin should be closest to:
A) $301,000
B) $311,600
C) $319,200
D) $66,674

Answer: B
Explanation: Selling price per unit = Sales ÷ Quantity sold

= $764,400 ÷ 8,400 units = $91 per unit

Variable expenses per unit = Variable expenses ÷ Quantity sold

= $445,200 ÷ 8,400 units = $53 per unit

Unit CM = Selling price per unit – Variable expenses per unit

= $91 per unit – $53 per unit = $38 per unit

Total CM = Unit CM × Quantity sold

= $38 per unit × 8,200 units = $311,600
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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50) Decaprio Inc. produces and sells a single product. The company has provided its contribution format income statement for June.

Sales (8,800 units)	$	528,000
Variable expenses		290,400
Contribution margin		237,600
Fixed expenses		211,700
Net operating income	$	25,900

If the company sells 9,200 units, its net operating income should be closest to:
A) $27,077
B) $49,900
C) $36,700
D) $25,900

Answer: C
Explanation: Selling price per unit = Sales ÷ Quantity sold

= $528,000 ÷ 8,800 units = $60 per unit

Variable expenses per unit = Variable expenses ÷ Quantity sold

= $290,400 ÷ 8,800 units = $33 per unit

Unit CM = Selling price per unit – Variable expenses per unit

= $60 per unit – $33 per unit = $27 per unit

Profit = (Unit CM × Q) – Fixed expenses

= ($27 per unit × 9,200 units) – $211,700 = $248,400 – $211,700 = $36,700
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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51) Warrix Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$	120,000
Variable expenses		90,000
Contribution margin		30,000
Fixed expenses		27,000
Net operating income	$	3,000

If sales increase to 3,020 units, the increase in net operating income would be closest to:
A) $800.00
B) $20.00
C) $600.00
D) $200.00

Answer: D
Explanation: The increase in net operating income would be the increased contribution margin because fixed expenses are not affected.

Selling price per unit ($120,000 ÷ 3,000 units)	$ 40
Variable cost per unit ($90,000 ÷ 3,000 units)	30
Unit contribution margin	$ 10

Unit contribution margin (a)	$ 10	per unit
Increased unit sales (b)	20	units
Increase in net operating income (a) × (b)	$ 200	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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52) Thomason Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (1,000 units)	$ 40,000
Variable expenses	30,000
Contribution margin	10,000
Fixed expenses	7,000
Net operating income	$ 3,000

If the variable cost per unit increases by $1, spending on advertising increases by $2,000, and unit sales increase by 50 units, the net operating income would be closest to:
A) $450
B) $1,000
C) $2,150
D) $9,450

Answer: A
Explanation:

Selling price per unit ($40,000 ÷ 1,000 units)	$ 40
Variable cost per unit ($30,000 ÷ 1,000 units)	30
Unit contribution margin	$ 10

Selling price	$ 40	per unit
Variable cost per price ($30 per unit + $1 per unit)	31	per unit
Unit contribution margin (a)	$ 9	per unit
Unit sales (1,000 units + 50 units) (b)	1,050	units
Contribution margin (a) × (b)	$ 9,450	
Fixed expenses ($7,000 + $2,000)	9,000	
Net operating income	$ 450	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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53) Duve Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (2,000 units)	$ 40,000
Variable expenses	24,000
Contribution margin	16,000
Fixed expenses	11,200
Net operating income	$ 4,800

If the selling price increases by $4 per unit and the sales volume decreases by 200 units, the net operating income would be closest to:
A) $7,200
B) $12,800
C) $10,400
D) $11,520

Answer: C
Explanation:

Selling price per unit ($40,000 ÷ 2,000 units)	$ 20
Variable cost per unit ($24,000 ÷ 2,000 units)	12
Unit contribution margin	$ 8

Selling price ($20 per unit + $4 per unit)	$ 24	per unit
Variable cost per price	12	per unit
Unit contribution margin (a)	$ 12	per unit
Unit sales (2,000 units − 200 units) (b)	1,800	units
Contribution margin (a) × (b)	$ 21,600	
Fixed expenses	11,200	
Net operating income	$ 10,400	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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54) Ploeger Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (4,000 units)	$	240,000
Variable expenses		156,000
Contribution margin		84,000
Fixed expenses		81,900
Net operating income	$	2,100

The break-even point in dollar sales is closest to:
A) $234,000
B) $237,900
C) $156,000
D) $0

Answer: A
Explanation: CM ratio = Contribution margin ÷ Sales = $84,000 ÷ $240,000 = 35%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $81,900 ÷ 35% = $234,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.
Bloom's: Apply
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55) The following information pertains to Nova Co.'s cost-volume-profit relationships:

Breakeven point in units sold		1,000
Variable expenses per unit	$	500
Total fixed expenses	$	150,000

How much will be contributed to net operating income by the 1,001st unit sold?
A) $650
B) $500
C) $150
D) $0

Answer: C
Explanation: Profit = (Unit CM × Q) – Fixed expenses

$0 = (Unit CM × 1,000 units) – $150,000

Unit CM = $150,000 ÷ 1,000 units = $150 per unit
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.
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56) Mishoe Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (1,000 units)	$	50,000
Variable expenses		32,500
Contribution margin		17,500
Fixed expenses		12,250
Net operating income	$	5,250

The break-even point in unit sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 0 units
B) 895 units
C) 700 units
D) 650 units

Answer: C
Explanation:

Selling price per unit ($50,000 ÷ 1,000 units)	$ 50.00
Variable cost per unit ($32,500 ÷ 1,000 units)	32.50
Unit contribution margin	$ 17.50

Unit sales to break even = Fixed expenses ÷ Unit CM = $12,250 ÷ $17.50 per unit = 700 units
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.
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57) Stockmaster Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (8,000 units)	$	320,000
Variable expenses		192,000
Contribution margin		128,000
Fixed expenses		121,600
Net operating income	$	6,400

The margin of safety in dollars is closest to:
A) $6,400
B) $16,000
C) $121,600
D) $128,000

Answer: B
Explanation: CM ratio = Contribution margin ÷ Sales = $128,000 ÷ $320,000 = 40%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $121,600 ÷ 40% = $304,000

Margin of safety in dollars = Total budgeted (or actual) sales − Break-even sales

= $320,000 − $304,000 = $16,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
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58) Hedman Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$	270,000
Variable expenses		202,500
Contribution margin		67,500
Fixed expenses		63,750
Net operating income	$	3,750

The margin of safety percentage is closest to:
A) 75%
B) 1%
C) 6%
D) 24%

Answer: C
Explanation: CM ratio = Contribution margin ÷ Sales = $67,500 ÷ $270,000 = 25%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $63,750 ÷ 25% = $255,000

Margin of safety in dollars = Total budgeted (or actual) sales − Break-even sales

= $270,000 − $255,000 = $15,000

Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales

= $15,000 ÷ $270,000 = 6%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
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59) Cassius Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (7,000 units)	$	210,000
Variable expenses		136,500
Contribution margin		73,500
Fixed expenses		67,200
Net operating income	$	6,300

The number of units that must be sold to achieve a target profit of $31,500 is closest to:
A) 42,000 units
B) 16,400 units
C) 35,000 units
D) 9,400 units

Answer: D
Explanation:

Selling price per unit ($210,000 ÷ 7,000 units)	$	30.00
Variable cost per unit ($136,500 ÷ 7,000 units)		19.50
Unit contribution margin	$	10.50

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($31,500 + $67,200) ÷ $10.50 per unit = $98,700 ÷ $10.50 per unit = 9,400 units
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Target Profit Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-06 Determine the level of sales needed to achieve a desired target profit.
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60) Goodman Corporation has sales of 3,000 units at $80 per unit. Variable costs are 35% of the sales price. If total fixed costs are $66,000, the degree of operating leverage is:
A) 0.79
B) 0.93
C) 2.67
D) 1.73

Answer: D
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $80 per unit – (0.35 × $80 per unit) = $80 per unit – $28 per unit = $52 per unit

Contribution margin = $52 per unit × 3,000 units = $156,000

Profit = Unit CM × Unit sales – Fixed expenses

= $156,000 – $66,000 = $90,000

Degree of operating leverage = Contribution margin ÷ Net operating income

= $156,000 ÷ $90,000 = 1.73

Difficulty: 3 Hard
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Operating Leverage
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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61) Jilk Inc.'s contribution margin ratio is 58% and its fixed monthly expenses are $36,000. Assuming that the fixed monthly expenses do not change, what is the best estimate of the company's net operating income in a month when sales are $103,000?
A) $23,740
B) $59,740
C) $67,000
D) $7,260

Answer: A
Explanation: Profit = (CM ratio × Sales) – Fixed expenses

= (0.58 × $103,000) – $36,000

= $59,740 – $36,000

= $23,740
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
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62) Gayne Corporation's contribution margin ratio is 12% and its fixed monthly expenses are $84,000. If the company's sales for a month are $738,000, what is the best estimate of the company's net operating income? Assume that the fixed monthly expenses do not change.
A) $565,440
B) $654,000
C) $88,560
D) $4,560

Answer: D
Explanation: Profit = (CM ratio × Sales) – Fixed expenses

= (0.12 × $738,000) – $84,000

= $88,560 – $84,000

= $4,560
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
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63) Creswell Corporation's fixed monthly expenses are $29,000 and its contribution margin ratio is 56%. Assuming that the fixed monthly expenses do not change, what is the best estimate of the company's net operating income in a month when sales are $95,000?
A) $12,800
B) $24,200
C) $53,200
D) $66,000

Answer: B
Explanation: Profit = (CM ratio × Sales) – Fixed expenses

= (0.56 × $95,000) – $29,000

= $53,200 – $29,000

= $24,200
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
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64) Northern Pacific Fixtures Corporation sells a single product for $28 per unit. If variable expenses are 65% of sales and fixed expenses total $9,800, the break-even point is: **(Round your intermediate calculations to 2 decimal places.)**
A) $15,077
B) $18,200
C) $9,800
D) $28,000

Answer: D
Explanation: CM ratio = Unit contribution margin ÷ Unit selling price

= ($28 – (0.65 × $28)) ÷ $28 = ($28.00 – $18.20) ÷ $28.00 = $9.80 ÷ $28.00 = 0.35

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $9,800 ÷ 0.35 = $28,000
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.
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65) Variable expenses for Alpha Corporation are 40% of sales. What are sales at the break-even point, assuming that fixed expenses total $150,000 per year:
A) $250,000
B) $375,000
C) $600,000
D) $150,000

Answer: A
Explanation: CM ratio = 1 – Variable expense ratio = 1 – 0.40 = 0.60

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $150,000 ÷ 0.60 = $250,000
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.
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66) Moyas Corporation sells a single product for $20 per unit. Last year, the company's sales revenue was $300,000 and its net operating income was $24,000. If fixed expenses totaled $96,000 for the year, the break-even point in unit sales was:
A) 12,000 units
B) 9,900 units
C) 15,000 units
D) 14,100 units

Answer: A
Explanation: Profit = (Sales – Variable expenses) – Fixed expenses

$24,000 = ($300,000 – Variable expenses) – $96,000

Variable expenses = $300,000 – $96,000 – $24,000 = $180,000

CM ratio = Contribution margin ÷ Sales = ($300,000 – $180,000) ÷ $300,000 = 0.40

Dollar sales to break even = Fixed expenses ÷ CM ratio = $96,000 ÷ 0.40 = $240,000

Unit sales to break even = $240,000 ÷ $20 per unit = 12,000 units
Difficulty: 3 Hard
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.
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67) Sabv Corporation's break-even-point in sales is $675,000, and its variable expenses are 75% of sales. If the company lost $24,000 last year, sales must have amounted to:
A) $651,000
B) $579,000
C) $603,000
D) $471,000

Answer: B
Explanation: CM ratio = 1 – Variable expense ratio

CM ratio = 1 – 0.75 = 0.25

Dollar sales to break even = Fixed expenses ÷ CM ratio

$675,000 = Fixed expenses ÷ 0.25

Fixed expenses = $675,000 × 0.25 = $168,750

Profit = (CM ratio × Sales) – Fixed expenses

-$24,000 = (0.25 × Sales) – $168,750

Sales = ($168,750 – $24,000) ÷ 0.25 = $579,000
Difficulty: 3 Hard
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.
Bloom's: Apply
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68) Last year Easton Corporation reported sales of $480,000, a contribution margin ratio of 25% and a net loss of $16,000. Based on this information, the break-even point was:
A) $435,000
B) $544,000
C) $506,000
D) $600,000

Answer: B
Explanation: Profit = (CM ratio × Sales) – Fixed expenses

–$16,000 = (0.25 × $480,000) – Fixed expenses

Fixed expenses = (0.25 × $480,000) + $16,000 = $136,000

Dollar sales to break even = Fixed expenses ÷ CM ratio = $136,000 ÷ 0.25 = $544,000
Difficulty: 3 Hard
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis; Target Profit Analysis
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.; 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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69) Black Corporation's sales are $600,000, its fixed expenses are $150,000, and its variable expenses are 60% of sales. The margin of safety is:
A) $90,000
B) $190,000
C) $225,000
D) $240,000

Answer: C
Explanation: CM ratio = 1 – Variable expense ratio = 1 – 0.60 = 0.40

Dollar sales to break even = Fixed expenses ÷ CM ratio = $150,000 ÷ 0.40 = $375,000

Margin of safety in dollars = Total budgeted (or actual) sales – Break-even sales

= $600,000 – $375,000 = $225,000
Difficulty: 2 Medium
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
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70) Awtis Corporation has a margin of safety percentage of 20% based on its actual sales. The break-even point is $500,000 and the variable expenses are 60% of sales. Given this information, the actual profit is:
A) $65,000
B) $55,000
C) $50,000
D) $41,500

Answer: C
Explanation: CM ratio = 1 – Variable expense ratio

= 1 – 0.60 = 0.40

Dollar sales to break even = Fixed expenses ÷ CM ratio

$500,000 = Fixed expenses ÷ 0.40

Fixed expenses = $500,000 × 0.40 = $200,000

Margin of safety in dollars = Total actual sales – Break-even sales

Margin of safety percentage = Margin of safety in dollars ÷ Total actual sales

Margin of safety percentage = (Total actual sales – Break-even sales) ÷ Total actual sales

Margin of safety percentage = 1 – Break-even sales ÷ Total actual sales

Break-even sales ÷ Total actual sales = 1 – Margin of safety percentage

Total actual sales = Break-even sales ÷ (1 – Margin of safety percentage)

= $500,000 ÷ (1 – 0.20) = $625,000

Profit = (CM ratio × Sales) – Fixed expenses

= (0.40 × $625,000) – $200,000 = $50,000
Difficulty: 3 Hard
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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71) Tropp Corporation sells a product for $10 per unit. The fixed expenses are $420,000 per month and the unit variable expenses are 60% of the selling price. What sales would be necessary in order for Tropp to realize a profit of 10% of sales? **(Round your intermediate calculations to 2 decimal places.)**
A) $1,050,000
B) $945,000
C) $1,400,000
D) $840,000

Answer: C
Explanation: CM ratio = 1 – Variable expense ratio = 1 – 0.60 = 0.40

Dollar sales to attain a target profit = (Target profit + Fixed expenses) ÷ CM ratio

$X = [(0.10 \times X) + \$420,000] \div 0.40$

$X = 0.25X + \$1,050,000$

$0.75X = \$1,050,000$

$X = \$1,050,000 \div 0.75 = \$1,400,000$
Difficulty: 3 Hard
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio; Target Profit Analysis
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.; 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
AACSB: Analytical Thinking
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72) Hopi Corporation expects the following operating results for next year:

Sales	$ 400,000
Margin of safety	$ 100,000
Contribution margin ratio	75%
Degree of operating leverage	4

What is Hopi expecting total fixed expenses to be next year?
A) $75,000
B) $100,000
C) $200,000
D) $225,000

Answer: D
Explanation: Margin of safety in dollars = Total budgeted (or actual) sales – Break-even sales

$100,000 = $400,000 – Break-even sales

Break-even sales = $400,000 – $100,000 = $300,000

Dollar sales to break even = Fixed expenses ÷ CM ratio

$300,000 = Fixed expenses ÷ 0.75

Fixed expenses = $300,000 × 0.75 = $225,000
Difficulty: 3 Hard
Topic: Operating Leverage; Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.; 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Apply
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73) Iverson Corporation's variable expenses are 60% of sales. At a $400,000 sales level, the degree of operating leverage is 5. If sales increase by $40,000, the new degree of operating leverage will be (rounded):
A) 3.67
B) 2.86
C) 5.25
D) 5.00

Answer: A
Explanation: CM ratio = 1 – Variable expense ratio
= 1 – 0.60 = 0.40

Contribution margin = CM ratio × Sales
= 0.40 × $400,000 = $160,000

Degree of operating leverage = Contribution margin ÷ Net operating income
5.0 = $160,000 ÷ Net operating income
Net operating income = $160,000 ÷ 5.0 = $32,000

Profit = (CM ratio × Sales) – Fixed expenses
$32,000 = (0.40 × $400,000) – Fixed expenses
Fixed expenses = $160,000 – $32,000 = $128,000

Profit = (CM ratio × Sales) – Fixed expenses
= (0.40 × ($400,000 + $40,000)) – $128,000
= $176,000 – $128,000 = $48,000

Degree of operating leverage = Contribution margin ÷ Net operating income
= $176,000 ÷ $48,000 = 3.67
Difficulty: 3 Hard
Topic: Operating Leverage; Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.; 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Apply
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74) Data concerning Dorazio Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 160	100%
Variable expenses	48	30%
Contribution margin	$ 112	70%

Fixed expenses are $87,000 per month. The company is currently selling 1,000 units per month. Management is considering using a new component that would increase the unit variable cost by $28. Since the new component would increase the features of the company's product, the marketing manager predicts that monthly sales would increase by 400 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $5,600
B) increase of $33,600
C) decrease of $5,600
D) decrease of $33,600

Answer: A
Explanation:

Contribution Income Statement

	1,000 units	1,400 units
Sales (at $160 per unit)	$ 160,000	$ 224,000
Variable expenses (at $48 per unit and $76 per unit)	48,000	106,400
Contribution margin	112,000	117,600
Fixed expenses	87,000	87,000
Net operating income	$ 25,000	$ 30,600

Net operating income would increase by $5,600
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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75) Kuzio Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 130	100%
Variable expenses	78	60%
Contribution margin	$ 52	40%

The company is currently selling 6,000 units per month. Fixed expenses are $263,000 per month. The marketing manager believes that a $5,000 increase in the monthly advertising budget would result in a 140 unit increase in monthly sales. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $2,280
B) increase of $7,280
C) decrease of $5,000
D) decrease of $2,280

Answer: A
Explanation:

Contribution Income Statement

	6,000 units	6,140 units
Sales (at $130 per unit)	$ 780,000	$ 798,200
Variable expenses (at $78 per unit)	468,000	478,920
Contribution margin	312,000	319,280
Fixed expenses ($5,000 increase)	263,000	268,000
Net operating income	$ 49,000	$ 51,280

Net operating income would increase by $2,280.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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76) Data concerning Pellegren Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 200	100%
Variable expenses	40	20%
Contribution margin	$ 160	80%

Fixed expenses are $531,000 per month. The company is currently selling 4,000 units per month. The marketing manager would like to cut the selling price by $14 and increase the advertising budget by $35,000 per month. The marketing manager predicts that these two changes would increase monthly sales by 500 units. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $18,000
B) increase of $38,000
C) decrease of $38,000
D) increase of $58,000

Answer: A
Explanation:

Contribution Income Statement

	4,000 units	4,500 units
Sales (at $200 per unit and $186 per unit)	$ 800,000	$ 837,000
Variable expenses (at $40 per unit)	160,000	180,000
Contribution margin	640,000	657,000
Fixed expenses (increase by $35,000)	531,000	566,000
Net operating income	$ 109,000	$ 91,000

Net operating income would decrease by $18,000.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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77) Warbler Gift's reported the following information for the sales of their single product:

	Total	Per Unit
Sales	$ 300,000	$ 10
Variable expenses	180,000	6
Contribution margin	120,000	$ 4
Fixed expenses	100,000	
Net operating income	$ 20,000	

Warbler's salesmen have proposed to decrease the selling price by 50 cents per unit. How many units will need to be sold for Warbler to earn at least the same net operating income? **(Round your intermediate calculations to 2 decimal places.)**
A) 5,715 units
B) 36,000 units
C) 34,286 units
D) 28,572 units

Answer: C
Explanation: Profit = (P – V) × Q – Fixed expenses

$20,000 = ($9.50 per unit – $6.00 per unit) × Q – $100,000

($9.50 per unit – $6.00 per unit) × Q = $120,000

$3.50 per unit × Q = $120,000

Q = $120,000 ÷ $3.50 per unit

Q = 34,286 units
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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78) Data concerning Bazin Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 100	100%
Variable expenses	20	20%
Contribution margin	$ 80	80%

Fixed expenses are $384,000 per month. The company is currently selling 6,000 units per month. The marketing manager would like to introduce sales commissions as an incentive for the sales staff. The marketing manager has proposed a commission of $9 per unit. In exchange, the sales staff would accept a decrease in their salaries of $46,000 per month. (This is the company's savings for the entire sales staff.) The marketing manager predicts that introducing this sales incentive would increase monthly sales by 500 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $27,500
B) decrease of $64,500
C) increase of $41,500
D) increase of $507,500

Answer: A
Explanation:

Contribution Income Statement

	6,000 units	6,500 units
Sales (at $100 per unit)	$ 600,000	$ 650,000
Variable expenses (at $20 and $29 per unit)	120,000	188,500
Contribution margin	480,000	461,500
Fixed expenses (decreases by $46,000)	384,000	338,000
Net operating income	$ 96,000	$ 123,500

Net operating income increases by $27,500.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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79) Chovanec Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 170	100%
Variable expenses	68	40%
Contribution margin	$ 102	60%

Fixed expenses are $521,000 per month. The company is currently selling 7,000 units per month. Management is considering using a new component that would increase the unit variable cost by $6. Since the new component would increase the features of the company's product, the marketing manager predicts that monthly sales would increase by 500 units. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $48,000
B) decrease of $6,000
C) increase of $48,000
D) increase of $6,000

Answer: D
Explanation:

Contribution Income Statement

	7,000 units	7,500 units
Sales ($170 per unit)	$ 1,190,000	$ 1,275,000
Variable expenses (at $68 per unit and $74 per unit)	476,000	555,000
Contribution margin	714,000	720,000
Fixed expenses	521,000	521,000
Net operating income	$ 193,000	$ 199,000

Net operating income increases by $6,000
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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80) How much will a company's net operating income change if it undertakes an advertising campaign given the following data:

Cost of advertising campaign	$ 25,000	
Variable expense as a percentage of sales	42	%
Increase in sales	$ 60,000	

A) $200 increase
B) $25,200 increase
C) $15,000 increase
D) $9,800 increase

Answer: D
Explanation: CM ratio = 1 – Variable expense ratio = 1 – 0.42 = 0.58

Increase in net operating income = CM ratio × Increase in sales – Increase in fixed expenses

= (0.58 × $60,000) – $25,000 = $34,800 – $25,000 = $9,800
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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81) Data concerning Kardas Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 140	100%
Variable expenses	28	20%
Contribution margin	$ 112	80%

The company is currently selling 8,000 units per month. Fixed expenses are $719,000 per month. The marketing manager believes that a $20,000 increase in the monthly advertising budget would result in a 180 unit increase in monthly sales. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $160
B) increase of $20,160
C) decrease of $20,000
D) increase of $160

Answer: D
Explanation:

Contribution Income Statement

	8,000 units	8,180 units
Sales (at $140 per unit)	$ 1,120,000	$ 1,145,200
Variable expenses (at $28 per unit)	224,000	229,040
Contribution margin	896,000	916,160
Fixed expenses ($20,000 increase)	719,000	739,000
Net operating income	$ 177,000	$ 177,160

Net operating income would increase by $160.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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82) Cobble Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 160	100%
Variable expenses	48	30%
Contribution margin	$ 112	70%

Fixed expenses are $499,000 per month. The company is currently selling 5,000 units per month. The marketing manager would like to cut the selling price by $13 and increase the advertising budget by $33,000 per month. The marketing manager predicts that these two changes would increase monthly sales by 900 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $56,100
B) decrease of $8,900
C) increase of $99,300
D) decrease of $56,100

Answer: B
Explanation:

Contribution Income Statement

	5,000 units	5,900 units
Sales (at $160 per unit and $147 per unit)	$ 800,000	$ 867,300
Variable expenses (at $48 per unit)	240,000	283,200
Contribution margin	560,000	584,100
Fixed expenses (increases by $33,000)	499,000	532,000
Net operating income	$ 61,000	$ 52,100

Net operating income decreases by $8,900.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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83) Sannella Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 220	100%
Variable expenses	66	30%
Contribution margin	$ 154	70%

Fixed expenses are $991,000 per month. The company is currently selling 8,000 units per month. The marketing manager would like to introduce sales commissions as an incentive for the sales staff. The marketing manager has proposed a commission of $11 per unit. In exchange, the sales staff would accept a decrease in their salaries of $74,000 per month. (This is the company's savings for the entire sales staff.) The marketing manager predicts that introducing this sales incentive would increase monthly sales by 200 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $1,246,600
B) increase of $14,600
C) decrease of $133,400
D) increase of $71,800

Answer: B
Explanation:

Contribution Income Statement

	8,000 units	8,200 units
Sales (at $220 per unit)	$ 1,760,000	$ 1,804,000
Variable expenses (at $66 per unit and $77 per unit)	528,000	631,400
Contribution margin	1,232,000	1,172,600
Fixed expenses (decreases by $74,000)	991,000	917,000
Net operating income	$ 241,000	$ 255,600

Net operating income would increase by $14,600.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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84) Wenstrom Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$	130.00
Variable expense per unit	$	41.60
Fixed expense per month	$	109,616

The break-even in monthly dollar sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $342,550
B) $204,455
C) $109,616
D) $161,200

Answer: D
Explanation: CM ratio = Unit contribution margin ÷ Unit selling price

= ($130.00 per unit – $41.60 per unit) ÷ $130.00 per unit

= $88.40 per unit ÷ $130.00 per unit = 0.68

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $109,616 ÷ 0.68

= $161,200
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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85) Borich Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$	150.00
Variable expense per unit	$	73.50
Fixed expense per month	$	308,295

The break-even in monthly unit sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 2,055
B) 4,030
C) 4,194
D) 3,426

Answer: B
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $150.00 per unit – $73.50 per unit = $76.50 per unit

Unit sales to break even = Fixed expenses ÷ Unit CM

= $308,295 ÷ $76.50 per unit = 4,030 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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86) Data concerning Follick Corporation's single product appear below:

Selling price per unit	$	110.00
Variable expense per unit	$	30.80
Fixed expense per month	$	321,552

The break-even in monthly dollar sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $1,148,400
B) $638,851
C) $321,552
D) $446,600

Answer: D
Explanation: CM ratio = Unit contribution margin ÷ Unit selling price

= ($110.00 per unit – $30.80 per unit) ÷ $110.00 per unit

= $79.20 per unit ÷ $110.00 per unit = 0.72

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $321,552 ÷ 0.72

= $446,600
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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87) Wimpy Inc. produces and sells a single product. The selling price of the product is $150.00 per unit and its variable cost is $58.50 per unit. The fixed expense is $366,915 per month.

The break-even in monthly dollar sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $601,500
B) $366,915
C) $636,408
D) $940,808

Answer: A
Explanation: CM ratio = Unit contribution margin ÷ Unit selling price

= ($150.00 per unit – $58.50 per unit) ÷ $150.00 per unit

= $91.50 per unit ÷ $150.00 per unit = 0.61

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $366,915 ÷ 0.61

= $601,500
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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88) Given the following data:

Selling price per unit	$	2.00
Variable production cost per unit	$	0.30
Fixed production cost	$	3,000
Sales commission per unit	$	0.20
Fixed selling expenses	$	1,500

The break-even point in dollars is: **(Round your intermediate calculations to 2 decimal places.)**
A) $6,000
B) $4,500
C) $2,647
D) $4,000

Answer: A
Explanation: Fixed expenses = $3,000 + $1,500 = $4,500

Unit CM = Selling price per unit – Variable expenses per unit

= $2.00 per unit – ($0.30 per unit + $0.20 per unit) = $1.50 per unit

CM ratio = Unit CM ÷ Unit selling price

= $1.50 per unit ÷ $2.00 per unit = 0.75

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $4,500 ÷ 0.75 = $6,000
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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89) Hevesy Inc. produces and sells a single product. The selling price of the product is $200.00 per unit and its variable cost is $80.00 per unit. The fixed expense is $300,000 per month. The break-even in monthly unit sales is closest to:
A) 2,500
B) 1,500
C) 3,750
D) 2,583

Answer: A
Explanation: Unit sales to break even = Fixed expenses ÷ Unit CM

= $300,000 ÷ ($200.00 per unit – $80.00 per unit)

= $300,000 ÷ $120.00 per unit

= 2,500 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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90) Singapore Candy Cane Corporation is a single product firm with the following cost structure for next year:

Selling price per unit	$	1.20
Variable expenses per unit	$	0.72
Total fixed expenses for the year	$	64,800

What is the company's break-even point next year in sales dollars? **(Round your intermediate calculations to 2 decimal places.)**
A) $90,000
B) $108,000
C) $135,000
D) $162,000

Answer: D
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $1.20 per unit – $0.72 per unit = $0.48 per unit

CM ratio = Unit CM ÷ Unit selling price

= $0.48 per unit ÷ $1.20 per unit = 0.4

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $64,800 ÷ 0.4 = $162,000
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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91) Bear Publishing sells a nature guide. The following information was reported for a typical month:

	Total		Per Unit	
Sales	$ 17,600		$ 16.00	
Variable expenses	9,680			
Contribution margin	7,920			
Fixed expenses	3,600			
Net operating income	$ 4,320			

What is Bear's current break-even point in unit and dollars?
A) 1,100 units and $17,600
B) 1,100 units and $8,000
C) 8,000 units and $500
D) 500 units and $8,000

Answer: D
Explanation: CM ratio = Contribution margin ÷ Sales

= $7,920 ÷ $17,600 = 0.45

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $3,600 ÷ 0.45 = $8,000

Unit sales to break even = $8,000 ÷ $16.00 per unit = 500 units
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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92) Mason Corporation's selling price was $20 per unit. Fixed expenses totaled $54,000, variable expenses were $14 per unit, and the company reported a profit of $9,000 for the year. The break-even point for Mason Corporation is:
A) 10,500 units
B) 4,500 units
C) 8,500 units
D) 9,000 units

Answer: D
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $20 per unit – $14 per unit = $6 per unit

Unit sales to break even = Fixed expenses ÷ Unit CM

= $54,000 ÷ $6 per unit = 9,000 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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93) Derst Inc. sells a particular textbook for $140. Variable expenses are $25 per book. At the current volume of 6,000 books sold per year the company is just breaking even. Given these data, the annual fixed expenses associated with the textbook total:
A) $400,000
B) $690,000
C) $840,000
D) $150,000

Answer: B
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $140 per book – $25 per book = $115 per book

Unit sales to break even = Fixed expenses ÷ Unit CM

6,000 books = Fixed expenses ÷ $115 per book

Fixed expenses = 6,000 books × $115 per book = $690,000
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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94) Data concerning Buchenau Corporation's single product appear below:

Selling price per unit	$	150.00
Variable expense per unit	$	34.50
Fixed expense per month	$	466,620

The break-even in monthly unit sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 3,111
B) 6,892
C) 4,040
D) 13,525

Answer: C
Explanation: Unit sales to break even = Fixed expenses ÷ Unit CM

= $466,620 ÷ ($150.00 per unit – $34.50 per unit)

= $466,620 ÷ $115.50 per unit

= 4,040 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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95) Sufra Corporation is planning to sell 100,000 units for $8.00 per unit and will break even at this level of sales. Fixed expenses will be $300,000. What are the company's variable expenses per unit?
A) $5.00
B) $4.00
C) $3.00
D) $4.50

Answer: A
Explanation: Unit sales to break even = Fixed expenses ÷ Unit CM

100,000 units = $300,000 ÷ Unit CM

Unit CM = $300,000 ÷ 100,000 units = $3.00 per unit

Unit CM = Selling price per unit – Variable expenses per unit

$3.00 per unit = $8.00 per unit – Variable expenses per unit

Variable expenses per unit = $8.00 per unit – $3.00 per unit = $5.00 per unit
Difficulty: 3 Hard
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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96) Mio Canoe Livery rents canoes and transports canoes and customers to and from their canoe trip on a local river. The trip is priced at $20 per person and has a CM ratio of 30%. Mio's fixed expenses are $84,000. Last year, sales were $400,000 and profit was $36,000. How many units need to be sold to break-even, and how many need to be sold to earn a profit of $42,000?
A) 1,800 and 2,100
B) 6,000 and 8,143
C) 14,000 and 21,000
D) 4,200 and 6,300

Answer: C
Explanation: Dollar sales to break even = Fixed expenses ÷ CM ratio

= $84,000 ÷ 0.30 = $280,000

Unit sales to break even = $280,000 ÷ $20 per person = 14,000 persons

Dollar sales to attain a target profit = (Target profit + Fixed expenses) ÷ CM ratio

= ($42,000 + $84,000) ÷ 0.30 = $420,000

Unit sales to attain a target profit = $420,000 ÷ $20 per person = 21,000 persons
Difficulty: 2 Medium
Topic: Break-Even Analysis; Target Profit Analysis
Learning Objective: 02-05 Determine the break-even point.; 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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97) A company makes a single product that it sells for $16 per unit. Fixed costs are $76,800 per month and the product has a contribution margin ratio of 40%. If the company's actual sales are $224,000, its margin of safety is:
A) $32,000
B) $96,000
C) $128,000
D) $192,000

Answer: A
Explanation: Dollar sales to break even = Fixed expenses ÷ CM ratio

= $76,800 ÷ 0.4 = $192,000

Margin of safety in dollars = Total budgeted (or actual) sales – Break-even sales

= $224,000 – $192,000 = $32,000
Difficulty: 2 Medium
Topic: Break-Even Analysis; The Margin of Safety
Learning Objective: 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
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98) The following data are available for the Phelps Corporation for a recent month:

	Product A	Product B	Product C	Total
Sales	$ 150,000	$ 130,000	$ 90,000	$ 370,000
Variable expenses	91,000	104,000	27,000	222,000
Contribution margin	$ 59,000	$ 26,000	$ 63,000	148,000
Fixed expenses				55,000
Net operating income				$ 93,000

The break-even sales for the month for the company is closest to:
A) $91,667
B) $203,000
C) $148,000
D) $137,500

Answer: D
Explanation: CM ratio = Contribution margin ÷ Sales
= $148,000 ÷ $370,000 = 0.4

Dollar sales to break even = Fixed expenses ÷ CM ratio
= $55,000 ÷ 0.4 = $137,500
Difficulty: 2 Medium
Topic: Sales Mix; Break-Even Analysis
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.; 02-05 Determine the break-even point.
Bloom's: Apply
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99) Ferkil Corporation manufacturers a single product that has a selling price of $100 per unit. Fixed expenses total $225,000 per year, and the company must sell 5,000 units to break even. If the company has a target profit of $67,500, sales in units must be:
A) 6,000 units
B) 5,750 units
C) 7,925 units
D) 6,500 units

Answer: D
Explanation: Unit sales to break even = Fixed expenses ÷ Unit CM

5,000 units = $225,000 ÷ Unit CM

Unit CM = $225,000 ÷ 5,000 units = $45 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($67,500 + $225,000) ÷ $45 per unit

= $292,500 ÷ $45 per unit

= 6,500 units
Difficulty: 3 Hard
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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100) Corporation X sold 25,000 units of product last year. The contribution margin per unit was $2, and fixed expenses totaled $40,000 for the year. This year fixed expenses are expected to increase to $45,000, but the contribution margin per unit will remain unchanged at $2. How many units must be sold this year to earn the same net operating income as was earned last year?
A) 22,500
B) 27,500
C) 35,000
D) 2,500

Answer: B
Explanation: Profit = (Unit CM × Q) – Fixed expenses

= ($2 per unit × 25,000 units) – $40,000 = $10,000

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($10,000 + $45,000) ÷ $2 per unit = 27,500 units
Difficulty: 2 Medium
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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101) Data concerning Bedwell Enterprises Corporation's single product appear below:

Selling price per unit	$	160.00
Variable expenses per unit	$	65.60
Fixed expense per month	$	387,040

The unit sales to attain the company's monthly target profit of $17,000 is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 6,159
B) 4,280
C) 2,525
D) 4,321

Answer: B
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $160.00 per unit – $65.60 per unit

= $94.40 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($17,000 + $387,040) ÷ $94.40 per unit

= $404,040 ÷ $94.40 per unit

= 4,280 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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102) The contribution margin ratio of Mountain Corporation's only product is 52%. The company's monthly fixed expense is $296,400 and the company's monthly target profit is $7,000. The dollar sales to attain that target profit is closest to:
A) $570,000
B) $157,768
C) $583,462
D) $154,128

Answer: C
Explanation: Dollar sales to attain a target profit = (Target profit + Fixed expenses) ÷ CM ratio

= ($7,000 + $296,400) ÷ 0.52

= $303,400 ÷ 0.52

= $583,462
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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103) Hettrick International Corporation's only product sells for $120.00 per unit and its variable expense is $52.80. The company's monthly fixed expense is $396,480 per month. The unit sales to attain the company's monthly target profit of $13,000 is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 7,755
B) 6,093
C) 5,753
D) 3,412

Answer: B
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $120.00 per unit – $52.80 per unit

= $67.20 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($13,000 + $396,480) ÷ $67.20 per unit

= $409,480 ÷ $67.20 per unit

= 6,093 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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104) Caneer Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$	240.00
Variable expenses per unit	$	81.60
Fixed expense per month	$	997,920

The unit sales to attain the company's monthly target profit of $44,000 is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 7,896
B) 12,769
C) 6,578
D) 4,341

Answer: C
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $240.00 per unit – $81.60 per unit

= $158.40 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($44,000 + $997,920) ÷ $158.40 per unit

= $1,041,920 ÷ $158.40 per unit

= 6,578 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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105) Product Y sells for $15 per unit, and has variable expenses of $9 per unit. Fixed expenses total $300,000 per year. How many units of Product Y must be sold each year to yield an annual profit of $90,000?
A) 50,000 units
B) 65,000 units
C) 15,000 units
D) 43,333 units

Answer: B
Explanation: Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($90,000 + $300,000) ÷ ($15 per unit – $9 per unit)

= $390,000 ÷ $6 per unit

= 65,000 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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106) Logsdon Corporation produces and sells a single product whose contribution margin ratio is 63%. The company's monthly fixed expense is $720,720 and the company's monthly target profit is $28,000. The dollar sales to attain that target profit is closest to:
A) $471,694
B) $454,054
C) $1,188,444
D) $1,144,000

Answer: C
Explanation: Dollar sales to attain a target profit = (Target profit + Fixed expenses) ÷ CM ratio

= ($28,000 + $720,720) ÷ 0.63

= $748,720 ÷ 0.63

= $1,188,444
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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107) Mcmurtry Corporation sells a product for $170 per unit. The product's current sales are 10,000 units and its break-even sales are 8,100 units. The margin of safety as a percentage of sales is closest to:
A) 23%
B) 81%
C) 19%
D) 77%

Answer: C
Explanation: Margin of safety in dollars = Total sales – Break-even sales

= ($170 per unit × 10,000 units) – ($170 per unit × 8,100 units)

= $1,700,000 – $1,377,000 = $323,000

Margin of safety percentage = Margin of safety in dollars ÷ Total sales

= $323,000 ÷ $1,700,000 = 0.19
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
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108) Cubie Corporation has provided the following data concerning its only product:

Selling price	$	100	per unit
Current sales		10,600	units
Break-even sales		9,540	units

What is the margin of safety in dollars?
A) $1,060,000
B) $106,000
C) $954,000
D) $706,667

Answer: B
Explanation: Margin of safety in dollars = Total sales – Break-even sales

= (10,600 units × $100 per unit) – (9,540 units × $100 per unit)

= $1,060,000 – $954,000 = $106,000
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
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109) Ensley Corporation has provided the following data concerning its only product:

Selling price	$ 200	per unit
Current sales	30,300	units
Break-even sales	21,816	units

The margin of safety as a percentage of sales is closest to:
A) 61%
B) 28%
C) 72%
D) 39%

Answer: B
Explanation: Margin of safety in dollars = Total actual sales – Break-even sales
= (30,300 units × $200 per unit) – (21,816 units × $200 per unit)
= $6,060,000 – $4,363,200 = $1,696,800

Margin of safety percentage = Margin of safety in dollars ÷ Total actual sales
= $1,696,800 ÷ $6,060,000 = 28%
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
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110) Evan's Electronics Boutique sells a digital camera. The following information was reported for the digital camera last month:

Sales	$	17,600
Variable expenses		9,680
Contribution margin		7,920
Fixed expenses		3,600
Net operating income	$	4,320

Evan's margin of safety in dollars and percentage are closest to:
A) $8,000 and 83%
B) $9,600 and 120%
C) $8,000 and 45%
D) $9,600 and 55%

Answer: D
Explanation: Contribution margin = Sales – Variable expenses
= $17,600 – $9,680 = $7,920

CM ratio = Contribution margin ÷ Sales
= $7,920 ÷ $17,600 = 0.45

Dollar sales to break even = Fixed expenses ÷ CM ratio
= $3,600 ÷ 0.45 = $8,000

Margin of safety in dollars = Total budgeted (or actual) sales – Break-even sales
= $17,600 – $8,000 = $9,600

Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales
= $9,600 ÷ $17,600 = 55%
Difficulty: 2 Medium
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
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111) Majid Corporation sells a product for $240 per unit. The product's current sales are 41,300 units and its break-even sales are 36,757 units.

What is the margin of safety in dollars?
A) $8,821,680
B) $6,608,000
C) $9,912,000
D) $1,090,320

Answer: D
Explanation: Margin of safety in dollars = Total sales – Break-even sales

= ($240 per unit × 41,300 units) – ($240 per unit × 36,757 units)

= $9,912,000 – $8,821,680 = $1,090,320
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
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112) Rushenberg Corporation's operating leverage is 10.8. If the company's sales increase by 14%, its net operating income should increase by about:
A) 151.2%
B) 14.0%
C) 77.1%
D) 10.8%

Answer: A
Explanation: Percentage change in net operating income = Degree of operating leverage × Percentage change in sales

= 10.8 ×14% = 151.2%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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113) The February contribution format income statement of Mcabier Corporation appears below:

Sales	$	211,200
Variable expenses		96,000
Contribution margin		115,200
Fixed expenses		84,100
Net operating income	$	31,100

The degree of operating leverage is closest to:
A) 0.27
B) 6.79
C) 3.70
D) 0.15

Answer: C
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $115,200 ÷ $31,100 = 3.70
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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114) Sales at East Corporation declined from $100,000 to $80,000, while net operating income declined by 300%. Given these data, the company must have had an operating leverage of:
A) 15
B) 2.7
C) 30
D) 12

Answer: A
Explanation: Percentage change in sales = ($80,000 – $100,000) ÷ $100,000 = −20%
Percentage change in net operating income = Degree of operating leverage × Percentage change in sales
−300% = Degree of operating leverage × −20%
Degree of operating leverage = 15
Difficulty: 3 Hard
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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115) Gamma Corporation has sales of $120,000, a contribution margin of $48,000, and a net operating income of $12,000. The company's degree of operating leverage is:
A) 2.5
B) 4.0
C) 10.0
D) 4.8

Answer: B
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $48,000 ÷ $12,000 = 4
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
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116) Bendel Inc. has an operating leverage of 7.3. If the company's sales increase by 3%, its net operating income should increase by about:
A) 243.3%
B) 7.3%
C) 21.9%
D) 3.0%

Answer: C
Explanation: Percentage change in net operating income = Degree of operating leverage × Percentage change in sales

= 7.3 × 3% = 21.9%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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117) Alpha Corporation reported the following data for its most recent year: sales, $1,000,000; variable expenses, $600,000; and fixed expenses, $300,000. The company's degree of operating leverage is closest to:
A) 0.25
B) 2.0
C) 4.0
D) 3.3

Answer: C
Explanation: Contribution margin = Sales – Variable expenses
= $1,000,000 – $600,000 = $400,000

Profit = Contribution margin – Fixed expenses
= $400,000 – $300,000 = $100,000

Degree of operating leverage = Contribution margin ÷ Net operating income
= $400,000 ÷ $100,000 = 4
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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118) Lofft Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (2,000 units)	$	120,000
Variable expenses		90,000
Contribution margin		30,000
Fixed expenses		16,500
Net operating income	$	13,500

Using the degree of operating leverage, the estimated percent increase in net operating income as the result of a 10% increase in sales is closest to: **(Round your intermediate calculations to 1 decimal place.)**
A) 1.13%
B) 88.89%
C) 22.22%
D) 4.50%

Answer: C
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $30,000 ÷ $13,500 = 2.2

Percentage change in net operating income = Degree of operating leverage × Percentage change in sales

= 2.2 × 10% = 22%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

119) Serfass Corporation's contribution format income statement for July appears below:

Sales	$	260,000
Variable expenses		176,000
Contribution margin		84,000
Fixed expenses		71,800
Net operating income	$	12,200

The degree of operating leverage is closest to:
A) 0.05
B) 0.15
C) 21.31
D) 6.89

Answer: D
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $84,000 ÷ $12,200 = 6.89
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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120) Bristo Corporation has sales of 2,000 units at $35 per unit. Variable expenses are 40% of the selling price. If total fixed expenses are $22,000, the degree of operating leverage is:
A) 0.79
B) 1.40
C) 2.10
D) 3.50

Answer: C
Explanation: Contribution margin = Sales – Variable expenses
= (2,000 units × $35 per unit) – (2,000 units × 0.40 × $35 per unit)
= $70,000 – $28,000 = $42,000

Net operating income = Contribution margin – Fixed expenses
= $42,000 – $22,000 = $20,000

Degree of operating leverage = Contribution margin ÷ Net operating income
= $42,000 ÷ $20,000 = 2.1
Difficulty: 2 Medium
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

121) Lydic Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (4,000 units)	$	160,000
Variable expenses		112,000
Contribution margin		48,000
Fixed expenses		38,400
Net operating income	$	9,600

The degree of operating leverage is closest to:
A) 5.00
B) 0.20
C) 16.67
D) 0.06

Answer: A
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $48,000 ÷ $9,600 = 5.0
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
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122) A company sells two products--J and K. The sales mix is expected to be $3 of sales of Product K for every $1 of sales of Product J. Product J has a contribution margin ratio of 40% whereas Product K has a contribution margin ratio of 50%. Annual fixed expenses are expected to be $120,000. The overall break-even point for the company in dollar sales is expected to be closest to:
A) $196,000
B) $200,000
C) $252,632
D) $263,420

Answer: C
Explanation: Sales of Product K = 3 × Sales of Product J
Overall contribution margin = (Product J CM ratio × Sales of Product J) + (Product K CM ratio × Sales of Product K)
= (0.40 × Sales of Product J) + (0.50 × 3 × Sales of Product J)
= 1.90 × Sales of Product J

Overall sales = Sales of Product J + Sales of Product K
= Sales of Product J + Sales of Product K
= Sales of Product J + 3 × Sales of Product J
= 4.00 × Sales of Product J

Overall CM ratio = Overall contribution margin ÷ Overall sales
= (1.90 × Sales of Product J) ÷ (4.00 × Sales of Product J)
= 1.90 ÷ 4.00 = 0.475

Dollar sales to break even = Fixed expenses ÷ Overall CM ratio
= $120,000 ÷ 0.475 = $252,632
Difficulty: 3 Hard
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Apply
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123) Roddam Corporation produces and sells two products. Data concerning those products for the most recent month appear below:

	Product K09E	Product G17B
Sales	$ 28,000	$ 38,000
Variable expenses	$ 11,200	$ 8,600

The fixed expenses of the entire company were $41,970. If the sales mix were to shift toward Product K09E with total dollar sales remaining constant, the overall break-even point for the entire company:
A) would increase.
B) could increase or decrease.
C) would not change.
D) would decrease.

Answer: A
Explanation:

	Product K09E	Product G17B
Sales (a)	$ 28,000	$ 38,000
Variable expenses	11,200	8,600
Contribution margin (b)	$ 16,800	$ 29,400
CM ratio (b) ÷ (a)	60.0%	77.4%

Since Product K09E has a lower contribution margin ratio, a shift in sales to that product would increase the break-even point of the entire company.
Difficulty: 2 Medium
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Apply
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124) Steffen Corporation has three products with the following characteristics:

	Product A	Product B	Product C
Monthly sales in dollars	$ 120,000	$ 160,000	$ 200,000
Contribution margin ratio	20%	40%	16%

The overall contribution margin ratio for the company as a whole is closest to:
A) 35.3%
B) 75.0%
C) 25.0%
D) 28.5%

Answer: C
Explanation:

	Product A	Product B	Product C	Total
Monthly sales in dollars	$ 120,000	$ 160,000	$ 200,000	$ 480,000
Contribution margin ratio	20%	40%	16%	
Contribution margin	$ 24,000	$ 64,000	$ 32,000	$ 120,000

Overall CM ratio = Contribution margin ÷ Sales = $120,000 ÷ $480,000 = 0.25
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Apply
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125) Mcdale Inc. produces and sells two products. Data concerning those products for the most recent month appear below:

	Product I49V	Product Z50U
Sales	$ 15,000	$ 14,000
Variable expenses	$ 3,300	$ 2,790

The fixed expenses of the entire company were $18,460. The break-even point for the entire company is closest to:
A) $23,367
B) $10,540
C) $24,550
D) $18,460

Answer: A
Explanation:

	Product I49V	Product Z50U	Total
Sales	$ 15,000	$ 14,000	$ 29,000
Variable expenses	3,300	2,790	6,090
Contribution margin	$ 11,700	$ 11,210	$ 22,910

CM ratio = Contribution margin ÷ Sales = $22,910 ÷ $29,000 = 0.79

Dollar sales to break even = Fixed expenses ÷ CM ratio = $18,460 ÷ 0.79 = $23,367
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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126) Sunnripe Corporation manufactures and sells two types of beach towels, standard and deluxe. Sunnripe expects the following operating results next year:

	Standard	Deluxe
Total sales	$ 450,000	$ 50,000
Total variable expenses	$ 360,000	$ 20,000

Sunnripe expects to have a total of $57,600 in fixed expenses next year. What is Sunnripe's overall break-even point next year in sales dollars?
A) $72,000
B) $144,000
C) $192,000
D) $240,000

Answer: D
Explanation:

	Standard	Deluxe	Total
Total sales	$ 450,000	$ 50,000	$ 500,000
Total variable expenses	360,000	20,000	380,000
Total contribution margin	$ 90,000	$ 30,000	$ 120,000

CM ratio = Contribution margin ÷ Sales

= $120,000 ÷ $500,000 = 0.24

Dollar sales to break even = Fixed expenses ÷ CM ratio

= $57,600 ÷ 0.24 = $240,000
Difficulty: 2 Medium
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

127) Flesch Corporation produces and sells two products. In the most recent month, Product C90B had sales of $24,000 and variable expenses of $6,480. Product Y45E had sales of $29,000 and variable expenses of $11,010. The fixed expenses of the entire company were $32,280. If the sales mix were to shift toward Product C90B with total dollar sales remaining constant, the overall break-even point for the entire company:
A) would decrease.
B) would increase.
C) could increase or decrease.
D) would not change.

Answer: A
Explanation:

	Product C90B	Product Y45E
Sales (a)	$ 24,000	$ 29,000
Variable expenses	6,480	11,010
Contribution margin (b)	$ 17,520	$ 17,990
CM ratio (b) ÷ (a)	73.0%	62.0%

Since Product C90B has a higher contribution margin ratio, a shift in sales to that product would decrease the break-even point of the entire company.
Difficulty: 2 Medium
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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128) Newham Corporation produces and sells two products. In the most recent month, Product R10L had sales of $28,000 and variable expenses of $6,440. Product X96N had sales of $22,000 and variable expenses of $7,560. The fixed expenses of the entire company were $32,710. The break-even point for the entire company is closest to:
A) $32,710
B) $45,431
C) $46,710
D) $17,290

Answer: B
Explanation:

	Product R10L	Product X96N	Total
Sales	$ 28,000	$ 22,000	$ 50,000
Variable expenses	6,440	7,560	14,000
Contribution margin	$ 21,560	$ 14,440	$ 36,000

CM ratio = Contribution margin ÷ Sales = $36,000 ÷ $50,000 = 0.72

Dollar sales to break even = Fixed expenses ÷ CM ratio = $32,710 ÷ 0.72 = $45,431
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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129) Keomuangtai Corporation produces and sells a single product. The company has provided its contribution format income statement for October.

Sales (4,600 units)	$	266,800
Variable expenses		179,400
Contribution margin		87,400
Fixed expenses		62,200
Net operating income	$	25,200

If the company sells 4,500 units, its total contribution margin should be closest to:
A) $85,500
B) $24,652
C) $87,400
D) $81,600

Answer: A
Explanation: Selling price per unit = $266,800 ÷ 4,600 units = $58 per unit

Variable expense per unit = $179,400 ÷ 4,600 units = $39 per unit

Unit CM = $58 per unit – $39 per unit = $19 per unit

Contribution margin = $19 per unit × 4,500 units =$85,500
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

130) Keomuangtai Corporation produces and sells a single product. The company has provided its contribution format income statement for October.

Sales (4,600 units)	$	266,800
Variable expenses		179,400
Contribution margin		87,400
Fixed expenses		62,200
Net operating income	$	25,200

If the company sells 4,200 units, its net operating income should be closest to:
A) $17,600
B) $23,009
C) $25,200
D) $2,000

Answer: A
Explanation: Selling price per unit = $266,800 ÷ 4,600 units = $58 per unit

Variable expense per unit = $179,400 ÷ 4,600 units = $39 per unit

Unit CM = $58 per unit – $39 per unit = $19 per unit

Profit = Unit CM × Q – Fixed expenses

= $19 per unit × 4,200 units – $62,200 = $79,800 – $62,200 = $17,600
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

131) Wight Corporation has provided its contribution format income statement for June. The company produces and sells a single product.

Sales (9,600 units)	$	336,000
Variable expenses		144,000
Contribution margin		192,000
Fixed expenses		137,000
Net operating income	$	55,000

If the company sells 9,100 units, its total contribution margin should be closest to:
A) $174,500
B) $192,000
C) $52,135
D) $182,000

Answer: D
Explanation: Selling price per unit = $336,000 ÷ 9,600 units = $35 per unit

Variable expense per unit = $144,000 ÷ 9,600 units = $15 per unit

Unit CM = $35 per unit – $15 per unit = $20 per unit

Contribution margin = $20 per unit × 9,100 units = $182,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

132) Wight Corporation has provided its contribution format income statement for June. The company produces and sells a single product.

Sales (9,600 units)	$	336,000
Variable expenses		144,000
Contribution margin		192,000
Fixed expenses		137,000
Net operating income	$	55,000

If the company sells 9,700 units, its net operating income should be closest to:
A) $57,000
B) $55,000
C) $55,573
D) $58,500

Answer: A
Explanation: Selling price per unit = $336,000 ÷ 9,600 units = $35 per unit
Variable expense per unit = $144,000 ÷ 9,600 units = $15 per unit
Unit CM = $35 per unit – $15 per unit = $20 per unit
Profit = Unit CM × Q – Fixed expenses
= $20 per unit × 9,700 units – $137,000 = $194,000 – $137,000 = $57,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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133) Lister Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$ 90,000
Variable expenses	58,500
Contribution margin	31,500
Fixed expenses	21,000
Net operating income	$ 10,500

If sales increase to 3,040 units, the increase in net operating income would be closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $420.00
B) $140.00
C) $1,200.00
D) $780.00

Answer: A
Explanation: The increase in net operating income would be the increased contribution margin because fixed expenses are not affected.

Selling price per unit ($90,000 ÷ 3,000 units)	$ 30.00
Variable cost per unit ($58,500 ÷ 3,000 units)	19.50
Unit contribution margin	$ 10.50

Unit contribution margin (a)	$ 10.50	per unit
Increased unit sales (b)	40	units
Increase in net operating income (a) × (b)	$ 420.00	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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134) Lister Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$ 90,000
Variable expenses	58,500
Contribution margin	31,500
Fixed expenses	21,000
Net operating income	$ 10,500

If sales decline to 2,900 units, the net operating income would be closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $1,050
B) $30,450
C) $10,150
D) $9,450

Answer: D
Explanation:

Selling price per unit ($90,000 ÷ 3,000 units)	$ 30.00
Variable cost per unit ($58,500 ÷ 3,000 units)	19.50
Unit contribution margin	$ 10.50

Unit contribution margin (a)	$ 10.50	per unit
Unit sales (b)	2,900	units
Contribution margin (a) × (b)	$ 30,450	
Fixed expenses	21,000	
Net operating income	$ 9,450	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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135) Souza Inc, which produces and sells a single product, has provided its contribution format income statement for October.

Sales (4,000 units)	$	88,000
Variable expenses		40,000
Contribution margin		48,000
Fixed expenses		41,700
Net operating income	$	6,300

If the company sells 3,600 units, its total contribution margin should be closest to:
A) $39,200
B) $5,670
C) $43,200
D) $48,000

Answer: C
Explanation: Selling price per unit = $88,000 ÷ 4,000 units = $22 per unit

Variable expense per unit = $40,000 ÷ 4,000 units = $10 per unit

Unit CM = $22 per unit – $10 per unit = $12 per unit

Contribution margin = $12 per unit × 3,600 units = $43,200
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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136) Souza Inc, which produces and sells a single product, has provided its contribution format income statement for October.

Sales (4,000 units)	$	88,000
Variable expenses		40,000
Contribution margin		48,000
Fixed expenses		41,700
Net operating income	$	6,300

If the company sells 3,500 units, its net operating income should be closest to:
A) $5,513
B) $6,300
C) $300
D) -$4,700

Answer: C
Explanation: Selling price per unit = $88,000 ÷ 4,000 units = $22 per unit

Variable expense per unit = $40,000 ÷ 4,000 units = $10 per unit

Unit CM = $22 per unit – $10 per unit = $12 per unit

Profit = Unit CM × Q – Fixed expenses

= $12 per unit × 3,500 units – $41,700 = $42,000 – $41,700 = $300
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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137) Kelsay Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$ 540,000
Variable expenses	405,000
Contribution margin	135,000
Fixed expenses	130,500
Net operating income	$ 4,500

The contribution margin per unit is closest to:
A) $15.00
B) $0.50
C) $45.00
D) $60.00

Answer: A
Explanation:

Total contribution margin (a)	$ 135,000	
Total unit sales (b)	9,000	units
Unit contribution margin (a) ÷ (b)	$ 15	per unit

Alternatively,

Selling price per unit ($540,000 ÷ 9,000 units)	$ 60
Variable cost per unit ($405,000 ÷ 9,000 units)	45
Unit contribution margin	$ 15

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

138) Kelsay Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$	540,000
Variable expenses		405,000
Contribution margin		135,000
Fixed expenses		130,500
Net operating income	$	4,500

The contribution margin ratio is closest to:
A) 75%
B) 67%
C) 25%
D) 33%

Answer: C
Explanation: CM ratio = Contribution margin ÷ Sales = $135,000 ÷ $540,000 = 25%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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139) Kelsay Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$	540,000
Variable expenses		405,000
Contribution margin		135,000
Fixed expenses		130,500
Net operating income	$	4,500

The variable expense ratio is closest to:
A) 33%
B) 67%
C) 25%
D) 75%

Answer: D
Explanation: Variable expense ratio = Variable expenses ÷ Sales = $405,000 ÷ $540,000 = 75%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

140) A cement manufacturer has supplied the following data:

Tons of cement produced and sold	680,000
Sales revenue	$ 2,788,000
Variable manufacturing expense	$ 1,156,000
Fixed manufacturing expense	$ 760,000
Variable selling and administrative expense	$ 272,000
Fixed selling and administrative expense	$ 294,000
Net operating income	$ 306,000

What is the company's unit contribution margin? **(Round your intermediate calculations to 2 decimal places.)**
A) $0.45 per unit
B) $2.10 per unit
C) $2.00 per unit
D) $4.10 per unit

Answer: C
Explanation: Unit contribution margin = Selling price per unit – Variable expenses per unit

= ($2,788,000 ÷ 680,000 units) – (($1,156,000 + $272,000) ÷ 680,000 units)

= ($2,788,000 ÷ 680,000 units) – ($1,428,000 ÷ 680,000 units)

= $4.10 per unit – $2.10 per unit = $2.00 per unit
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

141) A cement manufacturer has supplied the following data:

Tons of cement produced and sold	680,000
Sales revenue	$ 2,788,000
Variable manufacturing expense	$ 1,156,000
Fixed manufacturing expense	$ 760,000
Variable selling and administrative expense	$ 272,000
Fixed selling and administrative expense	$ 294,000
Net operating income	$ 306,000

The company's contribution margin ratio is closest to:
A) 39.0%
B) 51.2%
C) 11.0%
D) 48.8%

Answer: D
Explanation: Contribution margin = Sales – Variable expenses
= $2,788,000 – ($1,156,000 + $272,000) = $2,788,000 – $1,428,000 = $1,360,000

CM ratio = Contribution margin ÷ Sales
= $1,360,000 ÷ $2,788,000 = 0.488
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

142) A cement manufacturer has supplied the following data:

Tons of cement produced and sold	680,000
Sales revenue	$ 2,788,000
Variable manufacturing expense	$ 1,156,000
Fixed manufacturing expense	$ 760,000
Variable selling and administrative expense	$ 272,000
Fixed selling and administrative expense	$ 294,000
Net operating income	$ 306,000

If the company increases its unit sales volume by 4% without increasing its fixed expenses, then total net operating income should be closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $12,240
B) $318,240
C) $360,400
D) $311,973

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Answer: C
Explanation: Unit sales = 680,000 units × 1.04 = 707,200 units

Unit selling price = $2,788,000 ÷ 680,000 units = $4.10 per unit

Variable manufacturing expense per unit = $1,156,000 ÷ 680,000 units = $1.70 per unit

Variable selling and administrative expense per unit = $272,000 ÷ 680,000 units = $0.40 per unit

Unit sales	707,200
Sales (at $4.10 per unit)	$ 2,899,520
Variable expenses:	
Variable manufacturing expense (at $1.70 per unit)	1,202,240
Variable selling and administrative expense (at $0.40 per unit)	282,880
Contribution margin	1,414,400
Fixed expenses:	
Fixed manufacturing expenses	760,000
Fixed selling and administrative expenses	294,000
Net operating income	$ 360,400

Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

143) A tile manufacturer has supplied the following data:

Boxes of tiles produced and sold	520,000
Sales revenue	$ 2,132,000
Variable manufacturing expense	$ 650,000
Fixed manufacturing expense	$ 464,000
Variable selling and administrative expense	$ 260,000
Fixed selling and administrative expense	$ 312,000
Net operating income	$ 446,000

What is the company's unit contribution margin? **(Round your intermediate calculations to 2 decimal places.)**
A) $0.86 per unit
B) $2.35 per unit
C) $4.10 per unit
D) $1.75 per unit

Answer: B
Explanation: Unit contribution margin = Selling price per unit – Variable expenses per unit
= ($2,132,000 ÷ 520,000 units) – (($650,000 + $260,000) ÷ 520,000 units)
= ($2,132,000 ÷ 520,000 units) – ($910,000 ÷ 520,000 units)
= $4.10 per unit – $1.75 per unit = $2.35 per unit
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

144) A tile manufacturer has supplied the following data:

Boxes of tiles produced and sold	520,000
Sales revenue	$ 2,132,000
Variable manufacturing expense	$ 650,000
Fixed manufacturing expense	$ 464,000
Variable selling and administrative expense	$ 260,000
Fixed selling and administrative expense	$ 312,000
Net operating income	$ 446,000

The company's contribution margin ratio is closest to:
A) 42.7%
B) 57.3%
C) 45.8%
D) 21.0%

Answer: B
Explanation: Contribution margin = Sales – Variable expenses
= $2,132,000 – ($650,000 + $260,000) = $2,132,000 – $910,000 = $1,222,000

CM ratio = Contribution margin ÷ Sales
= $1,222,000 ÷ $2,132,000 = 0.573
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

145) A tile manufacturer has supplied the following data:

Boxes of tiles produced and sold	520,000
Sales revenue	$ 2,132,000
Variable manufacturing expense	$ 650,000
Fixed manufacturing expense	$ 464,000
Variable selling and administrative expense	$ 260,000
Fixed selling and administrative expense	$ 312,000
Net operating income	$ 446,000

If the company increases its unit sales volume by 3% without increasing its fixed expenses, then total net operating income should be closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $459,380
B) $453,667
C) $13,380
D) $482,660

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Answer: D
Explanation: Unit sales = 520,000 units × 1.03 = 535,600 units

Unit selling price = $2,132,000 ÷ 520,000 units = $4.10 per unit

Variable manufacturing expense per unit = $650,000 ÷ 520,000 units = $1.25 per unit

Variable selling and administrative expense per unit = $260,000 ÷ 520,000 units = $0.50 per unit

Unit sales	535,600
Sales (at $4.10 per unit)	$ 2,195,960
Variable expenses:	
Variable manufacturing expenses ($1.25 per unit)	669,500
Variable selling and administrative expense (at $0.50 per unit)	267,800
Contribution margin	1,258,660
Fixed expenses:	
Fixed manufacturing expenses	464,000
Fixed selling and administrative expenses	312,000
Net operating income	$ 482,660

Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

146) Sjostrom Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (7,000 units)	$ 280,000
Variable expenses	182,000
Contribution margin	98,000
Fixed expenses	84,000
Net operating income	$ 14,000

If the selling price increases by $3 per unit and the sales volume decreases by 600 units, the net operating income would be closest to:
A) $24,800
B) $35,000
C) $19,200
D) $32,000

Answer: A
Explanation:

Selling price per unit ($280,000 ÷ 7,000 units)	$ 40
Variable cost per unit ($182,000 ÷ 7,000 units)	26
Unit contribution margin	$ 14

Selling price ($40 per unit + $3 per unit)	$ 43	per unit
Variable cost per price	26	per unit
Unit contribution margin (a)	$ 17	per unit
Unit sales (7,000 units − 600 units) (b)	6,400	units
Contribution margin (a) × (b)	$ 108,800	
Fixed expenses	84,000	
Net operating income	$ 24,800	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

147) Sjostrom Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (7,000 units)	$	280,000
Variable expenses		182,000
Contribution margin		98,000
Fixed expenses		84,000
Net operating income	$	14,000

If the variable cost per unit increases by $10, spending on advertising increases by $1,500, and unit sales increase by 15,800 units, the net operating income would be closest to:
A) $12,500
B) $114,100
C) $91,200
D) $5,700

Answer: D
Explanation:

Selling price per unit ($280,000 ÷ 7,000 units)	$ 40
Variable cost per unit ($182,000 ÷ 7,000 units)	26
Unit contribution margin	$ 14

Selling price	$	40	per unit
Variable cost per price ($26 per unit + $10 per unit)		36	per unit
Unit contribution margin (a)	$	4	per unit
Unit sales (7,000 units + 15,800 units) (b)		22,800	units
Contribution margin (a) × (b)	$	91,200	
Fixed expenses ($84,000 + $1,500)		85,500	
Net operating income	$	5,700	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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148) Remmel Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (6,000 units)	$	300,000
Variable expenses		240,000
Contribution margin		60,000
Fixed expenses		59,000
Net operating income	$	1,000

If sales increase to 6,020 units, the increase in net operating income would be closest to:
A) $1,000.00
B) $800.00
C) $200.00
D) $3.33

Answer: C
Explanation: The increase in net operating income would be the increased contribution margin because fixed expenses are not affected.

Selling price per unit ($300,000 ÷ 6,000 units)	$ 50
Variable cost per unit ($240,000 ÷ 6,000 units)	40
Unit contribution margin	$ 10

Unit contribution margin (a)	$ 10	per unit
Increased unit sales (b)	20	units
Increase in net operating income (a) × (b)	$ 200	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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149) Remmel Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (6,000 units)	$ 300,000
Variable expenses	240,000
Contribution margin	60,000
Fixed expenses	59,000
Net operating income	$ 1,000

If the selling price increases by $3 per unit and the sales volume decreases by 400 units, the net operating income would be closest to:
A) $19,000
B) $16,800
C) $13,800
D) $17,733

Answer: C
Explanation:

Selling price per unit ($300,000 ÷ 6,000 units)	$ 50
Variable cost per unit ($240,000 ÷ 6,000 units)	40
Unit contribution margin	$ 10

Selling price ($50 per unit + $3 per unit)	$ 53	per unit
Variable cost per price	40	per unit
Unit contribution margin (a)	$ 13	per unit
Unit sales (6,000 units − 400 units) (b)	5,600	units
Contribution margin (a) × (b)	$ 72,800	
Fixed expenses	59,000	
Net operating income	$ 13,800	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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150) Valdez Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (6,000 units)	$	240,000
Variable expenses		180,000
Contribution margin		60,000
Fixed expenses		54,000
Net operating income	$	6,000

The break-even point in unit sales is closest to:
A) 5,850 units
B) 4,500 units
C) 0 units
D) 5,400 units

Answer: D
Explanation:

Selling price per unit ($240,000 ÷ 6,000 units)	$ 40
Variable cost per unit ($180,000 ÷ 6,000 units)	30
Unit contribution margin	$ 10

Unit sales to break even = Fixed expenses ÷ Unit CM = $54,000 ÷ $10 per unit = 5,400 units
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.
Bloom's: Apply
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151) Valdez Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (6,000 units)	$	240,000
Variable expenses		180,000
Contribution margin		60,000
Fixed expenses		54,000
Net operating income	$	6,000

The number of units that must be sold to achieve a target profit of $24,000 is closest to:
A) 30,000 units
B) 7,800 units
C) 13,800 units
D) 24,000 units

Answer: B
Explanation:

Selling price per unit ($240,000 ÷ 6,000 units)	$ 40
Variable cost per unit ($180,000 ÷ 6,000 units)	30
Unit contribution margin	$ 10

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($24,000 + $54,000) ÷ $10 per unit = $78,000 ÷ $10 per unit = 7,800 units
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Target Profit Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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152) Nussbaum Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$ 180,000
Variable expenses	117,000
Contribution margin	63,000
Fixed expenses	56,700
Net operating income	$ 6,300

The break-even point in unit sales is closest to:
A) 0 units
B) 5,850 units
C) 8,100 units
D) 8,685 units

Answer: C
Explanation:

Selling price per unit ($180,000 ÷ 9,000 units)	$ 20
Variable cost per unit ($117,000 ÷ 9,000 units)	13
Unit contribution margin	$ 7

Unit sales to break even = Fixed expenses ÷ Unit CM = $56,700 ÷ $7 per unit = 8,100 units
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.
Bloom's: Apply
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153) Nussbaum Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$	180,000
Variable expenses		117,000
Contribution margin		63,000
Fixed expenses		56,700
Net operating income	$	6,300

The break-even point in dollar sales is closest to:
A) $162,000
B) $117,000
C) $0
D) $173,700

Answer: A
Explanation: CM ratio = Contribution margin ÷ Sales = $63,000 ÷ $180,000 = 35%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $56,700 ÷ 35% = $162,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.
Bloom's: Apply
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154) Nussbaum Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$	180,000
Variable expenses		117,000
Contribution margin		63,000
Fixed expenses		56,700
Net operating income	$	6,300

The number of units that must be sold to achieve a target profit of $16,100 is closest to:
A) 32,000 units
B) 19,400 units
C) 10,400 units
D) 23,000 units

Answer: C
Explanation:

Selling price per unit ($180,000 ÷ 9,000 units)	$	20
Variable cost per unit ($117,000 ÷ 9,000 units)		13
Unit contribution margin	$	7

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM

= ($16,100 + $56,700) ÷ $7 per unit = $72,800 ÷ $7 per unit = 10,400 units
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Target Profit Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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155) Maruca Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$	270,000
Variable expenses		175,500
Contribution margin		94,500
Fixed expenses		86,100
Net operating income	$	8,400

The break-even point in dollar sales is closest to:
A) $175,500
B) $261,600
C) $246,000
D) $0

Answer: C
Explanation: CM ratio = Contribution margin ÷ Sales = $94,500 ÷ $270,000 = 35%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $86,100 ÷ 35% = $246,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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156) Maruca Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (9,000 units)	$	270,000
Variable expenses		175,500
Contribution margin		94,500
Fixed expenses		86,100
Net operating income	$	8,400

The margin of safety in dollars is closest to:
A) $86,100
B) $8,400
C) $24,000
D) $94,500

Answer: C
Explanation: CM ratio = Contribution margin ÷ Sales = $94,500 ÷ $270,000 = 35%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $86,100 ÷ 35% = $246,000

Margin of safety in dollars = Total budgeted (or actual) sales − Break-even sales

= $270,000 − $246,000 = $24,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
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157) Golebiewski Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (5,000 units)	$	150,000
Variable expenses		112,500
Contribution margin		37,500
Fixed expenses		35,250
Net operating income	$	2,250

The margin of safety in dollars is closest to:
A) $2,250
B) $9,000
C) $35,250
D) $37,500

Answer: B
Explanation: CM ratio = Contribution margin ÷ Sales = $37,500 ÷ $150,000 = 25%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $35,250 ÷ 25% = $141,000

Margin of safety in dollars = Total budgeted (or actual) sales − Break-even sales

= $150,000 − $141,000 = $9,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
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158) Golebiewski Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (5,000 units)	$	150,000
Variable expenses		112,500
Contribution margin		37,500
Fixed expenses		35,250
Net operating income	$	2,250

The margin of safety percentage is closest to:
A) 2%
B) 24%
C) 75%
D) 6%

Answer: D
Explanation: CM ratio = Contribution margin ÷ Sales = $37,500 ÷ $150,000 = 25%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $35,250 ÷ 25% = $141,000

Margin of safety in dollars = Total budgeted (or actual) sales − Break-even sales

= $150,000 − $141,000 = $9,000

Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales

= $9,000 ÷ $150,000 = 6%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
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159) Shambo Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$	60,000
Variable expenses		42,000
Contribution margin		18,000
Fixed expenses		13,200
Net operating income	$	4,800

The margin of safety percentage is closest to:
A) 27%
B) 70%
C) 22%
D) 8%

Answer: A
Explanation: CM ratio = Contribution margin ÷ Sales = $18,000 ÷ $60,000 = 30%
Dollar sales to break even = Fixed expenses ÷ CM ratio = $13,200 ÷ 30% = $44,000
Margin of safety in dollars = Total budgeted (or actual) sales − Break-even sales
= $60,000 − $44,000 = $16,000
Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales
= $16,000 ÷ $60,000 = 27%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; The Margin of Safety
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

160) Shambo Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (3,000 units)	$	60,000
Variable expenses		42,000
Contribution margin		18,000
Fixed expenses		13,200
Net operating income	$	4,800

Using the degree of operating leverage, the estimated percent increase in net operating income as the result of a 20% increase in sales is closest to: **(Round your intermediate calculations to 1 decimal place.)**
A) 75.00%
B) 1.60%
C) 250.00%
D) 5.33%

Answer: A
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $18,000 ÷ $4,800 = 3.8

Percentage change in net operating income = Degree of operating leverage × Percentage change in sales

= 3.8 × 20% = 75%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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161) A company that makes organic fertilizer has supplied the following data:

Bags produced and sold	200,000
Sales revenue	$ 1,560,000
Variable manufacturing expense	$ 660,000
Fixed manufacturing expense	$ 448,000
Variable selling and administrative expense	$ 180,000
Fixed selling and administrative expense	$ 214,000
Net operating income	$ 58,000

The company's margin of safety in units is closest to: **(Round per unit calculations to 2 decimal places.)**
A) 115,128 units
B) 16,111 units
C) 168,986 units
D) 100,444 units

Answer: B
Explanation: Selling price per unit = $1,560,000 ÷ 200,000 units = $7.80 per unit

Variable expense per unit = ($660,000 + $180,000) ÷ 200,000 units
= $840,000 ÷ 200,000 units = $4.20 per unit

Unit CM = Selling price per unit – Variable expenses per unit
= $7.80 per unit – $4.20 per unit = $3.60 per unit

Fixed expenses = ($448,000 + $214,000) = $662,000

Unit sales to break even = Fixed expenses ÷ Unit CM
= $662,000 ÷ $3.60 per unit = 183,889 units

Margin of safety = Total actual sales – Break-even sales
= 200,000 units – 183,889 units = 16,111
Difficulty: 2 Medium
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

162) A company that makes organic fertilizer has supplied the following data:

Bags produced and sold	200,000
Sales revenue	$ 1,560,000
Variable manufacturing expense	$ 660,000
Fixed manufacturing expense	$ 448,000
Variable selling and administrative expense	$ 180,000
Fixed selling and administrative expense	$ 214,000
Net operating income	$ 58,000

The company's unit contribution margin is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $4.50 per unit
B) $6.90 per unit
C) $3.60 per unit
D) $4.20 per unit

Answer: C
Explanation: Selling price per unit = $1,560,000 ÷ 200,000 units = $7.80 per unit

Variable expense per unit = ($660,000 + $180,000) ÷ 200,000 units
= $840,000 ÷ 200,000 units = $4.20 per unit

Unit CM = Selling price per unit – Variable expenses per unit
= $7.80 per unit – $4.20 per unit = $3.60 per unit
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

163) A company that makes organic fertilizer has supplied the following data:

Bags produced and sold	200,000
Sales revenue	$ 1,560,000
Variable manufacturing expense	$ 660,000
Fixed manufacturing expense	$ 448,000
Variable selling and administrative expense	$ 180,000
Fixed selling and administrative expense	$ 214,000
Net operating income	$ 58,000

The company's degree of operating leverage is closest to:
A) 1.27
B) 26.90
C) 3.45
D) 12.41

Answer: D
Explanation:

Sales revenue	$ 1,560,000
Variable expenses:	
Variable manufacturing expense	660,000
Variable selling and administrative expense	180,000
Contribution margin	$ 720,000

Degree of operating leverage = Contribution margin ÷ Net operating income

= $720,000 ÷ $58,000 = 12.41
Difficulty: 2 Medium
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

164) A manufacturer of premium wire strippers has supplied the following data:

Units produced and sold	580,000
Sales revenue	$ 4,176,000
Variable manufacturing expense	$ 2,871,000
Fixed manufacturing expense	$ 778,000
Variable selling and administrative expense	$ 348,000
Fixed selling and administrative expense	$ 104,000
Net operating income	$ 75,000

The company's margin of safety in units is closest to: **(Round per unit calculations to 2 decimal places.)**
A) 234,222 units
B) 564,242 units
C) 45,455 units
D) 457,500 units

Answer: C
Explanation: Contribution margin = Sales – Variable expenses
= $4,176,000 – ($2,871,000 + $348,000)
= $4,176,000 – $3,219,000 = $957,000

Unit CM = Contribution margin ÷ Unit sales
= $957,000 ÷ 580,000 units = $1.65 per unit

Unit sales to break even = Fixed expenses ÷ Unit CM
= ($778,000 + $104,000) ÷ $1.65 per unit
= $882,000 ÷ $1.65 per unit = 534,545 units

Margin of safety in units = Total budgeted (or actual) sales – Unit sales to break even
= 580,000 units – 534,545 units = 45,455 units
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; The Margin of Safety
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

165) A manufacturer of premium wire strippers has supplied the following data:

Units produced and sold	580,000
Sales revenue	$ 4,176,000
Variable manufacturing expense	$ 2,871,000
Fixed manufacturing expense	$ 778,000
Variable selling and administrative expense	$ 348,000
Fixed selling and administrative expense	$ 104,000
Net operating income	$ 75,000

The company's unit contribution margin is closest to:
A) $2.25 per unit
B) $5.55 per unit
C) $1.65 per unit
D) $6.60 per unit

Answer: C
Explanation: Contribution margin = Sales – Variable expenses
= $4,176,000 – ($2,871,000 + $348,000)
= $4,176,000 – $3,219,000 = $957,000

Unit CM = Contribution margin ÷ Unit sales
= $957,000 ÷ 580,000 units = $1.65 per unit
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

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Units produced and sold	580,000
Sales revenue	$ 4,176,000
Variable manufacturing expense	$ 2,871,000
Fixed manufacturing expense	$ 778,000
Variable selling and administrative expense	$ 348,000
Fixed selling and administrative expense	$ 104,000
Net operating income	$ 75,000

The company's degree of operating leverage is closest to:
A) 55.68
B) 3.65
C) 7.73
D) 12.76

Answer: D
Explanation: Contribution margin = Sales – Variable expenses
= $4,176,000 – ($2,871,000 + $348,000)
= $4,176,000 – $3,219,000 = $957,000

Degree of operating leverage = Contribution margin ÷ Net operating income
= $957,000 ÷ $75,000 = 12.76
Difficulty: 2 Medium
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Operating Leverage
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

167) A manufacturer of cedar shingles has supplied the following data:

Bundles of cedar shakes produced and sold	360,000
Sales revenue	$ 2,412,000
Variable manufacturing expense	$ 1,170,000
Fixed manufacturing expense	$ 714,000
Variable selling and administrative expense	$ 414,000
Fixed selling and administrative expense	$ 82,000
Net operating income	$ 32,000

The company's break-even in unit sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 118,806
B) 206,957
C) 346,087
D) 14,775

Answer: C
Explanation: Contribution margin = Sales – Variable expenses
= $2,412,000 – ($1,170,000 + $414,000)
= $2,412,000 – $1,584,000 = $828,000

Unit CM = $828,000 ÷ 360,000 bundles = $2.30 per bundle

Fixed expenses = $714,000 + $82,000 = $796,000
Unit sales to break even = Fixed expenses ÷ Unit CM
= $796,000 ÷ $2.30 per bundle = 346,087 bundles
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

168) A manufacturer of cedar shingles has supplied the following data:

Bundles of cedar shakes produced and sold	360,000
Sales revenue	$ 2,412,000
Variable manufacturing expense	$ 1,170,000
Fixed manufacturing expense	$ 714,000
Variable selling and administrative expense	$ 414,000
Fixed selling and administrative expense	$ 82,000
Net operating income	$ 32,000

The company's contribution margin ratio is closest to:
A) 72.6%
B) 65.7%
C) 34.3%
D) 27.4%

Answer: C
Explanation: Contribution margin = Sales – Variable expenses
= $2,412,000 – ($1,170,000 + $414,000)
= $2,412,000 – $1,584,000 = $828,000

CM ratio = Contribution margin ÷ Sales
= $828,000 ÷ $2,412,000 = 0.343
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Apply
AACSB: Analytical Thinking
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Bundles of cedar shakes produced and sold	360,000
Sales revenue	$ 2,412,000
Variable manufacturing expense	$ 1,170,000
Fixed manufacturing expense	$ 714,000
Variable selling and administrative expense	$ 414,000
Fixed selling and administrative expense	$ 82,000
Net operating income	$ 32,000

The company's degree of operating leverage is closest to:
A) 11.25
B) 25.88
C) 1.99
D) 75.38

Answer: B
Explanation: Contribution margin = Sales – Variable expenses
= $2,412,000 – ($1,170,000 + $414,000)
= $2,412,000 – $1,584,000 = $828,000

Degree of operating leverage = Contribution margin ÷ Net operating income
= $828,000 ÷ $32,000
= 25.88
Difficulty: 2 Medium
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

170) A manufacturer of tiling grout has supplied the following data:

Kilograms produced and sold	380,000
Sales revenue	$ 2,736,000
Variable manufacturing expense	$ 1,349,000
Fixed manufacturing expense	$ 336,000
Variable selling and administrative expense	$ 399,000
Fixed selling and administrative expense	$ 372,000
Net operating income	$ 280,000

The company's break-even in unit sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 272,308
B) 98,333
C) 92,055
D) 60,488

Answer: A
Explanation: Contribution margin = Sales – Variable expenses
= $2,736,000 – ($1,349,000 + $399,000)
= $2,736,000 – $1,748,000 = $988,000

Unit CM = $988,000 ÷ 380,000 kilograms = $2.60 per kilogram

Unit sales to break even = Fixed expenses ÷ Unit CM
= $708,000 ÷ $2.60 per kilogram = 272,308 kilograms
Difficulty: 2 Medium
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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Kilograms produced and sold	380,000
Sales revenue	$ 2,736,000
Variable manufacturing expense	$ 1,349,000
Fixed manufacturing expense	$ 336,000
Variable selling and administrative expense	$ 399,000
Fixed selling and administrative expense	$ 372,000
Net operating income	$ 280,000

The company's contribution margin ratio is closest to:
A) 28.9%
B) 63.9%
C) 71.1%
D) 36.1%

Answer: D
Explanation: Contribution margin = Sales – Variable expenses
= $2,736,000 – ($1,349,000 + $399,000)
= $2,736,000 – $1,748,000 = $988,000

CM ratio = Contribution margin ÷ Sales = $988,000 ÷ $2,736,000 = 0.361
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Apply
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Kilograms produced and sold	380,000
Sales revenue	$ 2,736,000
Variable manufacturing expense	$ 1,349,000
Fixed manufacturing expense	$ 336,000
Variable selling and administrative expense	$ 399,000
Fixed selling and administrative expense	$ 372,000
Net operating income	$ 280,000

The company's degree of operating leverage is closest to:
A) 9.77
B) 1.36
C) 3.53
D) 2.47

Answer: C
Explanation: Contribution margin = Sales – Variable expenses
= $2,736,000 – ($1,349,000 + $399,000)
= $2,736,000 – $1,748,000 = $988,000

Degree of operating leverage = Contribution margin ÷ Net operating income
= $988,000 ÷ $280,000 = 3.53
Difficulty: 2 Medium
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

173) Houpe Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 140	100%
Variable expenses	42	30%
Contribution margin	$ 98	70%

Fixed expenses are $490,000 per month. The company is currently selling 6,000 units per month.

The marketing manager believes that a $14,000 increase in the monthly advertising budget would result in a 150 unit increase in monthly sales. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $700
B) increase of $14,700
C) decrease of $14,000
D) decrease of $700

Answer: A
Explanation:

Unit sales (150 unit increase)	6,000 units	6,150 units
Sales (at $140 per unit)	$ 840,000	$ 861,000
Variable expenses (at $42 per unit)	252,000	258,300
Contribution margin	588,000	602,700
Fixed expenses ($14,000 increase)	490,000	504,000
Net operating income	$ 98,000	$ 98,700

Overall net operating income will increase by $700
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

174) Houpe Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 140	100%
Variable expenses	42	30%
Contribution margin	$ 98	70%

Fixed expenses are $490,000 per month. The company is currently selling 6,000 units per month.

Management is considering using a new component that would increase the unit variable cost by $5. Since the new component would increase the features of the company's product, the marketing manager predicts that monthly sales would increase by 300 units. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $2,100
B) decrease of $27,900
C) increase of $2,100
D) increase of $27,900

Answer: A
Explanation:

Unit sales (increase of 300 units)	6,000 units	6,300 units
Sales (at $140 per unit)	$ 840,000	$ 882,000
Variable expenses(at $42 per unit and $47 per unit)	252,000	296,100
Contribution margin	588,000	585,900
Fixed expenses	490,000	490,000
Net operating income	$ 98,000	$ 95,900

Overall net operating income will decrease by $2,100
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

175) Houpe Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 140	100%
Variable expenses	42	30%
Contribution margin	$ 98	70%

Fixed expenses are $490,000 per month. The company is currently selling 6,000 units per month.

The marketing manager would like to cut the selling price by $7 and increase the advertising budget by $28,000 per month. The marketing manager predicts that these two changes would increase monthly sales by 500 units. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $17,500
B) increase of $17,500
C) decrease of $24,500
D) increase of $38,500

Answer: C
Explanation:

	6,000 units	6,500 units
Unit sales (increase by 500 units)		
Sales (at $140 per unit and $133 per unit)	$ 840,000	$ 864,500
Variable expenses (at $42 per unit)	252,000	273,000
Contribution margin	588,000	591,500
Fixed expenses (increase by $28,000)	490,000	518,000
Net operating income	$ 98,000	$ 73,500

Overall net operating income will decrease by $24,500
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

176) Houpe Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$ 140	100%
Variable expenses	42	30%
Contribution margin	$ 98	70%

Fixed expenses are $490,000 per month. The company is currently selling 6,000 units per month.

The marketing manager would like to introduce sales commissions as an incentive for the sales staff. The marketing manager has proposed a commission of $11 per unit. In exchange, the sales staff would accept a decrease in their salaries of $58,000 per month. (This is the company's savings for the entire sales staff.) The marketing manager predicts that introducing this sales incentive would increase monthly sales by 100 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $700
B) increase of $56,900
C) decrease of $115,300
D) increase of $588,700

Answer: A
Explanation:

Unit sales (increase by 100 units)	6,000 units	6,100 units
Sales (at $140 per unit)	$ 840,000	$ 854,000
Variable expenses (at $42 per unit and $53 per unit)	252,000	323,300
Contribution margin	588,000	530,700
Fixed expenses (decrease by $58,000)	490,000	432,000
Net operating income	$ 98,000	$ 98,700

Overall net operating income will increase by $700
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

177) Data concerning Lemelin Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 230	100%
Variable expenses	115	50%
Contribution margin	$ 115	50%

The company is currently selling 7,000 units per month. Fixed expenses are $581,000 per month.

Management is considering using a new component that would increase the unit variable cost by $3. Since the new component would increase the features of the company's product, the marketing manager predicts that monthly sales would increase by 200 units. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $22,400
B) decrease of $1,400
C) increase of $22,400
D) increase of $1,400

Answer: D
Explanation:

Unit sales (increase of 200 units)	7,000 units	7,200 units
Sales (at $230 per unit)	$ 1,610,000	$ 1,656,000
Variable expenses(at $115 per unit and $118 per unit)	805,000	849,600
Contribution margin	805,000	806,400
Fixed expenses	581,000	581,000
Net operating income	$ 224,000	$ 225,400

Overall net operating income will increase by $1,400
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
AACSB: Analytical Thinking
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178) Data concerning Lemelin Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 230	100%
Variable expenses	115	50%
Contribution margin	$ 115	50%

The company is currently selling 7,000 units per month. Fixed expenses are $581,000 per month.

The marketing manager believes that an $11,000 increase in the monthly advertising budget would result in a 100 unit increase in monthly sales. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $11,000
B) increase of $11,500
C) decrease of $500
D) increase of $500

Answer: D
Explanation:

Unit sales (100 unit increase)	7,000 units	7,100 units
Sales (at $230 per unit)	$ 1,610,000	$ 1,633,000
Variable expenses (at $115 per unit)	805,000	816,500
Contribution margin	805,000	816,500
Fixed expenses ($11,000 increase)	581,000	592,000
Net operating income	$ 224,000	$ 224,500

Overall net operating income will increase by $500
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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179) Data concerning Lemelin Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 230	100%
Variable expenses	115	50%
Contribution margin	$ 115	50%

The company is currently selling 7,000 units per month. Fixed expenses are $581,000 per month.

The marketing manager would like to introduce sales commissions as an incentive for the sales staff. The marketing manager has proposed a commission of $20 per unit. In exchange, the sales staff would accept a decrease in their salaries of $113,000 per month. (This is the company's savings for the entire sales staff.) The marketing manager predicts that introducing this sales incentive would increase monthly sales by 300 units. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $224,500
B) increase of $107,000
C) increase of $1,500
D) increase of $806,500

Answer: C
Explanation:

Unit sales (increase by 300 units)	7,000 units	7,300 units
Sales (at $230 per unit)	$ 1,610,000	$ 1,679,000
Variable expenses (at $115 per unit and $135 per unit)	805,000	985,500
Contribution margin	805,000	693,500
Fixed expenses (decrease by $113,000)	581,000	468,000
Net operating income	$ 224,000	$ 225,500

Overall net operating income will increase by $1,500
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

180) Data concerning Lemelin Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$ 230	100%
Variable expenses	115	50%
Contribution margin	$ 115	50%

The company is currently selling 7,000 units per month. Fixed expenses are $581,000 per month.

The marketing manager would like to cut the selling price by $18 and increase the advertising budget by $37,000 per month. The marketing manager predicts that these two changes would increase monthly sales by 1,600 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $118,200
B) increase of $302,200
C) decrease of $118,200
D) decrease of $7,800

Answer: D
Explanation:

Unit sales (increase by 1,600 units)	7,000 units	8,600 units
Sales (at $230 per unit and $212 per unit)	$ 1,610,000	$ 1,823,200
Variable expenses (at $115 per unit)	805,000	989,000
Contribution margin	805,000	834,200
Fixed expenses (increase by $37,000)	581,000	618,000
Net operating income	$ 224,000	$ 216,200

Overall net operating income will decrease by $7,800
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

181) Thornbrough Corporation produces and sells a single product with the following characteristics:

	Per Unit	Percent of Sales
Selling price	$ 220	100%
Variable expenses	44	20%
Contribution margin	$ 176	80%

The company is currently selling 7,000 units per month. Fixed expenses are $901,000 per month.

Management is considering using a new component that would increase the unit variable cost by $11. Since the new component would increase the features of the company's product, the marketing manager predicts that monthly sales would increase by 500 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $82,500
B) decrease of $5,500
C) decrease of $82,500
D) increase of $5,500

Answer: D
Explanation:

Unit sales (increase of 500 units)	7,000 units	7,500 units
Sales (at $220 per unit)	$ 1,540,000	$ 1,650,000
Variable expenses(at $44 per unit and $55 per unit)	308,000	412,500
Contribution margin	1,232,000	1,237,500
Fixed expenses	901,000	901,000
Net operating income	$ 331,000	$ 336,500

Overall net operating income will increase by $5,500
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

182) Thornbrough Corporation produces and sells a single product with the following characteristics:

	Per Unit	Percent of Sales
Selling price	$ 220	100%
Variable expenses	44	20%
Contribution margin	$ 176	80%

The company is currently selling 7,000 units per month. Fixed expenses are $901,000 per month.

The marketing manager believes that a $28,000 increase in the monthly advertising budget would result in a 190 unit increase in monthly sales. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $28,000
B) increase of $33,440
C) increase of $5,440
D) decrease of $5,440

Answer: C
Explanation:

Unit sales (increase of 190 units)	7,000 units	7,190 units
Sales (at $220 per unit)	$ 1,540,000	$ 1,581,800
Variable expenses (at $44 per unit)	308,000	316,360
Contribution margin	1,232,000	1,265,440
Fixed expenses ($28,000 increase)	901,000	929,000
Net operating income	$ 331,000	$ 336,440

Overall net operating income will increase by $5,440
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

183) Thornbrough Corporation produces and sells a single product with the following characteristics:

	Per Unit	Percent of Sales
Selling price	$ 220	100%
Variable expenses	44	20%
Contribution margin	$ 176	80%

The company is currently selling 7,000 units per month. Fixed expenses are $901,000 per month.

The marketing manager would like to cut the selling price by $18 and increase the advertising budget by $53,000 per month. The marketing manager predicts that these two changes would increase monthly sales by 1,000 units. What should be the overall effect on the company's monthly net operating income of this change?
A) decrease of $105,000
B) increase of $149,000
C) increase of $105,000
D) decrease of $21,000

Answer: D
Explanation:

Unit sales (increase by 1,000 units)	7,000 units	8,000 units
Sales (at $220 per unit and $202 per unit)	$ 1,540,000	$ 1,616,000
Variable expenses (at $44 per unit)	308,000	352,000
Contribution margin	1,232,000	1,264,000
Fixed expenses (increase by $53,000)	901,000	954,000
Net operating income	$ 331,000	$ 310,000

Overall net operating income will decrease by $21,000
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

184) Thornbrough Corporation produces and sells a single product with the following characteristics:

	Per Unit	Percent of Sales
Selling price	$ 220	100%
Variable expenses	44	20%
Contribution margin	$ 176	80%

The company is currently selling 7,000 units per month. Fixed expenses are $901,000 per month.

The marketing manager would like to introduce sales commissions as an incentive for the sales staff. The marketing manager has proposed a commission of $11 per unit. In exchange, the sales staff would accept a decrease in their salaries of $65,000 per month. (This is the company's savings for the entire sales staff.) The marketing manager predicts that introducing this sales incentive would increase monthly sales by 300 units. What should be the overall effect on the company's monthly net operating income of this change?
A) increase of $1,269,500
B) increase of $37,500
C) increase of $61,700
D) decrease of $92,500

Answer: B
Explanation:

Unit sales (increase by 300 units)	7,000 units	7,300 units
Sales (at $220 per unit)	$ 1,540,000	$ 1,606,000
Variable expenses (at $44 per unit and $55 per unit)	308,000	401,500
Contribution margin	1,232,000	1,204,500
Fixed expenses (decrease by $65,000)	901,000	836,000
Net operating income	$ 331,000	$ 368,500

Overall net operating income will increase by $37,500
Difficulty: 2 Medium
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

185) Heathman Inc. produces and sells a single product. The selling price of the product is $230.00 per unit and its variable cost is $89.70 per unit. The fixed expense is $308,660 per month.

The break-even in monthly unit sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 2,328 units
B) 1,342 units
C) 3,441 units
D) 2,200 units

Answer: D
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $230.00 per unit – $89.70 per unit = $140.30 per unit

Unit sales to break even = Fixed expenses ÷ Unit CM

= $308,660 ÷ $140.30 per unit = 2,200 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

186) Heathman Inc. produces and sells a single product. The selling price of the product is $230.00 per unit and its variable cost is $89.70 per unit. The fixed expense is $308,660 per month.

The break-even in monthly dollar sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $791,436
B) $535,365
C) $506,000
D) $308,660

Answer: C
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $230.00 per unit – $89.70 per unit = $140.30 per unit
CM ratio = Unit contribution margin ÷ Unit selling price = $140.30 per unit ÷ $230.00 per unit = 0.61

Dollar sales to break even = Fixed expenses ÷ CM ratio
= $308,660 ÷ 0.61 = $506,000
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

187) Data concerning Sinisi Corporation's single product appear below:

Selling price per unit	$	200.00
Variable expense per unit	$	58.00
Fixed expense per month	$	407,540

The break-even in monthly unit sales is closest to:
A) 2,038 units
B) 7,027 units
C) 2,870 units
D) 3,978 units

Answer: C
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $200.00 per unit – $58.00 per unit = $142.00 per unit

Unit sales to break even = Fixed expenses ÷ Unit CM
= $407,540 ÷ $142.00 per unit = 2,870 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

188) Data concerning Sinisi Corporation's single product appear below:

Selling price per unit	$	200.00
Variable expense per unit	$	58.00
Fixed expense per month	$	407,540

The break-even in monthly dollar sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $407,600
B) $1,405,400
C) $574,000
D) $795,600

Answer: C
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $200.00 per unit – $58.00 per unit = $142.00 per unit
CM ratio = Unit CM ÷ Unit selling price = $142.00 per unit ÷ $200.00 per unit = 0.71

Dollar sales to break even = Fixed expenses ÷ CM ratio
= $407,540 ÷ 0.71 = $574,000
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

189) Zanetti Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$	110.00
Variable expense per unit	$	34.10
Fixed expense per month	$	132,066

The break-even in monthly unit sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 3,873 units
B) 1,740 units
C) 1,201 units
D) 2,271 units

Answer: B
Explanation: Unit CM = Selling price per unit – Variable expenses per unit

= $110.00 per unit – $34.10 per unit = $75.90 per unit

Unit sales to break even = Fixed expenses ÷ Unit CM

= $132,066 ÷ $75.90 per unit = 1,740 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

190) Zanetti Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$	110.00
Variable expense per unit	$	34.10
Fixed expense per month	$	132,066

The break-even in monthly dollar sales is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $191,400
B) $249,810
C) $426,030
D) $132,110

Answer: A
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $110.00 per unit – $34.10 per unit = $75.90 per unit
CM ratio = Unit CM ÷ Unit selling price = $75.90 per unit ÷ $110.00 per unit = 0.69

Dollar sales to break even = Fixed expenses ÷ CM ratio
= $132,066 ÷ 0.69 = $191,400
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

191) Junior Bodway, Inc., has provided the following budgeted data:

Sales		10,000	units
Selling price	$	50	per unit
Variable expense	$	30	per unit
Fixed expense	$	180,000	

What is the company's break-even point in sales dollars?
A) $450,000
B) $180,000
C) $300,000
D) $500,000

Answer: A
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $50 per unit – $30 per unit = $20 per unit

Unit sales to break even = Fixed expenses ÷ Unit CM
= $180,000 ÷ $20 per unit = 9,000 units

Dollar sales to break even = $50 per unit × 9,000 units = $450,000
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

192) Junior Bodway, Inc., has provided the following budgeted data:

Sales		10,000	units
Selling price	$	50	per unit
Variable expense	$	30	per unit
Fixed expense	$	180,000	

How many units would the company have to sell in order to have a net operating income of $40,000?
A) 20,000 units
B) 9,000 units
C) 11,000 units
D) 7,333 units

Answer: C
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $50 per unit – $30 per unit = $20 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($40,000 + $180,000) ÷ $20 per unit = $220,000 ÷ $20 per unit = 11,000 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

193) Junior Bodway, Inc., has provided the following budgeted data:

Sales		10,000	units
Selling price	$	50	per unit
Variable expense	$	30	per unit
Fixed expense	$	180,000	

At the budgeted sales level of 10,000 units, what is the company's degree of operating leverage?
A) 10.0
B) 6.0
C) 22.5
D) 5.0

Answer: A
Explanation:

Sales ($50 per unit × 10,000 units)	$ 500,000
Variable expenses ($30 per unit × 10,000 units)	300,000
Contribution margin	200,000
Fixed expenses	180,000
Net operating income	$ 20,000

Degree of operating leverage = Contribution margin ÷ Net operating income

= $200,000 ÷ $20,000 = 10.0
Difficulty: 1 Easy
Topic: Operating Leverage; Break-Even Analysis; Target Profit Analysis
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.; 02-05 Determine the break-even point.; 02-06 Determine the level of sales needed to achieve a desired target profit.
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Managerial Accounting for Managers 5th edition Noreen Test Bank

194) Maziarz Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$	220.00
Variable expense per unit	$	72.60
Fixed expense per month	$	548,328

Assume the company's target profit is $14,000. The unit sales to attain that target profit is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) 7,746 units
B) 2,556 units
C) 4,706 units
D) 3,815 units

Answer: D
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $220.00 per unit – $72.60 per unit = $147.40 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($14,000 + $548,328) ÷ $147.40 per unit
=$562,328 ÷ $147.40 per unit = 3,815 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

195) Maziarz Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$	220.00
Variable expense per unit	$	72.60
Fixed expense per month	$	548,328

Assume the company's target profit is $16,000. The dollar sales to attain that target profit is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $564,328
B) $1,710,085
C) $1,038,898
D) $842,281

Answer: D
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $220.00 per unit – $72.60 per unit = $147.40 per unit
CM ratio = Unit CM ÷ Unit selling price = $147.40 per unit ÷ $220.00 per unit = 0.67

Dollar sales to attain a target profit = (Target profit + Fixed expenses) ÷ CM ratio
= ($16,000 + $548,328) ÷ 0.67
= $564,328 ÷ 0.67
= $842,281
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

196) Speckman Enterprises, Inc., produces and sells a single product whose selling price is $200.00 per unit and whose variable expense is $68.00 per unit. The company's monthly fixed expense is $514,800.

Assume the company's target profit is $11,000. The unit sales to attain that target profit is closest to:
A) 2,629 units
B) 3,983 units
C) 4,781 units
D) 7,732 units

Answer: B
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $200.00 per unit – $68.00 per unit = $132.00 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($514,800 + $11,000) ÷ $132.00 per unit
=$525,800 ÷ $132.00 per unit = 3,983 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

197) Speckman Enterprises, Inc., produces and sells a single product whose selling price is $200.00 per unit and whose variable expense is $68.00 per unit. The company's monthly fixed expense is $514,800.

Assume the company's target profit is $12,000. The dollar sales to attain that target profit is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $1,549,412
B) $798,182
C) $526,800
D) $958,131

Answer: B
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $200.00 per unit – $68.00 per unit = $132.00 per unit
CM ratio = Unit contribution margin ÷ Unit selling price = $132.00 per unit ÷ $200.00 per unit = 0.66

Dollar sales to attain a target profit = (Target profit + Fixed expenses) ÷ CM ratio
= ($12,000 + $514,800) ÷ 0.66
= $526,800 ÷ 0.66 = $798,182
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

198) Data concerning Strite Corporation's single product appear below:

Selling price per unit	$	150.00
Variable expense per unit	$	42.00
Fixed expense per month	$	421,200

Assume the company's target profit is $17,000. The unit sales to attain that target profit is closest to:
A) 5,804 units
B) 2,921 units
C) 4,057 units
D) 10,433 units

Answer: C
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $150.00 per unit – $42.00 per unit = $108.00 per unit

Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($17,000 + $421,200) ÷ $108.00 per unit
=$438,200 ÷ $108.00 per unit = 4,057 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

199) Data concerning Strite Corporation's single product appear below:

Selling price per unit	$	150.00
Variable expense per unit	$	42.00
Fixed expense per month	$	421,200

Assume the company's target profit is $8,000. The dollar sales to attain that target profit is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $596,111
B) $1,532,857
C) $852,723
D) $429,200

Answer: A
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $150.00 per unit – $42.00 per unit = $108.00 per unit
CM ratio = Unit CM ÷ Unit selling price = $108.00 per unit ÷ $150.00 per unit = 0.72

Dollar sales to attain a target profit = (Target profit + Fixed expenses) ÷ CM ratio
= ($8,000 + $421,200) ÷ 0.72
=$429,200 ÷ 0.72 = $596,111
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

200) Highjinks, Inc., has provided the following budgeted data:

Sales		20,000units
Selling price	$	100per unit
Variable expense	$	70per unit
Fixed expense	$	450,000

What is the company's margin of safety as a percentage of sales?
A) 50%
B) 25%
C) 75%
D) 100%

Answer: B
Explanation: CM ratio = Unit CM ÷ Unit selling price
= ($100 per unit – $70 per unit) ÷ $100 per unit = 0.30

Dollar sales to break even = Fixed expenses ÷ CM ratio
= $450,000 ÷ 0.30 = $1,500,000

Margin of safety in dollars = Total budgeted (or actual) sales – Break-even sales
= (20,000 units × $100 per unit) – $1,500,000
= $2,000,000 – $1,500,000 = $500,000

Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales
= $500,000 ÷ $2,000,000 = 0.25
Difficulty: 2 Medium
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
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201) Highjinks, Inc., has provided the following budgeted data:

Sales		20,000	units
Selling price	$	100	per unit
Variable expense	$	70	per unit
Fixed expense	$	450,000	

How many units would the company have to sell in order to have a net operating income equal to 5% of total sales dollars?
A) 18,000 units
B) 20,000 units
C) 15,333 units
D) 14,286 units

Answer: A
Explanation: Unit CM = Selling price per unit – Variable expenses per unit
= $100 per unit – $70 per unit = $30 per unit

Let X = Unit sales to attain a target profit
Target profit = 0.05 × X × $100 per unit = $5 per unit × X
X = (Target profit + Fixed expenses) ÷ Unit CM
X = ($5 per unit × X + $450,000) ÷ $30 per unit
$30 per unit × X = $5 per unit × X + $450,000
$25 per unit × X = $450,000
X = $450,000 ÷ $25 per unit = 18,000 units
Difficulty: 3 Hard
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

202) Jerrel Corporation sells a product for $230 per unit. The product's current sales are 24,000 units and its break-even sales are 17,280 units.

What is the margin of safety in dollars?
A) $5,520,000
B) $1,545,600
C) $3,974,400
D) $3,680,000

Answer: B
Explanation:

Sales ($230 per unit × 24,000 units)	$ 5,520,000
Break-even sales ($230 per unit × 17,280 units)	3,974,400
Margin of safety (in dollars)	$ 1,545,600

Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

203) Jerrel Corporation sells a product for $230 per unit. The product's current sales are 24,000 units and its break-even sales are 17,280 units.

The margin of safety as a percentage of sales is closest to:
A) 61%
B) 28%
C) 72%
D) 39%

Answer: B
Explanation:

Sales ($230 per unit × 24,000 units)	$ 5,520,000
Break-even sales ($230 per unit × 17,280 units)	3,974,400
Margin of safety (in dollars)	$ 1,545,600

Margin of safety percentage = Margin of safety in dollars ÷ Total sales

= $1,545,600 ÷ $5,520,000 = 28%
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

204) Maruska Corporation has provided the following data concerning its only product:

Selling price	$ 180	per unit
Current sales	29,800	units
Break-even sales	25,032	units

What is the margin of safety in dollars?
A) $4,505,760
B) $858,240
C) $3,576,000
D) $5,364,000

Answer: B
Explanation:

Sales ($180 per unit × 29,800 units)	$ 5,364,000
Break-even sales ($180 per unit × 25,032 units)	4,505,760
Margin of safety (in dollars)	$ 858,240

Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

205) Maruska Corporation has provided the following data concerning its only product:

Selling price	$ 180	per unit
Current sales	29,800	units
Break-even sales	25,032	units

The margin of safety as a percentage of sales is closest to:
A) 19%
B) 16%
C) 84%
D) 81%

Answer: B
Explanation:

Sales ($180 per unit × 29,800 units)	$ 5,364,000
Break-even sales ($180 per unit × 25,032 units)	4,505,760
Margin of safety (in dollars)	$ 858,240

Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales

= $858,240 ÷ $5,364,000 = 16%
Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

206) Bois Corporation has provided its contribution format income statement for January.

Sales	$	426,400
Variable expenses		260,000
Contribution margin		166,400
Fixed expenses		120,900
Net operating income	$	45,500

The degree of operating leverage is closest to:
A) 0.11
B) 9.37
C) 0.27
D) 3.66

Answer: D
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $166,400 ÷ $45,500 = 3.66
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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Managerial Accounting for Managers 5th edition Noreen Test Bank

207) Bois Corporation has provided its contribution format income statement for January.

Sales	$	426,400
Variable expenses		260,000
Contribution margin		166,400
Fixed expenses		120,900
Net operating income	$	45,500

If the company's sales increase by 7%, its net operating income should increase by about:
(Round your intermediate calculations to 2 decimal places.)
A) 26%
B) 7%
C) 66%
D) 11%

Answer: A
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income
= $166,400 ÷ $45,500 = 3.66
Percentage change in net operating income = Degree of operating leverage × Percentage change in sales
= 3.66 × 7% = 25.60%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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208) Sebree Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (7,000 units)	$	280,000
Variable expenses		168,000
Contribution margin		112,000
Fixed expenses		105,600
Net operating income	$	6,400

The degree of operating leverage is closest to:
A) 0.06
B) 17.50
C) 43.75
D) 0.02

Answer: B
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $112,000 ÷ $6,400 = 17.5
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

209) Sebree Corporation has provided the following contribution format income statement. Assume that the following information is within the relevant range.

Sales (7,000 units)	$	280,000
Variable expenses		168,000
Contribution margin		112,000
Fixed expenses		105,600
Net operating income	$	6,400

Using the degree of operating leverage, the estimated percent increase in net operating income as the result of a 5% increase in sales is closest to: **(Round your intermediate calculations to 1 decimal place.)**
A) 0.29%
B) 87.50%
C) 0.11%
D) 218.75%

Answer: B
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $112,000 ÷ $6,400 = 17.5

Percentage change in net operating income = Degree of operating leverage × Percentage change in sales

= 17.5 × 5% = 87.5%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

210) The July contribution format income statement of Doxtater Corporation appears below:

Sales	$	564,400
Variable expenses		312,800
Contribution margin		251,600
Fixed expenses		193,800
Net operating income	$	57,800

The degree of operating leverage is closest to:
A) 0.23
B) 0.10
C) 4.35
D) 9.76

Answer: C
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $251,600 ÷ $57,800 = 4.35
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

211) The July contribution format income statement of Doxtater Corporation appears below:

Sales	$	564,400
Variable expenses		312,800
Contribution margin		251,600
Fixed expenses		193,800
Net operating income	$	57,800

If the company's sales increase by 19%, its net operating income should increase by about: **(Round your intermediate calculations to 2 decimal places.)**
A) 10%
B) 19%
C) 83%
D) 186%

Answer: C
Explanation: Degree of operating leverage = Contribution margin ÷ Net operating income

= $251,600 ÷ $57,800 = 4.35

Percentage change in net operating income = Degree of operating leverage × Percentage change in sales

= 4.35 × 19% = 82.71%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

212) Dietrick Corporation produces and sells two products. Data concerning those products for the most recent month appear below:

	Product B32L	Product K84B
Sales	$ 46,000	$ 27,000
Variable expenses	$ 13,800	$ 14,670

Fixed expenses for the entire company were $42,550.

The break-even point for the entire company is closest to: **(Round your intermediate calculations to 2 decimal places.)**
A) $42,550
B) $71,020
C) $69,754
D) $30,450

Answer: C
Explanation:

	Product B32L	Product K84B	Total
Sales	$ 46,000	$ 27,000	$ 73,000
Variable expenses	13,800	14,670	28,470
Contribution margin	$ 32,200	$ 12,330	$ 44,530

CM ratio = Contribution margin ÷ Sales revenue = $44,530 ÷ $73,000 = 0.61

Dollar sales to break even = Fixed expenses ÷ CM ratio = $42,550 ÷ 0.61 = $69,754
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Apply
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Managerial Accounting for Managers 5th edition Noreen Test Bank

213) Dietrick Corporation produces and sells two products. Data concerning those products for the most recent month appear below:

	Product B32L	Product K84B
Sales	$ 46,000	$ 27,000
Variable expenses	$ 13,800	$ 14,670

Fixed expenses for the entire company were $42,550.

If the sales mix were to shift toward Product B32L with total sales remaining constant, the overall break-even point for the entire company:
A) could increase or decrease.
B) would decrease.
C) would not change.
D) would increase.

Answer: B
Explanation:

	Product B32L	Product K84B
Sales (a)	$ 46,000	$ 27,000
Variable expenses	13,800	14,670
Contribution margin (b)	$ 32,200	$ 12,330
Contribution margin ratio (b) ÷ (a)	70.0%	45.7%

The overall break-even point for the entire company would decrease if the sales mix shifts toward Product B32L because Product B32L has a higher contribution margin (70.0%) than Product K84B (45.7%).
Difficulty: 2 Medium
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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Managerial Accounting for Managers 5th edition Noreen Test Bank

214) Ingrum Corporation produces and sells two products. In the most recent month, Product R38T had sales of $20,000 and variable expenses of $7,400. Product X08S had sales of $39,000 and variable expenses of $6,170. The fixed expenses of the entire company were $41,160.

The break-even point for the entire company is closest to:
A) $41,160
B) $17,840
C) $53,455
D) $54,730

Answer: C
Explanation:

	Product R38T	Product X08S	Total
Sales	$ 20,000	$ 39,000	$ 59,000
Variable expenses	7,400	6,170	13,570
Contribution margin	$ 12,600	$ 32,830	$ 45,430

CM ratio = Contribution margin ÷ Sales revenue = $45,430 ÷ $59,000 = 0.77

Dollar sales to break even = Fixed expenses ÷ CM ratio = $41,160 ÷ 0.77 = $53,455
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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215) Ingrum Corporation produces and sells two products. In the most recent month, Product R38T had sales of $20,000 and variable expenses of $7,400. Product X08S had sales of $39,000 and variable expenses of $6,170. The fixed expenses of the entire company were $41,160.

If the sales mix were to shift toward Product R38T with total sales remaining constant, the overall break-even point for the entire company:
A) would not change.
B) would increase.
C) would decrease.
D) could increase or decrease.

Answer: B
Explanation:

	Product R38T	Product X08S
Sales (a)	$ 20,000	$ 39,000
Variable expenses	7,400	6,170
Contribution margin (b)	$ 12,600	$ 32,830
Contribution margin ratio (b) ÷ (a)	63.0%	84.2%

The overall break-even point for the entire company would increase if the sales mix shifts toward Product R38T because Product R38T has a lower contribution margin (63.0%) than Product X08S (84.2%).
Difficulty: 2 Medium
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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216) In July, Meers Corporation sold 3,700 units of its only product. Its total sales were $107,300, its total variable expenses were $66,600, and its total fixed expenses were $34,800.

Required:
a. Construct the company's contribution format income statement for July.
b. Redo the company's contribution format income statement assuming that the company sells 3,400 units.

Answer:

a.	Sales (3,700 units)	$107,300
	Variable expenses	66,600
	Contribution margin	40,700
	Fixed expenses	34,800
	Net operating income	$5,900

b.	Sales (3,400 units)	$98,600
	Variable expenses	61,200
	Contribution margin	37,400
	Fixed expenses	34,800
	Net operating income	$2,600

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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217) Mcconkey Corporation produces and sells a single product. The company's contribution format income statement for July appears below:

Sales (5,500 units)	$357,500
Variable expenses	236,500
Contribution margin	121,000
Fixed expenses	102,200
Net operating income	$18,800

Required:
Redo the company's contribution format income statement assuming that the company sells 5,800 units.

Answer:

Sales (5,800 units)	$377,000
Variable expenses	249,400
Contribution margin	127,600
Fixed expenses	102,200
Net operating income	$25,400

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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218) Giannini Inc., which produces and sells a single product, has provided the following contribution format income statement for March:

Sales (5,900 units)	$477,900
Variable expenses	206,500
Contribution margin	271,400
Fixed expenses	190,800
Net operating income	$80,600

Required:
Redo the company's contribution format income statement assuming that the company sells 5,500 units.

Answer:

Sales (5,500 units)	$445,500
Variable expenses	192,500
Contribution margin	253,000
Fixed expenses	190,800
Net operating income	$62,200

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
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219) Mechem Corporation produces and sells a single product. In April, the company sold 2,100 units. Its total sales were $205,800, its total variable expenses were $107,100, and its total fixed expenses were $82,400.

Required:
a. Construct the company's contribution format income statement for April.
b. Redo the company's contribution format income statement assuming that the company sells 2,200 units.

Answer:

a.	Sales (2,100 units)	$205,800
	Variable expenses	107,100
	Contribution margin	98,700
	Fixed expenses	82,400
	Net operating income	$16,300
b.	Sales (2,200 units)	$215,600
	Variable expenses	112,200
	Contribution margin	103,400
	Fixed expenses	82,400
	Net operating income	$21,000

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.
Bloom's: Apply
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220) Certosimo Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (7,000 units)	$350,000
Variable expenses	245,000
Contribution margin	105,000
Fixed expenses	97,500
Net operating income	$7,500

Required:
a. If sales increase to 7,040 units, what would be the estimated increase in net operating income?
b. If sales decline to 6,900 units, what would be the estimated net operating income?

Answer:
a. The increase in net operating income would be the increased contribution margin because fixed expenses are not affected.

Selling price per unit ($350,000 ÷ 7,000 units)	$50
Variable cost per unit ($245,000 ÷ 7,000 units)	35
Unit contribution margin	$15

Unit contribution margin (a)	$15	per unit
Increased unit sales (b)	40	units
Increase in net operating income (a) × (b)	$600	

b.

Unit contribution margin (a)	$15	per unit
Unit sales (b)	6,900	units
Contribution margin (a) × (b)	$103,500	
Fixed expenses	97,500	
Net operating income	$6,000	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
AACSB: Analytical Thinking
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221) Muzzillo Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (3,000 units)	$180,000
Variable expenses	126,000
Contribution margin	54,000
Fixed expenses	52,200
Net operating income	$1,800

Required:
a. If the selling price increases by $4 per unit and the sales volume decreases by 300 units, what would be the estimated net operating income?
b. If the variable cost per unit increases by $6, spending on advertising increases by $3,000, and unit sales increase by 1,800 units, what would be the estimated net operating income?

Answer: a.

Selling price per unit ($180,000 ÷ 3,000 units)	$60
Variable cost per unit ($126,000 ÷ 3,000 units)	42
Unit contribution margin	$18

Selling price ($60 per unit + $4 per unit)	$64	per unit
Variable cost per price	42	per unit
Unit contribution margin (a)	$22	per unit
Unit sales (3,000 units − 300 units) (b)	2,700	units
Contribution margin (a) × (b)	$59,400	
Fixed expenses	52,200	
Net operating income	$7,200	

b.

Selling price	$60	per unit
Variable cost per price ($42 per unit + $6 per unit)	48	per unit
Unit contribution margin (a)	$12	per unit
Unit sales (3,000 units + 1,800 units) (b)	4,800	units
Contribution margin (a) × (b)	$57,600	
Fixed expenses ($52,200 + $3,000)	55,200	
Net operating income	$2,400	

Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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222) Montesdeoca Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (2,000 units)	$120,000
Variable expenses	72,000
Contribution margin	48,000
Fixed expenses	33,600
Net operating income	$14,400

Required:
a. If sales decline to 1,900 units, what would be the estimated net operating income?
b. If the selling price increases by $4 per unit and the sales volume decreases by 200 units, what would be the estimated net operating income?
c. What is the break-even point in dollar sales?

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Answer:

a.

Selling price per unit ($120,000 ÷ 2,000 units)	$60
Variable cost per unit ($72,000 ÷ 2,000 units)	36
Unit contribution margin	$24

Unit contribution margin (a)	$24	per unit
Unit sales (b)	1,900	units
Contribution margin (a) × (b)	$45,600	
Fixed expenses	33,600	
Net operating income	$12,000	

b.

Selling price ($60 per unit + $4 per unit)	$64	per unit
Variable cost per price	36	per unit
Unit contribution margin (a)	$28	per unit
Unit sales (2,000 units − 200 units) (b)	1,800	units
Contribution margin (a) × (b)	$50,400	
Fixed expenses	33,600	
Net operating income	$16,800	

c. CM ratio = Contribution margin ÷ Sales = $48,000 ÷ $120,000 = 40%
Dollar sales to break even = Fixed expenses ÷ CM ratio = $33,600 ÷ 40% = $84,000
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts; Break-Even Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.; 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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223) Sattler Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (8,000 units)	$480,000
Variable expenses	336,000
Contribution margin	144,000
Fixed expenses	142,200
Net operating income	$1,800

Required:
a. What is the contribution margin per unit?
b. What is the variable expense ratio?
c. If sales decline to 7,900 units, what would be the estimated net operating income?
d. If the variable cost per unit increases by $5, spending on advertising increases by $2,000, and unit sales increase by 3,400 units, what would be the estimated net operating income?
e. What is the break-even point in dollar sales?
f. Estimate how many units must be sold to achieve a target profit of $50,400.
g. What is the margin of safety percentage?
h. Using the degree of operating leverage, what is the estimated percent increase in net operating income of a 15% increase in sales?

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Answer:

a.

Total contribution margin (a)	$144,000	
Total unit sales (b)	8,000	units
Unit contribution margin (a) ÷ (b)	$18	per unit

Alternatively,

Selling price per unit ($480,000 ÷ 8,000 units)	$60
Variable cost per unit ($336,000 ÷ 8,000 units)	42
Unit contribution margin	$18

b. Variable expense ratio = Variable expenses ÷ Sales = $336,000 ÷ $480,000 = 70%

c.

Unit contribution margin (a)	$18	per unit
Unit sales (b)	7,900	units
Contribution margin (a) × (b)	$142,200	
Fixed expenses	142,200	
Net operating income	$0	

d.

Selling price	$60	per unit
Variable cost per price ($42 per unit + $5 per unit)	47	per unit
Unit contribution margin (a)	$13	per unit
Unit sales (8,000 units + 3,400 units) (b)	11,400	units
Contribution margin (a) × (b)	$148,200	
Fixed expenses ($142,200 + $2,000)	144,200	
Net operating income	$4,000	

e. Dollar sales to break even = Fixed expenses ÷ CM ratio = $142,200 ÷ 30% = $474,000

f. Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($50,400 + $142,200) ÷ $18 per unit = $192,600 ÷ $18 per unit = 10,700 units

g. Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales
= $6,000 ÷ $480,000 = 1%

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h. Percentage change in net operating income = Degree of operating leverage × Percentage change in sales
= 80.0 × 15% = 1200%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts; Break-Even Analysis; Target Profit Analysis; The Margin of Safety; Operating Leverage
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.; 02-05 Determine the break-even point.; 02-06 Determine the level of sales needed to achieve a desired target profit.; 02-07 Compute the margin of safety and explain its significance.; 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

224) Laraia Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (3,000 units)	$150,000
Variable expenses	90,000
Contribution margin	60,000
Fixed expenses	48,000
Net operating income	$12,000

Required:
a. What is the contribution margin per unit?
b. What is the contribution margin ratio?
c. What is the variable expense ratio?
d. If sales increase to 3,050 units, what would be the estimated increase in net operating income?
e. If sales decline to 2,900 units, what would be the estimated net operating income?
f. If the selling price increases by $4 per unit and the sales volume decreases by 200 units, what would be the estimated net operating income?
g. If the variable cost per unit increases by $5, spending on advertising increases by $3,000, and unit sales increase by 450 units, what would be the estimated net operating income?
h. What is the break-even point in unit sales?
i. What is the break-even point in dollar sales?
j. Estimate how many units must be sold to achieve a target profit of $54,000.
k. What is the margin of safety in dollars?
l. What is the margin of safety percentage?
m. What is the degree of operating leverage?
n. Using the degree of operating leverage, what is the estimated percent increase in net operating income of a 15% increase in sales?

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Answer:

a.

Total contribution margin (a)	$60,000	
Total unit sales (b)	3,000	units
Unit contribution margin (a) ÷ (b)	$20	per unit

Alternatively,

Selling price per unit ($150,000 ÷ 3,000 units)	$50
Variable cost per unit ($90,000 ÷ 3,000 units)	30
Unit contribution margin	$20

b. CM ratio = Contribution margin ÷ Sales = $60,000 ÷ $150,000 = 40%

c. Variable expense ratio = Variable expenses ÷ Sales = $90,000 ÷ $150,000 = 60%

d. The increase in net operating income would be the increased contribution margin because fixed expenses are not affected.

Unit contribution margin (a)	$20	per unit
Increased unit sales (b)	50	units
Increase in net operating income (a) × (b)	$1,000	

e.

Unit contribution margin (a)	$20	per unit
Unit sales (b)	2,900	units
Contribution margin (a) × (b)	$58,000	
Fixed expenses	48,000	
Net operating income	$10,000	

f.

Selling price ($50 per unit + $4 per unit)	$54	per unit
Variable cost per price	30	per unit
Unit contribution margin (a)	$24	per unit
Unit sales (b)	2,800	units
Contribution margin (a) × (b)	$67,200	
Fixed expenses	48,000	
Net operating income	$19,200	

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g.

Selling price	$50 per unit
Variable cost per price ($30 per unit + $5 per unit)	35 per unit
Unit contribution margin (a)	$15 per unit
Unit sales (3,000 units + 450 units) (b)	3,450 units
Contribution margin (a) × (b)	$51,750
Fixed expenses ($48,000 + $3,000)	51,000
Net operating income	$750

h. Unit sales to break even = Fixed expenses ÷ Unit CM = $48,000 ÷ $20 per unit = 2,400 units

i. Dollar sales to break even = Fixed expenses ÷ CM ratio = $48,000 ÷ 40% = $120,000

j. Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($54,000 + $48,000) ÷ $20 per unit = $102,000 ÷ $20 per unit = 5,100 units

k. Margin of safety in dollars = Total budgeted (or actual) sales - Break-even sales
= $150,000 − $120,000 = $30,000

l. Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales
= $30,000 ÷ $150,000 = 20%

m. Degree of operating leverage = Contribution margin ÷ Net operating income
= $60,000 ÷ $12,000 = 5.0

n. Percentage change in net operating income = Degree of operating leverage × Percentage change in sales
= 5.0 × 15% = 75%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts; Break-Even Analysis; Target Profit Analysis; The Margin of Safety; Operating Leverage
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.; 02-05 Determine the break-even point.; 02-06 Determine the level of sales needed to achieve a desired target profit.; 02-07 Compute the margin of safety and explain its significance.; 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
AACSB: Analytical Thinking
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225) Zaccaria Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (5,000 units)	$300,000
Variable expenses	240,000
Contribution margin	60,000
Fixed expenses	58,800
Net operating income	$1,200

Required:
a. What is the contribution margin ratio?
b. If sales increase to 5,040 units, what would be the estimated increase in net operating income?
c. If the selling price increases by $4 per unit and the sales volume decreases by 400 units, what would be the estimated net operating income?
d. What is the break-even point in unit sales?
e. What is the margin of safety in dollars?
f. What is the degree of operating leverage?

Answer:
a. CM ratio = Contribution margin ÷ Sales = $60,000 ÷ $300,000 = 20%

b. The increase in net operating income would be the increased contribution margin because fixed expenses are not affected.

Selling price per unit ($300,000 ÷ 5,000 units)	$60
Variable cost per unit ($240,000 ÷ 5,000 units)	48
Unit contribution margin	$12

Unit contribution margin (a)	$12 per unit
Increased unit sales (b)	40 units
Increase in net operating income (a) × (b)	$480

c.

Selling price ($60 per unit + $4 per unit)	$64 per unit
Variable cost per price	48 per unit
Unit contribution margin (a)	$16 per unit
Unit sales (b)	4,600 units
Contribution margin (a) × (b)	$73,600
Fixed expenses	58,800
Net operating income	$14,800

d. Unit sales to break even = Fixed expenses ÷ Unit CM = $58,800 ÷ $12 per unit = 4,900 units

e. Margin of safety in dollars = Total budgeted (or actual) sales - Break-even sales
= $300,000 − $294,000 = $6,000

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f. Degree of operating leverage = Contribution margin ÷ Net operating income
= $60,000 ÷ $1,200 = 50.0
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts; Break-Even Analysis; Target Profit Analysis; The Margin of Safety; Operating Leverage
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.; 02-05 Determine the break-even point.; 02-06 Determine the level of sales needed to achieve a desired target profit.; 02-07 Compute the margin of safety and explain its significance.; 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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226) Stonebraker Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (9,000 units)	$270,000
Variable expenses	189,000
Contribution margin	81,000
Fixed expenses	77,400
Net operating income	$3,600

Required:
a. If sales increase to 9,040 units, what would be the estimated increase in net operating income?
b. If the variable cost per unit increases by $6, spending on advertising increases by $3,000, and unit sales increase by 19,200 units, what would be the estimated net operating income?
c. Estimate how many units must be sold to achieve a target profit of $26,100.

Answer:
a. The increase in net operating income would be the increased contribution margin because fixed expenses are not affected.

Selling price per unit ($270,000 ÷ 9,000 units)	$30
Variable cost per unit ($189,000 ÷ 9,000 units)	21
Unit contribution margin	$9

Unit contribution margin (a)	$9	per unit
Increased unit sales (b)	40	units
Increase in net operating income (a) × (b)	$360	

b.

Selling price	$30	per unit
Variable cost per price ($21 per unit + $6 per unit)	27	per unit
Unit contribution margin (a)	$3	per unit
Unit sales (9,000 units + 19,200 units) (b)	28,200	units
Contribution margin (a) × (b)	$84,600	
Fixed expenses ($77,400 + $3,000)	80,400	
Net operating income	$4,200	

c. Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($26,100 + $77,400) ÷ $9 per unit = $103,500 ÷ $9 per unit = 11,500 units
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Additional Applications of CVP Concepts; Target Profit Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.; 02-06 Determine the level of sales needed to achieve a desired target profit.
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227) Mancine Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (3,000 units)	$150,000
Variable expenses	90,000
Contribution margin	60,000
Fixed expenses	42,000
Net operating income	$18,000

Required:
a. What is the break-even point in unit sales?
b. Estimate how many units must be sold to achieve a target profit of $50,000.

Answer:
a.

Selling price per unit ($150,000 ÷ 3,000 units)	$50
Variable cost per unit ($90,000 ÷ 3,000 units)	30
Unit contribution margin	$20

Unit sales to break even = Fixed expenses ÷ Unit CM = $42,000 ÷ $20 per unit = 2,100 units

b. Unit sales to attain a target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($50,000 + $42,000) ÷ $20 per unit = $92,000 ÷ $20 per unit = 4,600 units
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; Target Profit Analysis
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-06 Determine the level of sales needed to achieve a desired target profit.
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228) Sun Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (5,000 units)	$250,000
Variable expenses	162,500
Contribution margin	87,500
Fixed expenses	71,750
Net operating income	$15,750

Required:
a. What is the margin of safety in dollars?
b. What is the degree of operating leverage?

Answer:
a. CM ratio = Contribution margin ÷ Sales = $87,500 ÷ $250,000 = 35%
Dollar sales to break even = Fixed expenses ÷ CM ratio = $71,750 ÷ 35% = $205,000
Margin of safety in dollars = Total budgeted (or actual) sales - Break-even sales
= $250,000 − $205,000 = $45,000

b. Degree of operating leverage = Contribution margin ÷ Net operating income
= $87,500 ÷ $15,750 = 5.6
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis; The Margin of Safety; Operating Leverage
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-05 Determine the break-even point.; 02-07 Compute the margin of safety and explain its significance.; 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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229) Langin Corporation has provided the following contribution format income statement. All questions concern situations that are within the relevant range.

Sales (9,000 units)	$540,000
Variable expenses	324,000
Contribution margin	216,000
Fixed expenses	204,000
Net operating income	$12,000

Required:
a. What is the margin of safety percentage?
b. Using the degree of operating leverage, what is the estimated percent increase in net operating income of a 15% increase in sales?

Answer:
a. CM ratio = Contribution margin ÷ Sales = $216,000 ÷ $540,000 = 40%
Dollar sales to break even = Fixed expenses ÷ CM ratio = $204,000 ÷ 40% = $510,000
Margin of safety in dollars = Total budgeted (or actual) sales - Break-even sales
= $540,000 − $510,000 = $30,000
Margin of safety percentage = Margin of safety in dollars ÷ Total budgeted (or actual) sales
= $30,000 ÷ $540,000 = 6%

b. Degree of operating leverage = Contribution margin ÷ Net operating income
= $216,000 ÷ $12,000 = 18.0
Percentage change in net operating income = Degree of operating leverage × Percentage change in sales
= 18.0 × 15% = 270%
Difficulty: 1 Easy
Topic: The Basics of Cost-Volume-Profit (CVP) Analysis; Target Profit Analysis; The Margin of Safety; Operating Leverage
Learning Objective: 02-01 Explain how changes in activity affect contribution margin and net operating income.; 02-06 Determine the level of sales needed to achieve a desired target profit.; 02-07 Compute the margin of safety and explain its significance.; 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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230) The management of Merklin Corporation expects sales in May to be $105,000. The company's contribution margin ratio is 70% and its fixed monthly expenses are $48,000.

Required:
Estimate the company's net operating income for May, assuming that the fixed monthly expenses do not change. Show your work!

Answer: Profit = (CM ratio × Sales) − Fixed expenses
= (70% × $105,000) − $48,000
= $73,500 − $48,000 = $25,500
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
Bloom's: Apply
AACSB: Analytical Thinking
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231) Sarratt Corporation's contribution margin ratio is 62% and its fixed monthly expenses are $91,000. Assume that the company's sales for May are expected to be $193,000.

Required:
Estimate the company's net operating income for May, assuming that the fixed monthly expenses do not change. Show your work!

Answer: Profit = (CM ratio × Sales) − Fixed expenses
= (62% × $193,000) − $91,000
= $119,660 − $91,000 = $28,660
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
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232) Huitron Inc. expects its sales in September to be $143,000. The company's contribution margin ratio is 65% and its fixed monthly expenses are $62,000.

Required:
Estimate the company's net operating income for September, assuming that the fixed monthly expenses do not change. Show your work!

Answer: Profit = (CM ratio × Sales) − Fixed expenses
= (65% × $143,000) − $62,000
= $92,950 − $62,000 = $30,950
Difficulty: 1 Easy
Topic: Contribution Margin Ratio (CM Ratio) and the Variable Expense Ratio
Learning Objective: 02-03 Use the contribution margin ratio (CM ratio) to compute changes in contribution margin and net operating income resulting from changes in sales volume.
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233) Hamiel Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$240	100%
Variable expenses	168	70%
Contribution margin	$72	30%

Fixed expenses are $301,000 per month. The company is currently selling 5,000 units per month.

Required:
The marketing manager would like to introduce sales commissions as an incentive for the sales staff. The marketing manager has proposed a commission of $16 per unit. In exchange, the sales staff would accept an overall decrease in their salaries of $68,000 per month. The marketing manager predicts that introducing this sales incentive would increase monthly sales by 200 units. What should be the overall effect on the company's monthly net operating income of this change? Show your work!

Answer:

New contribution margin ($72 per unit − $16 per unit)	$56
New unit monthly sales (5,000 units + 200 units)	5,200
New total contribution margin:	
5,200 units × $56 per unit	$291,200
Present total contribution margin:	
5,000 units × $72 per unit	360,000
Change in total contribution margin	(68,800)
Plus savings in salespersons' salaries	68,000
Change in net operating income	$(800)

Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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234) Data concerning Wislocki Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$130	100%
Variable expenses	26	20%
Contribution margin	$104	80%

Fixed expenses are $466,000 per month. The company is currently selling 6,000 units per month.

Required:
The marketing manager would like to introduce sales commissions as an incentive for the sales staff. The marketing manager has proposed a commission of $11 per unit. In exchange, the sales staff would accept an overall decrease in their salaries of $55,000 per month. The marketing manager predicts that introducing this sales incentive would increase monthly sales by 100 units. What should be the overall effect on the company's monthly net operating income of this change? Show your work!

Answer:

New contribution margin ($104 per unit − $11 per unit)	$93
New unit monthly sales (6,000 units + 100 units)	6,100
New total contribution margin:	
6,100 units × $93 per unit	$567,300
Present total contribution margin:	
6,000 units × $104 per unit	624,000
Change in total contribution margin	(56,700)
Plus savings in salespersons' salaries	55,000
Change in net operating income	$(1,700)

Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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235) Naumann Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$100	100%
Variable expenses	30	30%
Contribution margin	$70	70%

Fixed expenses are $234,000 per month. The company is currently selling 4,000 units per month.

Required:
Management is considering using a new component that would increase the unit variable cost by $7. Since the new component would improve the company's product, the marketing manager predicts that monthly sales would increase by 500 units. What should be the overall effect on the company's monthly net operating income of this change if fixed expenses are unaffected? Show your work!

Answer:

New variable cost per unit ($30 per unit + $7 per unit)	$37
New contribution margin per unit ($100 per unit − $37 per unit)	$63
New unit monthly sales (4,000 units + 500 units)	4,500
New total contribution margin:	
4,500 units × $63 per unit	$283,500
Current total contribution margin:	
4,000 units × $70 per unit	280,000
Change in total contribution margin and in net operating income	$3,500

Because fixed expenses are not affected by this change, the change in net operating income will be equal to the change in total contribution margin.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
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236) Data concerning Neuner Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$220	100%
Variable expenses	88	40%
Contribution margin	$132	60%

Fixed expenses are $425,000 per month. The company is currently selling 4,000 units per month.

Required:
The marketing manager would like to cut the selling price by $11 and increase the advertising budget by $23,700 per month. The marketing manager predicts that these two changes would increase monthly sales by 400 units. What should be the overall effect on the company's monthly net operating income of this change? Show your work!

Answer:

New selling price ($220 per unit − $11 per unit)	$209
New contribution margin ($209 per unit − $88 per unit)	$121
New unit monthly sales (4,000 units + 400 units)	4,400
New total contribution margin:	
4,400 units × $121 per unit	$532,400
Present total contribution margin:	
4,000 units × $132 per unit	528,000
Change in total contribution margin	4,400
Less increase in advertising budget	23,700
Change in net operating income	$ (19,300)

Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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237) Bethard Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$120	100%
Variable expenses	24	20%
Contribution margin	$96	80%

Fixed expenses are $354,000 per month. The company is currently selling 5,000 units per month.

Required:
The marketing manager would like to cut the selling price by $8 and increase the advertising budget by $23,000 per month. The marketing manager predicts that these two changes would increase monthly sales by 600 units. What should be the overall effect on the company's monthly net operating income of this change? Show your work!

Answer:

New selling price ($120 per unit − $8 per unit)	$112
New contribution margin ($112 per unit − $24 per unit)	$88
New unit monthly sales (5,000 units + 600 units)	5,600
New total contribution margin:	
5,600 units × $88 per unit	$492,800
Present total contribution margin:	
5,000 units × $96 per unit	480,000
Change in total contribution margin	12,800
Less increase in advertising budget	23,000
Change in net operating income	$(10,200)

Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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238) Data concerning Cavaluzzi Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$110	100%
Variable expenses	44	40%
Contribution margin	$66	60%

Fixed expenses are $440,000 per month. The company is currently selling 8,000 units per month.

Required:
The marketing manager believes that an $8,000 increase in the monthly advertising budget would result in a 150 unit increase in monthly sales. What should be the overall effect on the company's monthly net operating income of this change? Show your work!

Answer:

Increase in total contribution margin ($66 per unit × 150 units)	$9,900
Less incremental fixed expenses	8,000
Change in net operating income	$1,900

Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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239) Shelhorse Corporation produces and sells a single product. Data concerning that product appear below:

	Per Unit	Percent of Sales
Selling price	$140	100%
Variable expenses	56	40%
Contribution margin	$84	60%

Fixed expenses are $275,000 per month. The company is currently selling 4,000 units per month.

Required:
The marketing manager believes that a $13,000 increase in the monthly advertising budget would result in a 150 unit increase in monthly sales. What should be the overall effect on the company's monthly net operating income of this change? Show your work!

Answer:

Increase in total contribution margin ($84 per unit × 150 units)	$12,600
Less incremental fixed expenses	13,000
Change in net operating income	($400)

Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
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240) Data concerning Milian Corporation's single product appear below:

	Per Unit	Percent of Sales
Selling price	$130	100%
Variable expenses	39	30%
Contribution margin	$91	70%

Fixed expenses are $66,000 per month. The company is currently selling 1,000 units per month.

Required:
Management is considering using a new component that would increase the unit variable cost by $15. Since the new component would improve the company's product, the marketing manager predicts that monthly sales would increase by 200 units. What should be the overall effect on the company's monthly net operating income of this change if fixed expenses are unaffected? Show your work!

Answer:

New variable cost per unit ($39 per unit + $15 per unit)	$54
New contribution margin per unit ($130 per unit − $54 per unit)	$76
New unit monthly sales (1,000 units + 200 units)	1,200
New total contribution margin:	
1,200 units × $76 per unit	$91,200
Current total contribution margin:	
1,000 units × $91 per unit	91,000
Change in total contribution margin and in net operating income	$200

Because fixed expenses are not affected by this change, the change in net operating income will be equal to the change in total contribution margin.
Difficulty: 1 Easy
Topic: Additional Applications of CVP Concepts
Learning Objective: 02-04 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

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241) Cleghorn Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$160.00
Variable expense per unit	$70.40
Fixed expense per month	$153,216

Required:
Determine the monthly break-even in total dollar sales. Show your work!

Answer:

	Per Unit	Percent of Sales
Selling price per unit	$160.00	100%
Variable expense per unit	70.40	44%
Contribution margin per unit and contribution margin ratio	$89.60	56%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $153,216 ÷ 0.56 = $273,600
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
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242) Hamernik, Inc., produces and sells a single product whose selling price is $240.00 per unit and whose variable expense is $72.00 per unit. The company's fixed expense is $372,960 per month.

Required:
Determine the monthly break-even in either unit or total dollar sales. Show your work!

Answer:

	Per Unit	Percent of Sales
Selling price per unit	$240.00	100%
Variable expense per unit	72.00	30%
Contribution margin per unit and contribution margin ratio	$168.00	70%

Unit sales to break even = Fixed expenses ÷ Unit CM = $372,960 ÷ $168 per unit = 2,220 units
Dollar sales to break even = Fixed expenses ÷ CM ratio = $372,960 ÷ 0.70 = $532,800
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
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243) Frisch Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$170.00
Variable expense per unit	$83.30
Fixed expense per month	$138,720

Required:
Determine the monthly break-even in either unit or total dollar sales. Show your work!

Answer:

	Per Unit	Percent of Sales
Selling price per unit	$170.00	100%
Variable expense per unit	83.30	49%
Contribution margin per unit and contribution margin ratio	$86.70	51%

Unit sales to break even = Fixed expenses ÷ Unit CM = $138,720 ÷ $86.70 per unit = 1,600 units
Dollar sales to break even = Fixed expenses ÷ CM ratio = $138,720 ÷ 0.51 = $272,000
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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244) Yamakawa Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$200.00
Variable expense per unit	$64.00
Fixed expense per month	$670,480

Required:
Determine the monthly break-even in unit sales. Show your work!

Answer:

Selling price per unit	$200.00
Variable expense per unit	64.00
Contribution margin per unit	$136.00

Unit sales to break even = Fixed expenses ÷ Unit CM
= $670,480 ÷ $136 per unit = 4,930 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

245) Liz, Inc., produces and sells a single product. The product sells for $130.00 per unit and its variable expense is $48.10 per unit. The company's monthly fixed expense is $223,587.

Required:
Determine the monthly break-even in unit sales. Show your work!

Answer:

Selling price per unit	$130.00
Variable expense per unit	48.10
Contribution margin per unit	$81.90

Unit sales to break even = Fixed expenses ÷ Unit CM
= $223,587 ÷ $81.90 per unit = 2,730 units
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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246) Malensek International, Inc., produces and sells a single product. The product sells for $240.00 per unit and its variable expense is $55.20 per unit. The company's monthly fixed expense is $249,480.

Required:
Determine the monthly break-even in total dollar sales. Show your work!

Answer:

	Per Unit	Percent of Sales
Selling price per unit	$240.00	100%
Variable expense per unit	55.20	23%
Contribution margin per unit and contribution margin ratio	$184.80	77%

Dollar sales to break even = Fixed expenses ÷ CM ratio = $249,480 ÷ 0.77 = $324,000
Difficulty: 1 Easy
Topic: Break-Even Analysis
Learning Objective: 02-05 Determine the break-even point.
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247) Brihon Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$230.00
Variable expense per unit	$103.50
Fixed expense per month	$518,650

Required:
a. Assume the company's monthly target profit is $12,650. Determine the unit sales to attain that target profit. Show your work!
b. Assume the company's monthly target profit is $63,250. Determine the dollar sales to attain that target profit. Show your work!

Answer:

	Per Unit	Percent of Sales
Selling price per unit	$230.00	100%
Variable expense per unit	103.50	45%
Contribution margin per unit and CM ratio	$126.50	55%

a. Unit sales to attain target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($518,650 + $12,650) ÷ $126.50 per unit = 4,200 units

b. Dollar sales to attain target profit = (Target profit + Fixed expenses) ÷ CM ratio
= ($518,650 + $63,250) ÷ 0.55 = $1,058,000
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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248) The contribution margin ratio of Kuck Corporation's only product is 75%. The company's monthly fixed expense is $585,000 and the company's monthly target profit is $11,250.

Required:
Determine the dollar sales to attain the company's target profit. Show your work!

Answer: Dollar sales to attain target profit = (Target profit + Fixed expenses) ÷ CM ratio
= ($585,000 + $11,250) ÷ 0.75 = $795,000
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
AACSB: Analytical Thinking
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249) Rachal Corporation produces and sells a single product whose selling price is $150.00 per unit and whose variable expense is $57.00 per unit. The company's monthly fixed expense is $381,300.

Required:
a. Assume the company's monthly target profit is $9,300. Determine the unit sales to attain that target profit. Show your work!
b. Assume the company's monthly target profit is $18,600. Determine the dollar sales to attain that target profit. Show your work!

Answer:

	Per Unit	Percent of Sales
Selling price per unit	$150.00	100%
Variable expense per unit	57.00	38%
Contribution margin per unit and CM ratio	$93.00	62%

a. Unit sales to attain target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($381,300 + $9,300) ÷ $93.00 per unit = 4,200 units

b. Dollar sales to attain target profit = (Target profit + Fixed expenses) ÷ CM ratio
= ($381,300 + $18,600) ÷ 0.62 = $645,000
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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250) Bussy Corporation produces and sells a single product whose contribution margin ratio is 54%. The company's monthly fixed expense is $561,600 and the company's monthly target profit is $34,560.

Required:
Determine the dollar sales to attain the company's target profit. Show your work!

Answer: Dollar sales to attain target profit = (Target profit + Fixed expenses) ÷ CM ratio
= ($561,600 + $34,560) ÷ 0.54 = $1,104,000
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
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251) Hawver Corporation produces and sells a single product. Data concerning that product appear below:

Selling price per unit	$180.00
Variable expense per unit	$81.00
Fixed expense per month	$594,000

Required:
Assume the company's monthly target profit is $19,800. Determine the unit sales to attain that target profit. Show your work!

Answer:

Selling price per unit	$180.00
Variable expense per unit	81.00
Contribution margin per unit	$99.00

Unit sales to attain target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($594,000 + $19,800) ÷ $99.00 per unit = 6,200 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
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252) The selling price of Old Corporation's only product is $180.00 per unit and its variable expense is $37.80 per unit. The company's monthly fixed expense is $483,480.

Required:
Assume the company's monthly target profit is $56,880. Determine the unit sales to attain that target profit. Show your work!

Answer:

Selling price per unit	$180.00
Variable expense per unit	37.80
Contribution margin per unit	$142.20

Unit sales to attain target profit = (Target profit + Fixed expenses) ÷ Unit CM
= ($483,480 + $56,880) ÷ $142.20 per unit = 3,800 units
Difficulty: 1 Easy
Topic: Target Profit Analysis
Learning Objective: 02-06 Determine the level of sales needed to achieve a desired target profit.
Bloom's: Apply
AACSB: Analytical Thinking
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253) Dickus Corporation's only product sells for $100 per unit. Its current sales are 35,600 units and its break-even sales are 29,192 units.

Required:
Compute the margin of safety in both dollars and as a percentage of sales.

Answer:

Sales (at the current volume of 35,600 units) (a)	$3,560,000
Break-even sales (at 29,192 units)	2,919,200
Margin of safety (in dollars) (b)	$640,800
Margin of safety percentage, (b) ÷ (a)	18%

Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
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254) Haslem Inc. has provided the following data concerning its only product:

Selling price	$100 per unit
Current sales	37,300 units
Break-even sales	26,483 units

Required:
Compute the margin of safety in both dollars and as a percentage of sales.

Answer:

Sales (at the current volume of 37,300 units) (a)	$3,730,000
Break-even sales (at 26,483 units)	2,648,300
Margin of safety (in dollars) (b)	$1,081,700
Margin of safety percentage, (b) ÷ (a)	29%

Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
Bloom's: Apply
AACSB: Analytical Thinking
AICPA: BB Critical Thinking; FN Measurement

255) Knezevich Corporation makes a product that sells for $230 per unit. The product's current sales are 36,900 units and its break-even sales are 32,103 units.

Required:
Compute the margin of safety in both dollars and as a percentage of sales.

Answer:

Sales (at the current volume of 36,900 units) (a)	$8,487,000
Break-even sales (at 32,103 units)	7,383,690
Margin of safety (in dollars) (b)	$1,103,310
Margin of safety percentage, (b) ÷ (a)	13%

Difficulty: 1 Easy
Topic: The Margin of Safety
Learning Objective: 02-07 Compute the margin of safety and explain its significance.
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256) Lubke Corporation's contribution format income statement for the most recent month follows:

Sales	$506,000
Variable expenses	236,500
Contribution margin	269,500
Fixed expenses	241,700
Net operating income	$27,800

Required:
a. Compute the degree of operating leverage to two decimal places.
b. Using the degree of operating leverage, estimate the percentage change in net operating income that should result from a 3% increase in sales.

Answer: a. Degree of operating leverage = Contribution margin ÷ Net operating income
= $269,500 ÷ $27,800 = 9.69
b. Percent increase in net operating income = Percent increase in sales × Degree of operating leverage
= 3% × 9.69 = 29.07%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
Bloom's: Apply
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257) Mcquage Corporation has provided its contribution format income statement for July.

Sales	$558,000
Variable expenses	306,900
Contribution margin	251,100
Fixed expenses	209,800
Net operating income	$41,300

Required:
a. Compute the degree of operating leverage to two decimal places.
b. Using the degree of operating leverage, estimate the percentage change in net operating income that should result from a 19% increase in sales.

Answer:
a. Degree of operating leverage = Contribution margin ÷ Net operating income
= $251,100 ÷ $41,300 = 6.08
b. Percent increase in net operating income = Percent increase in sales × Degree of operating leverage
= 19% × 6.08 = 115.52%
Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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258) In the most recent month, Sardella Corporation's total contribution margin was $46,200 and its net operating income $13,200.

Required:
a. Compute the degree of operating leverage to two decimal places.
b. Using the degree of operating leverage, estimate the percentage change in net operating income that should result from a 10% increase in sales.

Answer:
a. Degree of operating leverage = Contribution margin ÷ Net operating income
= $46,200 ÷ $13,200 = 3.50
b. Percent increase in net operating income = Percent increase in sales × Degree of operating leverage
= 10% × 3.50 = 35.00%

Difficulty: 1 Easy
Topic: Operating Leverage
Learning Objective: 02-08 Compute the degree of operating leverage at a particular level of sales and explain how it can be used to predict changes in net operating income.
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259) Brancati Inc. produces and sells two products. Data concerning those products for the most recent month appear below:

	Product W07C	Product B29Z
Sales	$25,000	$27,000
Variable expenses	$7,000	$8,600

Fixed expenses for the entire company were $32,860.

Required:
a. Determine the overall break-even point for the company in total sales dollars. Show your work!
b. If the sales mix shifts toward Product W07C with no change in total sales, what will happen to the break-even point for the company? Explain.

Answer:

a.	Product W07C	Product B29Z	Total
Sales	$25,000	$27,000	$52,000
Variable expenses	7,000	8,600	15,600
Contribution margin	$18,000	$18,400	36,400
Fixed expenses			32,860
Net operating income			$3,540

Overall CM ratio = Total contribution margin ÷ Total sales
= $36,400 ÷ $52,000 = 0.70
Break-even point in total sales dollars = Fixed expenses ÷ Overall CM ratio
= $32,860 ÷ 0.70 = $46,943

b.	Product W07C	Product B29Z
Sales (a)	$25,000	$27,000
Contribution margin (b)	$18,000	$18,400
CM ratio (b)÷(a)	0.720	0.681

Because Product W07C's CM ratio is greater than Product B29Z's, a shift in the sales mix toward Product W07C will result in a decrease in the company's overall break-even point.
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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260) Veren Inc. produces and sells two products. During the most recent month, Product F73A's sales were $27,000 and its variable expenses were $9,450. Product L75P's sales were $14,000 and its variable expenses were $5,310. The company's fixed expenses were $21,060.

Required:
a. Determine the overall break-even point for the company in total sales dollars. Show your work!
b. If the sales mix shifts toward Product F73A with no change in total sales, what will happen to the break-even point for the company? Explain.

Answer:

a.	Product F73A	Product L75P	Total
Sales	$27,000	$14,000	$41,000
Variable expenses	9,450	5,310	14,760
Contribution margin	$17,550	$8,690	26,240
Fixed expenses			21,060
Net operating income			$5,180

Overall CM ratio = Total contribution margin ÷ Total sales
= $26,240 ÷ $41,000 = 0.64
Break-even point in total sales dollars = Fixed expenses ÷ Overall CM ratio
= $21,060 ÷ 0.64 = $32,906

b.	Product F73A	Product L75P
Sales (a)	$27,000	$14,000
Contribution margin (b)	$17,550	$8,690
CM ratio (b)÷(a)	0.650	0.621

Because Product F73A's CM ratio is greater than Product L75P's, a shift in the sales mix toward Product F73A will result in a decrease in the company's overall break-even point.
Difficulty: 1 Easy
Topic: Sales Mix
Learning Objective: 02-09 Compute the break-even point for a multiproduct company and explain the effects of shifts in the sales mix on contribution margin and the break-even point.
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