**Chapter 02**

**Cost Behavior, Operating Leverage, and Profitability Analysis**

**Answer Key**

**Multiple Choice Questions**

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| 1. | Java Joe operates a chain of coffee shops. The company pays rent of $20,000 per year for each shop. Supplies (napkins, bags and condiments) are purchased as needed. The manager of each shop is paid a salary of $3,000 per month, and all other employees are paid on an hourly basis. Relative to the number of customers for a shop, the cost of supplies is which kind of cost?      |  |  | | --- | --- | | A. | Fixed cost |  |  |  | | --- | --- | | **B.** | Variable cost |  |  |  | | --- | --- | | C. | Mixed cost |  |  |  | | --- | --- | | D. | Relevant cost | |

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| Answer: B  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: When the volume increases, the total cost of supplies increases; when volume decreases, the total decreases; as such, the cost of supplies is a variable cost. |

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| 2. | Select the correct statement regarding fixed costs.      |  |  | | --- | --- | | A. | Because they do not change, fixed costs should be ignored in decision making. |  |  |  | | --- | --- | | **B.** | The fixed cost per unit decreases when volume increases. |  |  |  | | --- | --- | | C. | The fixed cost per unit increases when volume increases. |  |  |  | | --- | --- | | D. | The fixed cost per unit does not change when volume decreases. | |

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| Answer: B  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: The total amount of a fixed cost does not change when volume changes. In contrast, fixed cost per unit is *not* fixed. It changes as the volume changes. The fixed cost per unit decreases when volume increases and the fixed cost per unit increases when volume decreases. |

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| 3. | Larry's Lawn Care incurs significant gasoline costs. This cost would be classified as a variable cost if the total gasoline cost:       |  |  | | --- | --- | | A. | varies inversely with the number of hours the lawn equipment is operated. |  |  |  | | --- | --- | | B. | is not affected by the number of hours the lawn equipment is operated. |  |  |  | | --- | --- | | **C.** | increases in direct proportion to the number of hours the lawn equipment is operated. |  |  |  | | --- | --- | | D. | none of the above. | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: The gasoline cost would be classified as variable if the total gasoline cost increases when the volume increases and the total gasoline cost decreases when the volume decreases. |

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| 4. | Select the correct statement regarding fixed costs.      |  |  | | --- | --- | | A. | There is a contradiction between the term "fixed cost per unit" and the behavior pattern implied by the term. |  |  |  | | --- | --- | | B. | Fixed cost per unit is not fixed. |  |  |  | | --- | --- | | C. | Total fixed cost remains constant when volume changes. |  |  |  | | --- | --- | | **D.** | All of these are correct statements. | |

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| Answer: D  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: The total amount of a fixed cost does not change when volume changes. In contrast, fixed cost per unit is *not* fixed. It changes as the volume changes. The fixed cost per unit decreases when volume increases and the fixed cost per unit increases when volume decreases. |

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|  | Use the following information to answer questions 5 and 6:  Rock Creek Bottling Company pays its production manager a salary of $6,000 per month. Salespersons are paid strictly on commission, at $1.50 for each case of product sold. |

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| 5. | For Rock Creek Bottling Company, the production manager's salary is an example of:       |  |  | | --- | --- | | A. | a variable cost. |  |  |  | | --- | --- | | B. | a mixed cost. |  |  |  | | --- | --- | | **C.** | a fixed cost. |  |  |  | | --- | --- | | D. | none of these | |

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| Answer:  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: The total amount of a fixed cost does not change when volume changes. |

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| 6. | For Rock Creek Bottling Company, the cost of the salespersons' commissions is an example of:       |  |  | | --- | --- | | A. | a fixed cost. |  |  |  | | --- | --- | | **B.** | a variable cost. |  |  |  | | --- | --- | | C. | a mixed cost. |  |  |  | | --- | --- | | D. | none of these | |

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| Answer: B  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: Since the salespersons are paid strictly on commission, at $1.50 for each case of product sold, the total cost of the salespersons' commissions would increase as the sales volume increases. As such, this cost would be classified as a variable cost. |

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| 7. | Based on the following cost data, what conclusions can you make about the costs of Product A and Product B?          |  |  | | --- | --- | | A. | The cost of Product A is a fixed cost and the cost of Product B is a variable cost. |  |  |  | | --- | --- | | **B.** | The cost of Product A is a variable cost and the cost of Product B is a fixed cost. |  |  |  | | --- | --- | | C. | The costs of Product A and Product B are both variable costs. |  |  |  | | --- | --- | | D. | The costs of Product A and Product B are both mixed costs. | |

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| Answer: B  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: When the volume increases, the total cost of Product A increases; as such, the cost of Product A is a variable cost. The fixed cost per unit of Product B decreases when volume increases; as such, the cost of Product B is a fixed cost. |

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| 8. | Based on the following cost data, items labeled (a) and (b) in the table below are which of the following amounts, respectively?          |  |  | | --- | --- | | A. | (a) = $3.00; (b) = $3.00 |  |  |  | | --- | --- | | B. | (a) = $5.00; (b) = $4.00 |  |  |  | | --- | --- | | C. | (a) = $2.50; (b) = $2.00 |  |  |  | | --- | --- | | **D.** | (a) = $5.00; (b) = $2.00 | |

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| Answer: D  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  (a) Total cost of $15,000 ÷ 3,000 units = $5 per unit  (b) Total cost of $6,000 ÷ 3,000 units = $2 per unit |

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| 9. | Two different costs incurred by Ruiz Company exhibit the following behavior pattern per unit:      Cost #1 and Cost #2 exhibit which of the following cost behavior patterns, respectively?       |  |  | | --- | --- | | **A.** | Fixed and variable |  |  |  | | --- | --- | | B. | Variable and variable |  |  |  | | --- | --- | | C. | Fixed and fixed |  |  |  | | --- | --- | | D. | Variable and fixed | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: The cost per unit of Cost #1 decreases when volume increases; as such, Cost #1 is a fixed cost. When the volume increases, the cost per unit of Cost #2 stays the same; as such, Cost #2 is a variable cost. |

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|  | Use the following information to answer questions 10 through 12:  Wu Company incurred $40,000 of fixed cost and $50,000 of variable cost when 4,000 units of product were made and sold. |

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| 10. | If the company's volume doubles, the total cost per unit will:       |  |  | | --- | --- | | A. | stay the same. |  |  |  | | --- | --- | | **B.** | decrease. |  |  |  | | --- | --- | | C. | double as well. |  |  |  | | --- | --- | | D. | increase but will not double. | |

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| Answer: B  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Current cost per unit:  Total cost per unit = (Fixed cost + Variable cost) ÷ Number of units  Total cost per unit = ($40,000 + $50,000) ÷ 4,000 units = $22.50 per unit  Cost per unit when volume doubles:  Total cost per unit = [$40,000 + ($50,000 x 2)] ÷ (4,000 units x 2) = $17.50 per unit |

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| 11. | If the company's volume increases to 5,000 units, the total cost per unit will be:       |  |  | | --- | --- | | A. | $18.00. |  |  |  | | --- | --- | | B. | $20.00. |  |  |  | | --- | --- | | **C.** | $20.50. |  |  |  | | --- | --- | | D. | $22.50. | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Variable cost per unit = Total variable cost ÷ Number of units  Variable cost per unit = $50,000 ÷ 4,000 units = $12.50 per unit  Total cost per unit = Fixed cost per unit + Variable cost per unit  Total cost per unit = ($40,000 ÷ 5,000 units) + $12.50 per unit = $20.50 per unit |

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| 12. | If the company's volume increases to 5,000 units, the company's total costs will be:       |  |  | | --- | --- | | A. | $100,000 |  |  |  | | --- | --- | | B. | $90,000 |  |  |  | | --- | --- | | **C.** | $102,500 |  |  |  | | --- | --- | | D. | $80,000 | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Variable cost per unit = Total variable cost ÷ Number of units  Variable cost per unit = $50,000 ÷ 4,000 units = $12.50 per unit  Total cost = Fixed cost + Variable cost  Total cost = $40,000 + ($12.50 per unit x 5,000 units) = $102,500 |

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| 13. | If the company's volume doubles, the company's **total cost** will:       |  |  | | --- | --- | | A. | stay the same. |  |  |  | | --- | --- | | B. | double as well. |  |  |  | | --- | --- | | **C.** | increase but will not double. |  |  |  | | --- | --- | | D. | decrease. | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Current cost:  Total cost = Fixed cost + Variable cost  Total cost = $40,000 + $50,000 = $90,000  Cost per unit when volume doubles:  Total cost = $40,000 + ($50,000 x 2) = $140,000 |

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| 14. | In the graph below, which depicts the relationship between units produced and total cost, the dotted line depicts which type of total **cost**?          |  |  | | --- | --- | | **A.** | Variable cost |  |  |  | | --- | --- | | B. | Fixed cost |  |  |  | | --- | --- | | C. | Mixed cost |  |  |  | | --- | --- | | D. | None of these | |

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| Answer: A  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs.  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Blooms: Recall  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: Since the total cost line intersects the vertical axis at zero, there is no fixed cost component in this total cost. As such, and because the total cost line slopes upward, this line depicts a variable cost. |

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| 15. | In the graph below, which depicts the relationship between units produced and unit cost, the dotted line depicts which type of **cost per unit**?          |  |  | | --- | --- | | **A.** | Variable cost |  |  |  | | --- | --- | | B. | Fixed cost |  |  |  | | --- | --- | | C. | Mixed cost |  |  |  | | --- | --- | | D. | None of these | |

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| Answer: A  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs.  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Blooms: Recall  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: Since the per unit cost line is horizontal, the cost per unit is constant. A variable cost per unit remains *constant* regardless of volume changes. As such, this depicts a variable cost. |

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| 16. | In the graph below, which depicts the relationship between units produced and total cost, the dotted line depicts which type of **total cost**?          |  |  | | --- | --- | | A. | Variable cost |  |  |  | | --- | --- | | **B.** | Fixed cost |  |  |  | | --- | --- | | C. | Mixed cost |  |  |  | | --- | --- | | D. | None of these | |

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| Answer: B   Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs.  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Blooms: Recall  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: Since the total cost line is horizontal, the total cost is constant as the volume changes. As such, this depicts a fixed cost. |

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| 17. | Pickard Company pays its sales staff a base salary of $4,500 a month plus a $3.00 commission for each product sold. If a salesperson sells 800 units of product in January, the employee would be paid:       |  |  | | --- | --- | | **A.** | $6,900 |  |  |  | | --- | --- | | B. | $4,500 |  |  |  | | --- | --- | | C. | $2,300 |  |  |  | | --- | --- | | D. | $2,700 | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Total cost = Fixed cost + Variable cost  Total cost = $4,500 + (800 units x $3.00 per unit) = $6,900 |

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| 18. | Quick Change and Fast Change are competing oil change businesses. Both companies have 5,000 customers. The price of an oil change at both companies is $20. Quick Change pays its employees on a salary basis, and its salary expense is $40,000. Fast Change pays its employees $8 per customer served. Suppose Quick Change is able to lure 1,000 customers from Fast Change by lowering its price to $18 per vehicle. Thus, Quick Change will have 6,000 customers and Fast Change will have only 4,000 customers.    Select the **correct** statement from the following.       |  |  | | --- | --- | | **A.** | Quick Change's profit will increase while Fast Change's profit will fall. |  |  |  | | --- | --- | | B. | Fast Change's profit will fall but it will still earn a higher profit than Quick Change. |  |  |  | | --- | --- | | C. | Profits will decline for both Quick Change and Fast Change. |  |  |  | | --- | --- | | D. | Quick Change's profit will remain the same while Fast Change's profit will decrease. | |

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| Answer:  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Net income = Sales revenue – Variable cost – Fixed cost  Before the price change:  Quick Change: Net income = (5,000 x $20 per unit) – $0 – $40,000 = $60,000  Fast Change: Net income = (5,000 x $20 per unit) – (5,000 x $8 per unit) – $0 = $60,000  After the price change:  Quick Change: Net income = (6,000 x $18 per unit) – $0 – $40,000 = $68,000  Fast Change: Net income = (4,000 x $20 per unit) – (4,000 x $8 per unit) – $0 = $48,000 |

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| 19. | Hard Nails and Bright Nails are competing nail salons. Both companies have the same number of customers. Both charge the same price for a manicure. The only difference is that Hard Nails pays its manicurists on a salary basis (i.e., a fixed cost structure) while Bright Nails pays its manicurists on the basis of the number of customers they serve (i.e., a variable cost structure). Both companies currently make the same amount of net income. If sales of both salons increase by an equal amount, Hard Nails:       |  |  | | --- | --- | | **A.** | will earn a higher profit than Bright Nails. |  |  |  | | --- | --- | | B. | will earn a lower profit than Bright Nails. |  |  |  | | --- | --- | | C. | will earn the same amount of profit as Bright Nails. |  |  |  | | --- | --- | | D. | The answer cannot be determined from the information provided. | |

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| Answer:  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: When sales change, the amount of the corresponding change in net income is directly influenced by the company’s cost structure. The more fixed cost, the greater the fluctuation in net income. Since Hard Nails has a fixed cost structure while Bright Nails has a variable cost structure, if sales of both salons increase by an equal amount, Hard Nails will earn a higher profit than Bright Nails. |

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| 20. | Fixed cost per unit:       |  |  | | --- | --- | | A. | decreases as production volume decreases. |  |  |  | | --- | --- | | B. | is not affected by changes in the production volume. |  |  |  | | --- | --- | | **C.** | decreases as production volume increases. |  |  |  | | --- | --- | | D. | increases as production volume increases. | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: The total amount of a fixed cost does not change when volume changes. In contrast, fixed cost per unit is *not* fixed. It changes as the volume changes. The fixed cost per unit decreases when volume increases and the fixed cost per unit increases when volume decreases. |

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| 21. | Cool Runnings operates a chain of frozen yogurt shops. The company pays $5,000 of rent expense per month for each shop. The managers of each shop are paid a salary of $3,000 per month and all other employees are paid on an hourly basis. Relative to the number of shops, the cost of rent is which kind of cost?       |  |  | | --- | --- | | **A.** | Variable cost |  |  |  | | --- | --- | | B. | Fixed cost |  |  |  | | --- | --- | | C. | Mixed cost |  |  |  | | --- | --- | | D. | Opportunity cost | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Context-Sensitive Definitions of Fixed and Variable  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: The behavior pattern of a particular cost may be either fixed or variable, depending on the context. In this context, the total cost of rent increases proportionately with the number of shops while cost per shop remains constant. The rent is therefore variable relative to the number of shops. |

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| 22. | Companies A and B are in the same industry and are identical except for cost structure. At a volume of 50,000 units, the companies have equal net incomes. At 60,000 units, Company A's net income would be substantially higher than B's. Based on this information,      |  |  | | --- | --- | | A. | Company A's cost structure has more variable costs than B's. |  |  |  | | --- | --- | | **B.** | Company A's cost structure has higher fixed costs than B's. |  |  |  | | --- | --- | | C. | Company B's cost structure has higher fixed costs than A's. |  |  |  | | --- | --- | | D. | At a volume of 50,000 units, Company A's magnitude of operating leverage was lower than B's. | |

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| Answer: B  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: When sales change, the amount of the corresponding change in net income is directly influenced by the company’s cost structure. The more fixed cost, the greater the fluctuation in net income. Since Company A’s net income is substantially higher than Company B’s when both companies experience an equal increase in sales, Company A has a fixed cost structure while Company B has a variable cost structure. |

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| 23. | Operating leverage exists when:       |  |  | | --- | --- | | A. | a company utilizes debt to finance its assets. |  |  |  | | --- | --- | | B. | management buys enough of the company's shares of stock to take control of the corporation. |  |  |  | | --- | --- | | C. | the organization makes purchases on credit instead of paying cash. |  |  |  | | --- | --- | | **D.** | small percentage changes in revenue produce large percentage changes in profit. | |

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| Answer: D  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Operating Leverage  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: Operating leverage is the cost structure condition that produces a proportionately larger percentage change in net income for a given percentage change in revenue. Business managers apply operating leverage to magnify small changes in revenue into dramatic changes in profitability. |

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| 24. | For the last two years BRC Company had net income as follows:      What was the percentage change in income from Year 1 to Year 2?      |  |  | | --- | --- | | A. | 20% increase |  |  |  | | --- | --- | | B. | 20% decrease |  |  |  | | --- | --- | | **C.** | 25% increase |  |  |  | | --- | --- | | D. | 25% decrease | |

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| Answer: C  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Calculating Percentage Change  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  % change = (Alternative measure – Base measure) ÷ Base measure  % change = ($200,000 – $160,000) ÷ $160,000 = 25% |

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| 25. | The activity director for City Recreation is planning an activity. She is considering alternative ways to set up the activity's cost structure. Select the **incorrect** statement from the following.      |  |  | | --- | --- | | **A.** | If the director expects a low turnout, she should use a fixed cost structure. |  |  |  | | --- | --- | | B. | If the director expects a large turnout, she should attempt to convert variable costs into fixed costs. |  |  |  | | --- | --- | | C. | If the director shifts the cost structure from fixed to variable, the level of risk decreases. |  |  |  | | --- | --- | | D. | If the director shifts the cost structure from fixed to variable, the potential for profits will be reduced. | |

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| Answer: A  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Risk and Reward Assessment  Topic: Effect of Cost Structure on Profit Stability  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: A manager who expects revenues to increase should use a fixed cost structure. On the other hand, if future sales growth is uncertain or if the manager believes revenue is likely to decline, a variable cost structure makes more sense. Shifting the cost structure from fixed to variable reduces not only the level of risk but also the potential for profits. |

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| 26. | Select the **incorrect** statement regarding the relationship between cost behavior and profits.      |  |  | | --- | --- | | A. | A pure variable cost structure offers higher potential rewards. |  |  |  | | --- | --- | | B. | A pure fixed cost structure offers more security if volume expectations are not achieved. |  |  |  | | --- | --- | | C. | In a pure variable cost structure, when revenue increases by $1, so do profits. |  |  |  | | --- | --- | | **D.** | In a pure fixed cost structure, the unit selling price and unit contribution margin are equal. | |

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| Answer: D  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Risk and Reward Assessment  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: Recall that contribution margin equals sales revenue minus variable costs. As such, in a pure fixed cost structure, because variable costs are zero, the unit selling price equals the unit contribution margin. Shifting the cost structure from fixed to variable reduces not only the level of risk but also the potential for profits. |

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| 27. | Select the correct statement from the following.      |  |  | | --- | --- | | A. | A fixed cost structure offers less risk (i.e., less earnings volatility) and higher opportunity for profitability than does a variable cost structure. |  |  |  | | --- | --- | | B. | A variable cost structure offers less risk and higher opportunity for profitability than does a fixed cost structure. |  |  |  | | --- | --- | | **C.** | A fixed cost structure offers greater risk but higher opportunity for profitability than does a variable cost structure. |  |  |  | | --- | --- | | D. | A variable cost structure offers greater risk but higher opportunity for profitability than does a fixed cost structure. | |

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| Answer: C  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Risk and Reward Assessment  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: Shifting the cost structure from fixed to variable reduces not only the level of risk but also the potential for profits. |

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| 28. | The manager of Kenton Company stated that 45% of its total costs were fixed. The manager was describing the company's:       |  |  | | --- | --- | | A. | operating leverage. |  |  |  | | --- | --- | | B. | contribution margin. |  |  |  | | --- | --- | | **C.** | cost structure. |  |  |  | | --- | --- | | D. | cost averaging. | |

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| Answer: C  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Effect of Cost Structure on Profit Stability  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 29. | Select the **incorrect** statement regarding cost structures.      |  |  | | --- | --- | | A. | Highly leveraged companies will experience greater profits than companies less leveraged when sales increase. |  |  |  | | --- | --- | | **B.** | The more variable cost, the higher the fluctuation in income as sales fluctuate. |  |  |  | | --- | --- | | C. | When sales change, the amount of the corresponding change in income is affected by the company's cost structure. |  |  |  | | --- | --- | | D. | Faced with significant uncertainty about future revenues, a low leverage cost structure is preferable to a high leverage cost structure. | |

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| Answer: B  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Risk and Reward Assessment  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: Shifting the cost structure from fixed to variable reduces not only the level of risk but also the potential for profits. As a result, the more variable cost, the lower the fluctuation in income as sales fluctuate. |

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| 30. | Executive management at Ballard Books is very optimistic about the chain's ability to achieve significant increases in sales in each of the next five years. The company will most benefit if management creates a:      |  |  | | --- | --- | | A. | low operating leverage cost structure. |  |  |  | | --- | --- | | B. | medium operating leverage cost structure. |  |  |  | | --- | --- | | **C.** | high operating leverage cost structure. |  |  |  | | --- | --- | | D. | no operating leverage cost structure. | |

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| Answer: C  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Risk and Reward Assessment  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback:  The higher the proportion of fixed cost to total costs, the greater the operating leverage. A manager who expects revenues to increase should use a fixed cost structure. While the variable cost structure reduces risk, it also limits the opportunity to benefit from operating leverage. |

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| 31. | Based on the income statements shown below, which division has the cost structure with the highest operating leverage?          |  |  | | --- | --- | | **A.** | Bottled Water. |  |  |  | | --- | --- | | B. | Fruit Juices. |  |  |  | | --- | --- | | C. | Soft Drinks. |  |  |  | | --- | --- | | D. | The three divisions have identical operating leverage. | |

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| Answer: A  Learning Objective: 02-04 Calculate the magnitude of operating leverage.  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Soft drinks: Magnitude of operating leverage = $40,000 ÷ $10,000 = 4.0  Bottled water: Magnitude of operating leverage = $45,000 ÷ $5,000 = 9.0  Fruit juices: Magnitude of operating leverage = $20,000 ÷ $10,000 = 2.0 |

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| 32. | The following income statements are provided for two companies operating in the same industry:      Assuming sales increase by $1,000, select the correct statement from the following:       |  |  | | --- | --- | | **A.** | Felix’s net income will be more than Jinx’s. |  |  |  | | --- | --- | | B. | Only Felix will experience an increase in profit. |  |  |  | | --- | --- | | C. | Felix's net income will increase by $250. |  |  |  | | --- | --- | | D. | Jinx's net income will increase by 6%. | |

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| Answer: A  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Learning Objective: 02-04 Calculate the magnitude of operating leverage.  Topic: An Income Statement under the Contribution Margin Approach  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Felix: Magnitude of operating leverage = $175,000 ÷ $105,000 = 1.6667  Jinx: Magnitude of operating leverage = $130,000 ÷ $105,000 = 1.2381  Impact of an increase in sales of $1,000 or 0.5% (= $1,000 ÷ $105,000):  Increase in net income = Sales x Percentage increase x Magnitude of degree of operating leverage  Felix: Increase in net income = $105,000 x (0.5% x 1.6667) = $875  Jinx: Increase in net income = $105,000 x (0.5% x 1.2381) = $650 |

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| 33. | The excess of revenue over variable costs is referred to as:       |  |  | | --- | --- | | A. | gross profit |  |  |  | | --- | --- | | B. | gross margin |  |  |  | | --- | --- | | **C.** | contribution margin |  |  |  | | --- | --- | | D. | manufacturing margin | |

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| Answer: C  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 34. | Select the **incorrect** statement regarding the contribution margin income statement.      |  |  | | --- | --- | | A. | The contribution margin approach for the income statement is unacceptable for external reporting. |  |  |  | | --- | --- | | **B.** | Contribution margin represents the amount available to cover product costs and thereafter to provide profit. |  |  |  | | --- | --- | | C. | The contribution margin approach requires that all costs be classified as fixed or variable. |  |  |  | | --- | --- | | D. | Assuming no change in fixed costs, a $1 increase in contribution margin will result in a $1 increase in profit. | |

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| Answer: B  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: The contribution margin represents the amount available to cover fixed expenses and thereafter to provide company profits. |

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| 35. | Which of the following items would **not** be found on a contribution format income statement?      |  |  | | --- | --- | | A. | Fixed cost |  |  |  | | --- | --- | | B. | Variable cost |  |  |  | | --- | --- | | **C.** | Gross margin |  |  |  | | --- | --- | | D. | Net income | |

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| Answer: C  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 36. | The following income statement is provided for Ramirez Company for the current year:     What amount was the company's contribution margin?      |  |  | | --- | --- | | **A.** | $50,000 |  |  |  | | --- | --- | | B. | $22,000 |  |  |  | | --- | --- | | C. | $52,000 |  |  |  | | --- | --- | | D. | $60,000 | |

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| Answer: A  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Contribution margin = Revenues – Variable expenses  Contribution margin = $100,000 – ($40,000 + $10,000) = $50,000 |

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| 37. | In order to prepare a contribution format income statement, costs must be separated into:      |  |  | | --- | --- | | A. | manufacturing and selling, general, and administrative costs. |  |  |  | | --- | --- | | B. | cost of goods sold and operating expenses. |  |  |  | | --- | --- | | **C.** | variable and fixed costs. |  |  |  | | --- | --- | | D. | mixed, variable and fixed costs. | |

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| Answer: C  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 38. | Select from the following the **incorrect** statement regarding contribution margin.       |  |  | | --- | --- | | **A.** | Sales – Fixed costs = Contribution margin |  |  |  | | --- | --- | | B. | Net income + Total fixed costs = Contribution margin |  |  |  | | --- | --- | | C. | At the breakeven point (where the company has neither profit nor loss), Total fixed costs = Total contribution margin |  |  |  | | --- | --- | | D. | Total sales revenue times the contribution margin percentage = Total contribution margin | |

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| Answer: A  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback+ Contribution margin = Revenues – Variable expenses |

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| 39. | The following information is provided for Southall Company:      What is this company's contribution margin?      |  |  | | --- | --- | | A. | $30,000 |  |  |  | | --- | --- | | B. | $17,500 |  |  |  | | --- | --- | | C. | $45,000 |  |  |  | | --- | --- | | **D.** | $67,500 | |

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| Answer:  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Contribution margin = Revenues – Variable expenses  Contribution margin = $125,000 – ($42,500 + $15,000) = $67,500 |

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| 40. | Which of the following equations can be used to compute a firm's magnitude of operating leverage?      |  |  | | --- | --- | | A. | Net income ÷ Sales |  |  |  | | --- | --- | | B. | Fixed costs ÷ Contribution margin |  |  |  | | --- | --- | | **C.** | Contribution margin ÷ Net income |  |  |  | | --- | --- | | D. | Net income ÷ Contribution margin | |

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| Answer: C  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback: Magnitude of operating leverage = Contribution margin ÷ Net income |

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| 41. | The following income statement is provided for Vargas, Inc.      What is this company's magnitude of operating leverage?      |  |  | | --- | --- | | A. | 3.07 |  |  |  | | --- | --- | | B. | 0.33 |  |  |  | | --- | --- | | **C.** | 3.00 |  |  |  | | --- | --- | | D. | 1.67 | |

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| Answer: C  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Contribution margin = Revenues – Variable expenses  Contribution margin = $150,000 – ($50,000 + $10,000) = $90,000  Magnitude of operating leverage = Contribution margin ÷ Net income  Magnitude of operating leverage = $90,000 ÷ $30,000 = 3.00 |

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| 42. | The following income statement is provided for Grant, Inc.      What is this company's magnitude of operating leverage?       |  |  | | --- | --- | | A. | 0.33 |  |  |  | | --- | --- | | B. | 1.31 |  |  |  | | --- | --- | | C. | 2.00 |  |  |  | | --- | --- | | **D.** | 3.00 | |

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| Answer: D  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Magnitude of operating leverage = ($45,000 – $21,000) ÷ $8,000 = 3.00 |

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| 43. | The magnitude of operating leverage for Forbes Corporation is 1.8 when sales are $200,000 and net income is $24,000. If sales increase by 5%, what is net income expected to be?      |  |  | | --- | --- | | A. | $25,200 |  |  |  | | --- | --- | | **B.** | $26,160 |  |  |  | | --- | --- | | C. | $24,667 |  |  |  | | --- | --- | | D. | $43,200 | |

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| Answer: B  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Expected net income = Net income + (Net income x Percentage increase in sales x Magnitude of degree of operating leverage)  Expected net income = $24,000 + ($24,000 x 0.05 x 1.8) = $26,160 |

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| 44. | The magnitude of operating leverage for Blue Ridge Corporation is 3.5 when sales are $200,000 and net income is $36,000. If sales decrease by 6%, net income is expected to decrease by what amount?       |  |  | | --- | --- | | A. | $2,160 |  |  |  | | --- | --- | | **B.** | $7,560 |  |  |  | | --- | --- | | C. | $3,420 |  |  |  | | --- | --- | | D. | $1,260 | |

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| Answer: B  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Increase in net income = Net income x Percentage increase in sales x Magnitude of degree of operating leverage  Increase in net income = $36,000 x 0.06 x 3.5 = $7,560 |

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| 45. | The magnitude of operating leverage for Perkins Corporation is 4.5 when sales are $100,000. If sales increase to $110,000, profits would be expected to increase by what percent?       |  |  | | --- | --- | | A. | 4.5% |  |  |  | | --- | --- | | B. | 14.5% |  |  |  | | --- | --- | | **C.** | 45% |  |  |  | | --- | --- | | D. | 10% | |

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| Answer: C  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability.  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Calculating Percentage Change  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Percentage increase in net income = Percentage increase in sales x Magnitude of degree of operating leverage  Percentage increase in net income = [$110,000 – $100,000) ÷ $100,000] x 4.5 = 45% |

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| 46. | Based on the income statements of the three following retail businesses, which company has the highest operating leverage?          |  |  | | --- | --- | | **A.** | Alpha Company |  |  |  | | --- | --- | | B. | Beta Company |  |  |  | | --- | --- | | C. | Gamma Company |  |  |  | | --- | --- | | D. | They all have same operating leverage | |

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| Answer: A  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback: Given that all three companies have the same sales revenue and the same net income, the company with the greatest contribution margin will have the highest degree of operating leverage.  Alternatively, the answer can be obtained by calculating the degree of operating leverage for each company:  Magnitude of operating leverage = Contribution margin ÷ Net income  Alpha: Magnitude of operating leverage = $105,000 ÷ $25,000 = 4.2  Beta: Magnitude of operating leverage = $45,000 ÷ $25,000 = 1.8  Gamma: Magnitude of operating leverage = $75,000 ÷ $25,000 = 3.0 |

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| 47. | Wham Company sells electronic squirrel repellants for $60. Variable costs are 60% of sales and total fixed costs are $40,000. What is the firm's magnitude of operating leverage if 2,000 units are sold?      |  |  | | --- | --- | | A. | 0.17 |  |  |  | | --- | --- | | **B.** | 6.00 |  |  |  | | --- | --- | | C. | 2.25 |  |  |  | | --- | --- | | D. | none of these | |

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| Answer: B  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Net income = Sales – Variable expenses – Fixed expenses  Net income = ($60 x 2,000 units) – ($60 x 0.60 x 2,000 units) – $40,000 = $48,000 – $40,000 = $8,000  Magnitude of operating leverage = Contribution margin ÷ Net income  Magnitude of operating leverage =$48,000 ÷ $8,000 = 6.00 |

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| ÷ | Whether a cost behaves as a fixed cost or as a variable cost depends upon the:      |  |  | | --- | --- | | **A.** | activity based used. |  |  |  | | --- | --- | | B. | cost structure of the company. |  |  |  | | --- | --- | | C. | industry |  |  |  | | --- | --- | | D. | significance of the dollar amount of the cost. | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: Context-Sensitive Definitions of Fixed and Variable  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 49. | Craft, Inc. normally produces between 120,000 and 150,000 units each year. Producing more than 150,000 units alters the company's cost structure. For example, fixed costs increase because more space must be rented, and additional supervisors must be hired. The production range between 120,000 and 150,000 is called the:      |  |  | | --- | --- | | A. | differential range. |  |  |  | | --- | --- | | B. | median range. |  |  |  | | --- | --- | | **C.** | relevant range. |  |  |  | | --- | --- | | D. | leverage range. | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: The Relevant Range  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 50. | Mug Shots operates a chain of coffee shops. The company pays rent of $15,000 per year for each shop. Supplies (napkins, bags and condiments) are purchased as needed. The managers of each shop are paid a salary of $2,500 per month and all other employees are paid on an hourly basis. The cost of rent relative to the number of customers in a particular shop and relative to the number of customers in the entire chain of shops is which kind of cost, respectively?      |  |  | | --- | --- | | A. | Variable cost and fixed cost |  |  |  | | --- | --- | | **B.** | Fixed cost and fixed cost |  |  |  | | --- | --- | | C. | Fixed cost and variable cost |  |  |  | | --- | --- | | D. | Variable cost and variable cost | |

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| Answer: B  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Context-Sensitive Definitions of Fixed and Variable  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: The behavior pattern of a particular cost may be either fixed or variable, depending on the context. In this context, the total cost of rent remains the same relative to the number of customers in a particular shop and also remains the same relative to the number of customers in the entire chain of shops. As such, in both situations, the rent is a fixed cost. |

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| 51. | Select the **incorrect** statement regarding the relevant range of volume.      |  |  | | --- | --- | | A. | Total fixed costs are expected to remain constant. |  |  |  | | --- | --- | | B. | Total variable costs are expected to vary in direct proportion with changes in volume. |  |  |  | | --- | --- | | C. | Variable cost per unit is expected to remain constant. |  |  |  | | --- | --- | | **D.** | Total cost per unit is expected to remain constant. | |

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| Answer: D  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: The Relevant Range  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 52. | What are the expected average quarterly costs of running a consulting practice if fixed costs are expected to be $4,000 a month and variable costs are expected to be $100 per client for each quarter? Expected number of clients for the year are:          |  |  | | --- | --- | | A. | $12,500 |  |  |  | | --- | --- | | **B.** | $24,500 |  |  |  | | --- | --- | | C. | $16,500 |  |  |  | | --- | --- | | D. | $19,500 | |

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| Answer: B  Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Total costs for the year = Variable costs + Fixed costs  Total costs for the year = [(110 clients + 140 clients + 150 clients + 100 clients) x $100 per client] + ($4,000 x 12) = $50,000 + $48,000 = $98,000  Average quarterly costs = $98,000 ÷ 4 = $24,500 |

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| 53. | Yankee Tours provide seven-day guided tours along the New England coast. The company pays its guides a total of $100,000 per year. The average cost of supplies, lodging and food per customer is $500. The company expects a total of 500 customers during the period January through June, and a total of 1,500 customers from July through December. Yankee wants to earn $100 income per customer. For promotional reasons the company desires to charge the same price throughout the year. Based on this information, what is the correct price per customer? (round to nearest dollar)       |  |  | | --- | --- | | A. | $450 |  |  |  | | --- | --- | | B. | $500 |  |  |  | | --- | --- | | **C.** | $650 |  |  |  | | --- | --- | | D. | $700 | |

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| Answer: C  Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Total costs for the year = Variable costs + Fixed costs  Total costs for the year = [(500 customers + 1,500 customers) x $500 per customer] + $100,000 = 2,000 customers x $500 per customer + $100,000 = $1,100,000  Average costs per customer = $1,100,000 ÷ 2,000 customers = $550  Net income per customer = Price per customer – Average cost per customer  $100 per customer = Price per customer – $550 per customer  Price per customer = $100 per customer + $550 per customer = $650 per customer |

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| 54. | Select the **incorrect** statement regarding the use of average unit costs.      |  |  | | --- | --- | | A. | Average costs should be calculated for a sufficiently long time period to capture seasonal fluctuations in costs. |  |  |  | | --- | --- | | B. | Average costs are often more relevant for decision making than are actual costs. |  |  |  | | --- | --- | | C. | Average cost information can help managers evaluate performance of the company or departments in the company. |  |  |  | | --- | --- | | **D.** | Cost averaging should be used only for fixed costs, and not for variable costs. | |

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| Answer: D  Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 55. | The following information is given regarding driving lessons provided by Arrive Alive Company over several spans of time:    Select the **incorrect** statement from the following.      |  |  | | --- | --- | | A. | The average cost per lesson over the five-year period was $9.24. |  |  |  | | --- | --- | | B. | Based on the most current information, the cost per lesson was $12.00. |  |  |  | | --- | --- | | **C.** | The average cost based on the total five-year period is probably the most appropriate cost for pricing purposes. |  |  |  | | --- | --- | | D. | The selection of the most appropriate time span for calculating the average cost often requires considerable judgment. | |

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| Answer: C  Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Average costs for 5-year period = $508,000 ÷ 55,000 lessons = $9.24  Average costs for today = $600 ÷ 50 lessons = $12.00  Since the demand for driving lessons may vary from day-to-day, significant differences in the cost per driving lesson may occur when calculated on a daily basis. A cost average approach averages costs over a longer span of time, such as a year. Distortions can occur when the time period, such as a 5-year period, is too long; if older costs are mixed with newer costs, the average does not represent current conditions. |

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| 56. | A cost that contains both fixed and variable elements is referred to as a:      |  |  | | --- | --- | | **A.** | mixed cost. |  |  |  | | --- | --- | | B. | hybrid cost. |  |  |  | | --- | --- | | C. | relevant cost. |  |  |  | | --- | --- | | D. | nonvariable cost. | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: Mixed Costs (Semivariable Costs)  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 57. | Which of the following costs typically include both fixed and variable components?      |  |  | | --- | --- | | A. | Direct materials |  |  |  | | --- | --- | | B. | Direct labor |  |  |  | | --- | --- | | **C.** | Factory overhead |  |  |  | | --- | --- | | D. | None of these | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: Mixed Costs (Semivariable Costs)  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 58. | Southern Food Service operates six restaurants in the Atlanta area. The company pays rent of $20,000 per year for each shop. The managers of each shop are paid a salary of $4,200 per month and all other employees are paid on an hourly basis. Relative to the number of hours worked, total compensation cost for a particular shop is which kind of cost?      |  |  | | --- | --- | | **A.** | Mixed cost |  |  |  | | --- | --- | | B. | Fixed cost |  |  |  | | --- | --- | | C. | Variable cost |  |  |  | | --- | --- | | D. | None of these | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: Mixed Costs (Semivariable Costs)  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: The total compensation cost is comprised of the cost of the manager salaries, which is a fixed monthly cost, and the cost of the other employees, which is a variable cost based on the hours worked. A cost that contains both fixed and variable elements is referred to as a mixed cost. |

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| 59. | Production during the current year for California Manufacturing, a producer of high security bank vaults, was at its highest point in the month of June when 80 units were produced at a total cost of $800,000. The lowest point in production was in January when only 20 units were produced at a cost of $440,000. The company is preparing a budget for the current year and needs to project expected fixed cost for the budget year. Using the high-low method, the projected amount of fixed cost per month is:       |  |  | | --- | --- | | A. | $120,000 |  |  |  | | --- | --- | | **B.** | $320,000 |  |  |  | | --- | --- | | C. | $480,000 |  |  |  | | --- | --- | | D. | $360,000 | |

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| Answer: B  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Variable cost per unit = Change in costs ÷ Change in activity  Variable cost per unit = ($800,000 – $440,000) ÷ (80 units – 20 units) = $6,000 per unit  Total cost = Variable cost + Fixed cost  Fixed cost = Total cost – Variable cost  Fixed cost = $800,000 – (80 units x $6,000 per unit) = $320,000 |

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|  | Use the following information to answer question 60 through 63.  The following income statements are provided for Li Company's last two years of operation: |

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| 60. | Assuming that cost behavior did not change over the two-year period, what is the amount of the company's variable cost of goods sold per unit?      |  |  | | --- | --- | | A. | $12.00 per unit |  |  |  | | --- | --- | | **B.** | $16.00 per unit |  |  |  | | --- | --- | | C. | 22.00 per unit |  |  |  | | --- | --- | | D. | none of these | |

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| Answer: B  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Variable cost per unit = Change in costs ÷ Change in activity  Variable cost per unit = ($68,000 – $60,000) ÷ (3,500 units – 3,000 units) = $16.00 per unit |

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| 61. | Assuming that cost behavior did not change over the two-year period, what is the annual amount of the company's fixed manufacturing overhead?      |  |  | | --- | --- | | **A.** | $12,000 |  |  |  | | --- | --- | | B. | $24,000 |  |  |  | | --- | --- | | C. | $26,000 |  |  |  | | --- | --- | | D. | none of these | |

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| Answer: A  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Variable cost per unit = Change in costs ÷ Change in activity  Variable cost per unit = ($68,000 – $60,000) ÷ (3,500 units – 3,000 units) = $16.00 per unit  Total cost = Variable cost + Fixed cost  Fixed cost = Total cost – Variable cost  Fixed cost = $68,000 – (3,500 units x $16.00 per unit) = $12,000 |

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| 62. | Assuming that cost behavior did not change over the two-year period, what is the company's annual fixed general, selling, and administrative cost?      |  |  | | --- | --- | | A. | $6,500 |  |  |  | | --- | --- | | **B.** | $6,000 |  |  |  | | --- | --- | | C. | $3,000 |  |  |  | | --- | --- | | D. | $2,500 | |

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| Answer: B  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Variable cost per unit = Change in costs ÷ Change in activity  Variable cost per unit = ($13,000 – $12,000) ÷ (3,500 units – 3,000 units) = $2.00 per unit  Total cost = Variable cost + Fixed cost  Fixed cost = Total cost – Variable cost  Fixed cost = $13,000 – (3,500 units x $2.00 per unit) = $6,000 |

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| 63. | Assuming that cost behavior did not change over the two-year period, what is Li Company's contribution margin in Year 2?      |  |  | | --- | --- | | **A.** | $33,000 |  |  |  | | --- | --- | | B. | $32,000 |  |  |  | | --- | --- | | C. | $39,000 |  |  |  | | --- | --- | | D. | $69,000 | |

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| Answer: A  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: An Income Statement under the Contribution Margin Approach  Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Variable cost per unit = Change in costs ÷ Change in activity  Cost of goods sold:  Variable cost per unit = ($68,000 – $60,000) ÷ (3,500 units – 3,000 units) = $16.00 per unit  Selling and administrative expense:  Variable cost per unit = ($13,000 – $12,000) ÷ (3,500 units – 3,000 units) = $2.00 per unit  Contribution margin in Year 2:  Contribution margin = Sales revenue – Variable costs  Contribution margin = $87,000 – [3,000 units x ($16.00 per unit + $2.00 per unit)]= $33,000 |

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| 64. | The results below represent what form of cost behavior?        |  |  | | --- | --- | | A. | Fixed Cost |  |  |  | | --- | --- | | **B.** | Variable Cost |  |  |  | | --- | --- | | C. | Mixed Cost |  |  |  | | --- | --- | | D. | Opportunity Cost | |

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| Answer:  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback:  Cost per unit in Year 1: $11,250 ÷ 4,500 units = $2.50  Cost per unit in Year 2: $12,000 ÷ 4,800 units = $2.50  When the volume increases, the cost per unit of stayed the same; as such, the cost is a variable cost. |

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| 65. | Based on the following operating data, the operating leverage is:          |  |  | | --- | --- | | A. | 0.18 |  |  |  | | --- | --- | | **B.** | 5.50 |  |  |  | | --- | --- | | C. | 1.22 |  |  |  | | --- | --- | | D. | 12.5 | |

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| Answer: B  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Magnitude of operating leverage = $220,000 ÷ $40,000 = 5.5 |

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|  | Use the following information to answer questions 66 and 67.  The following information is for Gable, Inc. and Harlowe, Inc. for the recent year. |

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| 66. | Based on the above data, which company has a higher operating leverage?       |  |  | | --- | --- | | A. | Gable, Inc. |  |  |  | | --- | --- | | **B.** | Harlowe, Inc. |  |  |  | | --- | --- | | C. | Operating leverage is the same for both companies |  |  |  | | --- | --- | | D. | Cannot be determined | |

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| Answer: B  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Gable: Magnitude of operating leverage = $400,000 ÷ $200,000 = 2.0  Harlowe: Magnitude of operating leverage = $600,000 ÷ $200,000 = 3.0 |

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| 67. | What total amount of net income will Harlowe, Inc. earn if it experiences a 10 percent increase in revenue?      |  |  | | --- | --- | | A. | $180, 000 |  |  |  | | --- | --- | | B. | $80,000 |  |  |  | | --- | --- | | **C.** | $260,000 |  |  |  | | --- | --- | | D. | $20,000 | |

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| Answer: C  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Magnitude of operating leverage = $600,000 ÷ $200,000 = 3.0  Increase in net income = Net income + (Net income x Percentage increase in sales x Magnitude of degree of operating leverage)  Increase in net income = $200,000 + ($200,000 x 0.10 x 3.0) = $260,000 |

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| 68. | Based on the above information, select the correct statement.       |  |  | | --- | --- | | A. | Cost of goods sold is a mixed cost. |  |  |  | | --- | --- | | **B.** | Salary cost is a mixed cost. |  |  |  | | --- | --- | | C. | Depreciation cost is a variable cost. |  |  |  | | --- | --- | | D. | If the company sells 20 units for $540 each, it will incur a loss of $200. | |

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| Answer: B  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback:  As shown below, the salary cost is a mixed cost since it differs in total and also differs on a per unit basis.  $6,000 ÷ 20 = $300.00  $7,800 ÷ 40 = $195.00  $9,200 ÷ 60 = $153.33 |

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| 69. | Select the **incorrect** statement regarding fixed and variable costs.      |  |  | | --- | --- | | **A.** | Fixed cost per unit remains constant as the number of units increases. |  |  |  | | --- | --- | | B. | Total variable cost is represented by a straight line sloping upward from the origin when total variable cost is graphed versus number of units. |  |  |  | | --- | --- | | C. | The concept of relevant range applies to both fixed costs and variable costs. |  |  |  | | --- | --- | | D. | The terms “fixed” and “variable” refer to the behavior of total cost. | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs.  Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 70. | The following information is for Companies M and N for the most recent year:      Based on this information, which of the following statements is **incorrect?**       |  |  | | --- | --- | | **A.** | M's magnitude of operating leverage was lower than N's. |  |  |  | | --- | --- | | B. | N would suffer more than M from an equal drop in sales revenue. |  |  |  | | --- | --- | | C. | N's cost structure carries greater risk and greater potential for profit. |  |  |  | | --- | --- | | D. | If N’s sales increased by 20%, its net income would increase by 40%. | |

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| Answer: A  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability.  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Risk and Reward Assessment  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Company M: Magnitude of operating leverage = ($500,000 – $300,000) ÷ $50,000 = 4.0  Company N: Magnitude of operating leverage = ($500,000 – $200,000) ÷ $150,000 = 2.0.  Given the above, N’s magnitude of operating leverage is lower than M’s.  Since it has relatively higher fixed costs, Company N would suffer more than M from an equal drop in sales revenue.  Shifting the cost structure from fixed (Company N) to variable (Company M) reduces not only the level of risk but also the potential for profits.  If N’s sales increased by 20%, it’s net income would increase by 40% (= 20% x 2.0) |

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| 71. | Carson Corporation's sales increase from $500,000 to $600,000 in the current year. What is the percentage change in sales?       |  |  | | --- | --- | | **A.** | 20% |  |  |  | | --- | --- | | B. | 25% |  |  |  | | --- | --- | | C. | 22% |  |  |  | | --- | --- | | D. | 16.7% | |

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| Answer: A  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Calculating Percentage Change  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  % change = (Alternative measure – Base measure) ÷ Base measure  % change = ($600,000 – $500,000) ÷ $500,000 = 20% |

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| 72. | Frazier Company sells women's ski jackets. The average sales price is $275 and the variable cost per jacket is $175. Fixed Costs are $1,350,000. If Frazier sells 15,000 jackets, the contribution margin will be:       |  |  | | --- | --- | | A. | $2,775,000 |  |  |  | | --- | --- | | **B.** | $1,500,000 |  |  |  | | --- | --- | | C. | $2,250,000 |  |  |  | | --- | --- | | D. | $150,000 | |

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| Answer: B  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Contribution margin = Revenues – Variable expenses  Contribution margin = ($275 x 15,000 jackets) – ($175 x 15,000 jackets) = $1,500,000 |

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| 73. | Mark Company, Inc. sells electronics. The company generated sales of $45,000. Contribution margin is $20,000 and net income is $4,000. Based on this information, the magnitude of operating leverage is:      |  |  | | --- | --- | | A. | 2.25 |  |  |  | | --- | --- | | B. | 11.25 |  |  |  | | --- | --- | | **C.** | 5.00 |  |  |  | | --- | --- | | D. | 6.25 | |

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| Answer: C  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Magnitude of operating leverage = Contribution margin ÷ Net income  Magnitude of operating leverage = $20,000 ÷ $4,000 = 5.0 |

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| 74. | Which characteristic is true of the high-low method, the scattergraph method, and regression analysis?      |  |  | | --- | --- | | A. | All methods will produce the same estimate of variable and fixed costs. |  |  |  | | --- | --- | | **B.** | All methods use historic data to estimate variable and fixed costs. |  |  |  | | --- | --- | | C. | All methods use only two data points in analyzing a mixed cost. |  |  |  | | --- | --- | | D. | None of the above is true. | |

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| Answer: B  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Topic: Regression Method of Cost Estimation  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 75. | Taste of the Town, Inc. operates a gourmet sandwich shop. The company orders bread, cold cuts, and produce several times a week. If the cost of these items remains constant per customer served, the cost is said to be:       |  |  | | --- | --- | | **A.** | Variable |  |  |  | | --- | --- | | B. | Fixed |  |  |  | | --- | --- | | C. | Opportunity |  |  |  | | --- | --- | | D. | Mixed | |

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| Answer: A  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 76. | The following income statement was produced when volume of sales was at 400 units.      If volume reaches 500 units, net income will be:      |  |  | | --- | --- | | A. | $625 |  |  |  | | --- | --- | | B. | $1,800 |  |  |  | | --- | --- | | **C.** | $700 |  |  |  | | --- | --- | | D. | None of the above | |

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| Answer: C  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability.  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Calculating Percentage Change  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  % change = (Alternative measure – Base measure) ÷ Base measure  % change = (500 – 400) ÷ 400 = 25%  Magnitude of operating leverage = Contribution margin ÷ Net income  Magnitude of operating leverage = $800 ÷ $500 = 1.6  Increase in net income = Net income + (Net income x Percentage increase in sales x Magnitude of degree of operating leverage)  Increase in net income = $500 + ($500 x 0.25 x 1.6) = $700 |

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| 77. | All of the following would be considered a fixed cost for a bottled water company **except:**      |  |  | | --- | --- | | A. | Rent on warehouse facility |  |  |  | | --- | --- | | B. | Depreciation on its manufacturing equipment |  |  |  | | --- | --- | | **C**. | Hourly wages for machine operators |  |  |  | | --- | --- | | D. | Property taxes on its factory building | |

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| Answer: C  Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 78. | Assume that the management of Dairy Deli wants to expand operations. To help evaluate the risks involved in opening an additional store, the company president wants to know the amount of fixed cost a new store will likely incur. Management uses the regression method to analyze the company’s mixed costs. In terms of interpreting the results:   |  |  | | --- | --- | | A. | a low R2 statistic suggests that the independent value (units sold) more strongly influences the dependent variable (total cost). |  |  |  | | --- | --- | | B. | the R2 statistic represents the percentage of change in the independent variable (units sold) that is explained by a change in the independent variable (total cost). |  |  |  | | --- | --- | | **C**. | the R2 statistic represents the percentage of change in the dependent variable (total cost) that is explained by a change in the independent variable (units sold). |  |  |  | | --- | --- | | D. | the R2 statistic is not a good measures of reliability. | |

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| Answer: C  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs.  Topic: Regression Method of Cost Estimation  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: The R Square (R2) is the most commonly used measure of reliability. The R2 statistic represents the percentage of change in the dependent variable (total cost) that is explained by a change in the independent variable (units sold). The R2 values vary between zero and 100 percent. Higher R2 values suggest that the independent variable more strongly influences the dependent variable. |

**True / False Questions**

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| 79. | The variable cost per unit increases in direct proportion to the activity base.    Answer: **FALSE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 80. | If managers of a company do not understand the behavior of its costs, they are likely to make poor decisions about the company's operations.    Answer: **TRUE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 81. | For a mixed cost, total cost increases in direct proportion to volume.    Answer: **FALSE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Mixed Costs (Semivariable Costs)  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 82. | The total variable cost increases in direct proportion to volume.    Answer: **TRUE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 83. | If a company had a mixed cost structure, every dollar of revenue after covering the fixed costs would be pure profit.    Answer: **FALSE** |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 84. | As activity increases, the fixed cost per unit increases while the variable cost per unit remains constant.    Answer: **FALSE** |

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| Learning Objective: 02-01 Identify and describe fixed; variable; and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 85. | Risk refers to the possibility that sacrifices may exceed benefits.    Answer: **TRUE** |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Risk and Reward Assessment  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 86. | Operating leverage enables a company to convert small changes in fixed costs into dramatic changes in profitability.    Answer: **FALSE** |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Operating Leverage  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 87. | If a company shifts its cost structure by decreasing fixed costs and increasing variable costs, it will lower both the level of risk and its potential for profits.    Answer: **TRUE** |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Effect of Cost Structure on Profit Stability  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 88. | If revenues are expected to decline, management should attempt to convert its variable costs into fixed costs.    Answer: **FALSE** |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 89. | Companies with low operating leverage will experience lower profits when sales increase than will companies with higher operating leverage.    Answer: **TRUE** |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Operating Leverage  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 90. | A company with a completely fixed cost structure will have operating leverage of 1.    Answer: **FALSE** |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Operating Leverage  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: The sales revenue of a company with a completely fixed cost structure will equal its contribution margin. Since the magnitude of operating leverage equals the contribution margin divided by net income, the magnitude of the degree of operating leverage of a company with a completely fixed cost structure cannot be determined without additional information. |

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| 91. | Contribution margin represents the amount available to cover fixed expenses and then provide company profits.    Answer: **TRUE** |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 92. | No contribution margin is provided by selling one unit of a product at a price of $35 if variable production costs are $20, variable general and administrative costs are $5, and fixed costs are $10 per unit.    Answer: **FALSE** |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard  Feedback:  Contribution margin = Revenues – Variable expenses  Contribution margin = $35 – ($20 + $5) = $10 |

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| 93. | The contribution margin format income statement is **not** widely used for external financial reporting, but is allowed by GAAP.     Answer: **FALSE** |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 94. | The contribution margin format income statement classifies costs according to their behavior patterns.     Answer: **TRUE** |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 95. | Contribution margin can only be determined if costs are separated into product and period costs.    Answer: **FALSE** |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Feedback: Contribution margin can only be determined if costs are separated into fixed and variable costs. |

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| 96. | If a profitable company has both fixed and variable costs, its operating leverage will always be greater than 1.    Answer: **TRUE** |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: Recall that magnitude of operating leverage equals contribution margin divided by net income. |

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| 97. | The higher the magnitude of a company's operating leverage, the more benefit the company will receive from a given percentage increase in revenue.    Answer: **TRUE** |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 98. | The higher the magnitude of a company's operating leverage, the smaller the decrease in profit for a given percentage decrease in revenue.     Answer: **FALSE** |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 99. | A low magnitude of operating leverage is best for most companies.    Answer: **FALSE** |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium  Feedback: Operating leverage itself is neither good nor bad; it represents a strategy that can work to a company’s advantage or disadvantage, depending on how it is used. |

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| 100. | The BRC Company is considering the introduction of a new line of high end electronics. Because there is considerable uncertainty with regard to the demand for the products, the company would probably be served better by a variable cost structure.    Answer: **TRUE** |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Effect of Cost Structure on Profit Stability  Blooms: Remember  Blooms: Understand  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy  Difficulty: 2 Medium  Feedback: A manager who expects revenues to increase should use a fixed cost structure. On the other hand, if future sales growth is uncertain or if the manager believes revenue is likely to decline, a variable cost structure makes more sense. |

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| 101. | Descriptions of cost behavior as fixed or variable pertain to a particular range of activity.    Answer: **TRUE** |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Context-Sensitive Definitions of Fixed and Variable  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 102. | Variable costs will become fixed outside the relevant range.     Answer: **FALSE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: The Relevant Range  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 103. | Within the relevant range, the fixed cost per unit can be expected to decrease with increases in volume.    Answer: **TRUE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: The Relevant Range  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 104. | The activity base selected determines whether a cost behaves as a variable cost or fixed cost.    Answer: **TRUE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Context-Sensitive Definitions of Fixed and Variable  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 105. | A cost that is considered variable for one activity base may be considered fixed for a different activity base.    Answer: **TRUE** |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Context-Sensitive Definitions of Fixed and Variable  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 106. | One reason for computing the average cost for a product rather than the actual cost is that average cost is easier to compute.    Answer: **TRUE** |

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| Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 107. | One way that computing an average cost per unit facilitates management decision making is that managers are provided more timely and more relevant cost information.    Answer: **TRUE** |

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| Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 108. | Potential problems associated with cost averaging can be reduced by averaging the cost over a shorter span of time.    Answer: **FALSE** |

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| Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 109. | A cost that is part selling cost and part manufacturing cost is referred to as a mixed cost.    Answer: **FALSE** |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.Topic: Mixed Costs (Semivariable Costs)  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 110. | When selecting the high and low observations under the high-low method of analyzing mixed costs, the selection should be based on the dependent variable (cost).    Answer: **FALSE** |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Topic: Regression Method of Cost Estimation  Topic: Multiple Regression Analysis  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 111. | When using least-squares regression to determine variable and fixed costs, the r-square refers to the degree to which the change in the dependent variable can be explained by a change in the independent variable.    Answer: **TRUE** |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Regression Method of Cost Estimation  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 112. | An advantage of using the scattergraph method over the high-low method is that all points of data are used in determining the cost line.    Answer: **TRUE** |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 113. | Multiple regression analysis should be performed when a single independent variable influences multiple dependent variables.    Answer: **FALSE** |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Multiple Regression Analysis  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 114. | In regression analysis, an r-square value of one indicates that there is a perfect fit between the independent and dependent variables.    Answer: **TRUE** |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Regression Method of Cost Estimation  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 115. | A disadvantage of the high-low method is that the high point and low point may not be representative of the total data set available.    Answer: **TRUE** |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs.  Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Remember  Blooms: Understand  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

**Essay Questions**

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| 116. | Blackstock Company manufactures digital cameras. Indicate whether the cost is a product cost or period cost AND whether its cost behavior is fixed, variable, or mixed by placing X's in the appropriate boxes. As an example, commissions paid to sales staff would be classified as a period cost and variable.       Answer: |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Topic: Mixed Costs (Semivariable Costs)  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 117. | How does total fixed cost behave when volume increases?     Answer:  Answers will vary  Total fixed cost is constant (does not change) when volume increases. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 118. | How does fixed cost per unit behave when volume decreases?     Answer:  Answers will vary  Fixed cost per unit increases when volume decreases because the same amount of fixed costs is spread over (allocated to) fewer units. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 119. | How does total variable cost respond when volume increases?     Answer:  Answers will vary  Total variable cost would increase in direct proportion to volume. A 5% increase in volume would mean a 5% increase in total variable costs. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 120. | How does variable cost per unit behave when volume decreases?     Answer:  Answers will vary  Variable cost per unit is constant when volume decreases. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Variable Cost Behavior  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 121. | If a company had a pure fixed cost structure, what would be the relationship between a given dollar increase in sales and net income?     Answer:  Answers will vary  With a fixed cost structure, a given dollar increase in sales would result in an equal increase in net income. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability.  Topic: Effect of Cost Structure on Profit Stability  Blooms: Understand  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 122. | What are mixed or semivariable costs? Give an example of a mixed cost.     Answer:  Answers will vary  A mixed or semivariable cost has a fixed component and a variable component. Examples would be utilities or compensation of sales staff. For example, if sales personnel receive a salary and a commission, their compensation has a variable part (the commission, which varies with sales) and a fixed part (the salary). |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Mixed Costs (Semivariable Costs)  Blooms: Understand  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 123. | What is operating leverage, and how does a company achieve operating leverage?     Answer:  Answers will vary  Operating leverage exists when a company achieves a disproportionate change in profit from a small increase in sales. For example, a 5% increase in sales could result in a 25 or 50% increase in profit. A company achieves operating leverage through having fixed costs in its cost structure. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Operating Leverage  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 124. | What is meant by the phrase, "cost structure?"     Answer:  Answers will vary  "Cost structure" refers to the amount of fixed cost and variable cost a company has. For example, a company's managers may be able to make a change that would increase fixed costs and decrease variable costs. Such a change would increase the company's operating leverage. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Effect of Cost Structure on Profit Stability  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 125. | How is operating leverage related to cost structure?     Answer:  Answers will vary  Cost structure refers to the proportion of a company's fixed and variable costs. A company that has a more fixed cost structure will have high operating leverage. That means that for a given change in sales volume, it will have a greater change in net income than a company with a more variable cost structure. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Topic: Effect of Cost Structure on Profit Stability  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 126. | Describe the format of an income statement prepared using the contribution margin approach.     Answer:  Answers will vary  An income statement that uses the contribution margin approach begins with revenue. Variable costs are subtracted, resulting in contribution margin. The amount of fixed costs is then subtracted from contribution margin to calculate net income. |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 127. | For Marvin Company, the magnitude of operating leverage was 3.5 during the current year. Demonstrate what this magnitude of operating leverage would mean for the company's profitability by creating an example.     Answer:  Answers will vary  With magnitude of operating leverage of 3.5, a given percentage increase or decrease in revenue would result in a change in profits that is 3.5 times as great. For example, a 10% decrease in sales revenue would result in a 35% decrease in profit. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Operating Leverage  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Understand  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 128. | If a company had a pure variable cost structure, what would be the relationship between contribution margin and net income, and what would be the magnitude of operating leverage?     Answer:  Answers will vary  Contribution margin and net income would be equal. In other words, every dollar of contribution margin would be a dollar of profit. Magnitude of operating leverage would be 1.0 (which really means the absence of operating leverage) because the company would have no fixed costs. Net income would equal contribution margin. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Operating Leverage  Topic: Effect of Cost Structure on Profit Stability  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Understand  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 129. | What is meant by the phrase, "relevant range?" How does the concept of relevant range affect fixed costs?     Answer:  Answers will vary  The relevant range is a range of activity over which definitions of fixed and variable costs are valid. For a fixed cost, the relevant range is the range of activity over which the cost does not change. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: The Relevant Range  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 130. | Assume that wages expense is a variable cost and that the relevant range is 10,000 to 15,000 labor hours. Within that range, the cost is $15 per hour. What can you assume about wages expense outside this range?     Answer:  Answers will vary  Outside the relevant range, the cost may be more or less than $15 per hour. A cost relationship or behavior that applies within a specified range may not apply outside that range. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Topic: Variable Cost Behavior  Topic: The Relevant Range  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 131. | What is an activity base, and how does the activity base relate to a variable cost?     Answer:  Answers will vary  An activity base is a measure or definition of activity. Examples include number of stores, sales, number of employees, etc. A variable cost varies in direct proportion to the activity base. A cost that varies with one activity base may not vary with a different activity base. |

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| Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Variable Cost Behavior  Topic: Context-Sensitive Definitions of Fixed and Variable  Blooms: Remember  Blooms: Understand  Blooms: Apply  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 132. | Why would a company often calculate and use average costs of its products and services rather than actual costs?     Answer:  Answers will vary  When a company provides many products or services that are similar, calculating the actual cost of each might be difficult and expensive and of little benefit. Average costs may be used in setting the price to charge customers and in evaluating performance and making other managerial decisions. |

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| Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit. Topic: Cost Averaging  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 133. | Why would a company need to estimate the fixed and variable components of a mixed cost?     Answer:  Answers will vary  Mixed costs (semivariable costs) include both fixed and variable components; mixed costs should be broken down into these components for decision-making. For example, if sales are expected to increase by 5%, managers will want to be able to estimate the increase in total costs.Analysis of mixed costs is required for budgeting, evaluating performance, deciding whether to expand operations, and other important decisions. |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Use of Estimates in Real-World Problems  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 134. | What is the high-low method used for?     Answer:  Answers will vary  The high-low method is used to estimate the fixed and variable parts of a mixed cost. |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 135. | Describe the steps in the high-low method.     Answer:  Answers will vary  The steps in the high-low method are: 1. Assemble cost and volume information for a given period of time (several months, perhaps) 2. Select the high volume point and the low volume point in the data set 3. Determine the estimated variable cost per unit. Estimated variable cost = difference in total cost divided by difference in volume 4. Use the estimated variable cost per unit and either the high point or the low point to estimate the fixed cost |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 136. | What is a primary disadvantage of the high-low method of analyzing a mixed cost?     Answer:  Answers will vary  The high-low method uses just two data points, the high point and the low point, out of a set of several. If either point is not representative of the rest of the data, the results from the method (the variable cost and fixed cost) will be inaccurate. |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 137. | Compare least squares regression and the scattergraph method of analyzing mixed costs.     Answer:  Answers will vary  Both methods involve fitting a line to a set of cost and volume data points. Both identify the fixed and variable components of the mixed cost: the fixed component is the y-intercept for the line, and the variable component is the line's slope. The scattergraph method involves subjectivity: the line fitted to the data is the line that "looks best" in the judgment of the cost analyst. The least squares approach is more objective: it is a statistical method of fitting the best line to the data points. The least squares method also generates some statistics that can be used to determine how well the line actually does fit the data. |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Regression Method of Cost Estimation  Topic: Multiple Regression Analysis  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 138. | What advantages does the regression method of cost estimation offer, compared to the high-low and scattergraph methods of estimating mixed costs?     Answer:  Answers will vary  The regression method is more accurate than either the high-low method or the scattergraph method. It uses all the data points in the data set and fits the best straight line to these points. It is an objective method of estimating costs. In comparison, the scattergraph approach is subjective, requiring the analyst to fit to the data the line that he/she judges to be best. Also, with least-squares regression, statistics are generated that enable assessment of the quality of the estimates. |

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| Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: High-Low Method of Estimating Fixed and Variable Costs  Topic: Regression Method of Cost Estimation  Topic: Multiple Regression Analysis  Blooms: Remember  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 139. | Assume that management uses the regression method to separate a mixed cost into its fixed and variable components. Briefly describe the significance of the R Square (R2) when interpreting the reliability of cost estimates that result.  Answer:  Answers will vary  The R Square (R2) is the most commonly used measure of reliability. The R2 statistic represents the percentage of change in the dependent variable (total cost) that is explained by a change in the independent variable that was chosen. The R2 values vary between zero and 100 percent. Higher R2 values suggest that the independent variable more strongly influences the dependent variable. |

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| Answer: C  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs.  Topic: Regression Method of Cost Estimation  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

**Matching Questions**

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| 140. | Select the term from the list provided that best matches each of the following descriptions. The first is done for you.         Answer: |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability.  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Topic: Mixed Costs (Semivariable Costs)  Topic: Context-Sensitive Definitions of Fixed and Variable  Topic: Operating Leverage  Topic: Effect of Cost Structure on Profit Stability  Topic: An Income Statement under the Contribution Margin Approach  Topic: High-Low Method of Estimating Fixed and Variable Costs  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Blooms: Remember  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 1 Easy |

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| 141. | Costs that might be incurred by service, merchandising, and manufacturing companies are described below:      |  |  | | --- | --- | | Sales commissions paid to sales associates in a department store | **V** | | Shipping cost for Amazon | **V** | | Electricity cost to heat and light a law firm | **F** | | Rent on a storeroom used by Turf Pros to store lawn equipment | **F** | | Salary of a supervisor in a Best Buy distribution center | **F** | | Wages paid to production workers in a General Motors plant | **V** | | Insurance on a Hershey factory | **F** | | Fuel costs for Southwest Airlines | **V** | | Depreciation of office equipment by Microsoft Corporation | **F** | | Dishwashing in an Olive Garden restaurant | **V** | | Salary of the CEO of Microsoft | **F** | | Lubricants used to maintain machinery in a textile factory | **V** | | Cost of metal cans used in a dog food factory | **V** | | Cost of pizza boxes for Domino’s Pizza | **V** | | Material handling costs for Frito Lay | **V** |   Required: Classify each cost as variable (V) or fixed (F) with respect to volume or level of activity. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

**Problems**

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| 142. | Complete the following table to indicate your understanding of fixed and variable cost behavior by inserting one of the following responses in each box: "Remain constant," "Increase," or "Decrease."        Answer: |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Understand  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 2 Medium |

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| 143. | Sandford Company manufactures one product. Its variable manufacturing cost is $16 per unit; total fixed manufacturing cost is $600,000.  Required:  1.) Calculate Sandford's total manufacturing costs if it produces 10,000 units. 2.) What would be the total cost per unit (including both fixed and variable costs) assuming that Sandford produces 10,000 units? 3.) Calculate Sandford's total manufacturing costs if it produces 20,000 units. 4.) What would be the total cost per unit assuming that Sandford produces 20,000 units? 5.) Compare your answers from parts 2 and 4. If the cost per unit is different at 10,000 units than at 20,000 units, explain why.     Answer:  1.) Total manufacturing costs = ($16 × 10,000) + $600,000 = $760,000 2.) Cost per unit = $760,000 ÷ 10,000 units = $76 per unit 3.) Total manufacturing costs = ($16 × 20,000) + $600,000 = $920,000 4.) Cost per unit = $920,000 ÷ 20,000 units = $46 per unit 5.) At 10,000 units, the cost per unit is $76; at 20,000 units, it is $46. The difference is caused by fixed costs: the fixed cost per unit decreases as the number of units increases. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 144. | Phoenix Corporation manufactures smartphones, generally selling from 200,000 to 300,000 units per year. The following cost data apply to the activity levels shown:     Required:  1.) Complete the preceding table by filling the missing amounts for 250,000 and 300,000 units. 2.) Assume that Phoenix actually makes 280,000 units. What would be the total costs and the cost per unit at this level of activity? (Round the cost per unit to two decimal points) 3.) If Phoenix sells each unit for $220, what is Phoenix's magnitude of operating leverage at sales of 280,000 units? (Round to two decimal points.)    Answer:  1.)    2.) Total cost = $15,000,000+(280,000×$120) = $48,600,000 Cost per unit = $48,600,000 ÷ 280,000 units = $173.57 3.) Sales = $220×280,000 = $61,600,000 Contribution margin = $61,600,000-($120×280,000) = $28,000,000 Net income = $28,000,000-$15,000,000 = $13,000,000 Operating leverage = $28,000,000 ÷ $13,000,000 = 2.15 |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior. Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Learning Objective: 02-04 Calculate the magnitude of operating leverage.  Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Topic: An Income Statement under the Contribution Margin Approach  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 145. | Grant Company and Lee Company compete in the same market. The following budgeted income statements illustrate their cost structures.      Required:  (a) If Grant Company lowers its price to $135, it will lure 80 customers away from Lee Company. Prepare Grant's income statement based on 280 customers. (b) If Lee Company lowers its price to $135 (assuming that Grant Company is still charging $150 per customer), Lee would lure 80 customers away from Grant. Prepare Lee's income statement based on 280 customers. (c) Which of the companies would benefit more from lowering its sales price to attract more customers, and why?     Answer:  (a) Grant Company income statement    (b) Lee Company income statement    (c) Grant Company would benefit more from lowering its sales price to attract new customers; its income would increase by $5,400, while in the same circumstances, Lee's income would increase by just $600. The difference is caused by the companies' cost structures: Grant has a cost structure with more fixed costs, and Lee has higher variable costs. Therefore, the increase in sales (at a lower selling price) causes more of an increase in Grant's contribution margin and net income. |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: An Income Statement under the Contribution Margin Approach  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 146. | Income statements for three companies are provided below:      Required:  (a) Prepare new income statements for the firms assuming each sells one additional unit (i.e. each firm sells 21 units) (b) Briefly describe the effect of cost structure on profitability.     Answer:  Answers will vary  (a) Income statements    (b) Companies with high operating leverage experience higher profitability when sales increase. The more fixed costs, the higher the fluctuation in net income. Company C has the highest operating leverage, and it experienced the greatest increase in net income with the increase in sales volume. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: Risk and Reward Assessment  Topic: Effect of Cost Structure on Profit Stability  Topic: An Income Statement under the Contribution Margin Approach  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 147. | Former NFL coach Joe Gibbs is highly sought after as a guest speaker. His fee can run as high as $150,000 for a single two-hour appearance. Recently, he was asked to speak at a seminar offered by the National Sports in Education Foundation (NSEF). Due to the charitable nature of the organization, Mr. Gibbs offered to speak for $100,000. NSEF planned to invite 350 guests who would each make a $500 contribution to the organization. The Foundation's executive director was concerned about committing so much of the organization's cash to this one event. So instead of the $100,000 fee she countered with an offer to pay Mr. Gibbs 50% of the revenue received from the seminar and no other payments.  Required: (a) Classify the two offers in terms of cost behavior (fixed vs. variable). Scenario A, NSEF pays Gibbs a $100,000 fee: Scenario B, NSEF pays Gibbs 50% of revenue: (b) Compute the budgeted income (assuming there are no other expenses) under each of the following scenarios: 1) NSEF agrees to pay the $100,000 fee, and 350 guests actually attend the seminar; and 2) NSEF pays Mr. Gibbs 50% of revenue, and 350 guests attend the seminar. (c) For each scenario ($100,000 fee vs. 50% of revenue), compute the percentage increase in profit that would result if the Foundation is able to increase attendance by 20 percent over the original plan (to a total of 420). (Round the percentages to the nearest whole numbers.) (d) For each scenario, compute NSEF's cost per contributor if 350 attend and if 420 contributors attend. (Round the cost per contributor to two decimal points.) (e) Summarize the impact on risk and profits of shifting the cost structure from fixed to variable costs.     Answer:  (a) Cost behavior of the two offers: $100,000 fee: Fixed 50% of revenue: Variable (b) Profit computations:    (c) Percentage increase in profit:    ($110,000 $75,000) ÷ $75,000 = 47% ($105,000 – $87,500) ÷ $87,500 = 20% (d) Cost per Guest: **350 attendees** Scenario A, $75,000 ÷ 350 = $214.29 Scenario B, $87,500 ÷ 350 = $250.00 **420 attendees** Scenario A, $110,000 ÷ 420 = $261.90 Scenario B, $105,000 ÷ 420 = $250.00 (e) Shifting the cost structure from fixed to variable reduces the level of risk. For example, if no one attends, Mr. Gibbs is paid nothing. However, shifting to variable costs also reduces the potential for profits. For example, a 20 percent increase in attendance results in a 47% increase in profit under the fixed fee scenario but only a 20% increase in profits under the variable cost scenario. |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Topic: Fixed Cost Behavior  Topic: Variable Cost Behavior  Topic: Calculating Percentage Change  Topic: Risk and Reward Assessment  Topic: Effect of Cost Structure on Profit Stability  Topic: An Income Statement under the Contribution Margin Approach  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 148. | Assume that Microsoft and Sony both plan to introduce a new hand-held video game. Microsoft plans to use a heavily automated production process to produce its product while Sony plans to use a labor-intensive production process. The following revenue and cost relationships are provided:      Required:  (a) Compute the contribution margin per unit for each company. (b) Prepare a contribution income statement for each company assuming each company sells 8,000 units. (c) Compute each firm's net income if the number of units sold increases by 10%. (d) Which firm will have more stable profits when sales change? Why?     Answer:  Answers will vary  (a) Contribution margin per unit:    (b) Contribution income statements:    (c) Increase in NI with a 10% increase in sales volume:    (d) The lower the fixed costs, the more stable will be net income. Because Sony has approximately half the fixed costs of Microsoft, its earnings should be more stable. Note also that Sony's unit contribution margin is considerably less than Microsoft's. As sales rise, Microsoft will gain contribution margin (and thus profit) faster than Sony and, of course, when sales fall will lose contribution margin faster than Sony. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: Risk and Reward Assessment  Topic: Effect of Cost Structure on Profit Stability  Topic: An Income Statement under the Contribution Margin Approach  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 149. | Cannon Company operates a clothing store that reported the following operating results for the current year:     Required: Prepare an income statement for Cannon Company using the contribution margin format.  Answer: |

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| Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Topic: An Income Statement under the Contribution Margin Approach  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 150. | Contribution margin income statements for two competing companies are provided below:     Required:  1) Show each company's cost structure by inserting the percentage of the company's revenue represented by each item on the contribution income statement. 2) Compute each company's magnitude of operating leverage. 3) Using the operating leverage measures computed in requirement 2, determine the increase in each company's net income (percentage and amount) if each company experiences a 10 percent increase in sales. 4) Assume that sales are expected to continue to increase for the foreseeable future, which company probably has more desirable cost structure? Why?     Answer:  Answers will vary  1)  2) Magnitude of operating leverage: Yin Company = $450,000 contribution margin ÷ $45,000 net income = 10 Yang Company = $225,000 contribution margin ÷ $45,000 net income = 5 3) Expected profits when sales increase by 10%: Yin Company: 10%×10 magnitude of operating leverage = 100% If sales increase by 10%, net income should increase to $90,000 Yang Company: 10%×5 magnitude of operating leverage = 50% If sales increase by 10%, net income should increase to $67,500 4) Cost structures: Assuming sales continue to increase, Yin Company will fare better than Yang Company because its contribution margin ratio is higher (60% vs. 30%) and its operating leverage is higher. This means that as sales increase, Yin Company's net income will increase more rapidly than Yang Company's. |

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| Learning Objective: 02-02 Demonstrate the effects of operating leverage on profitability. Learning Objective: 02-03 Prepare an income statement using the contribution margin approach.  Learning Objective: 02-04 Calculate the magnitude of operating leverage. Topic: Risk and Reward Assessment  Topic: Effect of Cost Structure on Profit Stability  Topic: An Income Statement under the Contribution Margin Approach  Topic: Using Fixed Cost to Provide a Competitive Operating Advantage  Topic: Measuring Operating Leverage Using Contribution Margin  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 151. | ETutor is an online tutoring service provider that is particularly popular with college students. The company is interested in estimating the fixed and variable components of its tutoring services costs. The manager believes that these costs are driven by the number of hours of tutoring services provided. The following information was gathered for the last six months of business:     Required:  1) Compute the average tutoring cost per hour for the six-month period. (Round the average tutoring cost per hour to two decimal points.) 2) Use the high-low method to estimate the total fixed cost and the variable cost per hour. (Round the variable cost per hour to two decimal points.) 3) Name one advantage and one disadvantage of the high-low method. 4) Describe the scattergraph method that can be used to analyze mixed costs.     Answer:  Answers will vary  1) Average tutoring cost per hour: $2,083,000 ÷ 178,000 hours = $11.70 per hour $2,083,000 = total tutoring costs for the 6-month period; 178,000 = total number of hours 2) High-Low method of analyzing mixed costs: Total costs = a + bX where a = total fixed costs and b = unit variable cost, and X is the cost driver or independent variable Variable cost per hour (b) = (February costs – June costs) ÷ (February hours – June hours) b = ($420,000 – 252,000) ÷ (41,000 – 18,000) = $7.30 per hour Total fixed costs: If total costs = a + bX then a = $420,000 – ($7.30 × 41,000) = $120,700 (note that answers are affected by rounding) Thus, the cost equation would be defined as total costs = $120,700 + 7.30X, where X is the number of tutoring hours. 3) An advantage of the high-low method is its simplicity of use. The primary disadvantage is its vulnerability to inaccuracy. 4) Under the scattergraph approach data are plotted on a graph and a visual fit line is visually drawn through the points so that the total distance between the data points and the line is minimized. |

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| Learning Objective: 02-05 Select an appropriate time period for calculating the average cost per unit.  Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Cost Averaging  Topic: High-Low Method of Estimating Fixed and Variable Costs  Topic: Scattergraph Method of Estimating Fixed and Variable Costs  Blooms: Remember  Blooms: Understand  Blooms: Apply  AACSB: Communication  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |

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| 152. | Maryland Novelties Company produces and sells souvenir products. Monthly income statements for two activity levels are provided below:      Required:  1) Identify the mixed expense(s). 2) Use the high-low method to separate the mixed costs into variable and fixed components. 3) Prepare a contribution margin income statement at the 20,000-unit level.     Answer:  1) The salaries and commissions cost is mixed. 2) The variable cost per unit: ($25,000 – $20,000) ÷ (30,000 – 20,000) = $0.50 per unit The total fixed cost = $25,000 – (30,000 × $0.50) = $10,000 3) Contribution margin income statement: |

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| Learning Objective: 02-01 Identify and describe fixed, variable, and mixed cost behavior.  Learning Objective: 02-03 Prepare an income statement using the contribution margin approach. Learning Objective: 02-06 Use the high-low method, scattergraphs, and regression analysis to estimate fixed and variable costs. Topic: Mixed Costs (Semivariable Costs)  Topic: An Income Statement under the Contribution Margin Approach  Topic: High-Low Method of Estimating Fixed and Variable Costs  Blooms: Apply  AACSB: Knowledge Application  AICPA: BB Industry  AICPA: FN Decision Making  Difficulty: 3 Hard |