

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) _____ is the excess of sales over the cost of goods sold. 1) _____
- A) The sales mix B) Gross margin
C) Contribution-margin ratio D) Variable-cost ratio

Answer: B

Explanation: A)
B)
C)
D)

- 2) If the proportions in a sales mix change, the: 2) _____
- A) break-even point will remain the same
B) net income will not be altered
C) cost-volume-profit relationship also changes
D) contribution margin per unit increases

Answer: C

Explanation: A)
B)
C)
D)

- 3) As the cost-driver activity level increases within the relevant range: 3) _____
- A) fixed costs per unit increases B) variable costs per unit increases
C) total fixed costs remain unchanged D) total variable costs decrease

Answer: C

Explanation: A)
B)
C)
D)

- 4) When analyzing cost, think of: 4) _____
- A) variable costs on a per-unit basis
B) variable costs as a total
C) variable costs as a total and fixed costs on a per-unit basis
D) fixed costs on a per-unit basis

Answer: A

Explanation: A)
B)
C)
D)

5) Which of the following is not a cost driver of customer services costs?

5) _____

- A) Hours spent servicing products are not a cost driver of customer services costs.
- B) Number of service calls is not a cost driver of customer services costs.
- C) Travel costs are not a cost driver of customer services costs.
- D) All of these answers are correct.

Answer: C

Explanation: A)
B)
C)
D)

6) Assume the following cost information for Zachary Company:

6) _____

Selling price per unit	\$144
Variable costs per unit	\$80
Total fixed costs	\$80,000
Tax rate	40%

_____ must be sold to earn an after - tax net income of \$40,800.

- A) 3,700 units B) 1,594 units C) 1,063 units D) 2,313 units

Answer: D

Explanation: A)
B)
C)
D) $[\$80,000 + (\$40,800 / 0.6)] / (\$144 - \$80) = 2,312.5$ or 2,313 units

7) If the sales price per unit is \$180, variable cost per unit is \$96, targeted net income is \$52,800, and total fixed costs are \$39,600, the number of units that must be sold is:

7) _____

- A) 963 B) 513 C) 1,100 D) 629

Answer: C

Explanation: A)
B)
C) $(\$52,800 + \$39,600) / (\$180 - \$96) = 1,100$ units
D)

8) If the sales price per unit is \$100, the total fixed costs are \$75,000, and the break - even volume in dollar sales is \$250,000, then the variable cost per unit is:

8) _____

- A) \$70 B) \$30 C) \$100 D) \$75,000

Answer: A

Explanation: A) $\$75,000 / [(\$100 - X) / \$100] = \$250,000$
 $\$75,000 / \$250,000 = (\$100 - X) / \100
 $.3 = (\$100 - X) / \100
 $\$30 = (\$100 - X)$
 $\$70 = X$
B)
C)
D)

9) _____ is the relative proportions or combinations of quantities of products that comprise total sales.

- A) Variable-cost ratio
- C) Gross margin

- B) Contribution - margin ratio
- D) Sales mix

Answer: D

Explanation: A)
B)
C)
D)

9) _____

10) Meredith Company wishes to earn after - tax net income of \$18,000. Total fixed costs are \$84,000, and the contribution margin per unit is \$6.00. Meredith's tax rate is 40%. The number of units that must be sold to breakeven is:

- A) 19,000 units
- B) 21,500 units
- C) 14,000 units
- D) 17,000 units

Answer: C

Explanation: A)
B)
C) $\$84,000 / \$6.00 = 14,000$ units
D)

10) _____

11) Muy Mal Company, a producer of salsa, has the following information:

Income tax rate	30%
Selling price per unit	\$5.00
Variable cost per unit	\$3.00
Total fixed costs	\$90,000.00

_____ must be sold to obtain a targeted after - tax income of \$14,000.

- A) 45,000 units
- B) 55,000 units
- C) 52,000 units
- D) 60,000 units

Answer: B

Explanation: A)
B) $[\$90,000 + (\$14,000 / 0.7)] / (\$5.00 - \$3.00) = 55,000$ units
C)
D)

11) _____

12) If targeted sales volume in units is 62,300, total fixed costs are \$31,200, and contribution margin per unit is \$1.20, then the targeted net income is:

- A) \$43,560
- B) \$74,760
- C) \$31,200
- D) \$37,440

Answer: A

Explanation: A) $(\$31,200 + X) / \$1.20 = 62,300$ and $X = \$43,560$
B)
C)
D)

12) _____

- 13) If fixed expenses were the same and contribution margin per unit was cut in half, then the break-even point would: 13) _____
- A) be the same
B) be undeterminable
C) double
D) be cut in half
- Answer: C
Explanation: A)
B)
C)
D)
- 14) Which value chain function would include the cost of computer-aided design equipment and cost to develop the prototype of a product? 14) _____
- A) The distribution function would include these costs.
B) The production function would include these costs.
C) The marketing function would include these costs.
D) The design of product, services, and processes function would include these costs.
- Answer: D
Explanation: A)
B)
C)
D)
- 15) If the contribution-margin ratio is 0.30, targeted net income is \$76,800, and targeted sales volume in dollars is \$480,000, then total fixed costs are: 15) _____
- A) \$44,160
B) \$144,000
C) \$67,200
D) \$23,000
- Answer: C
Explanation: A)
B)
C) $(X + \$76,800) / .30 = \$480,000$ and $X = \$67,200$
D)
- 16) Which of the following would be a good cost driver for salaries of product and supervisory salaries? 16) _____
- A) Number of hours worked is a good cost driver for salaries of product and supervisory salaries.
B) Number of customers served is a good cost driver for salaries of product and supervisory salaries.
C) Number of department transactions is a good cost driver for salaries of product and supervisory salaries.
D) Number of people supervised is a good cost driver for salaries of product and supervisory salaries.
- Answer: D
Explanation: A)
B)
C)
D)

17) An increase in total variable cost usually indicates:

17) _____

- A) variable costs per unit is increasing
- B) the cost-driver activity level is increasing
- C) variable costs per unit is decreasing
- D) the cost-driver activity level is decreasing

Answer: B

Explanation: A)
B)
C)
D)

18) _____ is not shown in the cost-volume-profit graph.

18) _____

- A) Sales volume in units
- B) The break-even point
- C) The fixed cost per unit
- D) The profit or loss at any rate of activity

Answer: C

Explanation: A)
B)
C)
D)

19) Squeeze Me Company produces Beanie Babies. Each doll sells for \$20.00. Variable costs per unit total \$14.00, of which \$6.25 is for direct materials and \$5.25 is for direct labor. If total fixed costs are \$435,000, then the break-even point is:

19) _____

- A) 72,500 dolls
- B) 51,176 dolls
- C) 31,071 dolls
- D) 21,750 dolls

Answer: A

Explanation: A) $\$435,000 / (\$20 - \$14) = 72,500$ dolls
B)
C)
D)

20) If total fixed costs are \$84,000, contribution margin per unit is \$6.00, and targeted after-tax net income is \$18,000 with a 40% tax rate, then the number of units which must be sold is:

20) _____

- A) 19,000 units
- B) 21,500 units
- C) 14,000 units
- D) 17,000 units

Answer: A

Explanation: A) $[\$84,000 + (\$18,000 / 0.6)] / \$6.00 = 19,000$ units
B)
C)
D)

- 21) Rampart Hospital has total variable costs of 90% of total revenues and fixed costs of \$50 million per year. There are 50,000 patient-days estimated for next year. What is the average daily revenue per patient necessary to breakeven? 21) _____
- A) \$250 is the average daily revenue per patient necessary to breakeven.
 B) \$4,000 is the average daily revenue per patient necessary to breakeven.
 C) \$10,000 is the average daily revenue per patient necessary to breakeven.
 D) \$1,000 is the average daily revenue per patient necessary to breakeven.

Answer: C

Explanation: A)
 B)
 C) $\$50,000,000 / (1 - .90) = \$500,000,000$;
 $\$500,000,000 / 50,000 = \$10,000$
 D)

- 22) The following information is for Center Corporation: 22) _____

Total fixed costs	\$313,500
Variable costs per unit	\$99
Selling price per unit	\$154

If management has a targeted net income of \$59,400 (ignore income taxes), then sales revenue should be:

- A) \$1,044,120 B) \$239,721 C) \$580,067 D) \$671,220

Answer: A

Explanation: A) $(\$313,500 + \$59,400) / [(\$154 - \$99) / \$154] = \$1,044,120$
 B)
 C)
 D)

- 23) An increase in fixed costs usually indicates: 23) _____
- A) relevant range is decreasing B) cost driver activity is decreasing
 C) relevant range is increasing D) cost driver activity is increasing

Answer: C

Explanation: A)
 B)
 C)
 D)

24) Burning Company, a producer of salsa, has the following information:

24) _____

Income tax rate	30%
Selling price per unit	\$5.00
Variable cost per unit	\$3.00
Total fixed costs	\$90,000.00

The break-even point in dollars is:

- A) \$180,000 B) \$225,000 C) \$270,000 D) \$150,000

Answer: B

Explanation: A)
B) $\$90,000 / (\$5.00 - \$3.00) = 45,000$ units;
 $45,000 \text{ units} \times \$5.00 = \$225,000$
C)
D)

25) _____ is all variable costs divided by sales.

25) _____

- A) Variable-cost ratio B) The sales mix
C) Gross margin D) Contribution-margin ratio

Answer: A

Explanation: A)
B)
C)
D)

26) _____ will decrease a company's break-even point.

26) _____

- A) Decreasing the selling price per unit B) Increasing variable cost per unit
C) Reducing its total fixed costs D) Increasing contribution margin per unit

Answer: C

Explanation: A)
B)
C)
D)

27) As sales exceed the break-even point, a high contribution-margin percentage:

27) _____

- A) increases profits faster than does a low contribution-margin percentage
B) decreases profits at the same rate as a low contribution-margin percentage
C) increases profits slower than does a low contribution-margin percentage
D) increases profits at the same rate as a low contribution-margin percentage

Answer: A

Explanation: A)
B)
C)
D)

- 28) Cuyahoga County Hospital has overall variable costs of 75% of total revenues and fixed costs of \$40 million per year. There are 40,000 patient-days estimated for next year. The average daily revenue per patient necessary to breakeven is: 28) _____
- A) \$250 B) \$20,000 C) \$1,000 D) \$4,000

Answer: D

Explanation: A)
B)
C)
D) $\$40 \text{ million} / (1 - .75);$
 $\$160 \text{ million} / 40,000 = \$4,000$

- 29) If the sales price per unit is \$20, the unit contribution margin is \$8, and total fixed costs are \$24,000, the break-even point in units is: 29) _____
- A) 2,000 B) 1,200 C) 3,000 D) 857

Answer: C

Explanation: A)
B)
C) $\$24,000 / \$8 = 3,000 \text{ units}$
D)

- 30) If targeted after-tax net income is \$67,500 with a 40% tax rate, contribution margin per unit is \$2.00, and total fixed costs are \$370,000, then the number of units which must be sold is: 30) _____
- A) 241,250 units B) 218,750 units C) 167,250 units D) 160,833 units

Answer: A

Explanation: A) $[\$370,000 + (\$67,500 / 0.6)] / \$2 = 241,250 \text{ units}$
B)
C)
D)

- 31) Suppose the In & Out Motel has annual fixed costs applicable to its rooms of \$1.2 million for its 300-room motel, average daily room rents of \$50, and average variable costs of \$10 for each room rented. It operates 365 days per year. The percent of occupancy for the year needed to breakeven is: 31) _____
- A) 25% B) 27.4% C) 100% D) 3.65%

Answer: B

Explanation: A)
B) $\$1,200,000 / (\$50 - \$10) = 30,000 \text{ rooms};$
 $30,000 / (300 \times 365) = 27.4 \text{ percent}$
C)
D)

- 32) Given a break-even point of 88,000 units and a contribution margin per unit of \$9.60, the total number of units that must be sold to reach a net pre-tax profit of \$18,096 is: 32) _____
- A) 1,885 units B) 89,885 units C) 88,000 units D) indeterminable

Answer: B

Explanation: A)
B) $88,000 + (\$18,096 / \$9.60) = 89,885 \text{ units}$
C)
D)

- 33) Output measures of both resources and activities are: 33) _____
A) stages of production B) variable activities
C) fixed activities D) cost drivers

Answer: D

Explanation: A)
B)
C)
D)

- 34) If the sales price per unit is \$100, the unit variable cost is \$75, and total fixed costs are \$150,000, then 34) _____
the break-even volume in dollar sales rounded to the nearest whole dollar is:
A) \$600,000 B) \$150,000 C) \$1,500 D) \$200,000

Answer: A

Explanation: A) $\$150,000 / (\$100 - \$75) = 6,000$ units
 $6,000 \text{ units} \times \$100 = \$600,000$
B)
C)
D)

- 35) Ankeny Company wishes to earn after-tax net income of \$18,000. Total fixed costs are \$84,000, and 35) _____
the contribution margin per unit is \$6.00. Ankeny's tax rate is 40%. The number of units that must
be sold to earn the targeted net income is:
A) 17,000 units B) 14,000 units C) 19,000 units D) 21,500 units

Answer: C

Explanation: A)
B)
C) $[\$84,000 + (\$18,000 / .60)] / \$6.00 = 19,000$ units
D)

- 36) Assume the following cost information for Donald Company: 36) _____

Selling price per unit	\$144
Variable costs per unit	\$95
Total fixed costs	\$80,000
Tax rate	40%

The break-even point in units is

- A) 556 units B) 1,633 units C) 500 units D) 1,000 units

Answer: B

Explanation: A)
B) $\$80,000 / (\$144 - \$95) = 1,633$ units
C)
D)

- 37) Number of engineering hours is a likely cost driver for which value chain function? 37) _____
- A) The production function has number of engineering hours as a likely cost driver.
 - B) The research and development function has number of engineering hours as a likely cost driver.
 - C) The marketing function has number of engineering hours as a likely cost driver.
 - D) The design function has number of engineering hours as a likely cost driver.

Answer: D

Explanation: A)
B)
C)
D)

- 38) An accountant may have difficulty classifying costs as fixed or variable because: 38) _____
- A) the decision situation may cause the costs to be fixed in the short term
 - B) costs may be affected by more than one cost driver
 - C) costs may behave in a nonlinear way
 - D) All of these answers are correct.

Answer: D

Explanation: A)
B)
C)
D)

- 39) Four Alarm Company, a producer of salsa, has the following information: 39) _____

Income tax rate	30%
Selling price per unit	\$5.00
Variable cost per unit	\$3.00
Total fixed costs	\$90,000.00

The contribution-margin ratio is:

- A) 30% B) 100% C) 60% D) 40%

Answer: D

Explanation: A)
B)
C)
D) $\$5.00 - \$3.00 = \$2.00$;
 $\$2.00 / \$5.00 = 40\%$

- 40) Which of the following statements about highly leveraged companies is true? 40) _____
- A) There is a higher possibility of net income or net loss and therefore more risk than a highly leveraged firm.
 - B) Fixed costs are high and variable costs are low.
 - C) Large changes in sales volume result in larger changes in net income.
 - D) All of these answers are correct.

Answer: D

Explanation: A)
B)
C)
D)

- 41) If the sales price per unit is \$34, the unit variable cost is \$19, and the break-even point is 10,000 units, then the total fixed costs are: 41) _____
- A) \$150,000 B) \$190,000 C) \$340,000 D) \$530,000
- Answer: A
- Explanation: A) $X / (\$34 - \$19) = 10,000$
 $X = 10,000 \times \$15 = \$150,000$
 B)
 C)
 D)
- 42) Suppose a Holiday Inn hotel has annual fixed costs applicable to its rooms of \$1.2 million for its 300-room hotel, average daily room rents of \$50, and average variable costs of \$10 for each room rented. It operates 365 days per year. The amount of net income on rooms that will be generated if the hotel is completely full throughout the entire year is: 42) _____
- A) \$5,475,000 B) \$4,275,000 C) \$3,180,000 D) \$(1,188,000)
- Answer: C
- Explanation: A)
 B)
 C) $[300 \times 365 \times (\$50 - \$10)] - \$1,200,000 = \$3,180,000$
 D)
- 43) The horizontal axis on the cost-volume-profit graph is the: 43) _____
- A) net income B) sales volume in units
 C) dollars of cost D) dollars of revenue
- Answer: B
- Explanation: A)
 B)
 C)
 D)
- 44) Hug Me Company produces dolls. Each doll sells for \$20.00. Variable costs per unit total \$14.00, of which \$6.25 is for direct materials and \$5.25 is for direct labor. If the break-even volume in dollars is \$1,446,000, then the total fixed costs for the period must be: 44) _____
- A) \$1,446,000 B) \$433,800 C) \$361,500 D) \$516,425
- Answer: B
- Explanation: A)
 B) $[X / (\$20 - \$14)] \times \$20 = \$1,446,000$
 $\$20X = \$1,446,000 \times (\$20 - \$14)$
 $X = \$433,800$
 C)
 D)

45) Fixed costs:

45) _____

- A) vary on a per-unit basis, but are fixed in total
- B) are fixed on a per-unit basis, and fixed in total
- C) vary on a per-unit basis, and vary in total
- D) are fixed on a per-unit basis, but vary in total

Answer: A

Explanation: A)
B)
C)
D)

46) Which value chain function would include advertising costs?

46) _____

- A) The production function would include advertising costs.
- B) The distribution function would include advertising costs.
- C) The customer service function would include advertising costs.
- D) The marketing function would include advertising costs.

Answer: D

Explanation: A)
B)
C)
D)

47) On Fire Company, a producer of salsa, has the following information:

47) _____

Income tax rate	30%
Selling price per unit	\$5.00
Variable cost per unit	\$3.00
Total fixed costs	\$90,000.00

The contribution margin per unit is:

- A) \$3.00 B) \$8.00 C) \$2.00 D) \$5.00

Answer: C

Explanation: A)
B)
C) $\$5.00 - \$3.00 = \$2.00$
D)

48) The following information is for Allen Corporation:

48) _____

Total fixed costs	\$313,500
Variable costs per unit	\$101
Selling price per unit	\$163

The contribution-margin ratio is:

- A) 64.3% B) 55.6% C) 38.0% D) 35.7%

Answer: C

Explanation: A)
B)
C) $(\$163 - \$101) / \$163 = 38.04$ percent
D)

- 49) Clare Company currently sells 19,000 units. Total fixed costs are \$84,000, and the contribution margin per unit is \$6.00. Clare's tax rate is 40%. The margin of safety in units is: 49) _____
- A) 7,500 units B) 14,000 units C) 3,000 units D) 5,000 units

Answer: D

Explanation: A)
B)
C)
D) $[\$84,000 + (\$18,000 / .60)] / \$6.00 = 19,000$ units;
 $19,000 \text{ units} - (\$84,000 / \$6.00) = 5,000$ units

- 50) As the level of activity decreases within the relevant range: 50) _____
- A) fixed costs per unit decreases
B) total variable costs increase
C) variable costs per unit remain unchanged
D) total fixed costs increase

Answer: C

Explanation: A)
B)
C)
D)

- 51) Assume the following cost information for Marie Company: 51) _____

Selling price per unit	\$144
Variable costs per unit	\$80
Total fixed costs	\$80,000
Tax rate	40%

If fixed costs increased by 10% and management wanted to maintain the original break-even point, then the selling price per unit would have to be increased to:

- A) \$155.20 B) \$208.00 C) \$150.40 D) \$158.40

Answer: C

Explanation: A)
B)
C) $\$80,000 / (\$144 - \$80) = 1,250$ units at original break-even point;
 $(\$80,000 \times 1.10) / X = 1,250$
 $\$88,000 / X = 1,250$
 $X = \$88,000 / 1,250 = \70.40
Price = $\$70.40 + \$80.00 = \$150.40$
D)

- 52) _____ is how the activities of an organization affect its costs. 52) _____
- A) Volume-related cost drivers B) Cost driver
C) Cost behavior D) None of these answers is correct.

Answer: C

Explanation: A)
B)
C)
D)

53) Knothole Company sells desks at \$480 per desk. The costs associated with each desk are as follows: 53) _____

Direct materials	\$195
Direct labor	126
Variable factory overhead	51

Total fixed costs for the period are \$456,840. The break-even volume in dollars is:

- A) \$1,573,560
B) \$2,030,400
C) \$456,840
D) None of these answers is correct.

Answer: B

Explanation: A)
B) $\$480 - \$195 - \$126 - \$51 = \$108$;
 $\$456,840 / \$108 = 4,230$ desks;
 $4,230 \times \$480 = \$2,030,400$
C)
D)

54) Babbling Brook Hospital has overall variable costs of 75% of total revenues and fixed costs of \$40 million per year. There are 40,000 patient-days estimated for next year. The break-even point expressed in total revenue is: 54) _____

- A) \$160 million
B) \$10 million
C) \$40 million
D) None of these answers is correct.

Answer: A

Explanation: A) $\$40 \text{ million} / (1 - 0.75) = \160 million
B)
C)
D)

55) The level of sales at which revenues equal expenses and net income is zero is called the: 55) _____

A) break-even point
B) margin of safety
C) marginal income point
D) contribution margin

Answer: A

Explanation: A)
B)
C)
D)

56) Assume the following cost information for Melissa Company: 56) _____

Selling price per unit	\$144
Variable costs per unit	\$80
Total fixed costs	\$80,000
Tax rate	40%

_____ of sales dollars is required to earn an after-tax net income of \$24,000.

- A) \$252,000
B) \$216,000
C) \$270,000
D) \$315,000

Answer: C

Explanation: A)
B)
C) $[\$80,000 + (\$24,000 / 0.6)] / (\$144 - \$80) = 1,875$ units
 $1,875 \times \$144 = \$270,000$
D)

- 57) Suppose a Comfort Inn motel has annual fixed costs applicable to its rooms of \$1.2 million for its 300-room motel, average daily room rents of \$50, and average variable costs of \$10 for each room rented. It operates 365 days per year. The break-even point in number of rooms rented is: 57) _____
- A) 30,000 rooms B) 120,000 rooms
C) 24,000 rooms D) None of these answers is correct.

Answer: A

Explanation: A) $\$1,200,000 / (\$50 - \$10) = 30,000$ rooms
B)
C)
D)

- 58) Suppose a Best Western motel has annual fixed costs applicable to its rooms of \$1.2 million for its 300-room motel, average daily room rents of \$50, and average variable costs of \$10 for each room rented. It operates 365 days per year. The amount of net income on rooms that will be generated if the motel is half full throughout the entire year is: 58) _____
- A) \$(1,192,500) B) \$1,590,000 C) \$990,000 D) \$2,737,500

Answer: C

Explanation: A)
B)
C) $[(.5 \times 300 \times 365 \times (\$50 - \$10)) - \$1,200,000] = \$990,000$
D)

- 59) The following information is for Albion Corporation: 59) _____

Total fixed costs	\$313,500
Variable costs per unit	\$99
Selling price per unit	\$154

If management has a targeted net income of \$46,200 (ignore income taxes), then the number of units that must be sold is:

- A) 6,540 units B) 5,700 units C) 2,336 units D) 2,036 units

Answer: A

Explanation: A) $(\$313,500 + \$46,200) / (\$154 - \$99) = 6,540$ units
B)
C)
D)

- 60) _____ is the ratio of fixed costs to variable costs. 60) _____
- A) Operating leverage B) Contribution margin
C) Break-even point D) The margin of safety

Answer: A

Explanation: A)
B)
C)
D)

61) Like - U Company produces dolls. Each doll sells for \$20.00. Variable costs per unit total \$14.00, of which \$6.25 is for direct materials and \$5.25 is for direct labor. If total fixed costs are \$435,000, then the break-even volume in dollars is:

61) _____

- A) \$1,450,000 B) \$1,023,529 C) \$435,000 D) \$621,429

Answer: A

Explanation: A) $\$435,000 / (\$20 - \$14) = 72,500$ dolls;
 $72,500 \times \$20 = \$1,450,000$
B)
C)
D)

62) Andrew Company has the following information:

62) _____

Income tax rate	40%
Selling price per unit	\$7.50
Variable cost per unit	\$2.50
Total fixed costs	\$100,000

If the tax rate decreases to 30%, _____ fewer units can be sold to retain the same net income of \$42,000.

- A) 1,000 units B) 32,000 units C) 34,000 units D) 2,000 units

Answer: D

Explanation: A)
B)
C)
D) $[\$100,000 + (\$42,000 / 0.6)] / (\$7.50 - \$2.50) = 34,000$ units @ 40% tax rate;
 $[\$100,000 + (\$42,000 / 0.7)] / (\$7.50 - \$2.50) = 32,000$ units @ 30% tax rate;
2,000 units is the difference.

63) If total fixed costs are \$350,000, contribution margin per unit is \$7.50, the tax rate is 30%, and the number of units to be sold is 100,000, then the after-tax net income will be:

63) _____

- A) \$400,000 B) \$280,000 C) \$350,000 D) \$877,500

Answer: B

Explanation: A)
B) $[\$350,000 + (X / 0.7) / \$7.50 = 100,000$
 $\$350,000 + (X / 0.7) = \$750,000$
 $X / 0.7 = \$400,000$
 $X = \$280,000$
C)
D)

64) Assuming a constant mix of 3 units of Alpha for every 1 unit of Beta, a selling price of \$21.60 for Alpha and \$28.80 for Beta, variable costs per unit of \$14.40 for Alpha and \$16.80 for Beta, and total fixed costs of \$53,760, the break-even point in units would be:

64) _____

- A) 4,800 units of Alpha and 1,600 units of Beta
- B) 40,320 units of Alpha and 13,440 units of Beta
- C) 1,600 units of Alpha and 4,800 units of Beta
- D) 1,200 units of Alpha and 400 units of Beta

Answer: A

Explanation: A)

	<u>Alpha</u>	<u>Beta</u>
Sales	\$21.60	\$28.80
Variable costs	<u>14.40</u>	<u>16.80</u>
Contribution margin	\$7.20	\$12.00
Sales mix	<u>x 3</u>	<u>x 1</u>
Contribution margin per mix	<u>\$21.60</u>	<u>\$12.00</u>

Total contribution margin per mix = \$21.60 + \$12.00 = \$33.60

Break-even point in composite units = \$53,760 / \$33.60 = 1,600

Alpha: 1,600 x 3 = 4,800 units

Beta: 1,600 x 1 = 1,600 units

- B)
- C)
- D)

65) Managers should focus their efforts on managing:

65) _____

- A) products and services
- B) activities required to make products or deliver services
- C) revenues
- D) None of these answers is correct.

Answer: B

Explanation: A)

- B)
- C)
- D)

66) Days of Our Lives Hospital has total variable costs of 90% of total revenues and fixed costs of \$50 million per year. There are 50,000 patient-days estimated for next year. What is the break-even point expressed in total revenue?

66) _____

- A) \$500 million is the break-even point.
- B) \$12.5 million is the break-even point.
- C) \$50 million is the break-even point.
- D) None of these answers is correct.

Answer: A

Explanation: A) \$50 million / (1 - 0.90) = \$500 million

- B)
- C)
- D)

- 67) As the cost-driver activity level increases within the relevant range: 67) _____
- A) fixed costs per unit decrease B) variable costs per unit decrease
C) total variable costs decrease D) total fixed costs increase

Answer: A

Explanation: A)
B)
C)
D)

- 68) Executive Ambience Company sells desks at \$480 per desk. The costs associated with each desk are as follows: 68) _____

Direct materials	\$195
Direct labor	126
Variable factory overhead	51

Total fixed costs for the period are \$456,840. The contribution-margin ratio is:

- A) 77.5% B) 40.6% C) 22.5% D) 29.0%

Answer: C

Explanation: A)
B)
C) $\$480 - \$195 - \$126 - \$51 = \$108$;
 $\$108 / \$480 = 22.5\%$
D)

- 69) Which value chain function would include depreciation of plant and machinery? 69) _____
- A) The marketing function would include depreciation of plant and machinery.
B) The production function would include depreciation of plant and machinery.
C) The distribution function would include depreciation of plant and machinery.
D) The customer service function would include depreciation of plant and machinery.

Answer: B

Explanation: A)
B)
C)
D)

- 70) Variable costs: 70) _____
- A) vary per unit
B) are fixed per unit and vary in total
C) decrease in total as the cost-driver activity level increases
D) are fixed in total

Answer: B

Explanation: A)
B)
C)
D)

71) Desks R' Us Corporation sells desks at \$480 per desk. The costs associated with each desk are as follows:

71) _____

Direct materials	\$195
Direct labor	126
Variable factory overhead	51

Total fixed costs for the period are \$456,840. The break-even point in desks is:

- A) 952 desks B) 4,230 desks C) 5,458 desks D) 1,228 desks

Answer: B

Explanation: A)
B) $\$480 - \$195 - \$126 - \$51 = \$108$;
 $\$456,840 / \$108 = 4,230$ desks
C)
D)

72) Which value chain function would include depreciation on transportation cost?

72) _____

- A) The customer service function would include depreciation on transportation cost.
B) The distribution function would include depreciation on transportation cost.
C) The production function would include depreciation on transportation cost.
D) The marketing function would include depreciation on transportation cost.

Answer: B

Explanation: A)
B)
C)
D)

73) The margin of safety:

73) _____

- A) shows how actual sales differ from planned sales
B) is the sales price minus all the fixed expenses
C) is the same as contribution margin
D) equals planned unit sales less break-even unit sales

Answer: D

Explanation: A)
B)
C)
D)

74) Up In Smoke Company, a producer of salsa, has the following information:

74) _____

Income tax rate	30%
Selling price per unit	\$5.00
Variable cost per unit	\$3.00
Total fixed costs	\$90,000.00

_____ must be sold to obtain a targeted income before taxes of \$30,000.

- A) 27,000 units B) 60,000 units C) 45,000 units D) 10,000 units

Answer: B

Explanation: A)
B) $(\$90,000 + \$30,000) / (\$5.00 - \$3.00) = 60,000$ units
C)
D)

75) Relevant range applies to:

- A) the variable costs
- C) cost driver activity levels

- B) both fixed and variable costs
- D) fixed costs

75) _____

Answer: B

Explanation: A)
B)
C)
D)

76) As the cost driver activity level decreases within the relevant range:

- A) variable costs per unit decreases
- C) total variable costs decrease

- B) total fixed costs increase
- D) fixed costs per unit decreases

76) _____

Answer: C

Explanation: A)
B)
C)
D)

77) _____ is not an underlying assumption of the cost-volume-profit graph.

- A) Revenues and expenses are nonlinear over the relevant range
- B) Efficiency and productivity will be unchanged
- C) Sales mix will be constant
- D) Expenses are categorized into variable and fixed costs

77) _____

Answer: A

Explanation: A)
B)
C)
D)

78) Oak N' More Corporation sells desks at \$480 per desk. The costs associated with each desk are as follows:

78) _____

Direct materials	\$195
Direct labor	126
Variable factory overhead	51

Total fixed costs for the period are \$456,840. The contribution margin per desk is:

- A) \$108
- B) \$195
- C) \$51
- D) \$126

Answer: A

Explanation: A) $\$480 - \$195 - \$126 - \$51 = \$108$
B)
C)
D)

- 79) The _____ is the change in total results under a new condition, in comparison with some given or known condition. 79) _____
 A) detrimental effect B) conditional effect
 C) comparability effect D) incremental effect

Answer: D

Explanation: A)
 B)
 C)
 D)

- 80) The following information is for Joshua Corporation: 80) _____

Total fixed costs	\$333,500
Variable costs per unit	\$99
Selling price per unit	\$154

If total fixed costs increased to \$394,850, then break-even volume in dollars would increase by:

- A) 34.3% B) 12.3% C) 18.4% D) 10.0%

Answer: C

Explanation: A)
 B)
 C) $(\$394,850 - \$333,500) / \$333,500 = 18.40\%$
 D)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 81) The relationship between an organization's activities and its costs 81) _____
 Answer: Cost behavior
 Explanation:

- 82) Companies with high contribution-margin percentages 82) _____
 Answer: Airlines, cigarette, and cosmetic companies
 Explanation:

- 83) The range of activity over which the relationship between cost and activity is valid. 83) _____
 Answer: Relevant range
 Explanation:

- 84) All variable costs divided by sales. 84) _____
 Answer: Variable-cost ratio
 Explanation:

- 85) Cause the consumption of costly resources 85) _____
 Answer: Cost drivers
 Explanation:

- 86) A firm's ratio of fixed and variable costs 86) _____
 Answer: Operating leverage
 Explanation:

- 87) A cost that changes in direct proportion to changes in the cost driver 87) _____
Answer: Variable cost
Explanation:
- 88) The horizontal axis of the CVP graph 88) _____
Answer: Sales volume
Explanation:
- 89) The study of the effects of output volume on sales, costs, and profit 89) _____
Answer: Cost-volume-profit analysis
Explanation:
- 90) Another name for gross profit 90) _____
Answer: Gross margin
Explanation:
- 91) Total contribution margin / total sales 91) _____
Answer: Contribution-margin percentage
Explanation:
- 92) The change in total results (such as revenue, expenses, or income) under a new condition in comparison with some given or known condition. 92) _____
Answer: Incremental effect
Explanation:
- 93) The relationship between sales and variable costs 93) _____
Answer: Contribution margin
Explanation:
- 94) The assumed relationship between the cost and its cost driver 94) _____
Answer: Linear
Explanation:
- 95) The cost of advertisements is part of this value-chain function 95) _____
Answer: Marketing
Explanation:
- 96) The sales price minus the cost of goods sold 96) _____
Answer: Gross profit
Explanation:
- 97) The relative proportion or combinations of quantities of products that constitute total sales 97) _____
Answer: Sales mix
Explanation:
- 98) A cost that is not immediately affected by changes in the cost driver 98) _____
Answer: Fixed cost
Explanation:

- 99) The vertical axis of the CVP graph 99) _____
Answer: Dollars of cost and revenue
Explanation:
- 100) The level of sales at which the contribution margin equals the fixed cost 100) _____
Answer: Break-even point
Explanation:
- 101) The behavior of revenues and expenses on the CVP graph 101) _____
Answer: Linear
Explanation:
- 102) At any given volume, this distance on the CVP graph measures the net income or net loss 102) _____
Answer: Vertical distance between the sales line and the total expenses line
Explanation:
- 103) $(\text{change in volume in units}) \times (\text{contribution margin per unit}) \times (1 - \text{tax rate})$ 103) _____
Answer: Change in net income
Explanation:
- 104) $\text{Net income} / (1 - \text{tax rate})$ 104) _____
Answer: Income before income taxes
Explanation:
- 105) On the CVP graph, where the total expenses line crosses the sales line 105) _____
Answer: Break-even point
Explanation:
- 106) A firm's ratio of fixed to variable costs 106) _____
Answer: Operating leverage
Explanation:
- 107) $\text{Total fixed expenses} / \text{contribution-margin ratio}$ 107) _____
Answer: Break-even volume in dollars
Explanation:
- 108) The cost of the merchandise that a company acquires or produces and then sells 108) _____
Answer: Cost of goods sold
Explanation:
- 109) The relative proportions or combinations of quantities of products that comprise total sales 109) _____
Answer: Sales mix
Explanation:
- 110) The difference between planned sales and break-even sales 110) _____
Answer: Margin of safety
Explanation:

- 111) Shows how far sales can fall below the planned level of sales before losses occur 111) _____
 Answer: Margin of safety
 Explanation:
- 112) Total fixed expenses / unit contribution margin 112) _____
 Answer: Break-even volume in units
 Explanation:
- 113) A cost that does not change in total as the volume increases, assuming the volume is within the relevant range 113) _____
 Answer: Fixed cost
 Explanation:
- 114) The planned or desired net income 114) _____
 Answer: Target profit
 Explanation:
- 115) A good cost driver for maintenance wages 115) _____
 Answer: Number of mechanic hours
 Explanation:
- 116) $(\text{fixed expenses} + \text{target net income}) / \text{unit contribution margin}$ 116) _____
 Answer: Target sales volume in units
 Explanation:

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 117) Sales volume of a given product helps guide executives who must decide to emphasize or deemphasize particular products. 117) _____
 Answer: True ☒ False
 Explanation:
- 118) Break-even volume in dollars = variable costs / contribution - margin ratio. 118) _____
 Answer: True ☒ False
 Explanation:
- 119) The horizontal axis on the CVP graph is the dollars of cost and revenue. 119) _____
 Answer: True ☒ False
 Explanation:
- 120) A good example of a cost driver for production labor wages is the number of machine hours. 120) _____
 Answer: True ☒ False
 Explanation:
- 121) Margin of safety = actual unit sales - planned unit sales. 121) _____
 Answer: True ☒ False
 Explanation:

- 122) Highly leveraged companies have low fixed costs and high variable costs. 122) _____
Answer: True ☒ False
Explanation:
- 123) A good example of a cost driver for production supervisor salaries is the number of people supervised. 123) _____
Answer: ☒ True False
Explanation:
- 124) The relevant range is the limit of cost-driver activity within which a specific relationship between costs and the cost driver is valid. 124) _____
Answer: ☒ True False
Explanation:
- 125) Highly leveraged companies are less risky than companies with low leverage. 125) _____
Answer: True ☒ False
Explanation:
- 126) An industry that has a high contribution - margin percentage is the airlines. 126) _____
Answer: ☒ True False
Explanation:
- 127) Contribution margin = sales price - all variable expenses. 127) _____
Answer: ☒ True False
Explanation:
- 128) Only one cost driver may affect a cost at any given time. 128) _____
Answer: True ☒ False
Explanation:
- 129) The break-even point is located at the intersection of the total revenue line and the total expenses line on a cost-volume-profit graph. 129) _____
Answer: ☒ True False
Explanation:
- 130) After a certain point, a unit sold does not generate marginal income. 130) _____
Answer: True ☒ False
Explanation:
- 131) A major simplifying assumption of cost-volume-profit analysis is that costs can be classified as either variable or fixed with respect to a single measure of the volume of output activity. 131) _____
Answer: ☒ True False
Explanation:
- 132) Cost of goods sold is the cost of the merchandise that a company acquires or produces and then sells. 132) _____
Answer: ☒ True False
Explanation:

- 133) Target sales volume in units = (variable expenses + target net income) / unit contribution margin. 133) _____
 Answer: True ☒ False
 Explanation:
- 134) Total contribution margin / total sales = 100% - variable cost percentage. 134) _____
 Answer: ☒ True False
 Explanation:
- 135) The incremental approach means that a manager focuses on the effects of changes from the current condition. 135) _____
 Answer: ☒ True False
 Explanation:
- 136) Gross margin is the same as contribution margin. 136) _____
 Answer: True ☒ False
 Explanation:
- 137) Small increases in profits occur for high contribution - margin ratio companies when sales grow. 137) _____
 Answer: True ☒ False
 Explanation:
- 138) Generally, companies that spend heavily for advertising are willing to do so because they have low contribution - margin percentages. 138) _____
 Answer: True ☒ False
 Explanation:
- 139) The income statement can be expressed as: Sales - Variable Expenses - Fixed Expenses = Net Income 139) _____
 Answer: ☒ True False
 Explanation:
- 140) Cost drivers are output measures of both resources and activities. 140) _____
 Answer: ☒ True False
 Explanation:
- 141) Only managers of profit-seeking organizations find that the cost-volume-profit analysis is useful. 141) _____
 Answer: True ☒ False
 Explanation:
- 142) The break-even point is the level of sales at which revenue equals fixed costs. 142) _____
 Answer: True ☒ False
 Explanation:
- 143) A fixed cost changes in direct proportion to changes in a cost driver. 143) _____
 Answer: True ☒ False
 Explanation:

- 144) The benefits of increased accuracy of using a computer model in CVP analysis always exceed the costs. 144) _____
Answer: True ☒ False
Explanation:
- 145) The sales mix is the relative proportions or combinations of quantities of products that constitute total sales. 145) _____
Answer: ☒ True False
Explanation:
- 146) Gross margin focuses on sales in relation to variable cost. 146) _____
Answer: True ☒ False
Explanation:
- 147) On a day-to-day basis managers must manage the activities required to make products and services. 147) _____
Answer: ☒ True False
Explanation:
- 148) A change in the tax rate will not affect the break-even point. 148) _____
Answer: ☒ True False
Explanation:
- 149) In highly leveraged companies, small changes in sales volume result in large changes in net income. 149) _____
Answer: ☒ True False
Explanation:
- 150) When analyzing costs, two rules of thumb are useful: (1) think of fixed costs on a per-unit basis; and (2) think of variable costs as a total. 150) _____
Answer: True ☒ False
Explanation:
- 151) A small margin of safety may indicate a risky situation. 151) _____
Answer: ☒ True False
Explanation:
- 152) Costs may behave in a linear and nonlinear way. 152) _____
Answer: ☒ True False
Explanation:
- 153) An assumption of the CVP analysis is that changes in efficiency or productivity are expected. 153) _____
Answer: True ☒ False
Explanation:
- 154) The CVP graph shows profit and loss at any rate of activity. 154) _____
Answer: ☒ True False
Explanation:

- 155) The margin of safety is the difference between planned unit sales and break-even sales. 155) _____
Answer: ☒ True ☐ False
Explanation:
- 156) A key factor in controlling costs is associating costs with activities. 156) _____
Answer: ☒ True ☐ False
Explanation:
- 157) With very short time spans, costs become more fixed and less variable. 157) _____
Answer: ☒ True ☐ False
Explanation:
- 158) Manufacturers of industrial equipment have high contribution-margin percentages. 158) _____
Answer: ☐ True ☒ False
Explanation:
- 159) Break-even volume in units = fixed costs / unit contribution margin. 159) _____
Answer: ☒ True ☐ False
Explanation:
- 160) The CVP graph uses the assumption that costs are linear over the relevant range. 160) _____
Answer: ☒ True ☐ False
Explanation:
- 161) An assumption of the CVP analysis is that the difference in inventory level at the beginning and at the end of a period is insignificant. 161) _____
Answer: ☒ True ☐ False
Explanation:
- 162) Cost behavior pertains to how costs affect the activities of an organization. 162) _____
Answer: ☐ True ☒ False
Explanation:
- 163) On the CVP graph, the horizontal difference between the sales line and the total expenses line measures the net income or net loss. 163) _____
Answer: ☐ True ☒ False
Explanation:
- 164) Gross margin = sales price - cost of goods sold. 164) _____
Answer: ☒ True ☐ False
Explanation:
- 165) Gross profit margin is the sales price minus the variable cost per unit. 165) _____
Answer: ☐ True ☒ False
Explanation:
- 166) Operating leverage is the ratio of fixed costs to variable costs. 166) _____
Answer: ☒ True ☐ False
Explanation:

- 167) The margin of safety shows how far sales can fall below the planned level of sales before losses occur. 167) _____
Answer: ☒ True ☐ False
Explanation:
- 168) Target sales - variable expenses - fixed expenses = target net income. 168) _____
Answer: ☒ True ☐ False
Explanation:
- 169) Selling expenses are found in the cost of goods sold. 169) _____
Answer: ☐ True ☒ False
Explanation:
- 170) The CVP graph shows how costs behave over multiple relevant ranges. 170) _____
Answer: ☐ True ☒ False
Explanation:
- 171) Income before income taxes = net income / marginal tax rate. 171) _____
Answer: ☐ True ☒ False
Explanation:
- 172) When changes occur in the sales mix, there is no effect on the cost-volume-profit relationships. 172) _____
Answer: ☐ True ☒ False
Explanation:
- 173) An assumption of the CVP analysis is that the sales mix can fluctuate. 173) _____
Answer: ☐ True ☒ False
Explanation:
- 174) Due to limited resources, sales of every type of product cannot be maximized. 174) _____
Answer: ☒ True ☐ False
Explanation:
- 175) The reliability of computer models used in CVP analysis depends on the accuracy of their underlying assumptions about how revenues and costs may actually be affected. 175) _____
Answer: ☒ True ☐ False
Explanation:
- 176) The break-even point is when enough units are sold that total contribution margin equals total variable costs. 176) _____
Answer: ☐ True ☒ False
Explanation:
- 177) The break-even point may be reduced by reducing total fixed costs and holding everything else constant. 177) _____
Answer: ☒ True ☐ False
Explanation:

- 178) An increase in sales price would cause a decrease in the break-even point. 178) _____
 Answer: ☒ True ☐ False
 Explanation:
- 179) The break-even point may be reduced by increasing the per unit variable cost. 179) _____
 Answer: ☐ True ☒ False
 Explanation:
- 180) At the break-even point, net income may be positive. 180) _____
 Answer: ☐ True ☒ False
 Explanation:
- 181) Sales mix concept is relevant for all companies, regardless of the number of units produced. 181) _____
 Answer: ☐ True ☒ False
 Explanation:

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 182) Dodger Company produces two products, X and Y. The following information is presented for both products:

	<u>X</u>	<u>Y</u>
Selling price per unit	\$46	\$36
Variable cost per unit	\$38	\$24

Total fixed costs are \$234,000. Dodger Company plans to sell 21,000 units of product X and 7,000 units of product Y.

Compute:

- Contribution margin for each product
- Current net income
- Break-even point in units of both X and Y if the sales mix is 3 units of X for every unit of Y
- Break-even volume in total dollars if the sales mix is 2 units of X for every 3 units of Y

Answer: a. X: $\$46 - \$38 = \$8$
 Y: $\$36 - \$24 = \$12$
 b. $(21,000 \times \$8) + (7,000 \times \$12) - \$234,000 = \$18,000$
 c. $21,000:7,000 = 3:1$
 $(3 \times \$8) + (1 \times \$12) = \$36$
 $\$234,000 / \$36 = 6,500 \text{ units}$
 X: $6,500 \times 3 = 19,500 \text{ units}$
 Y: $6,500 \times 1 = 6,500 \text{ units}$
 d. $(2 \times \$8) + (3 \times \$12) = \$52$
 $\$234,000 / \$52 = 4,500 \text{ units}$
 X: $4,500 \times 2 = 9,000 \times \$46 = \$414,000$
 Y: $4,500 \times 3 = 13,500 \times \$36 = \$486,000$
 Total dollar sales = \$900,000

183) Retread Company manufactures running shoes. The selling price per pair of shoes (one unit) averages \$80 and variable costs per pair are \$47.50. The sales volume of \$776,000 produces \$100,750 of net income before taxes.

Required:

- Compute total fixed costs.
- Compute total variable costs.
- Compute the break-even point in units.
- Compute the quantity of units above breakeven to reach targeted net income before taxes.

Answer: a. $\$776,000 / \$80 = 9,700$ units
 $9,700 \times (\$80.00 - \$47.50) = \$315,250$
 $\$315,250 - \$100,750 = \$214,500$
 b. $9,700 \text{ units} \times \$47.50 = \$460,750$
 c. $\$214,500 / \$32.50 = 6,600$ units
 d. $9,700 - 6,600 = 3,100$ units

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

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

Required:

- Compute the break-even point in units.
- Compute the sales volume necessary to produce an after-tax net income of \$13,028.40.
- Compute the total units sold to earn an after-tax net income of \$18,480.

Answer: a. $\$46,200 / (\$6.60 - \$5.28) = 35,000$ units
 b. $\$13,028.40 / 0.70 = \$18,612$
 $\$18,612 + \$46,200 = \$64,812$
 $\$64,812 / \$1.32 = 49,100$ units
 $49,100 \text{ units} \times \$6.60 = \$324,060$
 c. $\$18,480 / 0.70 = \$26,400$
 $\$26,400 + \$46,200 = \$72,600$
 $\$72,600 / \$1.32 = 55,000$ units

185) Jefferson Company produces only product A. The following information is available:

Selling price per unit	\$95
Variable costs per unit	\$70
Total fixed costs	\$130,000

Required:

- Compute break-even point in units.
- Compute break-even volume in dollars.
- Compute the margin of safety assuming planned unit sales of 6,000.

Answer: a. $\$130,000 / (\$95 - \$70) = 5,200$ units
 b. $5,200 \text{ units} \times \$95/\text{unit} = \$494,000$
 c. $6,000 \text{ units} - 5,200 \text{ units} = 800$ units

186) Graybill Corporation gathered the following information:

Variable costs	\$945,000
Income tax rate	40%
Contribution-margin ratio	25%

Required:

- Compute total fixed costs assuming a break-even volume in dollars of \$1,610,000.
- Compute sales volume in dollars to produce an after-tax net income of \$210,000.

Answer: a. $\$1,610,000 \times 0.25 = \$402,500$
b. $\$210,000 / (1 - .40) = \$350,000$
 $(\$350,000 + \$402,500) / 0.25 = \$3,010,000$

187) The following information is for Wood Products Corporation

Total fixed costs	\$345,700
Unit variable costs	\$50.95
Unit selling price	\$68.50

Required:

- Compute the contribution margin per unit.
- Compute the contribution-margin ratio.
- Compute the break-even point in units.
- Compute the break-even volume in dollars.

Answer: a. $\$68.50 - \$50.95 = \$17.55$ per unit
b. $\$17.55 / \$68.50 = .2562$
c. $\$345,700 / \$17.55 = 19,698$ units
d. $19,698 \text{ units} \times \$68.50 = \$1,349,313$

188) What are the assumptions used for CVP analysis?

Answer: Expenses can be classified as totally variable or fixed. Total variable expenses vary directly with activity level. Total fixed expenses do not change with activity level.

The behavior of revenues and expenses is linear over the relevant range.

No change in efficiency or productivity is expected.

Sales mix remains constant.

The difference in inventory level at the beginning and at the end of a period is insignificant.

- 189) Bonnie and Clyde started the BC Restaurant in 20X0. They rented a building, bought equipment, and hired two employees to work full time at a fixed monthly salary. Utilities and other operating charges remain fairly constant during each month.

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

Required:

Explain why the profits have increased at a faster rate than sales.

Answer: The fixed cost per meal served is decreasing with increased volumes, while the contribution margin per meal served remains constant. Apparently, most of the restaurant's expenses are fixed. Therefore, as sales pass the break-even point, the profit will increase even faster because the fixed expenses have already been covered. This allows sales to cover only variable expenses before contributing to the profit margin, thereby causing it to increase at a faster rate.

- 190) Too Hot To Handle Company produces fireworks and has provided the following information:

Total fixed costs	\$100,000
Unit variable costs	\$6
Planned unit sales	30,000

The break-even point is 25,000 units.

Required:

- Compute the selling price per unit.
- Compute the contribution-margin ratio.
- Compute the break-even volume in dollars.
- Compute the margin of safety.

Answer: a. $\$100,000 / 25,000 = \$4 + \$6 = \10
b. $\$4 / \$10 = 0.40$
c. $25,000 \text{ units} \times \$10 = \$250,000$
d. $30,000 - 25,000 = 5,000 \text{ fireworks}$

- 191) The Yetmar Family Restaurant is open 24 hours per day serving breakfast, lunch, and dinner. Fixed costs are \$24,000 per month. Variable costs are estimated at \$9.60 per meal. The average total bill (excluding tax and tip) is \$12 per customer.

Required:

- Compute the number of meals that must be served if the Family Restaurant wishes to earn a profit before taxes of \$6,000.
- Compute the break-even point in meals.
- Compute the break-even volume in dollars.
- Assume that fixed costs increase to \$30,000. How many additional meals must be served if the Yetmar Family Restaurant wishes to earn the same before-tax profit?

Answer: a. $(\$24,000 + \$6,000) / (\$12.00 - \$9.60) = 12,500 \text{ meals}$
b. $\$24,000 / (\$12.00 - \$9.60) = 10,000 \text{ meals}$
c. $10,000 \text{ meals} \times \$12 \text{ per meal} = \$120,000$
d. $(\$30,000 - \$24,000) / (\$12.00 - \$9.60) = 2,500 \text{ meals}$

192) Cleveland Manufacturing, Inc.'s most recent income statement is presented below:

Sales	\$450,000
Cost of goods sold	<u>200,000</u>
Gross margin	250,000
Other operating expenses	<u>196,000</u>
Operating income	<u>\$54,000</u>

Cleveland Manufacturing, Inc., has determined that \$50,000 of cost of goods sold and \$166,000 of operating expenses is fixed.

Required:

- Compute the contribution margin.
- Compute the contribution - margin percentage.
- Compute the break-even volume in sales dollars.
- Compute the current margin of safety.

Answer: a. Fixed costs = \$50,000 + \$166,000 = \$216,000
Variable costs + \$150,000 + \$30,000 = \$180,000
 $\$450,000 - \$180,000 = \$270,000$
b. $\$270,000 / \$450,000 = 60\%$
c. $\$216,000 / 60\% = \$360,000$
d. $\$450,000 - \$360,000 = \$90,000$

193) A classmate is having difficulty understanding two sets of accounting terms, variable and fixed costs, as opposed to period and product costs. He understands that variable costs change during an accounting period while fixed costs do not. However, he explains that a period cost implies that it is for a period of time and is, therefore, also fixed. Does his assumption imply that all product costs are then variable?

Required: Assist your classmate in being able to distinguish between these terms.

Answer: First, you should explain that all costs should be first classified as either variable or fixed. This concept deals with cost behavior and not with what the costs are associated in the organization. Many decisions are made about costs because of the type of behavior they exhibit.

Second, a cost can be assigned to "why you are in business" activities (product costs) of the organization or to "support" activities (period costs) of the organization. For a manufacturing firm, period costs are all costs that have no direct relationship to the manufacturing process.

Using accounting terminology, you might explain that period costs are always expenses during the accounting period while product costs are included in inventory because they can be assigned to the products being produced.

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

Selling prices per tire average \$50 except during the busy season. Because a large number of customers buy tires prior to winter, discounts run above average during the busy season. A 15% discount is given when two tires are purchased at one time. During the busy months, selling prices per tire average \$40.

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

Required:

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

Answer: a. The accounting system includes some assumptions about the CVP model that do not hold for Renew Tires. The CVP model requires cost and revenue to be linear. During the busy months, the company has cost and revenue that behave differently than during the other months of the year. The revenue line turns down (less slope) with the average selling price per tire decreasing from \$50 to \$40. The variable costs line probably turns upward (increasing slope) with the additional hourly workers being added to the work force.

b. The accountant may want to present two sets of information regarding the revenue and cost behaviors of the company: one for the busy season and one for the other months of the year. It would show that while the break-even point actually increases during the busy months (a negative), the marginal income increases because of increased sales (a positive).

- 195) Oakdale Municipal Hospital has variable costs of \$80 million per year. These costs represent approximately 80% of the total revenues. There are 50,000 patient-days estimated for next year.

Required:

- a. What is the break-even point expressed in total revenue?
- b. What is the average daily revenue per patient necessary to breakeven?

Answer: a. $\$80 \text{ million} / (1 - 0.80) = \400 million
b. $\$400 \text{ million} / 50,000 = \$8,000$

Answer Key
Testname: C2

- 1) B
- 2) C
- 3) C
- 4) A
- 5) C
- 6) D
- 7) C
- 8) A
- 9) D
- 10) C
- 11) B
- 12) A
- 13) C
- 14) D
- 15) C
- 16) D
- 17) B
- 18) C
- 19) A
- 20) A
- 21) C
- 22) A
- 23) C
- 24) B
- 25) A
- 26) C
- 27) A
- 28) D
- 29) C
- 30) A
- 31) B
- 32) B
- 33) D
- 34) A
- 35) C
- 36) B
- 37) D
- 38) D
- 39) D
- 40) D
- 41) A
- 42) C
- 43) B
- 44) B
- 45) A
- 46) D
- 47) C
- 48) C
- 49) D
- 50) C

Answer Key

Testname: C2

- 51) C
- 52) C
- 53) B
- 54) A
- 55) A
- 56) C
- 57) A
- 58) C
- 59) A
- 60) A
- 61) A
- 62) D
- 63) B
- 64) A
- 65) B
- 66) A
- 67) A
- 68) C
- 69) B
- 70) B
- 71) B
- 72) B
- 73) D
- 74) B
- 75) B
- 76) C
- 77) A
- 78) A
- 79) D
- 80) C
- 81) Cost behavior
- 82) Airlines, cigarette, and cosmetic companies
- 83) Relevant range
- 84) Variable-cost ratio
- 85) Cost drivers
- 86) Operating leverage
- 87) Variable cost
- 88) Sales volume
- 89) Cost-volume-profit analysis
- 90) Gross margin
- 91) Contribution-margin percentage
- 92) Incremental effect
- 93) Contribution margin
- 94) Linear
- 95) Marketing
- 96) Gross profit
- 97) Sales mix
- 98) Fixed cost
- 99) Dollars of cost and revenue
- 100) Break-even point

Answer Key

Testname: C2

- 101) Linear
- 102) Vertical distance between the sales line and the total expenses line
- 103) Change in net income
- 104) Income before income taxes
- 105) Break-even point
- 106) Operating leverage
- 107) Break-even volume in dollars
- 108) Cost of goods sold
- 109) Sales mix
- 110) Margin of safety
- 111) Margin of safety
- 112) Break-even volume in units
- 113) Fixed cost
- 114) Target profit
- 115) Number of mechanic hours
- 116) Target sales volume in units
- 117) FALSE
- 118) FALSE
- 119) FALSE
- 120) FALSE
- 121) FALSE
- 122) FALSE
- 123) TRUE
- 124) TRUE
- 125) FALSE
- 126) TRUE
- 127) TRUE
- 128) FALSE
- 129) TRUE
- 130) FALSE
- 131) TRUE
- 132) TRUE
- 133) FALSE
- 134) TRUE
- 135) TRUE
- 136) FALSE
- 137) FALSE
- 138) FALSE
- 139) TRUE
- 140) TRUE
- 141) FALSE
- 142) FALSE
- 143) FALSE
- 144) FALSE
- 145) TRUE
- 146) FALSE
- 147) TRUE
- 148) TRUE
- 149) TRUE
- 150) FALSE

Answer Key
Testname: C2

- 151) TRUE
152) TRUE
153) FALSE
154) TRUE
155) TRUE
156) TRUE
157) TRUE
158) FALSE
159) TRUE
160) TRUE
161) TRUE
162) FALSE
163) FALSE
164) TRUE
165) FALSE
166) TRUE
167) TRUE
168) TRUE
169) FALSE
170) FALSE
171) FALSE
172) FALSE
173) FALSE
174) TRUE
175) TRUE
176) FALSE
177) TRUE
178) TRUE
179) FALSE
180) FALSE
181) FALSE
182) a. $X: \$46 - \$38 = \$8$
 $Y: \$36 - \$24 = \$12$
b. $(21,000 \times \$8) + (7,000 \times \$12) - \$234,000 = \$18,000$
c. $21,000:7,000 = 3:1$
 $(3 \times \$8) + (1 \times \$12) = \$36$
 $\$234,000 / \$36 = 6,500 \text{ units}$
 $X: 6,500 \times 3 = 19,500 \text{ units}$
 $Y: 6,500 \times 1 = 6,500 \text{ units}$
d. $(2 \times \$8) + (3 \times \$12) = \$52$
 $\$234,000 / \$52 = 4,500 \text{ units}$
 $X: 4,500 \times 2 = 9,000 \times \$46 = \$414,000$
 $Y: 4,500 \times 3 = 13,500 \times \$36 = \$486,000$
Total dollar sales = \$900,000
183) a. $\$776,000 / \$80 = 9,700 \text{ units}$
 $9,700 \times (\$80.00 - \$47.50) = \$315,250$
 $\$315,250 - \$100,750 = \$214,500$
b. $9,700 \text{ units} \times \$47.50 = \$460,750$
c. $\$214,500 / \$32.50 = 6,600 \text{ units}$
d. $9,700 - 6,600 = 3,100 \text{ units}$

Answer Key

Testname: C2

- 184) a. $\$46,200 / (\$6.60 - \$5.28) = 35,000$ units
b. $\$13,028.40 / 0.70 = \$18,612$
 $\$18,612 + \$46,200 = \$64,812$
 $\$64,812 / \$1.32 = 49,100$ units
 $49,100 \text{ units} \times \$6.60 = \$324,060$
c. $\$18,480 / 0.70 = \$26,400$
 $\$26,400 + \$46,200 = \$72,600$
 $\$72,600 / \$1.32 = 55,000$ units
- 185) a. $\$130,000 / (\$95 - \$70) = 5,200$ units
b. $5,200 \text{ units} \times \$95/\text{unit} = \$494,000$
c. $6,000 \text{ units} - 5,200 \text{ units} = 800$ units
- 186) a. $\$1,610,000 \times 0.25 = \$402,500$
b. $\$210,000 / (1 - .40) = \$350,000$
 $(\$350,000 + \$402,500) / 0.25 = \$3,010,000$
- 187) a. $\$68.50 - \$50.95 = \$17.55$ per unit
b. $\$17.55 / \$68.50 = .2562$
c. $\$345,700 / \$17.55 = 19,698$ units
d. $19,698 \text{ units} \times \$68.50 = \$1,349,313$
- 188) Expenses can be classified as totally variable or fixed. Total variable expenses vary directly with activity level. Total fixed expenses do not change with activity level.

The behavior of revenues and expenses is linear over the relevant range.

No change in efficiency or productivity is expected.

Sales mix remains constant.

The difference in inventory level at the beginning and at the end of a period is insignificant.

- 189) The fixed cost per meal served is decreasing with increased volumes, while the contribution margin per meal served remains constant. Apparently, most of the restaurant's expenses are fixed. Therefore, as sales pass the break-even point, the profit will increase even faster because the fixed expenses have already been covered. This allows sales to cover only variable expenses before contributing to the profit margin, thereby causing it to increase at a faster rate.
- 190) a. $\$100,000 / 25,000 = \$4 + \$6 = \10
b. $\$4 / \$10 = 0.40$
c. $25,000 \text{ units} \times \$10 = \$250,000$
d. $30,000 - 25,000 = 5,000$ fireworks
- 191) a. $(\$24,000 + \$6,000) / (\$12.00 - \$9.60) = 12,500$ meals
b. $\$24,000 / (\$12.00 - \$9.60) = 10,000$ meals
c. $10,000 \text{ meals} \times \$12 \text{ per meal} = \$120,000$
d. $(\$30,000 - \$24,000) / (\$12.00 - \$9.60) = 2,500$ meals
- 192) a. Fixed costs = $\$50,000 + \$166,000 = \$216,000$
Variable costs + $\$150,000 + \$30,000 = \$180,000$
 $\$450,000 - \$180,000 = \$270,000$
b. $\$270,000 / \$450,000 = 60\%$
c. $\$216,000 / 60\% = \$360,000$
d. $\$450,000 - \$360,000 = \$90,000$

Answer Key

Testname: C2

- 193) First, you should explain that all costs should be first classified as either variable or fixed. This concept deals with cost behavior and not with what the costs are associated in the organization. Many decisions are made about costs because of the type of behavior they exhibit.

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Using accounting terminology, you might explain that period costs are always expenses during the accounting period while product costs are included in inventory because they can be assigned to the products being produced.

- 194) a. The accounting system includes some assumptions about the CVP model that do not hold for Renew Tires. The CVP model requires cost and revenue to be linear. During the busy months, the company has cost and revenue that behave differently than during the other months of the year. The revenue line turns down (less slope) with the average selling price per tire decreasing from \$50 to \$40. The variable costs line probably turns upward (increasing slope) with the additional hourly workers being added to the work force.
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- b. $\$400 \text{ million} / 50,000 = \$8,000$