What is Cost-Volume-Profit (CVP) Analysis?

Worksheet

CVP analysis studies how fixed costs, variable costs, selling price, and sales volume interact to determine profit, centered on the break-even point where total revenue equals total costs.

Profit = (P @times Q) - (FC + VC @times Q)

Questions

1. A company has fixed costs of $10,000, sells at $50/unit with $30 variable cost per unit. What is the break-even point in units?

A) 200
B) 500
C) 300
D) 1000

2. What does contribution margin measure?

A) Total revenue
B) Selling price minus variable cost per unit
C) Fixed costs only
D) Net profit after tax

3. In CVP analysis, what happens to profit for each unit sold above the break-even point?

A) It stays at zero
B) The full contribution margin per unit becomes profit
C) It decreases
D) It equals total fixed costs

4. Which of these is NOT a standard assumption of CVP analysis?

A) Costs behave linearly
B) Sales mix stays constant
C) Variable cost per unit decreases as volume grows
D) Fixed costs stay constant within the relevant range

5. A company has fixed costs of $10,000, sells its product at $50/unit, and pays $30/unit in variable costs. Find the break-even point.

6. Same company wants a target profit of $5,000. How many units must it sell?

7. If the company raises its price to $60 while VC stays at $30 and FC at $10,000, what is the new break-even point?

8. Define: What is the break-even point?

9. Define: What is contribution margin?

10. Define: What are the core CVP variables?

Answer Key

1. B) 500 - CM = 50 30 = $20; Break-even units = 10,000 / 20 = 500.

2. B) Selling price minus variable cost per unit - Contribution margin is what remains per unit after covering variable costs.

3. B) The full contribution margin per unit becomes profit - Once fixed costs are covered, each extra unit's contribution margin flows straight to profit.

4. C) Variable cost per unit decreases as volume grows - CVP assumes variable cost PER UNIT stays constant, not decreasing - total variable costs rise proportionally with volume.

5. Contribution margin = P VC = 50 30 = $20 Break-even units = FC / CM = 10,000 / 20 = 500 units Break-even revenue = 500 $50 = $25,000

6. Units for target profit = (FC + Target Profit) / CM = (10,000 + 5,000) / 20 = 750 units Check: 750 20 10,000 = $5,000

7. New CM = 60 30 = $30 Break-even units = 10,000 / 30 = 333.3 334 units Higher price lowers the break-even point (fewer units needed).

8. The sales volume at which total revenue equals total costs - zero profit, zero loss.

9. Selling price minus variable cost per unit; the amount each unit contributes toward covering fixed costs and profit.

10. Fixed costs, variable cost per unit, selling price, and sales volume.