# What is Break-Even Analysis?

Worksheet

The break-even point is the sales volume at which total revenue equals total costs - zero profit, zero loss. In units: BEP = Fixed Costs (Price per unit Variable cost per unit).

**BEP = @frac{FC}{P - VC}**

## Questions

1. Fixed costs are $2,000, price is $25/unit, variable cost is $15/unit. Break-even point?

A) 80 units
B) 100 units
C) 200 units
D) 133 units

2. What does the break-even point represent?

A) Maximum possible profit
B) The point where revenue equals total costs
C) The point where variable costs are zero
D) The minimum price a business can charge

3. If a company lowers its variable cost per unit (price and fixed costs unchanged), the break-even point will:

A) Rise
B) Fall
C) Stay the same
D) Become negative

4. Contribution margin is calculated as:

A) Price Fixed cost
B) Price Variable cost
C) Fixed cost Price
D) Revenue Profit

5. A bakery has $1,000 in fixed costs, sells cupcakes at $20, and each costs $10 to make. Find the break-even point.

6. A software tool has $6,000/month fixed costs, sells at $50/month, and variable cost (support/hosting) is $10/user. Find the break-even number of subscribers.

7. A t-shirt printer has $2,400 fixed costs, sells shirts for $18, and each costs $6 in materials/labor. How many shirts to break even, and what's the break-even revenue?

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

9. Define: What is the break-even formula?

10. Define: What is 'contribution margin'?

# Answer Key

1. C) 200 units - BEP = 2000 / (25 15) = 2000 / 10 = 200 units.
2. B) The point where revenue equals total costs - At break-even, revenue exactly covers total costs - profit is zero.
3. B) Fall - A lower variable cost increases the contribution margin, so fewer units are needed to break even.
4. B) Price Variable cost - Contribution margin = Price per unit Variable cost per unit.
5. BEP = FC / (P VC) BEP = 1000 / (20 10) = 1000 / 10 BEP = 100 units
6. BEP = FC / (P VC) BEP = 6000 / (50 10) = 6000 / 40 BEP = 150 subscribers
7. BEP = FC / (P VC) BEP = 2400 / (18 6) = 2400 / 12 BEP = 200 shirts Break-even revenue = 200 $18 = $3,600
8. The sales level where total revenue equals total costs - no profit, no loss.
9. BEP (units) = Fixed Costs (Price per unit Variable cost per unit).
10. Price per unit minus variable cost per unit - the amount each sale contributes toward fixed costs.