3.6 · FINANCE

Lesson 6: Break-even

KNOWLEDGE ORGANISER

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🎯 Learning goals

- ✓ Explain the break-even point
- ✓ Calculate contribution and break-even output
- ✓ Calculate the margin of safety
- ✓ Read a break-even chart

🔑 Key words

Break-even point The output where total revenue equals total costs.

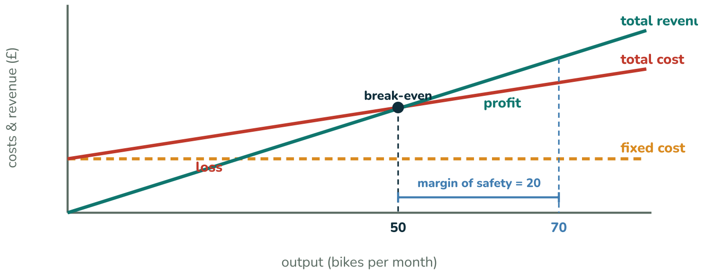
Contribution Selling price – variable cost per unit.

Margin of safety Actual output – break-even output.

Total revenue Selling price × quantity sold.

Fixed costs Costs that do not change with output.

📘 What you need to know



On a break-even chart, the business breaks even where total revenue meets total costs.

1. The break-even point

The **break-even point** is the output where **total revenue equals total costs** — the business makes **no profit and no loss**. Sell more than this and it makes a profit; sell fewer and it makes a loss. On a break-even chart, it's where the total revenue line crosses the total costs line.

2. Calculating break-even

First find the **contribution** per unit: **selling price – variable cost per unit**. Then: **break-even output = fixed costs ÷ contribution per unit**.

For Pedal Power:

a serviced bike sells for £200 | variable cost £100 | fixed costs £5,000 a month

Contribution = 200 – 100 = £100 . Break-even = 5,000 ÷ 100 = 50 bikes . The chart above shows revenue meeting total costs at 50 bikes

> *"Contribution = price – variable cost. Break-even = fixed costs ÷ contribution."*

3. Margin of safety

The **margin of safety** is how far actual sales are **above** break-even: **actual output – break-even output**. If Pedal Power sells **70** bikes and breaks even at 50, the margin of safety is **20 bikes** — sales could fall by 20 before it makes a loss.

✅ Test yourself

Cover the answers below, answer Q37–Q43, then check.

Q37 What is the break-even point?

Q38 How do you calculate break-even output?

Q39 What is contribution per unit?

Q40 What is the margin of safety?

Q41 How do you calculate the margin of safety?

Q42 What happens above the break-even point?

Q43 Give one benefit of break-even analysis.

ANSWERS

A37 The output where total revenue equals total costs (no profit or loss).

A38 Fixed costs ÷ (selling price – variable cost per unit).

A39 Selling price – variable cost per unit.

A40 The amount by which actual sales exceed the break-even point.

A41 Actual output – break-even output.

A42 The business makes a profit.

A43 It shows how many units must be sold to avoid a loss, helping planning.