

Exercise walk-through

5.1

Operations and break-even: supported rehearsal

International Baccalaureate · IB Diploma · Business Management · HL

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The method

Method — Worked example

Job production suits customized work; batch production groups similar jobs; flow production suits repeated standardized output. Location trades access, labour, transport and costs. Break-even uses constant price and variable cost per unit, fixed costs and output sold.

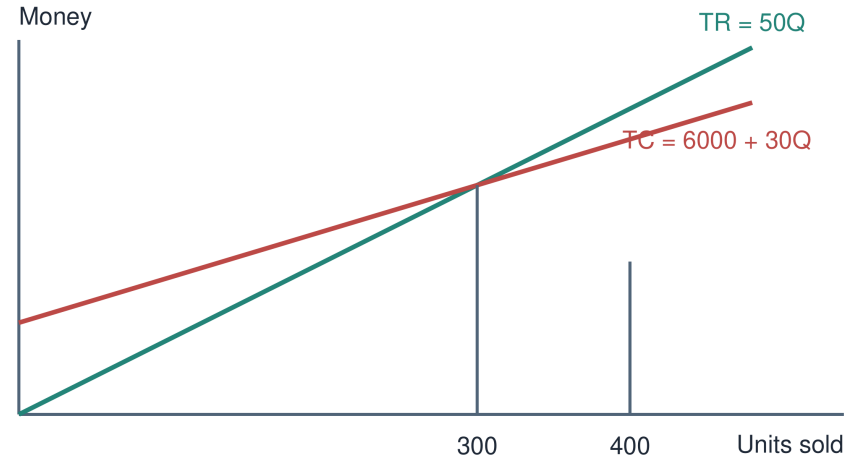
Task: fixed cost 4,800 units, price 40 units per item, variable cost 24 units per item, expected sales 360 items. Calculate break-even and margin of safety, then evaluate capacity of 280.

Contribution per item = price – variable cost = $40 - 24 = 16$ units/item. Break-even quantity = fixed cost / contribution = $4,800 / (16 \text{ units/item}) = 300$ items. Margin of safety = expected sales – break-even = $360 - 300 = 60$ items. Capacity 280 is below break-even, so the assumed 360 sales are infeasible without changing capacity or costs. HL may examine quality, contingency and information systems; claims require operational evidence.

Method — Worked example

Calculate break-even and margin of safety, then evaluate capacity of 280.

Break-even under constant unit price and cost



Break-even: 300 units. Margin of safety at 400 units: 100.

Exercises 2.1-3.1

2.1 For the worked case, identify the evidence and a conclusion it can support. Explain one material limit. [3]

3.1 Price falls from 40 to 36 while variable cost stays 24 and fixed cost stays 4,800. Recalculate break-even. Give a reasoned answer, evidence or method, and a relevant qualification. [3]

Exercises 2.1·3.1

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2.1 Contribution per item=price−variable cost=40−24=16 units/item. Break-even quantity=fixed cost/contribution=4,800/(16 units/item)=300 items. Margin of safety=expected sales−break-even=360−300=60 items. Capacity 280 is below break-even, so the assumed 360 sales are infeasible without changing capacity or costs. HL may examine quality, contingency and information systems; claims require operational evidence. Authored points for identifying relevant evidence, explaining a supported inference and a material limit.

3.1 Price falls from 40 to 36 while variable cost stays 24 and fixed cost stays 4,800. Recalculate break-even. Give a reasoned answer, evidence or method, and a relevant qualification. [3]

3.1 Contribution per item=price−variable cost=36−24=12 currency units/item. Break-even quantity=fixed cost/contribution=4,800/12=400 items. At expected sales of 360, margin of safety=360−400=−40 items; the model predicts a shortfall. Capacity and demand must be checked again. Authored points for a relevant judgement, reason tied to the case and justified qualification or method. Accept a supported alternative.