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## Answers

# Using breakeven analysis to make business decisions

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## Fill in the gaps

Breakeven point refers to a level of output where a firm's sales **revenue**, i.e. the value of its sales, is exactly equal to its total costs of **production**. Not enough is being sold to generate a **profit** but the firm is avoiding making a **loss**. Constructing a breakeven chart makes it possible to quickly identify the profits (or losses) produced at different levels of **output**. It can also show the effects on profits of a change in a business' **fixed** or **variable** costs, as well as its sales price.

## Correct the following

- (1) Sales revenue = Sales price × Quantity sold
- (2) Breakeven point =  $\frac{\text{Fixed costs}}{\text{Contribution per unit}}$
- (3) Contribution per unit = Sales price – Variable costs per unit
- (4) Margin of safety = Actual output – Breakeven output
- (5) Profit = Contribution per unit × Margin of safety

## True or false

- (1) TRUE: reducing prices will mean a lower contribution per unit, meaning that it will take longer for fixed costs to be covered and for a profit to start being made.
- (2) FALSE: cheaper supplies will mean lower variable costs per unit, increasing contribution per unit and allowing fixed costs to be paid off more quickly.

## Data response

$$\begin{aligned}
 (1) \text{ Current breakeven output} &= \frac{\text{Fixed costs}}{\text{Contribution per unit}} \\
 &= \frac{£210,000}{(\text{£}512,500 / 20,500 \text{ units}) - \text{£}11.00} \\
 &= \text{£}210,000 / \text{£}14.00 \\
 &= 15,000 \text{ units per year}
 \end{aligned}$$

**(2) Current profit/loss:**

Profit = Contribution per unit  $\times$  Margin of safety

Contribution per unit:  $\text{£}25.00 - \text{£}11.00 = \text{£}14.00$

Margin of safety:  $20,500 \text{ units} - 15,000 \text{ units} = 5,500 \text{ units}$

Current profit:  $\text{£}14 \times 5,500 = \text{£}77,000$  per year

**(3) Maximum profit given current capacity, costs and prices:**

Margin of safety at capacity output:  $25,000 \text{ units} - 15,000 \text{ units} = 10,000 \text{ units}$

Maximum profit:  $\text{£}14.00 \times 10,000 \text{ units} = \text{£}140,000$  per year