

ANSWERS

Lesson 1 Break Even Calculations

Fixed Cost per week = £5,000 Variable Cost each = £ 5 Selling Price each = £ 25	$\frac{£5000}{£20} = 250 \text{ units}$
Fixed Cost per week = £250 Variable Cost each = £ 25 Selling Price each = £ 37.50	$\frac{£250}{£12.50} = 20 \text{ units}$
Fixed Cost per week = £10,000 Variable Cost each = £ 50 Selling Price each = £ 75	$\frac{£10000}{£25} = 400 \text{ units}$
Fixed Cost per week = £20,000 Variable Cost each = £ 5 Selling Price each = £ 9	$\frac{£20000}{£4} = 5000 \text{ units}$
Fixed Cost per week = £100 Variable Cost each = £ 5 Selling Price each = £ 10	$\frac{£100}{£5} = 20 \text{ units}$
Fixed Cost per week = £200 Variable Cost each = £ 3 Selling Price each = £ 7	$\frac{£200}{£4} = 50 \text{ units}$
Fixed Cost per week = £3000 Variable Cost each = £ 6 Selling Price each = £ 10	$\frac{£3000}{£4} = 750 \text{ units}$

COMPLETE THE FOLLOWING TABLE

Output	Fixed Cost	Variable Cost	Total Cost	Total Revenue	Profit
0	200	0	200	0	(200)
10	200	30	230	70	(160)
20	200	60	260	140	(120)
30	200	90	290	210	(80)
40	200	120	320	280	(40)
50	200	150	350	350	0
60	200	180	380	420	40
70	200	210	410	490	80
80	200	240	440	560	120
90	200	270	470	630	160
100	200	300	500	700	200

Variable Cost is calculated by multiplying output by Variable Cost for each item

€3 p.u.

Total Cost is calculated by adding together

Fixed plus Variable Cost

Revenue is calculated by multiplying

Output by Selling Price. €7 p.u.

Profit is calculated by taking Total

Revenue from Total Cost

∴ Break Even point of output = 50 units.

Break-even analysis



Progress questions

(see p. 104 of student text)

1 State two reasons why a business might carry out a break-even analysis. (2 marks)

- To discover the level of sales necessary to make a profit.
- To calculate the profit/loss likely at a given level of sales.
- In support of an application for a loan or other financial support.

2 Carefully distinguish between contribution and profits. (5 marks)

- A number of types of profit exist. However, in their simplest form, profits are the difference between total costs and total revenues. Contribution is sales revenue less variable costs. Thus contribution is used to pay fixed costs; any contribution remaining after this represents profits.

3 Outdoor Ltd manufactures jackets. It has annual fixed costs of £100 000, sells its jackets at £50 each and estimates the variable cost of producing a single jacket to be £30. Calculate the level of contribution made from the sale of a single jacket. (4 marks)

- A jacket sells for £50 and has a variable cost of £30. Thus contribution is £20 per jacket (£50 - £30).

4 Using the above example, calculate the annual break-even output for Outdoor Ltd. (4 marks)

- Break-even = Fixed costs divided by the contribution from a single product. In this case it is £100 000 divided by £20 = 5000 jackets. (NB break-even is a level of output and not a value!)

5 If Outdoor Ltd manufactured 7500 jackets during the year, what would be its margin of safety? Why might

8 Outline two reasons why a small business such as Norris Newspapers might make use of break-even analysis. (4 marks)

- Reasons might include: to set sales targets; to assess effects on profits of increasing circulation; to support an application for a loan; because it is a cheap and simple technique.

9 A firm's break-even analysis has been shown to be inaccurate. Explain three factors that might have caused this outcome. (6 marks)

- Relevant factors might include: inaccurate forecasts of variable costs; unexpected change in fixed costs (e.g.

Accounting and finance

this be important information to the managers of the business? (10 marks)

- The margin of safety is the difference between current and break-even output. In this case it is (7500 - 5000) = 2500. It tells the managers the amount by which sales can fall before the business incurs a loss.

6 Norris Newspapers produce a local newspaper. They face fixed costs amounting to £20 000 a month, sell their newspapers at £0.50 each and the variable cost of printing a single newspaper is £0.25. At full capacity, they can print 150 000 newspapers each month. Construct a break-even chart and illustrate Norris Newspapers' break-even point. (10 marks)

rise in rates); all output not sold; achievement of economies of scale. The chart could be accurate but the business's position on it may be wrongly forecast due to poor (or no) market research.

10 Explain the benefits that a small business might gain from the use of break-even analysis. (7 marks)

- Benefits might include: a simple technique that is easy to use with minimal training; improved chance of raising finance; some indication of likely levels of profit (or losses) at various levels of output; can assist in deciding whether a particular project is profitable.

