



Starter:

- 1) 0.5×63
- 2) Make N the subject of this formula. $P = 3N - 24$.
- 3) What is the cost of 450 units of electricity at 12.03p per unit in pounds?
- 4) Calculate $435 - 723$.

Skills:

- 1) Tickets for a concert are sold at £25 each. The costs were; band £1250, equipment £780, venue hire £900 and staff £1800.

How many tickets have to be sold in order to start making a profit?

- 2) This formula works out the Cost (C) of a building contract.

$C = 12.50 \times H + M$

Where H is the number of hours taken and M is the cost of materials.

- a) What is the cost of a contract that takes 23 hours and costs £321.20 in materials?
- b) What was the cost of the materials of a contract that took 98 hours to complete and cost a total of £1877.78?

Top Tips!

Profit: When income is more than the outlay (Money payed out)

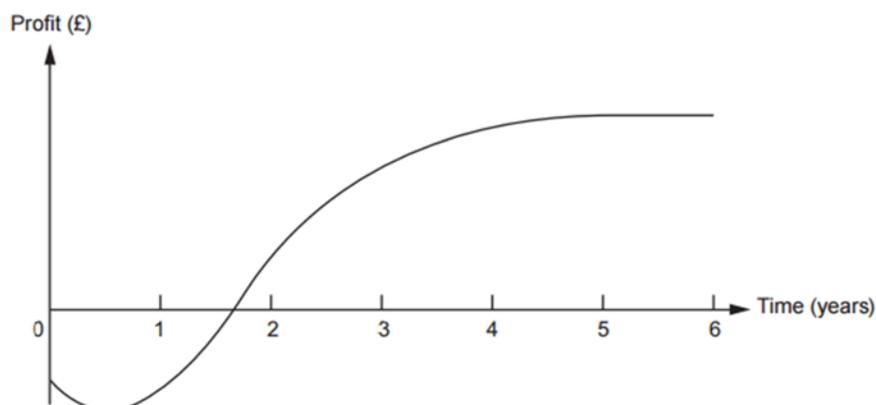
Loss: When the outlay is more than the income.

PROFIT / LOSS = INCOME – OUTLAY

- Work out the income.
- Work out the outlay.
- Subtract the outlay from the income.

Examination Question:

A company that manufactures and sells wooden toys was set up six years ago. It has produced a graph, shown below, to illustrate how profitable the business has been over these six years.



- (i) What significant fact can be stated about what happened during the company's second year in business?
 - (ii) What seems to have happened after four years?
 - (iii) Describe what happened during the first six months after the business was set up.
- b) The profit (P), in pounds, made on one type of toy, is calculated using the formula **$P = 2.75S - 0.18M - 247$** where S is the number of toys sold, and M is the number of toys manufactured.

Calculate how many of these toys were sold when the company made a profit of £1220 from the 650 toys it manufactured.

Assessment for Learning

Video / QR code

**Starter:**

- $0.5 \times 63 = 31.5$
- Make N the subject of this formula. $P = 3N - 24$.
$$N = \frac{P+24}{3} = \frac{p}{3} + 8$$
- What is the cost of 450 units of electricity at 12.03p per unit in pounds?
 $450 \times 12.03 = 5413.5$
 $= \text{£}54.14$ (nearest p)
- Calculate $435 - 723 = -288$

Skills:

- Tickets for a concert are sold at £25 each. The costs were; band £1250, equipment £780, venue hire £900 and staff £1800.

How many tickets have to be sold in order to start making a profit? **Total cost = £4730**

$$4730 \div 25 = 189.2 \text{ So } 190 \text{ tickets}$$

- This formula works out the Cost (C) of a building contract.

$$C = 12.50 \times H + M$$

Where H is the number of hours taken and M is the cost of materials.

- What is the cost of a contract that takes 23 hours and costs £321.20 in materials?
 $C = 12.50 \times 23 + 321.2 = \text{£}608.70$
- What was the cost of the materials of a contract that took 98 hours to complete and cost a total of £1877.78?
 $1877.78 = 12.50 \times 98 + M$
 $1877.78 = 1225 + M$
So, $M = 1877.78 - 1225 = \text{£}652.78$

Top Tips!

Profit: When income is more than the outlay (Money payed out)

Loss: When the outlay is more than the income.

$$\text{PROFIT / LOSS} = \text{INCOME} - \text{OUTLAY}$$

- Work out the income.
- Work out the outlay.
- Subtract the outlay from the income.

Examination Question:

A company that manufactures and sells wooden toys was set up six years ago. It has produced a graph, shown below, to illustrate how profitable the business has been over these six years.

- What significant fact can be stated about what happened during the company's second year in business?
Started to make a profit
 - What seems to have happened after four years?
The amount of profit stopped increasing
 - Describe what happened during the first six months after the business was set up.
The company made a loss, this loss increased up to 6 months
- b) The profit (P), in pounds, made on one type of toy, is calculated using the formula $P = 2.75S - 0.18M - 247$ where S is the number of toys sold, and M is the number of toys manufactured.

Calculate how many of these toys were sold when the company made a profit of £1220 from the 650 toys it manufactured.

$$1220 = 2.75 \times S - 0.18 \times 650 - 247$$

$$1220 = 2.75 \times S - 117 - 247$$

$$1220 = 2.75 \times S - 364$$

$$1220 + 364 = 2.75 \times S$$

$$1584 = 2.75 \times S$$

$$1584 \div 2.75 = S$$

$$S = 576 \text{ toys sold}$$

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