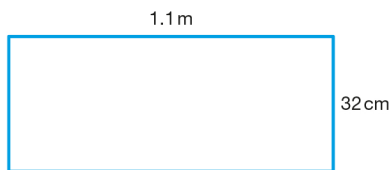


# Ratio, proportion and rates of change

## REVIEW IT!

 You may **not** use a calculator for these questions.

- 1 Work out how many
  - a m in 3.2 km
  - b seconds in 9 minutes
  - c ml in 0.4 litres
- 2 Convert 4600 m into km.
- 3 How many minutes are there in 2.5 hours?
- 4 Calculate the area of this shape.



- 5 A square has area  $3\text{ m}^2$ . What is its area in  $\text{cm}^2$ ?
- 6 What fraction of 12 is 5?
- 7 A bag contains 26 blue balls and 18 red balls. Write the ratio of blue balls to red balls. Give the ratio in its simplest form.
- 8 Boiling water in a kettle cools at approximately  $3^\circ\text{C}$  per minute. To make a cup of tea, water should be a maximum of  $85^\circ\text{C}$ . How long should you wait after a kettle has boiled before making a cup of tea?
- 9 A metal object has mass 345 kg and volume  $0.15\text{ m}^3$ . Calculate the density of the object.
- 10 One day Ian runs 8 km. The next day he runs 10 km. Work out the percentage increase in the distance he runs.

- 11 In a restaurant, 13 of the 25 customers order the set menu. Work out the proportion of customers who do not order the set menu.
- 12 A DJ runs a radio programme between 9.00 am and 10.30 am. Here is the schedule.

9.00 am	News and Weather
9.15 am	80s Music
10.00 am	News
10.05 am	Weather
10.08 am	Quiztime
10.20 am	Showbiz Roundup

What proportion of the schedule is taken up with news and weather?

- 13 A snail crawls at  $\frac{4}{5}$  of a metre per hour. How long will it take to travel the length of a garden measuring 20 m?
- 14 Josie and Charlie share 50 marbles in the ratio 1 : 4.
  - a How many more marbles does Charlie have than Josie?
  - b Write a function relating the number of marbles Josie has ( $J$ ) to the number Charlie has ( $C$ ).

 You may use a calculator for these questions.

- 15 What percentage of this circle is shaded? Give your answer to 2 significant figures.

