



Scale drawing

- Converting between actual distances and scaled measurements
- Writing scales as ratios

Keywords

You should know

explanation 1

1 A map uses the scale 1 cm to 2 km.

a What are the actual distances for these measurements?

i 6 cm

ii 8 cm

iii 12 cm

iv 15 cm

v 0.5 cm

vi 2.5 cm

b What are the measurements for these actual distances?

i 6 km

ii 8 km

iii 20 km

iv 1 km

v 3 km

vi 7 km

2 A scale drawing uses the scale 1 cm to 5 m.

a What are the actual distances for these measurements?

i 3 cm

ii 4 cm

iii 9 cm

iv 12 cm

v 20 cm

b What are the measurements for these actual distances?

i 10 m

ii 40 m

iii 35 m

iv 70 m

v 2.5 m

3 A map of the UK shows the distance between London and Birmingham as 13 cm.

The scale of the map is 1 cm to 12 km.

Work out the distance in kilometres between London and Birmingham.



explanation 2

4 Write each scale as a ratio in its simplest form.

a 1 cm : 2 m

b 1 cm : 5 m

c 2 cm : 3 m

d 4 cm : 5 m

e 1 cm : 1 km

f 10 cm : 1 km

***g** 5 cm : 1 km

***h** 5 cm : 2 km

***i** 6 cm : 1 km

5 A scale drawing uses the scale 4 cm to 15 m.

a Explain why the scale is 1 : 375.

b A measurement on the drawing is 6 cm.
Explain why the real distance is 22.5 m.

6 A map of the United Kingdom shows the distance between Leeds and Hull as 4 cm.

The distance between Leeds and Hull is 80 km.

a Work out the scale of the map.

b On the map Leeds and Manchester are 3 cm apart.

Use your scale to work out the distance between Leeds and Manchester.

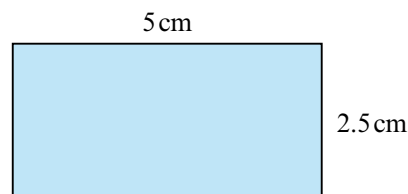


7 The rectangle is a scale drawing of an Olympic swimming pool.

a The real pool has a length of 50 m.
Explain how you work out that the scale of the drawing is 1 cm to 10 m.

b The width of the pool in the drawing is 2.5 cm.
What is the width of the pool in real life?

c Explain why the scale of the drawing is 1 : 1000.



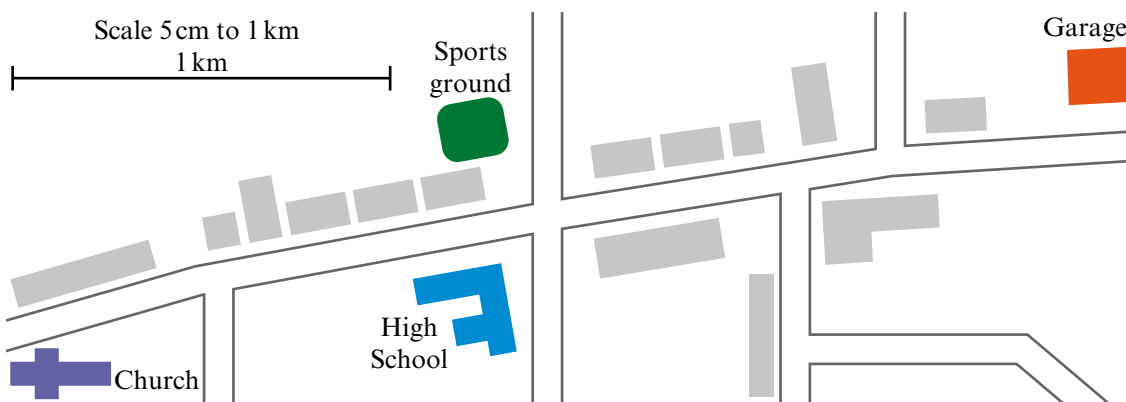
8 The plans of a house were drawn to scale. The scale was 4 cm to 1 m.

a The length of the kitchen is 2.5 m.
What was the length of the kitchen on the plans?

b On the plans, the width of the kitchen is 8 cm.
What is the width of the real kitchen?

c Explain why the scale is 1 : 25.

- 9** A town map is drawn with a scale of 5 cm to 1 km.



- The distance from the church to the garage is 3 km.
What is the distance on the map?
- On the map the distance from the sports ground to the school was 2.5 cm.
What is the real distance?
- Write the map scale as a ratio in its simplest form.

- 10** The length of a car is 4.8 m.

Mr Jones made a model of the car.

The length of the model is 24 cm.

- Explain how you work out that the ratio of the model length : actual length is 1 : 20.
- The height of the model is 6.5 cm.
Explain how you can work out that the real height of the car is 1.3 m.
- The width of the model is 10.5 cm.
What is the width of the real car?

- 11** The diagram shows a football pitch.

- Draw a scale diagram of the football pitch, using a scale of 1 cm to 10 m.
- Write the scale of the drawing as a ratio.

