



Scale drawing

- Using scales
- Interpreting scaled areas

Keywords

You should know

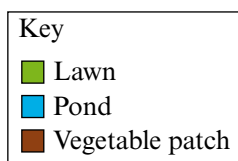
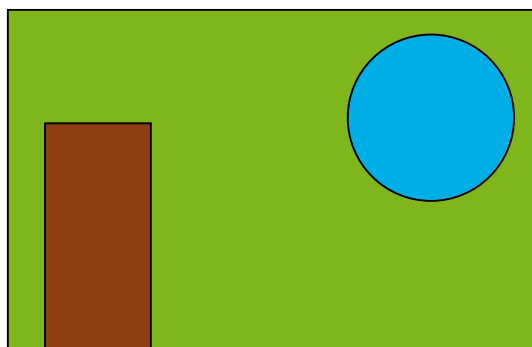
explanation 1a

explanation 1b

- James has a plan of his garden. It uses a scale of 1 : 50.
 - He measures these lengths from the plan. Work out the actual lengths in metres.
 - length of flower bed 3 cm
 - length of path 18 cm
 - James has a patio of length 6 m and width 2.5 m in his garden.
Work out the length and width of his patio on the plan in centimetres.
- Sahil uses a diagram of an aeroplane. The diagram is a scale drawing that uses a scale of 1 : 200.
 - He measures lengths from the scale drawing. Work out the actual lengths in metres.
 - length of aeroplane 27 cm
 - length of wing 9.6 cm
 - The actual length of another aeroplane is 35 m. What is the length of this aeroplane in a scale drawing using the ratio 1 : 200?
- Mandy finds an accurate scale drawing of a butterfly using a scale of 3 : 1 in a reference book.
She measures these lengths from the scale drawing. Work out the actual lengths in millimetres.
 - length of wingspan 15 cm
 - length of leg 0.9 cm

- 4** The accurate scale drawing shows a plan for a garden. The plan has a scale of 1 : 200. Use the plan of the garden to work these out.

- a** actual length and width of the garden
- b** actual diameter of the circular pond
- c** actual area of the vegetable patch

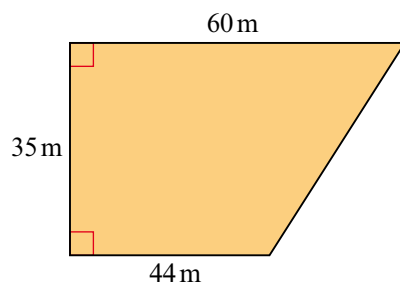


- 5** A map uses a scale of 1 : 25 000.

- a** On the map the distance from Cromer to Sheringham is 28 cm. What is the actual distance from Cromer to Sheringham? Give your answer in kilometres.
- b** The actual distance from Cromer to North Walsham is 15.4 km. What will this distance be on the map?

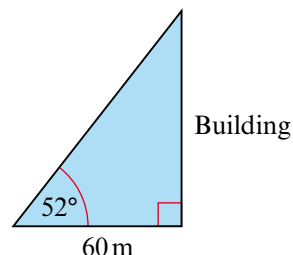
- 6** The diagram shows a field.

- a** Draw an accurate scale drawing of the field. Use a scale of 1 : 500.
- b** Work out the actual area of the field.
- c** Work out the area of the field in the scale drawing.



- 7** From a point 60 m away from a tall building, the angle of elevation of the top of the building is 52° . The sketch shows this information.

- a** Draw an accurate scale drawing, using a scale of 1 : 200.
- b** Use your scale drawing to find the height of the building.



- 8** The length of a car park is 120 m. This length on a scale drawing is 15 cm. What is the scale used for the scale drawing?
- 9** On a map, the distance from London to Cambridge is 14.4 cm. The actual distance from London to Cambridge is 72 km. What is the scale used on the map?

explanation 2a

explanation 2b

- 10** On a map of scale 1 : 100 000, the area of a lake is 5 cm^2 . What is the actual area of the lake in square kilometres?
- 11** On a scale drawing a garden has an area of 300 cm^2 . The scale drawing uses a scale of 1 : 100. What is the actual area of the garden in square metres?
- 12** On a map using a scale of 1 : 100 000, a desert covers an area of 25 cm^2 . What is the area that the desert covers in real life? Give your answer in square kilometres.
- 13** A country has an area of $30\,500 \text{ km}^2$. What area would this be on a map using a scale of 1 : 1 000 000?
- 14** A scale drawing of a room is drawn using a scale of 1 : 100.
- a** The area of the lounge on the scale drawing is 18 cm^2 . What is the actual area of the lounge? Give your answer in square metres.
 - b** The actual area of the bathroom is 3 m^2 . What is the area of the bathroom on the scale drawing?
- 15** On a map using a scale of 1 : 50 000, a forest covers an area of 6 cm^2 .
- a** What area in real life does 1 cm^2 on the map represent? Give your answer in square kilometres.
 - b** Work out the area that the forest covers in real life. Give your answer in square kilometres.