Planner

Scale drawing

- Converting between lengths on scale drawings and in real life, given the scale
- Drawing diagrams to scale
- Interpreting diagrams drawn to scale

Keywords

You should know

explanation 1a | explanation 1b | explanation 1c | online

1 Boris draws a plan of his flat to a scale of 1 : 40.
Calculate the actual size in metres of the flat.

a Length of lounge: 12 cm
b Width of bedroom: 7.5 cm
c Length of bathroom: 5.25 cm
d Depth of storage cupboard: 1 cm

2 In these questions, the plan lengths and the scale are given.
Calculate the actual lengths. Give your answers in metres.

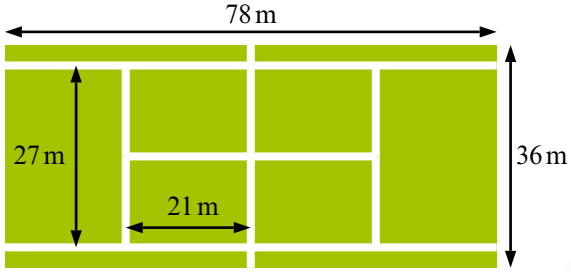
a 5 cm, 1 : 50
b 11 mm, 1 : 250
c 2 cm, 1 : 10 000
d 8.5 cm, 1 : 500
e 2 cm, 1 : 75
f 1 mm, 1 : 150 000

3 In these questions, the actual lengths and the scale are given.
Calculate the scaled lengths. Give your answers in centimetres.

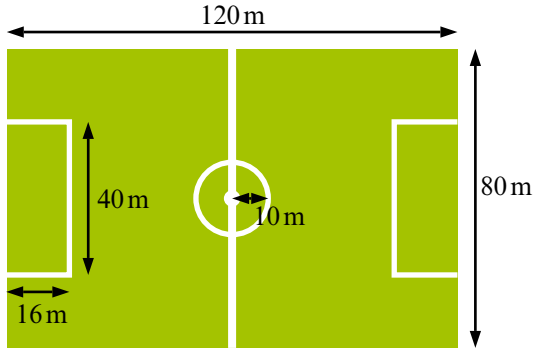
a 2 m, 50 : 1
b 50 mm, 4 : 1
c 120 m, 500 : 1
d 6 km, 50 000 : 3
e 85 cm, 5 : 3
f 7.5 m, 150 : 2

4 A swimming pool is rectangular and has a length of 50 m and a width of 25 m.
Draw a scale diagram of the pool. Use a scale of 1 : 1000.

5 The diagram shows a giant tennis court.
Draw a scale diagram of the tennis court. Use a scale of 1 : 600.

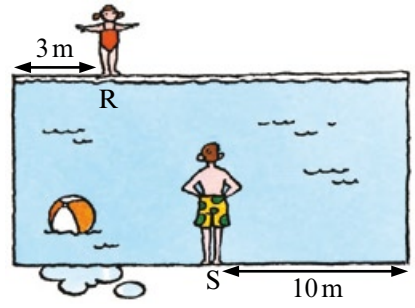


6 The diagram shows a football pitch.



Draw a scale diagram of the football pitch, using a scale of 3 : 4000.

7 The diagram below shows a rectangular pool 20 m long by 10 m wide.
Rachel stands at R and Steve stands at S.



a Draw a scale diagram of the pool, using 1 cm for 2 m.

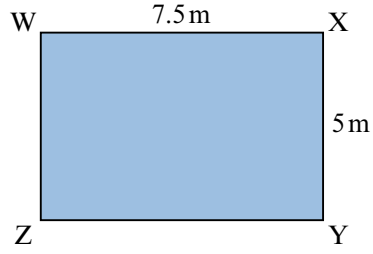
b Tom swims across the pool. He is always the same distance from Rachel as from Steve. Construct Tom's path across the pool.

> Draw the line segment RS. Every point on the perpendicular bisector of RS is equidistant from R and S.

8 A small rectangular swimming pool WXYZ is 7.5 m long and 5 m wide.

A girl sets off from corner Z and swims towards the edge WX in such a way that she bisects the angle WZY.

On arrival at the edge WX she turns and heads directly towards the corner Y.



a Using a scale of 1:125, draw a scale diagram of the pool.

b Using a pair of compasses and a ruler, construct the path taken by the girl.

c By measuring the path taken, calculate the actual distance swum by the girl.