

1 Map scales

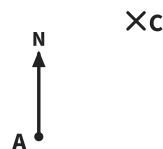
- a) A map has a scale of 1 : 20 000. A lake is 7.5 cm across on the map. How wide is the lake in real life, in km?
- b) A road 3 km long is 12 cm long on a map. Write the scale of the map in the form 1 : n .

a) $7.5 \times 20\,000 = 150\,000 \text{ cm} = 1.5 \text{ km}$

b) $300\,000 \div 12 = 25\,000$, so 1 : 25 000

2 Map scales: measuring

- a) Measure the bearing of C from A.
- b) B is 2.5 cm from A on a bearing of 110° . Mark B. Work out the bearing of A from B.

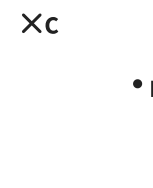


a) 040° (allow 038° to 042°)

b) $110 + 180 = 290^\circ$

3 Perpendicular bisector

- a) Construct the perpendicular bisector of AB. Use a ruler and compasses.
- b) Is C nearer to A or to B? Use your line to decide.

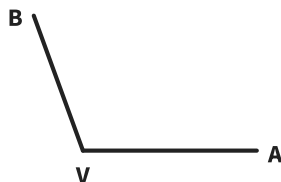


a) arcs from A and B, the same radius, joined

b) B: C is on B's side of the line

4 Angle bisector

- a) Construct the bisector of angle AVB.
- b) Shade the points inside the angle nearer to VA than to VB.



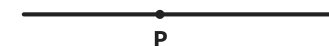
a) two angles of 55°

b) between VA and the bisector

Constructions and loci *revision mat answers*

5 Perpendicular through a point

- a) Construct the perpendicular to the line at P.
- b) Use it to construct an angle of 45° at P.



a) arcs from P cut the line; bisect between them

b) bisect the right angle: $90 \div 2 = 45^\circ$

6 Constructing triangles

- a) Construct triangle ABC with AB = 4 cm, angle BAC = 32° and AC = 2.4 cm.
- b) Measure BC.



b) $BC = 2.3 \text{ cm}$ (allow 2.1 cm to 2.5 cm)

7 Loci: a fixed distance

- a) Draw the locus of points 1 cm from the line segment AB.
- b) Shade the points less than 1 cm from AB that are nearer to A than to B.

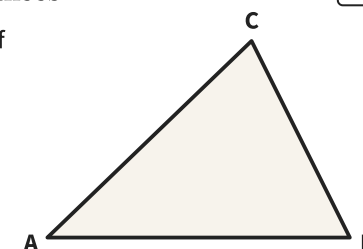


a) two lines parallel to AB and two semicircles

b) inside it, left of the bisector of AB

8 Loci: equal distances

- a) Construct the locus of points equidistant from AB and AC.
- b) Shade the points inside the triangle nearer to AB than AC and nearer to B than C.



a) the bisector of angle A

b) below it, on B's side of the bisector of BC