

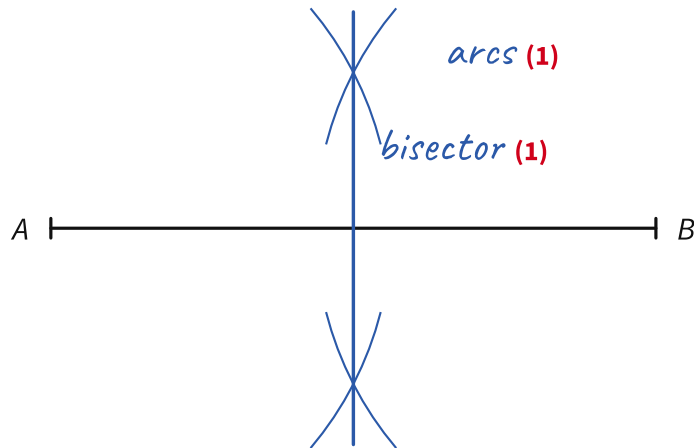
# Constructions and Loci

ANSWERS

Ruler, compasses and protractor | 30 minutes | Total marks: 25

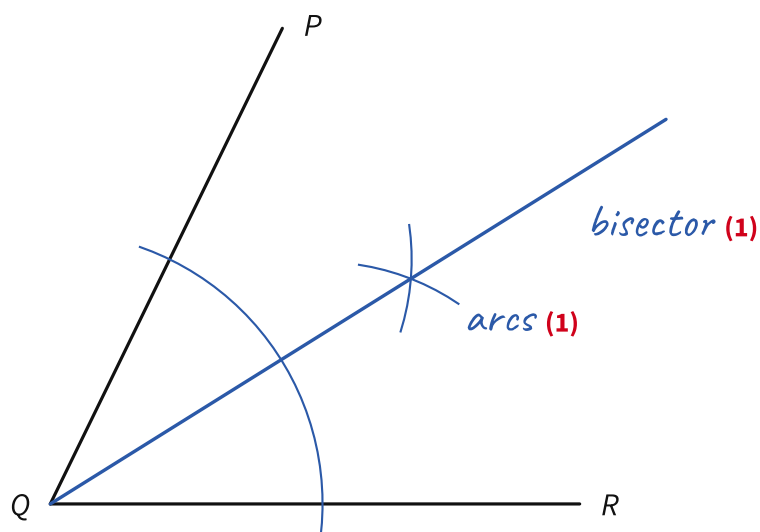
Name ..... Class .....

- 1 Use a ruler and compasses to construct the perpendicular bisector of the line  $AB$ .  
You **must** show all your construction arcs.



[2 marks]

- 2 Use a ruler and compasses to construct the bisector of angle  $PQR$ .  
You **must** show all your construction arcs.



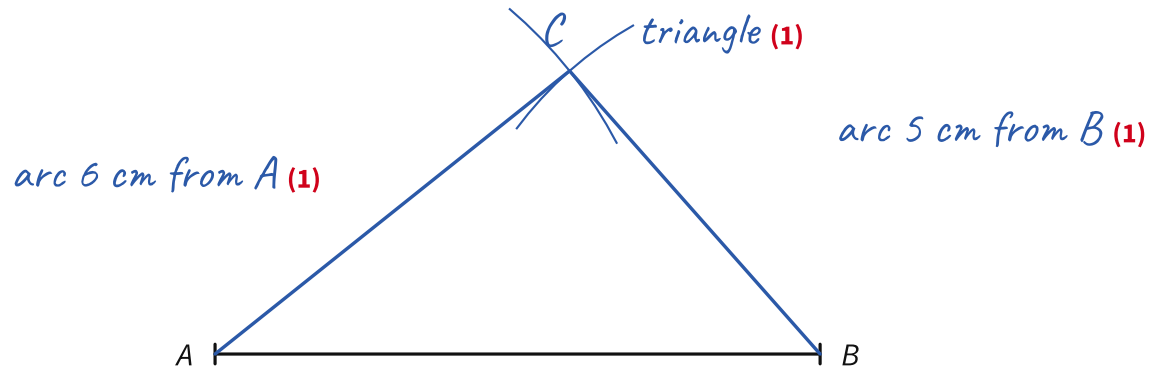
[2 marks]

3

The line  $AB$  is 8 cm long.

- (a) Use a ruler and compasses to construct triangle  $ABC$  with  $AC = 6$  cm and  $BC = 5$  cm

You **must** show all your construction arcs.



[3 marks]

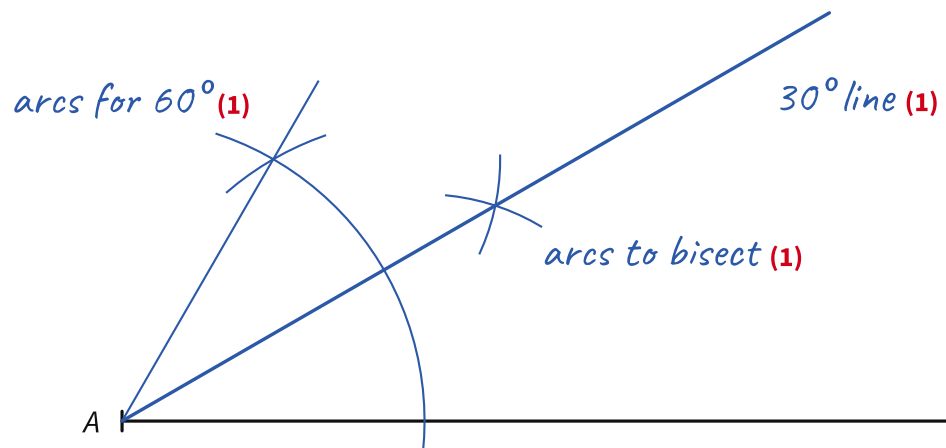
- (b) Measure the size of angle  $BAC$ .

Answer 39 (1) accept 37 to 41 ° [1 mark]

4

Use a ruler and compasses to construct an angle of  $30^\circ$  at  $A$ .

You **must** show all your construction arcs.



[3 marks]

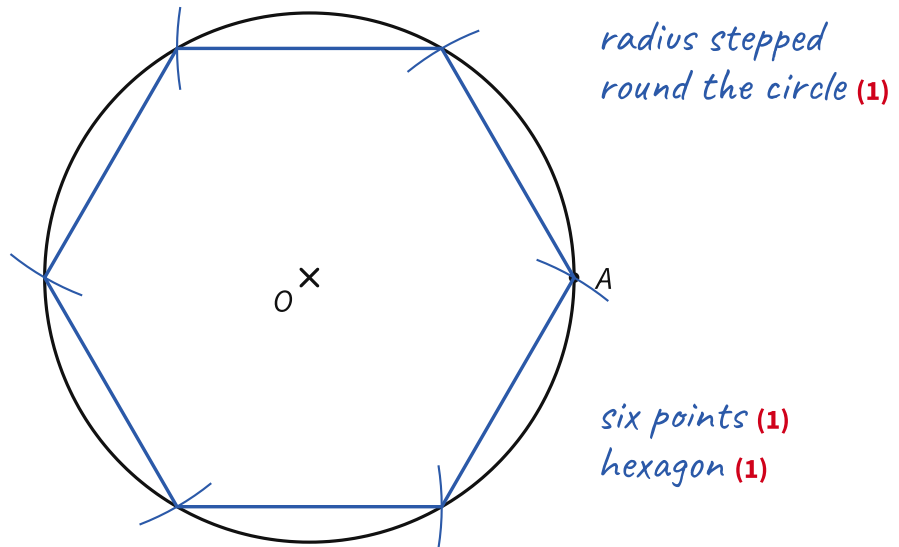
5

The diagram shows a circle, centre  $O$ .

$A$  is a point on the circle.

Use a ruler and compasses to construct a regular hexagon inside the circle.

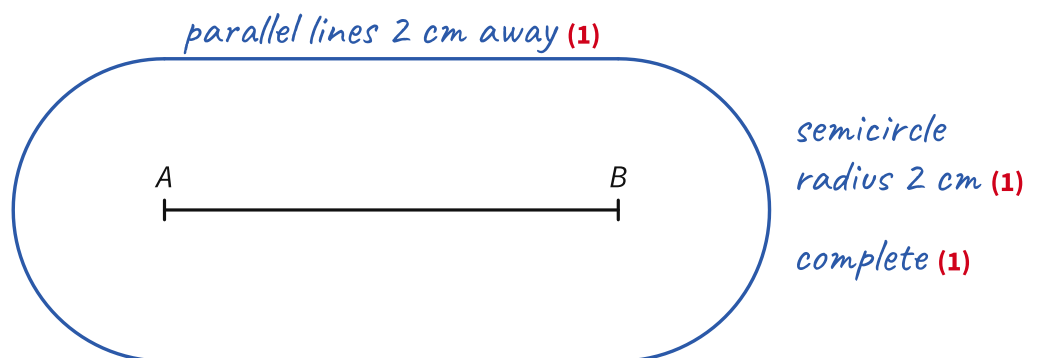
$A$  is one vertex of the hexagon.



[3 marks]

6

Draw the locus of all points that are exactly 2 cm from the line  $AB$ .

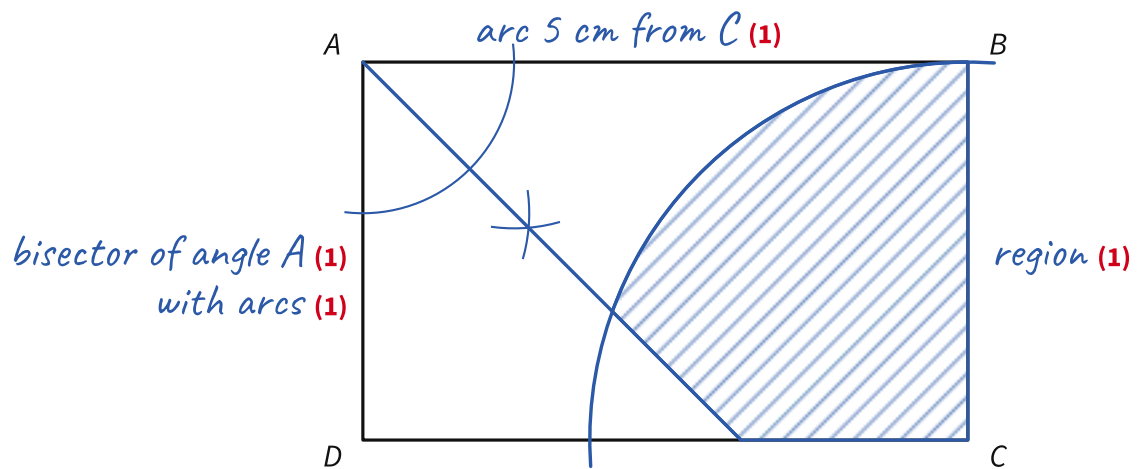


[3 marks]

7

$ABCD$  is a rectangular garden.

Scale: 1 cm represents 1 m



A tree is going to be planted in the garden.

The tree must be nearer to  $AB$  than to  $AD$ .

The tree must also be less than 5 m from  $C$ .

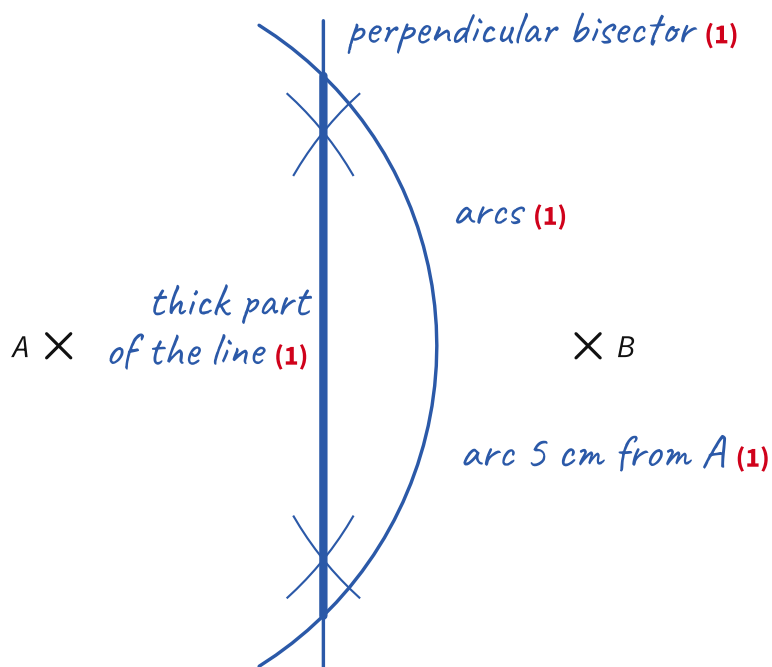
Shade the region where the tree can be planted.

[4 marks]

8

$A$  and  $B$  are two phone masts.

Scale: 1 cm represents 10 km



A new mast is going to be built.

It must be the same distance from  $A$  and from  $B$ .

It must also be less than 50 km from  $A$ .

Show on the diagram all the places where the new mast could be built.

[4 marks]

| Question | Topic                                                       | RAG |
|----------|-------------------------------------------------------------|-----|
| 1        | I can construct the perpendicular bisector of a line        |     |
| 2        | I can construct the bisector of an angle                    |     |
| 3        | I can construct a triangle when I know all three sides      |     |
| 4        | I can construct angles of $60^\circ$ and $30^\circ$         |     |
| 5        | I can construct a regular hexagon inside a circle           |     |
| 6        | I can draw the locus of points a fixed distance from a line |     |
| 7        | I can shade a region that follows two rules                 |     |
| 8        | I can solve a loci problem using a scale                    |     |