

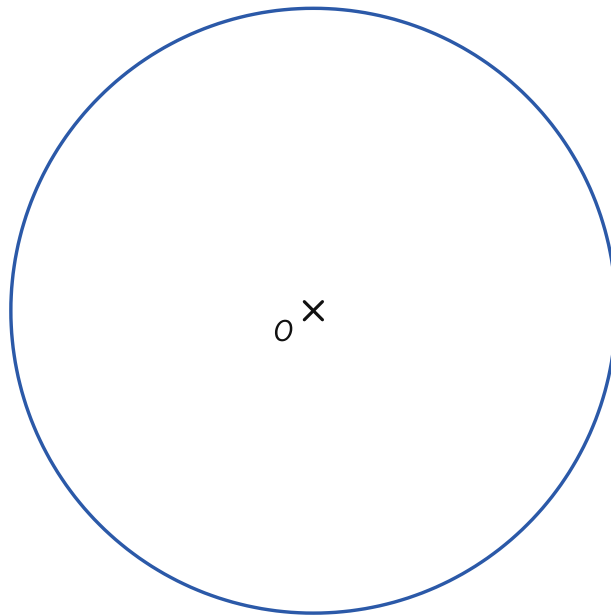
Constructions and Loci

ANSWERS

Ruler, compasses and protractor | 30 minutes | Total marks: 23

Name Class

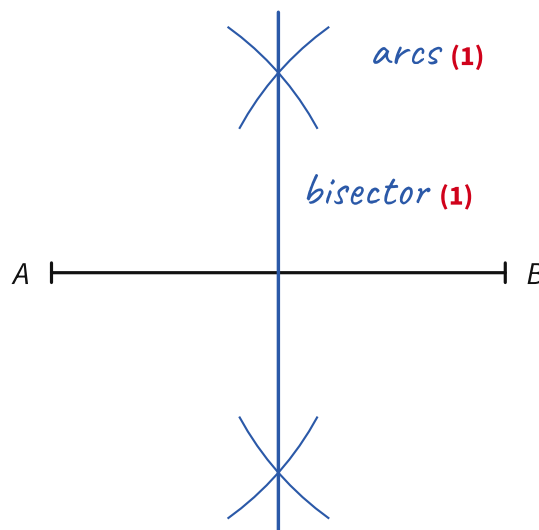
- 1 Use compasses to draw a circle with centre O and radius 4 cm



radius 4 cm (1)

[1 mark]

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

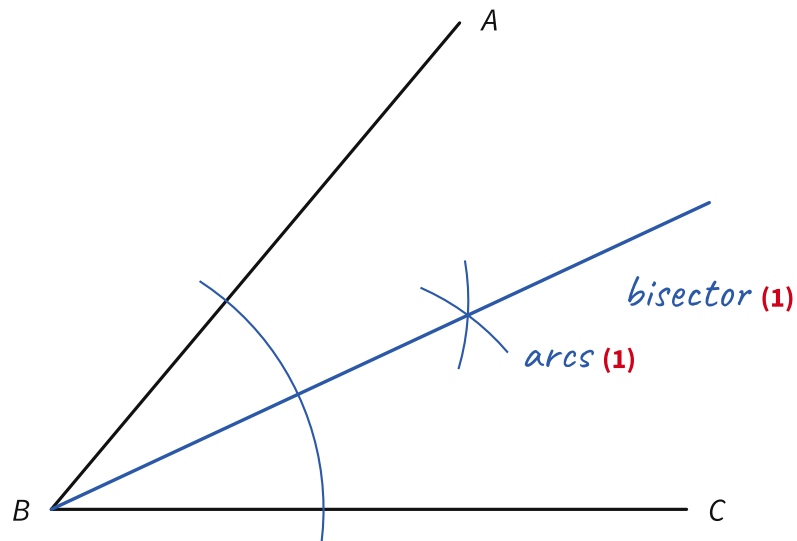


[2 marks]

3

Use a ruler and compasses to construct the bisector of angle ABC .

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

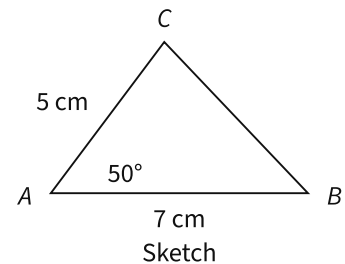
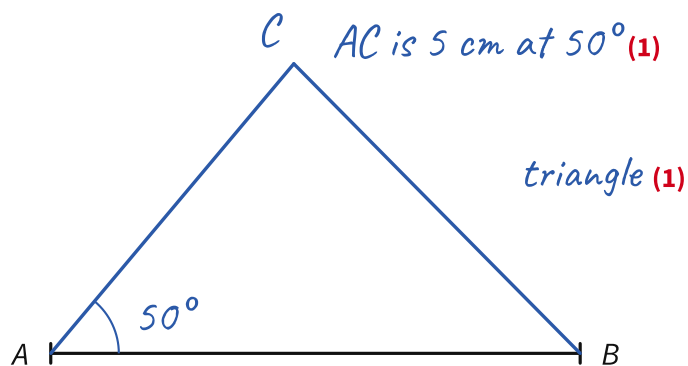


[2 marks]

4

Here is a sketch of triangle ABC .

The line AB has been drawn accurately for you.



(a) Make an accurate drawing of triangle ABC .

[2 marks]

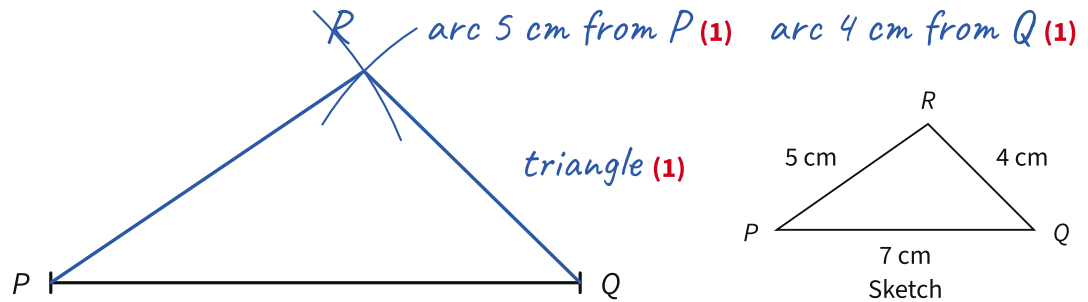
(b) Measure the length of BC .

Answer 5.4 (1) accept 5.2 to 5.6 cm [1 mark]

5

Here is a sketch of triangle PQR .

The line PQ has been drawn accurately for you.

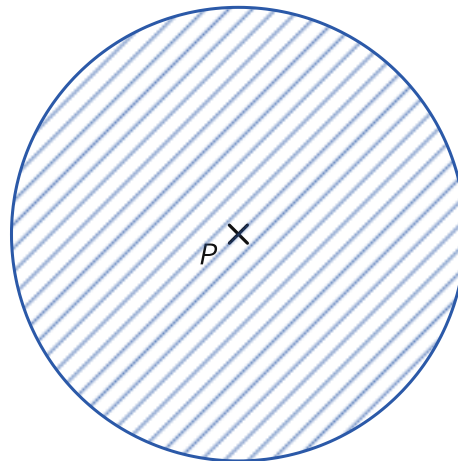


Use a ruler and compasses to construct triangle PQR .

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

[3 marks]

6



circle radius 3 cm (1)

inside shaded (1)

(a) Draw the locus of all points that are 3 cm from the point P .

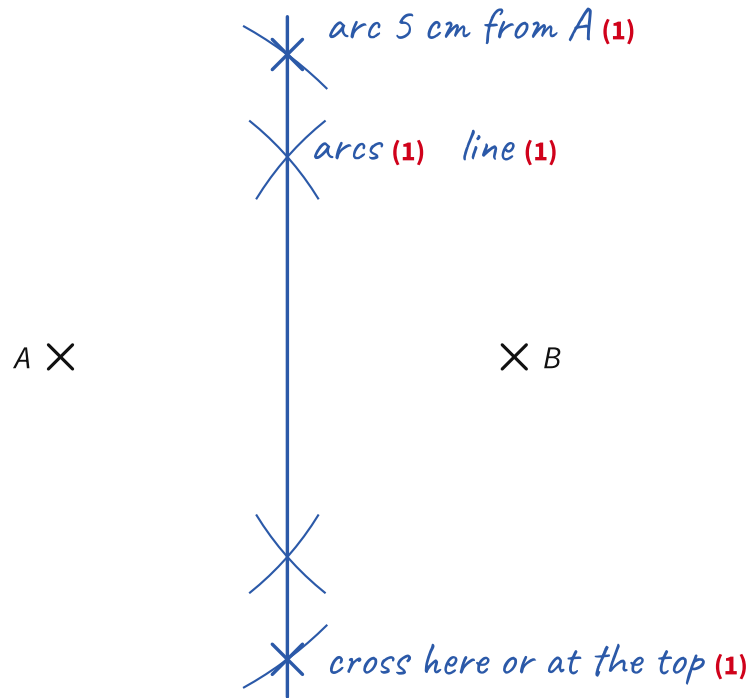
[1 mark]

(b) Shade the region where the points are less than 3 cm from P .

[1 mark]

7

A and B are two trees in a park.



- (a) Use a ruler and compasses to construct the locus of points that are the same distance from A and from B .

[2 marks]

- (b) A bench is the same distance from A and from B .

On the diagram, the bench is 5 cm from A .

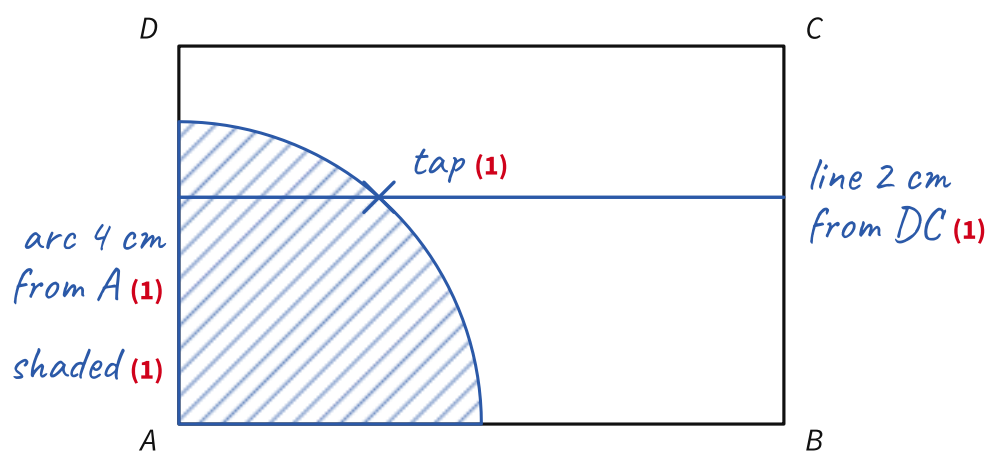
Mark with a cross ($\times$) one possible position of the bench.

[2 marks]

8

$ABCD$ is a rectangular garden.

Scale: 1 cm represents 1 m



- (a) A sprinkler at A waters all the grass that is less than 4 m from A .

Shade the region that the sprinkler waters.

[2 marks]

- (b) Draw the locus of points inside the garden that are exactly 2 m from the side DC .

[1 mark]

- (c) A tap is exactly 4 m from A and exactly 2 m from DC .

Mark the position of the tap with a cross ($\times$).

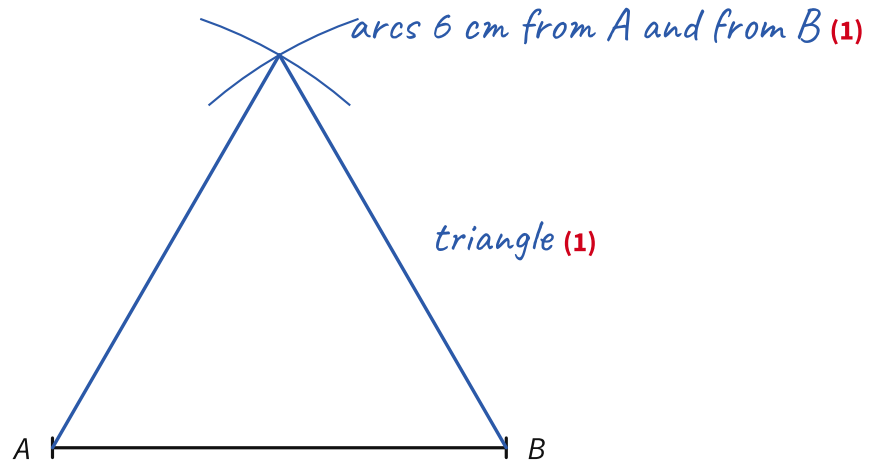
[1 mark]

9

Use a ruler and compasses to construct an equilateral triangle.

The line AB is one side of the triangle.

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



[2 marks]

Question	Topic	RAG
1	I can draw a circle with a given radius	
2	I can construct the perpendicular bisector of a line	
3	I can construct the bisector of an angle	
4	I can draw a triangle when I know two sides and the angle between them	
5	I can construct a triangle when I know all three sides	
6	I can draw the locus of points a fixed distance from a point	
7	I can use loci to find a position	
8	I can solve a loci problem using a scale	
9	I can construct an equilateral triangle	