Constructions and Loci

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

[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]

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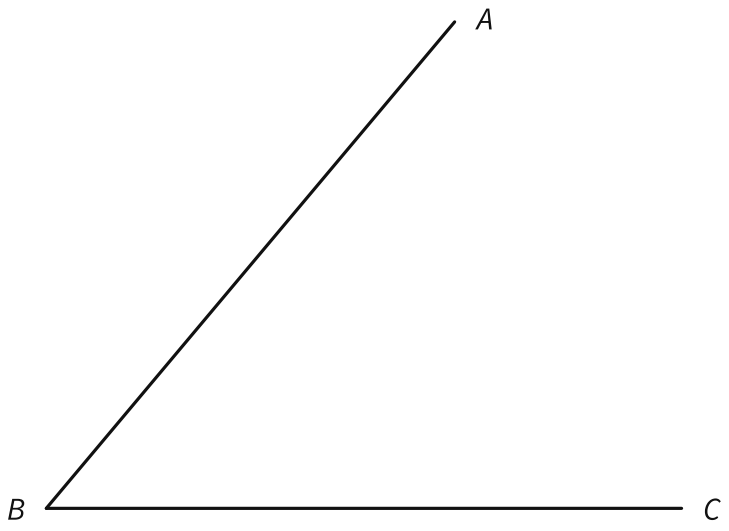
3 Use a ruler and compasses to construct the bisector of angle *ABC*.

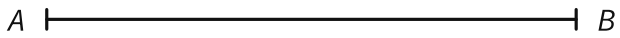
You **must** show all your construction arcs.

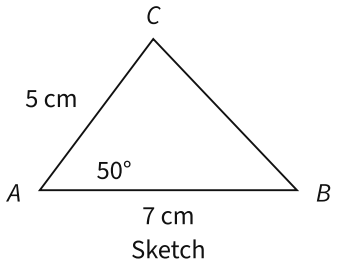


[2 marks]

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 ..... cm **[1 mark]**

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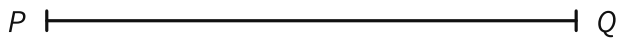
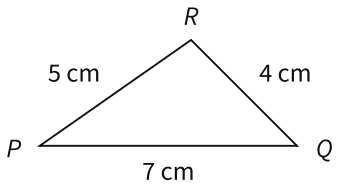
5 Here is a sketch of triangle *PQR*.

The line *PQ* has been drawn accurately for you.





Sketch

Use a ruler and compasses to construct triangle *PQR*.

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

[3 marks]

6

(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]

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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 (×) one possible position of the bench.

[2 marks]

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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 (×).

[1 mark]

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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	