

Constructions and Loci - Higher

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **22**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You will need a ruler and a pair of compasses. Diagrams are drawn accurately: print at 100%.

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

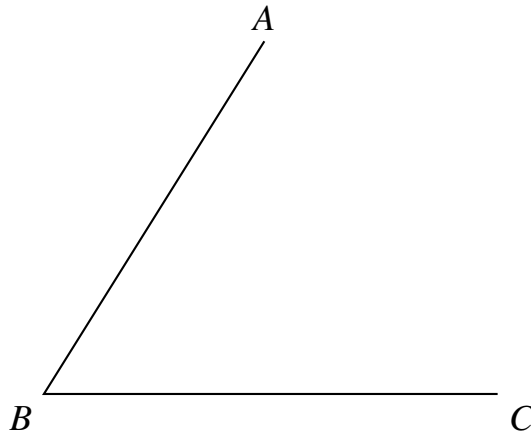
$\dot{A}$

$\dot{B}$

(2)

(Total for Question 1 is 2 marks)

- 2 Use ruler and compasses to construct the bisector of angle ABC .
You must show all your construction lines.



(2)

(Total for Question 2 is 2 marks)

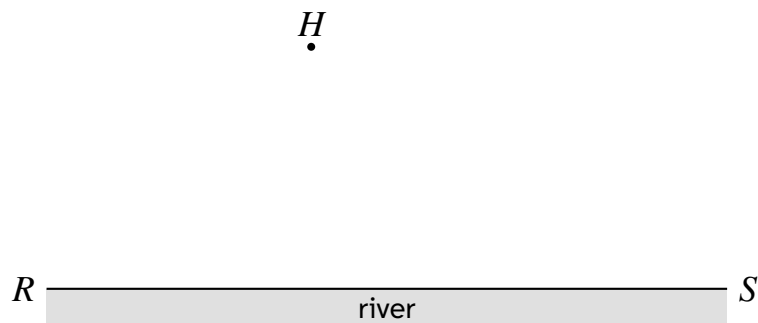
- 3 PQ is a line segment.
Use ruler and compasses to construct the line through Q that is perpendicular to PQ .
You must show all your construction lines.



(2)

(Total for Question 3 is 2 marks)

- 4 The diagram shows a house, H , and a straight river bank, RS .
A path is going to be made from H to the river bank.
The path will be as short as possible.
Use ruler and compasses to construct the path.
You must show all your construction lines.

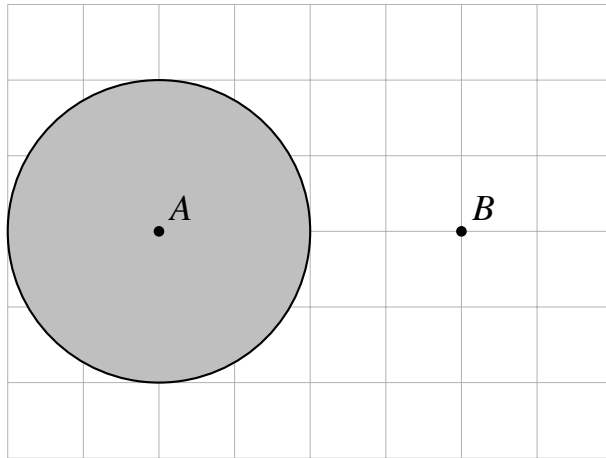


(2)

(Total for Question 4 is 2 marks)

- 5 Two points, A and B , are 4 cm apart on a centimetre grid.

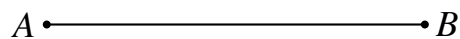
Ellis wants to show all the points that are closer to A than to B .
He shades the circle shown on the grid.
Explain why Ellis is wrong.



(1)

(Total for Question 5 is 1 mark)

- 6 Show, by shading, the region of points that are less than 2 cm from the line segment AB .



(3)

(Total for Question 6 is 3 marks)

- 7 Shade the region of points that are less than 4 cm from A and closer to B than to A .
Show all your construction lines.

$\dot{A}$

$\dot{B}$

(3)

(Total for Question 7 is 3 marks)

- 8 The diagram shows a scale drawing of a garden $ABCD$.

Anwen is going to plant a tree in the garden.

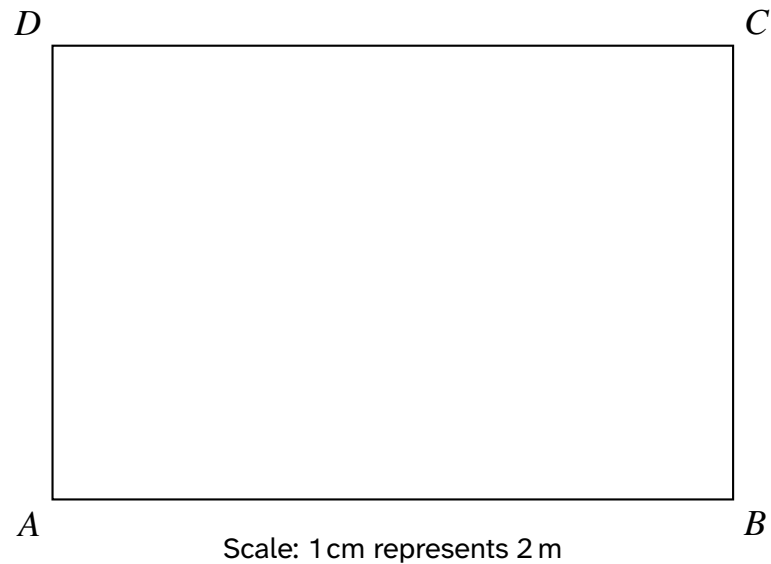
The tree must be

at least 4 m from the fence AB

closer to the fence BC than to the fence DC .

Show, by shading on the diagram, the region where Anwen can plant the tree.

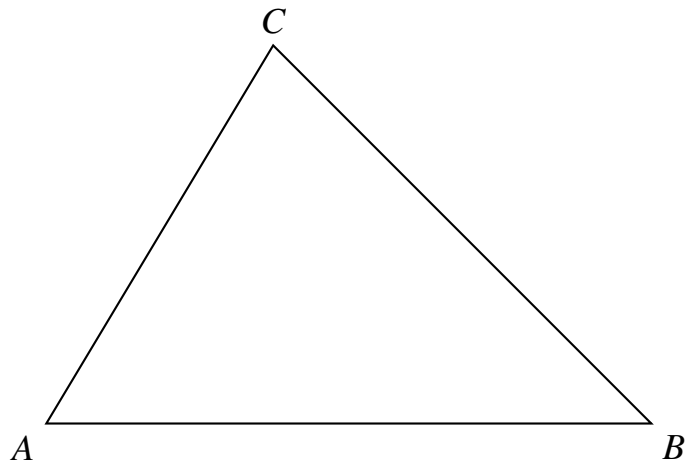
You must show all your construction lines.



(3)

(Total for Question 8 is 3 marks)

- 9 Shade the region inside triangle ABC that is closer to AB than to AC and closer to B than to A .
Show all your construction lines.



(4)

(Total for Question 9 is 4 marks)
