

Constructions and Loci - Higher

For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **22**

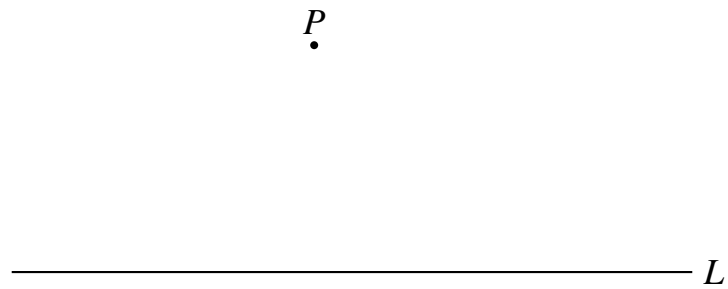
Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You will need a ruler and a pair of compasses. Diagrams are drawn accurately: print at 100%.

- 1** The diagram shows two trees, A and B , in a park.
A straight path is to be laid across the park.
Every point on the path is the same distance from tree A as from tree B .
Use ruler and compasses to construct the line of the path.
You must show your construction arcs.



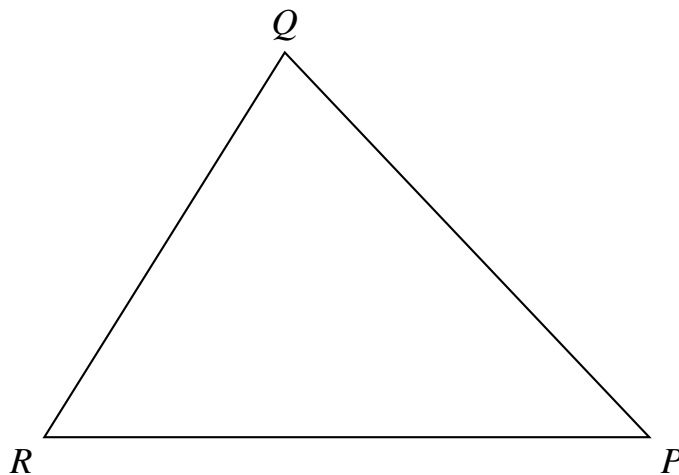
[2 marks]

- 2 Use ruler and compasses to construct the perpendicular from P to the line L .
You must show your construction arcs.



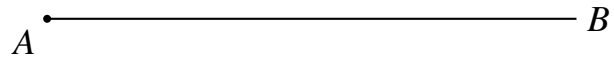
[2 marks]

- 3 The diagram shows a triangular piece of card, PQR .
Oskar cuts the card along a straight line that starts at R .
Every point on the cut is the same distance from RP and RQ .
Using ruler and compasses, construct the line of the cut.



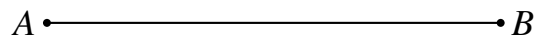
[2 marks]

- 4** Use ruler and compasses to construct an angle of 30° at A , above the line AB .
You must show all your construction arcs.



[3 marks]

- 5** Construct the region that lies within 3 cm of the line segment AB .



[3 marks]

- 6 $PQRS$ is a plan of a campsite. The scale is 1 cm represents 5 m.
 T is a water tap and W is a waste bin.

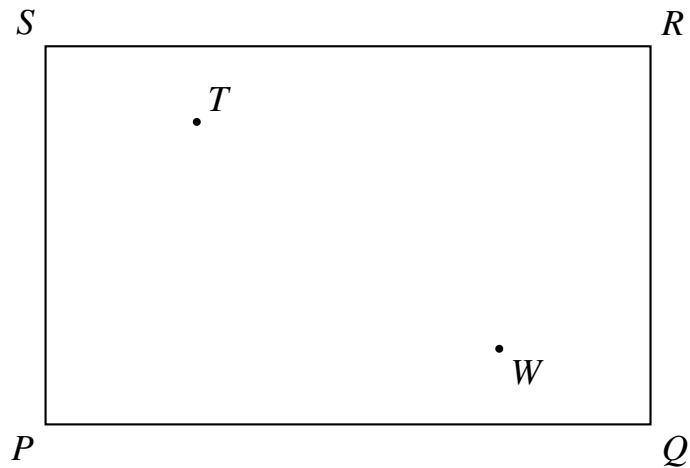
A tent is to be put up on the campsite. It must be
closer to T than to W

and

at least 10 m from the hedge PQ .

Shade the region where the tent can be put up.

Show all your construction lines.



[3 marks]

- 7 Use ruler and compasses to answer this question.

$ABCD$ is a plan of a field.

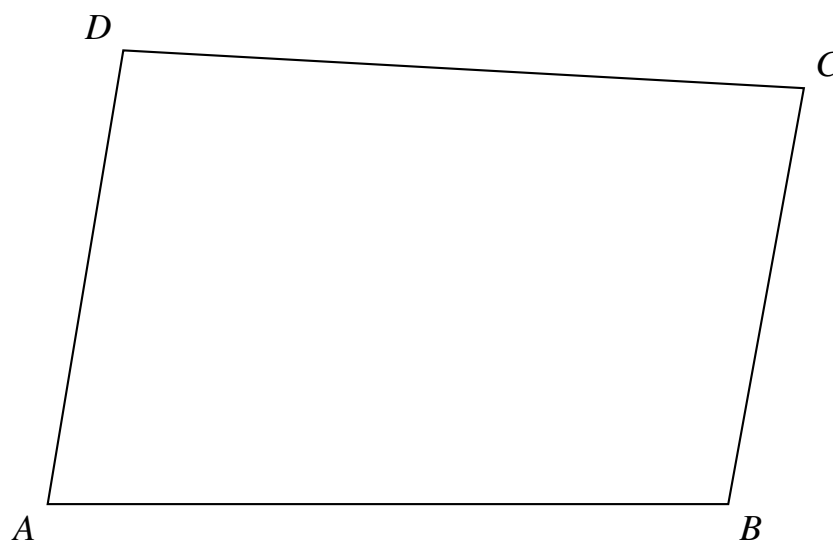
A water trough, X , is to be placed in the field.

X is

the same distance from A as from D

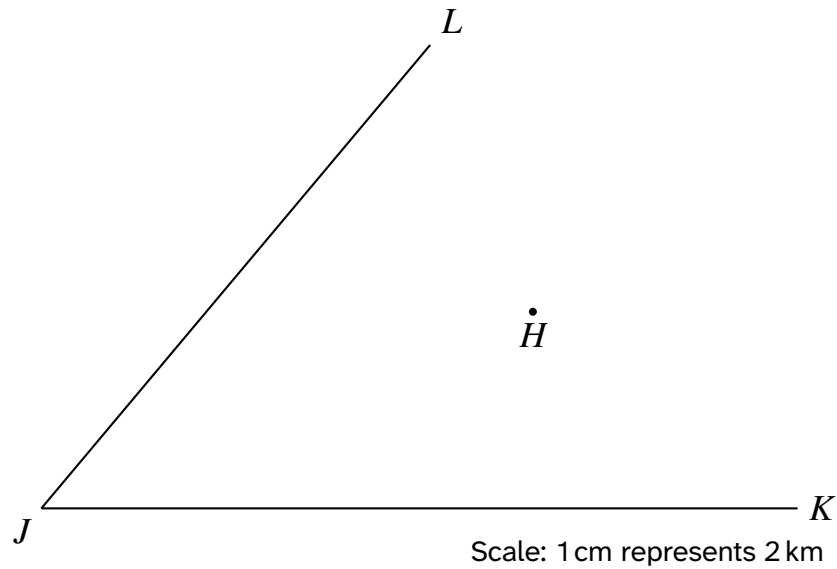
the same distance from BA and BC .

Show the position of X on the diagram.



[3 marks]

- 8 Use a ruler and compasses in this question.
The scale diagram shows two straight roads, JK and JL , and a hospital, H .
A phone mast is to be built. It must be
less than 5 km from H
and
closer to road JK than to road JL .
Label the region, R , where the mast could be built.
Show all your construction lines.



[4 marks]