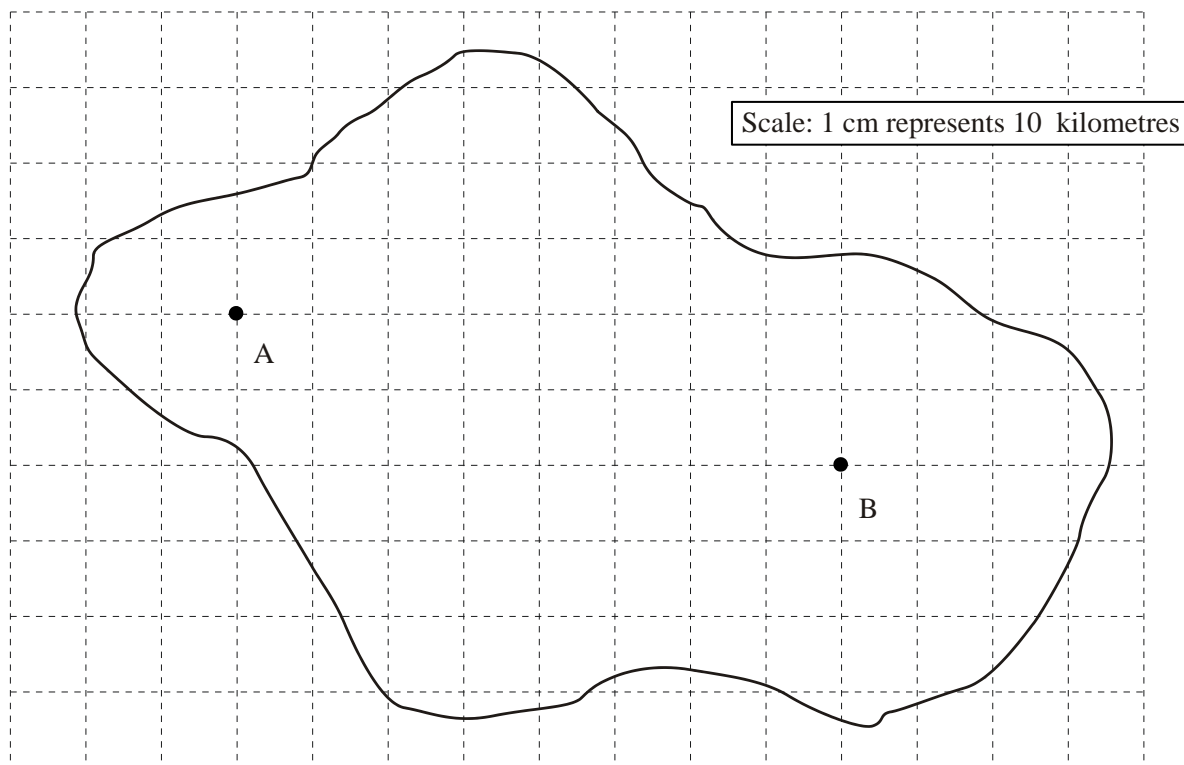


Loci and Constructions GCSE Questions

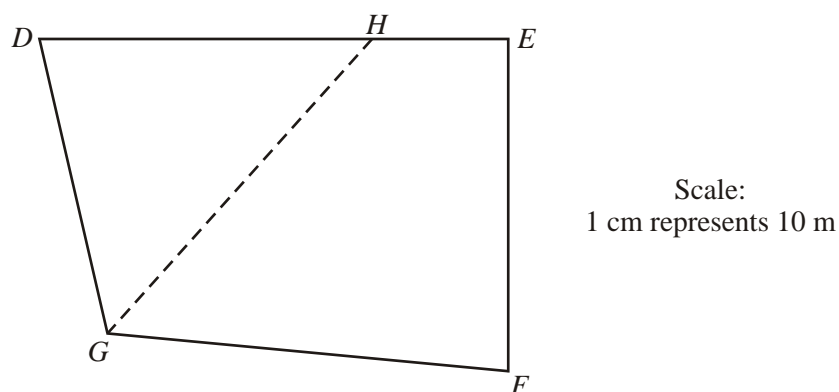
1. There are two TV transmitters on an island.
The transmitter at A has a range of 40 km.
The transmitter at B has a range of 60 km.



Show clearly the area in which the signal from both transmitters can be received.

(Total 3 marks)

2. The quadrilateral $DEFG$ is a scale drawing of a field.
The line GH bisects angle DGF .



- (a) Construct the locus of points in the field which are 40 m from E .

(1)

- (b) Shade the area of the field which is more than 40 m from E
and nearer to DG than to GF .

(1)

(Total 2 marks)

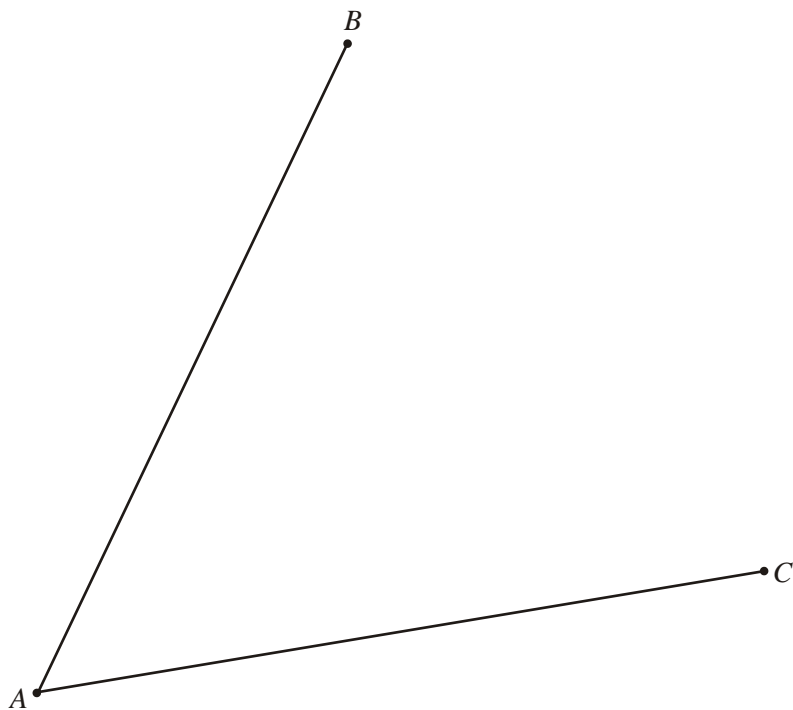
3. AB and AC represent two walls.

A mast is to be erected that is

equidistant from AB and AC

between 40 m and 70 m from A .

Scale: 1 cm represents 10 m



Show clearly all the possible positions of the mast.

(Total 3 marks)

4.

- (b) Two lifeboat stations *A* and *B* receive a distress call from a boat.
The boat is within 6 kilometres of station *A*.
The boat is within 8 kilometres of station *B*.

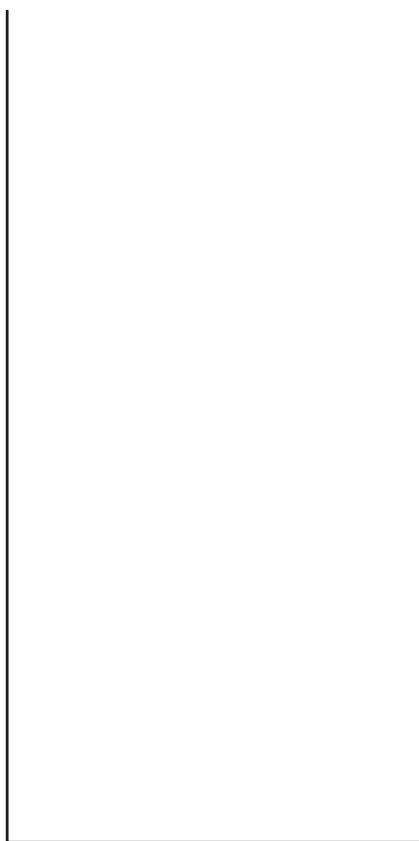
Shade the possible area in which the boat could be.

Scale: 1 cm represents
1 km



(Total 2 marks)

5. The diagram shows an L shape.



Draw the locus of all points 2 cm from the L shape.

(Total 3 marks)

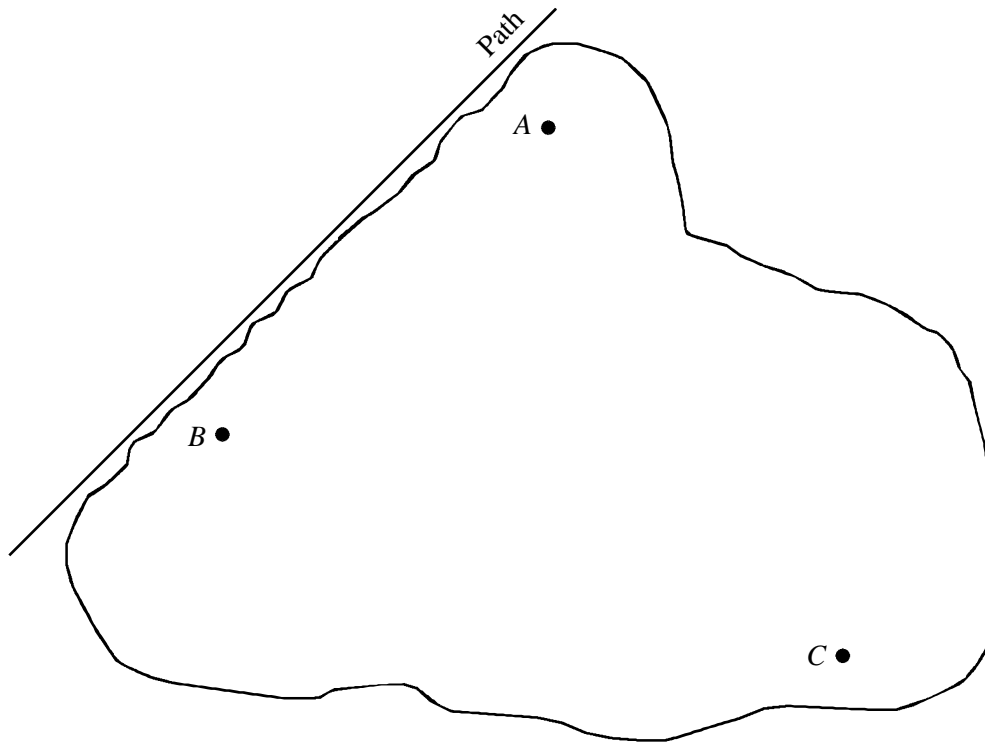
6. The map below shows three boats, *A*, *B* and *C*, on a lake. Along one edge of the lake there is a straight path.

Treasure lies at the bottom of the lake.

The treasure is:

between 150 m and 250 m from *B*,
nearer to *A* than *C*,
more than 100 m from the path.

Scale: 1 cm represents 50m



Using a ruler and compasses only, shade the region in which the treasure lies.

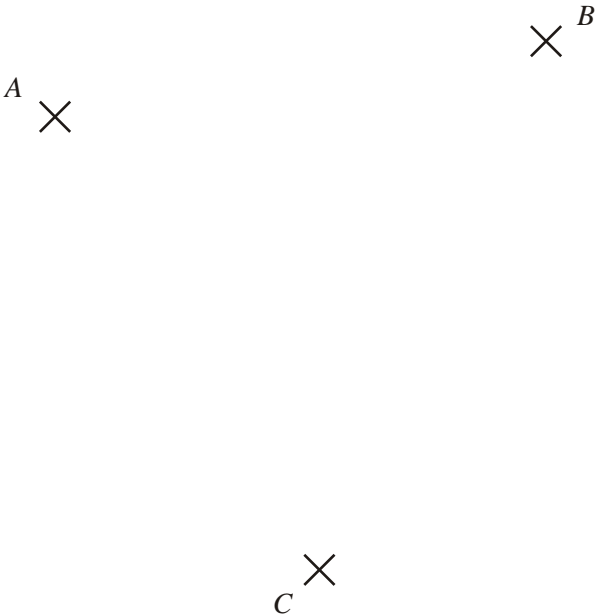
You **must** show clearly all your construction arcs.

(Total 5 marks)

7. The diagram shows three towns A , B and C .
 1 cm represents 2 km.

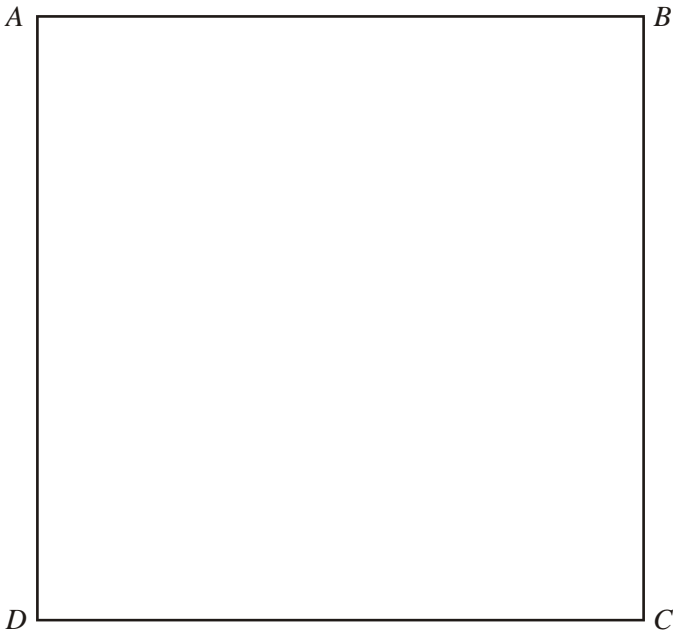
Show on the diagram the region which is less than 10 km from all three towns.

Scale: 1 cm represents 2 km



(Total 3 marks)

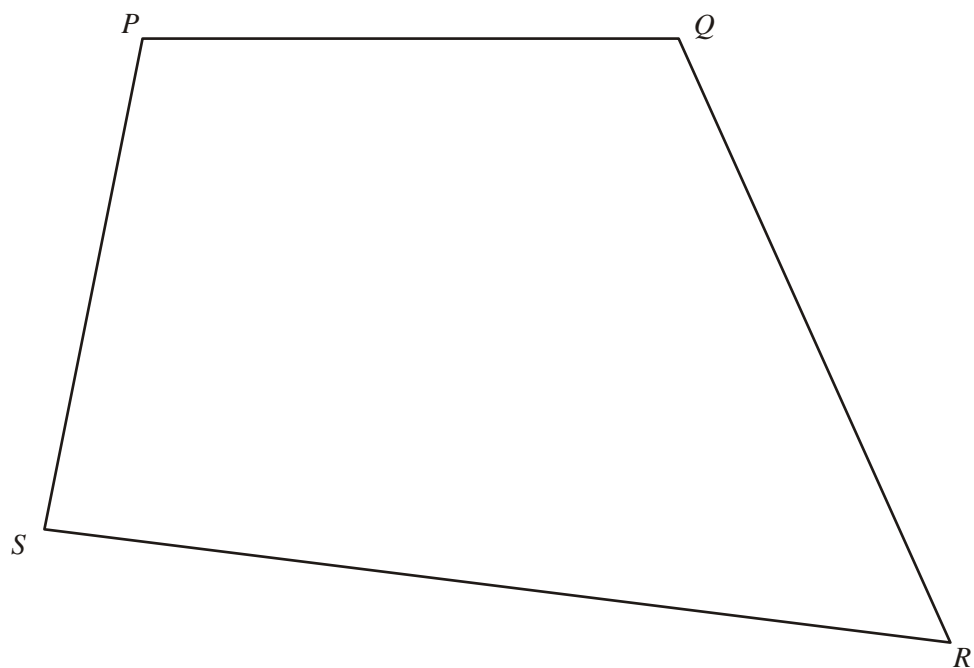
8. $ABCD$ is a square of side 8 cm.



Show clearly the region inside the square that is both closer to the point D than to the point A , and closer to the side CD than the side AD .

(Total 3 marks)

9. The diagram shows a quadrilateral $PQRS$.



- (a) Draw the locus of points that are the same distance from P as from Q . (2)
- (b) Shade the region inside the quadrilateral which is less than 7 cm from S and nearer to Q than to P . (2)

(Total 4 marks)