

Name: _____

GCSE (1 – 9)

Loci and Construction

Instructions

- Use **black** ink or ball-point pen.
- Answer all Questions.
- Answer the Questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

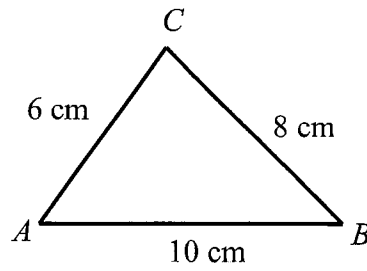
Information

- The marks for each Question are shown in brackets
– *use this as a guide as to how much time to spend on each Question.*

Advice

- Read each Question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every Question.
- Check your answers if you have time at the end

1 ABC is a triangle.



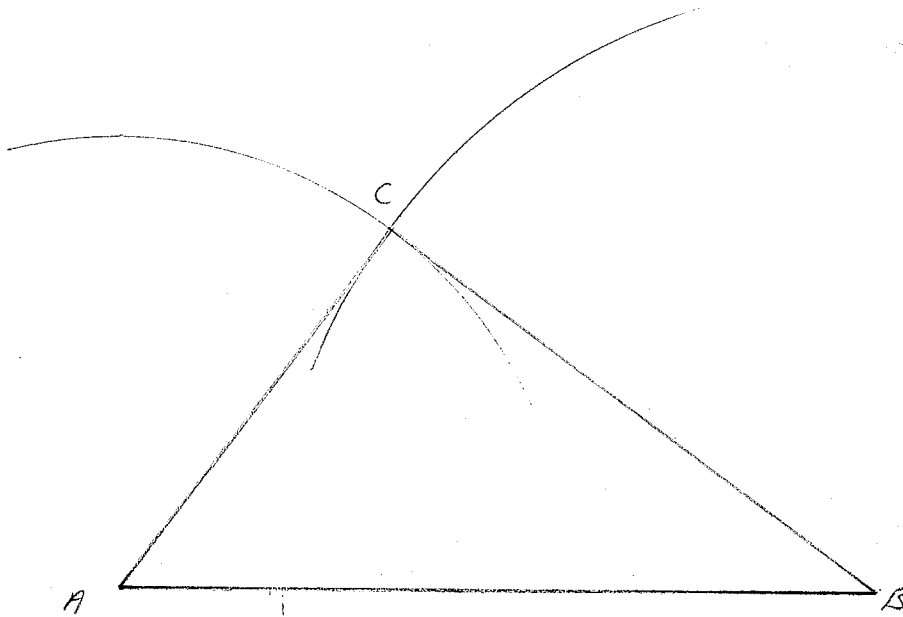
$$AB = 10\text{ cm}$$

$$BC = 8\text{ cm}$$

$$AC = 6\text{ cm}$$

Use ruler and compasses to construct an accurate drawing of triangle ABC .

You must show all your construction lines.

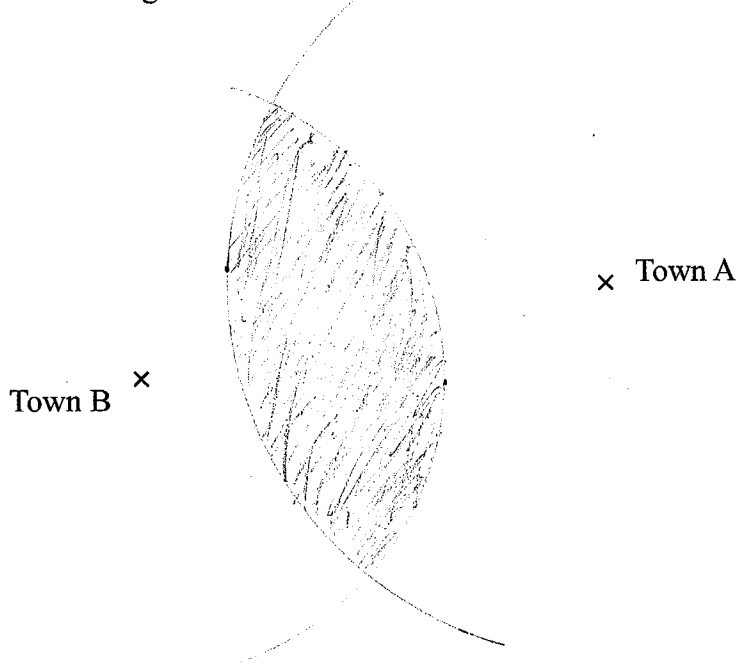


(Total for Question 1 is 3 marks)

- 2 A stadium is going to be built.
It must be more than 10 km from town A and no more than 8 km from town B.

1 cm represents 2 km 5 cm 4 cm

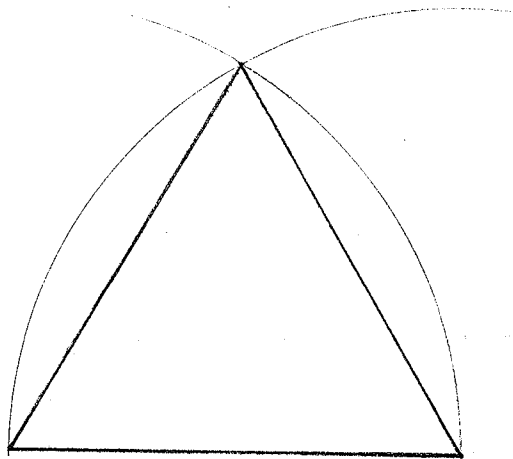
Shade the region on the diagram where the stadium can be built.



(Total for Question 2 is 2 marks)

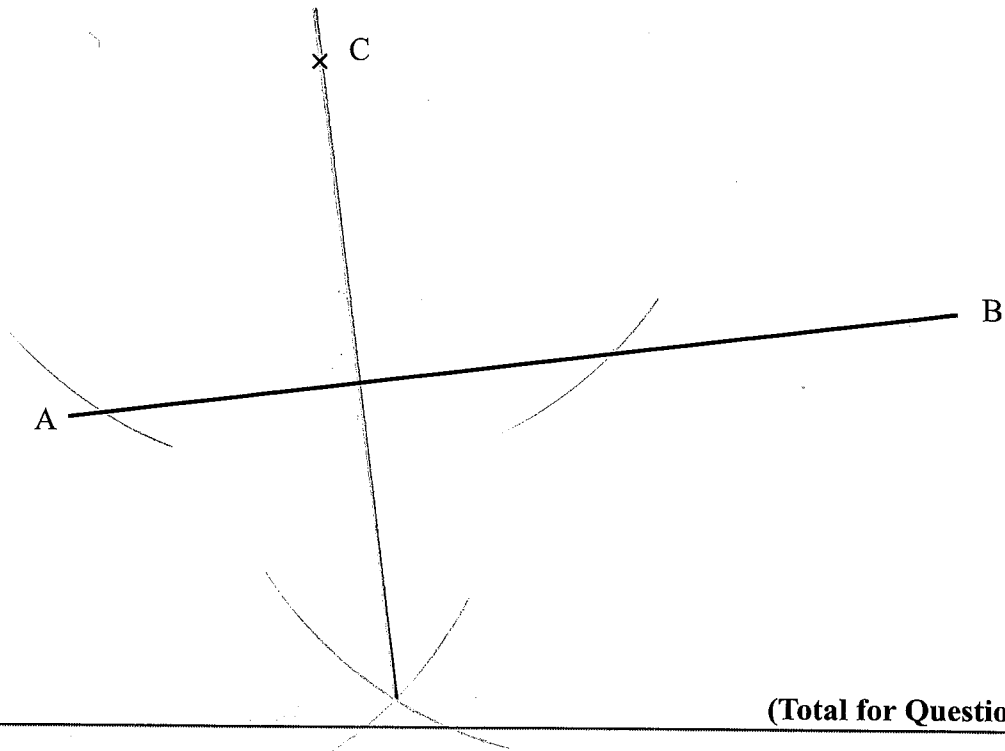
- 3 In the space below, use a ruler and compasses to construct an equilateral triangle with side length 6 cm.

You must show all your construction lines.



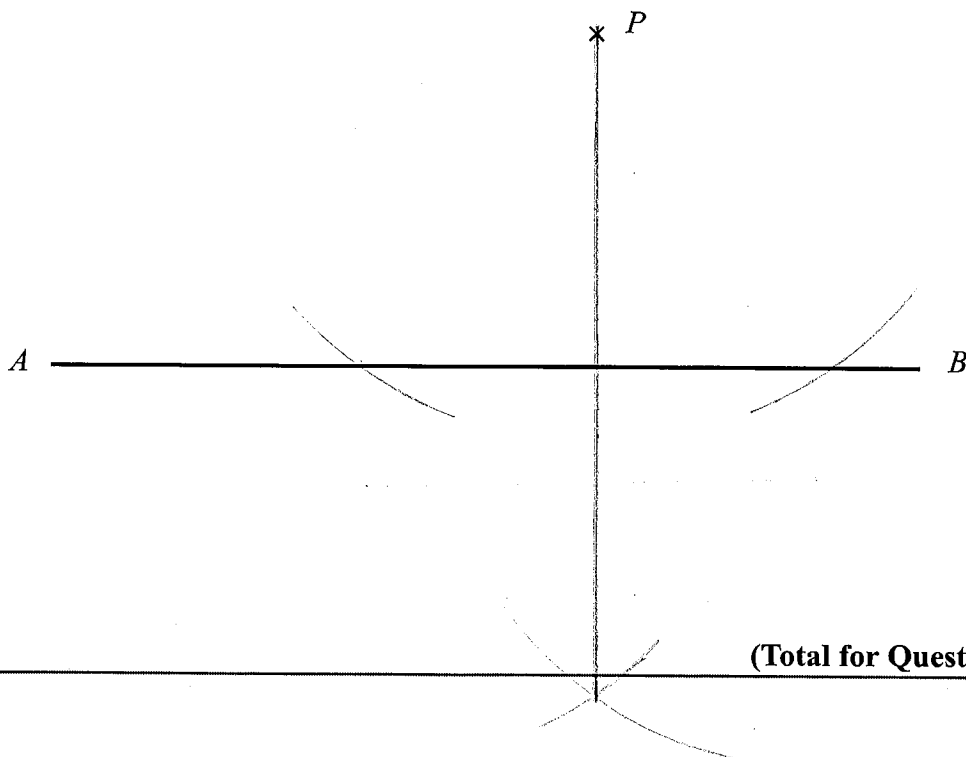
(Total for Question 3 is 3 marks)

- 4 Use ruler and compasses to construct the perpendicular from point C to the line AB .
You must show all your construction lines.



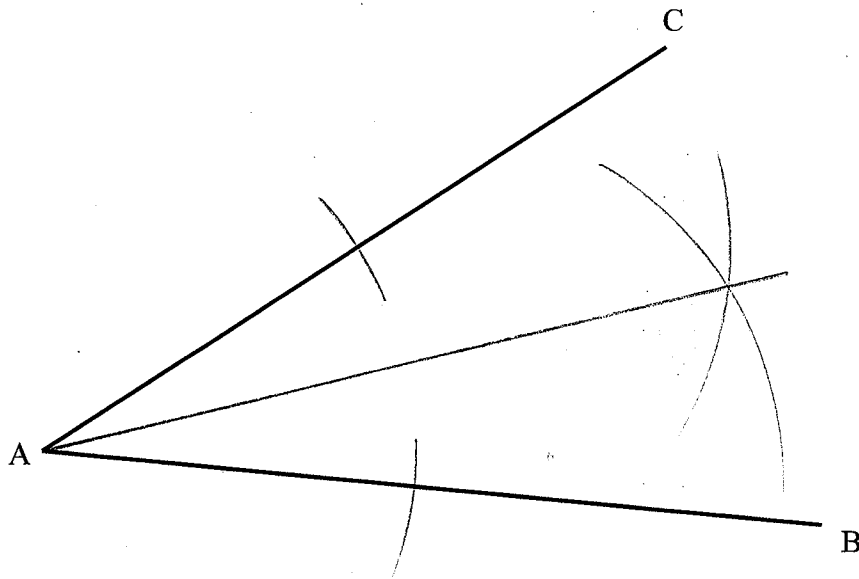
(Total for Question 4 is 2 marks)

- 5 Use ruler and compasses to construct the perpendicular from point P to the line AB .
You must show all your construction lines.



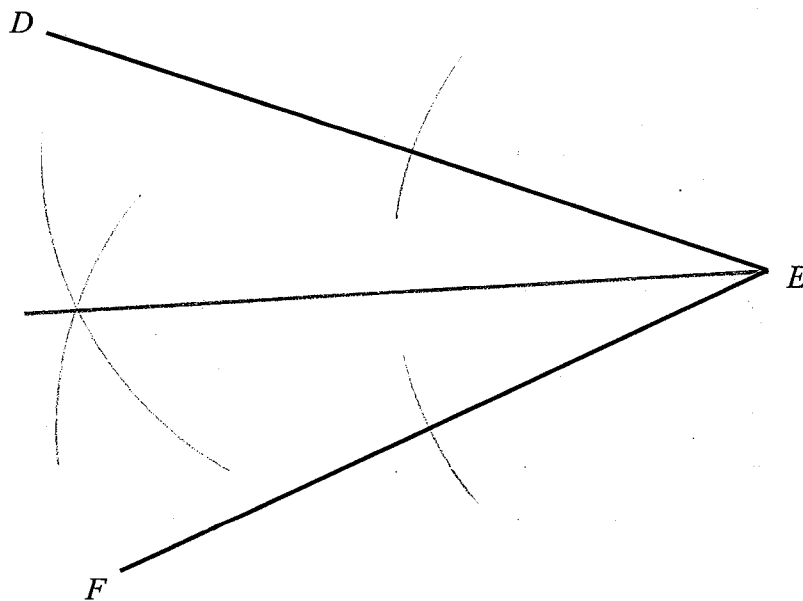
(Total for Question 5 is 2 marks)

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



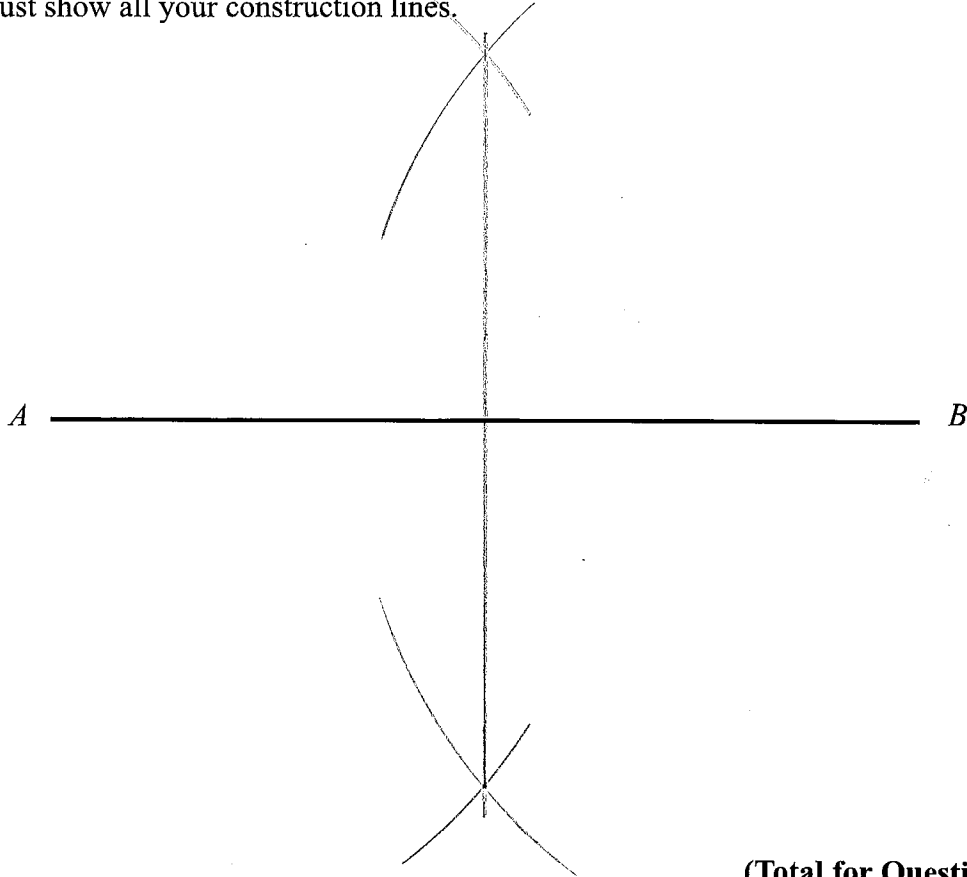
(Total for Question 6 is 2 marks)

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



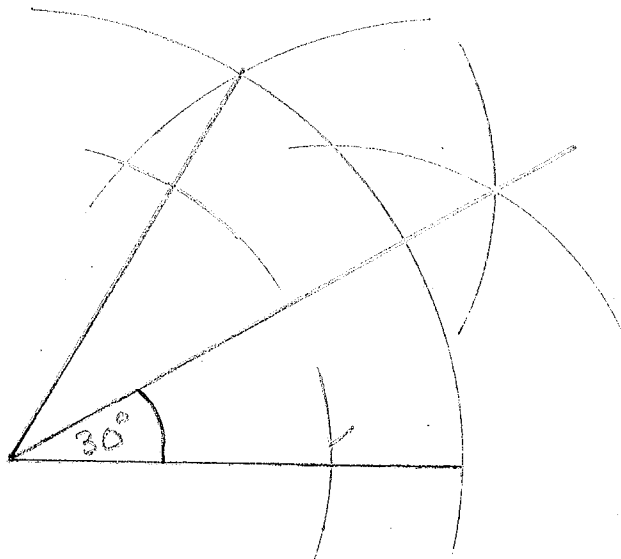
(Total for Question 7 is 2 marks)

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



(Total for Question 8 is 2 marks)

- 9 In the space below, use a ruler and compasses to construct a 30° angle.
You must show all your construction lines.

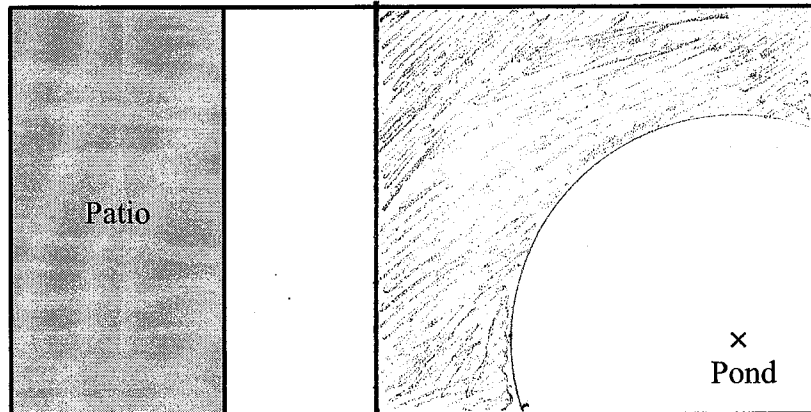


(Total for Question 9 is 4 marks)

- 10 Here is a scale drawing of a garden.
The scale is 1 cm to 2 m

A tree is going to be planted.
The tree must be more than 4 m from the patio.
The tree must be more than 6 m from the pond.

Shade the region where the tree can be planted.

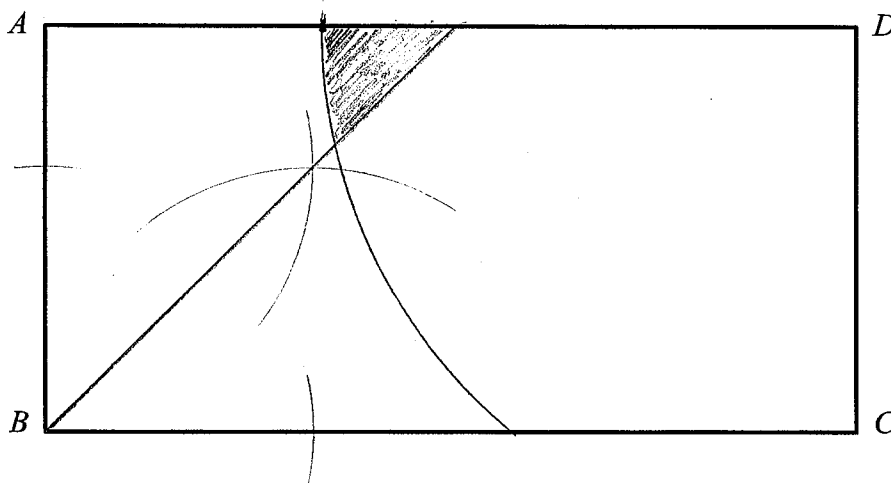


(Total for Question 10 is 2 marks)

- 11 Here is a scale drawing of a room.
The scale is 1 cm to 2 m.

A chair is going to be placed in the room.
The chair must be closer to AB than BC .
The chair must be less than 14 m from D .

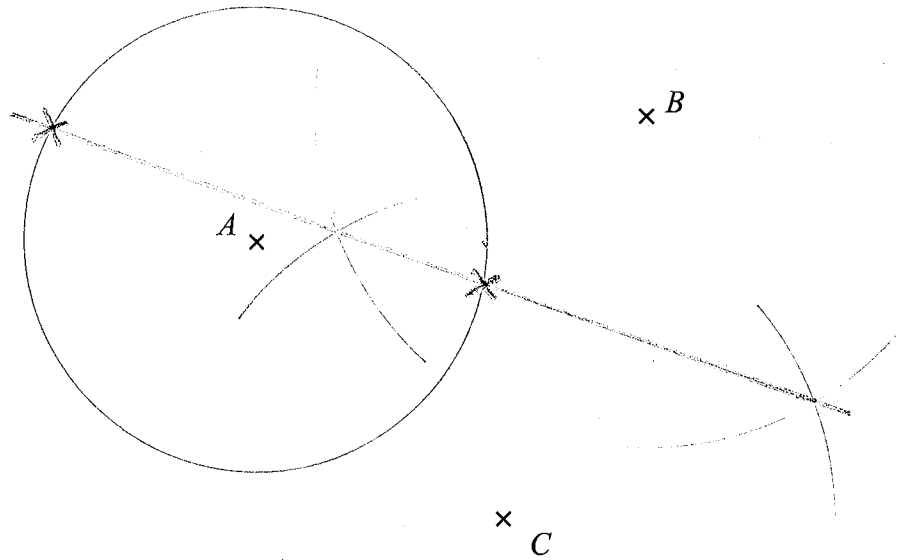
Shade the region where the chair can be placed.



(Total for Question 11 is 2 marks)

12 A , B and C are three points on a map.

1 cm represents 100 metres.



Point P is 300 metres from A .

Point P is equidistant from B and C .

On the map, show the possible positions of P .

(Total for Question 12 is 3 marks)