

Name

Class



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# Loci and constructions

(9 – 1) Topic booklet

These questions have been collated from previous years GCSE Mathematics papers.

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

## Instructions

- Use **black** ink or ball-point pen.
- Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- 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.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

## Information

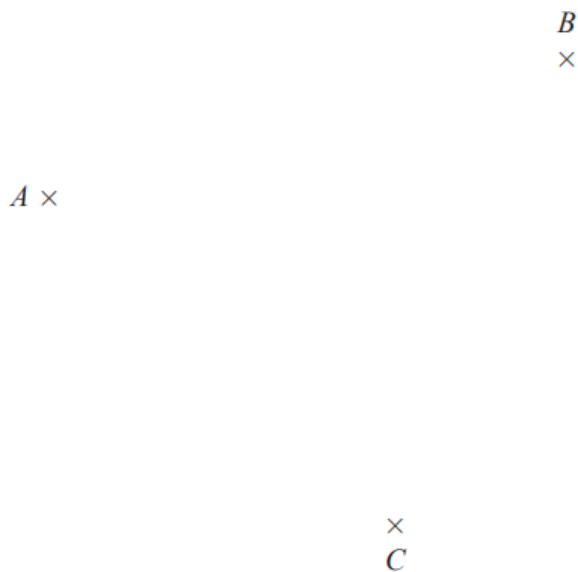
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

## 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.

**Answer ALL questions**  
**Write your answers in the space provided.**  
**You must write down all the stages in your working.**

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



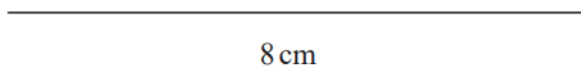
1 cm represents 100 metres.

Point  $T$  is 250 metres from point  $A$ .

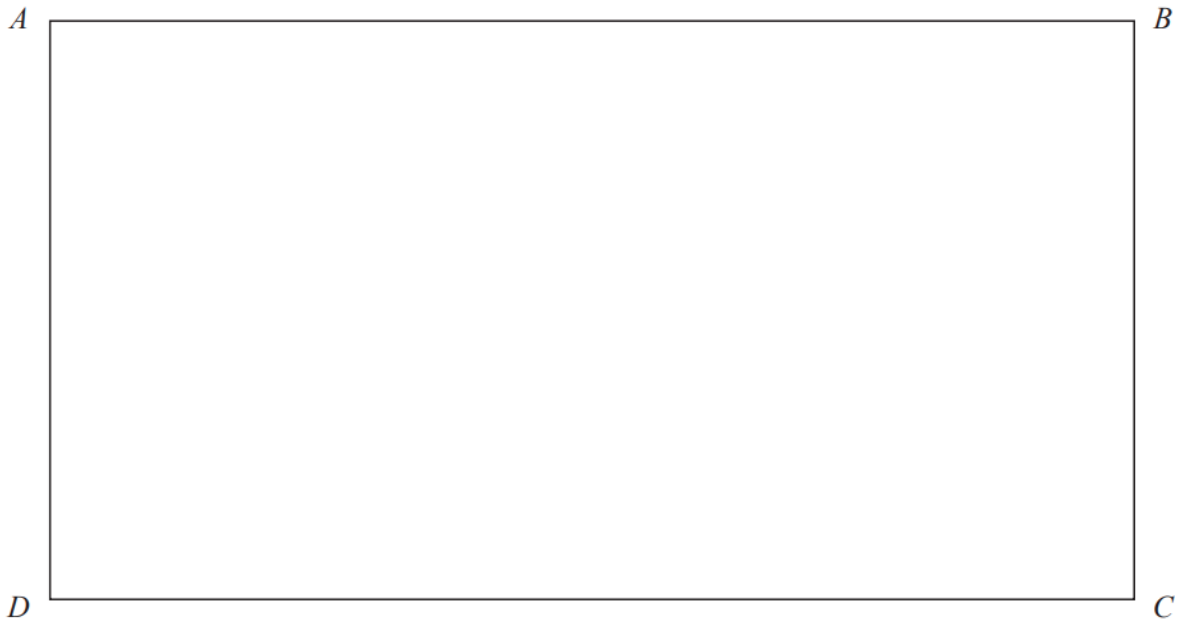
Point  $T$  is equidistant from point  $B$  and point  $C$ .

On the map, show one of the possible positions for point  $T$ .

- 17** Draw accurately an isosceles triangle with sides of length 8 cm, 6 cm and 6 cm.  
One side of the triangle has been drawn for you.



19 Here is a plan of a kitchen drawn to a scale of 1 : 30



Scale 1:30

Sam is going to put a small table in the kitchen.

The table has to be  
more than 180 cm from  $A$   
more than 150 cm from  $BC$

Show, by shading on the diagram, the region where Sam can put the table.

- 23** Use a ruler and compasses to construct the line from the point  $P$  perpendicular to the line  $CD$ .  
You must show **all** construction lines.

$\times P$

$C$  \_\_\_\_\_  $D$