| Name | Class |
|------|-------|
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# MATHS TEACHER HUB
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# Constructions and Loci
**(9 – 1) Topic booklet**
# Foundation

**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.

B
×

$A$ ×

×
C

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 $T$.

June 2017 – Paper 2F                    **(Total for Question 16 is 3 marks)**

**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.

_____

8 cm

**(Total for Question 17 is 2 marks)**
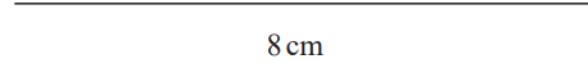
**17** Here is a triangle $ABC$.
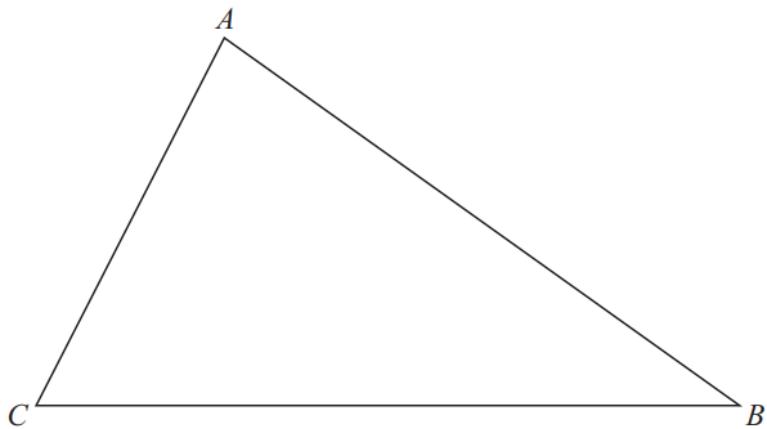


The region **R** consists of all points inside the triangle that are

less than 4 cm from $A$
**and** closer to $C$ than to $B$.

On the diagram show, by shading, the region **R**.

June 2024 – Paper 2F                                     **(Total for Question 17 is 3 marks)**

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

A _____ B



D _____ C
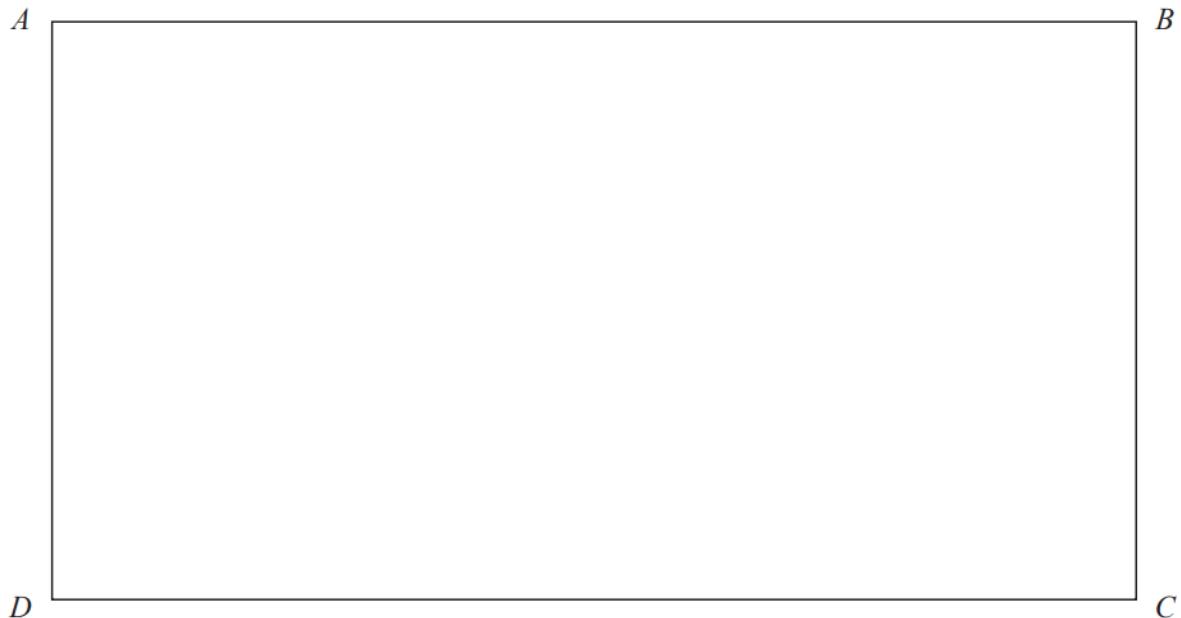
Scale 1:30

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.

**(Total for Question 19 is 4 marks)**

**22** The point *P* lies on the line *AB*.
Use ruler and compasses to construct an angle of 90° at *P*.
You must show all your construction lines.

$$A \;\text{———————————}\!\!\times\!\!\text{———————————}\; B$$
$$P$$

**(Total for Question 22 is 2 marks)**

**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.

$\times\, P$

$C$ ——————————————————————— $D$

**(Total for Question 23 is 2 marks)**