Write your name, centre number and candidate number in the boxes below.

Surname	Other names

Centre number | | | | | |

Candidate number | | | | |

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Constructions and loci

Time allowed: 30 minutes

Subject code **0580**

Mathematics

Questions from Paper 1, Paper 2 and Paper 4

You must have: a ruler marked in centimetres and millimetres, a protractor, compasses, a pen, an HB pencil and an eraser.
You may use a calculator.

Total marks

/ 24

Instructions

- Answer every question in the space provided on this paper.
- Write in black or dark blue ink. Pencil may be used for diagrams and graphs.
- Fill in your name, centre number and candidate number above.
- Show your working: a correct method can earn marks even if the answer is wrong.
- Unless a question says otherwise, give answers that are not exact to 3 significant figures, and angles in degrees to 1 decimal place.

Information

- This paper has 10 questions worth 24 marks in total.
- The marks for each question or part are shown in brackets, for example [3].

Advice

- Read every question through once before you write anything.
- Use the marks in brackets to judge how long to spend on each part.
- If you finish early, go back and check your working.

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Print at 100% (Actual size) so diagrams keep their real measurements.

1

The diagram shows the base of a triangle.
The lengths of the other two sides are 6 cm and 4 cm.

Using a ruler and compasses only, construct the other two sides of the triangle.
Show all your construction arcs. [2]

Constructions and loci Click for more variations

2 In triangle ABC, $AB = 7$ cm, $BC = 4$ cm and $AC = 6$ cm.

Using a ruler and compasses only, construct triangle ABC.
The side BC has been drawn for you.



[2]

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3 Construct a triangle with sides of length 55 mm, 68 mm and 85 mm.

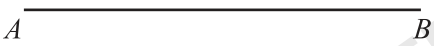
The 85 mm side has been drawn for you.

[2]

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4 The line AB is one side of an equilateral triangle ABC.

Using a straight edge and compasses only, construct triangle ABC.



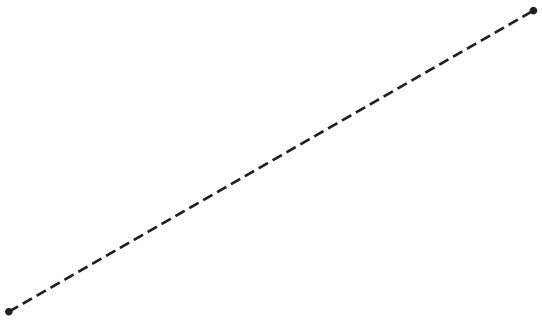
[2]

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5 A rhombus has side length 6.5 cm.
The rhombus can be constructed by drawing two triangles.

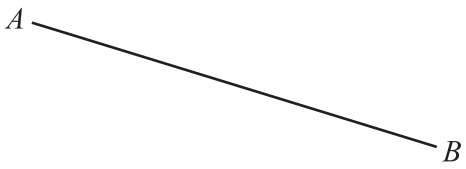
Using a ruler and compasses only, construct the rhombus.
Leave in your construction arcs.
One diagonal of the rhombus has been drawn for you.



[2]

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6



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(a) Measure the length of line AB in centimetres.

..... cm [1]

(b) Draw a line that is parallel to line AB. [1]

(a) Constructions and loci (b) Constructions and loci Click for more variations

7 **In this question use a ruler and compasses only and show all your construction arcs.**

Using a scale of 1 centimetre to represent 50 metres, construct a triangle with sides 550 m, 450 m and 300 m.
The 300 m side has been drawn for you.

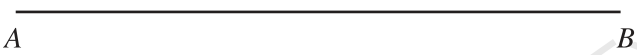
[2]

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8 Triangle ABC has sides $AB = 40$ m, $BC = 25$ m and $AC = 35$ m.

Using a scale of 1 cm to represent 5 m, construct triangle ABC.
The construction must be completed using a ruler and compasses only.
All construction arcs must be clearly shown.

Answer



[3]

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9 In triangle ABC, $AC = 21\,\text{m}$ and $BC = 15.9\,\text{m}$.

Using a ruler and compasses only, complete the scale drawing of the triangle.
Use a scale of 1 cm to represent 3 m.
The side AB is drawn for you.



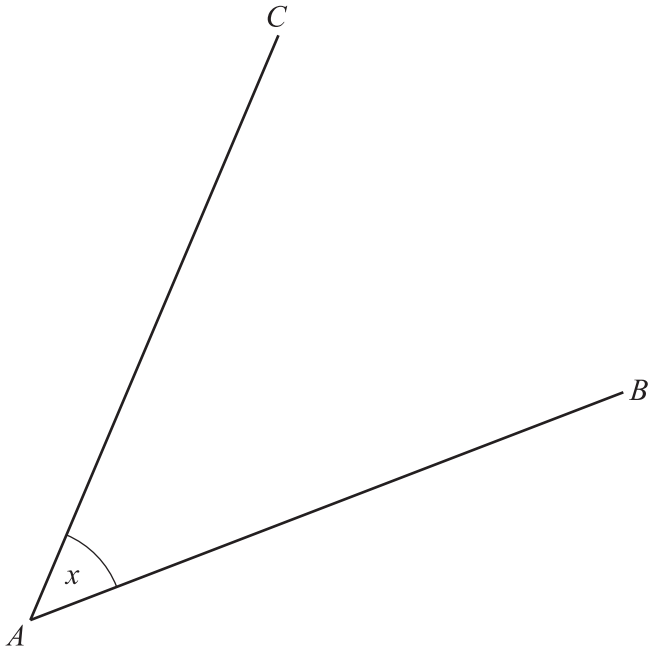
Scale : 1 cm to 3 m

[3]

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10



(a) Measure the size of angle x.

..... [1]

(b) Measure the length of line AB in millimetres.

..... mm [1]

(c) Mark the midpoint, M, of line AB. [1]

(d) Draw a line through the point M that is perpendicular to line AB. [1]

(a) Basic angle properties (b) Constructions and loci (c) Constructions and loci (d) Constructions and loci

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