

Cambridge IGCSE™

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--

MATHEMATICS

0580/12

Paper 1 (Core)

May/June 2023

1 hour

You must answer on the question paper.

You will need: Geometrical instruments

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You should use a calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
- For π , use either your calculator value or 3.142.

INFORMATION

- The total mark for this paper is 56.
- The number of marks for each question or part question is shown in brackets [].

This document has **12** pages.

- 1 (a) Write down all the factors of 18.

..... [2]

- (b) Write down the reciprocal of 8.

..... [1]

2



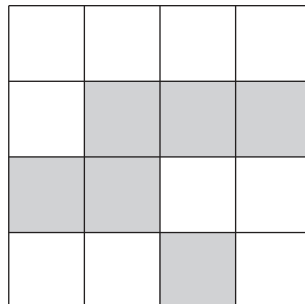
- (a) Draw a line perpendicular to the line AB .

[1]

- (b) Measure the line AB in centimetres.

.....cm [1]

3



Shade two squares so that the diagram has rotational symmetry of order 4.

[2]

- 4 Kai and Ava each have a piece of wood 57 cm long.

(a) Kai cuts his piece into 4 equal length parts.

Find the length of one part.

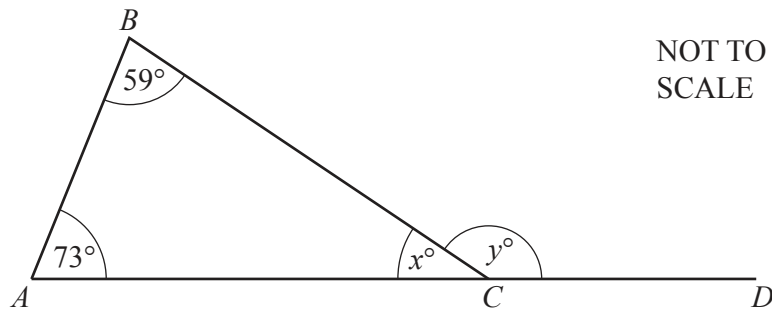
.....cm [1]

(b) Ava cuts her piece into two parts and the lengths are in the ratio 5 : 1.

Find the length of the longer part.

.....cm [2]

5



In the diagram, ABC is a triangle and ACD is a straight line.

Find the value of x and the value of y .

$x =$

$y =$ [2]

- 6 Find the temperature that is 8°C colder than -5°C .

..... $^{\circ}\text{C}$ [1]

- 7 There are two prime numbers in this list.

27 47 57 61 75 93

Work out the sum of these two prime numbers.

..... [2]

- 8 On ten days, Stefan records the number of minutes he has to wait for a train.

1 3 12 5 4 23 5 24 11 8

- (a) Complete the stem-and-leaf diagram to show this information.

0	1 3
1	
2	

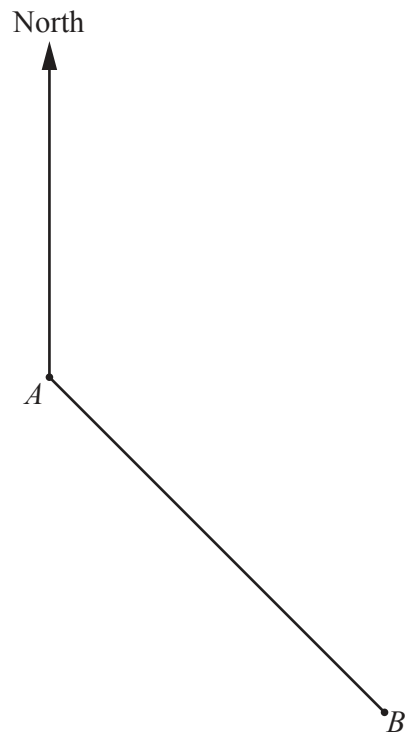
Key: 0 | 1 represents 1 minute

[2]

- (b) Find the median.

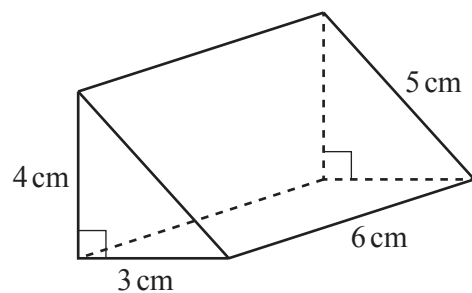
..... min [1]

- 9 The scale drawing shows the positions of town A and town B .



Measure the bearing of town B from town A .

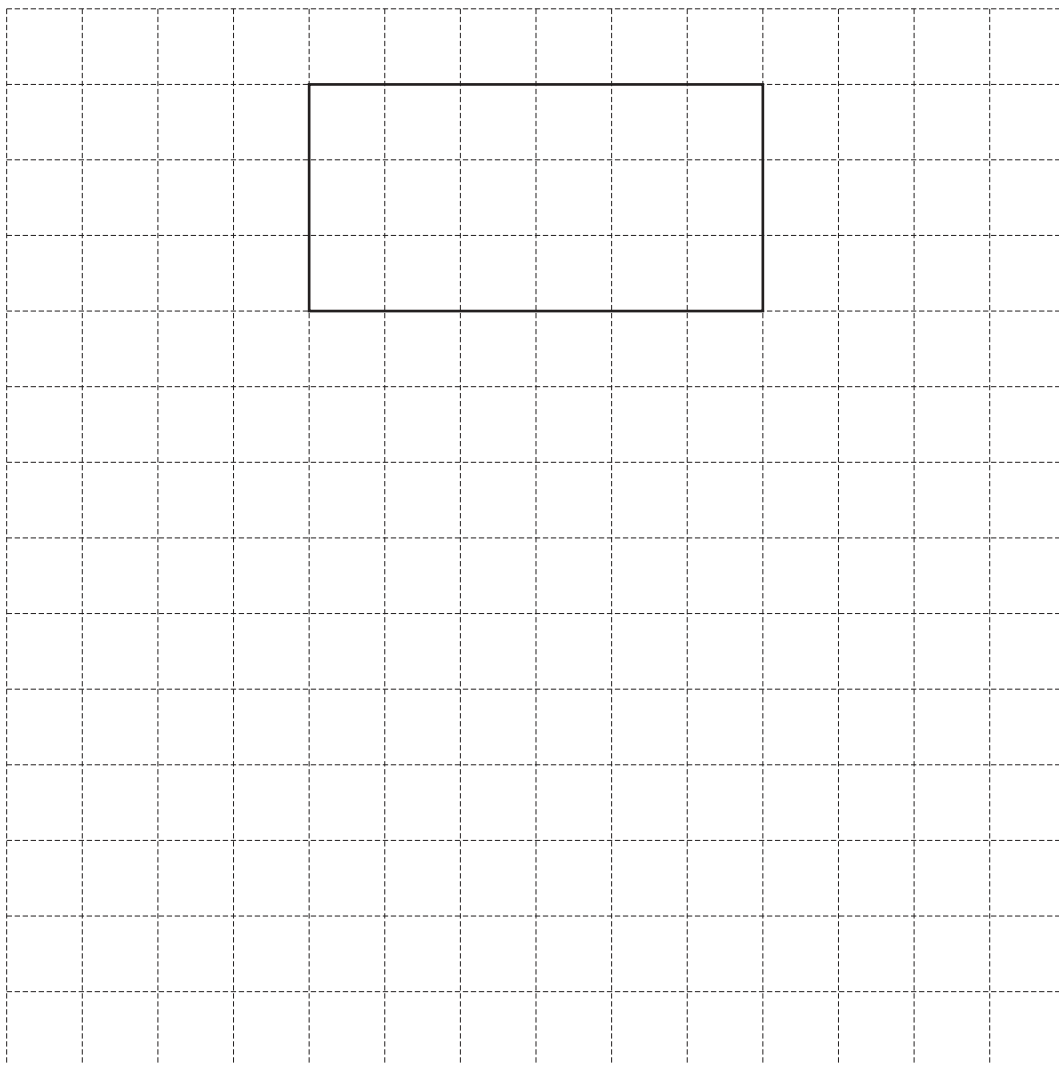
..... [1]



NOT TO
SCALE

The diagram shows a right-angled triangular prism.

On the 1 cm^2 grid, complete the net of this prism.
One face has been drawn for you.



[3]

- 11 The distance from town A to town B on a map is 3.5 cm.
The scale on the map is 1 : 250 000.

Find the actual distance, in kilometres, from town A to town B .

..... km [2]

- 12 A spinner is spun.
The possible outcomes are A, B, C or D.
The probability of spinning A, C or D is shown in the table.

Letter on spinner	A	B	C	D
Probability	0.2		0.05	0.35

Complete the table.

[2]

- 13 $\mathcal{C} = \{x : 1 \leq x \leq 20\}$
 $E = \{\text{even numbers}\}$
 $M = \{\text{multiples of 5}\}$

(a) Find $n(M)$.

..... [1]

(b) Find the elements in the set $E \cap M$.

..... [1]

- 14** Without using a calculator, work out $\frac{4}{7} \div 1\frac{5}{21}$.

You must show all your working and give your answer as a fraction in its simplest form.

..... [3]

- 15** F is the point $(1, -4)$, $\overrightarrow{FG} = \begin{pmatrix} 8 \\ -3 \end{pmatrix}$ and $\overrightarrow{GH} = \begin{pmatrix} -12 \\ 35 \end{pmatrix}$.

Find

(a) $3\overrightarrow{FG}$

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

(b) $\overrightarrow{FG} + \overrightarrow{GH}$

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

- (c)** the coordinates of the point G .

(.....,) [1]

- 16 x is an integer where $x \geq -3$ and $x < 3$.

Write down all the possible values of x .

..... [2]

- 17 Find the size of an interior angle of a regular 15-sided polygon.

..... [2]

- 18 (a) Write 45 000 in standard form.

..... [1]

- (b) Calculate $6.75 \times 10^{-3} \times 4.2 \times 10^5$.
Give your answer in standard form.

..... [1]

- 19 Simplify.
 $18x^{12} \div 3x^3$

..... [2]

- 20 Buses at a station go to the port or to the town.

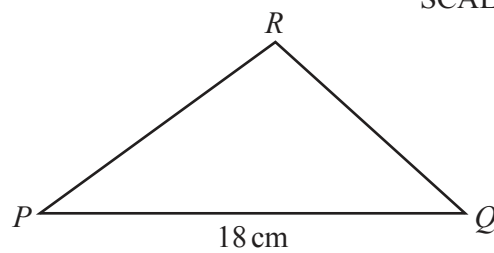
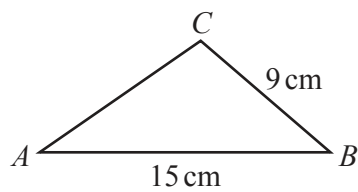
Buses leave every 28 minutes for the port.
Buses leave every 48 minutes for the town.

At 10 18 a bus for the port and a bus for the town leave the station together.

Find the next time when a bus for the port and a bus for the town leave the station together.

..... [3]

- 21



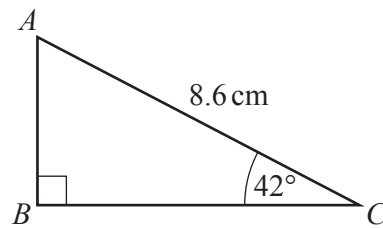
NOT TO
SCALE

Triangle ABC is similar to triangle PQR .

Calculate QR .

$QR =$ cm [2]

22 (a)

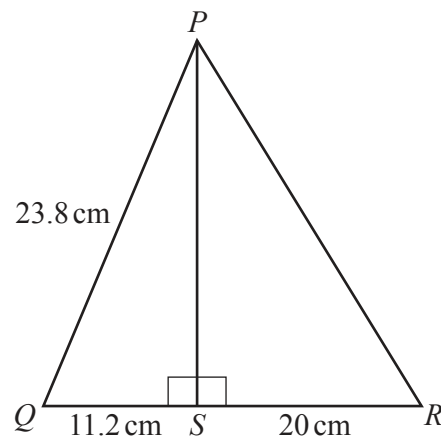
NOT TO
SCALE

The diagram shows a right-angled triangle ABC .

Calculate AB .

$AB = \dots\dots\dots$ cm [2]

(b)

NOT TO
SCALE

The diagram shows right-angled triangles PQS and PRS .
 $PQ = 23.8$ cm, $QS = 11.2$ cm and $SR = 20$ cm.

Calculate PR .

$PR = \dots\dots\dots$ cm [4]

Question 23 is printed on the next page.

- 23 (a) The mass, m kilograms, of object A is 350 kg, correct to the nearest 10 kg.

Complete this statement about the value of m .

$$\dots\dots\dots \leq m < \dots\dots\dots [2]$$

- (b) The mass of object B is 348 kg, correct to the nearest kilogram.

Show that the mass of object B may be more than the mass of object A .

..... [1]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.