Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

1294183400

MATHEMATICS **0580/12**

Paper 1 (Core) **February/March 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. Any blank pages are indicated.

1 Write the number twenty-five million in figures.

..... [1]

2 **(a)** Write 0.7 as a fraction.

..... [1]

(b) Write $\frac{13}{20}$ as a percentage.

..... % [1]

3 -7 12 -3 2 8 -6 15 -4 -8

From the list of numbers, find

(a) all the numbers which are less than -5

..... [1]

(b) the product of the largest number and the smallest number.

..... [1]

4 An exam starts at 11 50 and lasts for $2\frac{1}{4}$ hours.

Work out the time that the exam finishes.

..... [1]

5 Write 56.17345 correct to 1 decimal place.

..... [1]

6 Work out the number of seconds in 5 hours.

..... s [2]

7

12	15	27	29	91	93

From the list of numbers, write down

(a) a cube number

..... [1]

(b) a prime number.

..... [1]

8 $\mathbf{v} = \begin{pmatrix} -1 \\ 3 \end{pmatrix}$ $\mathbf{y} = \begin{pmatrix} 2 \\ 5 \end{pmatrix}$

Find

(a) $\mathbf{v} - \mathbf{y}$

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

(b) $2\mathbf{v}$.

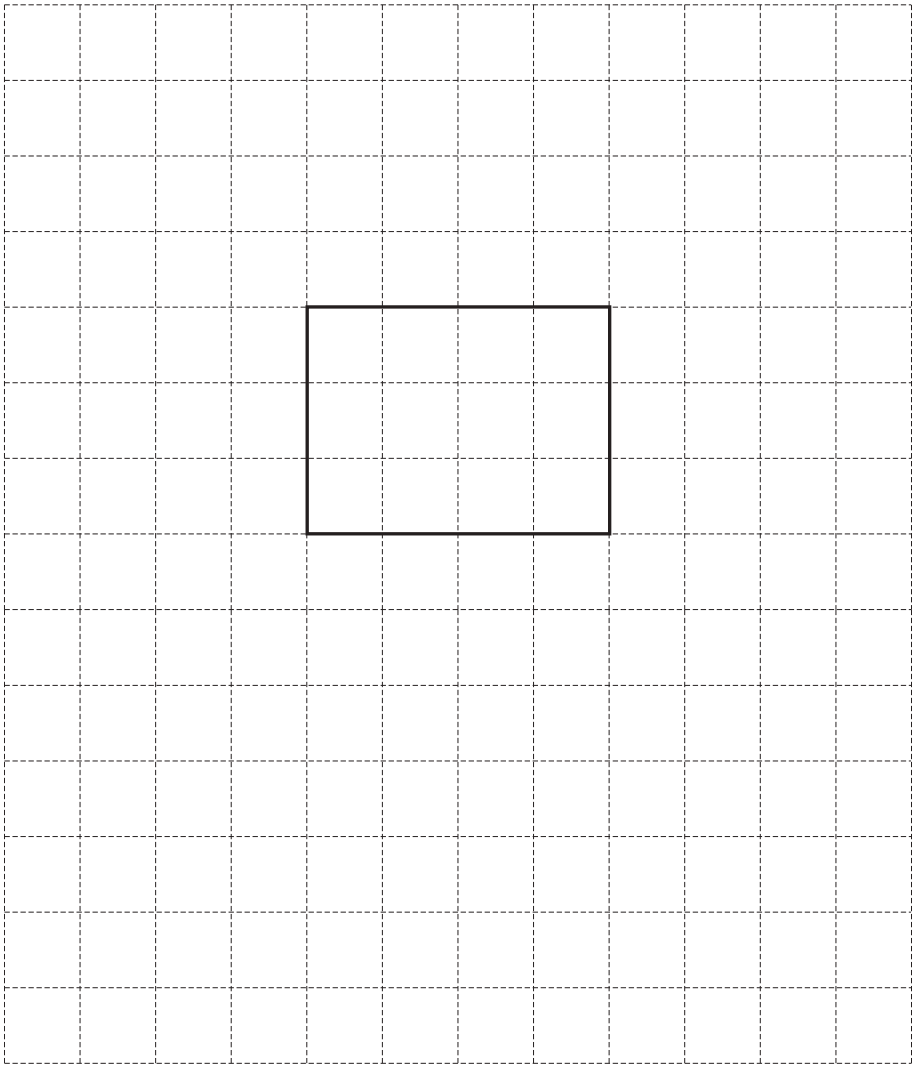
$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

9 A suit costs 6500 rupees.

Calculate the cost of the suit in dollars when the exchange rate is 1 rupee = \$0.013 .

\$ ..... [1]

10 The diagram shows one face of a cuboid on a 1 cm^2 grid.



The cuboid has a volume of 24 cm^3.

Complete a net of this cuboid.

[3]

11 The median of six numbers is 61.
Five of the numbers are 24, 43, 58, 71 and 85.

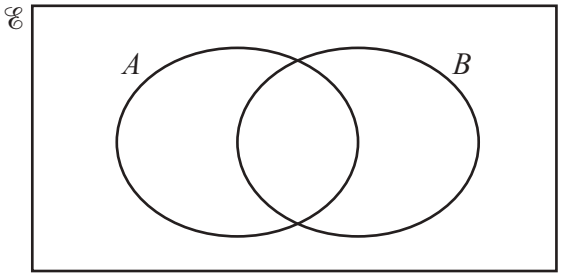
Work out the sixth number.

..... [1]

12 Work out the size of one interior angle of a regular 9-sided polygon.

..... [2]

13



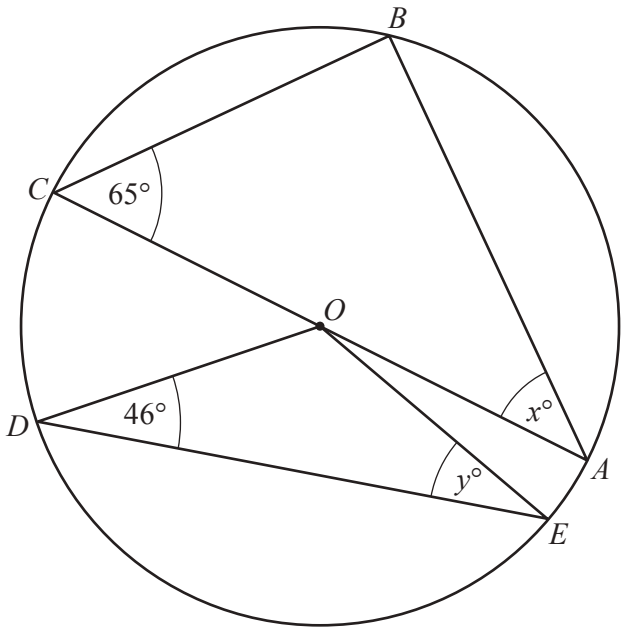
On the Venn diagram, shade the region $A \cap B$. [1]

14 Factorise completely.

$$8g - 2g^2$$

..... [2]

15



NOT TO SCALE

The diagram shows a circle, centre O, with diameter AC.
A, B, C, D and E lie on the circumference of the circle.

(a) Find the value of x.
Give a reason for your answer.

$x =$ ..... because ..... [2]

(b) Find the value of y.
Give a reason for your answer.

$y =$ ..... because ..... [2]

16 **Without using a calculator**, work out $\frac{4}{7} \div 8$.

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

..... [2]

17 A school records how many calculators it sells each week for 40 weeks.
The results are shown in the table.

Number of calculators	Frequency
0	14
1	12
2	6
3	5
4	0
5	2
6	1

Work out the mean number of calculators the school sells each week.

..... [3]

18 The mass, m kg, of a bag of sand is 12 kg, correct to the nearest kilogram.

Complete the statement about the value of m.

..... $\leqslant m <$ ..... [2]

19 Qianna invests \$3000 at a rate of 4% per year compound interest.

Calculate the value of her investment at the end of 6 years.

\$ ..... [2]

20 Solve.

$$\frac{25-2u}{3} = 2$$

$u =$ ..... [2]

21 Calculate 0.3^2 .
Give your answer in standard form.

..... [2]

22 The probability of passing a driving test is 0.36 .
600 people take this driving test.

Work out the expected number of these people that will pass.

..... [1]

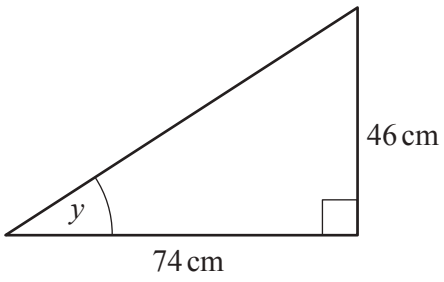
23 Solve the simultaneous equations.
You must show all your working.

$$3x - 2y = 19$$
$$x + y = 3$$

$x =$ .....

$y =$ ..... [3]

24



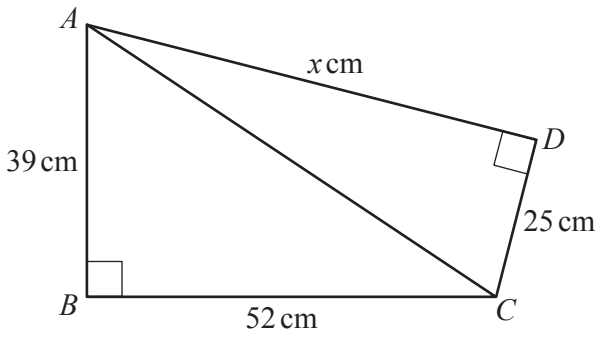
NOT TO SCALE

The diagram shows a right-angled triangle.

Show that angle y is 31.9°, correct to 1 decimal place.

[2]

25



NOT TO SCALE

The diagram shows two right-angled triangles, *ABC* and *ACD*.

Work out the value of x.

$x =$ ..... [4]

26 A circle has an area of $25\pi\,\text{cm}^2$.

(a) Work out the circumference of the circle.
Give your answer in terms of π.

..... cm [3]

(b) Two of the circles are used as the ends of a cylinder, with height h cm.
The total surface area of the cylinder is $170\pi\,\text{cm}^2$.

Work out the value of h.

$h =$ ..... [3]