Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

4118099417

MATHEMATICS **0580/11**

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. Any blank pages are indicated.

1 Work out the number of months in 5 years.

..... months [1]

2 Write 3752 correct to the

(a) nearest 10

..... [1]

(b) nearest 100.

..... [1]

3 Magazines cost $3.40 each.
Rosina has $15 to buy as many magazines as possible.

Complete the statement.

Rosina can buy ..... magazines and will have $ ..... left. [3]

4 Write down the mathematical name of a 4-sided shape that has rotational symmetry of order 2 and no lines of symmetry.

..... [1]

5

21 8 15 32 3 29 19 45 8

Calculate the mean of these numbers.

..... [2]

6 A train journey starts at 2143.
It takes 8 hours and 32 minutes.

Find the time the journey finishes.

..... [1]

7 Write these numbers in order, starting with the smallest.

$\frac{15}{213}$ 0.071 0.7 7%

..... < ..... < ..... < ..... [2]
smallest

8 Write the fraction $\frac{24}{84}$ in its simplest form.

..... [1]

9 Simplify.
$3a - 5b - a - 6b$

..... [2]

10 The cost of hiring a bicycle, $\$C$, for y hours is given by the formula $C = 12 + 3.5y$.
Maria pays \$36.50 to hire this bicycle.

Work out the number of hours she hires the bicycle for.

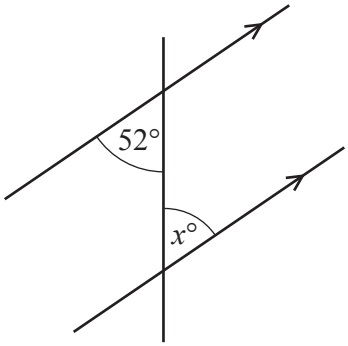
..... hours [2]

11 $\mathbf{a} = \begin{pmatrix} 3 \\ 7 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -2 \\ 5 \end{pmatrix}$

Work out $\mathbf{a} - 2\mathbf{b}$.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [2]

12 (a)



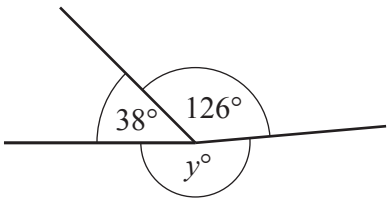
NOT TO SCALE

The diagram shows a pair of parallel lines and a straight line.

Write down the geometrical reason why the value of x is 52.

..... [1]

(b)



NOT TO SCALE

Find the value of y and write down the geometrical reason for your answer.

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

13 Calculate the volume of a sphere with diameter 4.8 cm.

[The volume, V, of a sphere with radius r is $V = \frac{4}{3}\pi r^3$.]

..... cm^3 [2]

14 By writing each number in the calculation correct to 1 significant figure, work out an estimate for the value of

$$\frac{6.7 \times 2.1}{18 - 5.9}.$$

You must show all your working.

..... [2]

15 Eric has four colours of paint.
The table shows the probability that he uses each colour.

Colour	Red	Blue	Green	Yellow
Probability	0.3	0.35	0.13	x

Find the value of x.

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

16 Factorise completely.

$$8x^2 - 20x$$

..... [2]

[Turn over

17 **(a)** The nth term of a sequence is $10 - n^2$.

Write down the first three terms of this sequence.

..... , ... , ... [2]

(b) These are the first four terms of another sequence.

7 10 13 16

Find an expression for the nth term of this sequence.

..... [2]

18 The length, l metres, of a piece of wood is 3.6 metres, correct to the nearest 10 centimetres.

Complete this statement about the value of l.

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

19 Calculate $1 \div (6.4 \times 10^{-5})$.
Give your answer in standard form.

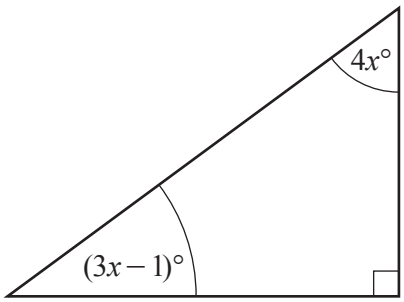
..... [2]

20 **Without using a calculator**, work out $2\frac{1}{7} \div \frac{5}{9}$.

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

..... [3]

21



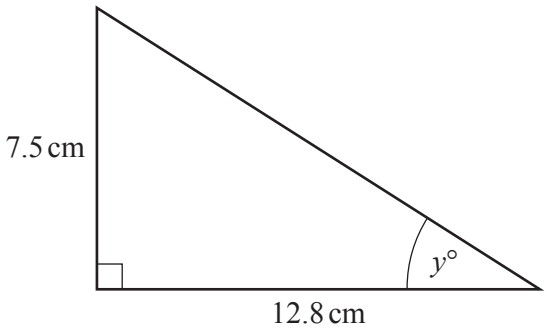
NOT TO SCALE

The diagram shows a right-angled triangle.

Use the information in the diagram to write down and solve an equation to find the value of x.

$x =$ ..... [3]

22



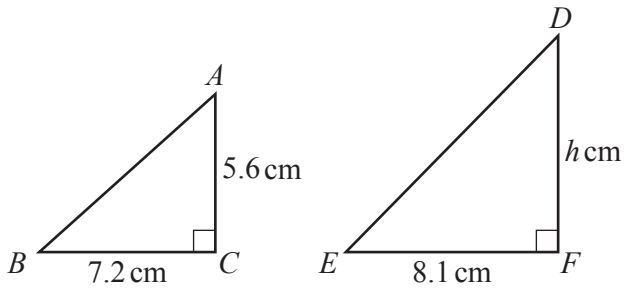
NOT TO SCALE

The diagram shows a right-angled triangle.

Calculate the value of y.

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

23



NOT TO SCALE

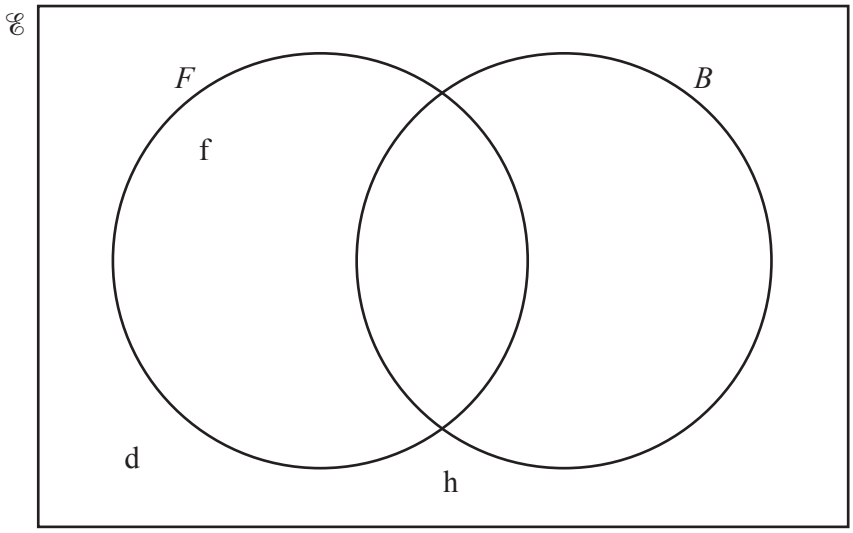
Triangle ABC is similar to triangle DEF.

Calculate the value of h.

$h =$ ..... [2]

24 $\mathscr{E} = \{a, b, c, d, e, f, g, h, i, j, k\}$
$F = \{f, a, c, e\}$
$B = \{b, a, c, k\}$

(a) Complete the Venn diagram.



[2]

(b) Find $n(F \cup B)$.

..... [1]

25 At a cinema, an adult ticket costs \$$a$ and a child ticket costs \$$c$.

(a) Farah buys 3 adult tickets and 4 child tickets for \$38.50.

Complete the equation.

$3a + 4c =$ ..... [1]

(b) Hana buys 6 adult tickets and 5 child tickets for \$65.00.

Write down another equation in terms of a and c.

..... [1]

(c) Solve the two simultaneous equations to find the value of a and the value of c.
You must show all your working.

$a =$ .....

$c =$ ..... [3]

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