



# **Cambridge IGCSE™**

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## **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  $\pi$ , 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.

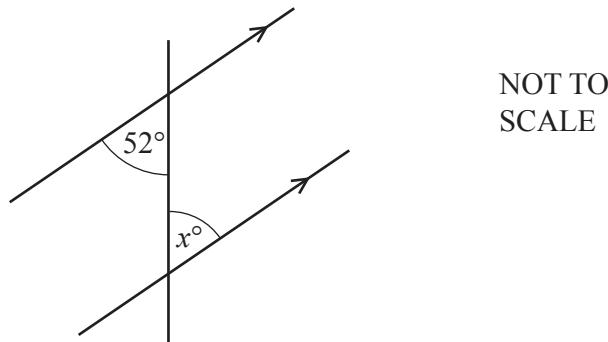
..... hours [2]

11

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

Work out  $\mathbf{a} - 2\mathbf{b}$ .
$$\left( \quad \quad \right) \quad [2]$$

12 (a)

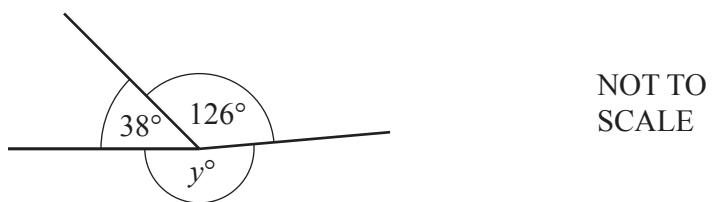


The diagram shows a pair of parallel lines and a straight line.

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

..... [1]

(b)

Find the value of  $y$  and write down the geometrical reason for your answer. $y = \dots$  because ..... [2]

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

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

.....  $\text{cm}^3$  [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]

17 (a) The  $n$ th 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  $n$ th 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  $l$ .

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

19 Calculate  $1 \div (6.4 \times 10^{-5})$ .

Give your answer in standard form.

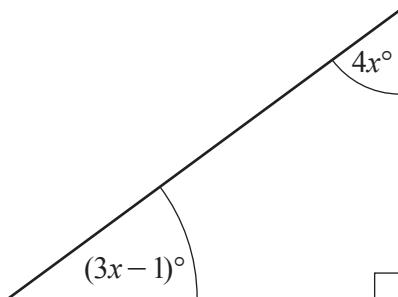
..... [2]

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



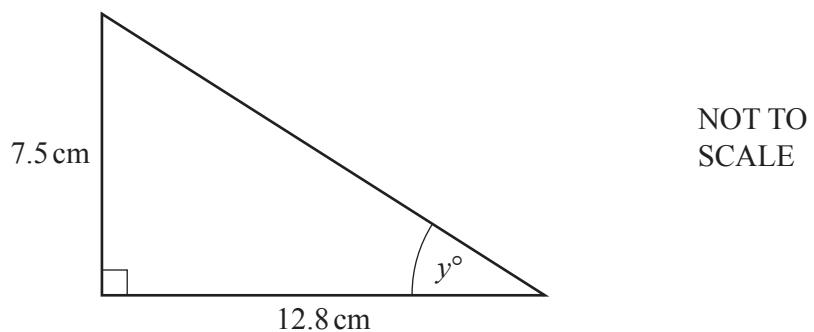
NOT TO  
SCALE

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

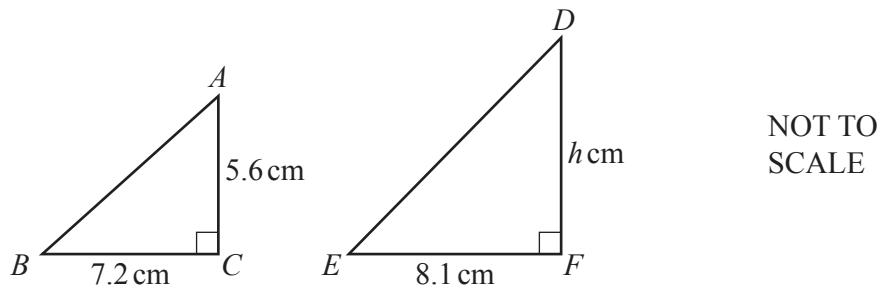


The diagram shows a right-angled triangle.

Calculate the value of  $y$ .

$$y = \dots \quad [2]$$

23



Triangle  $ABC$  is similar to triangle  $DEF$ .

Calculate the value of  $h$ .

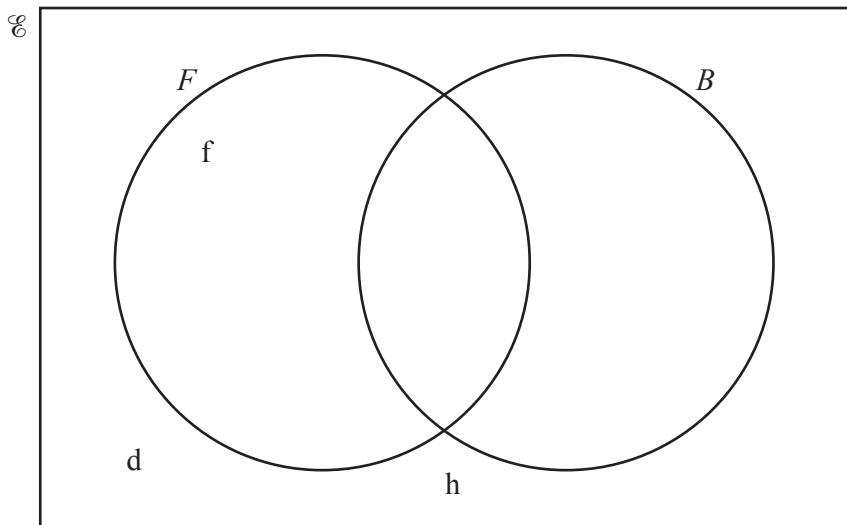
$$h = \dots \quad [2]$$

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

$F = \{f, a, c, e\}$

$B = \{b, a, c, k\}$

(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.

$$3a + 4c = \dots \quad [1]$$

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

Write down another equation in terms of  $a$  and  $c$ .

$$\dots \quad [1]$$

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

$$a = \dots$$

$$c = \dots \quad [3]$$



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