



# Cambridge IGCSE™

CANDIDATE  
NAME

CENTRE  
NUMBER

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

CANDIDATE  
NUMBER

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|



**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 21 43.  
It takes 8 hours and 32 minutes.

Find the time the journey finishes.

..... [1]

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

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

..... < ..... < ..... < ..... [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.

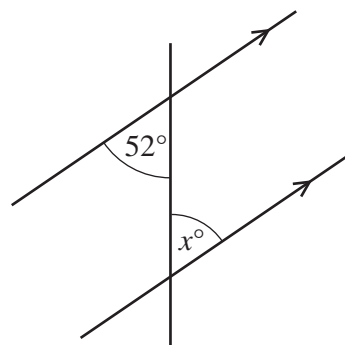
..... hours [2]

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

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

$\left( \quad \right)$  [2]

12 (a)



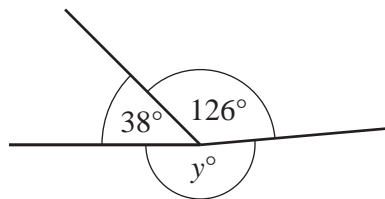
NOT TO SCALE

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.

$y = \dots\dots\dots$  because  $\dots\dots\dots$  [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<sup>3</sup> [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.

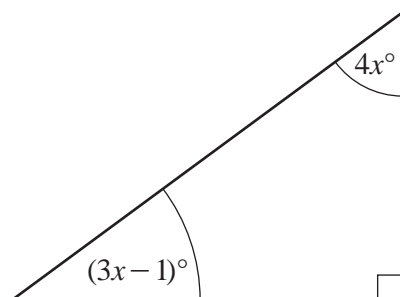
..... [2]

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



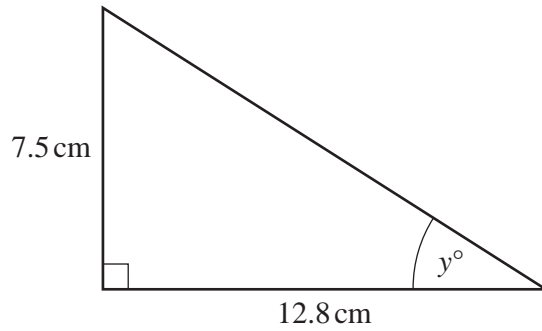
NOT TO  
SCALE

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

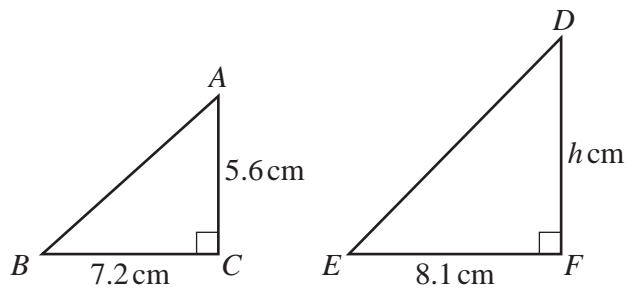
NOT TO  
SCALE

The diagram shows a right-angled triangle.

Calculate the value of  $y$ .

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

23

NOT TO  
SCALE

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

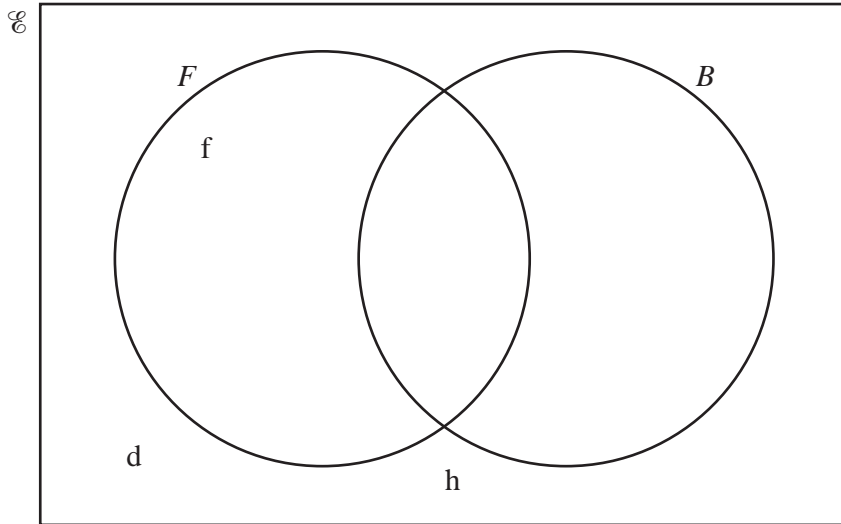
Calculate the value of  $h$ .

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



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

(a) Complete the Venn diagram.



[2]

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

..... [1]

## 10

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.

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

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

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

$$\dots\dots\dots [1]$$

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

$$a = \dots\dots\dots$$

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



**BLANK PAGE**

---

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](http://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.