



# Cambridge IGCSE™

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NAME

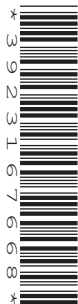
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**MATHEMATICS**

**0580/12**

Paper 1 (Core)

**February/March 2020**

**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. Blank pages are indicated.

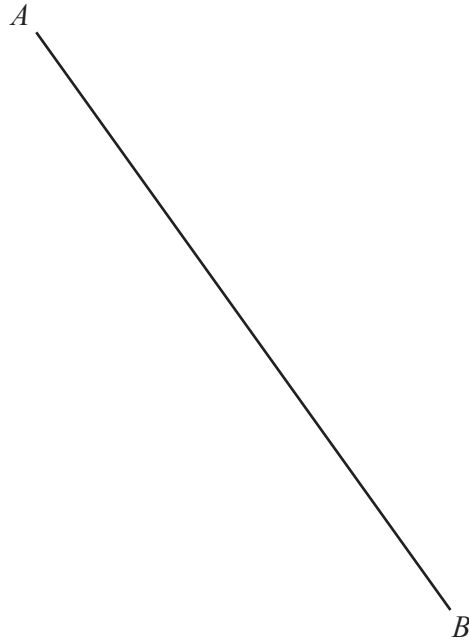
1 (a) Write 3.25 pm in the 24-hour clock.

..... [1]

(b) Work out the time 7 hours and 36 minutes before 13 26.

..... [1]

2



(a) Measure the length of the line  $AB$  in millimetres.

..... mm [1]

(b)  $AB$  is the diameter of a circle.

Draw this circle. [2]

- 3 (a) The temperature on Monday was  $-7^{\circ}\text{C}$ .  
 The temperature on Tuesday was  $5^{\circ}\text{C}$  lower than on Monday.  
 The temperature on Wednesday was  $8^{\circ}\text{C}$  higher than on Tuesday.

Find the temperature on Wednesday.

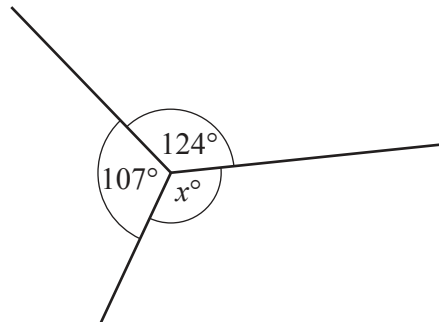
.....  $^{\circ}\text{C}$  [2]

- (b) Kyra has a faulty thermometer.  
 It always shows the temperature as  $2^{\circ}\text{C}$  higher than the actual temperature.  
 The temperature on the thermometer is  $T^{\circ}\text{C}$ .

Write an expression, in terms of  $T$ , for the actual temperature.

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

4

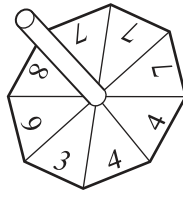


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Work out the value of  $x$ .  
 Give a geometrical reason for your answer.

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

- 5 The diagram shows a fair 8-sided spinner.



The numbers on the spinner are 3, 4, 4, 7, 7, 7, 8 and 9.

- (a) The spinner is spun once.

Write down the probability that the spinner lands on

- (i) the number 7,

..... [1]

- (ii) a number greater than 2.

..... [1]

- (b) The spinner is spun 160 times.

Work out the expected number of times the spinner lands on the number 7.

..... [1]

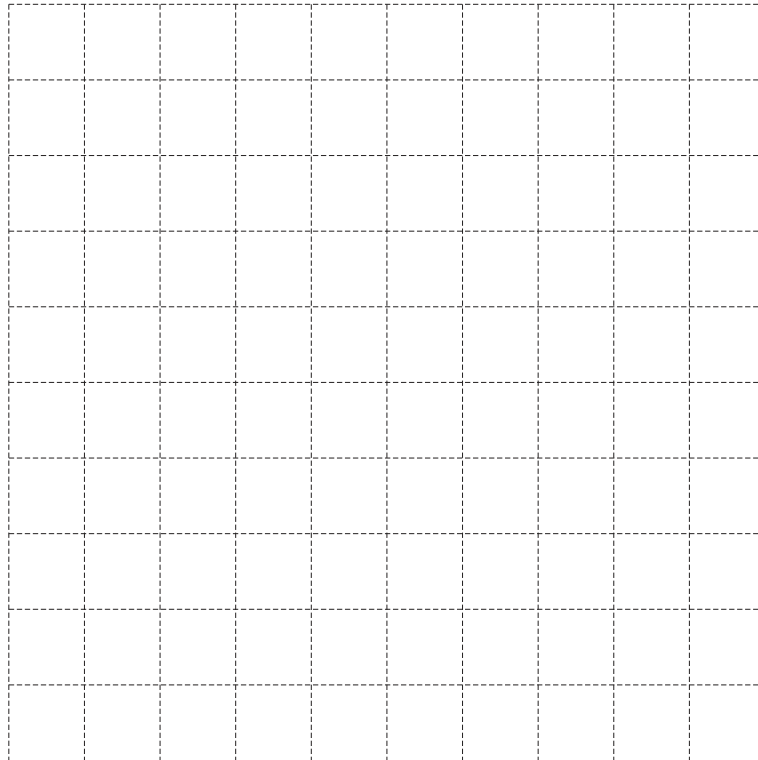
- 6 The month of July has 31 days.

Calculate the number of seconds in the month of July.

..... seconds [2]

- 7 A cuboid has length 3 cm, width 2 cm and height 1 cm.

On the  $1\text{ cm}^2$  grid, draw a net of the cuboid.



[3]

- 8 (a) Write down the reciprocal of 40.

..... [1]

- (b) Calculate  $\sqrt[3]{40}$ .  
Give your answer correct to 4 decimal places.

..... [2]

- (c) Write the number 40 in standard form.

..... [1]

- 9 (a) Write down the gradient of the line  $y = 2x - 3$ .

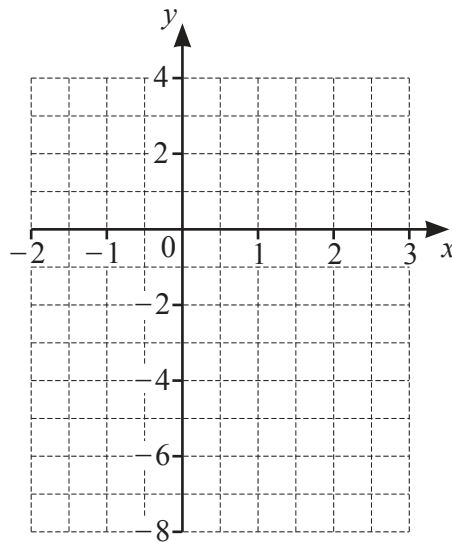
..... [1]

- (b) Complete the table of values for  $y = 2x - 3$ .

$x$	-2	0	3
$y$			

[2]

- (c) On the grid, draw the graph of  $y = 2x - 3$  for  $-2 \leq x \leq 3$ .



[1]

- 10 Point  $A$  has coordinates  $(6, 4)$  and point  $B$  has coordinates  $(2, 7)$ .

Write  $\vec{AB}$  as a column vector.

$$\vec{AB} = \begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix} \quad [1]$$

- 11 The number of people swimming in a pool is recorded each day for 12 days.

24    28    13    38    15    26  
45    21    48    36    18    38

- (a) Complete the stem-and-leaf diagram.

1	
2	
3	
4	

Key: 1 | 3 represents 13 swimmers

[2]

- (b) Find the median number of swimmers.

..... [1]

- 12 A bag contains red marbles, green marbles and blue marbles only.  
The ratio of the number of marbles of each colour is

$$\text{red} : \text{green} : \text{blue} = 12 : 5 : 2.$$

There are 112 more red marbles than green marbles.

Work out the number of blue marbles.

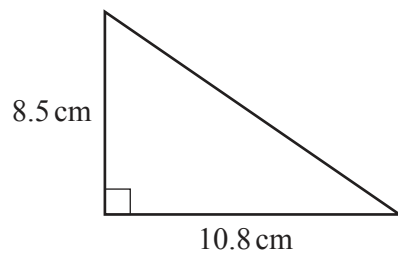
..... [2]

13 Without using a calculator, work out  $\frac{15}{28} \div \frac{4}{7}$ .

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

..... [3]

14



NOT TO  
SCALE

The diagram shows a right-angled triangle.

(a) Calculate the area.

..... cm<sup>2</sup> [2]

(b) Calculate the perimeter.

..... cm [3]



- 15 Riya invests \$30 000 at a rate of 2.5% per year compound interest.

Calculate the value of her investment at the end of 7 years.  
Give your answer correct to the nearest dollar.

\$ ..... [3]

- 16 (a) Simplify.

$$5 \times x^0$$

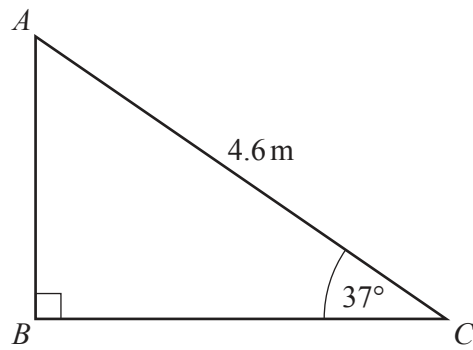
..... [1]

- (b)  $9^{12} \div 9^w = 9^4$

Find the value of  $w$ .

$w =$  ..... [1]

17



NOT TO SCALE

The diagram shows a right-angled triangle  $ABC$ .

Calculate  $AB$ .

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

18 (a) Factorise completely.

$$3x^2 - 12xy$$

$\dots\dots\dots$  [2]

(b) Expand and simplify.

$$(m - 3)(m + 2)$$

$\dots\dots\dots$  [2]

- 19 A car travels at a constant speed of 45 kilometres per hour for 5 minutes.  
Each wheel of the car has radius 25 centimetres.

Calculate the number of complete revolutions that a wheel makes during the 5 minutes.

..... [5]

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