Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

3923167668

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 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. Blank pages are indicated.

DC (LK/SW) 182801/1

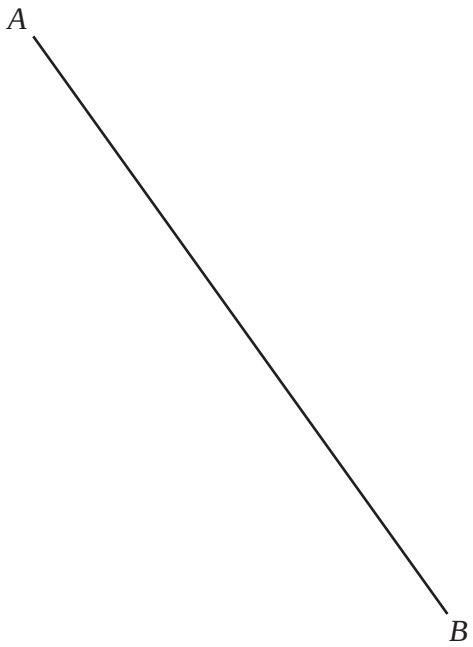
1 **(a)** Write 3.25 pm in the 24-hour clock.

..... [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 °C.
The temperature on Tuesday was 5 °C lower than on Monday.
The temperature on Wednesday was 8 °C higher than on Tuesday.

Find the temperature on Wednesday.

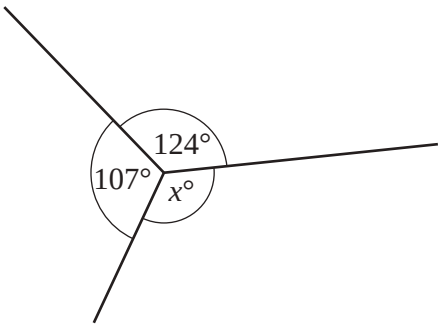
..... °C [2]

(b) Kyra has a faulty thermometer.
It always shows the temperature as 2 °C higher than the actual temperature.
The temperature on the thermometer is T °C.

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

..... °C [1]

4

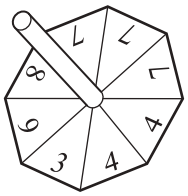


NOT TO SCALE

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]

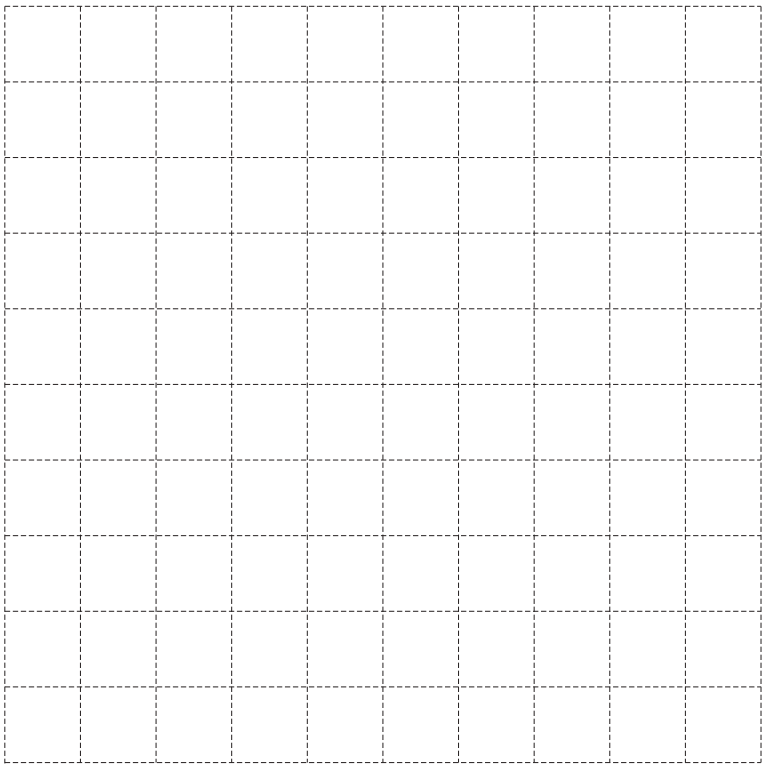
6 The month of July has 31 days.

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 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 $y = 2x - 3$.

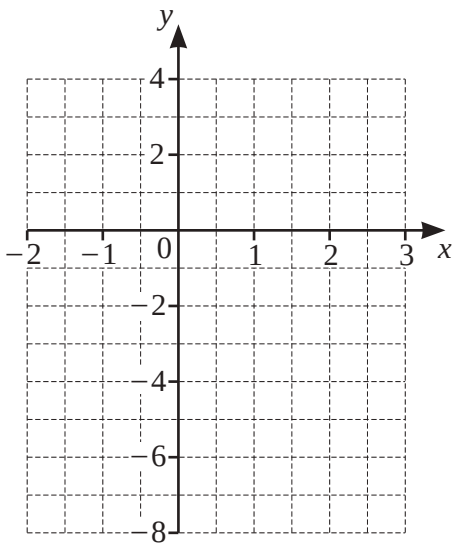
..... [1]

(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 $-2 \leqslant x \leqslant 3$.



[1]

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

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

$\overrightarrow{AB} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [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

red : green : blue = 12 : 5 : 2.

There are 112 more red marbles than green marbles.

Work out the number of blue marbles.

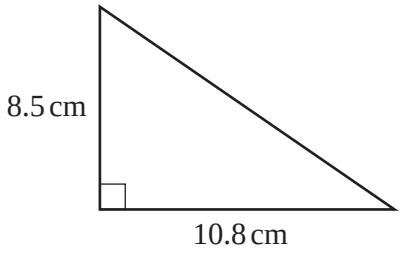
..... [2]

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^2 [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.

$5 \times x^0$

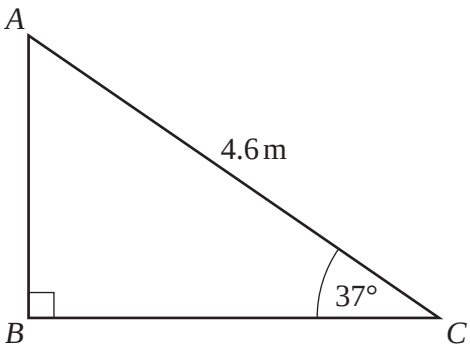
..... [1]

(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 = ... m [2]

18 **(a)** Factorise completely.

$3x^2 - 12xy$

..... [2]

(b) Expand and simplify.

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

..... [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]

BLANK PAGE