Cambridge Assessment International Education

# Cambridge IGCSE™

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| CANDIDATE NAME | | | | | | | | | |
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*7302592640*

**MATHEMATICS** **0580/13**

Paper 1 (Core) **May/June 2022**

**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**

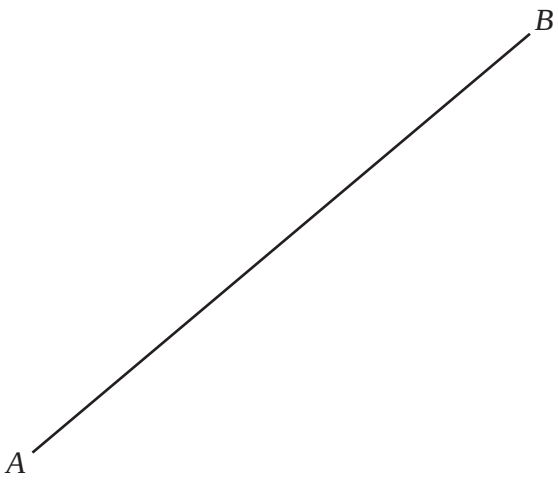
- The total mark for this paper is 56.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **12** pages. Any blank pages are indicated.

**1** Write the number one hundred and three thousand eight hundred and six in figures.

..... [1]

**2**




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

..... mm [1]

**(b)** Mark the midpoint, *M*, of the line *AB*. [1]

**(c)** Draw a line through *M* that is perpendicular to the line *AB*. [1]

**3** Simplify.

$3x - 4x + 7x$

..... [1]

**4** Work out the area of a rectangle that is 9.5 m long and 6.8 m wide.

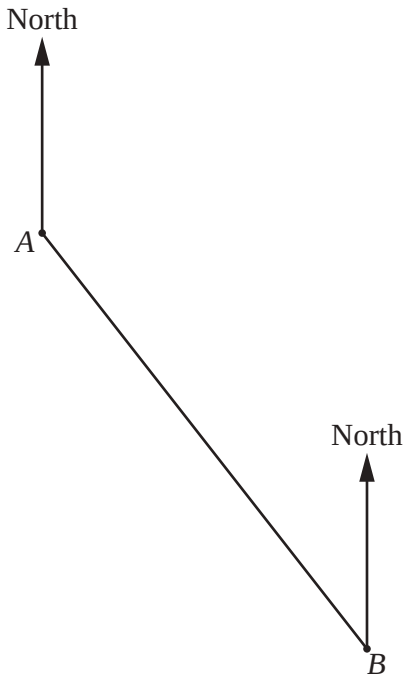
..... $m^2$ [2]

**5** The probability of picking a red sweet from a bag is 0.05 .

Find the probability of not picking a red sweet.

..... [1]

**6**




Measure the bearing of point $B$ from point $A$.

..... [1]

**7** Work out the value of $\frac{mk^3}{\sqrt{3}}$ when $m = 4$ and $k = 7$.

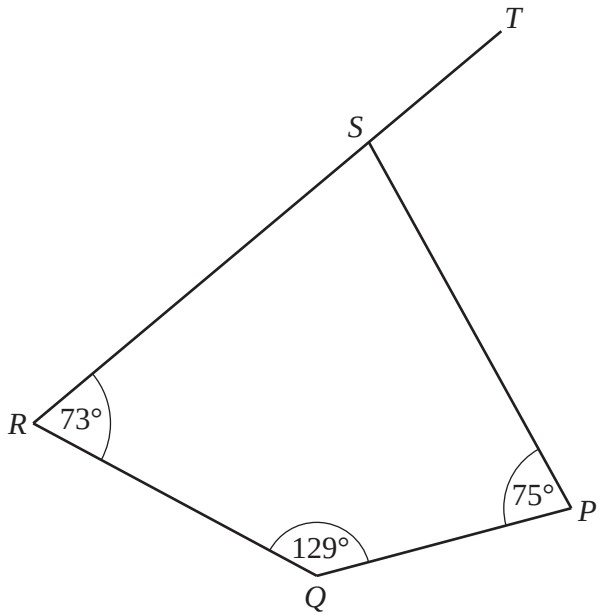
..... [2]

**8** A box, in the shape of a cuboid, has volume $357\,\text{cm}^3$.
It has a length of 8.5 cm and a width of 6 cm.

Calculate the height of the box.

..... cm [2]

**9**




NOT TO SCALE

*PQRS* is a quadrilateral.
*RST* is a straight line.

Find angle *PST*.

Angle *PST* = ..... [2]

**10** These are the masses, in kg, of 12 parcels.

0.3 0.4 1.2 0.8 1.1 2.1 1.7 1.8 1.2 2.3 0.7 1.1

**(a)** Complete the stem-and-leaf diagram for the 12 parcels.

| | |
|---|---|
| 0 | 3 4 |
| 1 | |
| 2 | |

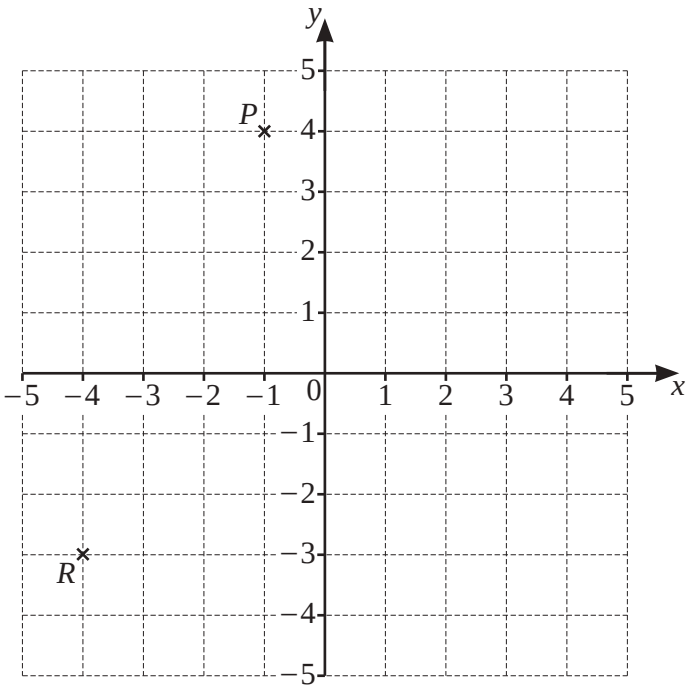
Key: 0 | 3 represents 0.3 kg

[2]

**(b)** Find the median.

..... kg [1]

**11** The grid shows point $P$ and point $R$.




**(a)** Write down the coordinates of point $P$.

(..... , .....) [1]

**(b)** $\overrightarrow{PQ} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$

Mark point $Q$ on the grid. [1]

**(c)** Find $\overrightarrow{QR}$.

$\overrightarrow{QR} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

**(d)** Complete this statement.

$\overrightarrow{PQ} + \overrightarrow{QR} =$ ..... [1]

**12** Simplify.

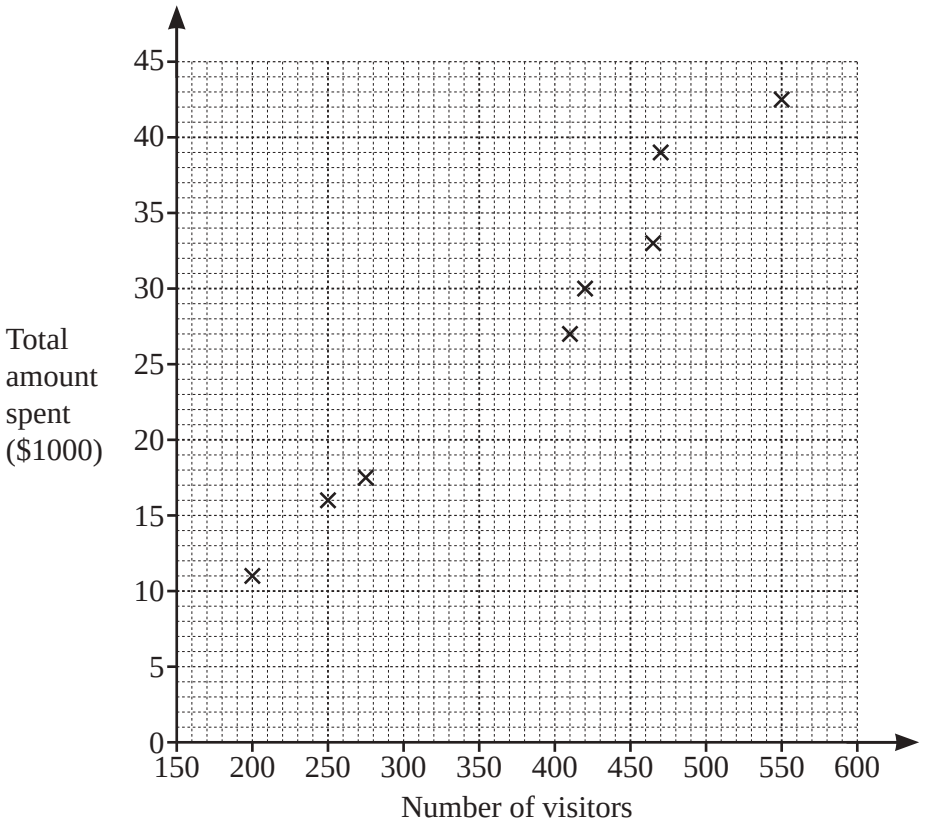
**(a)** $y^3 \div y^5$

..... [1]

**(b)** $7x^0$

..... [1]

**13** The scatter diagram shows the number of visitors and the total amount spent, in thousands of dollars, at a zoo on each of eight days.




**(a)** On one of the eight days there are 410 visitors.

Find the total amount spent by visitors during this day.

$ ..... [1]

**(b)** Information for the ninth day is shown in the table.

| | |
|---|---|
| Number of visitors | 175 |
| Total amount spent ($1000) | 9 |

Plot this information on the scatter diagram. [1]

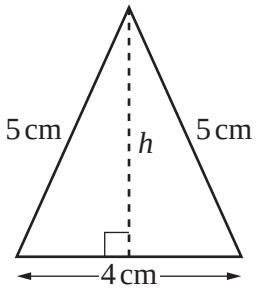
**(c)** Draw a line of best fit on the scatter diagram. [1]

**(d)** On the tenth day the total amount spent is $22 000.

Estimate the number of visitors on this day.

..... [1]

**14**




NOT TO SCALE

**(a)** Calculate the height, $h$, of the triangle.

$h =$ ..... cm [3]

**(b)** The triangle is one face of a square-based pyramid.

On the 1 cm$^2$ grid, draw a net of this pyramid.

[3]

**15** Factorise completely.

$18px - 27p$

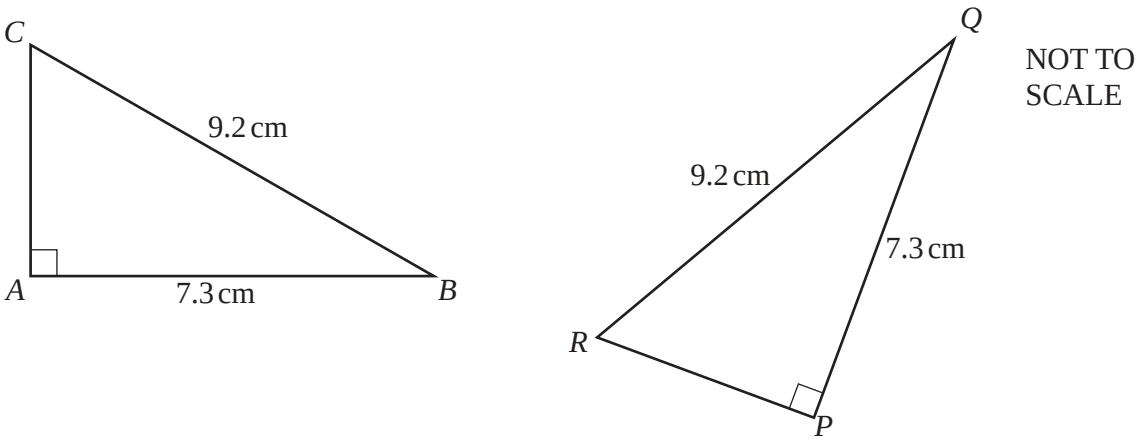
..... [2]

**16** The $n$th term of a sequence is $n^2 - 1$.

Find the first three terms of this sequence.

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

**17**




The diagram shows two right-angled triangles, *ABC* and *PQR*.

**(a)** Complete this statement with a geometrical term.

Triangle *ABC* is ..... to triangle *PQR*. [1]

**(b)** Calculate angle *ABC*.

Angle *ABC* = ..... [2]

**18** Find the lowest common multiple (LCM) of 32 and 40.

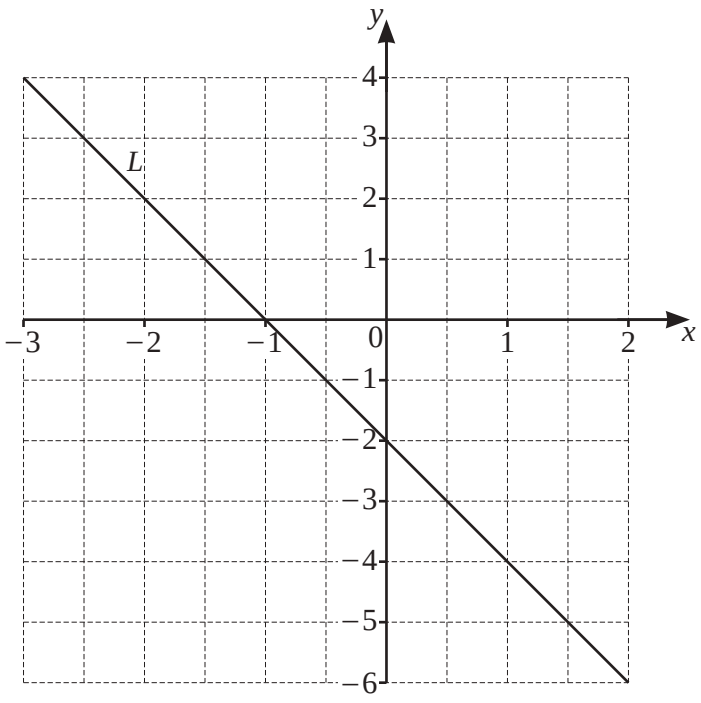
..... [2]

**19** Joe thinks of a number, $n$, trebles it, and subtracts 5.
The result is 22.

Write this as an equation in terms of $n$, and solve the equation.

$n =$ ..... [3]

**20**




Find the gradient of line $L$.

..... [2]

**21** Dominic asks 30 students in his class if they are right-handed or left-handed.
7 students are left-handed.

Work out the expected number of left-handed students in the whole school of 960 students.

..... [2]

**22** **Without using a calculator**, work out $4\frac{1}{6} - 1\frac{7}{8}$.

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

..... [3]

**23** Solve the simultaneous equations.
You must show all your working.

$$4x - 3y = 26$$
$$5x + 6y = 13$$

$x =$ .....

$y =$ ..... [3]

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