



# Cambridge IGCSE™

CANDIDATE  
NAME

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NUMBER

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**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

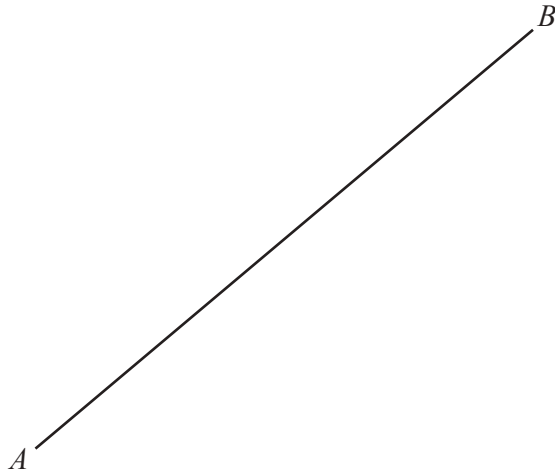
- The total mark for this paper is 56.
- The number of marks for each question or part question is shown in brackets [ ].

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.

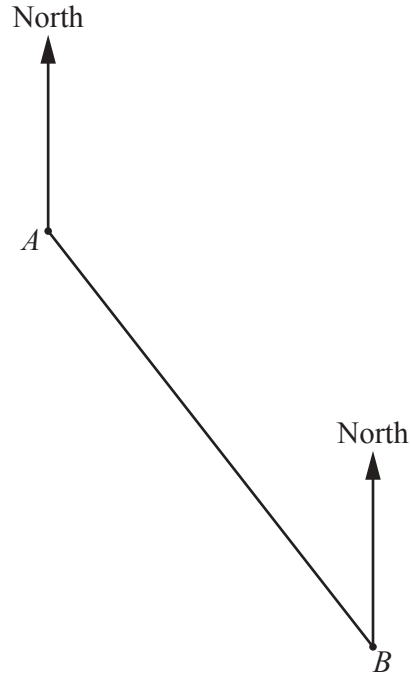
.....  $\text{m}^2$  [2]

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]

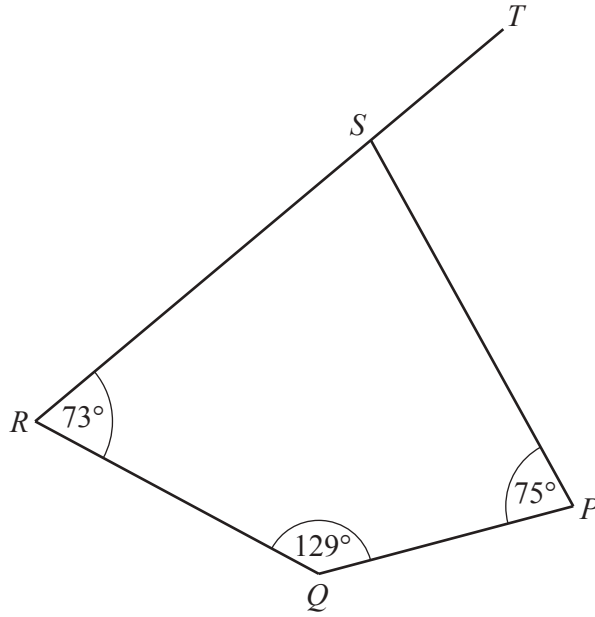
7 Work out the value of  $\frac{mk^3}{\sqrt{3}}$  when  $m = 4$  and  $k = 7$ .

..... [2]

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

Calculate the height of the box.

..... cm [2]



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	

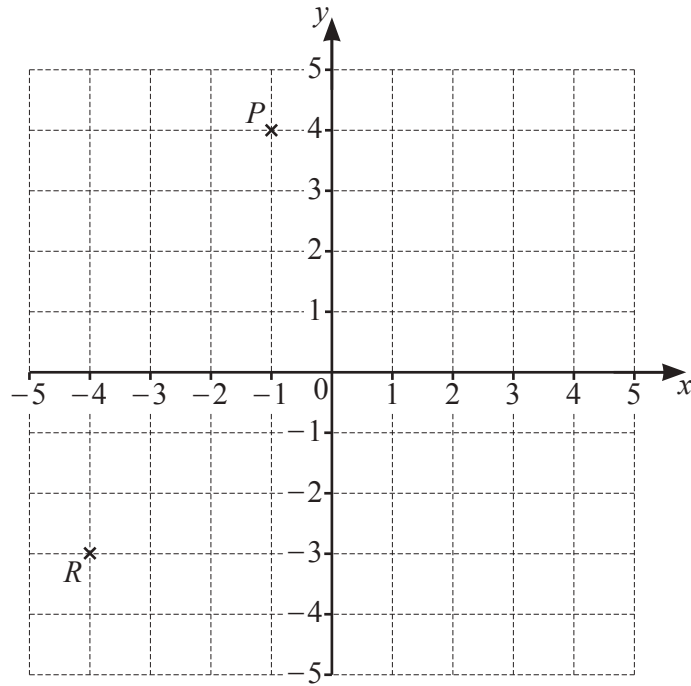
Key: 0 | 3 represents 0.3 kg

[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)  $\vec{PQ} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$

Mark point  $Q$  on the grid.

[1]

(c) Find  $\vec{QR}$ .

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

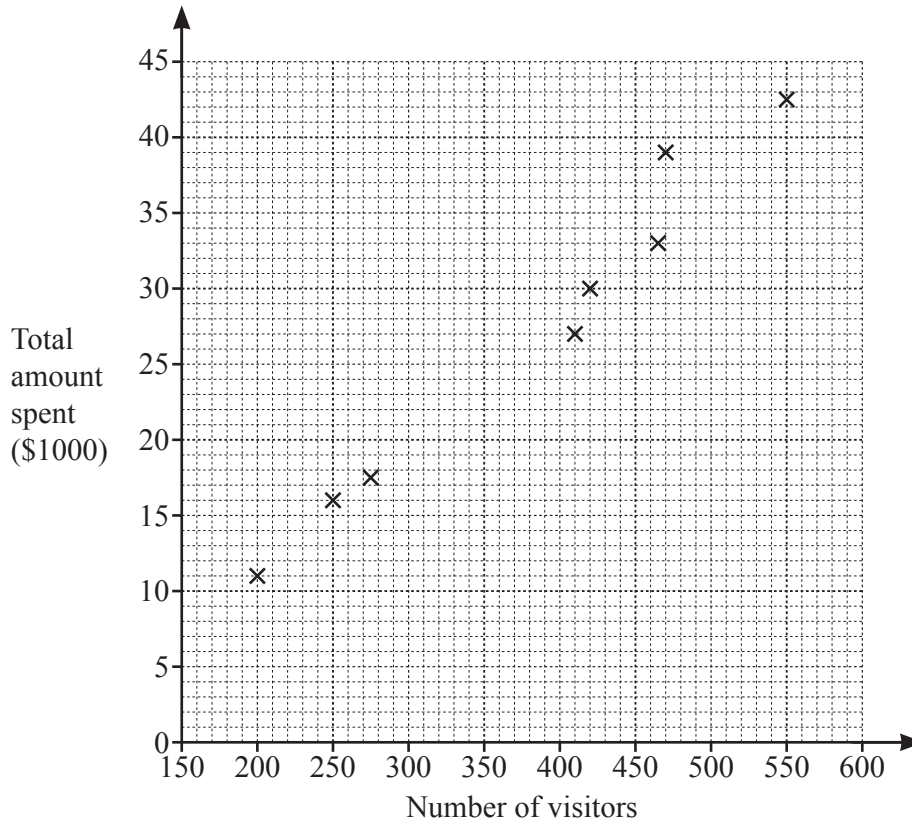
(d) Complete this statement.  $\vec{PQ} + \vec{QR} = \underline{\hspace{2cm}}$   
 ..... [1]

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.

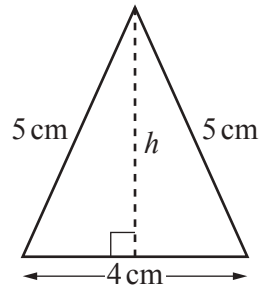
[1]

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

Estimate the number of visitors on this day.

..... [1]

14

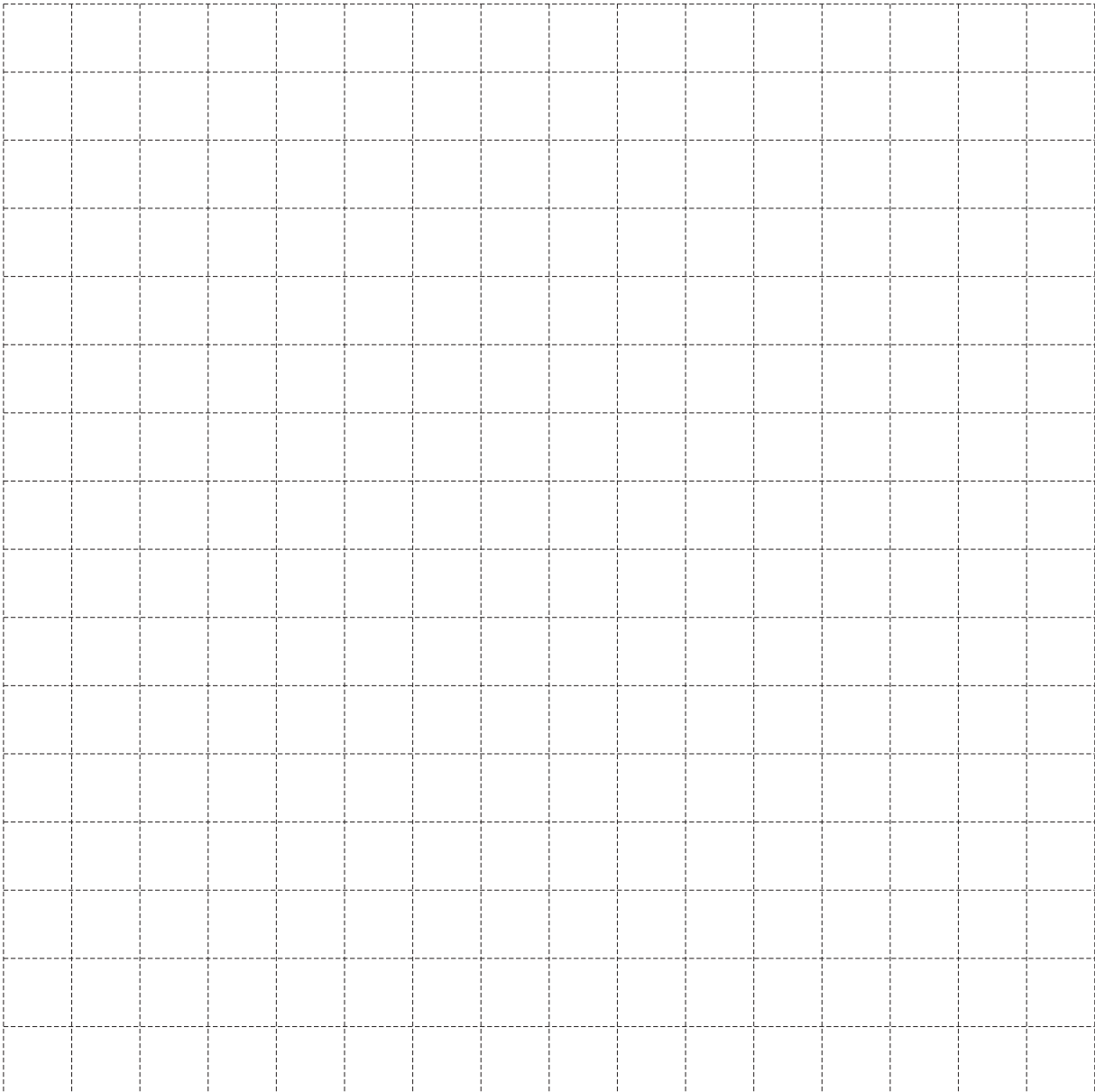
NOT TO  
SCALE

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

$$h = \dots\dots\dots \text{ cm [3]}$$

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

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



15 Factorise completely.

$$18px - 27p$$

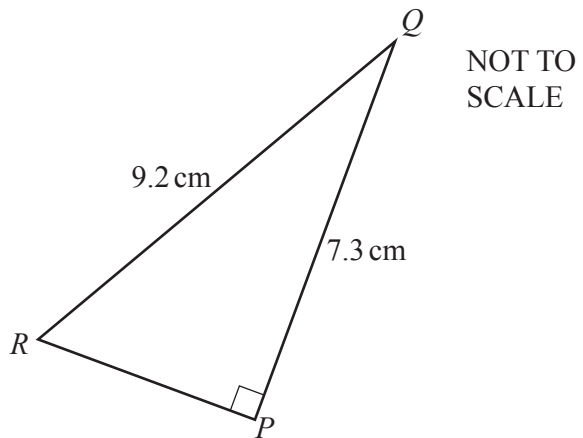
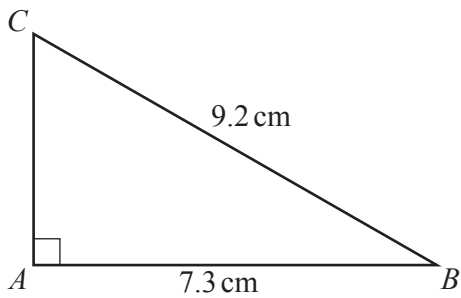
..... [2]

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

Find the first three terms of this sequence.

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

17



NOT TO SCALE

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.

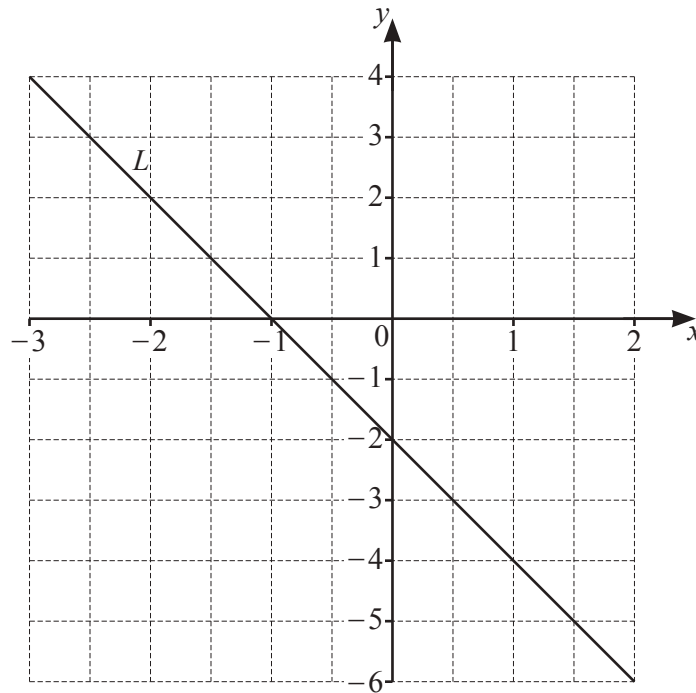
..... [2]

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]