

Cambridge IGCSE[™]

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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

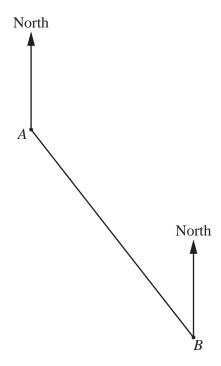
- Answer all questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do not use an erasable pen or correction 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 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. Any blank pages are indicated.

| 1 | Write the number one hundred and three thousand eight hundred and | nd six in figures. | |
|---|---|--------------------|-------------|
| | | | [1] |
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| 2 | | D. | |
| | | \nearrow^B | |
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| | | | |
| | | | |
| | A | | |
| | (a) Measure the length of the line <i>AB</i> in millimetres. | | |
| | (w) 111000000 the 101gth of the fine file in infinite con- | mm | Г1 1 |
| | (b) Mode the midwaint M of the line AD | | |
| | (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. | | |
| 7 | work out the area of a rectangle that is 7.5 in long and 0.6 in 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] |
| | | | |



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

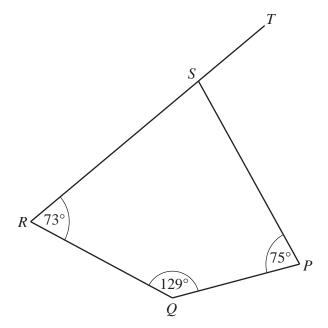
| | [1] |
|--|-----|
|--|-----|

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 cm³. It has a length of 8.5 cm and a width of 6 cm.

Calculate the height of the box.



NOT TO SCALE

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

Find angle *PST*.

Angle
$$PST = \dots [2]$$

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 | | | |

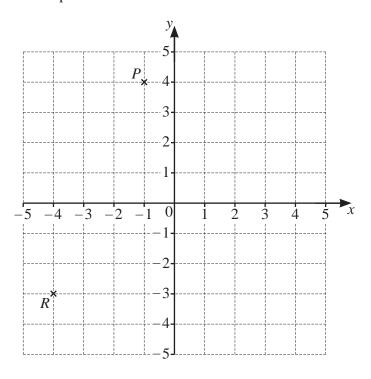
Key: 0 | 3 represents 0.3 kg

[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 | · | | \ [1] |
|---|--------|-----------|--------------|
| ĺ | ······ | • • • • • | <i>)</i> [1] |

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

Mark point *Q* on the grid.

[1]

(c) Find \overrightarrow{QR} .

$$\overrightarrow{QR} = \left(\right)$$
 [1]

(d) Complete this statement.

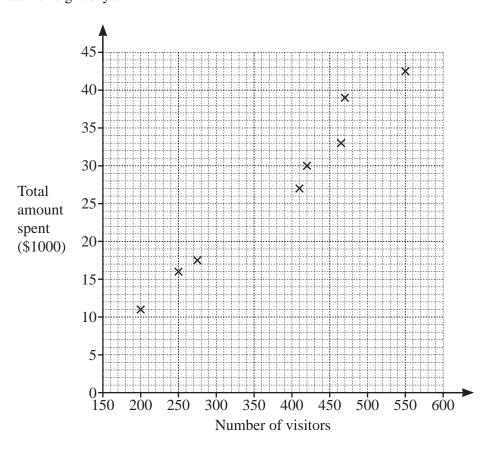
$$\overrightarrow{PQ} + \overrightarrow{QR} =$$
 [1]

12 Simplify.

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

(b)
$$7x^0$$

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 |

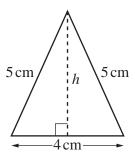
| Plot this information on the scatter diagram. | [1] |
|---|-----|

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

(d) On the tenth day the total amount spent is \$22000.

Estimate the number of visitors on this day.

| г | 1 | ٦ |
|--------|---|---|
| Į. | I | J |



NOT TO SCALE

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

| $h = \dots $ cm | [3] |
|-----------------|-----|
|-----------------|-----|

(b) The triangle is one face of a square-based pyramid.On the 1 cm² grid, draw a net of this pyramid.

| | | | | | | | | | | | |
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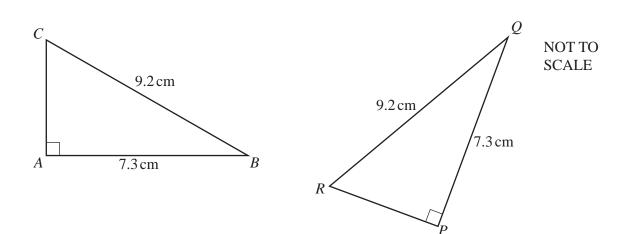
| [2] |
|---------|
| r-1 |

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

Find the first three terms of this sequence.



17



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

(a) Complete this statement with a geometrical term.

(b) Calculate angle *ABC*.

Angle
$$ABC = \dots$$
 [2]

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

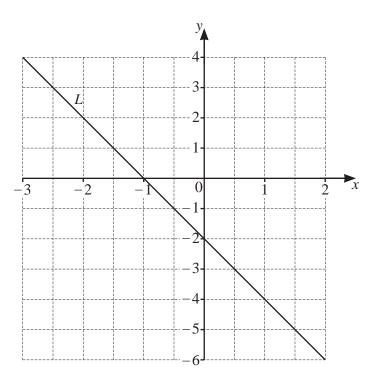
| [2] |
|--------|
| 12 |

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.

$$n = \dots [3]$$

20



Find the gradient of line L.

| 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 le | eft-handed students in the v | 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 an | nd give your answer as a mi | ixed number in its simplest form. | | | |
| | | | | [3] | | |
| 23 | Solve the simultaneous equations. You must show all your working. | 4x - 3y = 26 $5x + 6y = 13$ | $x = \dots$ | | | |
| | | | <i>y</i> = | [3] | | |

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