Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

4974010224

MATHEMATICS **0580/12**

Paper 1 (Core) **May/June 2024**

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 **8** pages.

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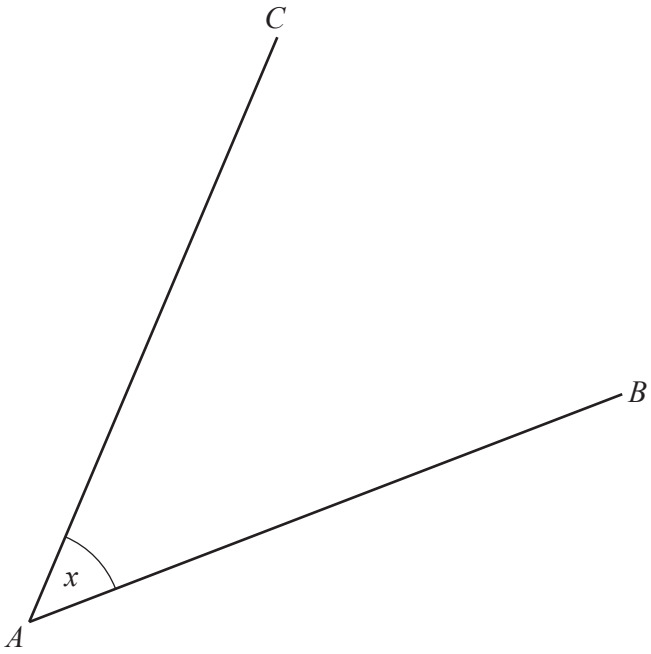
[Turn over

1 Write the number 31 072 000 in words.

..... [1]

2



(a) Measure the size of angle x.

..... [1]

(b) Measure the length of line AB in millimetres.

..... mm [1]

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

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

3 Find the value of the reciprocal of 0.4 .

..... [1]

4 Write these numbers in order, starting with the smallest.

$\frac{6}{7}$ $\quad 8.6\times10^{-1}$ $\quad \frac{11}{13}$ $\quad 86.5\%$

..... < ..... < ..... < ..... [2]

smallest

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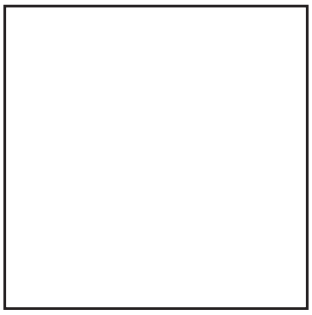
5 **(a)**



Draw all the lines of symmetry on this quadrilateral. [2]

(b) Write down the mathematical name of a quadrilateral that has rotational symmetry of order 2.

..... [1]

6 The temperature at midnight is −4 °C.
The temperature at noon is 25 °C.

Work out the difference between these two temperatures.

..... °C [1]

7 A gardener charges $6.55 for each hour he works plus a fixed charge of $15.50 .

Calculate the total amount he charges when he works for 4 hours.

$ ..... [2]

8 Jonah has $750.
He spends $\frac{1}{4}$ of this money on travel, and some of this money on food.
He now has $437.50 .

Work out the fraction of the $750 he spends on food.

..... [3]

9 A delivery driver records the number of pizzas she delivers each month for one year.

48	44	39	28	57	22
36	41	54	57	49	52

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

2	
3	
4	
5	

Key: 4 | 8 represents 48 pizzas

[2]

(b) Find the median.

..... [1]

10 $\mathbf{a} = \begin{pmatrix} 5 \\ -7 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 6 \\ -7 \end{pmatrix}$

Work out $\mathbf{a} - \mathbf{b}$.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

11 These are the first four terms of a sequence.

23 17 11 5

(a) Write down the next two terms.

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

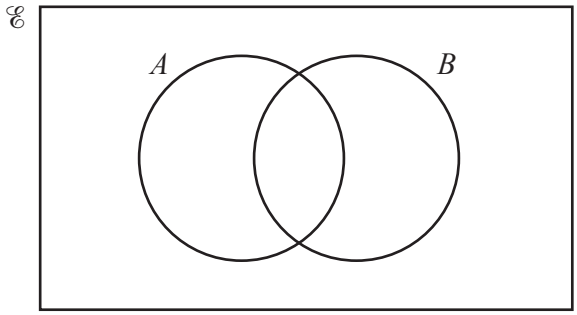
(b) Find the *n*th term.

..... [2]

12 Write 0.04628 correct to 2 significant figures.

..... [1]

13



On the Venn diagram, shade the region $A \cup B$. [1]

14 Factorise completely.

$$20x - 90x^2$$

..... [2]

15 Describe the type of correlation between the speed of runners and the time taken to complete a race.

..... [1]

16 A circle has an area of $36\pi\,\text{cm}^2$.

(a) Find the circumference of the circle.
Give your answer in terms of π.

..... cm [3]

(b) The circle forms the base of a cylinder with height h cm.
The volume of the cylinder is $540\pi\,\text{cm}^3$.

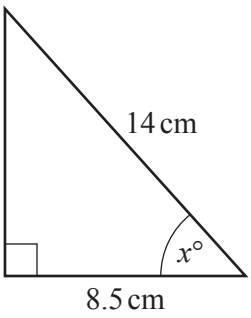
Work out the value of h.

$h =$ ..... [2]

17 Write 174 000 in standard form.

..... [1]

18



NOT TO SCALE

The diagram shows a right-angled triangle.

Calculate the value of x.

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

19 **Without using a calculator**, work out $2\frac{1}{4} \div 1\frac{7}{8}$.

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

..... [3]

20 Expand and simplify.

$$(x-4)(x-7)$$

..... [2]

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21 $5^7 \div 5^x = 5^3$

Find the value of x.

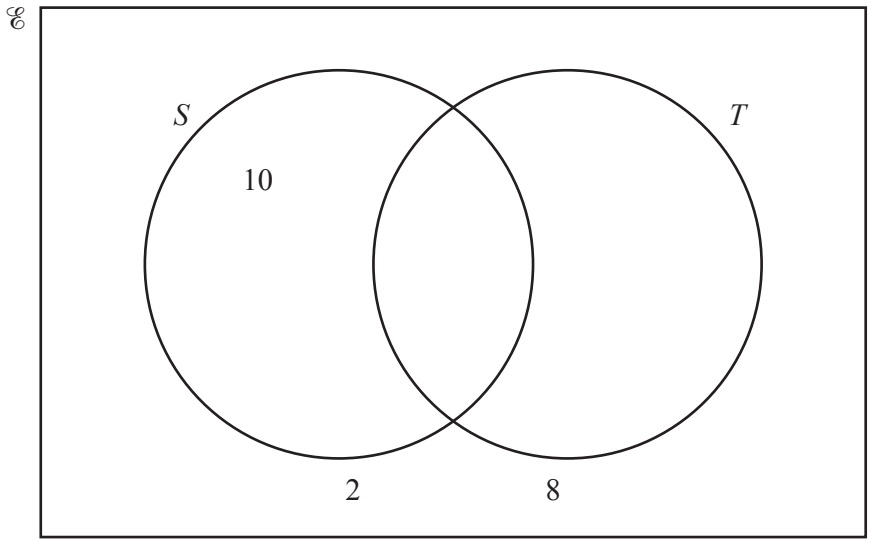
$x =$ ..... [1]

22 The length, l metres, of a piece of material is 4.5 m, correct to the nearest 10 cm.

Complete this statement about the value of l.

..... $\leqslant l <$ ..... [2]

23 $\mathscr{E} = \{x: x \text{ is a natural number less than } 12\}$
$S = \{1, 4, 7, 10\}$
$T = \{1, 3, 5, 7, 9, 11\}$



Complete the Venn diagram.

[2]

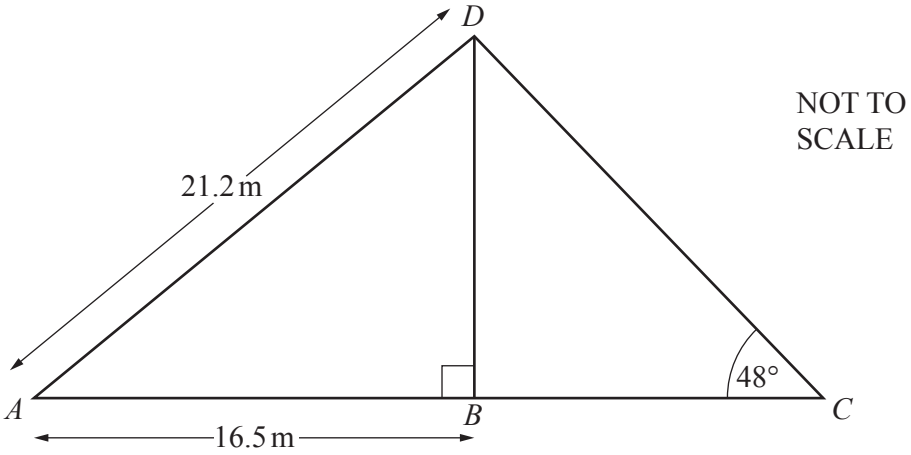
24 In a class of 30 students, 13 travel to school by bus.
There are 570 students in the school.

Find the expected number of students in the school who travel by bus.

..... [2]

Question 25 is printed on the next page.

25



The diagram shows a flagpole, BD, held by two ropes, AD and CD.
ABC is a straight line and angle $ABD = 90°$.
$AD = 21.2$ m, $AB = 16.5$ m and angle $BCD = 48°$.

(a) Show that the height of the flagpole BD is 13.3 m, correct to 1 decimal place.

[3]

(b) Calculate the length of the rope CD.

$CD =$ ..... m [3]

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