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CANDIDATE NAME

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161765825 6

MATHEMATICS **0580/13**

Paper 1 (Core) **October/November 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 **12** pages. Any blank pages are indicated.

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1 Write 6475 correct to the nearest ten.

..... [1]

2 Write 0.75 as a fraction.

..... [1]

3 A piece of string has length 65.1 cm.
The string is cut into 7 equal pieces.

Find the length of each piece.

.....cm [1]

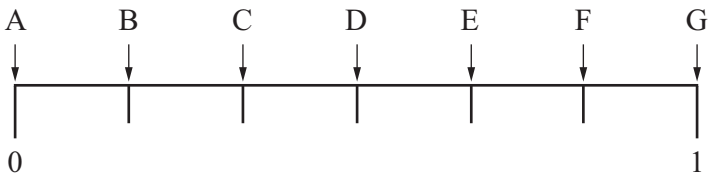
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7	19	8	12	3	12	9	7	12

Find the mode of these numbers.

..... [1]

5 A bag contains 6 red balls, 4 green balls and 2 blue balls.
Zia takes a ball from the bag at random.



Write down the letter from the probability scale that shows the probability that

(a) Zia takes a green ball

..... [1]

(b) Zia takes a yellow ball

..... [1]

(c) Zia does **not** take a blue ball.

..... [1]

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6 These are the first four terms of a sequence.

19 26 33 40

(a) (i) Find the next term.

..... [1]

(ii) Write down the term to term rule for this sequence.

..... [1]

(b) These are the first four terms of another sequence.

−1 2 5 8

Find the nth term of this sequence.

..... [2]

7 Simplify.

$3p - t - p - 4t$

..... [2]

8

61	62	63	64	65	66	67	68	69

From the list of numbers, write down

(a) a cube number

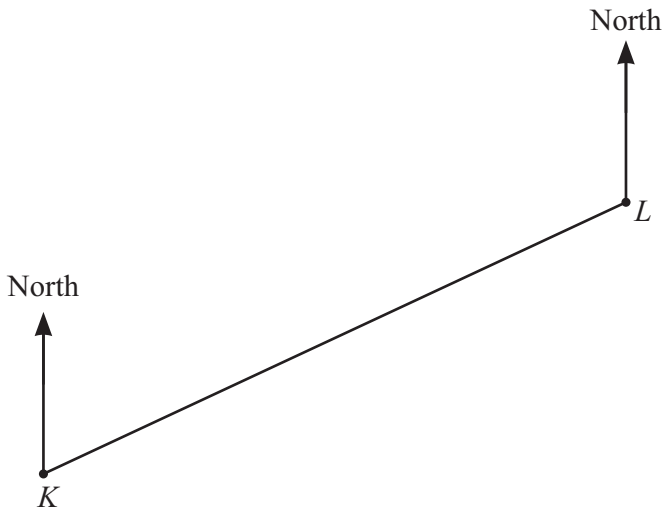
..... [1]

(b) a prime number.

..... [1]

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9 The scale drawing shows the positions of town K and town L.
The scale is 1 cm represents 10 km.



Scale : 1 cm to 10 km

(a) Find the actual distance between town K and town L.

..... km [2]

(b) Measure the bearing of town L from town K.

..... [1]

(c) Town M is 40 km from town L on a bearing of 140°.

On the scale drawing, mark the position of town M. [2]

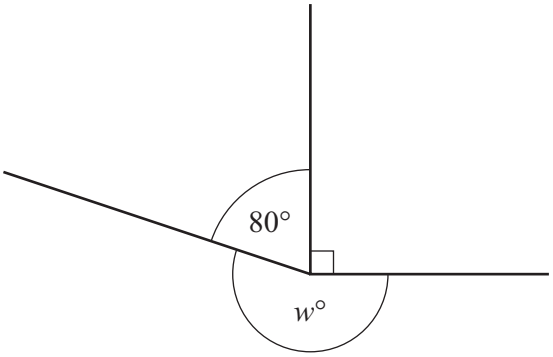
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10 The surface area of a cube is $121.5\,\text{cm}^2$.

Calculate the length of one side of the cube.

..... cm [2]

11 **(a)**



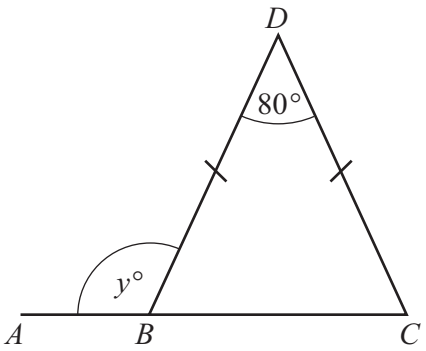
NOT TO SCALE

The diagram shows three lines meeting at a point.

Find the value of w.

$w =$ ..... [1]

(b)



NOT TO SCALE

BCD is an isosceles triangle.
ABC is a straight line.

Work out the value of y.

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

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12 Write down the equation of a line parallel to the line $y = 2x$.

..... [1]

13 Each student in a class of 20 students records the number of coins in their pockets.
The table shows the results.

Number of coins	0	1	2	3	4	5	6
Frequency	3	1	7	8	0	0	1

(a) Find the median.

..... [1]

(b) Calculate the mean.

..... [3]

14 Expand $4(x-3)$.

..... [1]

15 Find the size of an interior angle of a regular 15-sided polygon.

..... [2]

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16 Rio buys some pens.
He sells 63 pens, which is $\frac{7}{9}$ of the pens he buys.

Work out how many pens he buys.

..... [2]

17 Ed has n books.
Sam has 3 times as many books as Ed
Jane has 2 books fewer than Sam.
The total number of books is 54.

Use this information to write down an equation and solve it to find the value of n.

$n =$ ..... [4]

18 **Without using a calculator**, work out $2\frac{1}{4} - 1\frac{11}{12}$.

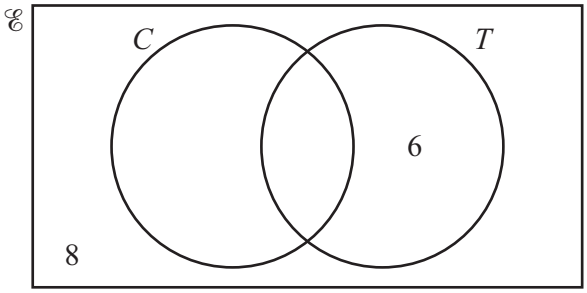
You must show all your working and give your answer as a fraction in its simplest form.

..... [3]

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19 $\mathscr{E}$ = {workers in an office}
C = {workers who drink coffee}
T = {workers who drink tea}

47 people work in the office.
32 people drink tea.



(a) Complete the Venn diagram. [2]

(b) Write down n($C \cap T$).

..... [1]

(c) Work out the probability that a worker chosen at random does **not** drink coffee.

..... [1]

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20 The weight, w grams, of a box is 463.9 grams, correct to 1 decimal place.

Complete the statement about the value of w.

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

21 Calculate $(6.4 \times 10^5) \div (2.5 \times 10^{-7})$.
Give your answer in standard form.

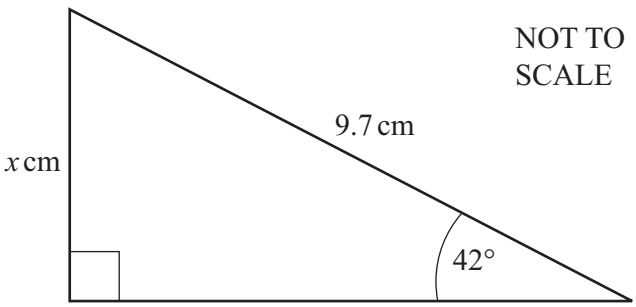
..... [1]

22 Mia invests \$1270 for 5 years at a rate of 2.1% per year compound interest.

Calculate the value of her investment at the end of the 5 years.

\$ ..... [2]

23



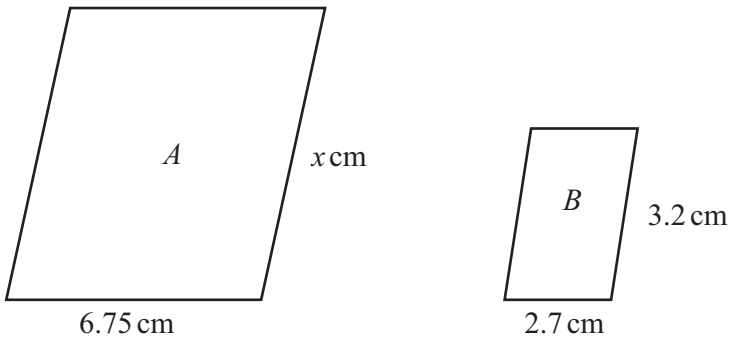
The diagram shows a right-angled triangle.

Calculate the value of x.

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

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24



NOT TO SCALE

Shape A is mathematically similar to shape B.

Calculate the value of x.

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

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