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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.



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]

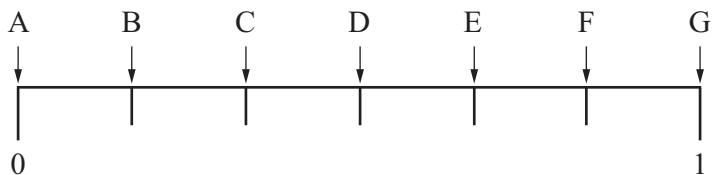
4

7	19	8	12	3	12	9	7	12
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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]





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 n th 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]

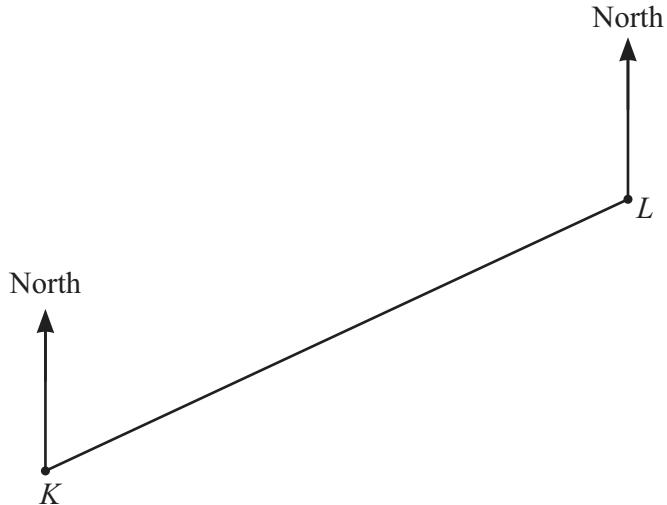
(b) a prime number.

..... [1]





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]



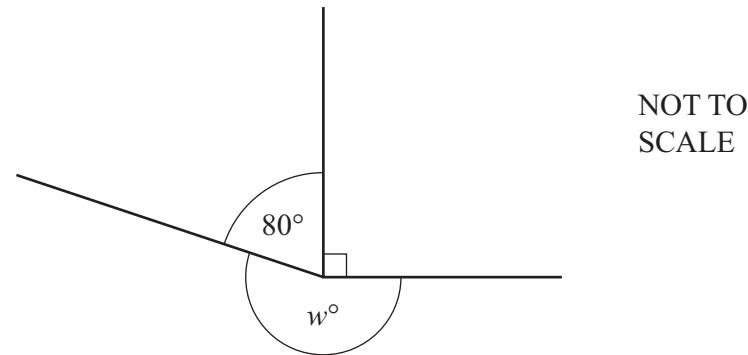


10 The surface area of a cube is 121.5 cm^2 .

Calculate the length of one side of the cube.

..... cm [2]

11 (a)

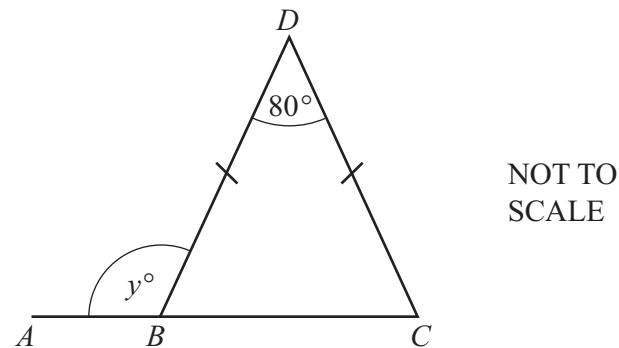


The diagram shows three lines meeting at a point.

Find the value of w .

$w =$ [1]

(b)



BCD is an isosceles triangle.

ABC is a straight line.

Work out the value of y .

$y =$ [3]





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]





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.

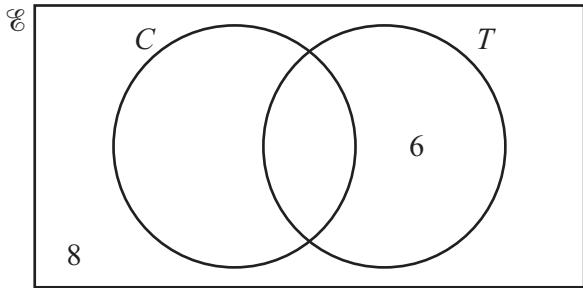
..... [3]





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

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]





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 .

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

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

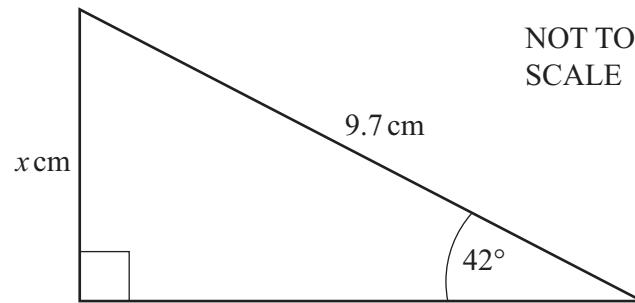
..... [1]

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 .

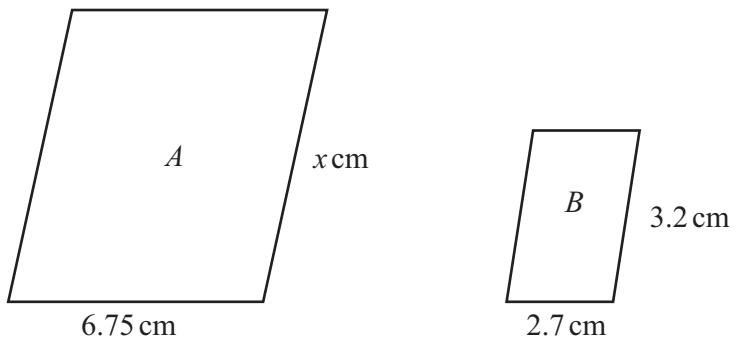
$x =$ [2]

[Turn over]





24



Shape A is mathematically similar to shape B .

Calculate the value of x .

$x = \dots$ [2]



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