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7053215745

MATHEMATICS **0580/11**

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 **12** pages. Any blank pages are indicated.

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1 **(a)** Write 0.8 as a fraction.

..... [1]

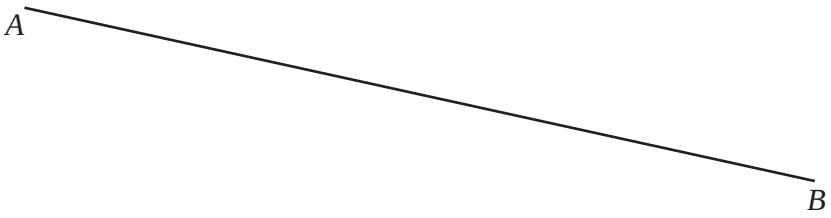
(b) Write 28% as a decimal.

..... [1]

(c) Write 4876 correct to the nearest hundred.

..... [1]

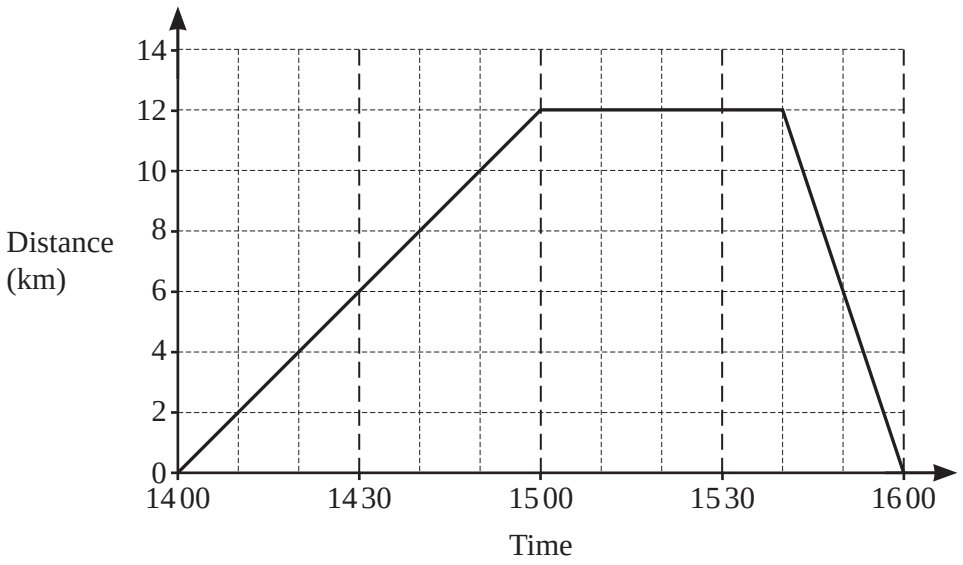
2



Measure the length of line *AB* in millimetres.

..... mm [1]

3 The travel graph shows the journey of a bus.



(a) Find the distance the bus travels in the first 50 minutes.

..... km [1]

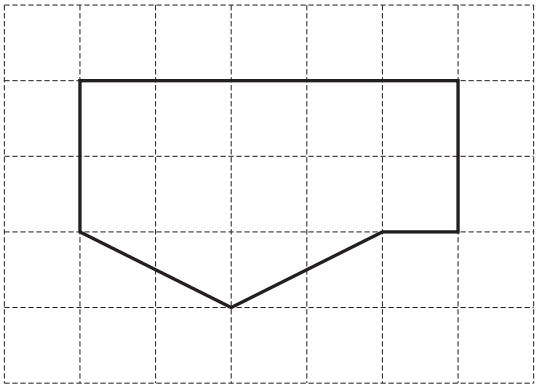
(b) Find how long, in minutes, the bus is stationary.

..... min [1]

4 Write down the order of rotational symmetry of a rhombus.

..... [1]

5 The diagram shows a shape on a $1\,cm^2$ grid.



Find the area of this shape.

..... cm^2 [1]

6 **(a)** Work out.

$$28 - 16 \div 2$$

..... [1]

(b) Find the reciprocal of $\frac{4}{5}$.

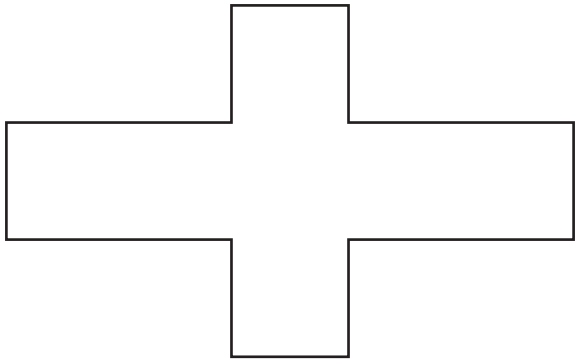
..... [1]

7 The temperature on Monday is –27 °C.
The temperature on Tuesday is 15 °C higher than on Monday.

Work out the temperature on Tuesday.

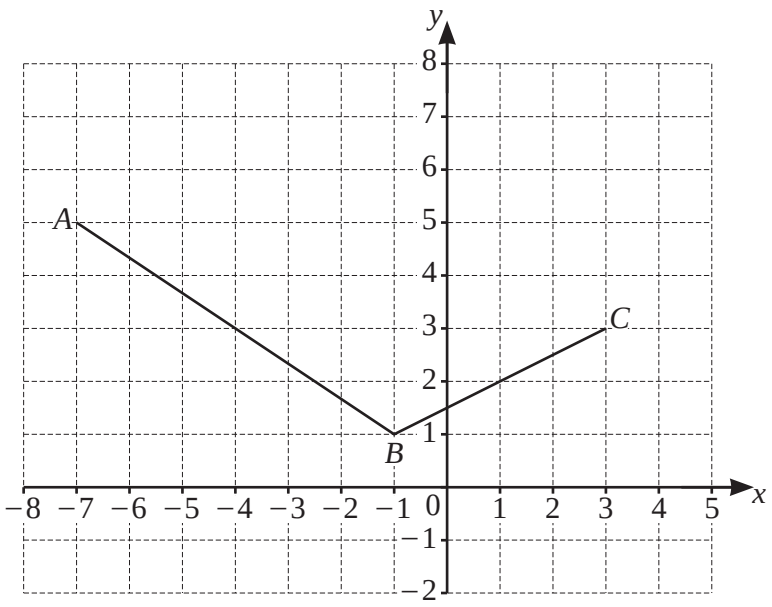
..... °C [1]

8



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

9

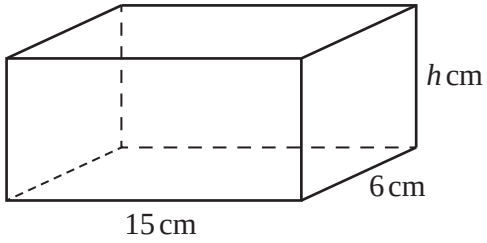


The diagram shows two sides of a parallelogram *ABCD*.

Find the coordinates of point *D*.

(..... , ...) [2]

10



NOT TO SCALE

The total surface area of this cuboid is 369 cm^2.

Work out the value of h.

$h =$ ..... [4]

11 Geetha has a box of toys.
She picks a toy at random from the box.
The probability that she picks a wooden toy is 0.6 .

(a) Work out the probability that she does not pick a wooden toy.

..... [1]

(b) The box contains three types of toys, wooden, plastic or metal.

Type of toy	Wooden	Plastic	Metal
Number of toys		14	14
Probability	0.6		

Complete the table.

[2]

12 The table shows some information about two sequences.

	nth term	5th term
Sequence A	$60 - 4n$	
Sequence B	$n^2 - 300$	

Complete the table.

[2]

13 Find the coordinates of the point where the line $y = 3x - 5$ crosses the y-axis.

(..... , ...) [1]

14 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

$$\frac{28.2 - 5.6}{4.2 \times 1.68}.$$

You must show all your working.

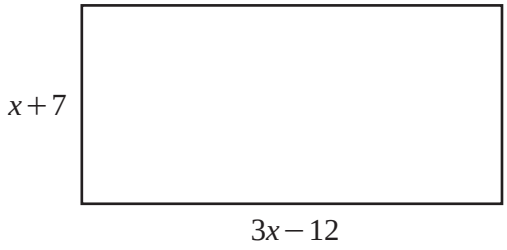
..... [2]

15 Factorise completely.

$$36x^2 + 40x$$

..... [2]

16



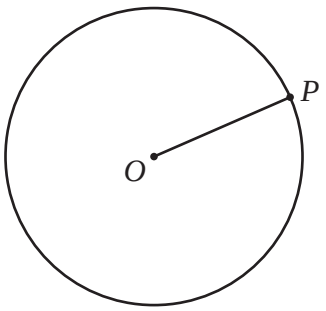
NOT TO SCALE

The diagram shows a rectangle with length $3x-12$ and width $x+7$.

Find an expression for the perimeter of the rectangle.
Give your answer in its simplest form.

..... [3]

17 The diagram shows a circle, centre O.
P lies on the circle.



(a) Write down the mathematical name of the line OP.

..... [1]

(b) Draw a tangent to the circle at P. [1]

18 Find the greatest **odd** number that is a factor of 140 and a factor of 210.

..... [2]

19 Calculate.

(a) $\sqrt[3]{343} - \sqrt{40.96}$

..... [1]

(b) $(192 + 4 \times 16)^{1.25}$

..... [1]

20 **(a)** Find the value of 137^0.

..... [1]

(b) $7^{12} \div 7^p = 7^{17}$

Find the value of p.

$p =$ ..... [1]

21 Calculate $1.827 \times 10^6 \div 9000$.
Give your answer in standard form.

..... [2]

22 Solve the simultaneous equations.
You must show all your working.

$$6x + 2y = 29$$
$$3x - 4y = 17$$

$x =$ .....

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

23 Change 9.6 km/h into m/s.

..... m/s [2]

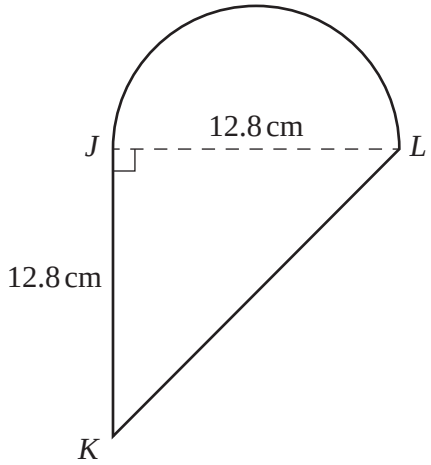
24 These are the first five terms of a sequence.

11 18 25 32 39

Find an expression for the nth term of the sequence.

..... [2]

25



NOT TO SCALE

The diagram shows a shape made from a triangle *JKL* and a semicircle with diameter *JL*.
JKL is an isosceles right-angled triangle with $JK = JL = 12.8$ cm.

(a) Calculate the area of this shape.

..... cm^2 [3]

(b) Calculate the perimeter of this shape.

..... cm [4]

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