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MATHEMATICS

0580/12

Paper 1 (Core)

October/November 2020

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. Blank pages are indicated.

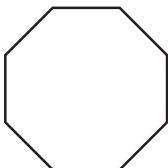
- 1 Write two hundred thousand and seventeen in figures.

..... [1]

- 2 Write 867 correct to the nearest ten.

..... [1]

3



Write down the order of rotational symmetry of this regular octagon.

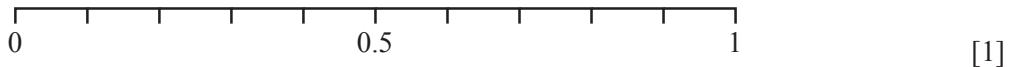
..... [1]

- 4 A bag contains 20 balls.

5 of these balls are red.

A ball is picked at random from the bag.

On the probability scale, draw an arrow (\uparrow) to show the probability that this ball is red.



- 5 Work out the number of hours in 3 days.

..... hours [1]

- 6 Write these in order of size, starting with the smallest.

$$\frac{11}{27} \quad 41\% \quad 0.4 \quad \frac{16}{39}$$

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

- 7 Solve the equation.

$$6 - 2x = 3x$$

$$x = \dots \quad [2]$$

- 8 Work out the difference in temperature between -6°C and 5°C .

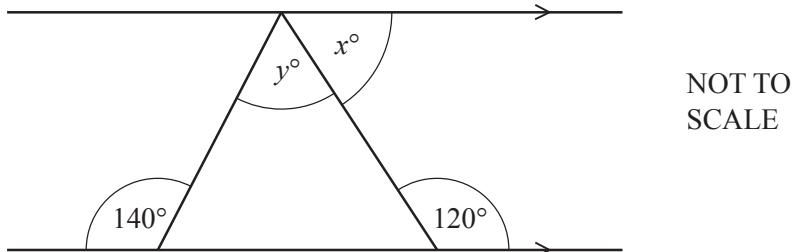
$$\dots^{\circ}\text{C} \quad [1]$$

9 $A = \frac{1}{4}bc^2$

Calculate the value of A when $b = 3$ and $c = 6$.

$$\dots \quad [2]$$

10



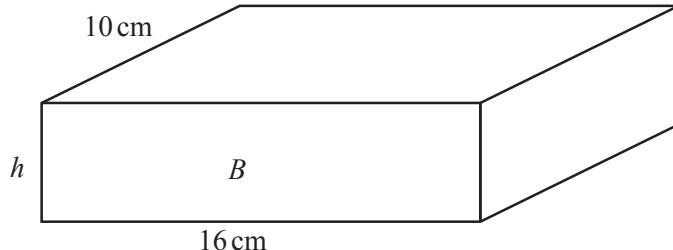
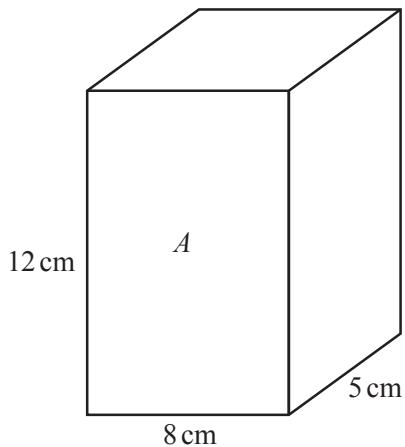
The diagram shows a triangle drawn between a pair of parallel lines.

Find the value of x and the value of y .

$$x = \dots$$

$$y = \dots \quad [3]$$

11

NOT TO
SCALE

The diagram shows cuboid A and cuboid B .
Cuboid A has the same volume as cuboid B .

Calculate the height, h , of cuboid B .

$$h = \dots \text{ cm} [3]$$

- 12 Fernando records the favourite sport of each of 20 people.

football	cricket	rugby	cricket	rugby	rugby	football	football	rugby	football
cricket	rugby	tennis	football	tennis	football	rugby	cricket	football	cricket

- (a) Complete the frequency table to show this information.

You may use the tally column to help you.

Favourite sport	Tally	Frequency
Cricket		
Football		
Rugby		
Tennis		

[2]

- (b) Fernando wants to draw a pie chart to show this information.

Work out the sector angle for football.

..... [2]

- 13 Increase 42 by 16%.

..... [2]

- 14 These are the first four terms of a sequence.

17 10 3 -4

- (a) (i) Find the next term.

..... [1]

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

..... [1]

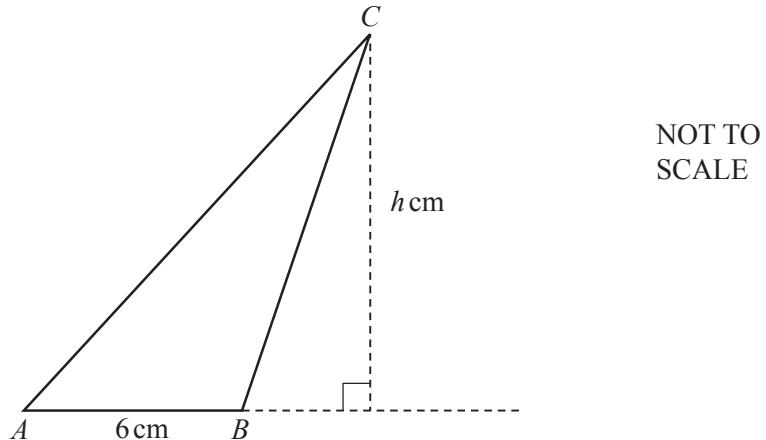
- (b) These are the first four terms of a different sequence.

-2 2 6 10

Find an expression for the n th term.

..... [2]

15

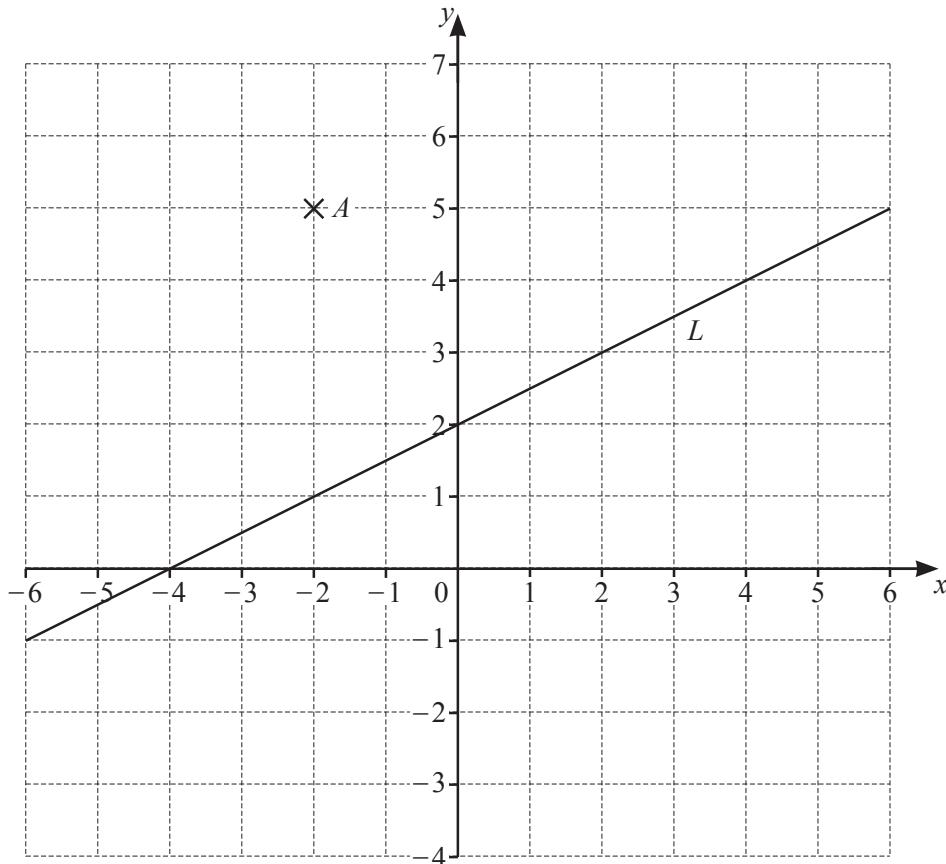


The area of triangle ABC is 27 cm^2 and $AB = 6 \text{ cm}$.

Calculate the value of h .

$h = \dots$ [2]

16 (a)



- (i) Write down the coordinates of point A.

(..... ,) [1]

- (ii) On the grid, plot the point $(2, -3)$. [1]

- (iii) The line L is shown on the grid.

Find the equation of the line L in the form $y = mx + c$.

$$y = \dots \quad [2]$$

- (b) Write down the equation of the line parallel to $y = 5x + 6$ that passes through $(0, -7)$.

$$y = \dots \quad [1]$$

- 17 Without using a calculator, work out $\frac{5}{6} \div 1\frac{1}{3}$.

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

..... [3]

- 18 (a) The length, l cm, of a pencil is 18 cm, correct to the nearest centimetre.

Complete the statement about the value of l .

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

- (b) (i) Write 9.314×10^5 as an ordinary number.

..... [1]

- (ii) Calculate $(4.1 \times 10^{-3}) \times (8.9 \times 10^7)$.

Give your answer in standard form.

..... [2]

- (c) Calculate $\sqrt{(8 + 4 \times 75^{0.6})}$.

..... [1]

- 19 The length of one side of a rectangle is 12 cm.
The length of the diagonal of the rectangle is 13 cm.

Calculate the area of the rectangle.

..... cm^2 [3]

- 20 Alex and Chris share sweets in the ratio Alex : Chris = 7 : 3.
Alex receives 20 more sweets than Chris.

Work out the number of sweets Chris receives.

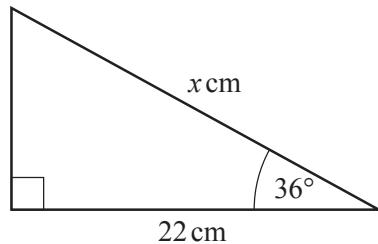
..... [2]

21 Write 825 as the product of its prime factors.

..... [2]

22

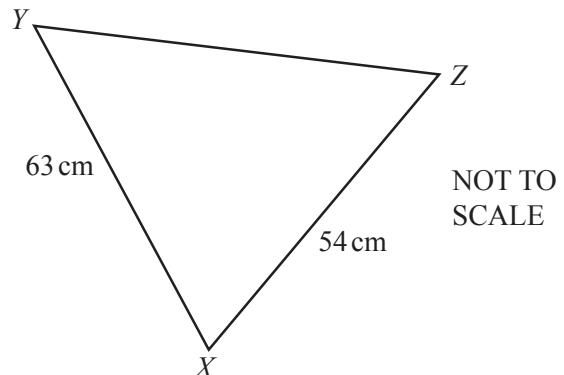
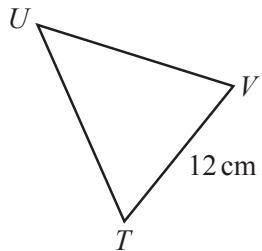
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Show that the value of x is 27.2, correct to 3 significant figures.

[3]

23



The diagram shows two similar triangles TUV and XYZ .

Calculate UT .

$$UT = \dots \text{ cm} \quad [2]$$

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