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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.

2

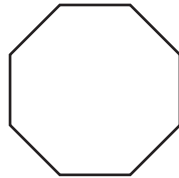
1 Write two hundred thousand and seventeen in figures.

..... [1]

2 Write 867 correct to the nearest ten.

..... [1]

3

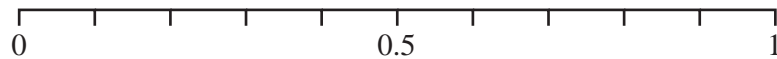


Write down the order of rotational symmetry of this regular octagon.

..... [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 (↓) to show the probability that this ball is red.



[1]

5 Work out the number of hours in 3 days.

..... hours [1]

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

$$\frac{11}{27}$$

41%

0.4

$$\frac{16}{39}$$

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

7 Solve the equation.

$$6 - 2x = 3x$$

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

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

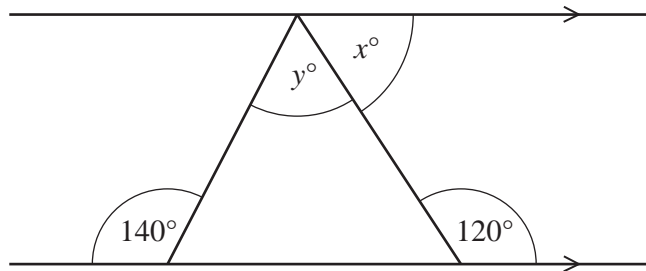
$\dots\dots\dots^\circ\text{C}$ [1]

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

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

$\dots\dots\dots$ [2]

10



NOT TO SCALE

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

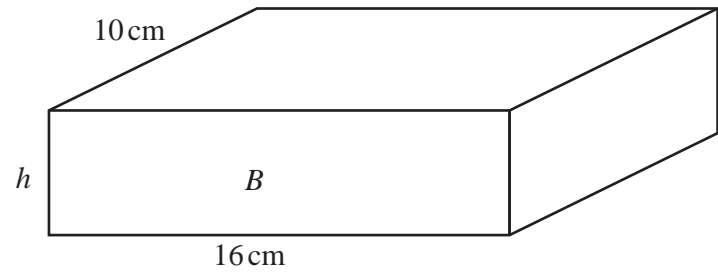
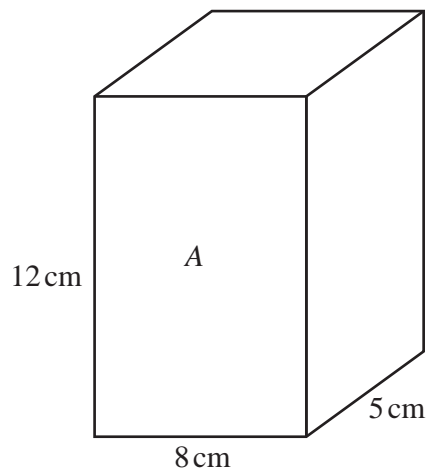
Find the value of x and the value of y .

$x = \dots\dots\dots$

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

4

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*.

$h = \dots\dots\dots$ 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]

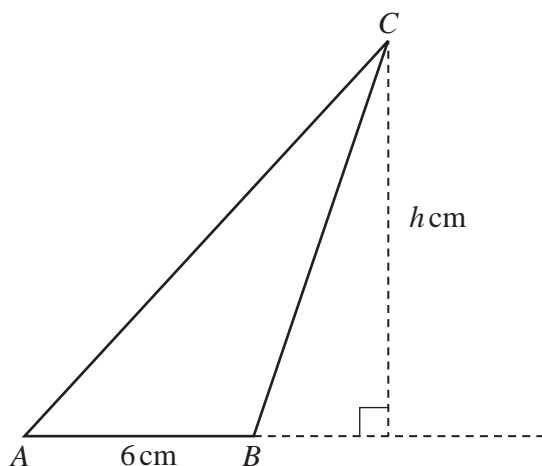
(b) These are the first four terms of a different sequence.

-2 2 6 10

Find an expression for the n th term.

..... [2]

15



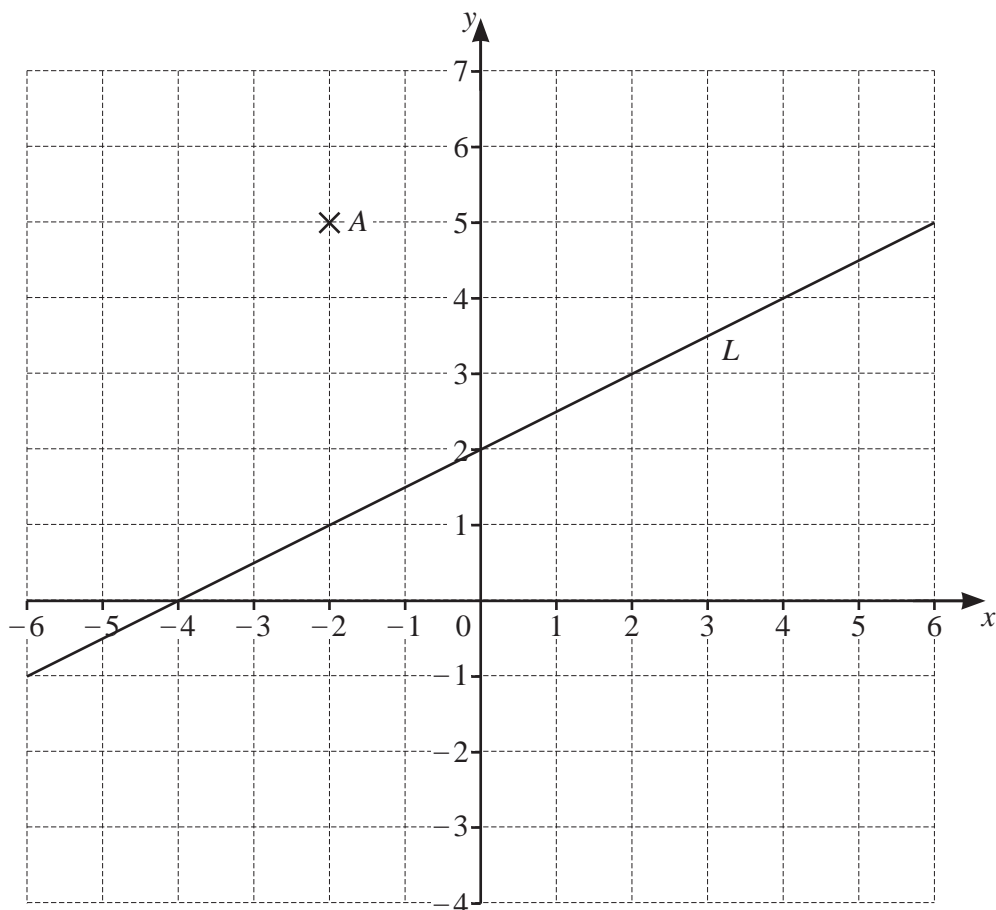
NOT TO SCALE

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

Calculate the value of h .

$h =$ [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 $y = mx + c$.

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

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

$y = \dots\dots\dots$ [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]

9

- 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.

..... cm² [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]

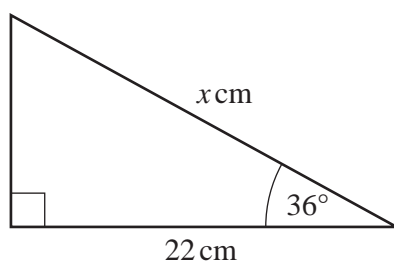
10

21 Write 825 as the product of its prime factors.

..... [2]

22

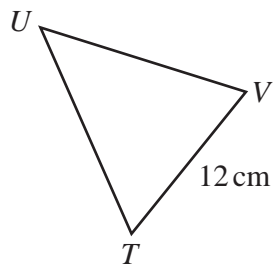
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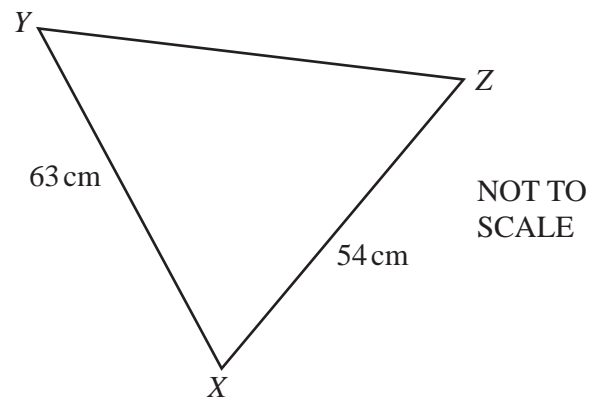
Show that the value of x is 27.2, correct to 3 significant figures.

[3]

23



11



The diagram shows two similar triangles TUV and XYZ .

Calculate UT .

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

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