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MATHEMATICS**0580/12**

Paper 1 (Core)

October/November 2021**1 hour**

You must answer on the question paper.

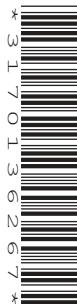
You will need: Geometrical instruments

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.

2

- 1 (a) Write the number four hundred thousand and four hundred in figures.

..... [1]

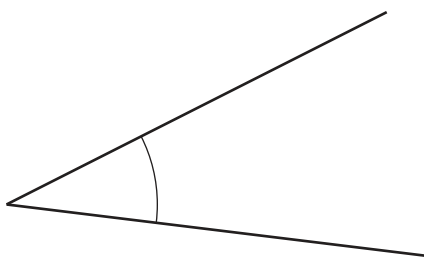
- (b) Write 60 287 correct to the nearest ten.

..... [1]

- 2 Find the value of $\sqrt{345.96}$.

..... [1]

3



Write down the mathematical name for this type of angle.

..... [1]

- 4 (a) Write 9% as a decimal.

..... [1]

- (b) Write 0.6 as a fraction in its simplest form.

..... [1]

3

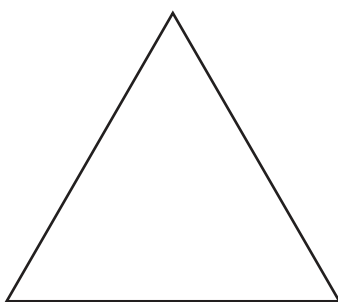
- 5 Write down the reciprocal of 20.

..... [1]

- 6 (a) Write down the order of rotational symmetry of a rectangle.

..... [1]

(b)



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

- 7 In triangle ABC , $AB = 7\text{ cm}$ and $BC = 5.6\text{ cm}$.

Using a ruler and compasses only, construct triangle ABC .

Leave in your construction arcs.

The line AC has been drawn for you.



[2]

4

- 8 The temperature at midnight is -8.5°C .
The temperature at 11 am is -1°C .

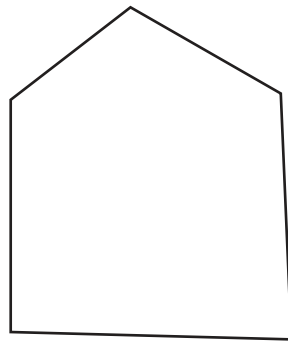
Work out the difference between the temperature at midnight and the temperature at 11 am.

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

- 9 Change 0.3 metres into centimetres.

..... cm [1]

10

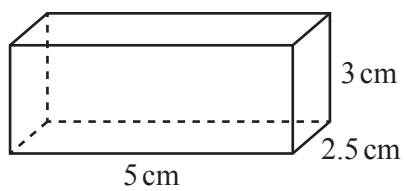


Write down the mathematical name of this polygon.

..... [1]

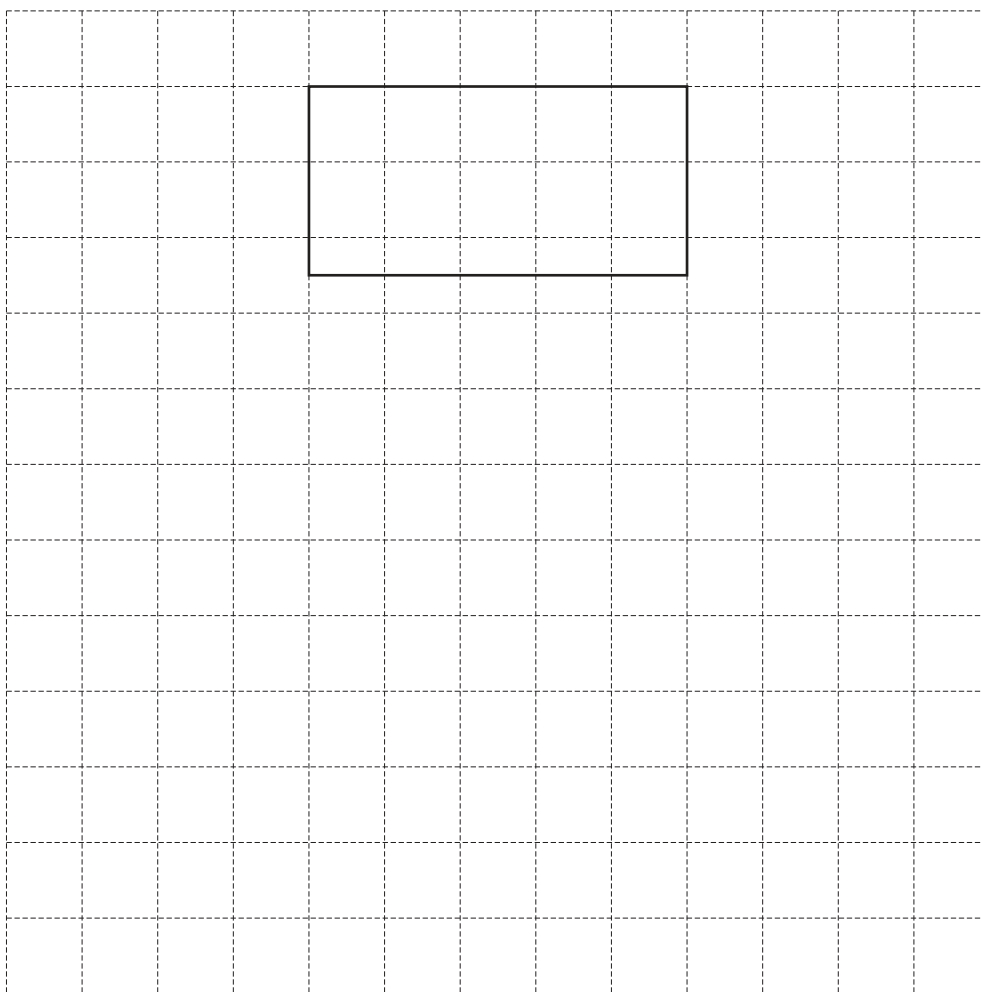
5

11

NOT TO
SCALE

The diagram shows a cuboid.

On the 1 cm^2 grid, draw an accurate net of this cuboid.
One face has been drawn for you.



[3]

6

- 12** The stem-and-leaf diagram shows the age, in years, of each of 15 women.

3	1	5	8	9			
4	1	1	2	3	5	6	9
5	0	2	3	8			

Key: 3 | 1 represents 31 years

Complete these statements.

The modal age is

The median age is

The percentage of women that are older than 51 years is %. [3]

- 13** The price of a coat is 84.60 euros.

Find the price of the coat in dollars when the exchange rate is 1 euro = \$1.15 .

\$ [1]

- 14** Work out.

(a) $\begin{pmatrix} 3 \\ -2 \end{pmatrix} + \begin{pmatrix} -5 \\ 7 \end{pmatrix}$

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

(b) $5 \begin{pmatrix} 3 \\ -1 \end{pmatrix}$

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

7

15 Change 2.15 hours into minutes.

..... min [1]

16 (a) Solve.

$$7x + 18 = 4$$

$x =$ [2]

(b) $7^y \times 7^6 = 7^{18}$

Find the value of y .

$y =$ [1]

8**17** These are the first four terms of a sequence.

3 10 17 24

(a) Write down the next term.

..... [1]

(b) Write down the term to term rule.

..... [1]

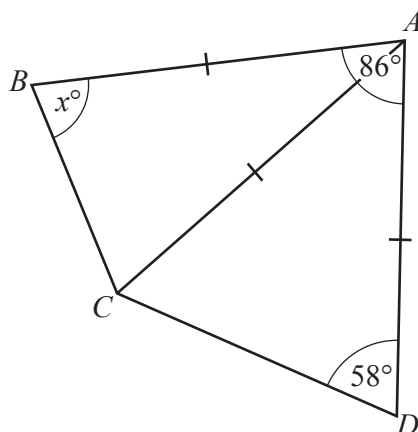
(c) Find the n th term.

..... [2]

(d) Find the 40th term.

..... [2]

18

NOT TO
SCALE

Triangle ABC and triangle ACD are isosceles.
Angle $DAB = 86^\circ$ and angle $ADC = 58^\circ$.

Find the value of x .

$x = \dots\dots\dots$ [3]

- 19** Angelique rents a room for a party.
The cost of renting the room is \$15.50 for the first hour and then \$7.25 for each additional hour.
She pays \$95.25 in total.

Work out the total number of hours she rents the room for.

$\dots\dots\dots$ hours [3]

10

- 20** Without using a calculator, work out $\frac{1}{3} \div \frac{7}{6} + \frac{1}{5}$.

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

..... [4]

- 21** Work out the size of one interior angle of a regular 10-sided polygon.

..... [2]

- 22** In a group of 650 people, 117 are left-handed.

Find the expected number of left-handed people in a group of 5000 people.

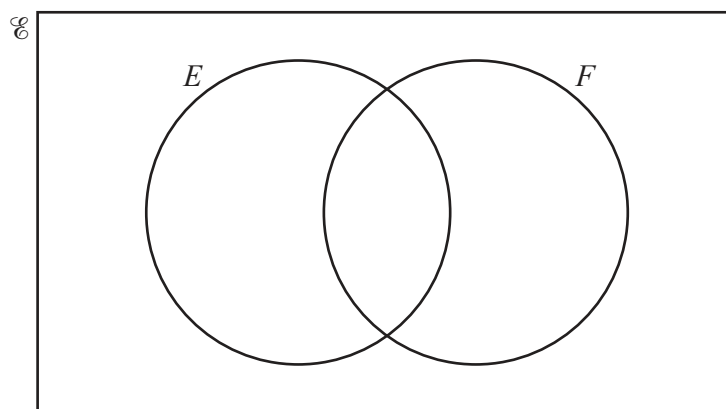
..... [2]

- 23 (a)** At an airport, 216 people are asked whether they speak English (E) or French (F).

125 speak English.

43 speak both English and French.

61 do not speak English or French.



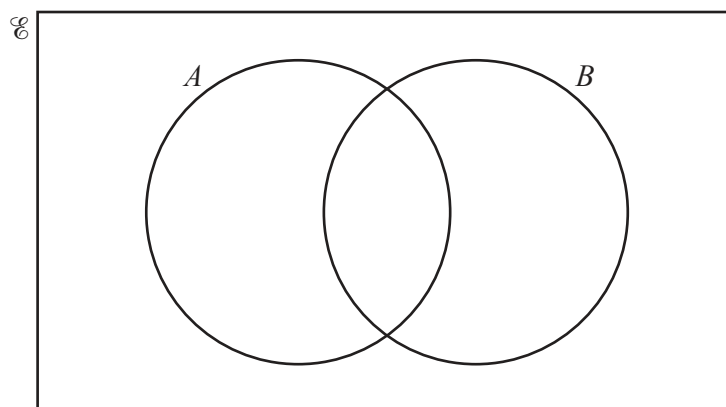
- (i)** Complete the Venn diagram.

[2]

- (ii)** Find $n(F)$.

..... [1]

- (b)**



On this Venn diagram, shade the region $A \cap B$.

[1]

Question 24 is printed on the next page.

12

- 24 Yasmin has 4 white flowers, 3 red flowers and x yellow flowers.
She picks a flower at random.

The probability that it is white is $\frac{1}{5}$.

Find the probability that it is yellow.

..... [4]

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