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4901954880

MATHEMATICS **0580/11**

Paper 1 Non-calculator (Core) **May/June 2026**

1 hour 30 minutes

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. Do **not** use correction fluid or tape.
- Do **not** write on any bar codes.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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1

1.694	$\sqrt{18}$	6	6.666	7	$\sqrt{225}$	25	27	39	56	1000

From the list of numbers, write down

(a) an even number

..... [1]

(b) a factor of 28

..... [1]

(c) a square number

..... [1]

(d) a prime number

..... [1]

(e) an irrational number.

..... [1]

2 **(a)** Bella is b years old.
Alan is 5 years older than Bella.

Write an expression, in terms of b, for how old Alan is.

..... [1]

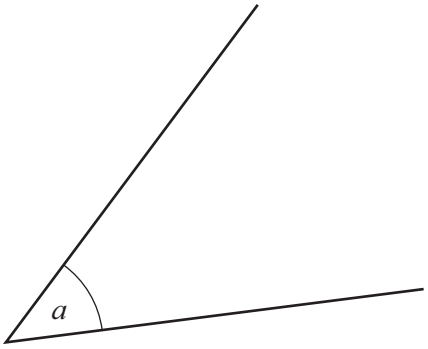
(b) Write an expression for the total cost, in cents, of x bags of sweets costing 65 cents each.

..... cents [1]

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3



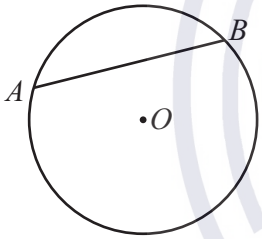
(a) Measure angle a.

..... [1]

(b) Write down the mathematical name for this type of angle.

..... [1]

4 **(a)** Points A and B lie on a circle, centre O, as shown in the diagram.



Write down the mathematical name for line AB.

..... [1]

(b) A quadrilateral has

- four equal sides
- no right angles
- opposite angles that are equal.

Write down the mathematical name for this quadrilateral.

..... [1]

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5 **(a)** Write $\frac{1}{2}$ as a decimal.

..... [1]

(b) Write $\frac{9}{10}$ as a percentage.

.....% [1]

(c) Write 0.15 as a fraction in its simplest form.

..... [1]

6 Triangle ABC has sides $AC = 7.4\,\text{cm}$ and $BC = 4.6\,\text{cm}$.

Using a ruler and compasses only, construct triangle ABC.
Leave in your construction arcs.
The side AB has been drawn for you.



[2]

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7 **(a)** Two fair 4-sided dice have faces numbered 1 to 4.
The dice are thrown, and the numbers are multiplied to give a total.
The table shows all the possible results.

dice *B*

dice *A*		**1**	**2**	**3**	**4**
	1	1	2	3	4
	2	2	4	6	8
	3	3	6	9	12
	4	4	8	12	16

Find the probability the total is

(i) 12

..... [1]

(ii) 5

..... [1]

(iii) a number that is less than 20.

..... [1]

(b) A biased 6-sided dice, numbered 1 to 6, is thrown.
The probability of scoring the number 6 is 0.2 .

Work out the probability of scoring a number less than 6.

..... [1]

8 In a town, the lowest temperature one night is −12.6 °C.
The highest temperature the next day is 25.7 °C.

Calculate the difference between these two temperatures.

..... °C [1]

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9 When Ahmed gets out of bed he takes

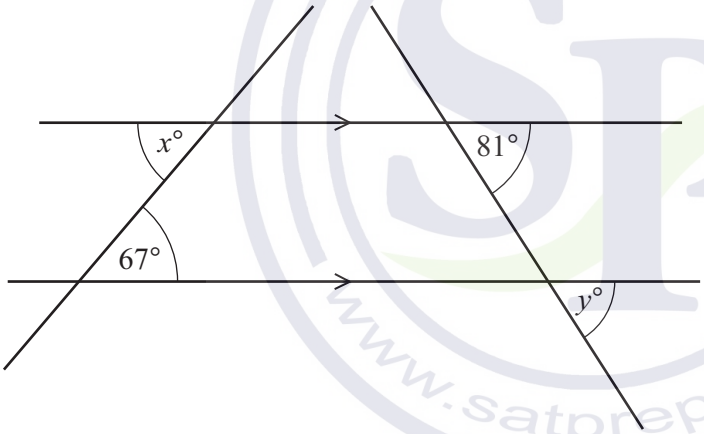
- 12 minutes to get dressed
- 26 minutes to eat breakfast
- 37 minutes to walk to the station.

Ahmed must be at the station by 09 45.

Work out the **latest** time Ahmed can get out of bed.

..... [2]

10 The diagram shows two straight lines intersecting two parallel lines.



NOT TO SCALE

Complete each of these statements with the correct geometrical reason.

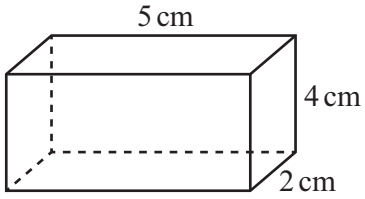
$x = 67$ because .....

$y = 81$ because .....

[2]

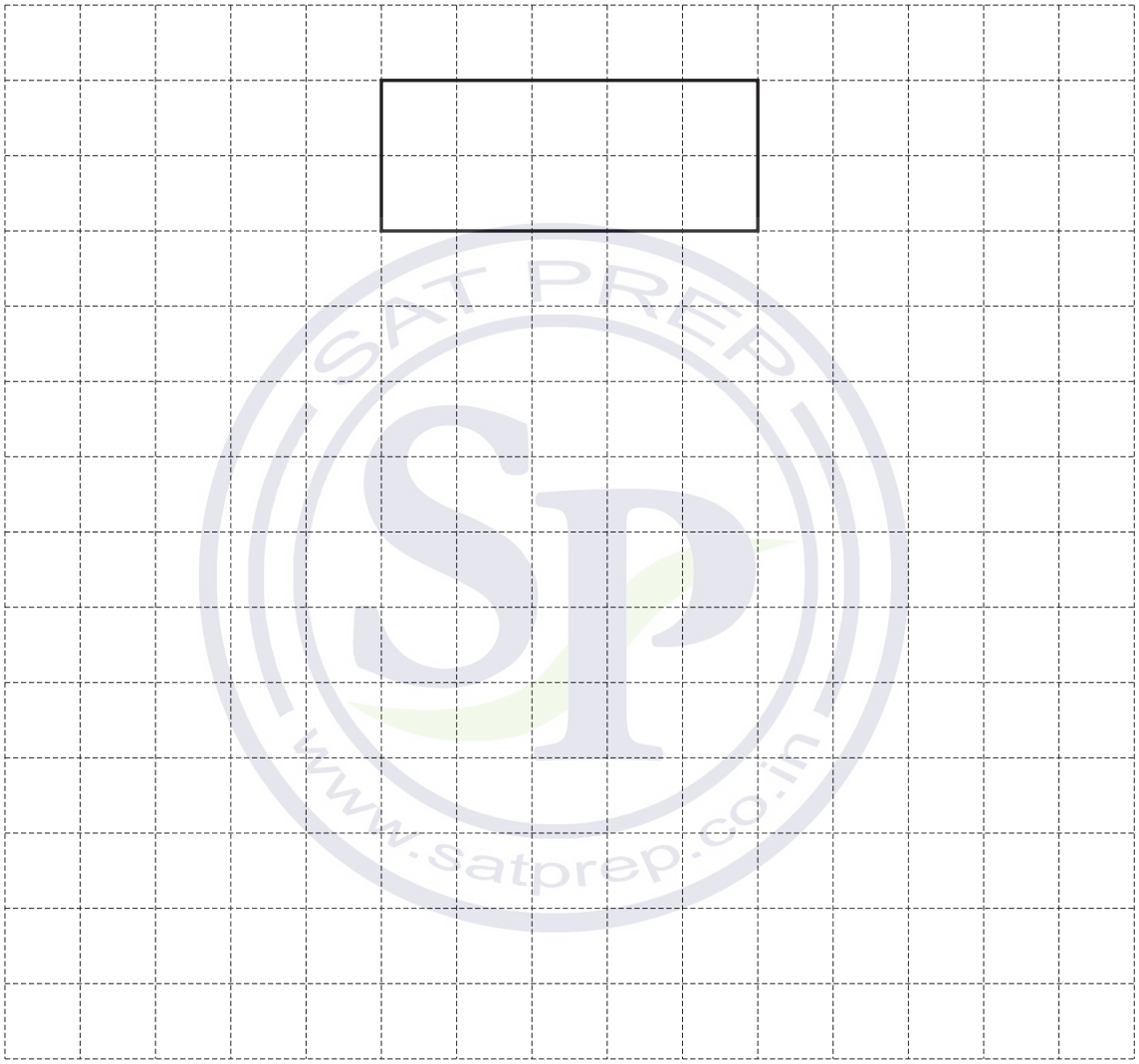
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11



NOT TO SCALE

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



[3]

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12 The stem-and-leaf diagram shows the lengths, in centimetres, of 32 wooden planks.

23	3	4	4	5	6	6	8	9			
24	0	0	1	1	1	1	3	6	8	8	9
25	2	3	5	6	7	9	9	9			
26	0	0	1	2	4						

key : 23 | 3 represents 233 cm

(a) Find the range.

..... cm [1]

(b) Find the mode.

..... cm [1]

(c) Find the median.

..... cm [1]

(d) Find the fraction of all these planks which are less than 236 cm.
Write your answer as a fraction in its simplest form.

..... [2]

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13 By writing each number in the calculation correct to 1 significant figure, work out an estimate for the value of

$$\frac{9.57 \times 3.84}{6.72 + 1.13}.$$

..... [2]

14 A bag contains 45 balls.
The balls are red or green.
The balls are in the ratio red balls : green balls = 2 : 3.

Carlos puts 4 more red balls and x more green balls into the bag.
The balls are now in the ratio red balls : green balls = 1 : 2.

Find the value of x.

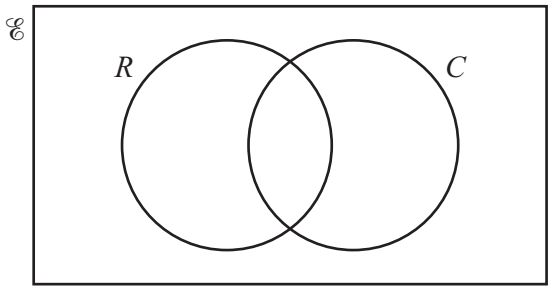
$x =$ ..... [4]

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15 **(a)** 60 people complete a survey about hobbies.

41 people like reading books (R).
31 people like cookery (C).
11 do not like reading books and do not like cookery.



(i) Complete the Venn diagram.

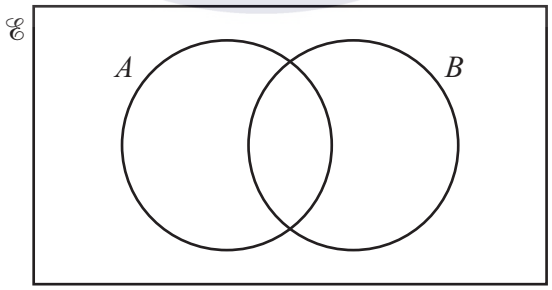
[2]

(ii) One of these 60 people is picked at random.

Find the probability that they like cookery but they do not like reading books.

..... [1]

(b)



Shade $A \cap B$. [1]

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16 Buses at a station go to Alve or to Riba.
Buses leave every 16 minutes for Alve.
Buses leave every 28 minutes for Riba.
At 08 25 a bus for Alve and a bus for Riba leave the station together.

Find the next time a bus for Alve and a bus for Riba leave the station together.

..... [3]

17 Work out.

$$2\frac{1}{6} - 1\frac{3}{5}$$

Write your answer as a fraction in its simplest form.

..... [3]

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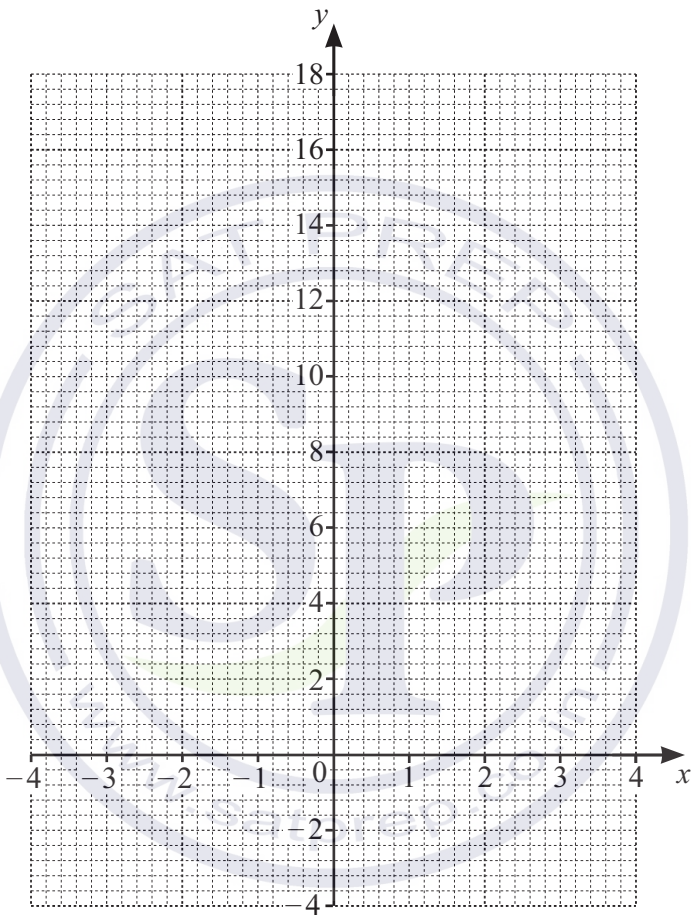
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18 **(a)** Complete the table of values for $y = x^2 + x - 3$.

x	−4	−3	−2	−1	0	1	2	3	4
y	9		−1	−3	−3	−1		9	

[2]

(b) On the grid, draw the graph of $y = x^2 + x - 3$ for $-4 \leqslant x \leqslant 4$.



[4]

(c) Write down the equation of the line of symmetry of the graph.

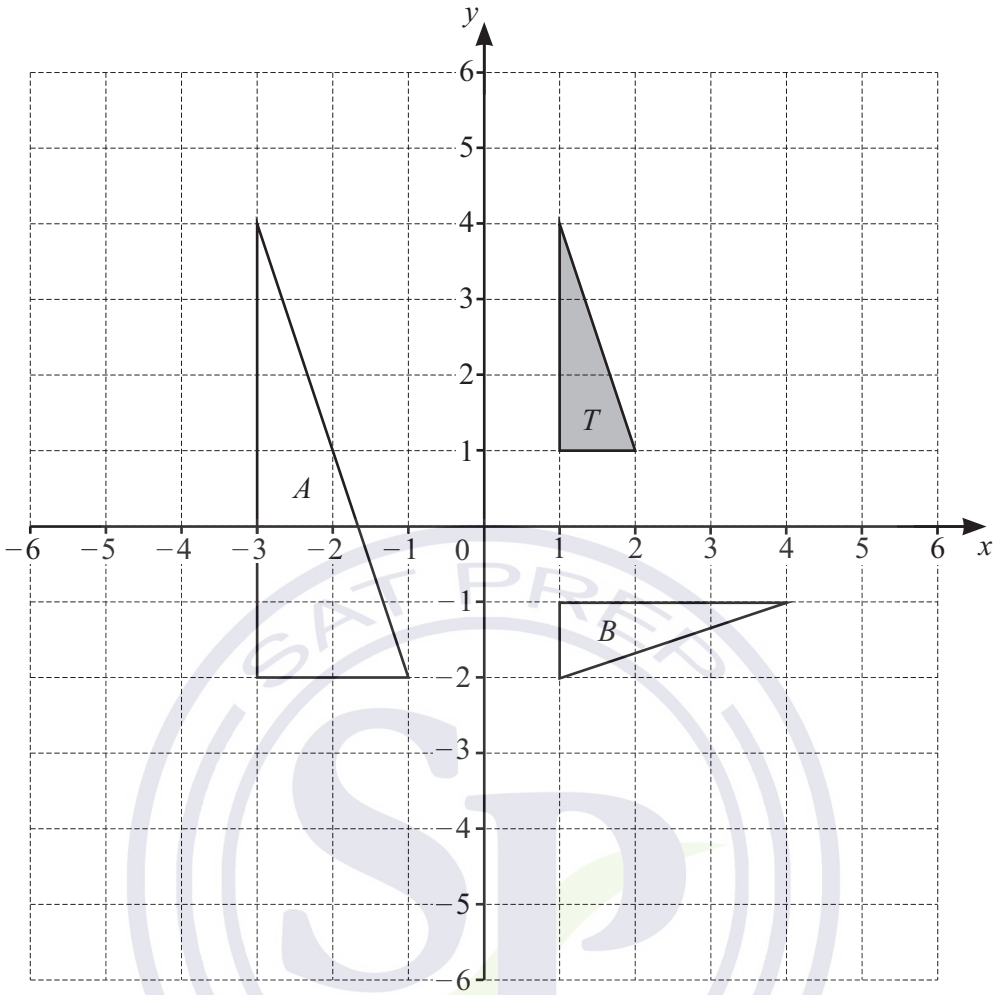
..... [1]

(d) Use your graph to solve the equation $x^2 + x - 3 = 0$.

$x =$ ..... or $x =$ ..... [2]

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19



(a) On the grid, draw the image of triangle T after a translation by the vector $\begin{pmatrix} 3 \\ -6 \end{pmatrix}$. [2]

(b) On the grid, draw the image of triangle T after a reflection in the line $y = -1$. [2]

(c) Describe fully the **single** transformation that maps triangle T onto triangle A.

.....

..... [3]

(d) Describe fully the **single** transformation that maps triangle T onto triangle B.

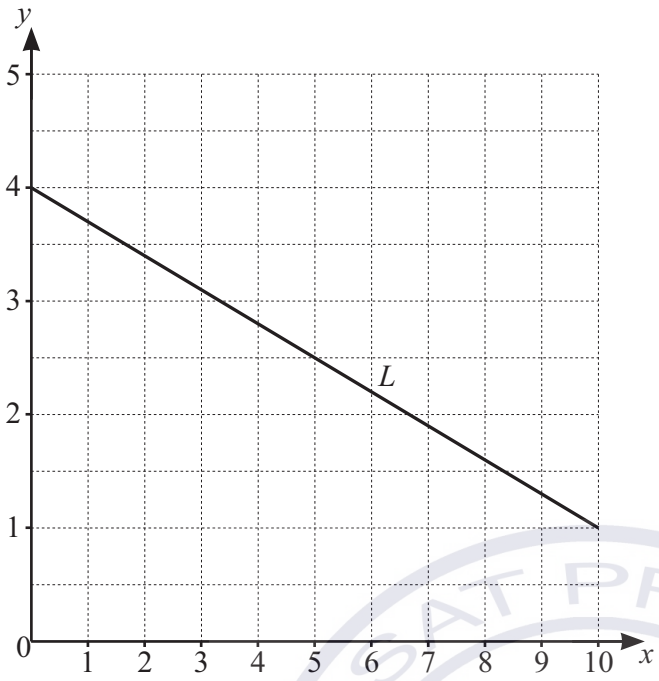
.....

..... [3]

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20 The diagram shows line L on a grid.



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

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

21 **(a)** Make T the subject of the formula.

$P = Ty$

$T =$ ..... [1]

(b) Expand the brackets and simplify.

$(x + 8)(x - 5)$

..... [2]

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22 The time, t seconds, for the winner of a race is 12.7 seconds, correct to 3 significant figures.

Complete this statement about the value of t.

..... $\leqslant t <$ ..... [2]

23 Solve the simultaneous equations.

$$3x + 4y = 1$$
$$2x - 3y = 12$$

$x =$ .....

$y =$ .....

[4]

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MATHEMATICS **0580/12**

Paper 1 Non-calculator (Core) **May/June 2026**

1 hour 30 minutes

You must answer on the question paper.

You will need: Geometrical instruments

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List of formulas

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Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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1 Write down the value of $\sqrt{81}$.

..... [1]

2 **(a)** Add 63 and 28.

..... [1]

(b) Work out 50% of 526.

..... [1]

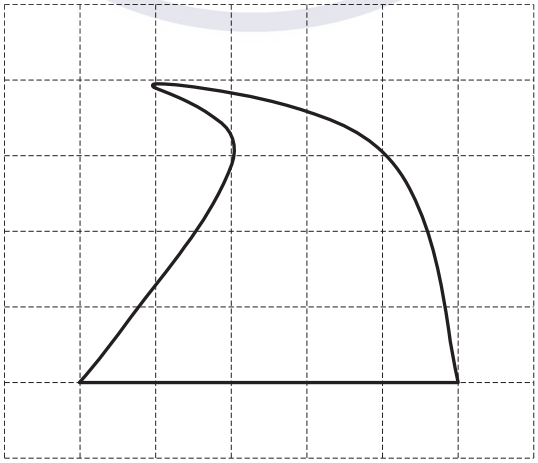
3 **(a)** Write 35% as a decimal.

..... [1]

(b) Write $\frac{4}{5}$ as a percentage.

..... % [1]

4 The diagram shows a shape drawn on a 1 cm^2 grid.



By counting squares, estimate the area of the shape.

..... cm^2 [1]

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5 **(a)** Write 65 432 correct to the nearest hundred.

..... [1]

(b) Write 0.04857 correct to 3 decimal places.

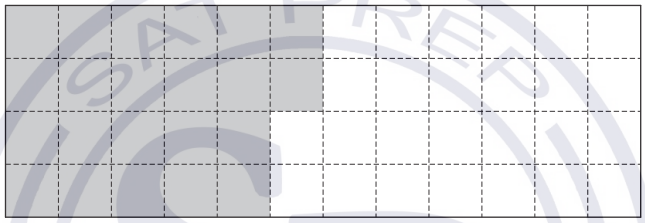
..... [1]

6 Put **one** pair of brackets into each calculation to make it correct.

(a) $7 \times 3 - 2 \times 4 = 28$ [1]

(b) $9 - 80 \div 8 - 6 = 5$ [1]

7



(a) Write down the fraction of the rectangle that is shaded.
Give your answer in its simplest form.

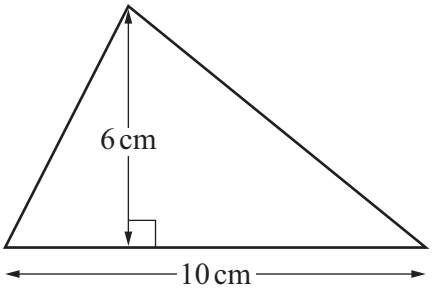
..... [2]

(b) On the diagram, shade some more squares so that $\frac{1}{6}$ of the rectangle is **not** shaded. [1]

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8



NOT TO SCALE

Work out the area of the triangle.

..... cm^2 [1]

9 The stem-and-leaf diagram shows the time, in minutes, it takes 20 students to eat lunch.

0	7 8 9
1	1 3 5 6 9
2	3 4 5 5 7 8 8 9
3	1 2 2 9

key : 3|1 represents 31 minutes

Complete these statements.

(a) ..... students took between 10 and 30 minutes to eat lunch. [1]

(b) ..... % of the students took less than 18 minutes to eat lunch. [1]

(c) The slowest student took ..... minutes longer than the quickest student. [1]

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10 Phil has $7y - 52$ toy cars.
Ann has $78 - 6y$ toy cars.
Phil and Ann have the same number of cars.

(a) Write down an equation to show this information.

..... [1]

(b) Solve your equation and work out the number of cars they each have.

They each have ..... cars. [3]

11 Complete these statements.

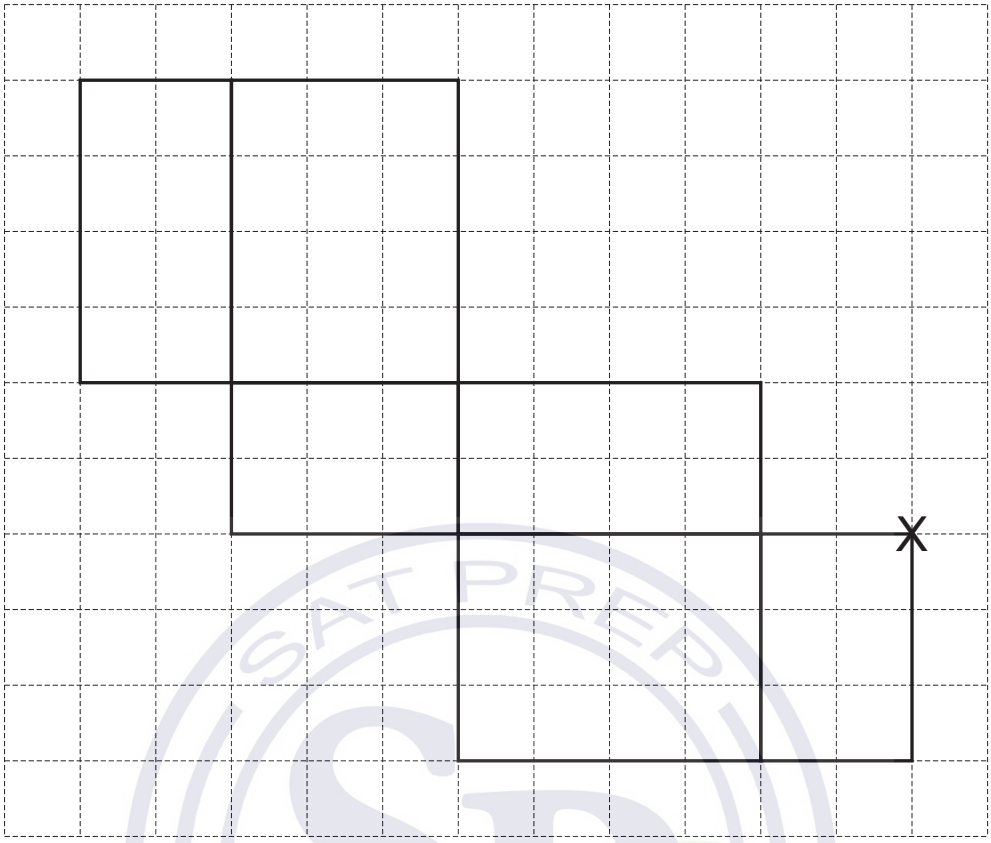
(a) 2 kg is the same as ..... g. [1]

(b) 7 cm^2 is the same as ..... mm^2. [1]

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12 To make a solid, a net is drawn on the 1cm^2 grid.



(a) Write down the mathematical name for the solid.

..... [1]

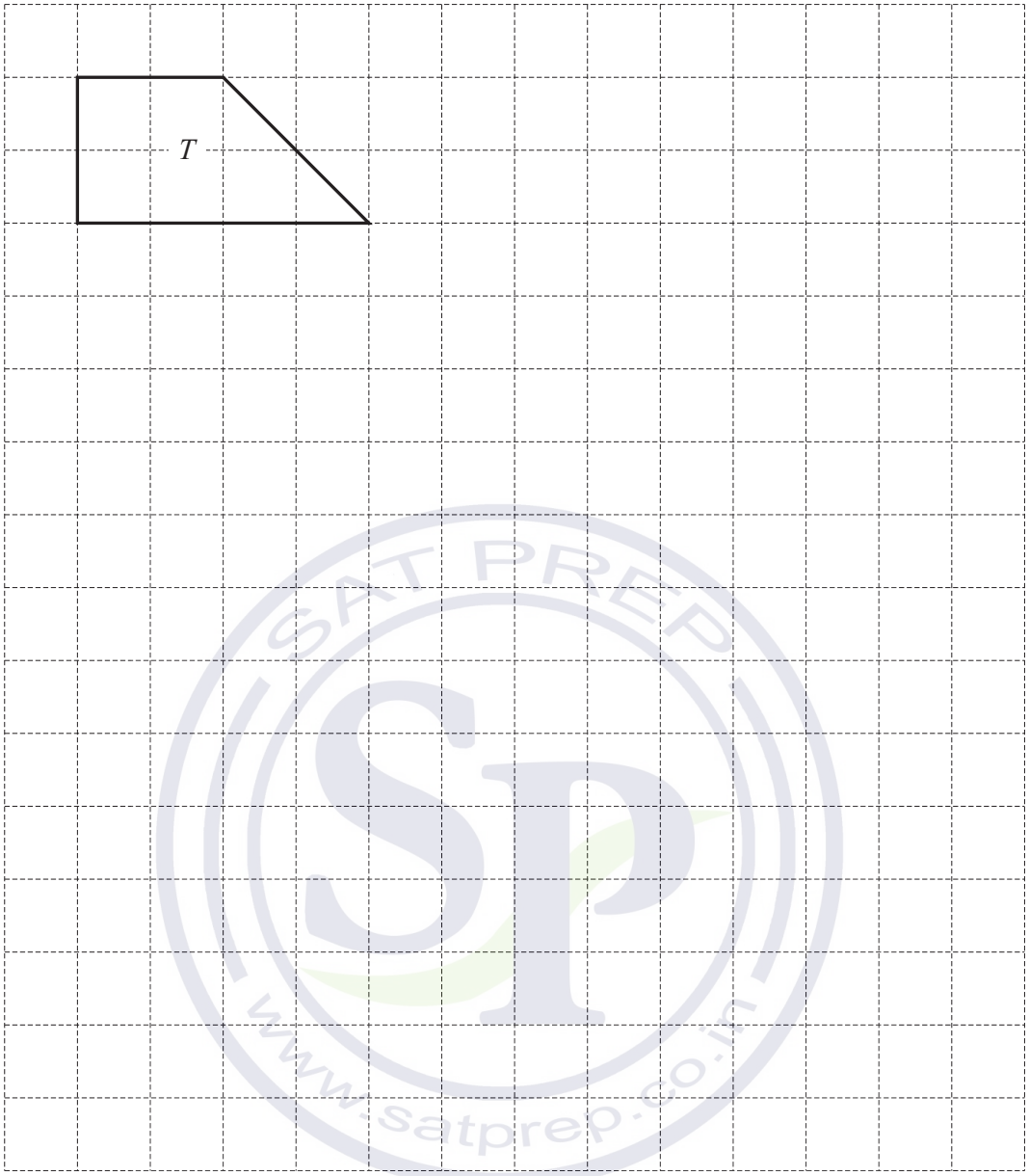
(b) Point X is marked on the diagram.

When the net is folded, there are two other points that meet at X.

On the diagram, mark each of these two points with an X. [2]

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13 A trapezium, T, is drawn on the 1cm^2 grid.



On the grid, draw

(a) a different trapezium that is mathematically similar to trapezium T [1]

(b) a rectangle with the same area as trapezium T. [2]

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14 The total number of apples and oranges in a bowl is 20.
The ratio apples : oranges = 7 : 3.

Work out the number of apples.

..... [2]

15 Write down two geometrical properties of a parallelogram.

1 .....

2 .....
[2]

16 Find the value of the reciprocal of 0.8 .

..... [2]

17 **(a)** Two of the angles in a triangle are 100° and 30°.

Work out the size of the third angle.

..... [1]

(b) Work out the size of an interior angle of a regular 10-sided polygon.

..... [2]

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18 **(a)** Simplify.

$3x - 2y + 5x + 7y$

..... [2]

(b) Expand the brackets and simplify.

$(3x + 5)(x - 7)$

..... [2]

19 Line L has the equation $y = 3x + 7$.

(a) Write down the gradient of line L.

..... [1]

(b) Point P and point W lie on line L.
P has coordinates $(4, p)$ and W has coordinates $(w, -11)$.

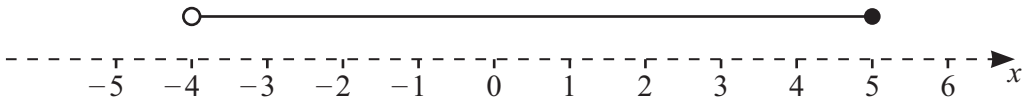
(i) Work out the value of p.

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

(ii) Work out the value of w.

$w =$ ..... [2]

20 Write down the inequality represented on the number line.



..... [2]

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21 These are the first four diagrams in a sequence.
The diagrams are made using grey squares and white squares.

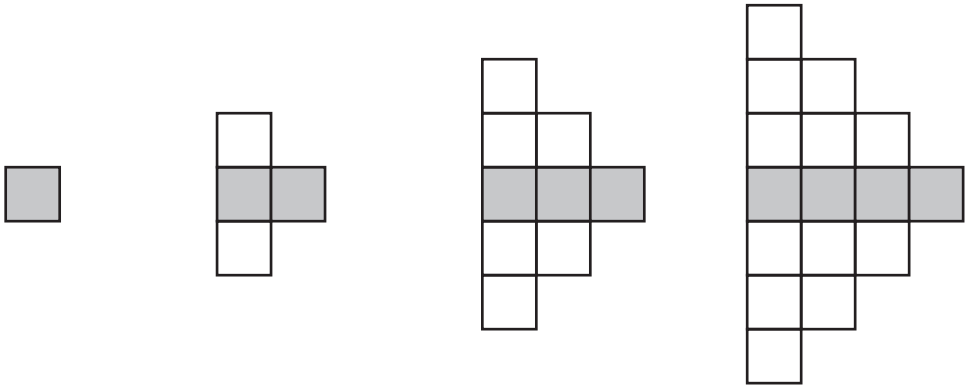
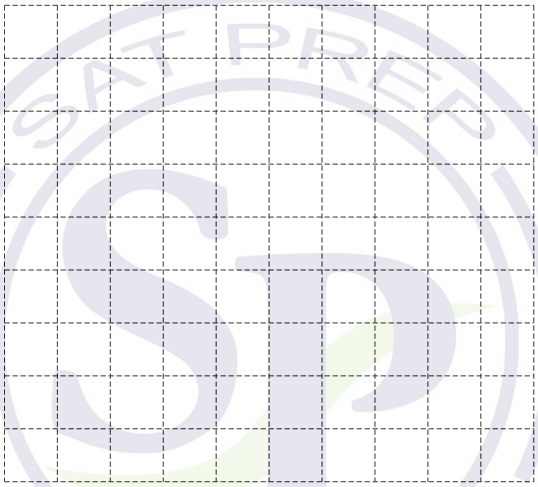


diagram 1 diagram 2 diagram 3 diagram 4

(a)



Draw diagram 5 on the grid. [1]

(b) Complete the table for diagram 4 and diagram n.

diagram	**1**	**2**	**3**	**4**		**n**
number of grey squares	1	2	3			
number of white squares	0	2	6			$n(n-1)$
total number of squares	1	4	9			

[4]

(c) Complete this statement.

A diagram in this sequence can **not** have a total number of 120 squares because .....

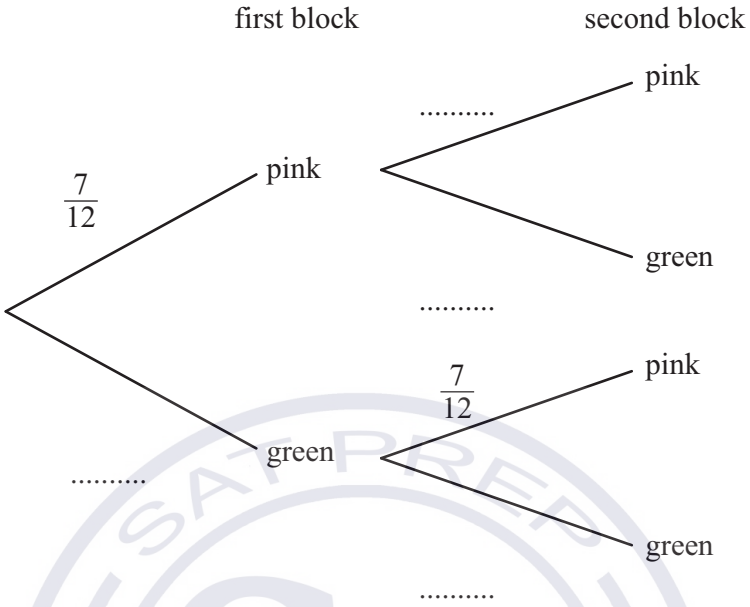
..... [1]

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22 A bag contains 7 pink blocks and 5 green blocks.
Kay picks a block at random, notes its colour and puts it back in the bag.
She does this a second time.

(a) Complete the tree diagram.



[2]

(b) Use the tree diagram to work out the probability that the two blocks are green.

..... [2]

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23 The circumference of a circle is 18π cm.

Work out the radius of the circle.

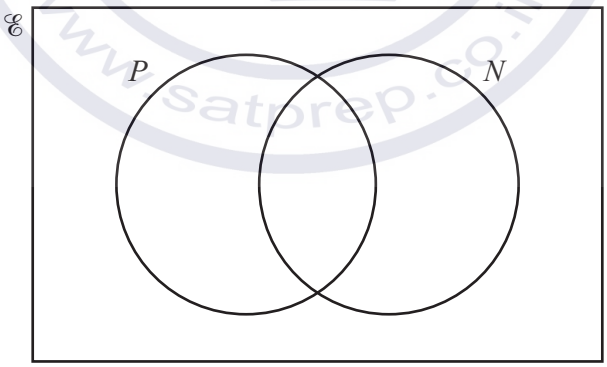
..... cm [2]

24 A group of 4 children have a mean age of 11.
A fifth child joins the group, and the mean age is now 10.

Calculate the age of the fifth child.

..... years [3]

25 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$
$P = \{\text{prime numbers}\}$
$N = \{\text{odd numbers}\}$



(a) Complete the Venn diagram. [2]

(b) Write down $n(P \cup N)$.

..... [1]

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26 Write these numbers in standard form.

(a) 6320

..... [1]

(b) 0.0258

..... [1]

27 Work out $3\frac{1}{3} - 1\frac{3}{4}$.

Give your answer as a mixed number in its simplest form.

..... [3]

28 Make T the subject of the formula.

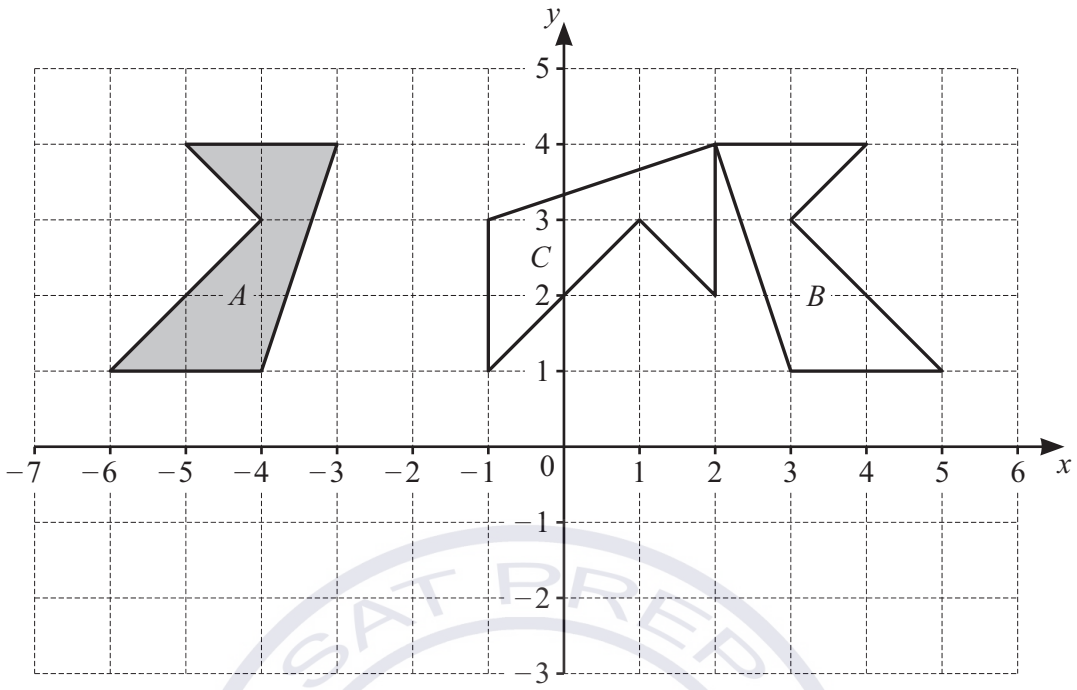
$Q = 3 - 4T$

$T =$ ..... [2]

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29 The diagram shows three shapes, A, B and C, on a grid.



(a) Describe fully the **single** transformation that maps

(i) shape A onto shape B

.....

..... [2]

(ii) shape B onto shape C.

.....

..... [3]

(b) On the grid, draw the image of shape A after a translation by the vector $\begin{pmatrix} 1 \\ -3 \end{pmatrix}$. [2]

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CENTRE NUMBER

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MATHEMATICS **0580/13**

Paper 1 Non-calculator (Core) **May/June 2026**

1 hour 30 minutes

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. Do **not** use correction fluid or tape.
- Do **not** write on any bar codes.
- Calculators must not be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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1 Write down the number that is 1 more than 4 999 499.

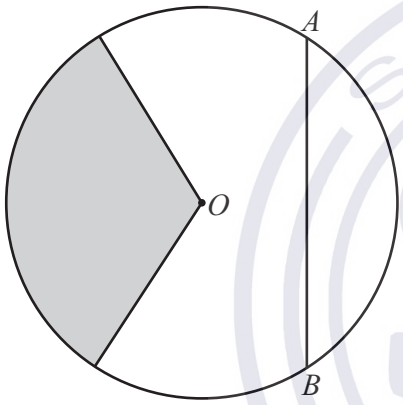
..... [1]

2 Write the number 707 700 in words.

.....

..... [1]

3



A and *B* are points on the circumference of a circle, centre *O*.

Write down the mathematical name for

(a) the line *AB*

..... [1]

(b) the shaded region.

..... [1]

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4 A car hire company uses this formula to work out the hire cost, in dollars.

cost = fixed charge + rate per day × number of days

Find the cost of hiring a car for 7 days when the fixed charge is $140 and the rate per day is $30.

$ ..... [2]

5 Sam takes 75 minutes to make a cake.

The time taken to make the cake is in the ratio preparing : cooking : decorating = 6 : 10 : 9.

(a) Work out the number of minutes Sam takes to decorate the cake.

..... min [2]

(b) Sam starts making the cake at 12 42.

Find the time Sam finishes making the cake.

..... [1]

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6 A book has 420 pages.

Meg reads 14 pages each day.

Meg has read $\frac{1}{3}$ of the number of pages so far.

Find how many days it will take Meg to finish reading the rest of the book.

..... [3]

7 Raj records the temperature, in °C, at midday for each of 8 days.
These are the results.

1, 10, 8, –3, –2, 10, 7, 9

(a) Calculate the mean.

..... °C [2]

(b) Find the median.

..... °C [2]

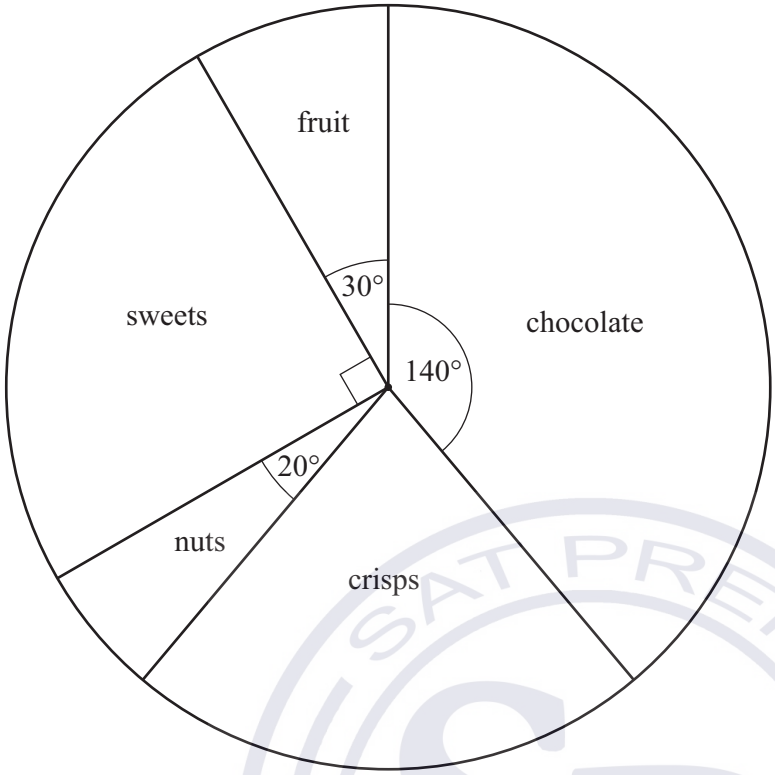
(c) When another temperature is recorded, the range increases by 5.

Find the two possible values of this temperature.

.....°C or .....°C [2]

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8 Ben asks some children to choose their favourite type of snack.
The pie chart shows the results.



(a) Measure the sector angle for crisps.

..... [1]

(b) Find the fraction of the children who chose chocolate.
Give your answer in its simplest form.

..... [2]

(c) 8 more children chose fruit than those who chose nuts.

Work out the number of children who chose fruit.

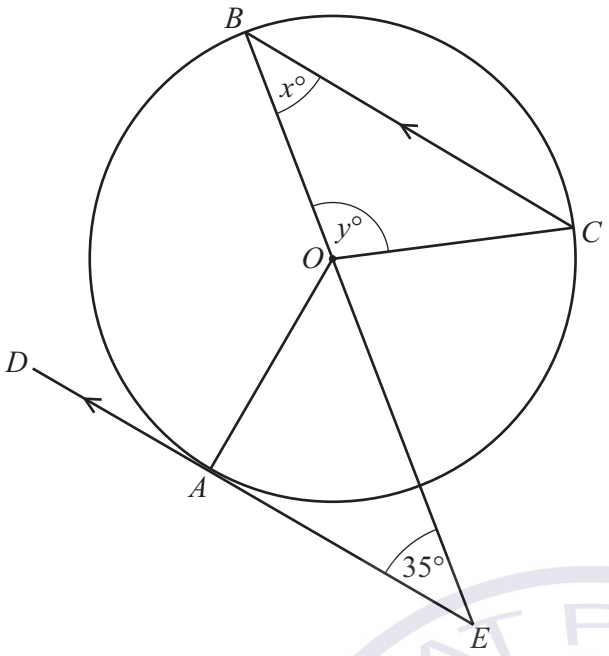
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9



NOT TO SCALE

A, B and C are points on the circumference of the circle, centre O.

DAE is a tangent to the circle at A.
DE is parallel to BC.
BOE is a straight line.

(a) Write down the two geometrical reasons to explain why angle $AOE = 55°$.

1 .....

2 .....
[2]

(b) Find the value of x.

$x =$ ..... [1]

(c) Find the value of y.

$y =$ ..... [2]

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10 $K = 2x + \sqrt{y}$

Find the value of K when $x = 5$ and $y = 169$.

$K =$ ..... [2]

11 $\frac{2}{5}$ of the area of a shape is blue, $\frac{3}{7}$ is green and the rest is red.

(a) What fraction of the shape is red?

..... [3]

(b) $12\,\text{cm}^2$ of the shape is green.

Find the total area of the shape.

..... cm^2 [2]

12 Factorise.

$5c - 15c^2d$

..... [2]

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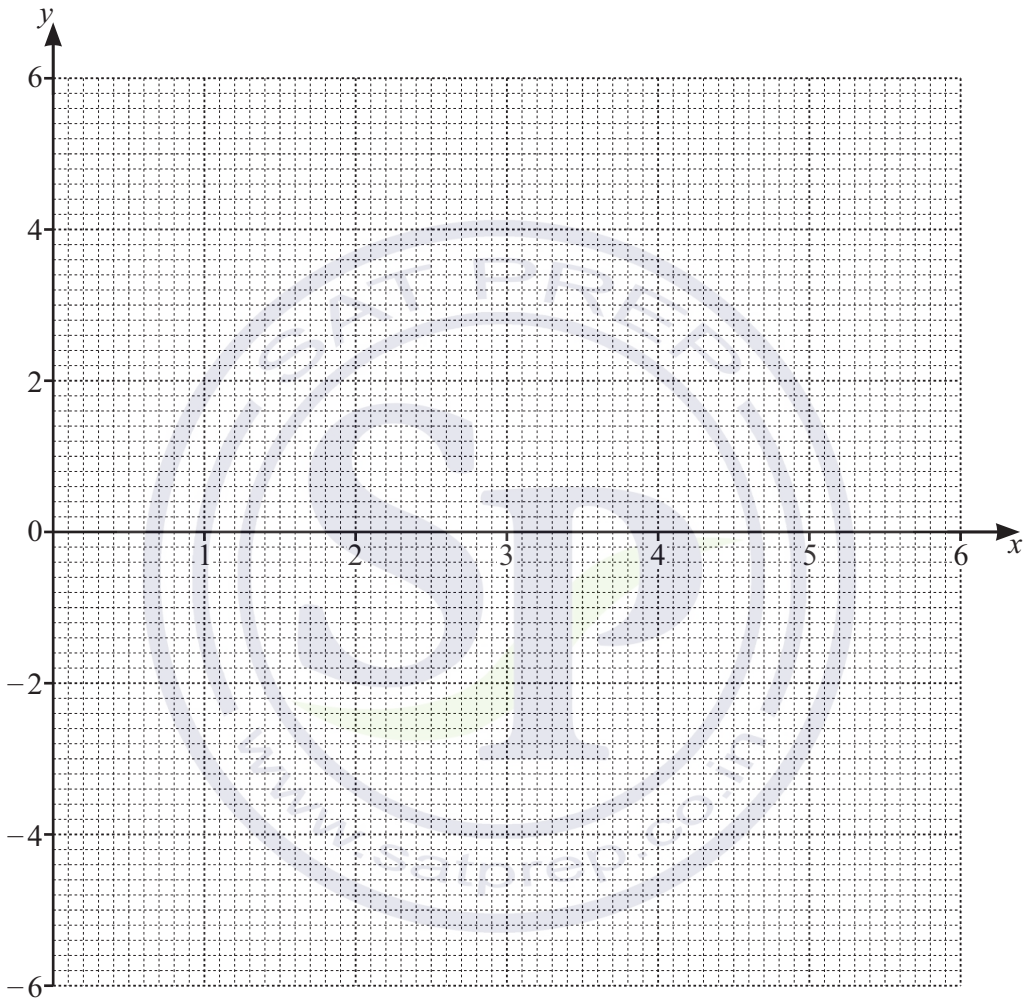
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13 **(a)** Complete the table of values for $y = 6x - x^2 - 4$.

x	0	1	2	3	4	5	6
y				5	4	1	–4

[2]

(b) On the grid, draw the graph of $y = 6x - x^2 - 4$ for $0 \leqslant x \leqslant 6$.



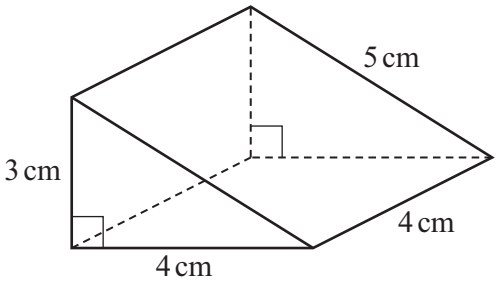
[4]

(c) On the grid, draw the line $y = 3$. [1]

(d) Use your graph to solve $6x - x^2 - 4 = 3$.

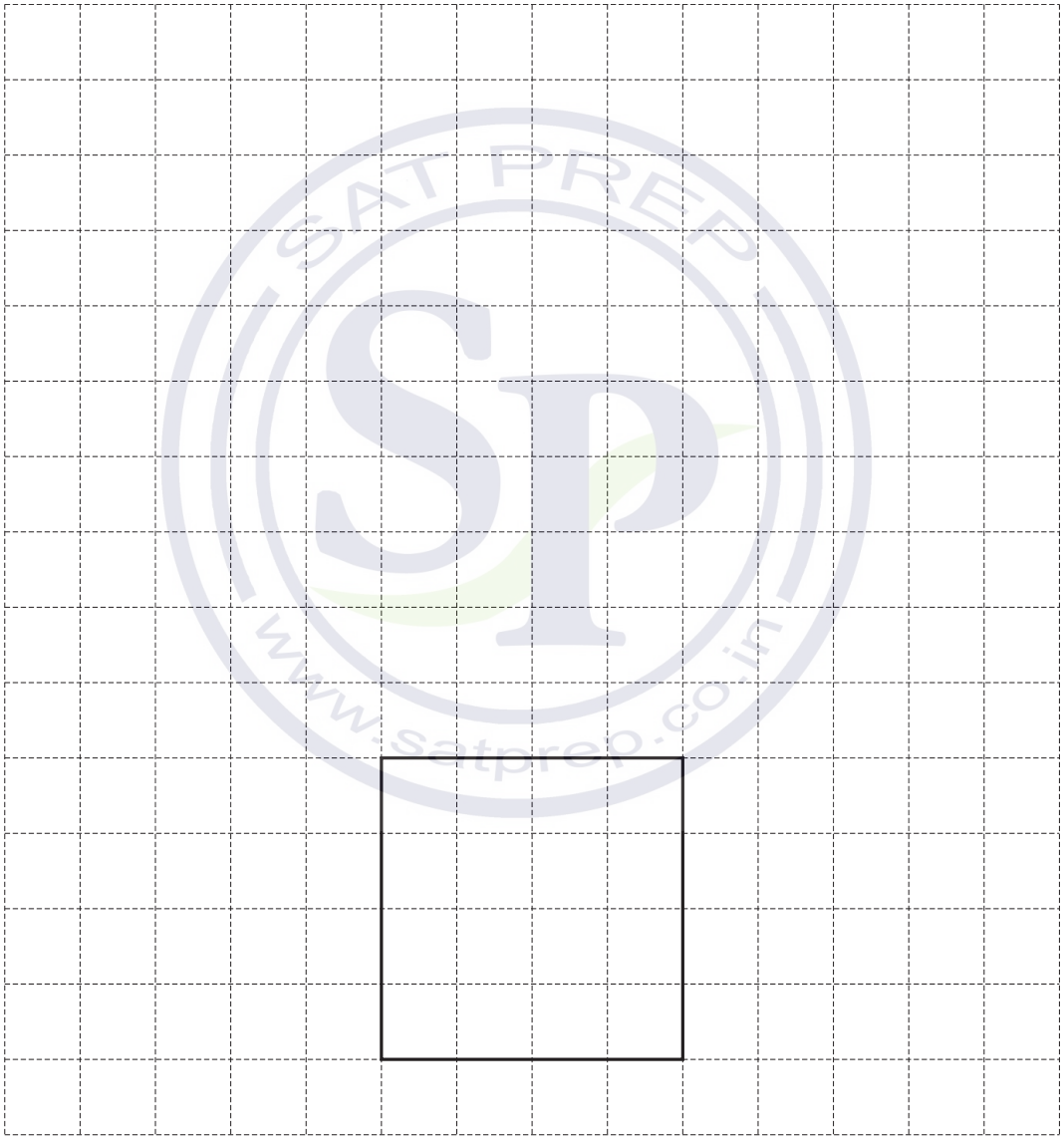
$x =$ ..... or $x =$ ..... [2]

14 (a) The diagram shows a right-angled triangular prism.



NOT TO SCALE

On the 1 cm^2 grid, complete the net of this prism.
One face has been drawn for you.



[3]

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(b) Find the volume of the triangular prism.

..... cm^3 [2]

15 **(a)** In a restaurant the cost of a pizza is \$25.
The restaurant reduces the cost of the pizza to \$19.

Work out the percentage decrease in the cost.

..... % [2]

(b) In another restaurant, the cost of a pizza is \$15.
This restaurant adds a service charge of 10% to each pizza.

Find the cost of a pizza, including the service charge.

\$ ..... [2]

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16 The area of a circle is $36\pi\,\text{cm}^2$.

Find the radius of the circle.

..... cm [2]

17 Convert $850\,\text{cm}^3$ into litres.

..... litres [1]

18 **(a)** Write down the value of $\sqrt[3]{27}$.

..... [1]

(b) Write 5^{-1} as a decimal.

..... [2]

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19 **(a)** Write 84 as a product of its prime factors.

..... [2]

(b) 96 can be written as $2^P \times 3$.

Find the value of P.

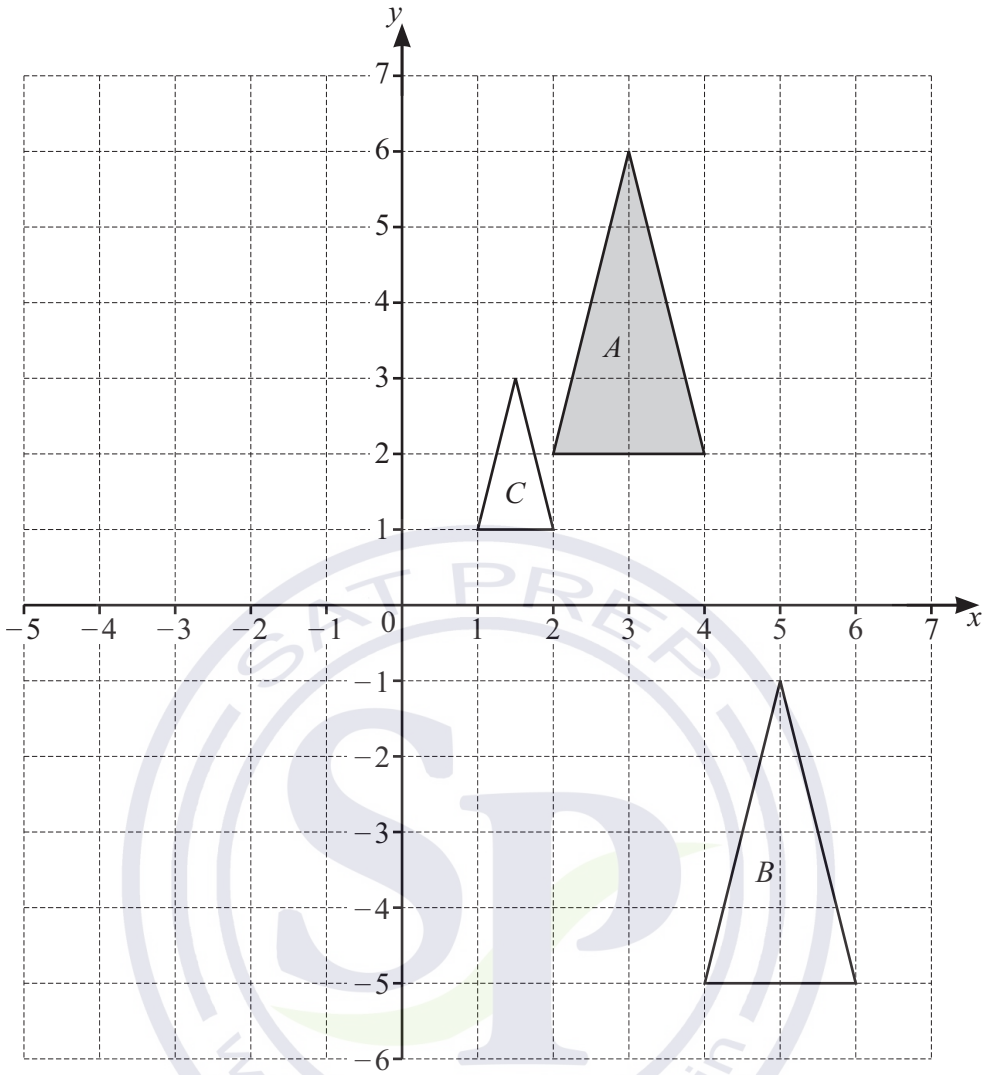
$P =$ ..... [1]

(c) Use your answers to **19(a)** and **19(b)** to find the lowest common multiple (LCM) of 84 and 96.
Leave your answer as a product of prime numbers.

..... [1]

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20



(a) Describe fully the **single** transformation that maps triangle *A* onto triangle *B*.

.....

..... [2]

(b) Describe fully the **single** transformation that maps triangle *A* onto triangle *C*.

.....

..... [3]

(c) On the grid, draw the image of shape *A* after a rotation 180°, centre (0, 0). [2]

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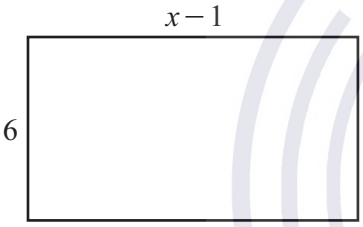
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21 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

$$\frac{341 \times 0.47}{9.8}.$$

..... [2]

22 In this question, all lengths are in centimetres.



NOT TO SCALE

The area, in cm^2, of the rectangle is $5x + 8$.

Write an equation to show this information and solve it to find the value of x.

$x =$ ..... [3]

Question 23 is on the back page.

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23 Solve the simultaneous equations.

$$x + 5y = 9$$
$$4x + 6y = 1$$

$x =$ .....

$y =$ .....

[3]

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MATHEMATICS **0580/12**

Paper 1 Non-calculator (Core) **February/March 2026**

1 hour 30 minutes

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. Do **not** use correction fluid or tape.
- Do **not** write on any bar codes.
- Calculators must not be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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List of formulas

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Circumference, C, of circle of radius r.	$C = 2\pi r$
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Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
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Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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1 **(a)** Subtract 9 from 1321.

..... [1]

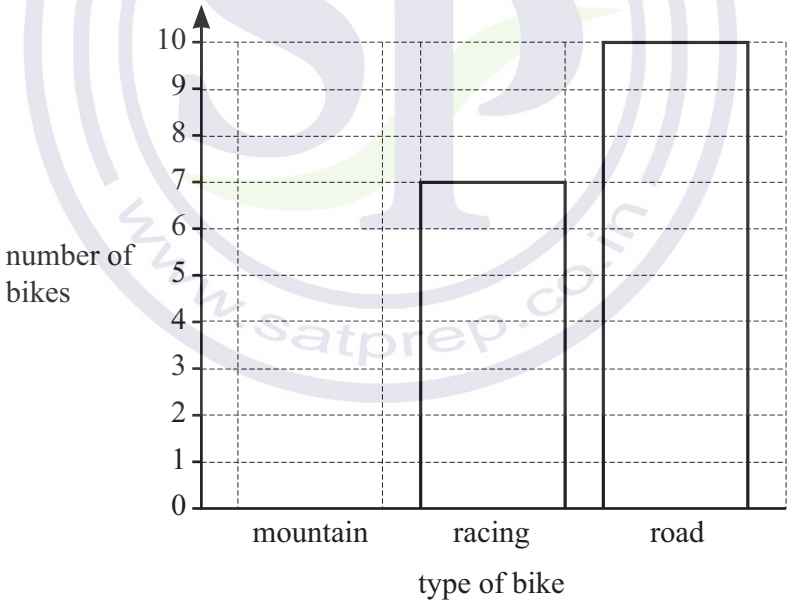
(b) Divide 814 by 2.

..... [1]

(c) Write down the multiple of 6 that is nearest to 20.

..... [1]

2 25 people own a bike.
Flo asks each of these 25 people what type of bike they own.
The bar chart shows some of these results.



(a) Complete the bar chart for the mountain bikes. [2]

(b) How many more people own a road bike than own a racing bike?

..... [1]

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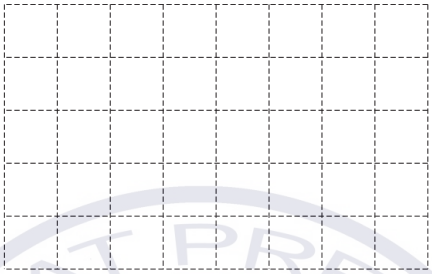
3 **(a)** Write 0.47 as a percentage.

..... % [1]

(b) Write $\frac{9}{100}$ as a decimal.

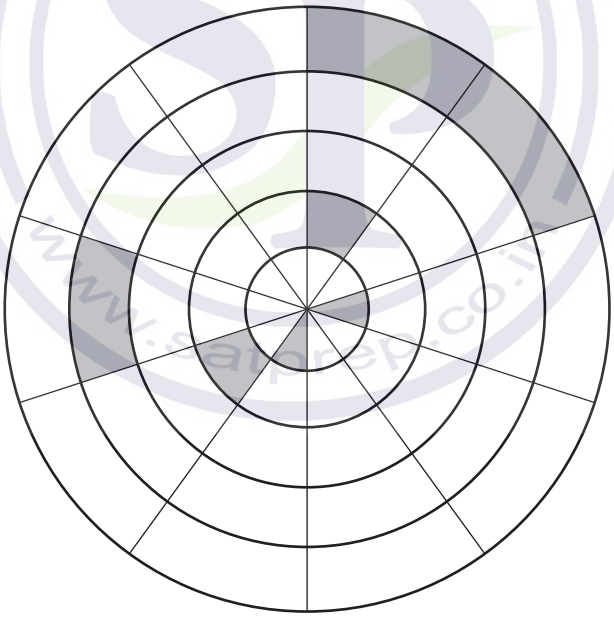
..... [1]

4 **(a)**



Shade $\frac{3}{10}$ of the squares on the grid. [1]

(b)



7 of the regions are shaded.

Shade 3 more regions so that $\frac{1}{5}$ of the total area is shaded. [1]

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5 **(a)** These are the first four terms of a sequence.

6000 600 60 6

Write down the term-to-term rule for this sequence.

..... [1]

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

27 21 15 9

Find the next two terms in the sequence.

..... , ... [2]

6 An isosceles triangle has a side length 4 cm and a side length 6 cm.
There are two possible triangles that can be drawn that are **not** congruent to each other.

Construct these two triangles.
One 4 cm side has been drawn for each of the triangles.

[4]

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7 Krish has $6x+4$ marbles.
Jo has $9-x$ marbles.

(a) Write down an expression for the total number of marbles that Krish and Jo have.
Give your answer in its simplest form.

..... [2]

(b) Krish has more marbles than Jo.

Write down an expression for how many more marbles Krish has than Jo.
Give your answer in its simplest form.

..... [2]

8 Write down the two prime numbers that are greater than 20 but less than 30.

..... , ... [2]

9 **(a)** Work out the difference between 5^2 and 2^3.

..... [2]

(b) Write down the reciprocal of 4.

..... [1]

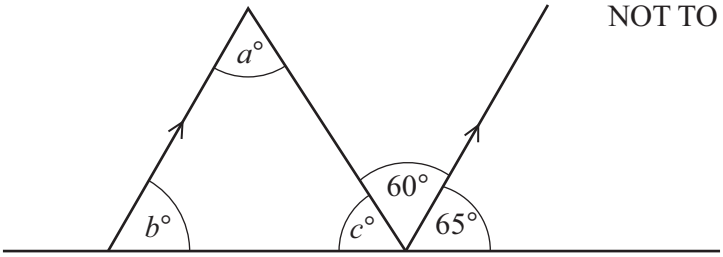
(c) Write down an irrational number that is between 4 and 5.

..... [1]

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10



NOT TO SCALE

Work out the values of a, b and c.

$a =$ .....

$b =$ .....

$c =$ .....

[3]

11 Put **one** pair of brackets into each calculation to make it correct.

(a) $6 \times 5 - 3 + 5 = 42$ [1]

(b) $4 - 80 + 20 \div 10 = -6$ [1]

12 Write 9×27 as a power of 3.

..... [2]

13 Work out $\sqrt{0.0025}$.

..... [1]

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14 A school records the number of students who are late on each of 12 days.

17	1	23	14	18	8
8	12	10	5	22	19

Complete the stem-and-leaf diagram.

0	
1	
2	

key : 1 | 7 represents 17 students

[2]

15 The probability that Jai wins a game is 0.7 .

(a) Find the probability that he does not win a game.

..... [1]

(b) Jai plays 50 games.

Work out the number of games he is expected to win.

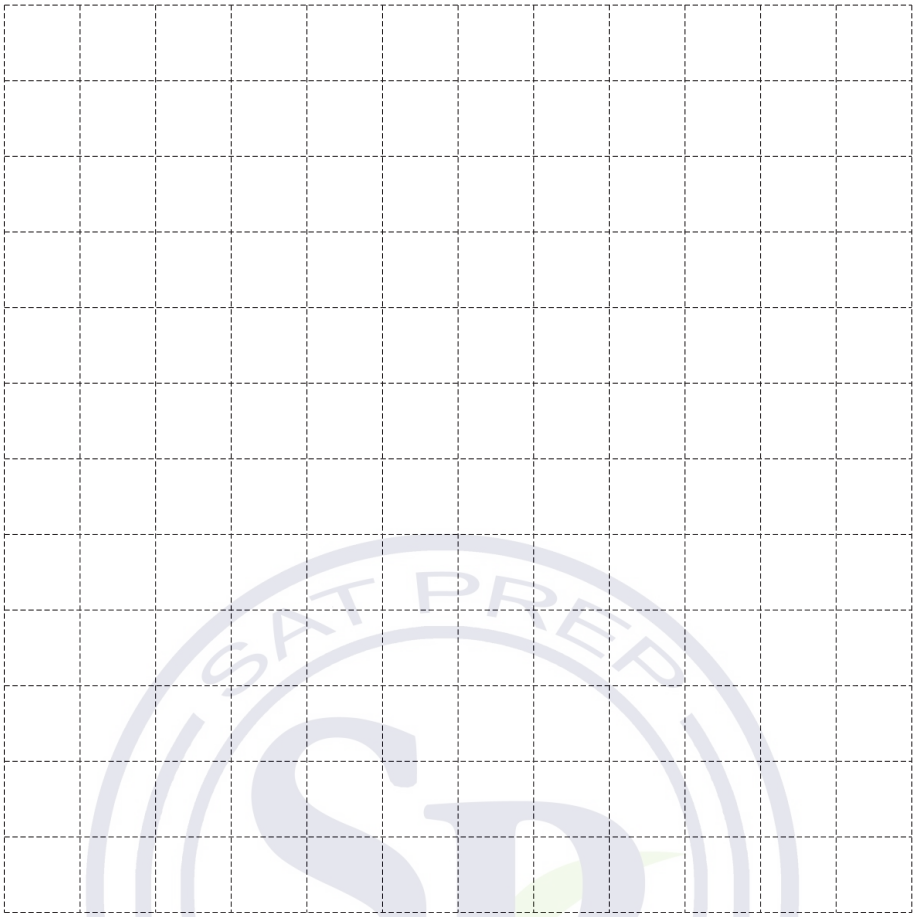
..... [1]

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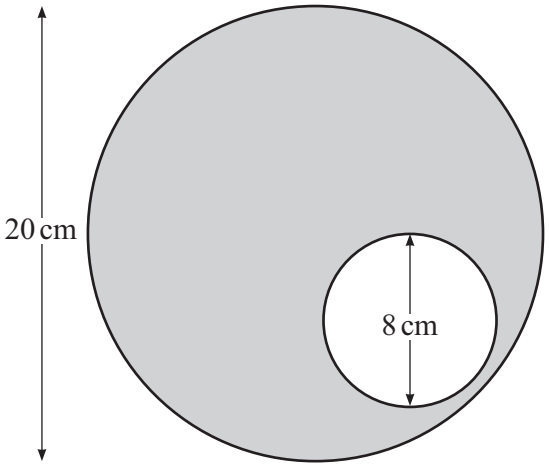
A cube has volume $8\,cm^3$.

On the $1\,cm^2$ grid, draw a net for this cube. [3]

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17 The diagram shows two circles.

NOT TO SCALE



The small circle has diameter 8 cm.
The large circle has diameter 20 cm.

Work out the shaded area.
Give your answer in terms of π.

..... cm^2 [3]

18 Factorise.

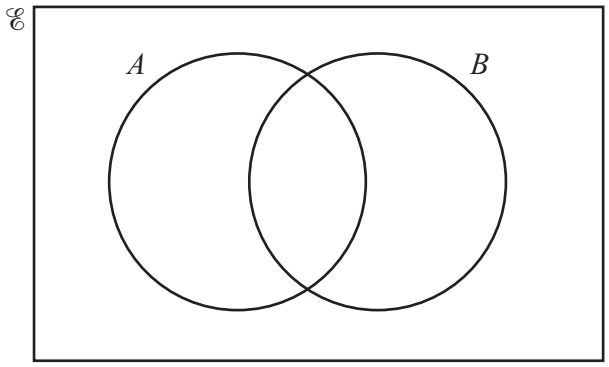
$$9x^3 - 6x$$

..... [2]

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19 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$
$A = \{\text{multiples of } 3\}$
$B = \{\text{multiples of } 4\}$



(a) Complete the Venn diagram. [2]

(b) Write down $\text{n}(A \cap B)$.

..... [1]

20 Solve the simultaneous equations.

$$-5x - 7y = 1$$
$$6x + 8y = -2$$

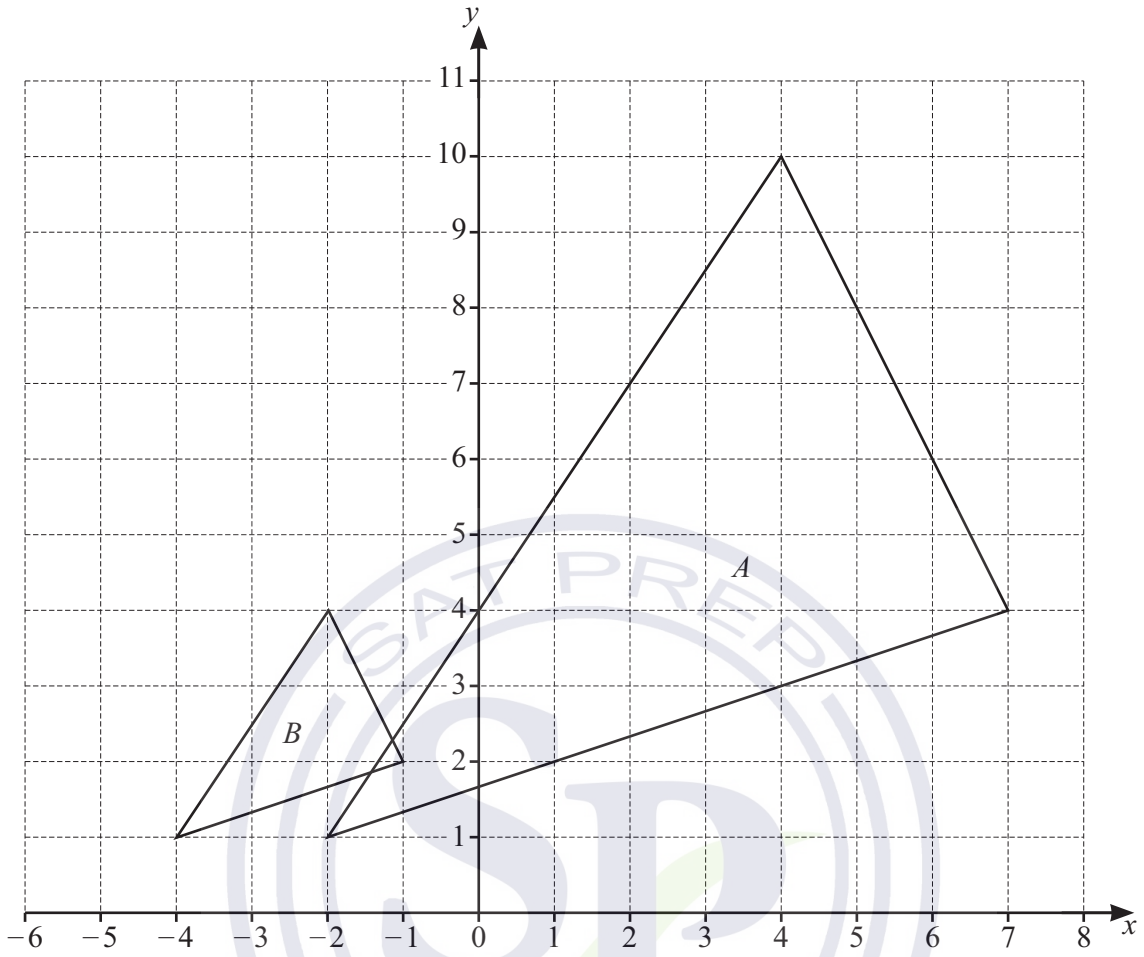
$x =$ .....

$y =$ .....
[4]

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21 The diagram shows two triangles, A and B, on a 1 cm^2 grid.



(a) Describe fully the **single** transformation that maps triangle A onto triangle B.

.....

..... [3]

(b) On the grid, draw the image of triangle B after a rotation 180°, centre $(-2, 4)$. [2]

(c) Triangle A is reflected in the line $x = 7$.

Work out the coordinates of the vertices of triangle A, after this reflection.

(..... , ...) , (..... , ...) , (..... , ...) [3]

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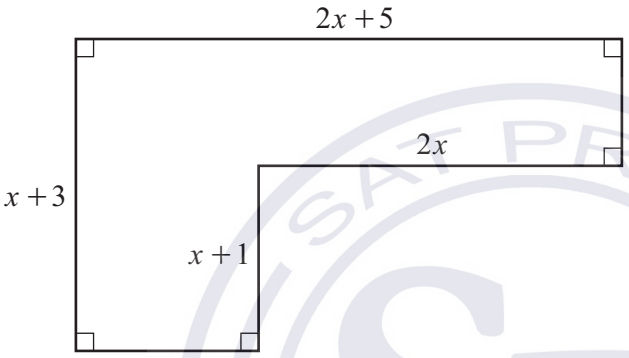
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22 **(a)** Expand the brackets and simplify.

$(2x+5)(x+3)$

..... [2]

(b)



NOT TO SCALE

Find an expression for the area of this shape.
Give your answer in its simplest form.

..... [3]

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23 The height, h metres, of a tree is 37.4 m, correct to the nearest 10 centimetres.

Complete this statement about the value of h.

..... $\leqslant h <$ ..... [2]

24 Complete these statements.
Give your answers in standard form.

(a)

2.5 km is the same as ..... cm. [2]

(b)

30 cm^3 is the same as ..... litres. [2]

25 By writing each number in the calculation correct to 1 significant figure, work out an estimate for the value of

$$\frac{0.43 \times 22.8}{13.7}.$$

..... [2]

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26 Work out $3\frac{3}{5} \times 2\frac{2}{9}$.

Give your answer in its simplest form.

..... [3]

27 **(a)** A teacher asks a student to make x the subject of the formula $y = \frac{x}{5} + 2$.
Their working is shown in the box below, but it is **not** correct.

$y = \frac{x}{5} + 2$	line A
$5y = x + 2$	line B
$5y - 2 = x$	line C
$x = 5y - 2$	line D

Complete this statement.

Line ..... is **not** correct because .....

..... [1]

(b) Make p the subject of the formula.

$A = pt^2$

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

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MATHEMATICS **0580/11**

Paper 1 Non-calculator (Core) **October/November 2025**

1 hour 30 minutes

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.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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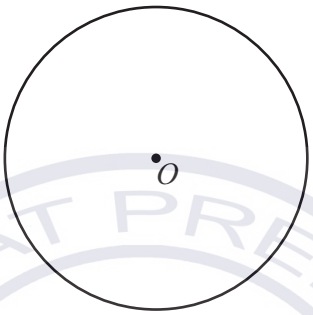
1 **(a)** Write the number four hundred and sixty thousand and five in figures.

..... [1]

(b) Write 52 149 correct to the nearest hundred.

..... [1]

2

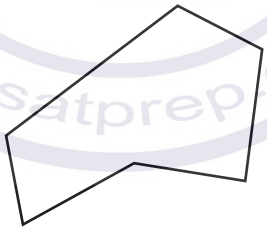


The diagram shows a circle, centre O.
On the diagram

(a) draw a diameter [1]

(b) mark a point on the circumference and label it C. [1]

3



Write down the mathematical name of this polygon.

..... [1]

4 **(a)** Write down all the factors of 24.

..... [2]

(b) Write down the reciprocal of $\frac{3}{7}$.

..... [1]

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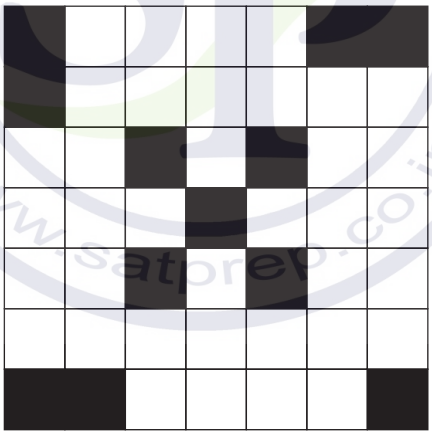
5 In triangle ABC, $AB = 8$ cm and $BC = 6.4$ cm.

Using a ruler and compasses only, construct triangle ABC.
Leave in your construction arcs.
The line AC has been drawn for you.



[2]

6 Shade **one** square so that the diagram has rotational symmetry of order 4.



[1]

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7 These are the first four terms of a sequence.

9 5 1 −3

(a) Find the next term.

..... [1]

(b) Explain how you worked out your answer.

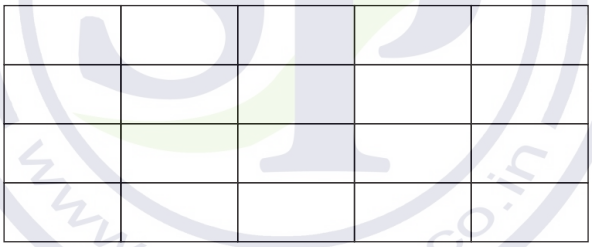
..... [1]

8 $p = 3q - 2r$

Work out the value of q when $p = 50$ and $r = 5$.

$q =$ ..... [2]

9 **(a)** Shade $\frac{3}{4}$ of this grid.



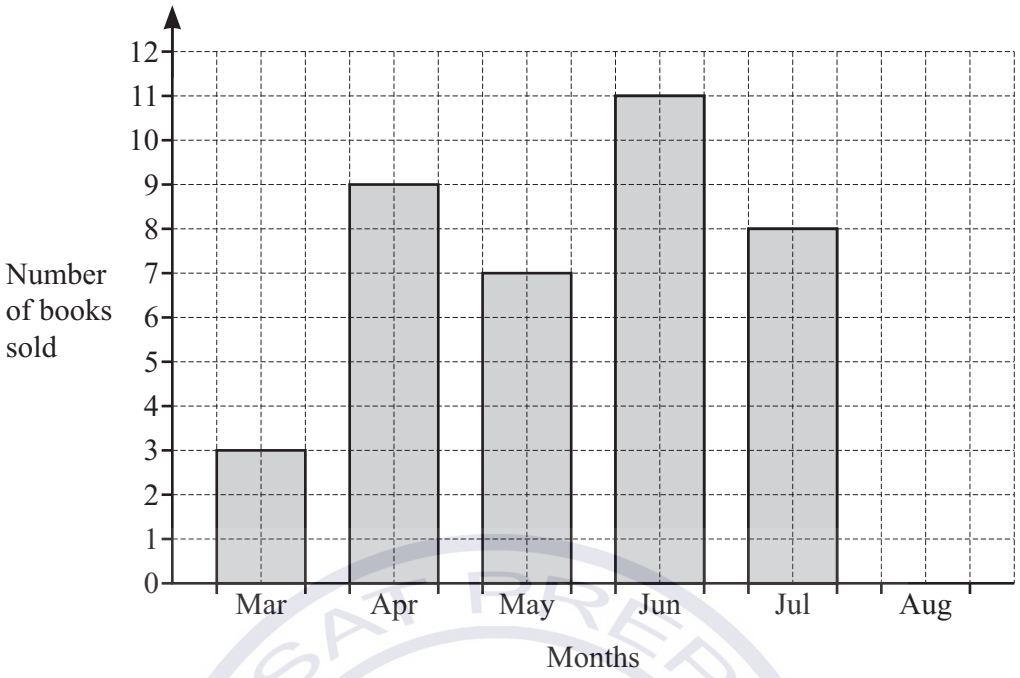
[1]

(b) Work out 15% of 80.

..... [2]

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10 The bar chart shows the number of books sold in a shop in each of five months.



(a) 4 books were sold in August.

Complete the bar chart. [1]

(b) Calculate the mean number of books sold in the six months.

..... [2]

11 The temperature at midnight is −2 °C.
The temperature at noon is 5 °C.

(a) Find the difference between these temperatures.

..... °C [1]

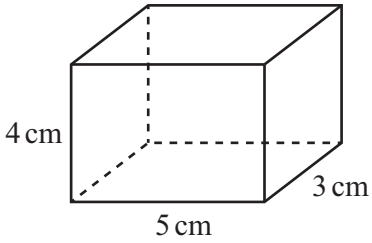
(b) The temperature at 9 am is 8 °C higher than the temperature at midnight.

Work out the temperature at 9 am.

..... °C [1]

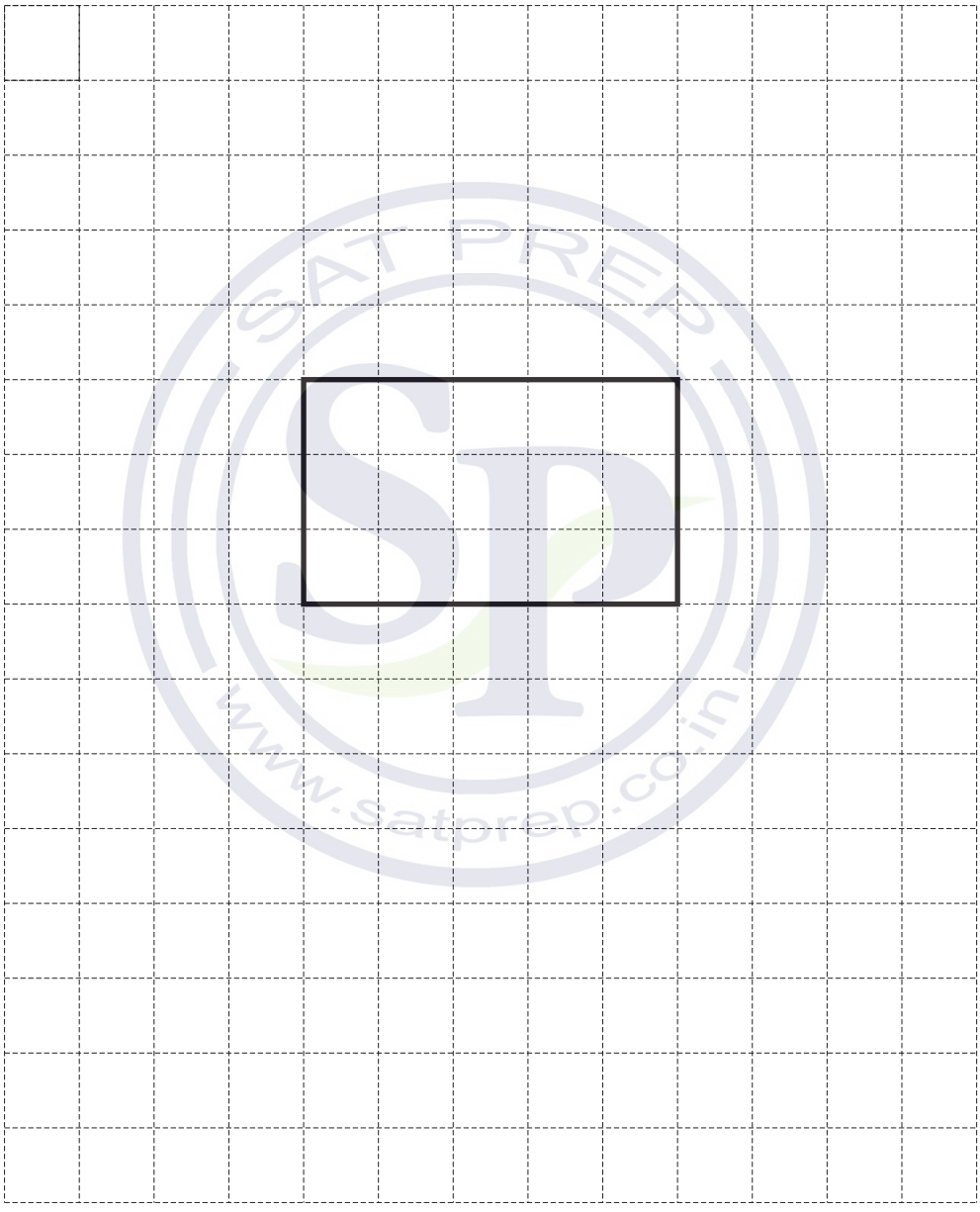
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12



NOT TO SCALE

Complete the net of this cuboid on the 1 cm^2 grid.
One face has been drawn for you.



[3]

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13 The scale drawing shows the positions of town *A* and town *B*.
The scale is 1 centimetre represents 10 kilometres.





Scale: 1 cm to 10 km

(a) Work out the actual distance from town *A* to town *B*.

..... km [2]

(b) Measure the bearing of town *B* from town *A*.

..... [1]

(c) Town *C* is 45 km from town *A* on a bearing of 310°.

On the scale drawing, mark the position of town *C*. [2]

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14 These are the ages, in **months**, of each of 12 children.

11	27	8	10	26	17	28	12	9	13	22	12

(a) Complete the stem-and-leaf diagram to show this information.

0	
1	
2	

Key: 1 | 7 represents 17 months [2]

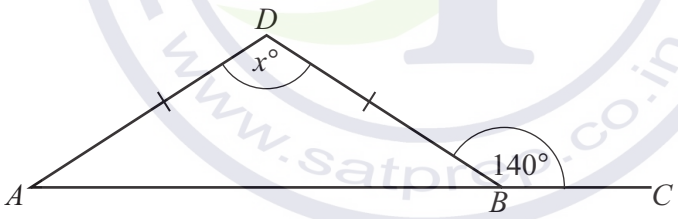
(b) Find the number of children over 2 **years** old.

..... [1]

(c) Show that the median is 12.5 .

[1]

15



NOT TO SCALE

ABC is a straight line and *ABD* is an isosceles triangle.

Work out the value of x.

$x =$ ..... [3]

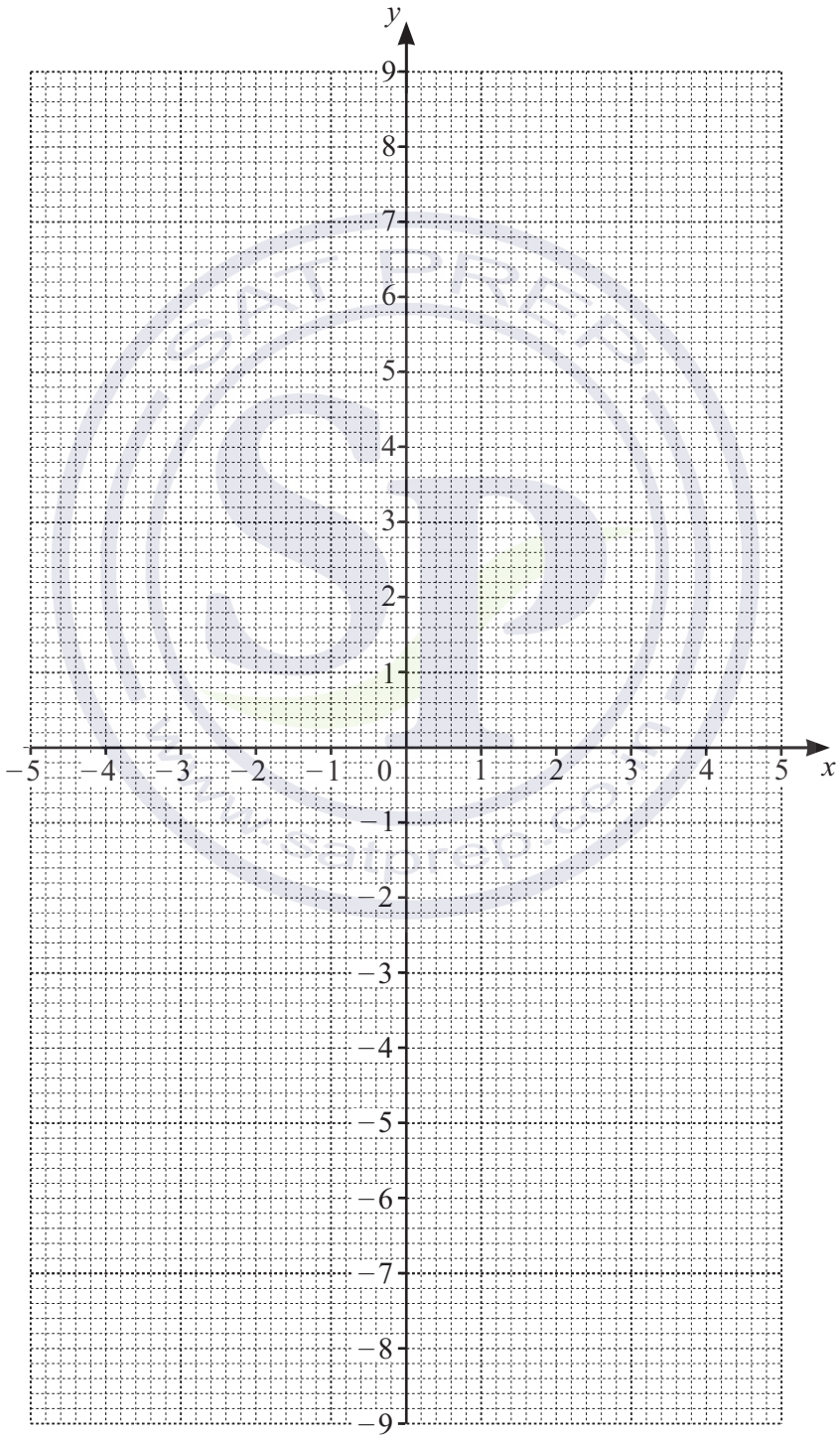
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16 **(a)** Complete the table of values for $y = \frac{9}{x}$.

x	−4.5	−3	−2	−1.5	−1		1	1.5	2	3	4.5
y	−2	−3		−6	−9		9	6	4.5		2

[2]

(b) On the grid, draw the graph of $y = \frac{9}{x}$ for $-4.5 \leqslant x \leqslant -1$ and $1 \leqslant x \leqslant 4.5$.



[4]

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17 **(a)** Write down a prime number between 20 and 30.

..... [1]

(b) Simplify $\left(\sqrt{9}\right)^2$.

..... [1]

18 Work out $\frac{11}{18} - \frac{2}{9}$.

Give your answer as a fraction in its simplest form.

..... [2]

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

$$\frac{5.3 \times 19.5}{2.49}.$$

..... [2]

20 Some students take a test.
75 of the students pass the test.
This is $\frac{3}{5}$ of the students who take the test.

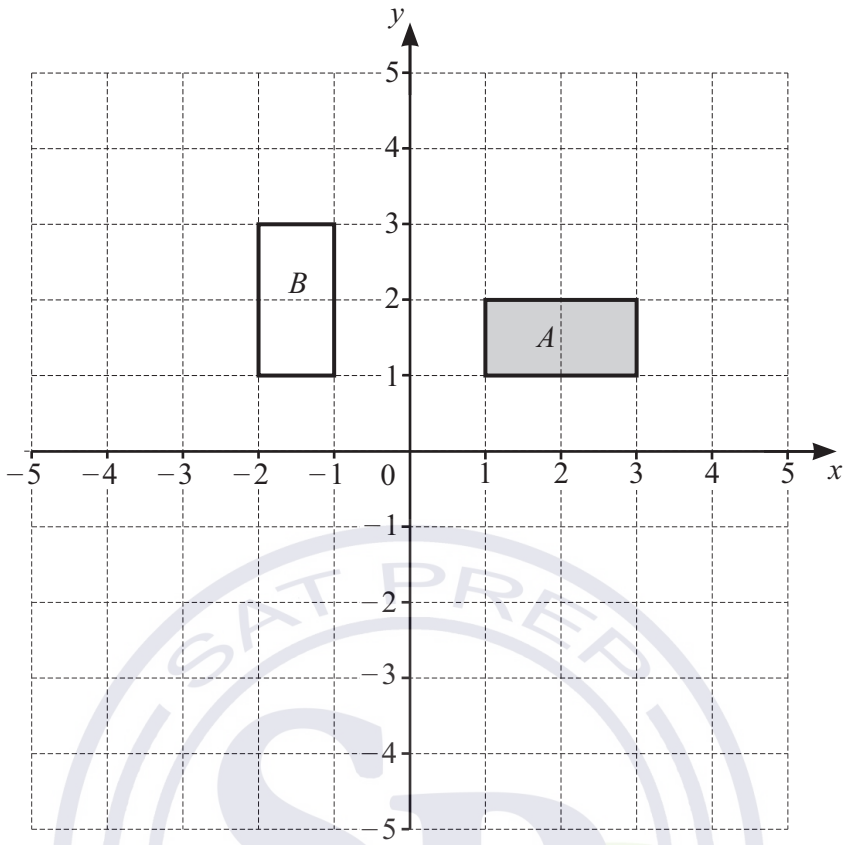
Work out how many students take the test.

..... [2]

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21 Shapes A and B are shown on the grid.



(a) Describe fully the **single** transformation that maps shape A onto shape B.

.....

..... [3]

(b) Draw the image of shape A after a reflection in the line $y = -1$. [2]

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22

Chocolate cookies Makes 12 100 g flour 55 g butter 55 g sugar 20 g cocoa 1 egg

(a) Sunita makes 24 chocolate cookies.

Work out how much flour she needs.

..... g [1]

(b) Albie has 28 g of cocoa.

Does he have enough cocoa to make 18 cookies?
Explain how you decide.

.....

..... [2]

23 **(a)** $a^8 \times a^x = a^{15}$

Find the value of x.

$x =$ ..... [1]

(b) $(b^7)^y = b^{21}$

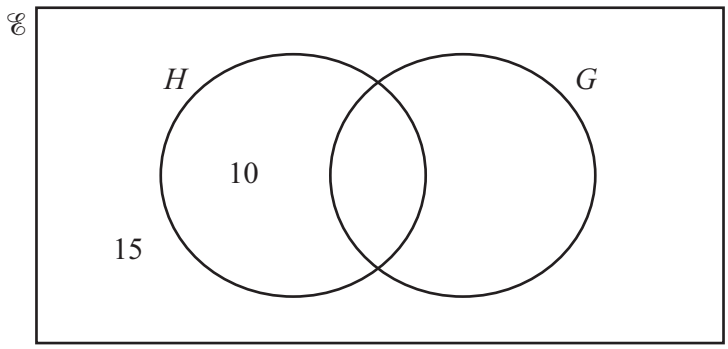
Find the value of y.

$y =$ ..... [1]

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24 $\mathscr{E}$ = {students in a year group}
H = {students who study History}
G = {students who study Geography}

80 students are in the year group.
40 students study History.



(a) Complete the Venn diagram. [2]

(b) Find n(G).

..... [1]

(c) A student is chosen at random.

Work out the probability that the student does not study History and does not study Geography.

..... [1]

25 Expand and simplify.

$(x+3)(x-2)$

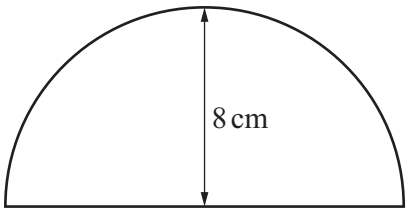
..... [2]

26 Write 1.753×10^8 as an ordinary number.

..... [1]

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27



NOT TO SCALE

The diagram shows a semicircle.
The radius of the semicircle is 8 cm.

Find the perimeter of the semicircle.
Give your answer in terms of π in its simplest form.

..... cm [3]

28 Work out $8\frac{2}{3} \div 1\frac{5}{8}$.

Give your answer as a mixed number in its simplest form.

..... [3]

Question 29 is printed on the next page.

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29 Jim buys 15 apples and 10 pears for $42.50 .
Li buys 4 apples and 5 pears for $16.

Write down a pair of simultaneous equations and solve them to find the cost of one apple and the cost of one pear.

Apple $ .....

Pear $ .....

[5]

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MATHEMATICS **0580/12**

Paper 1 Non-calculator (Core) **October/November 2025**

1 hour 30 minutes

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.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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Calculators must **not** be used in this paper.

1 Write down the value of the 3 in the number 23 679.

..... [1]

2 Tom buys 2 books costing $8.20 each.

Work out how much change he receives from $20.

$ ..... [2]

3 **(a)** Write 17 469 correct to the nearest ten.

..... [1]

(b) Write 5.073 correct to 1 decimal place.

..... [1]

4 **(a)** Write down the value of $\sqrt{144}$.

..... [1]

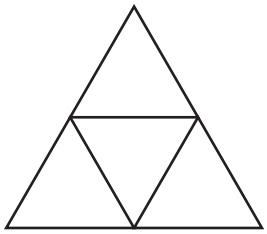
(b) Work out the value of 5^3.

..... [1]

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5 The diagram is made from equilateral triangles.



(a) On the diagram, draw all the lines of symmetry. [2]

(b) Write down the order of rotational symmetry.

..... [1]

6 **(a)** Write $\frac{3}{4}$ as a decimal.

..... [1]

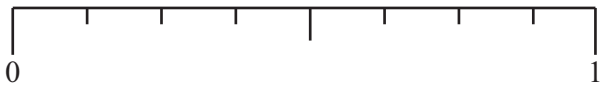
(b) Write $\frac{9}{100}$ as a percentage.

..... % [1]

(c) Write 143% as a decimal.

..... [1]

7 A bag contains 8 discs numbered 1 to 8.
A disc is picked at random from the bag.



On the probability scale, draw an arrow (↓) to show the probability that the number is

(a) an even number, label the arrow A [1]

(b) 9, label the arrow B [1]

(c) less than 3, label the arrow C. [1]

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8 A number, n, is a factor of 144 and a multiple of 9.

Find all the values for n.

..... [3]

9 The temperature at midday on Monday is –3 °C.
The temperature at 10 pm on Monday is –15 °C.

(a) Calculate the difference between these two temperatures.

..... °C [1]

(b) The temperature at midday on Tuesday is 23 °C higher than the temperature at 10 pm on Monday.

Calculate the temperature at midday on Tuesday.

..... °C [1]

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10 A bag contains red balls and green balls.
They are in the ratio red balls : green balls = 2 : 3.
A ball is picked at random.

Find the probability that it is a red ball.

..... [1]

11 The stem-and-leaf diagram shows the number of customers entering a shop each day for 20 days.

3	0 1 5 9
4	1 4 6 8 9
5	1 3 4 4 4 7 8
6	3 6 6
7	2

Key : 3 | 0 represents 30 customers

(a) Find the range.

..... [1]

(b) Find the mode.

..... [1]

(c) Work out the percentage of these 20 days when more than 55 customers enter the shop.

..... % [2]

(d) (i) Find the median.

..... [1]

(ii) On the next day 48 customers enter the shop.

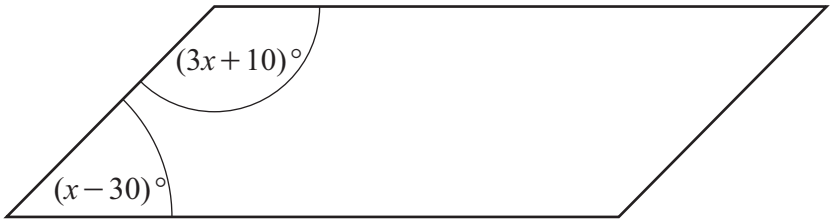
Will the median increase or decrease?
Give a reason for your answer.

..... because .....

..... [1]

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12 The diagram shows a parallelogram.



NOT TO SCALE

(a) Use the information in the diagram to write an equation and solve it to find the value of x.

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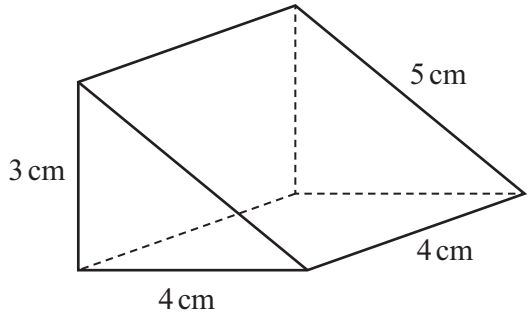
$x =$ ..... [4]

(b) Find the value of the largest angle in this parallelogram.

..... [1]

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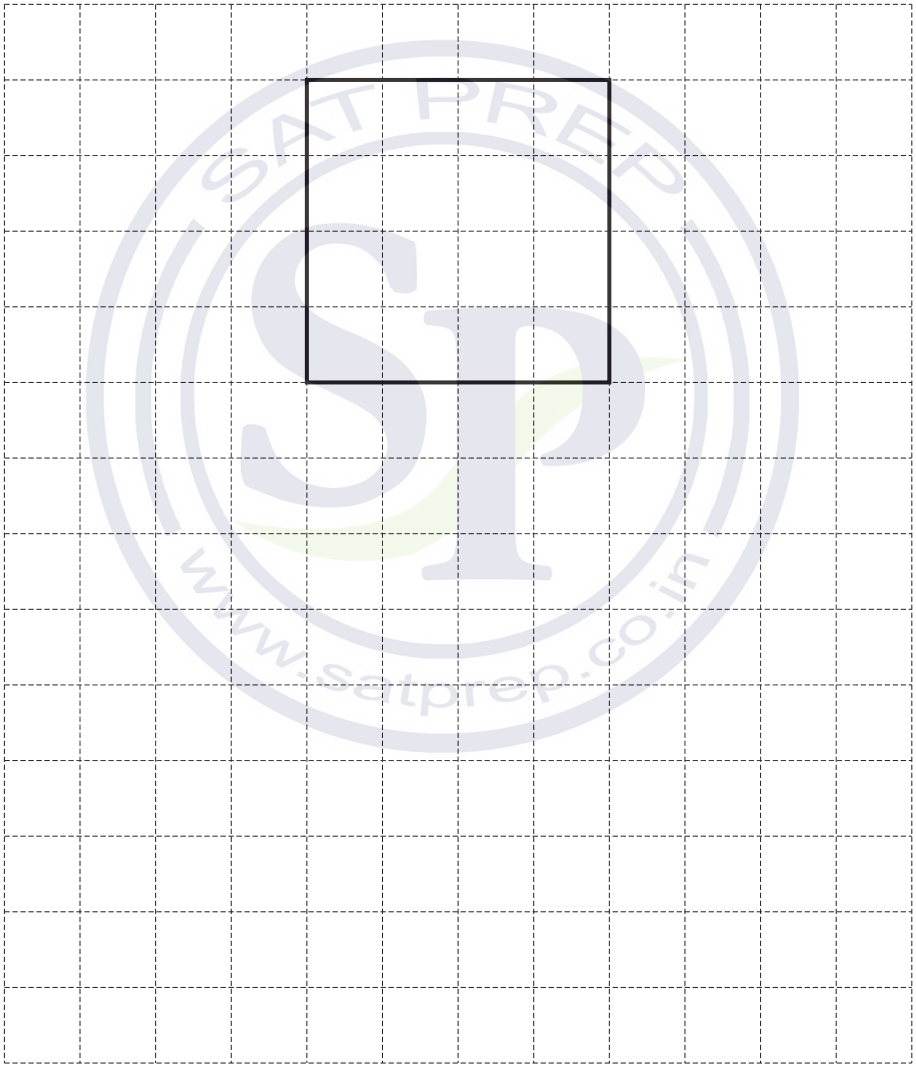
13



NOT TO SCALE

The diagram shows a right-angled triangular prism.

Complete the net of this prism on the 1 cm^2 grid.
One face has been drawn for you.

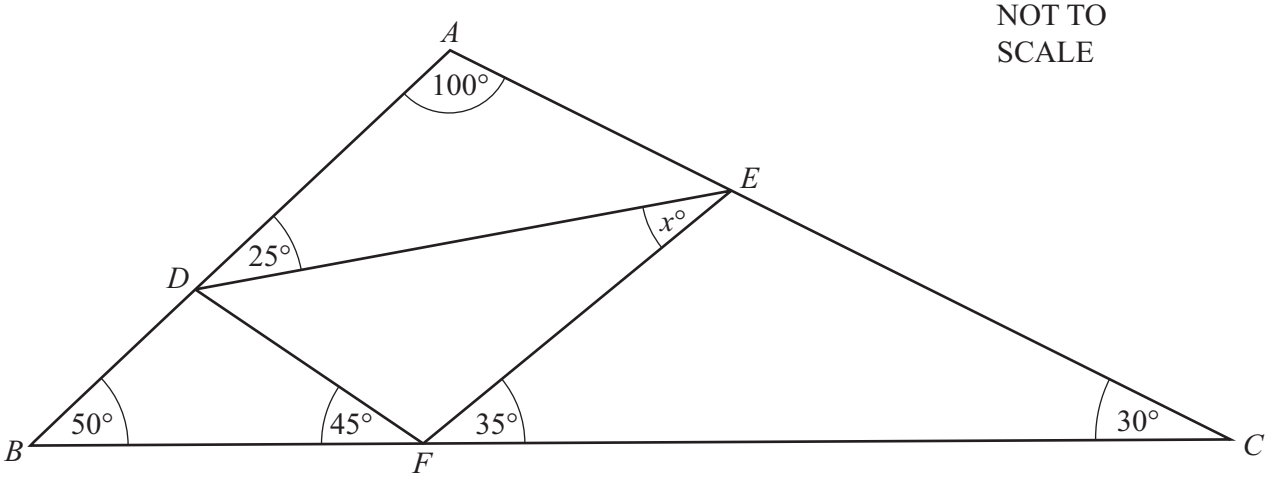


[3]

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14 The diagram shows a smaller triangle *DEF* which has vertices on the sides of a larger triangle *ABC*.

NOT TO SCALE



Find the value of x.

$x =$ ..... [3]

15 Three sisters share \$$n$ in the ratio 10 : 3 : 2.
The smallest share is \$120.

Find the value of n.

$n =$ ..... [3]

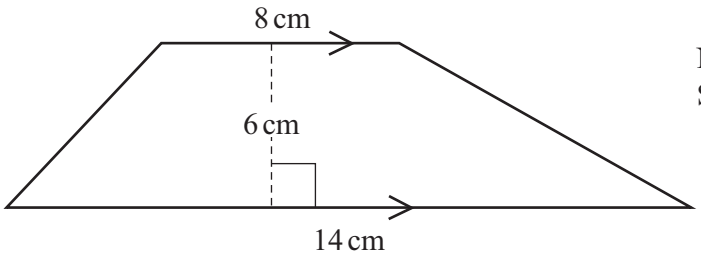
16 9.857×10^{-2} 3.5×10^{2} 1.54×10^{1} 6.5×10^{-2}

Write these numbers in order, starting with the smallest.

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

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17



NOT TO SCALE

Calculate the area of this trapezium.

..... cm^2 [2]

18 Work out.

$$2\frac{5}{6} \div 4\frac{1}{4}$$

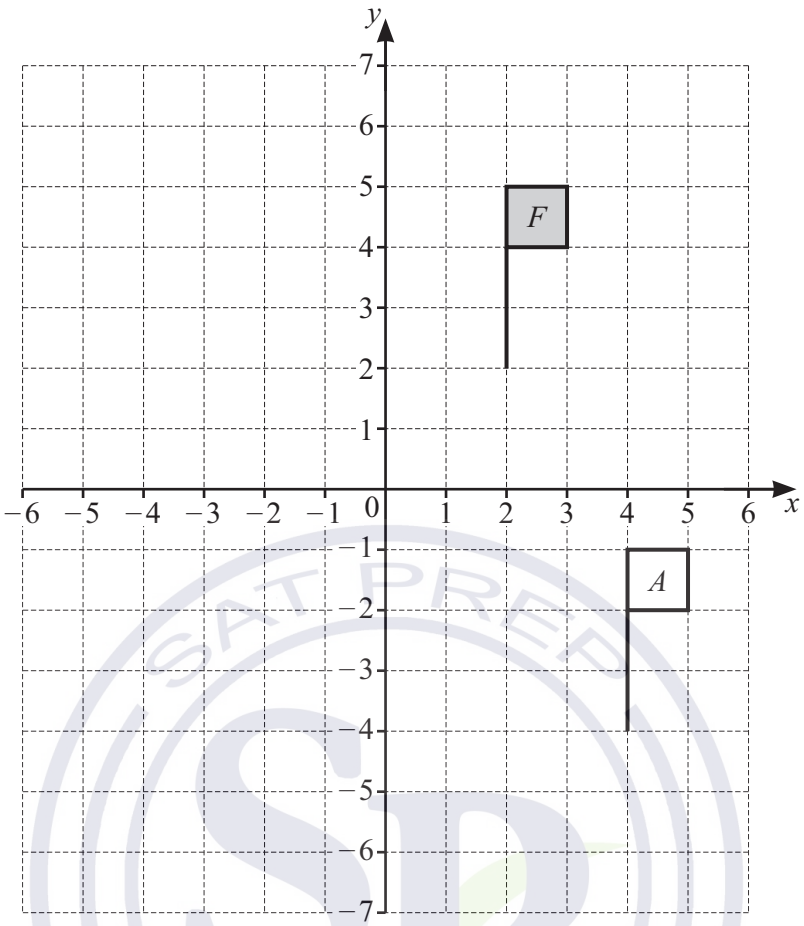
Write your answer as a fraction in its simplest form.

..... [3]

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19 The grid shows two flags, F and A.



(a) On the grid, draw the image of flag F after a reflection in the line $x = -1$. [2]

(b) On the grid, draw the image of flag F after a rotation of 180° about (0, 0). [2]

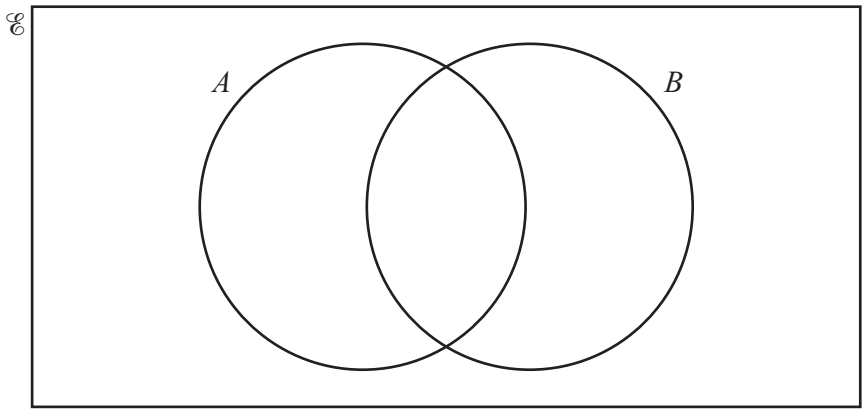
(c) Describe fully the **single** transformation that maps flag F onto flag A.

.....

..... [2]

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20 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{1, 3, 5, 7, 9\}$
$B = \{1, 3, 6, 10\}$



(a) Use this information to complete the Venn diagram. [2]

(b) List the elements of $A \cap B$.

..... [1]

(c) Find $n(B')$.

..... [1]

21 Simplify.

$$\frac{18x^8}{9x^2}$$

..... [2]

22 Work out the size of one interior angle of a regular hexagon.

..... [2]

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23 There are two charges for crossing a bridge.

Cars	$\$a$
Other vehicles	$\$b$

On Monday 4 cars and 20 other vehicles pay a total of \$130.
On Tuesday 6 cars and 15 other vehicles pay a total of \$105.

Write down two equations and solve them to find the value of a and the value of b.

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$a =$ .....

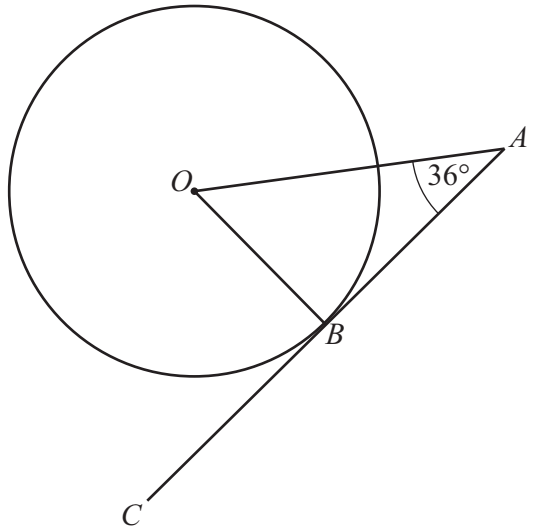
$b =$ .....

[6]

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24

NOT TO SCALE



B is a point on the circle, centre O.
ABC is a tangent to the circle at B and angle $OAB = 36°$.

Work out the size of angle AOB.

Angle $AOB =$ ..... [1]

25 **(a)** Expand and simplify.

$$(x-5)(x+2)$$

..... [2]

(b) Factorise.

$$5x^3 + 10x$$

..... [2]

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26 The length, l metres, of a rope is 16.32 metres, correct to 2 decimal places.

Complete this statement about the value of l.

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

27 **(a)** These are the first four terms of a sequence.

2 8 14 20

Find the nth term of this sequence.

..... [2]

(b) The nth term of a different sequence is $n^2 + 10$.

Find the first three terms of this sequence.

..... , ... , ... [2]

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MATHEMATICS **0580/13**

Paper 1 Non-calculator (Core) **October/November 2025**

1 hour 30 minutes

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.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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This document has **16** pages.

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List of formulas

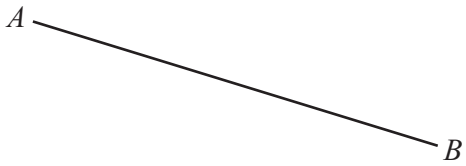
Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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Calculators must **not** be used in this paper.

1



(a) Measure the length of line *AB* in centimetres.

..... cm [1]

(b) Draw a line that is parallel to line *AB*. [1]

2 **(a)** Write the number 83 042 in words.

..... [1]

(b) Write down the value of the 7 in the number 346 709.

..... [1]

(c) Write 8453 correct to

(i) the nearest hundred

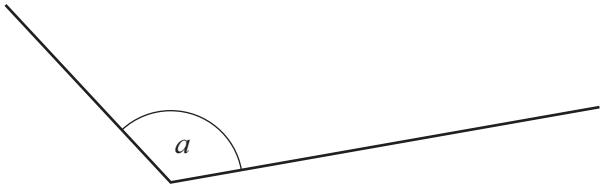
..... [1]

(ii) the nearest ten.

..... [1]

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3



(a) Measure angle *a*.

..... [1]

(b) Write down the mathematical name of this type of angle.

..... [1]

4 Ben records the favourite sport of each of 20 students.

Football Cricket Hockey Rugby Football Tennis Rugby Football Football Rugby

Tennis Football Rugby Football Cricket Football Rugby Football Cricket Cricket

Complete the frequency table.
You may use the tally column to help you.

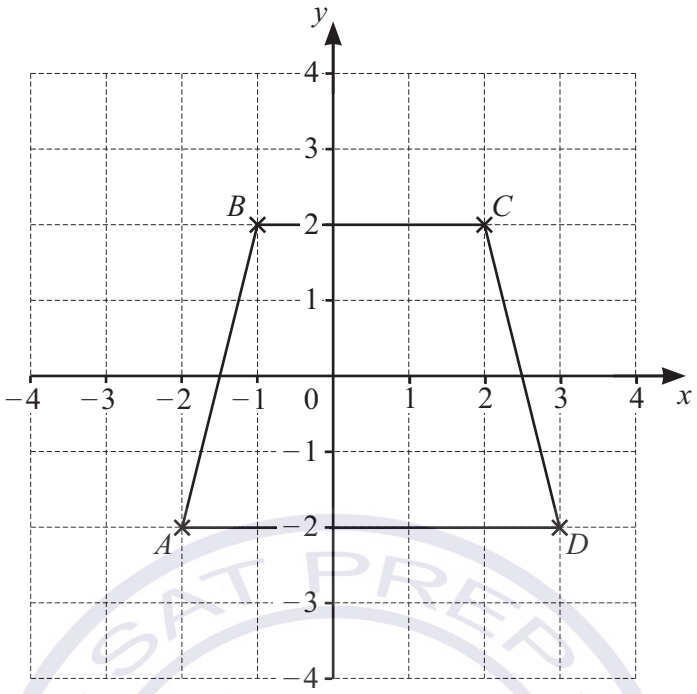
Sport	Tally	Frequency
Cricket		
Football		
Hockey		
Rugby		
Tennis		

[2]

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5 The diagram shows quadrilateral $ABCD$ on a 1 cm^2 grid.



(a) Write down the coordinates of point B.

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

(b) Write down the mathematical name of quadrilateral $ABCD$.

..... [1]

(c) Find the area of quadrilateral $ABCD$.

..... cm^2 [1]

(d) On the grid, plot the point E at (–3, 2). [1]

6 Anna thinks of a number, she multiplies it by 2 and then finds the square root.
The answer is 12.

What number did Anna think of?

..... [2]

7 A journey starts at 10 55 and ends at 16 10.

Find how long the journey takes.
Give your answer in hours and minutes.

..... h ..... min [1]

8 These are the masses, in kg, of each of 11 bags.

23	16	8	10	27	19	4	17	13	4	14

(a) Complete the stem-and-leaf diagram to show this information.

0	
1	
2	

Key: 2 | 7 represents 27 kg [2]

(b) Find the median.

..... kg [1]

9 Find the value of

(a) 2^5

..... [1]

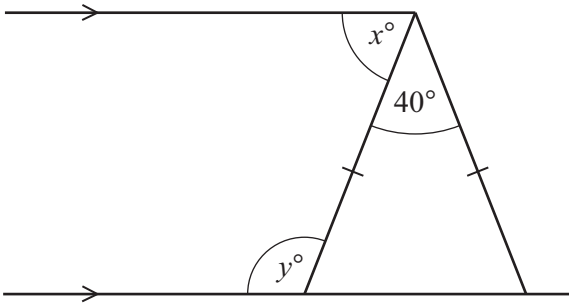
(b) 6^0.

..... [1]

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10



NOT TO SCALE

The diagram shows an isosceles triangle between a pair of parallel lines.

(a) Find the value of x.

$x =$ ..... [2]

(b) Find the value of y.
Give a geometrical reason for your answer.

$y =$ ..... because .....

..... [2]

11 **(a)** Sam buys 3 apples at 40 cents each.
He also buys 5 peaches.
The total cost is $3.45 .

Find the cost of 1 peach.

..... cents [3]

(b) Pears cost 55 cents each.
Bananas cost 36 cents each.

Write an expression, in cents, for the cost of x pears and y bananas.

..... [2]

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12

(a) Simplify.

$3y - 4y + 2y$

..... [1]

(b) Solve.

(i) $x + 5 = 19$

$x =$ ..... [1]

(ii) $6x - 5 = 7$

$x =$ ..... [2]

13



Write down the inequality represented on the number line.

..... [2]

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14 Victoria invests $2000 at a rate of 5% per year simple interest.

Calculate the value of her investment after 4 years.

$ ..... [3]

15 Complete each statement.

(a) $0.0000047\,m^2$ = ... cm^2.

[1]

(b) $8500\,cm^3$ = ... litres.

[1]

16 Kai, Jo and Liz share some money in the ratio Kai : Jo : Liz = 4 : 7 : 13.
Jo receives $1400.

Find the total amount of money they share.

$ ..... [3]

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17 **(a)** $k^x \times k^5 = k^{20}$

Find the value of x.

$x =$ ..... [1]

(b) Expand and simplify.

$$(x+5)(x-4)$$

..... [2]

(c) Factorise.

$$21r^3 - 7r$$

..... [2]

18 The diameter of a circle is 16 cm.

Find the area of the circle.
Leave your answer in terms of π.

..... cm^2 [2]

19 Find the number of sides of a regular polygon with interior angle 160°.

..... [2]

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20 The height, h cm, of a door is 180 cm, correct to the nearest centimetre.

Complete this statement about the value of h.

..... $\leqslant h <$ ..... [2]

21 These are the first four terms of a sequence.

$$-6 \qquad 1 \qquad 8 \qquad 15$$

(a) Write down the next term.

..... [1]

(b) Write down the term-to-term rule.

..... [1]

(c) **(i)** Find the nth term.

..... [2]

(ii) Is 688 a term in this sequence?

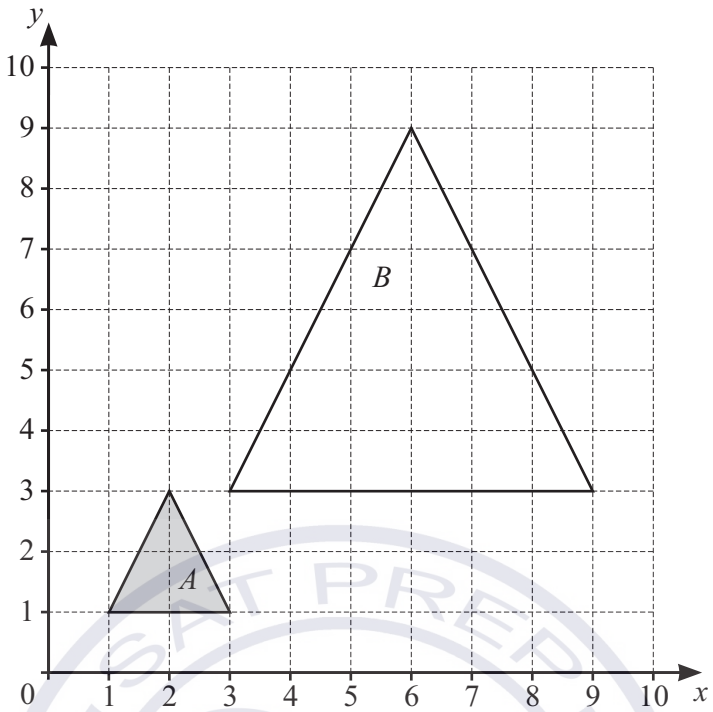
Explain how you decide.

..... because .....

..... [2]

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22 The diagram shows triangles A and B.



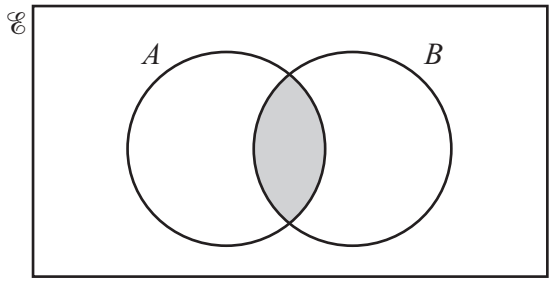
Describe fully the **single** transformation that maps triangle A onto triangle B.

.....

..... [3]

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23 (a)



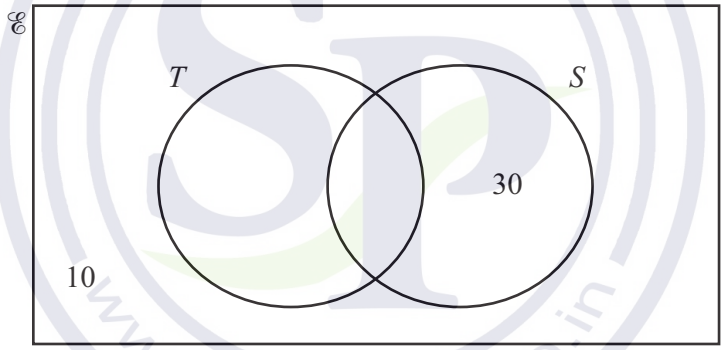
Use set notation to describe the shaded region.

..... [1]

(b)

$\mathscr{E}$ = {people in a club}
T = {people who play tennis}
S = {people who go swimming}

There are 60 people in the club.
36 people go swimming.



(i) Complete the Venn diagram. [2]

(ii) Find $n(T')$.

..... [1]

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24 **(a)** The scale on a map is 1 cm represents 12 km.

Write this in the ratio 1 : n .

1 : ..... [1]

(b) The bearing of B from A is 070°.

Find the bearing of A from B.

..... [2]

25 Work out.

$$\frac{3}{4} \times 1\frac{2}{3}$$

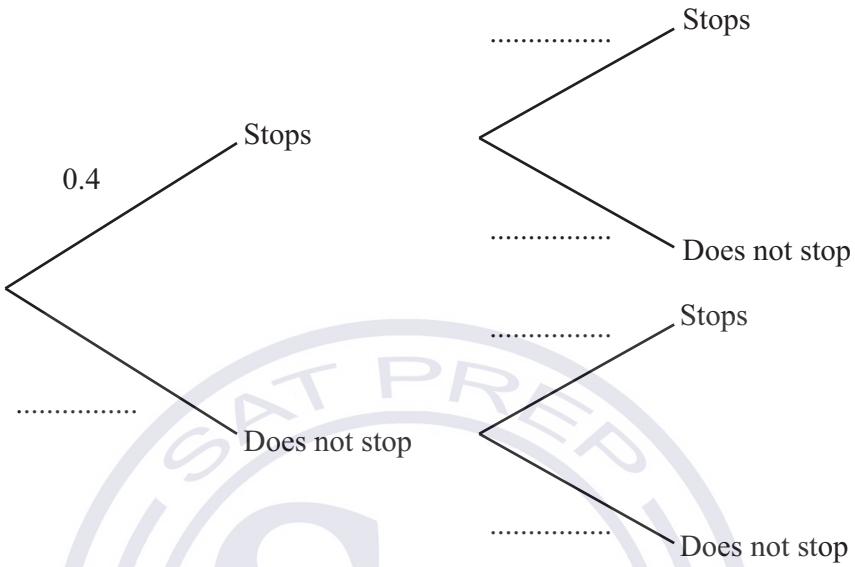
Give your answer as a mixed number in its simplest form.

..... [3]

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26 There are 2 sets of traffic lights on Li's journey to work.
The probability he stops at the first set of traffic lights is 0.4 .
The probability he stops at the second set of traffic lights is 0.7 .



(a) Complete the tree diagram. [2]

(b) Work out the probability that Li does not stop at both sets of traffic lights.

..... [2]

Question 27 is printed on the next page.

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27 Sam writes 851 000 in standard form as 85.1×10^4.

Explain why 85.1×10^4 is not a number in standard form.

.....

..... [1]

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0020983772

MATHEMATICS **0580/11**

Paper 1 Non-calculator (Core) **May/June 2025**

1 hour 30 minutes

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.
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- Do **not** write on any bar codes.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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1 **(a)** Write the number 10 069 in words.

..... [1]

(b) Write 10 069 correct to the nearest ten.

..... [1]

(c) Convert 10 069 centimetres into metres.

..... m [1]

2 A bag of sweets costs \$0.34 .
Arun buys 10 bags of sweets.

Work out how much change he receives from \$5.

\$ ..... [2]

3 Two numbers have a sum of −2 and a product of −15.

Work out the two numbers.

..... and ..... [2]

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4

7	27	39	49	99	112

From the list of numbers, write down

(a) an even number

..... [1]

(b) a square number

..... [1]

(c) a factor of 56

..... [1]

(d) a prime number.

..... [1]

5 Write down the reciprocal of 5.

..... [1]

6 Put **one** pair of brackets into each calculation to make it correct.

(a) $7 - 5 \times 4 + 8 = 16$ [1]

(b) $7 - 5 \times 4 + 8 = -21$ [1]

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7 **(a)** A ticket costs \$18.

Write down an expression, in dollars, for the cost of t tickets.

\$ ..... [1]

(b) A bag contains n red balls and 16 green balls.

Write down an expression for the total number of balls in the bag.

..... [1]

8 **(a)** Write 90% as a fraction in its simplest form.

..... [1]

(b) Write $\frac{3}{100}$ as a decimal.

..... [1]

9 **(a)** These are the first four terms of a sequence.

33 26 19 12

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

..... [1]

(ii) Work out the next two terms in this sequence.

..... , ... [2]

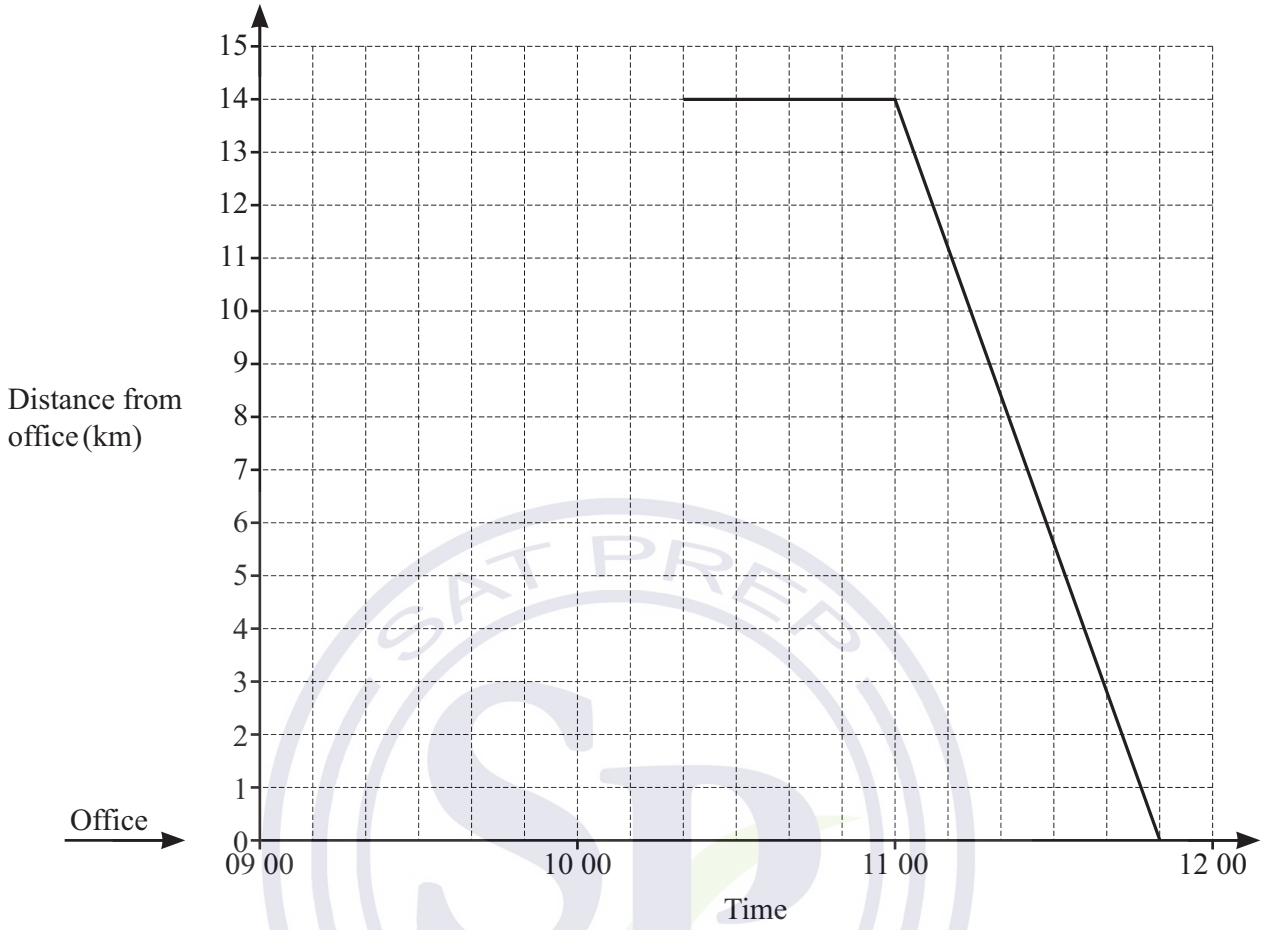
(b) These are the first four terms of another sequence.

19 23 27 31

Find the nth term.

..... [2]

10 Ky cycles from his office to a meeting and back again.
The travel graph shows his time at the meeting and his journey back.



(a) How far is the meeting from his office?

..... km [1]

(b) How long is Ky at the meeting for?

..... min [1]

(c) Write down the time Ky arrives back at his office after the meeting.

..... [1]

(d) Ky cycles from his office to the meeting at a constant speed of 21 km/h.

Complete the travel graph.

[2]

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11 Calculate the volume of a cube with side length 3 cm.

..... cm^3 [1]

12 Solve.

$5x + 8 = 3x - 2$

$x =$ ..... [2]

13 Work out.

(a) -5×-4

..... [1]

(b) $-8 + (-3)$

..... [1]

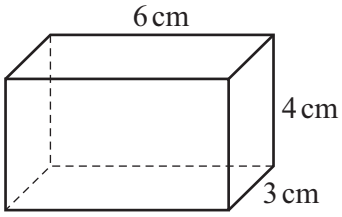
14 $3^p \times 3^4 = 3^{10}$

Find the value of p.

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

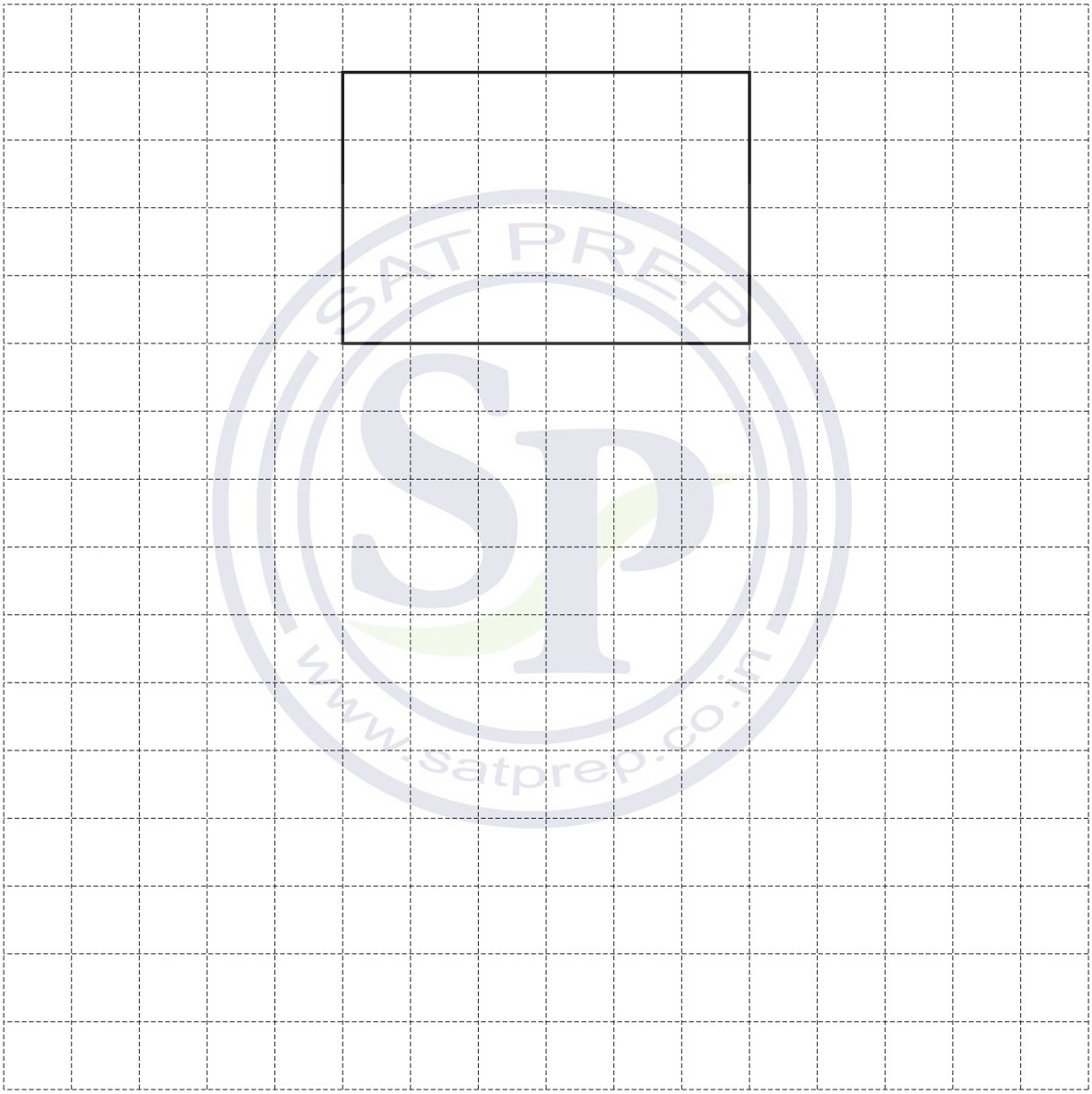
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15



NOT TO SCALE

Complete a net of this cuboid on the 1 cm^2 grid.
One face has been drawn for you.



[3]

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16 **(a)** Simplify.

$$6a + 4b - a - 5b$$

..... [2]

(b) Factorise.

(i) $6x + 15y$

..... [1]

(ii) $x^2y - 5xy$

..... [2]

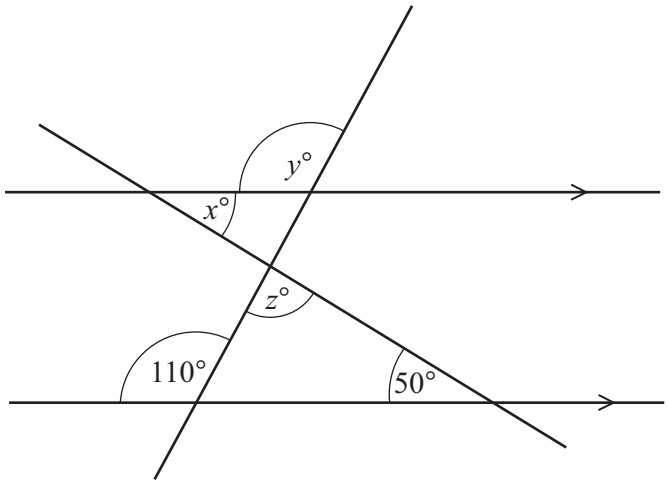
17 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

$$\frac{42.8 + 17.4}{1.97 \times 5.79}.$$

..... [2]

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18 The diagram shows two straight lines intersecting two parallel lines.



NOT TO SCALE

(a) Find the value of x.
Give a geometrical reason for your answer.

x = ... because .....

..... [2]

(b) Find the value of y.
Give a geometrical reason for your answer.

y = ... because .....

..... [2]

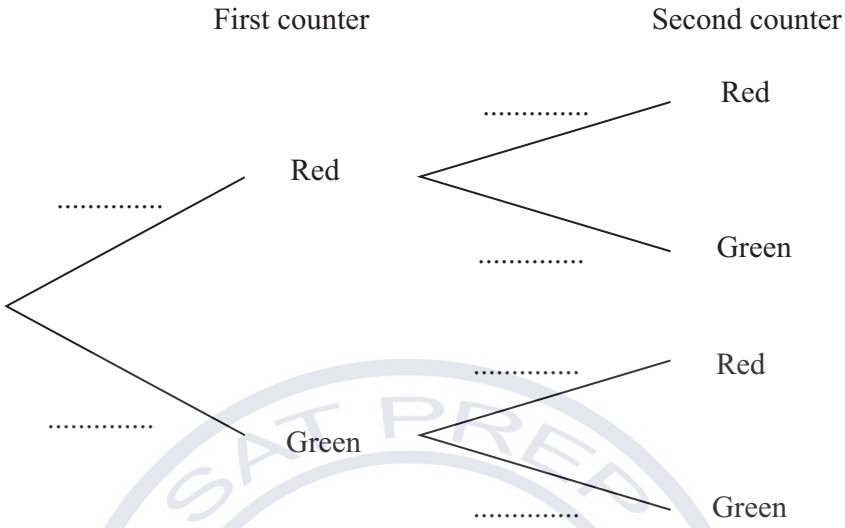
(c) Find the value of z.

z = ... [2]

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19 A box contains 10 counters.
The counters are either red or green.
The ratio red counters : green counters = 1 : 4.

Shareen picks a counter at random, notes its colour and puts it back in the box.
She then picks a second counter at random.



(a) Complete the tree diagram.

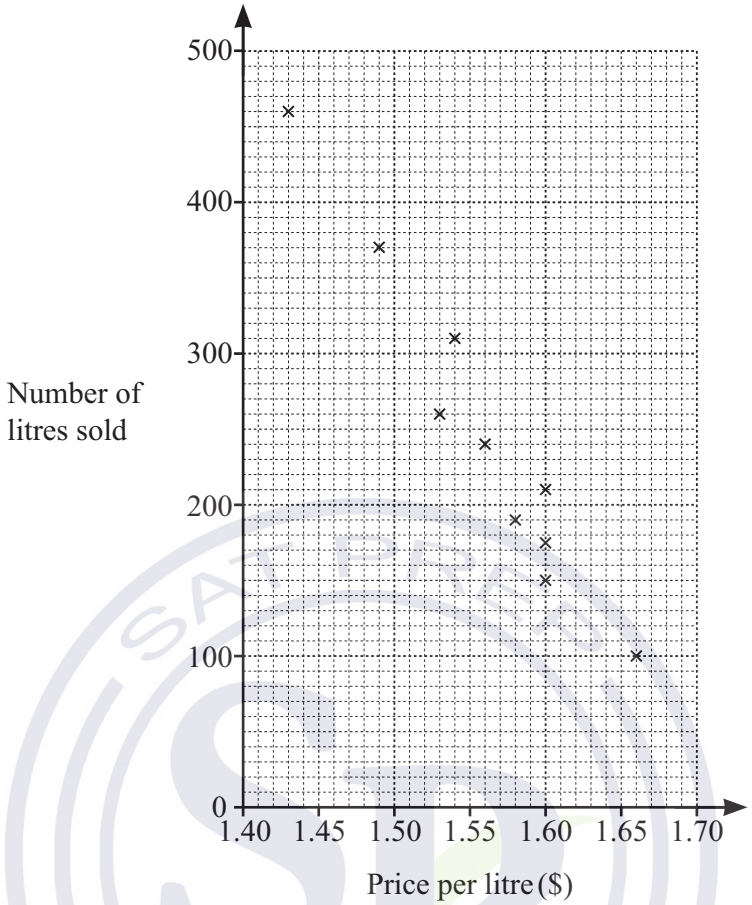
[3]

(b) Find the probability that both counters are green.

..... [2]

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20 The scatter diagram shows the price of petrol per litre and the number of litres sold at a petrol station on each of ten days.



(a) These are the results for two more days.

Price per litre ($)	1.68	1.47
Number of litres sold	90	380

Plot this information on the scatter diagram. [1]

(b) What type of correlation is shown in the scatter diagram?

..... [1]

(c) **(i)** On the scatter diagram, draw a line of best fit. [1]

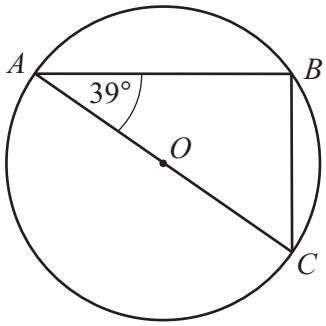
(ii) One day the price of petrol was $1.55 per litre.

Use your line of best fit to estimate the number of litres sold.

..... litres [1]

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21 Points A, B and C lie on the circle, centre O.



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Work out angle BCA.

Angle BCA = ... [2]

22 $A = 2^3 \times 3$ $B = 3^2 \times 5$

(a) Find the highest common factor (HCF) of A and B.

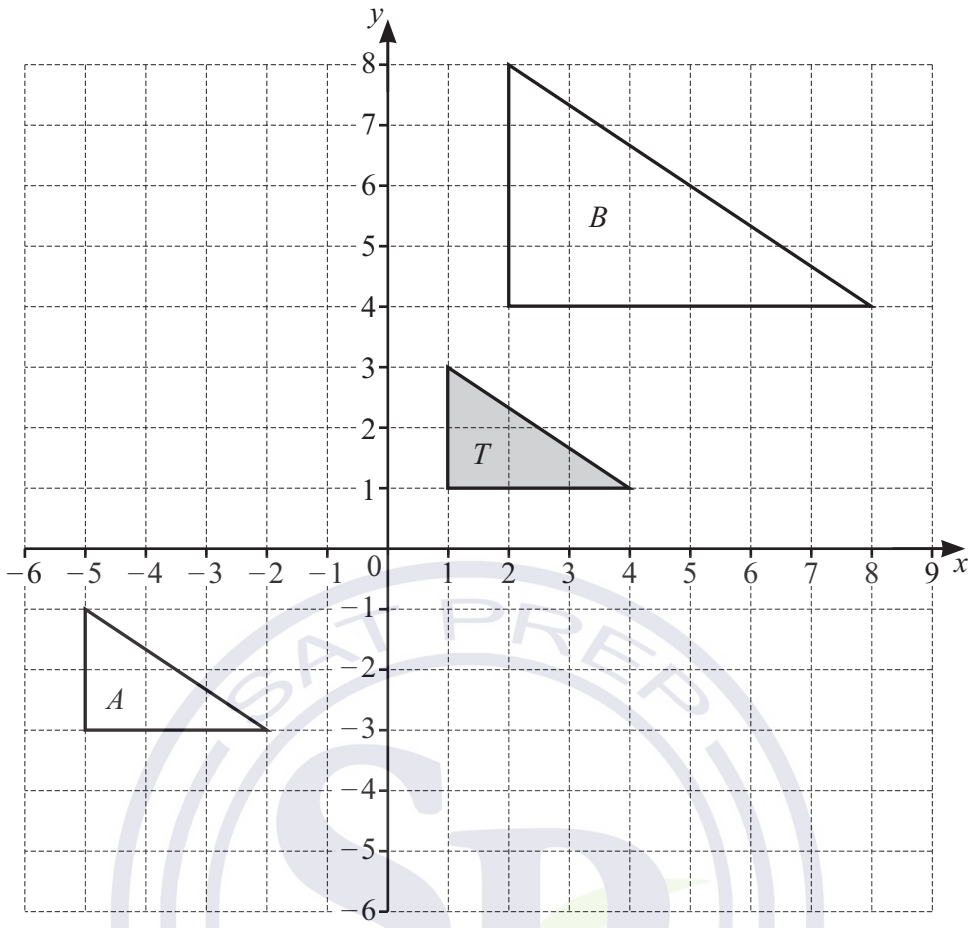
..... [1]

(b) Find the lowest common multiple (LCM) of A and B.

..... [2]

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23



(a) On the grid, draw the image of triangle T after a rotation, 90° clockwise, centre (0, 0). [2]

(b) Describe fully the **single** transformation that maps triangle T onto triangle A.

.....

..... [2]

(c) Describe fully the **single** transformation that maps triangle T onto triangle B.

.....

..... [3]

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24 Work out $1\frac{1}{3} + 1\frac{3}{4}$.

Give your answer as a mixed number in its simplest form.

..... [3]

25 **(a)** Write 32 500 in standard form.

..... [1]

(b) Write 5.6×10^{-3} as an ordinary number.

..... [1]

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Question 26 is printed on the next page.

26 Solve the simultaneous equations.

$$2x + 5y = 5$$
$$3x + 4y = 11$$

$x =$ .....

$y =$ ..... [4]

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MATHEMATICS **0580/12**

Paper 1 Non-calculator (Core) **May/June 2025**

1 hour 30 minutes

You must answer on the question paper.

You will need: Geometrical instruments

INSTRUCTIONS

- Answer **all** questions.
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INFORMATION

- The total mark for this paper is 80.
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List of formulas

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Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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Calculators must **not** be used in this paper.

1 Write the number sixteen thousand and sixty-two in figures.

..... [1]

2 Write three-quarters as

(a) a decimal

..... [1]

(b) a percentage.

.....% [1]

3 Write down the value of

(a) $\sqrt{36}$

..... [1]

(b) 10^3.

..... [1]

4 The diagram shows a line AB and a point P.



(a) Measure the length of line AB in millimetres.

..... mm [1]

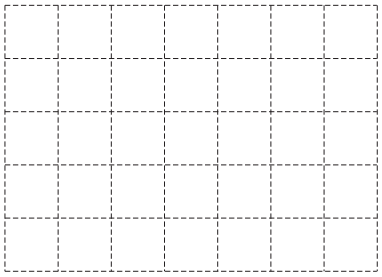
(b) Draw a line through point P that is perpendicular to line AB. [1]

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5 Complete this statement.

10 weeks is ..... days. [1]

6



Shade $\frac{2}{5}$ of the rectangle. [1]

7 **(a)** Find the value of the reciprocal of $\frac{1}{3}$.

..... [1]

(b) Write 2^{-3} as a fraction.

..... [1]

8 Put **one** pair of brackets into each calculation to make it correct.

(a) $-12+4\div2-3=-16$ [1]

(b) $-3-4+5-7=-5$ [1]

9 Write these fractions in order, starting with the smallest.

$\frac{5}{8}$ $\frac{11}{12}$ $\frac{2}{3}$ $\frac{3}{4}$ $\frac{13}{24}$

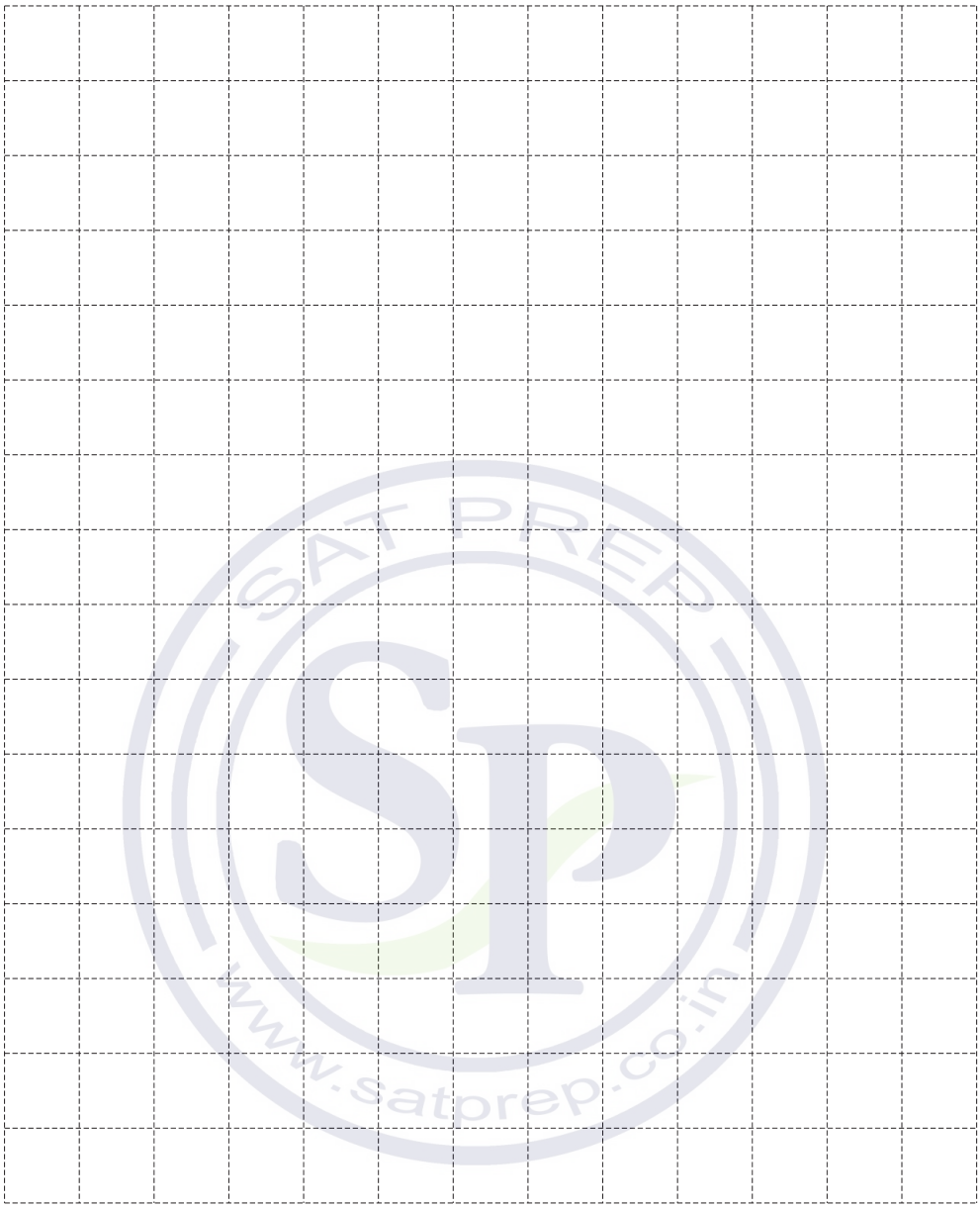
..... < ..... < ..... < ..... < ..... [2]

smallest

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10 A cuboid has length 5 cm, width 2 cm and height 3 cm.

(a) Draw a net of the cuboid on the 1 cm^2 grid.



[3]

(b) Work out the volume of the cuboid.
Give the units of your answer.

.... [2]

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11

0	2	2	3	4	7

For these six numbers

(a) write down the mode

..... [1]

(b) work out the range

..... [1]

.

(c) work out the median

..... [1]

(d) work out the mean.

..... [2]

12 Tim has a method for multiplying a number by 99.
He shows his method for 53×99.

$$\begin{aligned} & 53 \times 99 \\ &= 53 \times 100 - 53 \\ &= 5300 - 53 \\ &= 5247 \end{aligned}$$

Work out 85×99 using Tim's method.

..... [2]

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13 **(a)** A quadrilateral has the geometrical properties

- 4 equal length sides
- 2 lines of symmetry
- rotational symmetry of order 2.

Write down the mathematical name of this quadrilateral.

..... [1]

(b) Write down two geometrical properties of a rectangle.

1. .....

2. .....

[2]

(c)



The parallel sides of a trapezium have lengths 6 cm and 4 cm.
The area of the trapezium is 15 cm^2.

On the 1 cm^2 grid, draw a trapezium with these lengths and area.

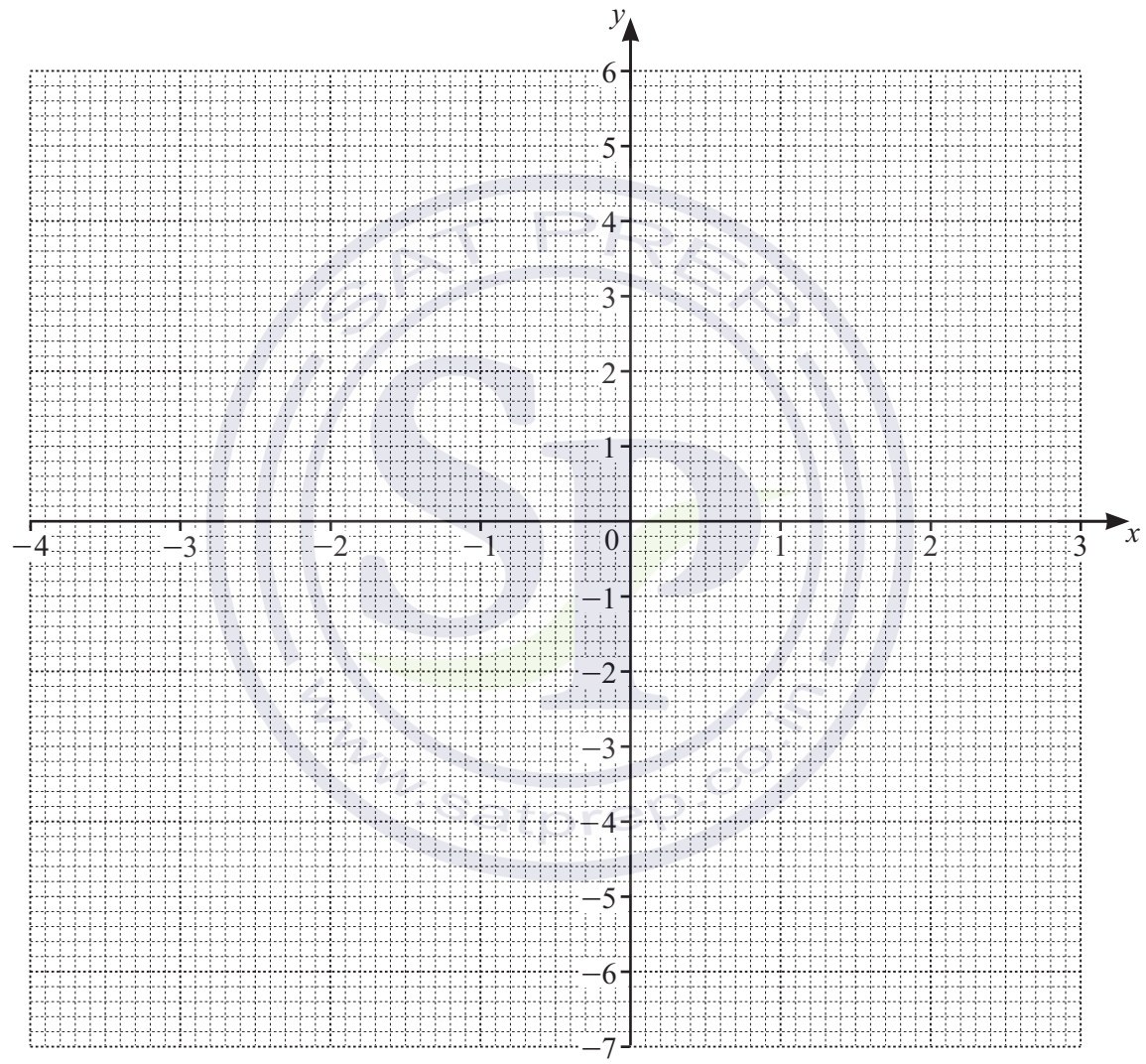
[3]

14 **(a)** Complete the table of values for $y = (x+3)(x-2)$.

x	-4	-3	-2	-1	0	1	2	3
y	6		-4			-4		

[3]

(b) On the grid, draw the graph of $y = (x+3)(x-2)$ for $-4 \leqslant x \leqslant 3$.



[4]

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(c) Write down the coordinates of the lowest point of the graph.

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

(d) Write down the equation of the line of symmetry of the graph.

..... [1]

(e) Use your graph to solve the equation $(x+3)(x-2) = 3$.

$x =$ ..... or $x =$ ..... [2]

15 Beth thinks of a positive number, n.
She squares n then subtracts 55.
The answer is 9.

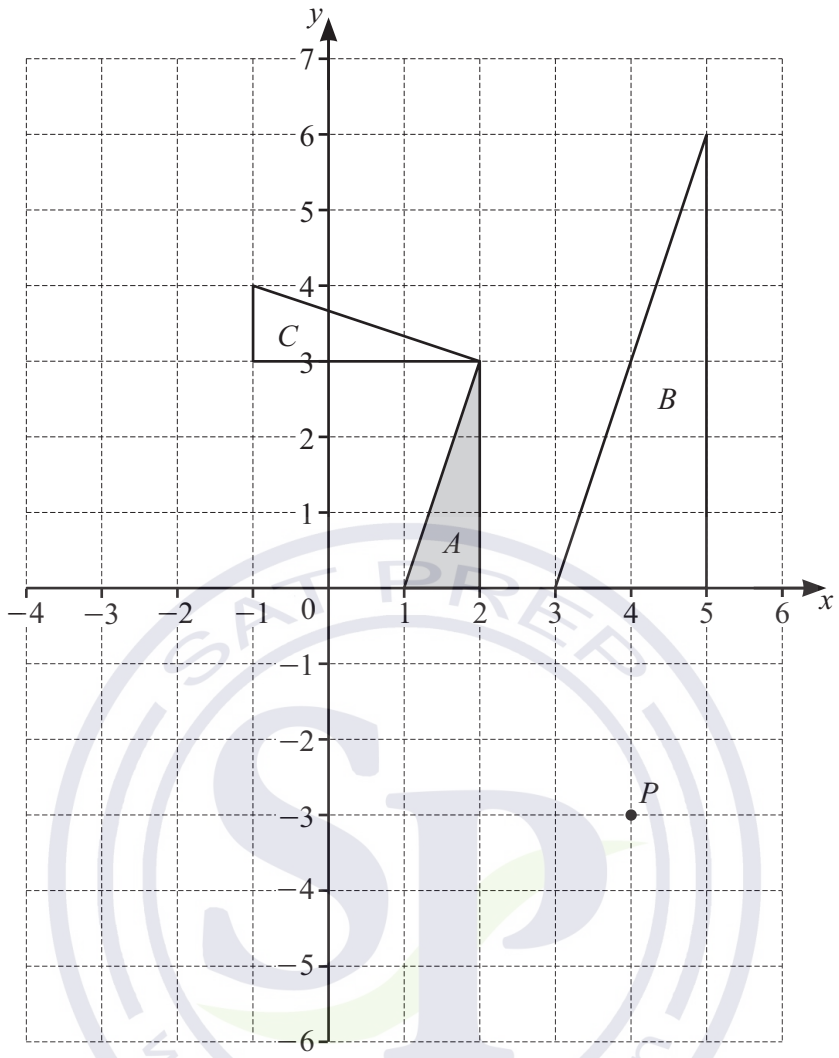
Work out the value of n.

$n =$ ..... [2]

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16 The diagram shows a point P and three triangles, A, B and C, on a 1 cm^2 grid.



(a) Find the area of triangle B.

..... cm^2 [1]

(b) (i) Write down the coordinates of point P.

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

(ii) Work out the coordinates of point P after a translation by the vector $\begin{pmatrix} -20 \\ 12 \end{pmatrix}$.

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

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(c) Draw the image of triangle A after a reflection in the line $y = -1$. [2]

(d) Describe fully the **single** transformation that maps

(i) triangle A onto triangle B

.....

..... [3]

(ii) triangle A onto triangle C.

.....

..... [3]

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

$$\frac{17.8 + 10.3}{5.5}.$$

..... [2]

18 Find the highest common factor (HCF) of 66 and 110.

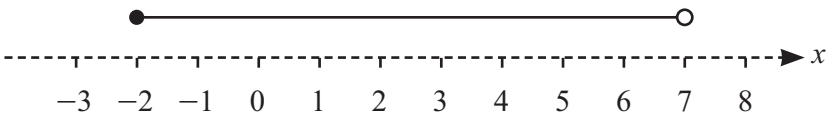
..... [2]

19 **(a)** P is a prime number.

Write down the value of P that satisfies the inequality $13 < P < 19$.

$P =$ ..... [1]

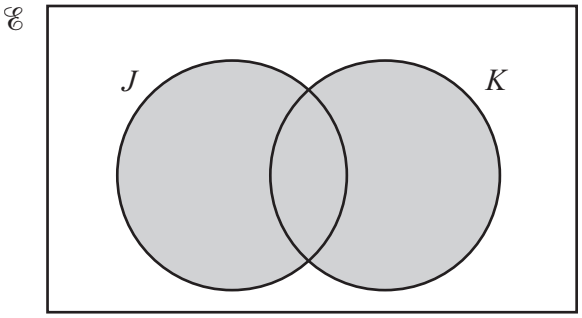
(b) Write down the inequality represented on the number line.



..... [2]

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20



Use set notation to describe the shaded region.

..... [1]

21 Work out $2\frac{7}{9} \times 1\frac{1}{5}$.

Give your answer as a mixed number in its simplest form.

..... [3]

22 The mass, m kg, of a stone is 3.2 kg, correct to the nearest 100 g.

Complete this statement about the value of m.

..... $\leqslant m <$ ..... [2]

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23 **(a)** Factorise.

$$9x - 6xy$$

..... [2]

(b) Expand and simplify.

$$(2x + 3)(x - 4)$$

..... [2]

24 Solve the simultaneous equations.

$$5x + 2y = 3$$
$$3x + 4y = 27$$

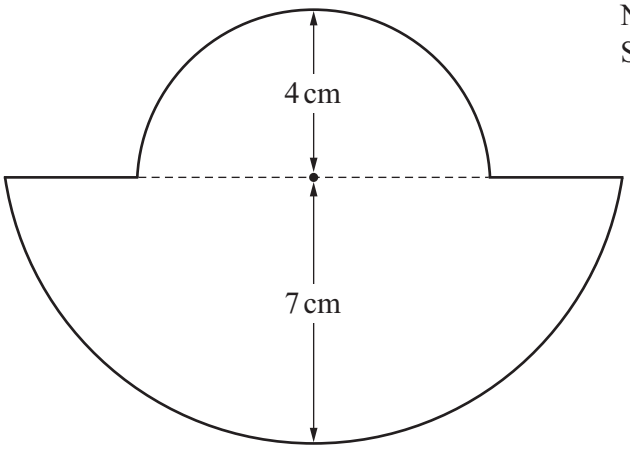
$x =$ .....

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

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25 The diagram shows a shape made from two different semicircles, with the same centre.



NOT TO SCALE

The radius of the large semicircle is 7 cm.
The radius of the small semicircle is 4 cm.

Work out the perimeter of the shape.
Give your answer in terms of π.

..... cm [3]

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MATHEMATICS **0580/13**

Paper 1 Non-calculator (Core) **May/June 2025**

1 hour 30 minutes

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.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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[Turn over

List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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Calculators must **not** be used in this paper.

1 **(a)** Write the number 70 000 000 in words.

..... [1]

(b) **(i)** Write down the value of the 5 in the number 0.25 .
Give your answer as a fraction.

..... [1]

(ii) Find the value of the reciprocal of 0.25 .

..... [2]

2 **(a)** Write down the mathematical name for an angle between 90° and 180°.

..... [1]

(b) Write down the mathematical term that describes two polygons that are the same shape and size.

..... [1]

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3 **(a)** Write down $\sqrt{169}$.

..... [1]

(b) Work out the value of 2^4.

..... [1]

(c) Work out the value of 10^{-2}.

..... [1]

(d) Work out $-18 \div -4$.

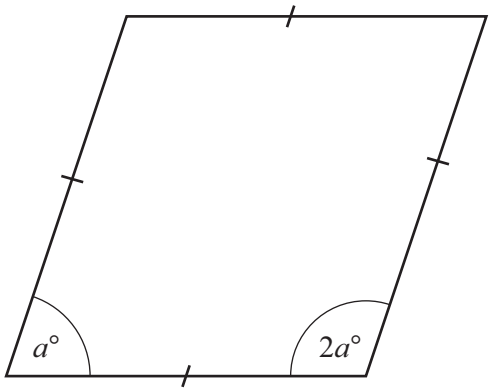
..... [1]

(e) Work out 1.6×0.02 .

..... [1]

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4 The diagram shows a quadrilateral with sides of equal length.



NOT TO SCALE

(a) Write down the mathematical name for this quadrilateral.

..... [1]

(b) Work out the value of a.

$a =$ ..... [2]

5 Find the next term in each sequence.

(a) 1, 5, 10, 16, 23, …

..... [1]

(b) 1, 2, 4, 8, 16, …

..... [1]

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6 These are the lengths of time, in minutes, of seven phone calls.

10 22 5 7 35 8 75

(a) (i) Find the median.

..... min [2]

(ii) Find the range.

..... min [1]

(b) The longest phone call is 75 minutes.

Write 75 minutes in hours.

..... h [1]

7 70 students study one of French, Spanish and German.

The ratio number who study French : number who study Spanish = 3 : 7.
15 students study French.

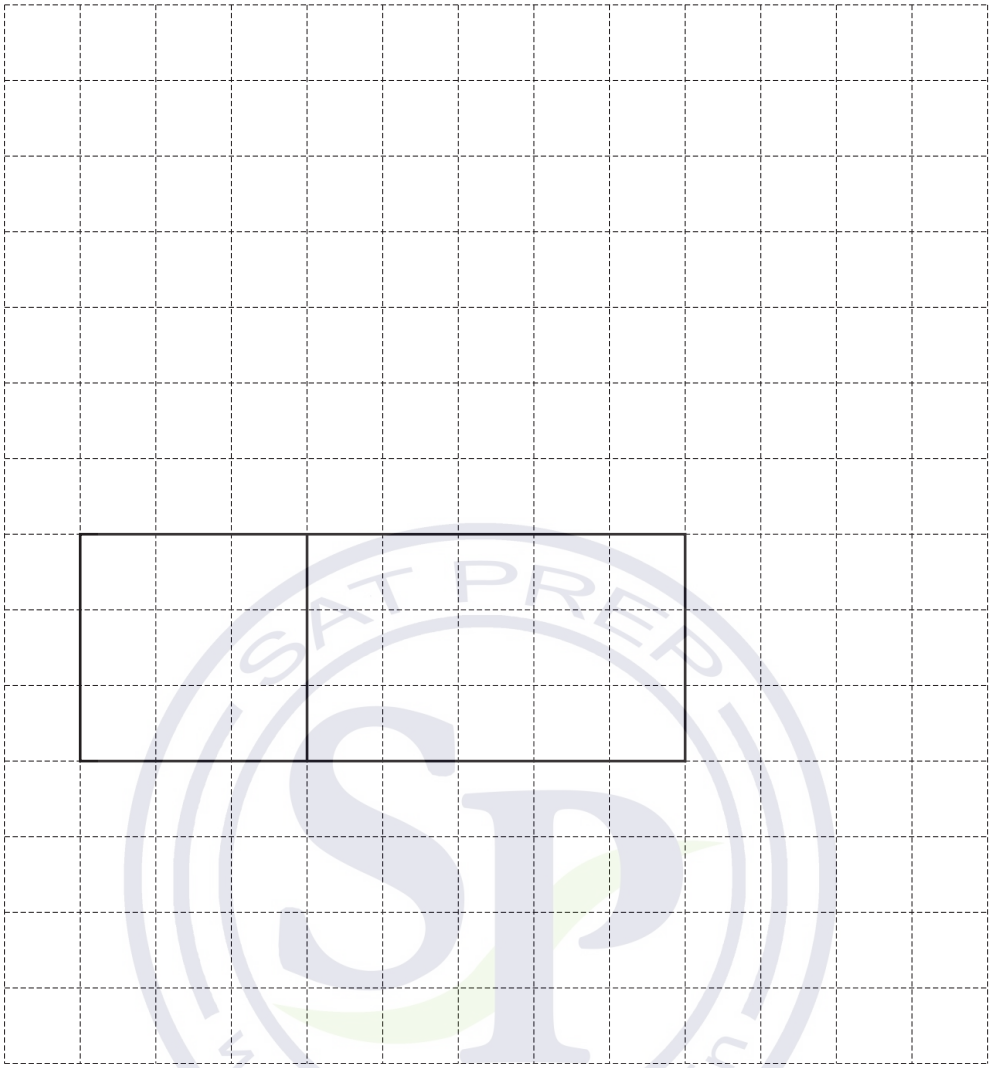
Find the number of students who study German.

..... [3]

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8 The diagram shows two faces of a net of a cuboid on a 1 cm^2 grid.



(a) Complete the statement.

The dimensions of the cuboid are ..... cm by ..... cm by ..... cm. [1]

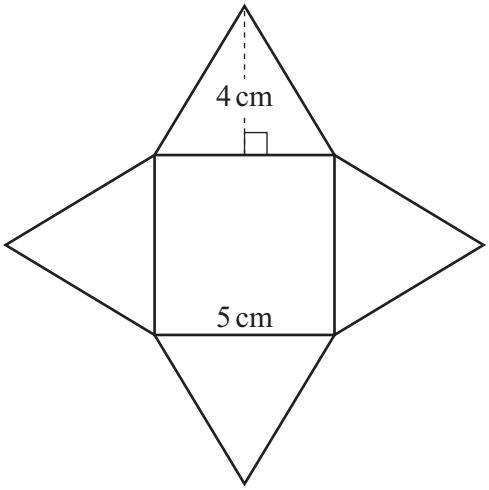
(b) On the grid, complete a net of the cuboid. [3]

(c) Work out the volume of the cuboid.

..... cm^3 [2]

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9 The diagram shows the net of a square-based pyramid.



NOT TO SCALE

The perpendicular height of each triangle is 4 cm.
The base has side length 5 cm.

(a) Calculate the surface area of the pyramid.

..... cm^2 [2]

(b) Write down the number of edges of the square-based pyramid.

..... [1]

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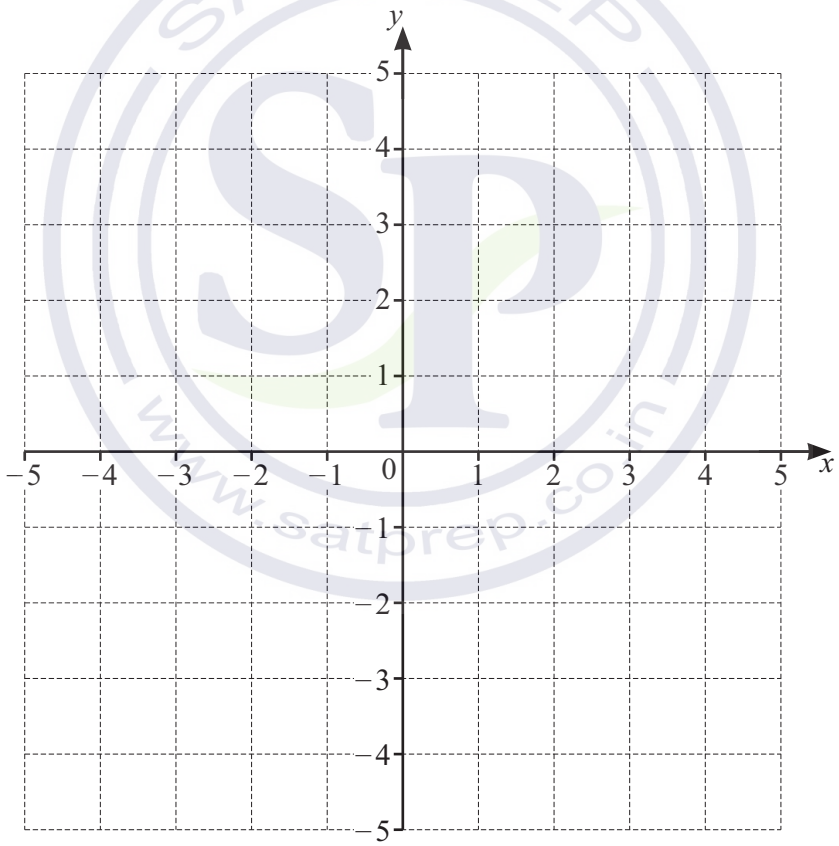
10 **(a)** Line A has equation $y = 3x + 1$.
Line B has equation $y = 3x - 1$.

Draw a ring around the description that is correct.

Line A intersects line B	Line A has a steeper gradient than line B	Line A is perpendicular to line B
Line A is parallel to line B	Line A and Line B intersect the y-axis at the same point	

[1]

(b)

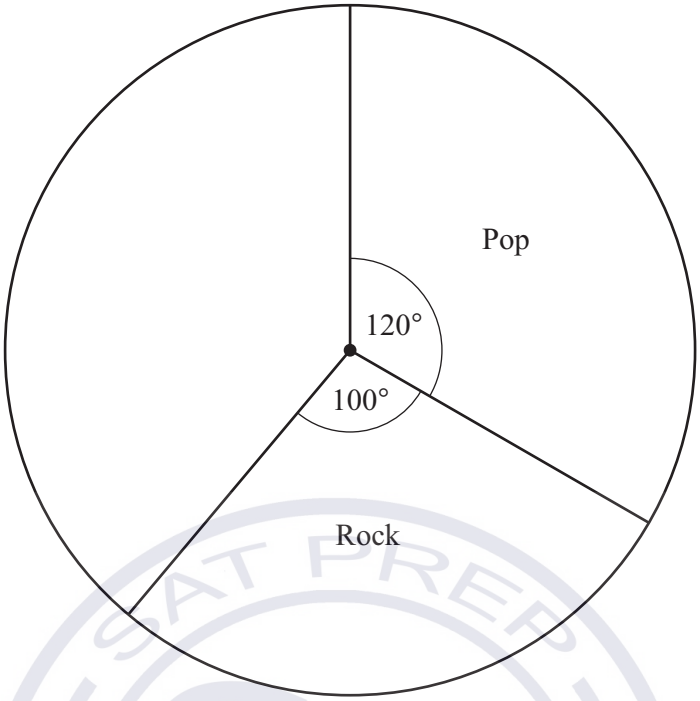


On the grid, draw the graph of $y = 2x - 1$.

[2]

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11 Jo asks 90 people whether they prefer pop, rock, classical, jazz or folk music.
The pie chart shows some of the results.



(a) Work out the number of people who prefer pop.

..... [2]

(b) The sector angle for classical is 80°.

Draw this sector on the pie chart. [1]

(c) 9 people prefer jazz and the rest prefer folk.

(i) Work out the size of the sector angle for jazz.

..... [2]

(ii) Complete the pie chart. [1]

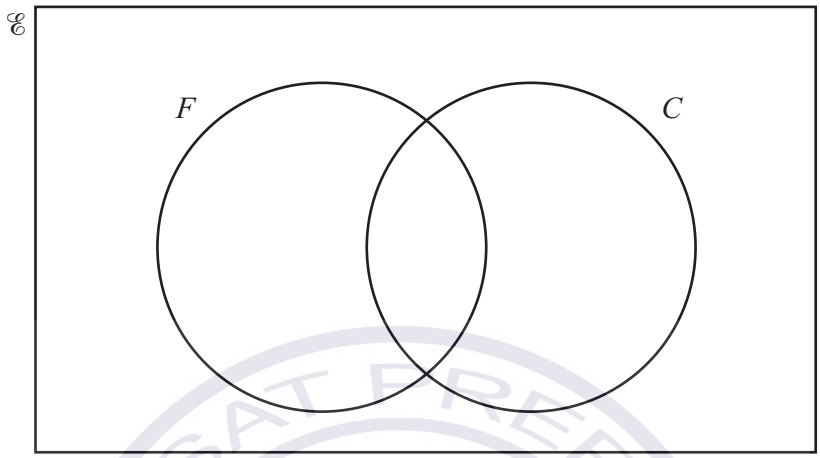
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12 A music group has 30 members.

7 members play a flute (F) and play a clarinet (C).
12 members play a flute.
1 member does not play a flute and does not play a clarinet.

(a) Use this information to complete the Venn diagram.



[2]

(b) Find n(C).

..... [1]

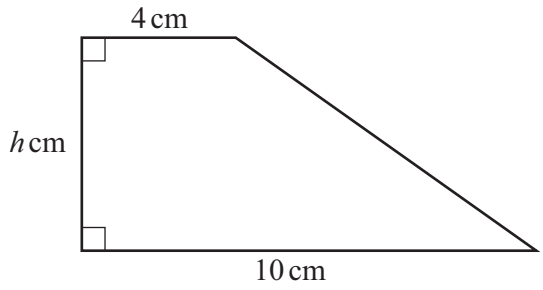
13 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

$$\frac{62.5}{9.7 \times 0.52}.$$

..... [2]

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14



NOT TO SCALE

The diagram shows a trapezium.
The area of the trapezium is $42\,\text{cm}^2$.

Work out the value of h.

$h =$ ..... [2]

15 **(a)** Write down the inequality represented on the number line.



..... [2]

(b) Write down the smallest integer that satisfies the inequality $d > -3\frac{1}{4}$.

..... [1]

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16 On Monday the cost of a concert ticket is $\$x$.
On Tuesday the cost of a ticket for the same concert is 20% more than the cost on Monday.

Jack buys 4 tickets on Monday and 5 tickets on Tuesday.
Jack pays $270 in total.

Work out the value of x.

$x =$ ..... [3]

17 Simplify.

(a) $y^4 \times y^6$

..... [1]

(b) $\dfrac{p^5}{p^8}$

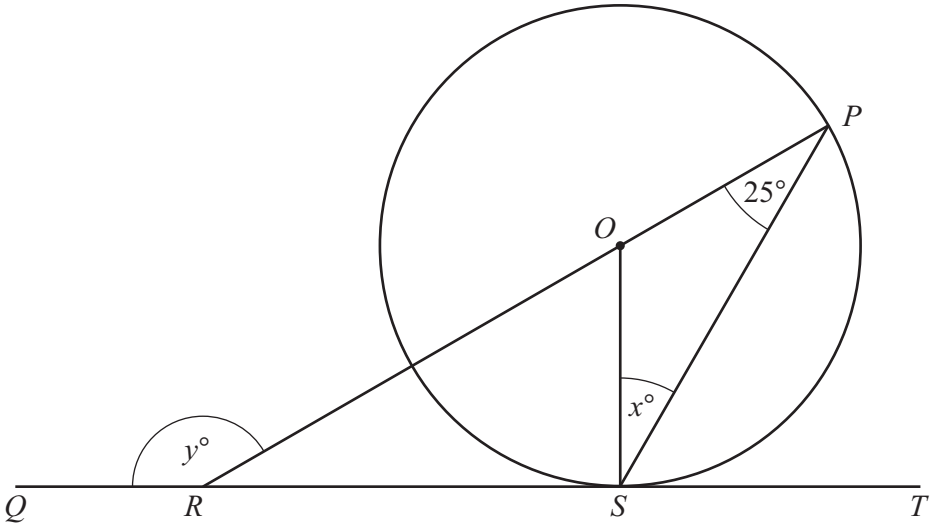
..... [1]

(c) $\left(w^4\right)^3$

..... [1]

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18



NOT TO SCALE

The diagram shows a circle, centre O.
P and S are points on the circle.
POR is a straight line.
$QRST$ is a tangent to the circle at S.

(a) Find the value of x.
Give a geometrical reason for your answer.

$x =$ ..... because ..... [2]

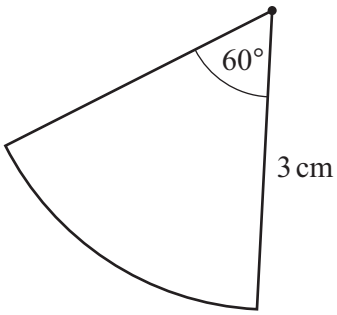
(b) Find the value of y.

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

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19



NOT TO SCALE

The diagram shows a sector of a circle with radius 3 cm and sector angle 60°.

Calculate the area of the sector.
Give your answer in terms of π in its simplest form.

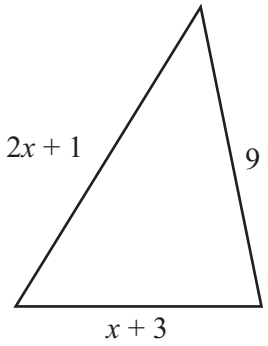
..... cm^2 [2]

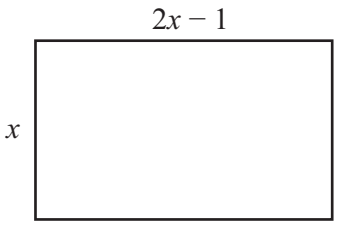
20 Find the highest common factor (HCF) of 36 and 54.

..... [2]

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21 In this question, all lengths are in centimetres.





NOT TO SCALE

The perimeter of the triangle is equal to the perimeter of the rectangle.

Form an equation and solve it to find the value of x.

$x =$ ..... [4]

22 $g = \frac{h}{3} - 8$

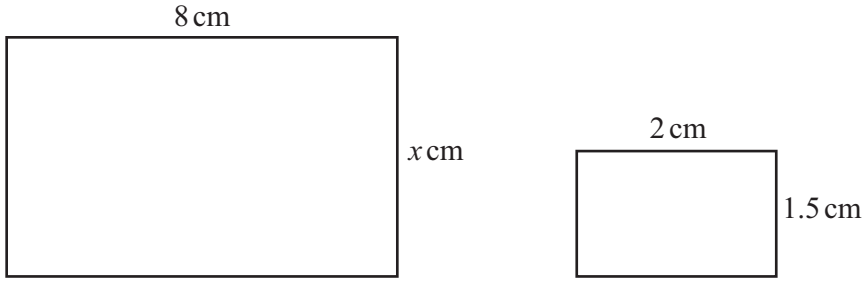
Rearrange the formula to make h the subject.

$h =$ ..... [2]

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23



NOT TO SCALE

Rectangle A Rectangle B

Rectangle A is mathematically similar to rectangle B.

Work out the value of x.

$x =$ ..... [2]

24 Work out $3\frac{1}{2} - 1\frac{4}{7}$.

Give your answer as a mixed number in its simplest form.

..... [3]

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25 Solve the simultaneous equations.

$$8x + 5y = 4$$
$$2x - y = 10$$

$x =$ .....

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

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MATHEMATICS **0580/12**

Paper 1 Non-calculator (Core) **February/March 2025**

1 hour 30 minutes

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.
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- Do **not** write on any bar codes.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
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Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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1 Write the number twenty thousand in figures.

..... [1]

2 Write 0.07

(a) as a percentage

..... % [1]

(b) as a fraction

..... [1]

(c) in standard form.

..... [1]

3 Write down all the factors of 18.

..... [2]

4 Find the value of

(a) 10^3

..... [1]

(b) $\sqrt[3]{27}$

..... [1]

(c) 7^0.

..... [1]

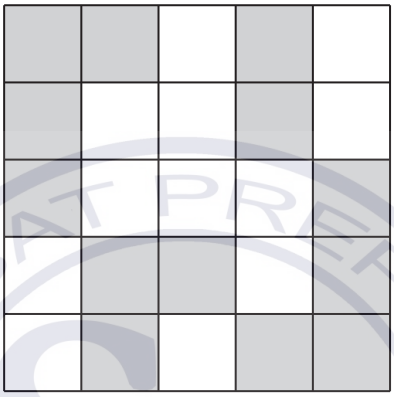
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5 **(a)** On the diagram, draw all the lines of symmetry.



[2]

(b) Shade one square so that the diagram has rotational symmetry of order 2.



[1]

6 Find the value of the reciprocal of 0.25 .

..... [2]

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7 Work out $-6\times-3+7\times2$.

..... [2]

8 Write these numbers in order, starting with the smallest.

34% π $\frac{1}{3}$ 3 $\frac{3}{10}$

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

smallest

9 A film starts at 19 35.
The film lasts for 70 minutes.

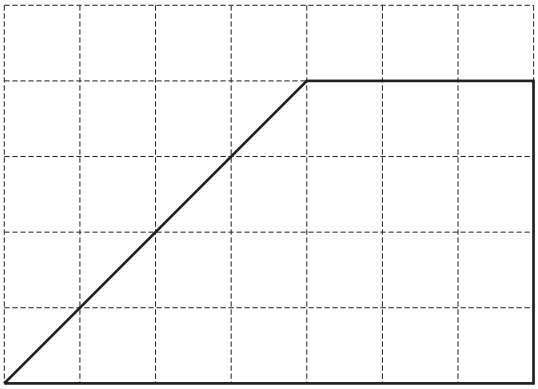
Work out the time the film finishes.

..... [1]

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10 A shape is drawn on a 1 cm^2 grid.



(a) Find the area of the shape.

..... cm^2 [1]

(b) On the grid, shade 50% of the shape. [1]

11

$$19.5 \times 20.4 = 397.8$$

Work out.

(a) 1.95×2.04

..... [1]

(b) $3978 \div 204$

..... [1]

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12 **(a)** Kat has a method for finding the difference between two square numbers, $a^2 - b^2$.
Her method is

(the sum of a and b) × (the difference between a and b) .

She shows her method for $17^2 - 13^2$.

$17^2 - 13^2$

$= (17 + 13) \times (17 - 13)$

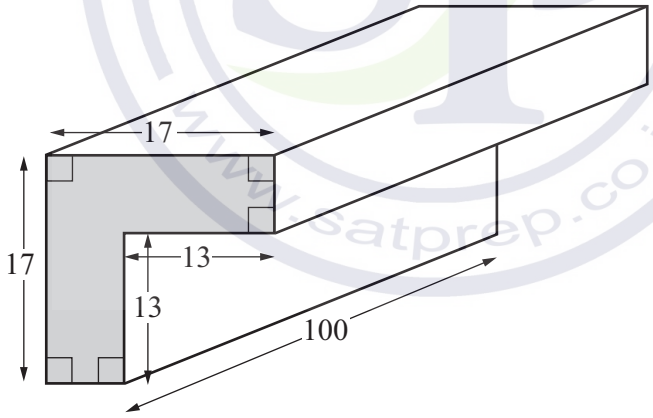
$= 30 \times 4$

$= 120$

Work out $29^2 - 21^2$ using Kat's method.

..... [2]

(b) In this part, all lengths are in centimetres.



NOT TO SCALE

The diagram shows a prism.

Work out the volume of the prism.

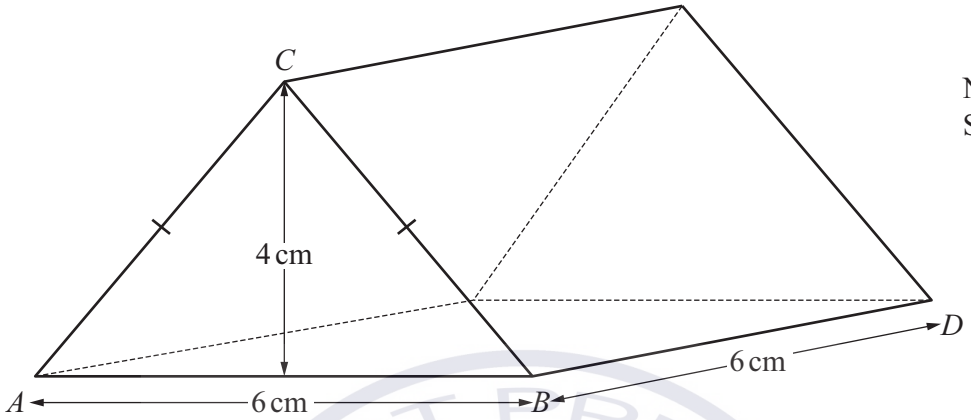
..... cm^3 [2]

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13 Convert 8 litres into cm^3.

..... cm^3 [1]

14



NOT TO SCALE

The diagram shows a triangular prism.
ABC is an isosceles triangle with $AC = BC$.
The perpendicular height of triangle ABC is 4 cm.
$AB = 6$ cm and $BD = 6$ cm.

(a) Complete this statement.

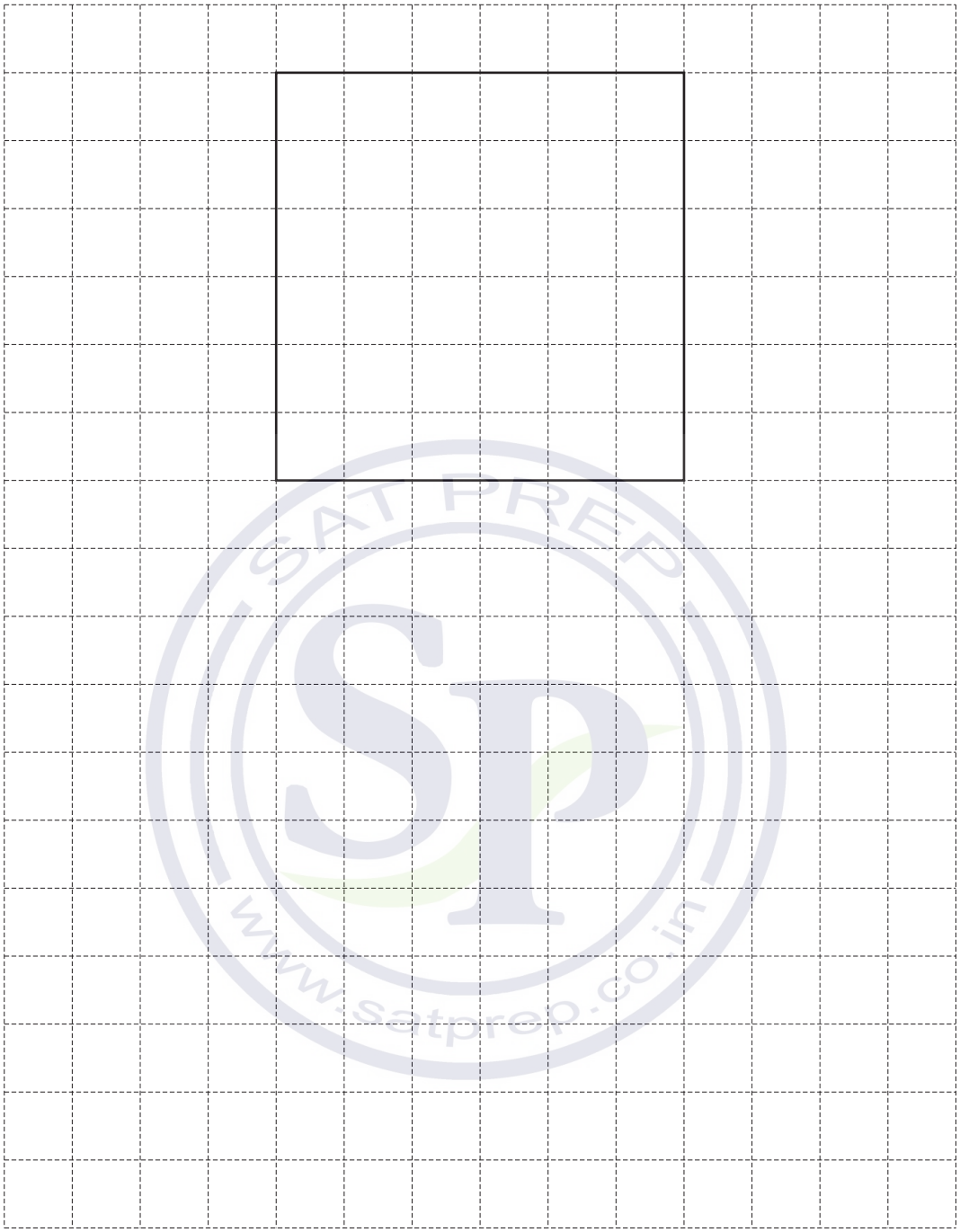
The prism has ..... faces and ..... edges. [2]

(b) Show that the length of BC is 5 cm.

[2]

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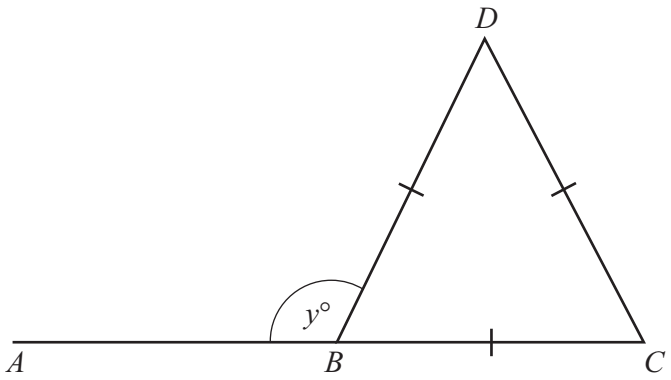
(c) Complete the net of the prism on the 1 cm^2 grid.
The base has been drawn for you.



[3]

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NOT TO SCALE

The diagram shows a triangle *BCD* and a straight line *ABC*.
DB=DC=BC.

(a) Write down the mathematical name for triangle *BCD*.

..... [1]

(b) Work out the value of *y*.
Give two geometrical reasons for your answer.

y = ... because

1. .....

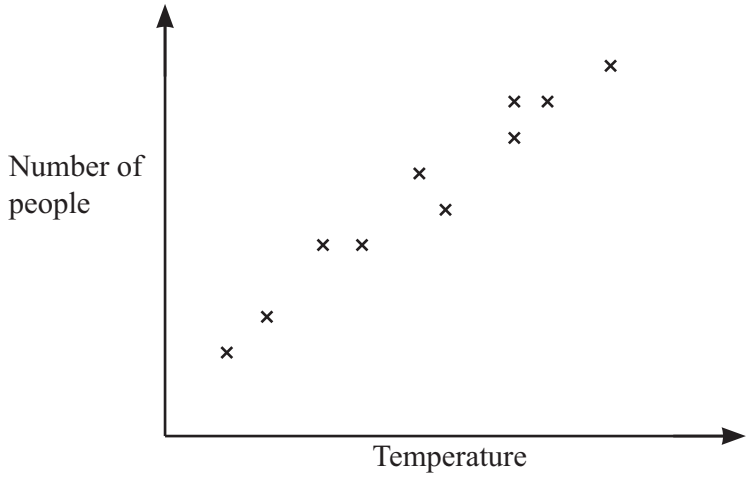
2. .....

[4]

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16 Jill records the temperature and the number of people on a beach for each of ten days.
The results are shown in the scatter diagram.



(a) What type of correlation is shown in the scatter diagram?

..... [1]

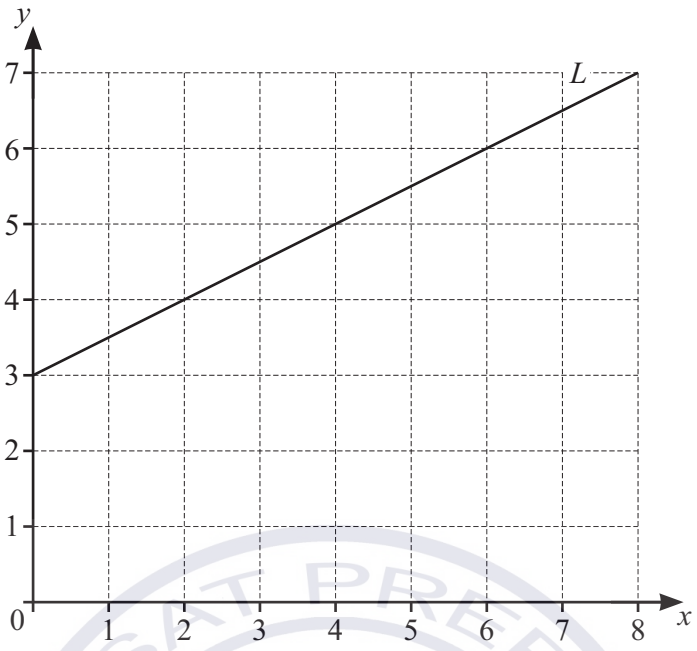
(b) Describe the relationship between the temperature and the number of people on the beach.

.....

..... [1]

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17 Line L is shown on the grid.



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

$y =$ ..... [2]

(b) Line L crosses the x-axis at P.

Find the coordinates of P.

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

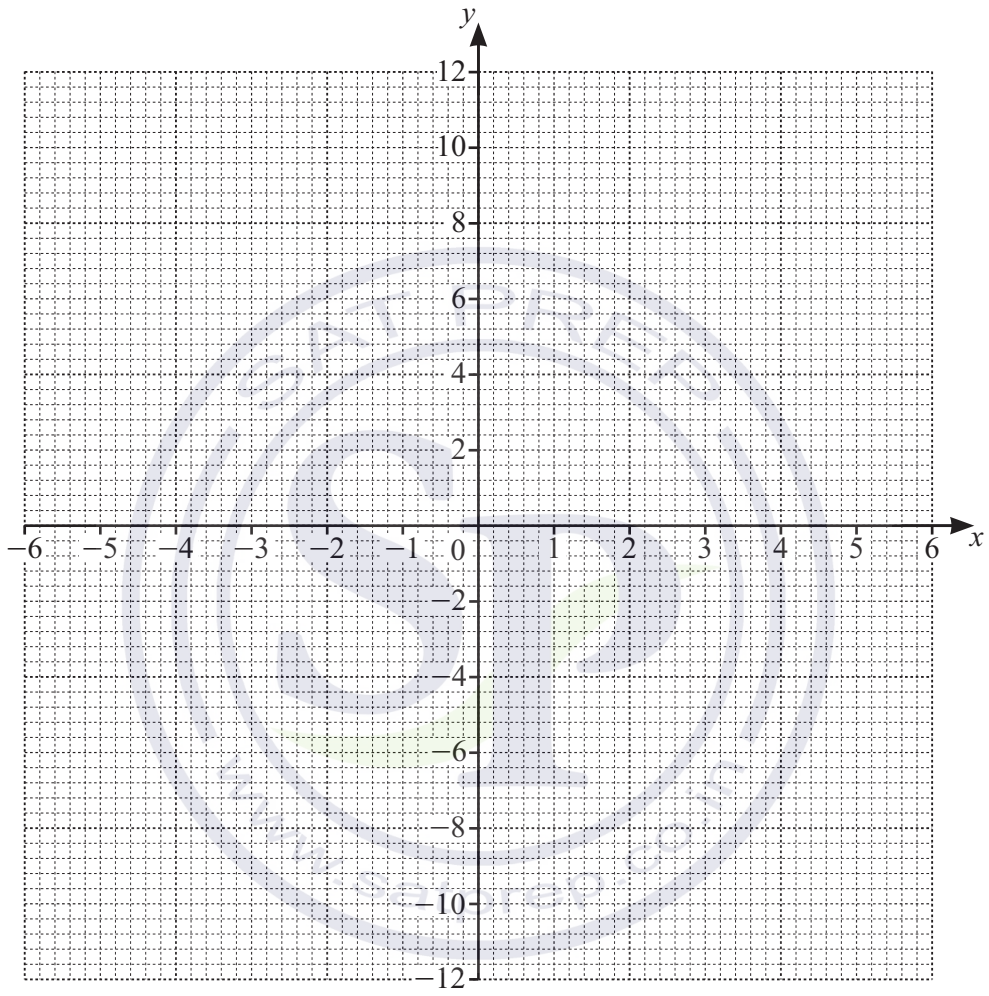
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18 **(a)** Complete the table of values for $y = \frac{12}{x}$.

x	-6	-4	-3	-2	-1		1	2	3	4	6
y		-3		-6				6		3	

[3]

(b) On the grid, draw the graph of $y = \frac{12}{x}$ for $-6 \leqslant x \leqslant -1$ and $1 \leqslant x \leqslant 6$.



[4]

(c) On the grid, draw the line $y = -9$. [1]

(d) Use your graph to solve $\frac{12}{x} = -9$.

$x =$ ..... [1]

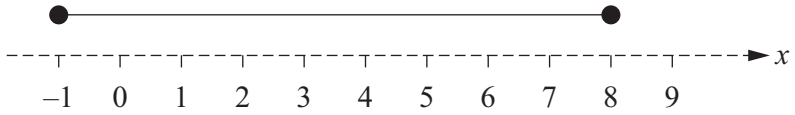
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19 **(a)** n is an **odd** number.

Write down the values of n that satisfy $7 < n \leqslant 15$.

..... [2]

(b)



Pip thinks $-1 < x < 8$ is the inequality represented on the number line.

Complete the statement.

Pip's inequality is not correct because .....

..... [1]

20 The height, h metres, of a building is 635 m, correct to the nearest metre.

Complete this statement about the value of h.

..... $\leqslant h <$ ..... [2]

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21 $X = \frac{1}{3}w^2p$

(a) Find the value of X when $w = 5$ and $p = 6$.

$X =$ ..... [2]

(b) Make p the subject of the formula.

$p =$ ..... [2]

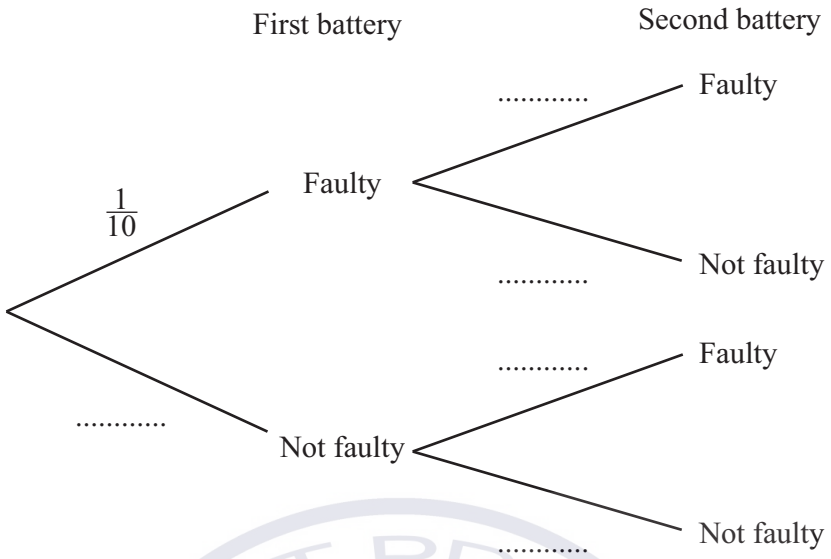
22 Work out $1\frac{7}{15} - \frac{4}{5}$.

Give your answer as a fraction in its simplest form.

..... [3]

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23 Mai buys two batteries.
The probability that a battery is faulty is $\frac{1}{10}$.



(a) Complete the tree diagram. [2]

(b) Find the probability that Mai buys two faulty batteries.

..... [2]

(c) A shop sells 3000 batteries in one month.

Work out the expected number of faulty batteries the shop sells.

..... [1]

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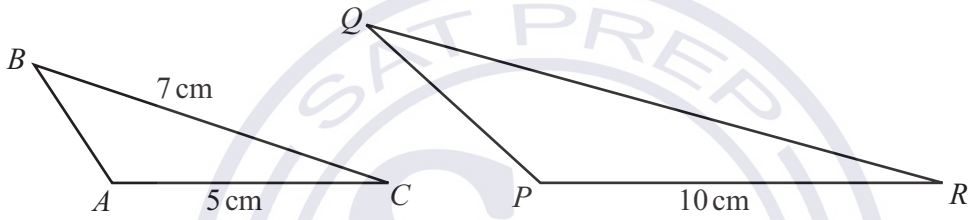
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24 A circle has radius 7 cm.
A square has side x cm.
The circumference of the circle is the same length as the perimeter of the square.

Find the value of x.
Give your answer in terms of π.

$x =$ ..... [3]

25



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Triangle ABC is mathematically similar to triangle PQR.

Show that $QR = 14$ cm.

[1]

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26 Solve the simultaneous equations.

$$4t - 3w = 11$$
$$6t + 2w = -3$$

$t =$ .....

$w =$ ..... [4]

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