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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.
- 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 [].

This document has **16** pages.

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 .

$$V = \frac{4}{3}\pi r^3$$



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

- 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]





7	27	39	49	99	112
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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]



- 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.

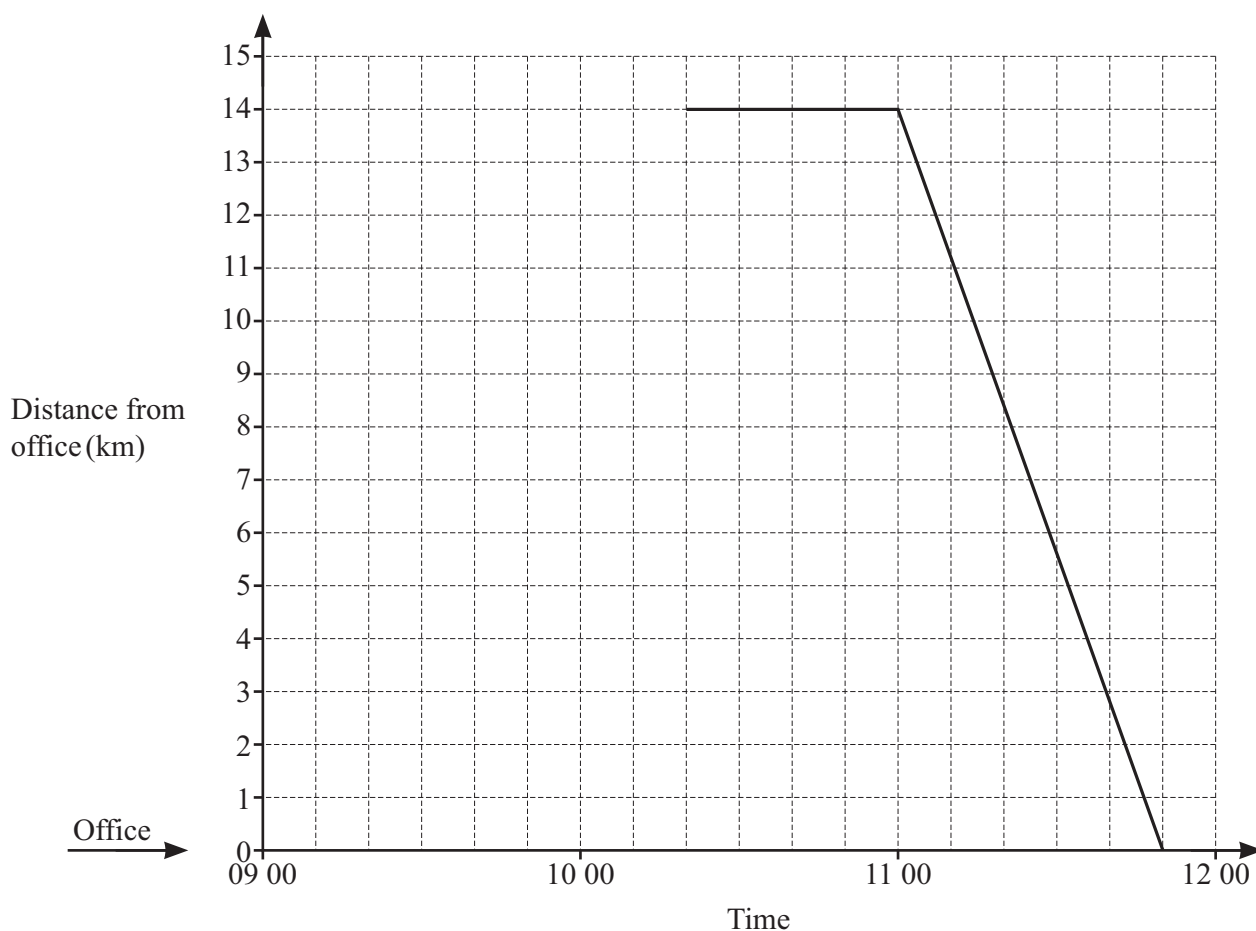
19 23 27 31

Find the n th 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]



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

..... cm³ [1]

12 Solve.

$$5x + 8 = 3x - 2$$

$x =$ [2]

13 Work out.

(a) -5×-4

..... [1]

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

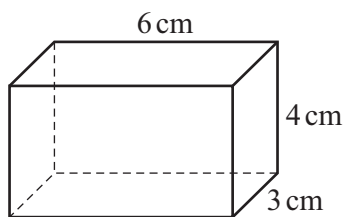
..... [1]

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

Find the value of p .

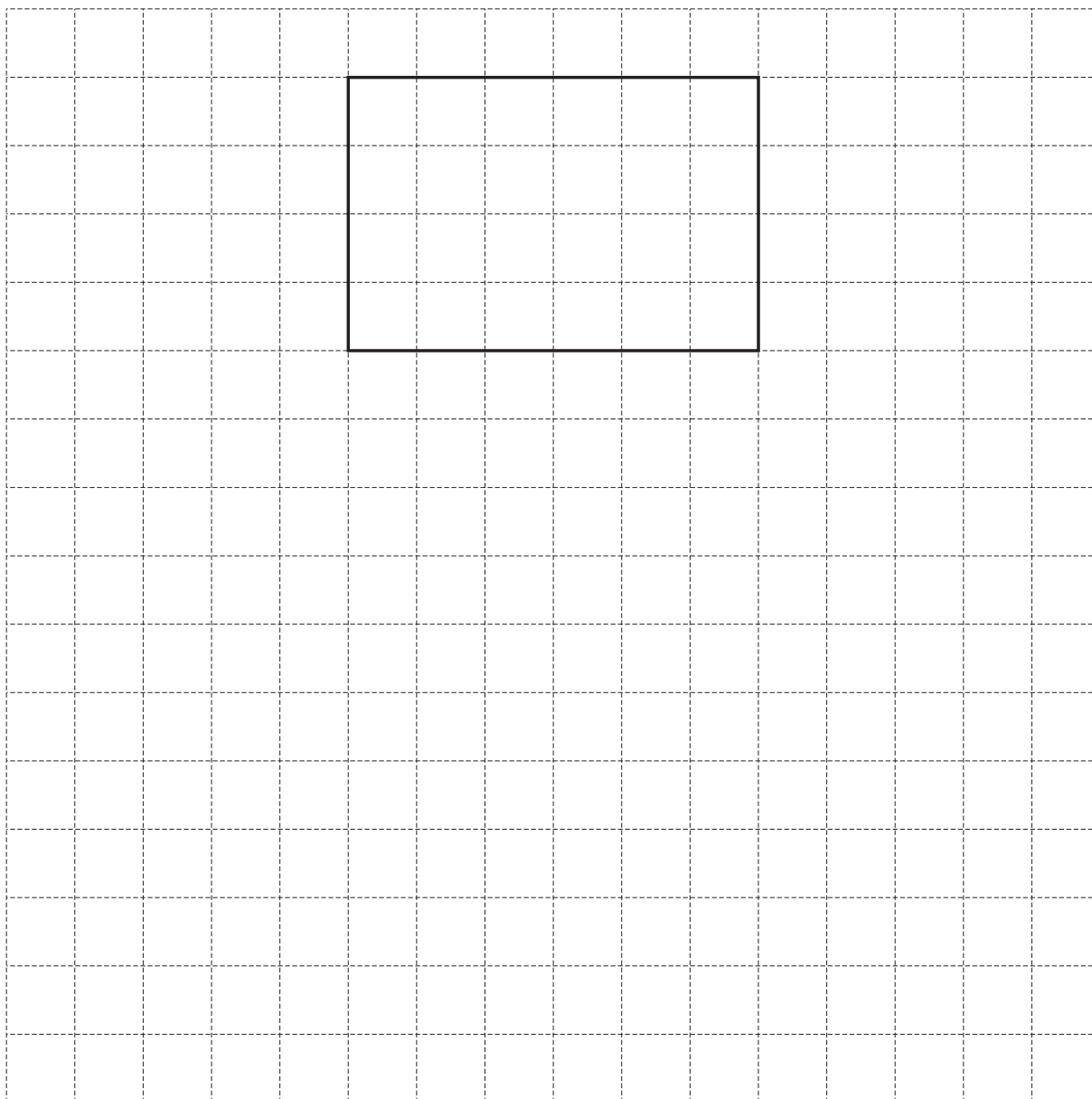
$p =$ [1]





NOT TO
SCALE

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



[3]



16 (a) Simplify.

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

..... [2]

(b) Factorise.

(i) $6x + 15y$

..... [1]

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

..... [2]

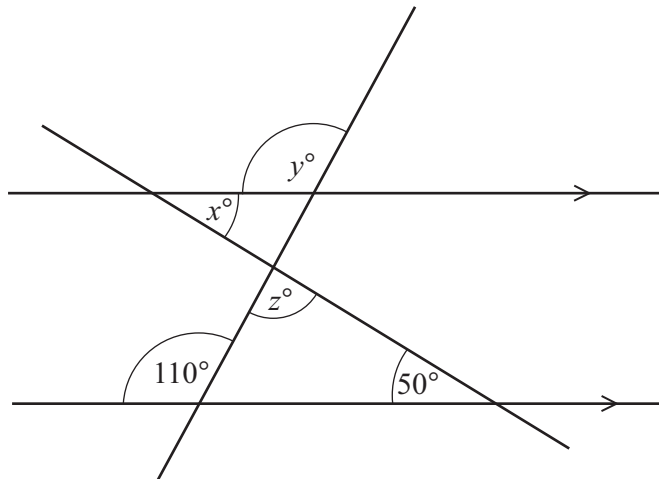
17 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

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

..... [2]



- 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.

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

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

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

- (c) Find the value of z .

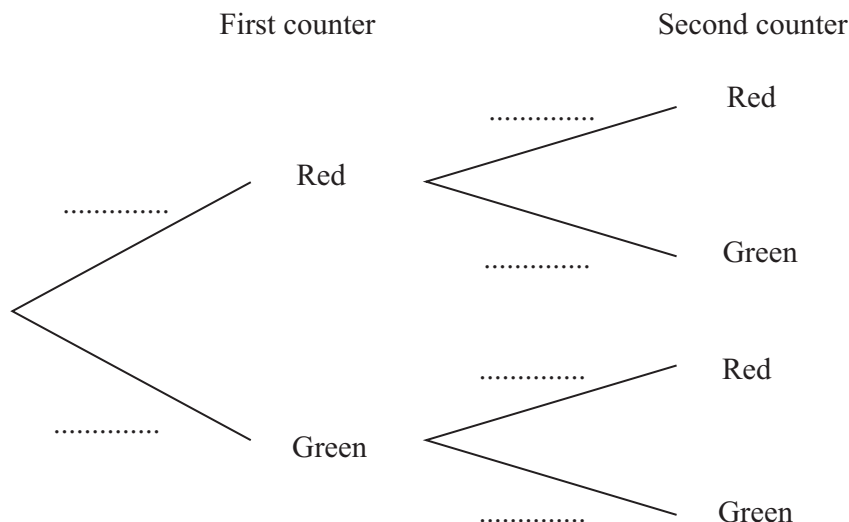
$z = \dots\dots\dots$ [2]





- 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.

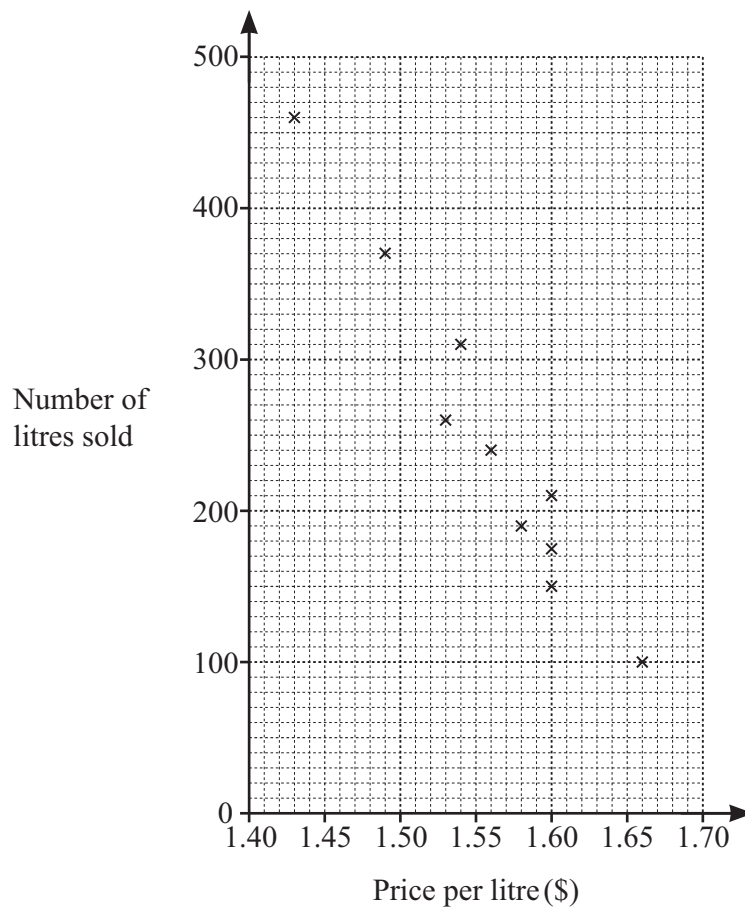
[3]

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

..... [2]



- 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]

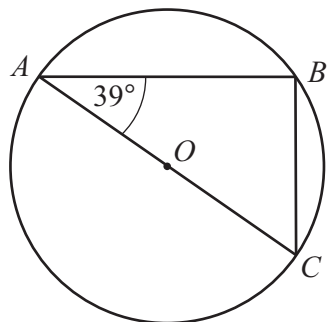
- (ii) One day the price of petrol was \$1.55 per litre.

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

..... litres [1]



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



NOT TO
SCALE

Work out angle BCA .

Angle $BCA = \dots\dots\dots$ [2]

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

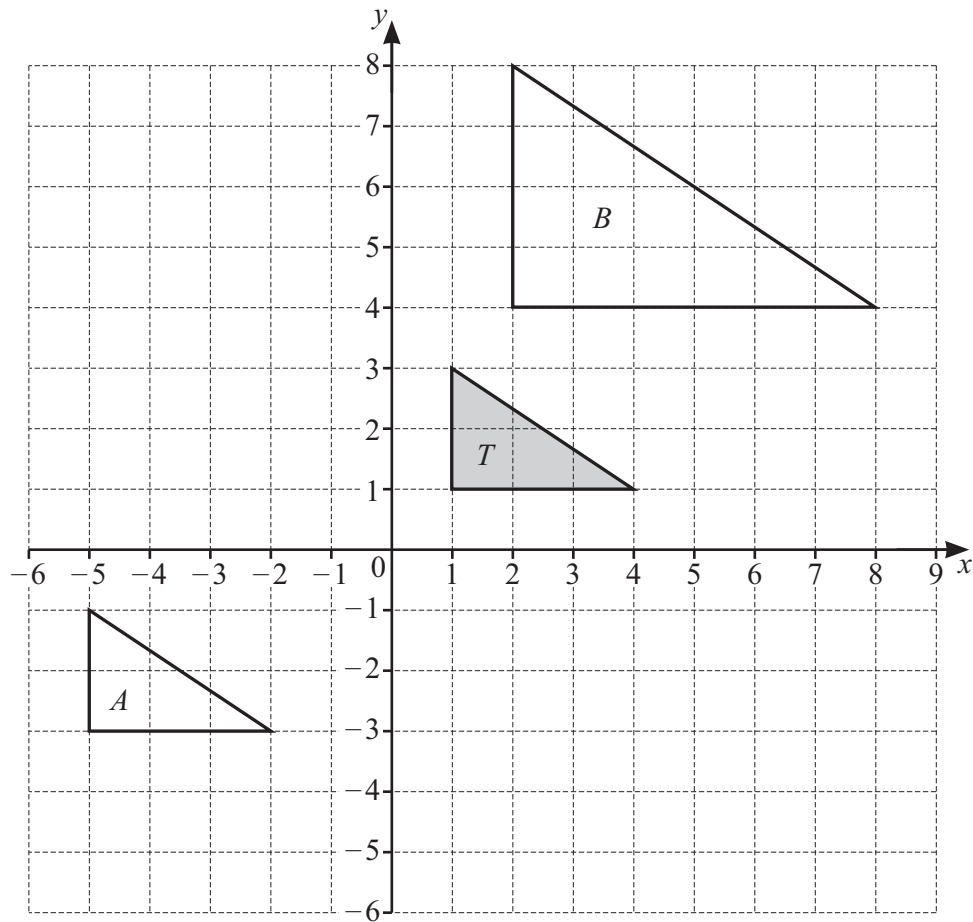
- (a) Find the highest common factor (HCF) of A and B .

$\dots\dots\dots$ [1]

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

$\dots\dots\dots$ [2]





(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]



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]

Question 26 is printed on the next page.





26 Solve the simultaneous equations.

$$2x + 5y = 5$$

$$3x + 4y = 11$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots [4]$$

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