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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.

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

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]

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]

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]

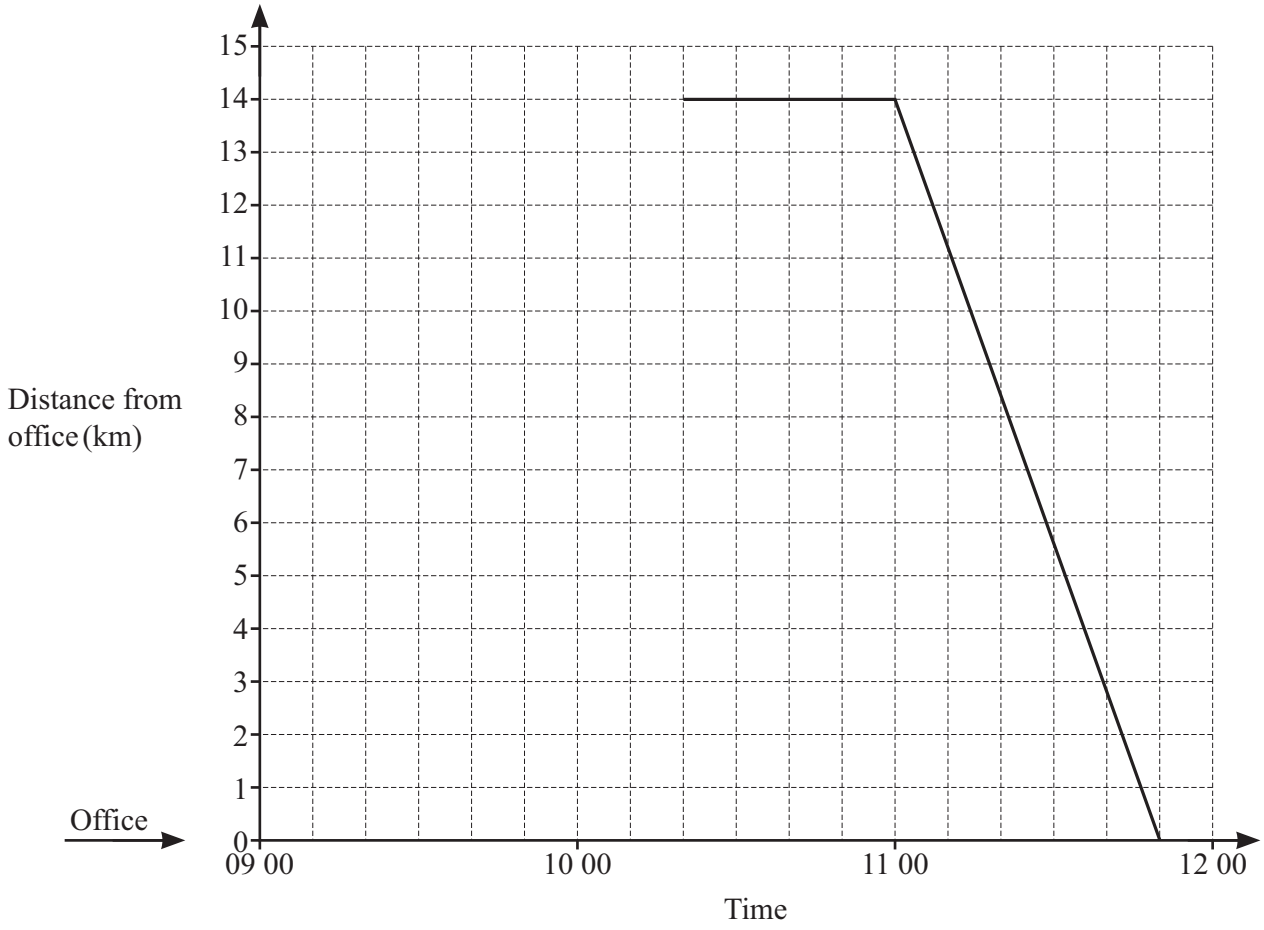
(b) These are the first four terms of another sequence.

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]

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) $-8 + (-3)$

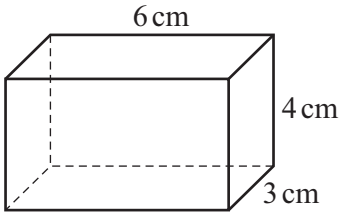
..... [1]

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

Find the value of p.

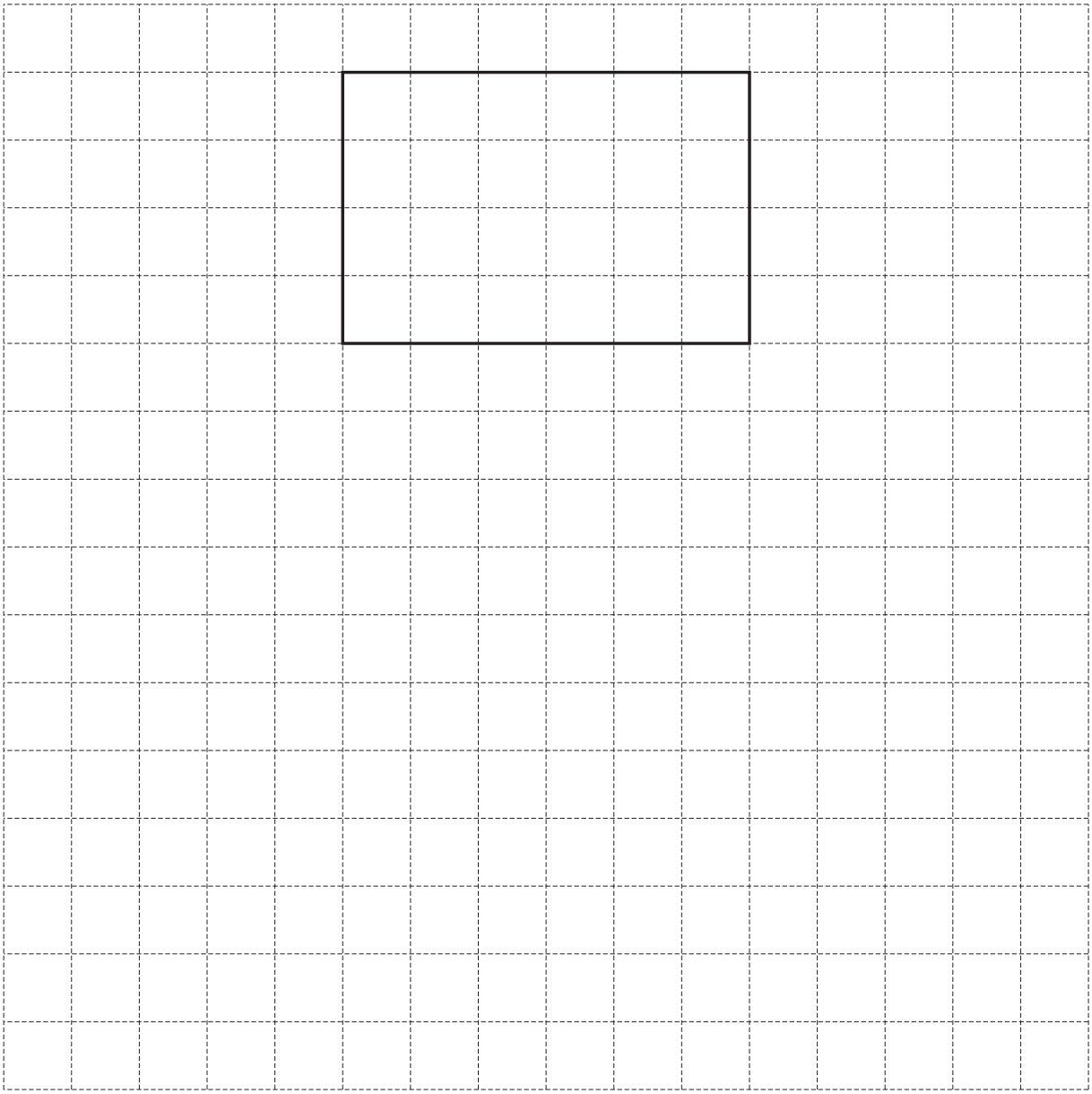
$p =$ ..... [1]

15



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) $x^2y - 5xy$

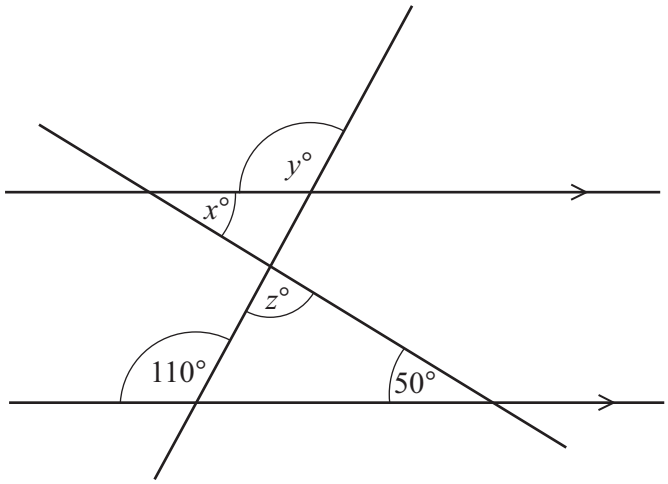
..... [2]

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 = ... because .....

..... [2]

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

y = ... because .....

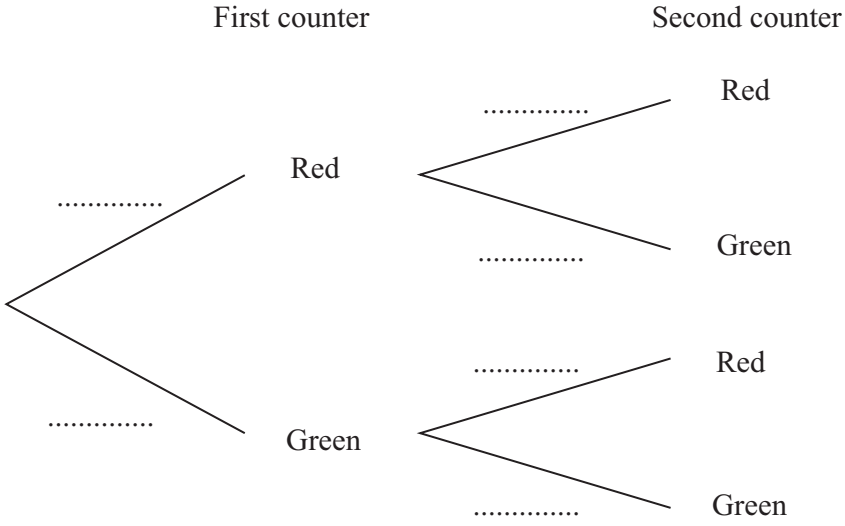
..... [2]

(c) Find the value of z.

z = ... [2]

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.



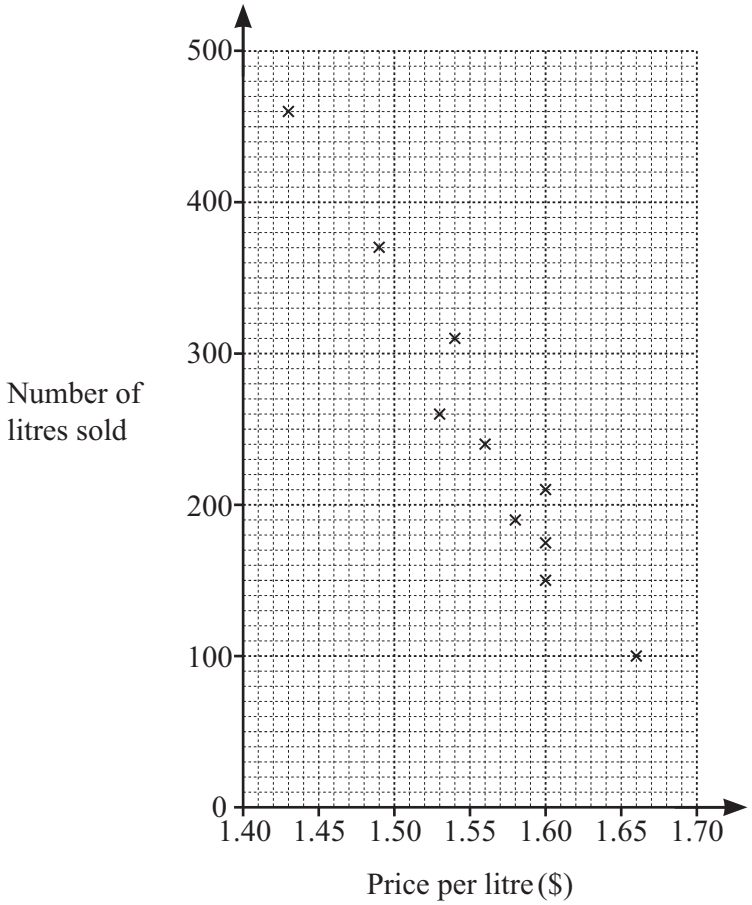
(a) Complete the tree diagram.

[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]

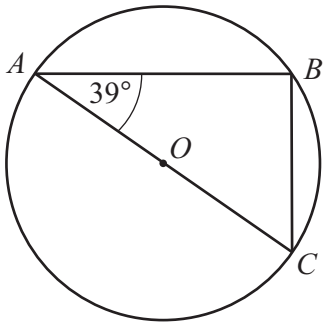
(c) (i) On the scatter diagram, draw a line of best fit. [1]

(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 = ... [2]

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

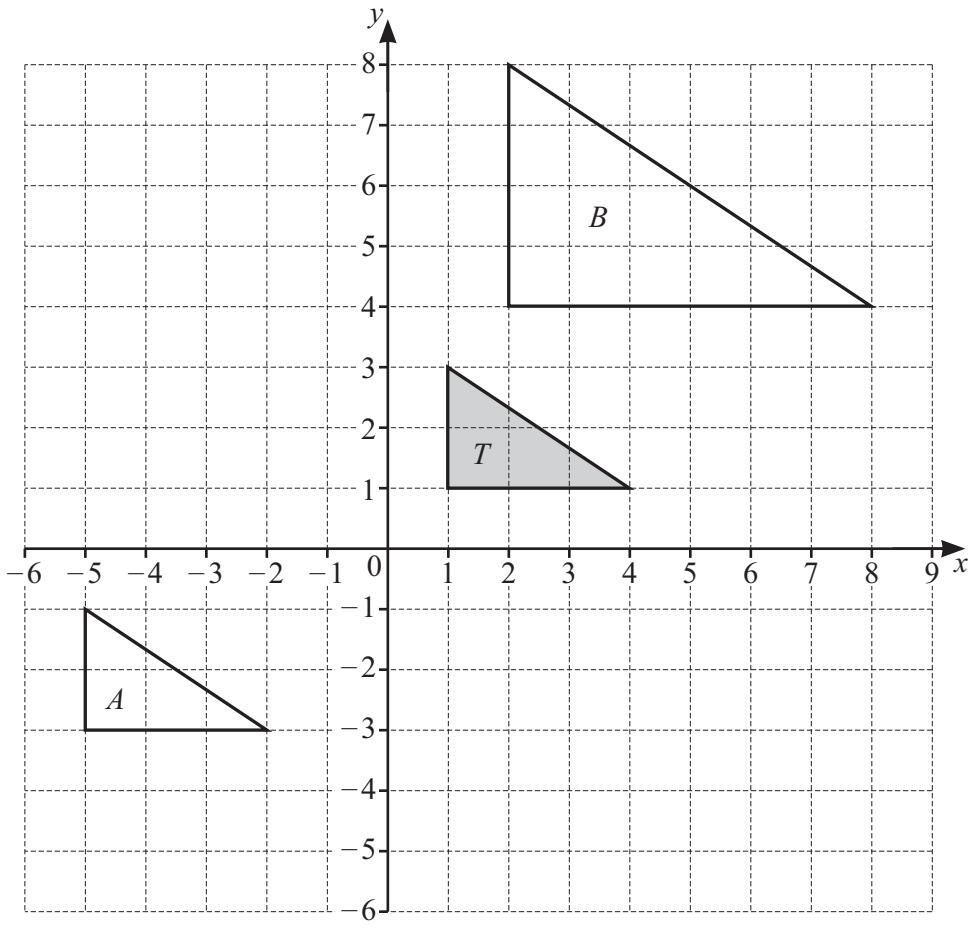
(a) Find the highest common factor (HCF) of A and B.

..... [1]

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

..... [2]

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]

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.

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

$x =$ .....

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