Cambridge Assessment International Education

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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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## 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 10 069 in words.

View solution

..... [1]

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

View solution

..... [1]

**(c)** Convert 10 069 centimetres into metres.

View solution

..... 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.

View solution

\$ ..... [2]

**3** Two numbers have a sum of $-2$ and a product of $-15$.

Work out the two numbers.

View solution

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

**4**

| 7 | 27 | 39 | 49 | 99 | 112 |
|---|---|---|---|---|---|

From the list of numbers, write down

**(a)** an even number

View solution

..... [1]

**(b)** a square number

View solution

..... [1]

**(c)** a factor of 56

View solution

..... [1]

**(d)** a prime number.

View solution

..... [1]

**5** Write down the reciprocal of 5.

View solution

..... [1]

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

**(a)** $7 - 5 \times 4 + 8 = 16$

View solution [1]

**(b)** $7 - 5 \times 4 + 8 = -21$

[1]

View solution

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

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

View solution

\$ ..... [1]

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

View solution

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.

View solution

..... [1]

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

View solution

..... [1]

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

View solution

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.

View solution

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

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

View solution

19 23 27 31

Find the $n$th term.

..... [2]

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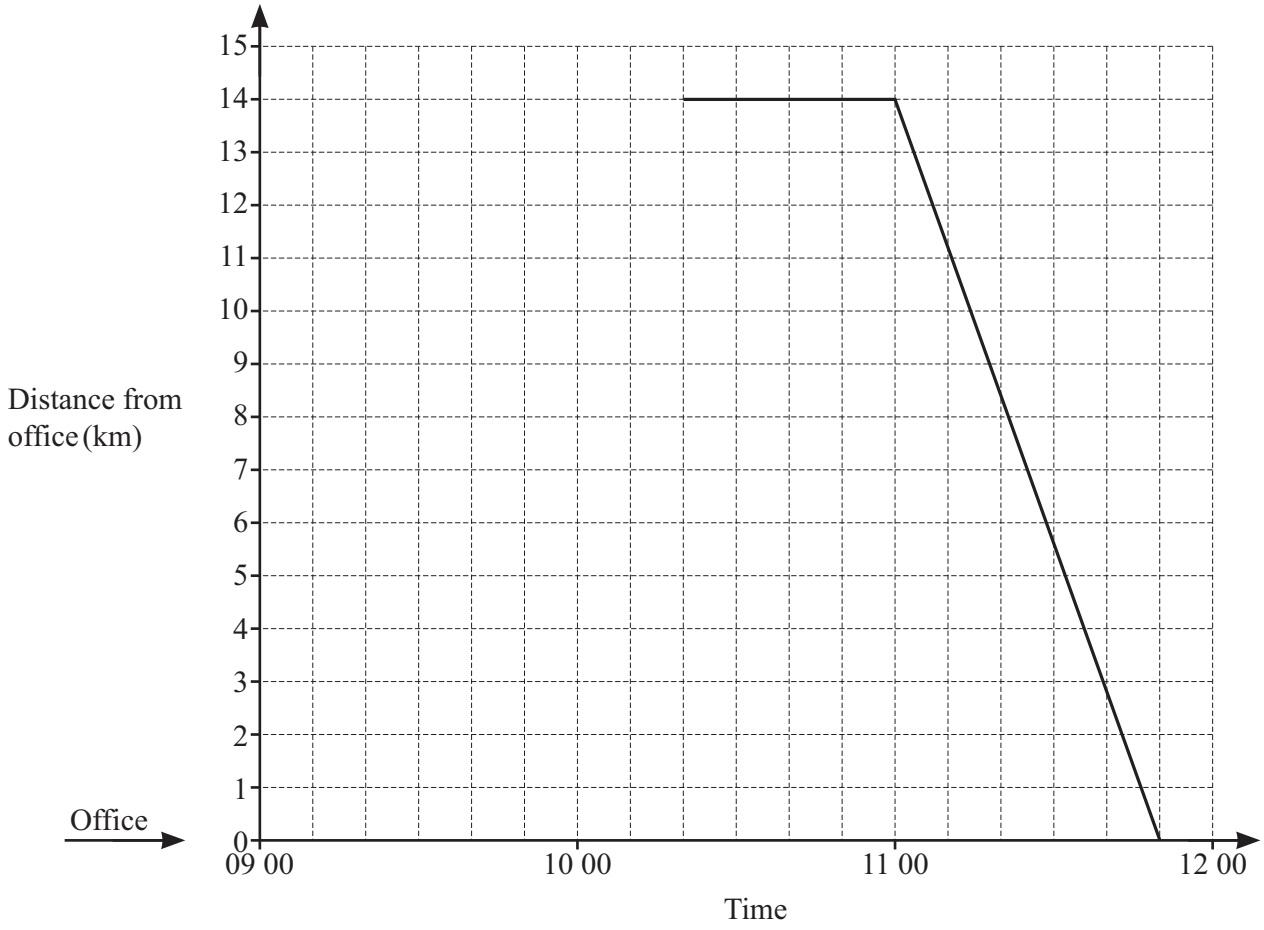
**10** Ky cycles from his office to a meeting and back again.
The travel graph shows his time at the meeting and his journey back.




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

View solution

..... km [1]

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

View solution

..... min [1]

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

View solution

..... [1]

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

Complete the travel graph.

View solution

[2]

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

View solution

..... $cm^3$ [1]

**12** Solve.

View solution

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

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

**13** Work out.

**(a)** $-5 \times -4$

View solution

..... [1]

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

View solution

..... [1]

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

View solution

Find the value of $p$.

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

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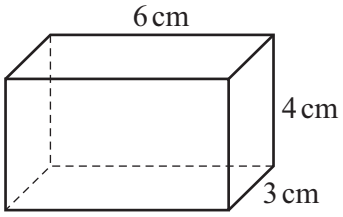
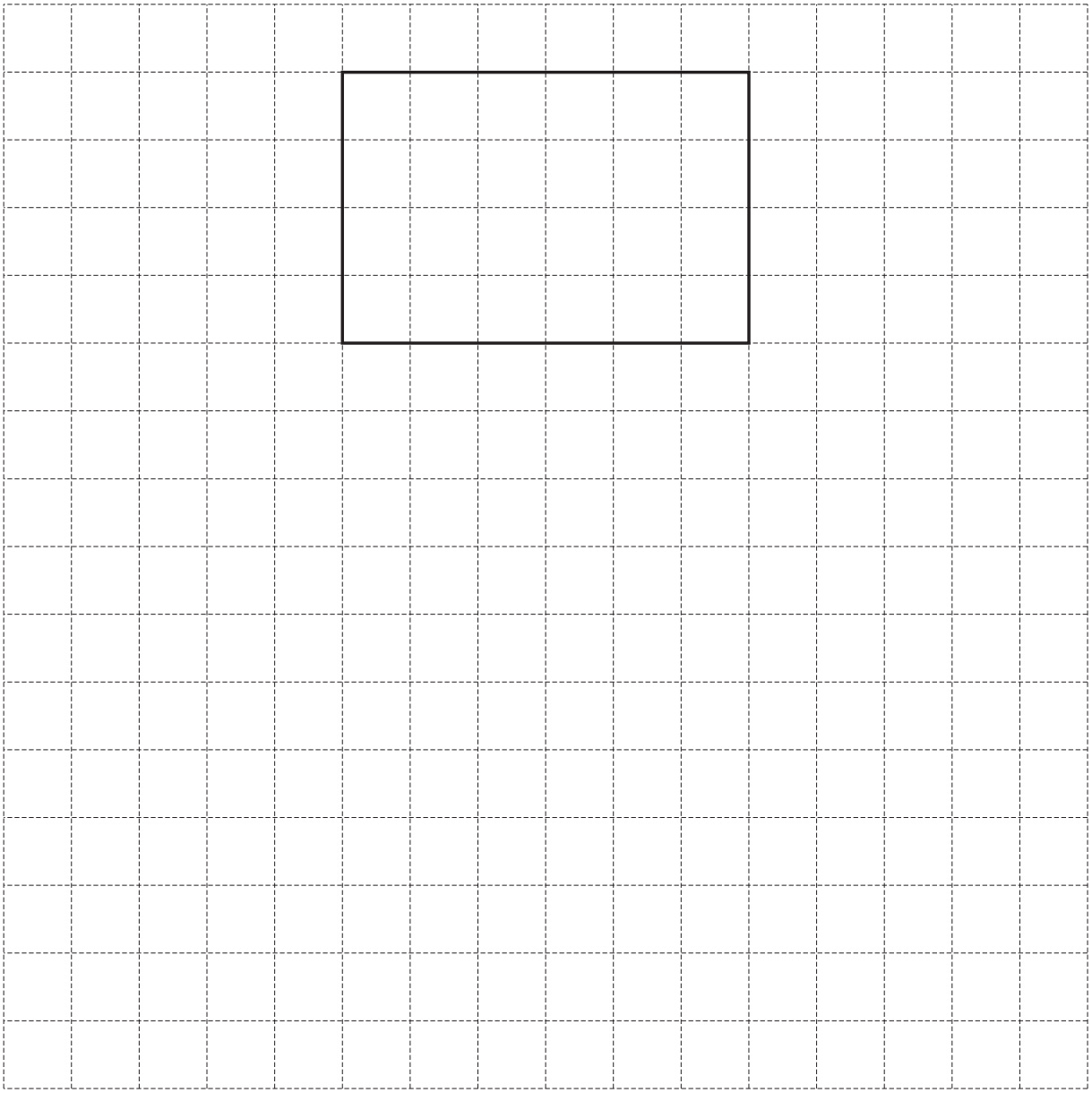
**15**




NOT TO SCALE

View solution

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



[3]

**16** **(a)** Simplify.

View solution

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

..... [2]

**(b)** Factorise.

View solution

**(i)** $6x + 15y$

..... [1]

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

View solution

..... [2]

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

View solution

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

..... [2]

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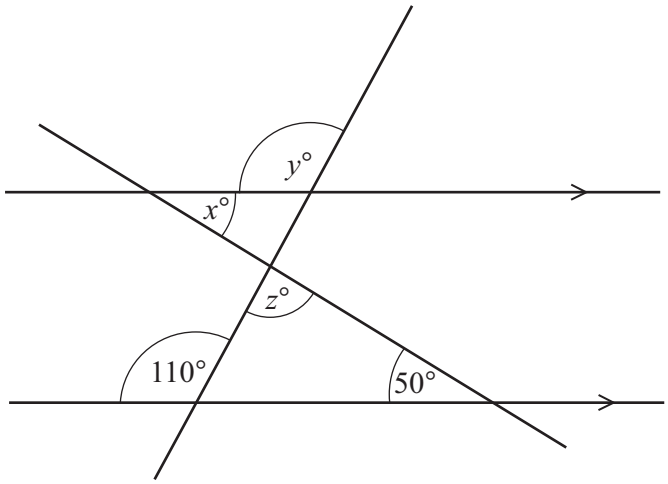
**18** The diagram shows two straight lines intersecting two parallel lines.




NOT TO SCALE

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

View solution

$x =$ ..... because .....

..... [2]

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

View solution

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

..... [2]

**(c)** Find the value of $z$.

View solution

$z =$ ..... [2]

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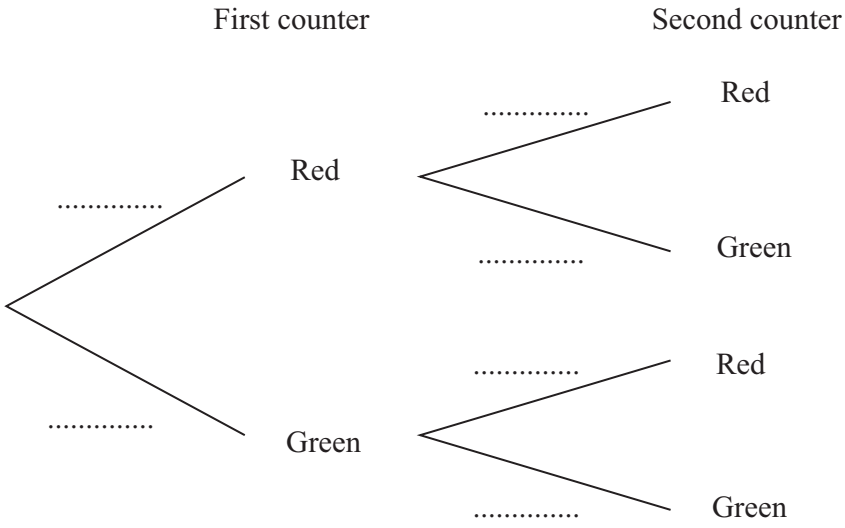
**19** A box contains 10 counters.
The counters are either red or green.
The ratio red counters : green counters = 1 : 4.

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.

View solution

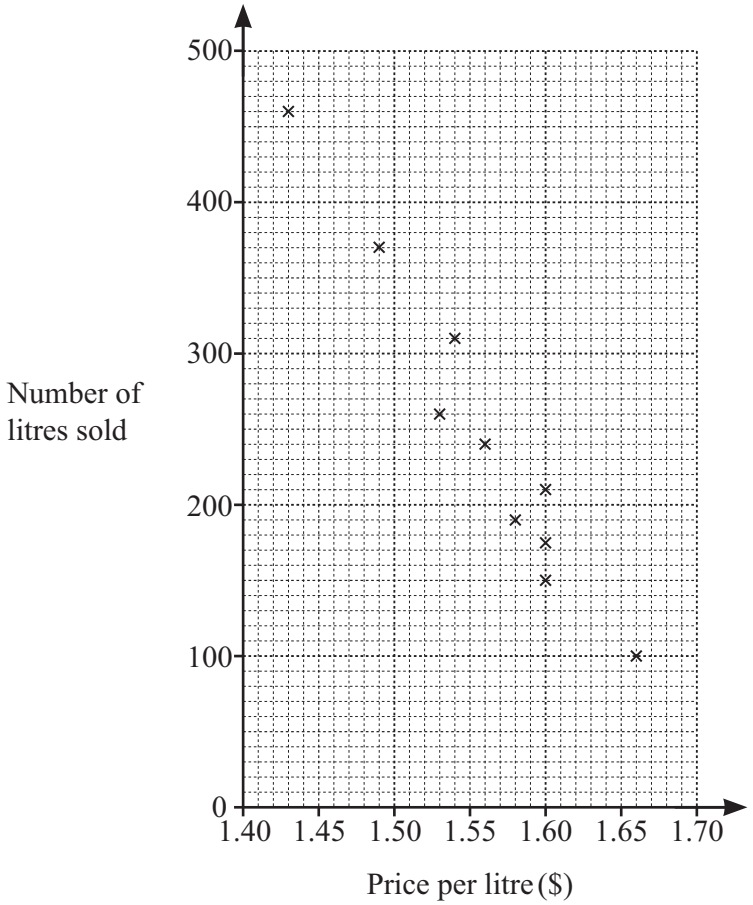
[3]

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

View solution

..... [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.

View solution

| 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?

View solution

..... [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.

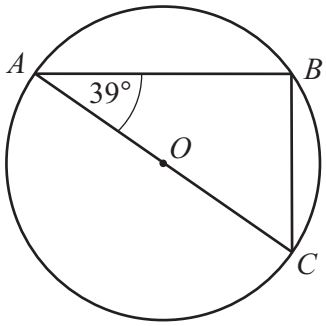
View solution

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 $O$.

View solution




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 $B$.

View solution

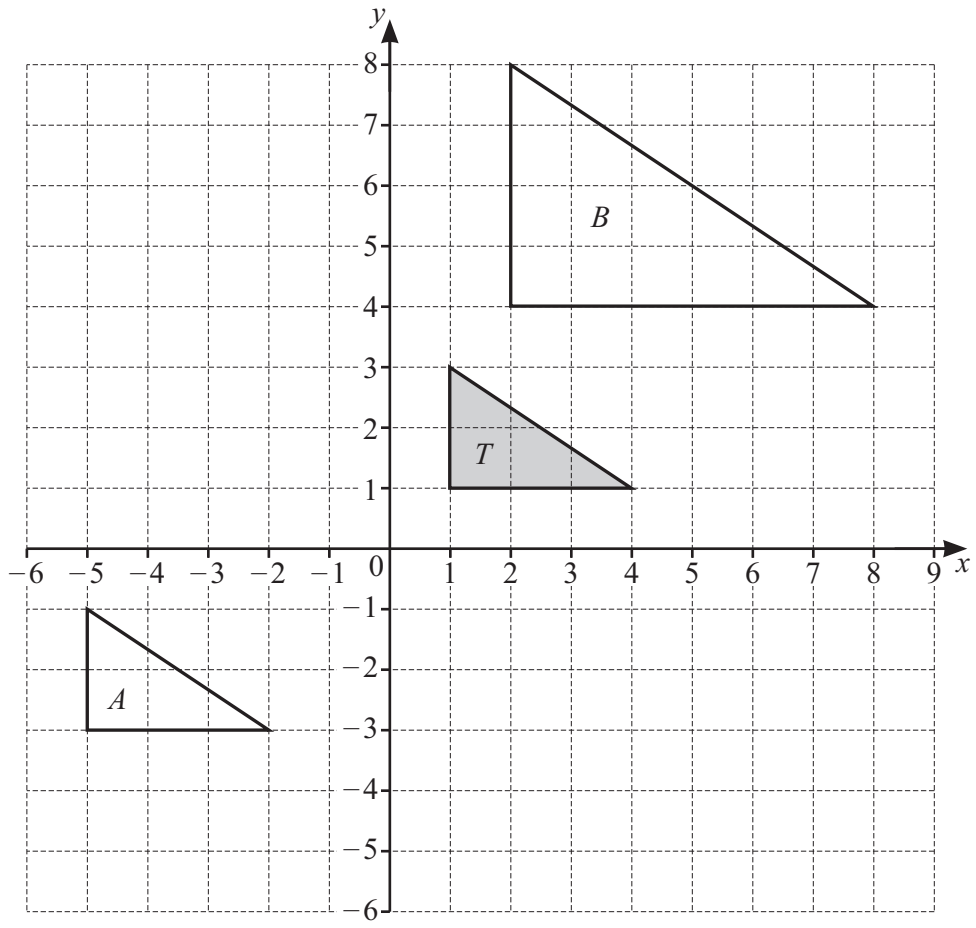
..... [1]

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

View solution

..... [2]

**23**




View solution

**(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 $A$.

View solution

.....

..... [2]

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

View solution

.....

..... [3]

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

View solution

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

..... [3]

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

View solution

..... [1]

**(b)** Write $5.6 \times 10^{-3}$ as an ordinary number.

View solution

..... [1]

**Question 26 is printed on the next page.**

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**26** Solve the simultaneous equations.

View solution

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

$x =$ .....

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

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