Surname	Centre Number	Candidate Number
Other Names		0

GCSE

3300U10-1

S18-3300U10-1

MATHEMATICS

UNIT 1: NON-CALCULATOR

FOUNDATION TIER

THURSDAY, 24 MAY 2018 – MORNING

1 hour 30 minutes

ADDITIONAL MATERIALS

The use of a calculator is not permitted in this examination.

A ruler, protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

If you run out of space, use the continuation page at the back of the booklet. Question numbers must be given for all work written on the continuation page.

Take π as 3·14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

In question **6**, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

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For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**3**	
2.	**2**	
3.	**2**	
4.	**4**	
5.	**6**	
6.	**6**	
7.	**3**	
8.	**3**	
9.	**2**	
10.	**5**	
11.	**3**	
12.	**6**	
13.	**4**	
14.	**2**	
15.	**2**	
16.	**3**	
17.	**4**	
18.	**5**	
Total	**65**	

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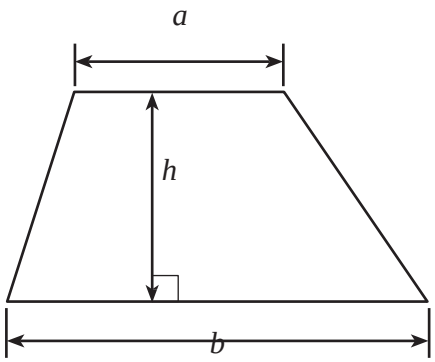
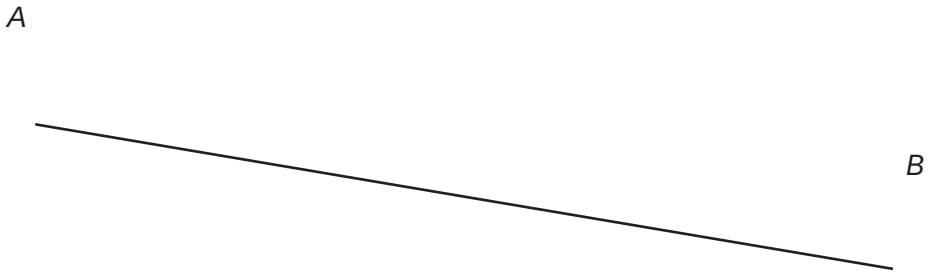
Formula List - Foundation Tier

Area of trapezium $= \frac{1}{2}(a+b)h$



Examiner only

1. *(a)* Measure the length of the line *AB*.
Write your answer in centimetres. [1]



AB ..... cm

(b) In the space below, draw a circle with a radius of 6 cm. [1]

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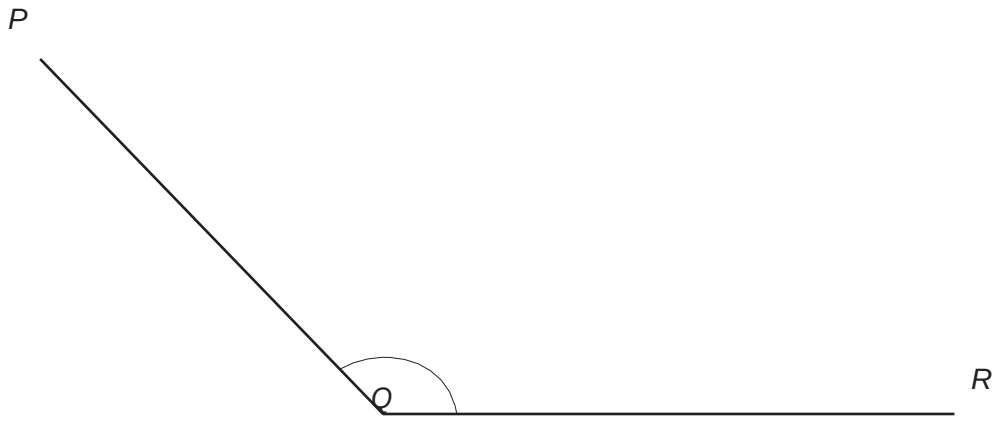
(c) Measure and write down the size of *PQR*. [1]



PQR = ... °

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2. *(a)* Mai has a box of 60 different beads.
There are 40 red beads in the box.
Mai chooses a bead at random from the box.

Describe the chance that Mai chooses a red bead.
Circle the correct expression from those given below. [1]

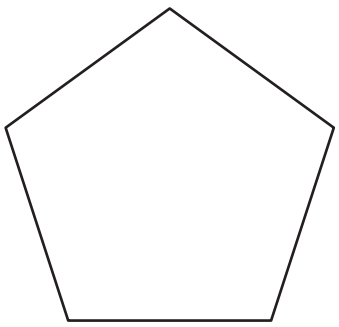
impossible **unlikely** **an even chance** **likely** **certain**

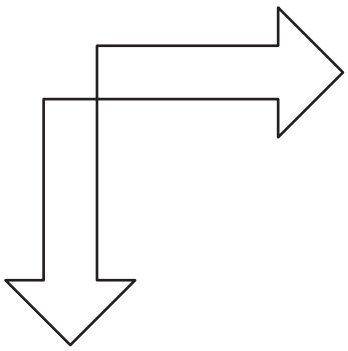
(b) Ifan has a box of 12 cakes.
There are 6 chocolate cakes and the rest are lemon cakes.
Ifan chooses a cake at random from the box.

Describe the chance that Ifan chooses a lemon cake.
Circle the correct expression from those given below. [1]

impossible **unlikely** **an even chance** **likely** **certain**

3. Draw all the lines of symmetry on the following shapes. [2]





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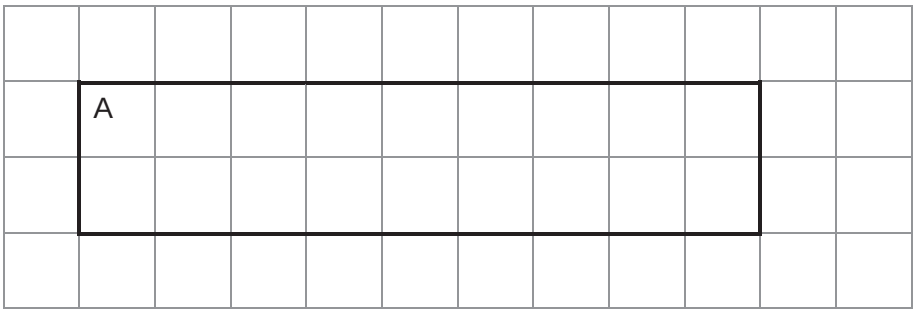
4. *(a)* Rectangle A is drawn on the centimetre square grid below.



(i) What is the perimeter of rectangle A? [1]

Perimeter = ...

(ii) What is the area of rectangle A?
Give the units of your answer. [2]

Area = ...

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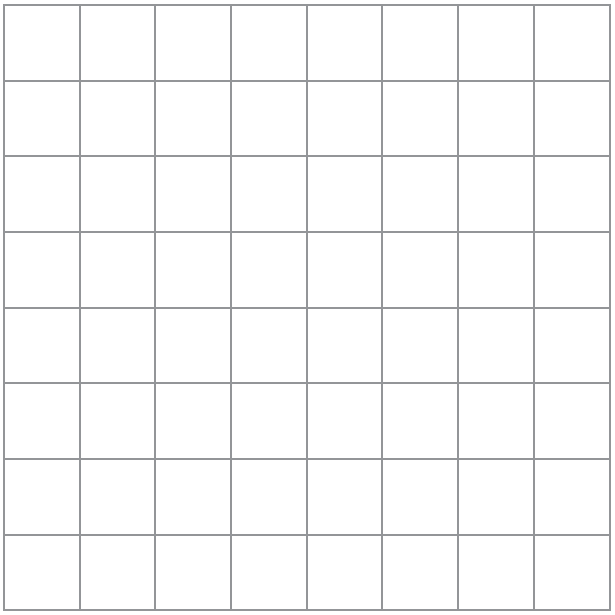
(b) Rectangle B has the same area as rectangle A and fits on the centimetre square grid below.
Rectangle B has a different perimeter from rectangle A.

Draw rectangle B on the grid below. [1]



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5. *(a)* Write a number in each box to make the following calculations correct. [2]

(i) 22 ÷ ☐ + 5 = 7

(ii) ☐ × 9 – 4 = 50

(b) (i) The number 283 is multiplied by 10.

What is the value of the 2 in the answer? [1]

Value of the 2 is .....

(ii) The number 6518 is divided by 100.

What is the value of the 6 in the answer? [1]

Value of the 6 is .....

(c) Work out the mean of the following numbers. [2]

7 13 10 4 6

Mean = ...

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6. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

A computer program has 6 steps.
In step 4, the value of the percentage is missing.

Step	Instruction
1	INPUT a number.
2	Multiply the INPUT number by 3.
3	Calculate $\frac{2}{3}$ of the INPUT number.
4	Calculate ..... % of the INPUT number.
5	Add the answers to step 2, step 3 and step 4.
6	Print the answer to step 5.

The INPUT number is 15.
The computer prints the answer 62·5.

What is the value of the percentage missing from step 4?
You must show all your working. [4 + 2 OCW]

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7. Solve these equations.

(a) $6x = 42$ [1]

(b) $x + 9 = 28$ [1]

(c) $14 - x = 8$ [1]

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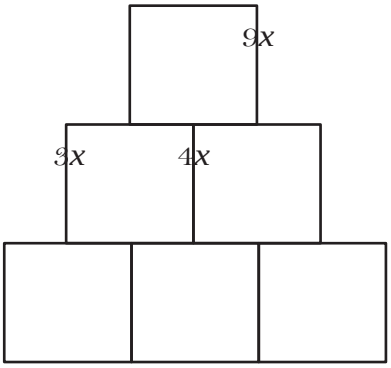
8. Look at the diagram below.

The term in each square in the top two rows is found by using the following rule:

The term in any square is the sum of the terms in the two squares below it.

Some terms are already shown.

Use the rule to write down the missing terms in the three empty squares. [3]



Space for working:

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9. On the diagram, mark the point P with a cross so that

- $\$$
- $BAP = 72°$,
- $AP = 6{\cdot}8\,\text{cm}$. [2]

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10. Using only the numbers in the following list,

10 11 12 13 14 15 16 17 18 19 20

write down

(a) two **prime** numbers that have a sum of 32, [2]

The two numbers are ..... and .....

(b) a number that is a multiple of **both** 4 **and** 6, [2]

(c) a number that is a factor of 51. [1]

11. Circle the correct answer for each of the following.

(a) 16 km is approximately equal to [1]

5 miles 8 miles 10 miles 16 miles 32 miles

(b) 2·2 lb is approximately equal to [1]

1 kg 2 kg 4·4 kg 5 kg 10 kg

(c) 4 litres is approximately equal to [1]

4 pints 5 pints 6 pints 7 pints 8 pints

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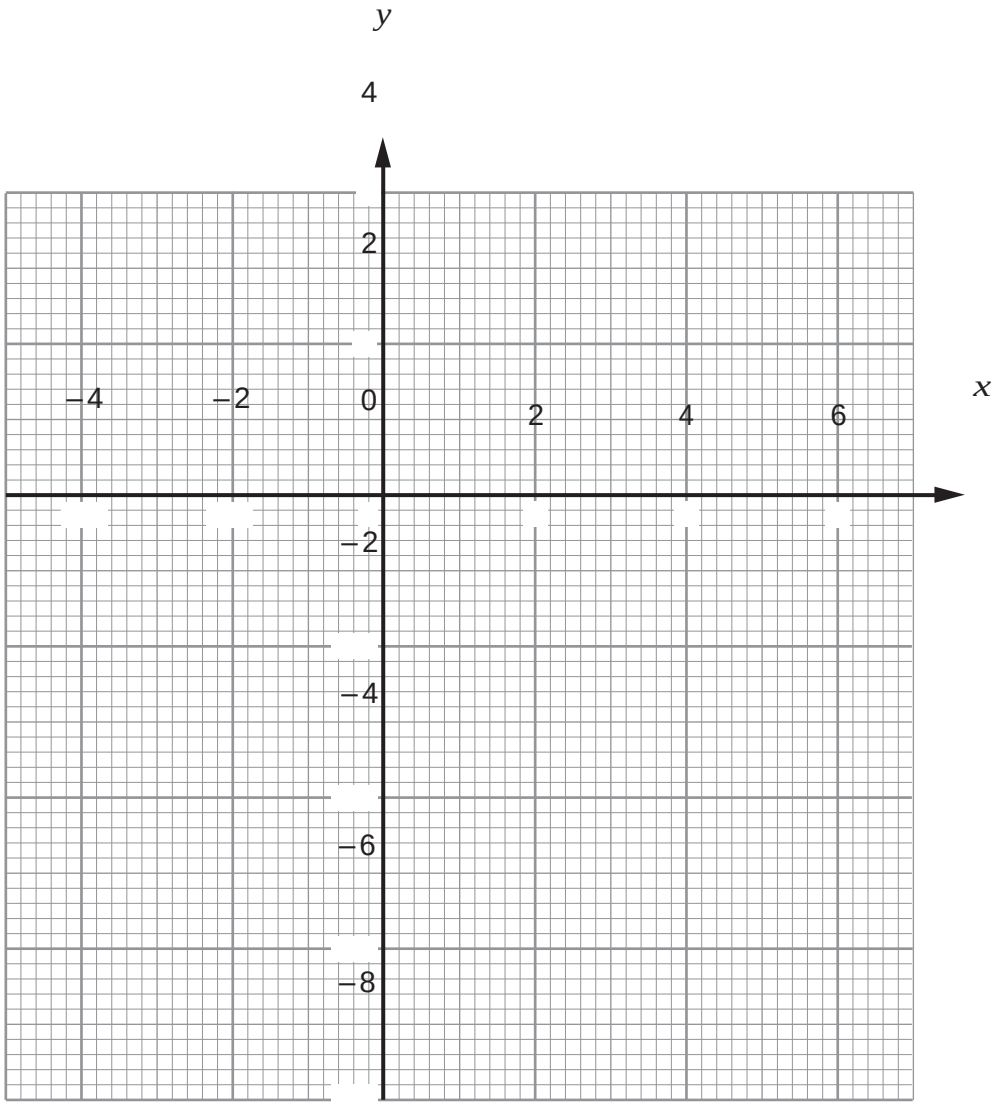
12. The table below shows some values of $y = x - 3$ for values of x from –4 to 6.

x	–4	–2	0	2	4	6
$y = x - 3$	–7		–3			3

(a) Complete the table above. [2]

(b) On the graph paper below, draw the graph of the straight line $y = x - 3$ for values of x **from –4 to 6 only**. [2]



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(c) The straight line you have drawn on the graph for values of x **from –4 to 6** is a diagonal of a square.

Write down the coordinates of the four corners of this square. [2]

(..... , ...) (..... , ...) (..... , ...) (..... , ...)

13. A bag contains a number of different coloured balls.
A ball is selected at random from the bag.
The probability of selecting a blue ball is 0·3.

(a) Why is the following statement incorrect?
Explain your answer clearly. [1]

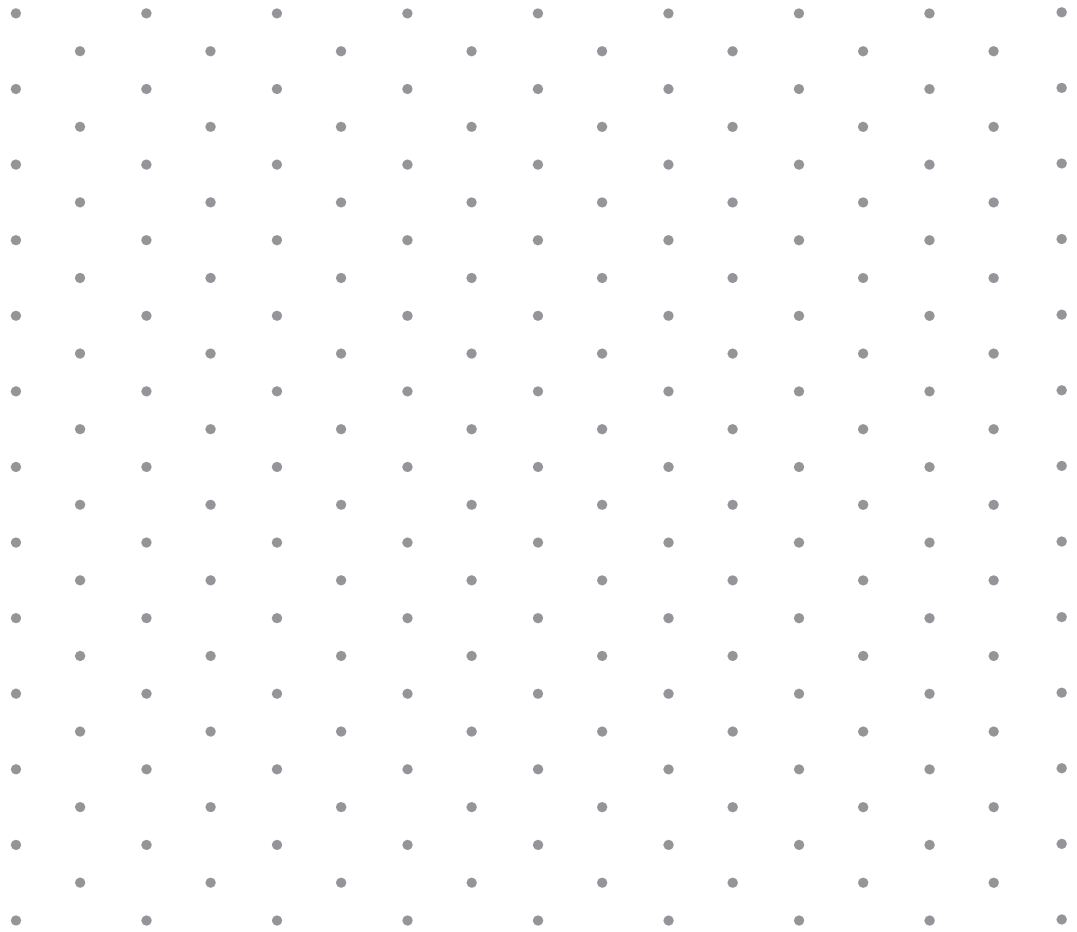
'More than half the balls in the bag are blue.'

(b) What is the probability that a ball selected at random from the bag is not blue? [1]

(c) There are 50 balls in the bag.
How many of them are blue? [2]

Examiner only

14. Draw an isometric representation of a cuboid measuring 6 cm by 4 cm by 3 cm.
Use the grid below. [2]



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15. The nth term of a sequence is given by $2n - 11$.

Write down the value of,

(i) the 10th term, [1]

(ii) the 3rd term. [1]

Examiner only

16. Find the whole number that satisfies all of the following conditions.

- It is a whole number between 1 and 100 inclusive.
- 10% of the number is greater than 2 but less than 8.
- $\frac{1}{2}$ of the number is a square number.
- The number is **not** a multiple of 4. [3]

The number is .....

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17. In the diagram below, *ABCE* is a square whose perimeter is 28 cm.
CDE is a right-angled triangle whose area is 35 cm^2.

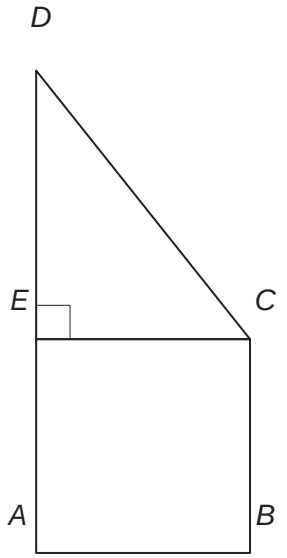

Diagram not drawn to scale

Calculate the length of *DE*.
You must show all your working. [4]

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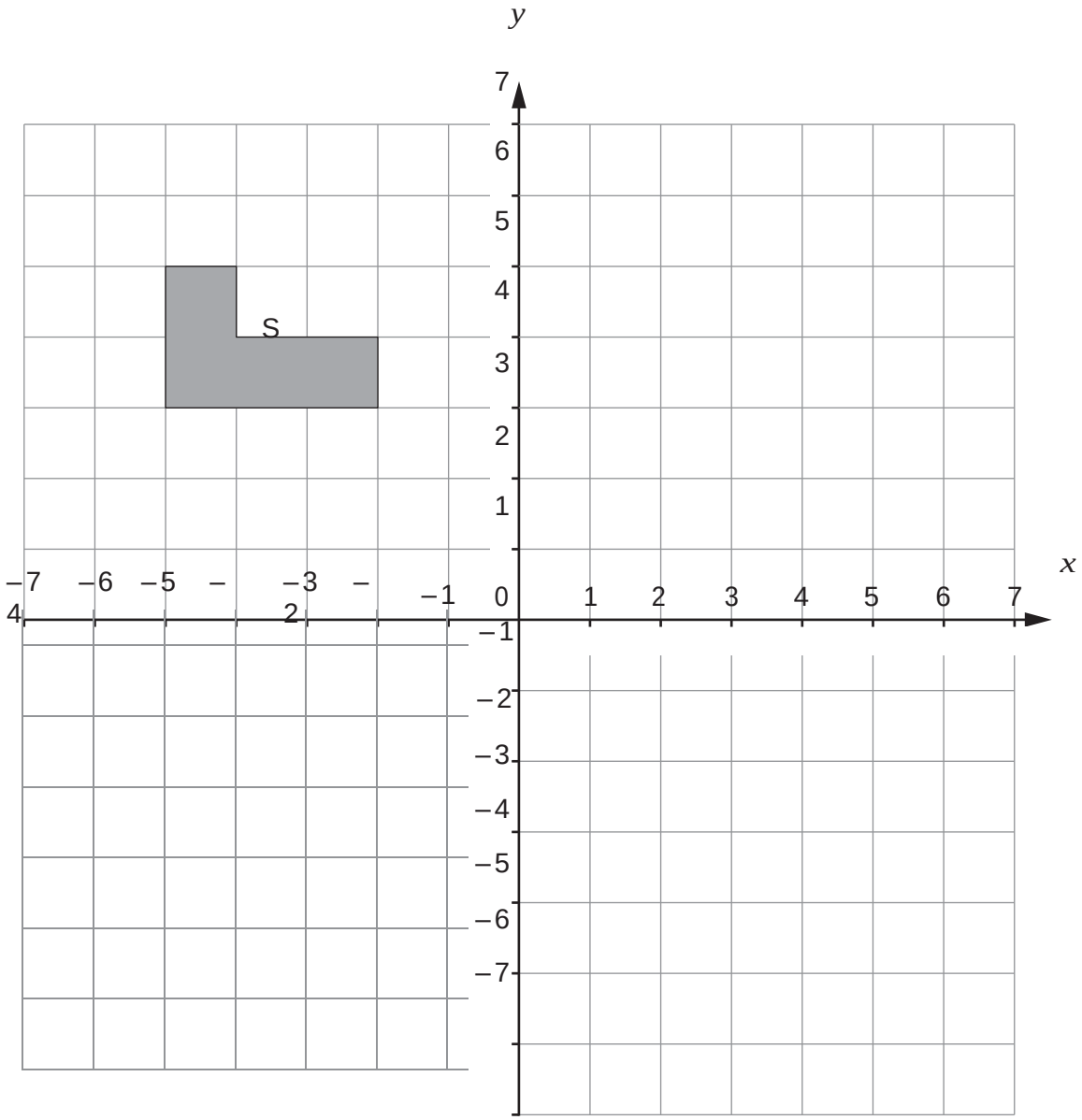
18. *(a)* Reflect the shape S in the line $y = 1$. [2]



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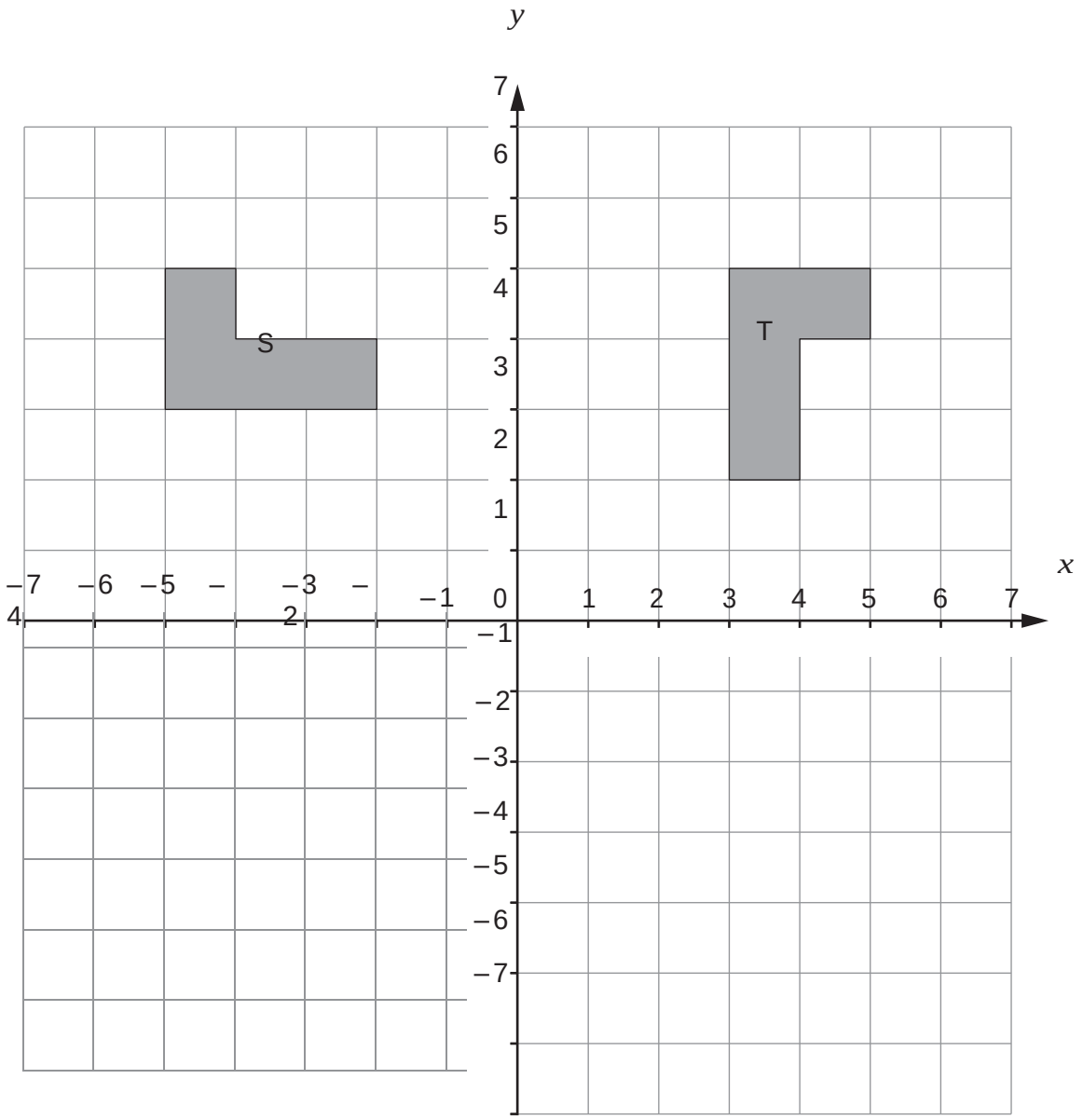
(b) Describe **fully** the **single** transformation that transforms shape S to shape T. [3]



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Question number	Additional page, if required. Write the question number(s) in the left-hand margin.

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