Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3300U10-1

S24-3300U10-1

THURSDAY, 16 MAY 2024 – MORNING

MATHEMATICS
UNIT 1: NON-CALCULATOR
FOUNDATION TIER

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 additional page at the back of the booklet. Question numbers must be given for all work written on the additional 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 **3**, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**2**	
2.	**2**	
3.	**6**	
4.	**2**	
5.	**3**	
6.	**3**	
7.	**4**	
8.	**2**	
9.	**4**	
10.	**2**	
11.	**3**	
12.	**2**	
13.	**2**	
14.	**3**	
15.	**5**	
16.	**4**	
17.	**4**	
18.	**7**	
19.	**5**	
Total	**65**	

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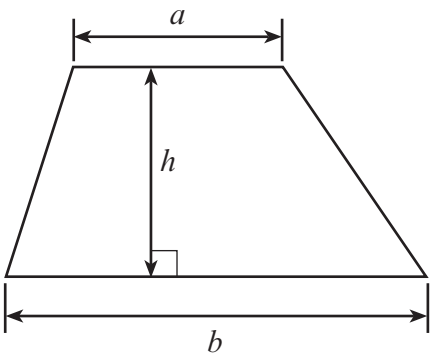
Formula List – Foundation Tier

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



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1. (a) Calculate 5620 × 100. [1]

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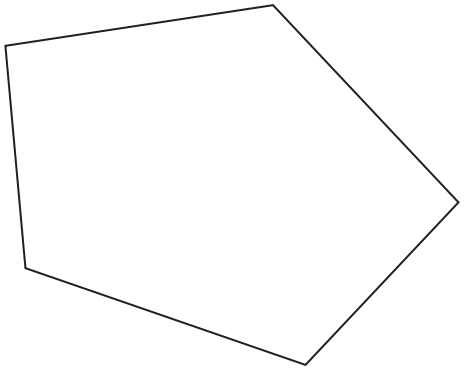
(b) Write 42 861 correct to the nearest hundred. [1]

.....

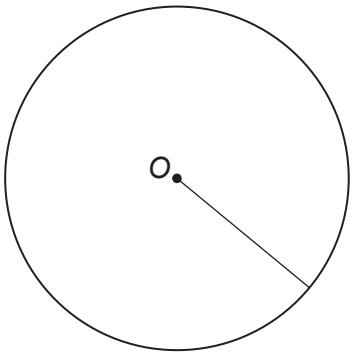
2. (a)



What is the special name of the shape shown above?
Circle your answer. [1]

pentagon hexagon kite parallelogram rhombus

(b)



O is the centre of the circle shown above.

What is the special name of the straight line shown in the diagram?
Circle your answer. [1]

circumference tangent diameter radius chord

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

Alex has four bags of beads.
Three of these bags contain 65 beads each.
The fourth bag contains 405 beads.

Alex pours all the beads from the four bags into an empty box.

Then, Alex shares all these beads equally between the four bags.

How many beads are there in each bag?

You must show all your working. [4 + 2 OCW]

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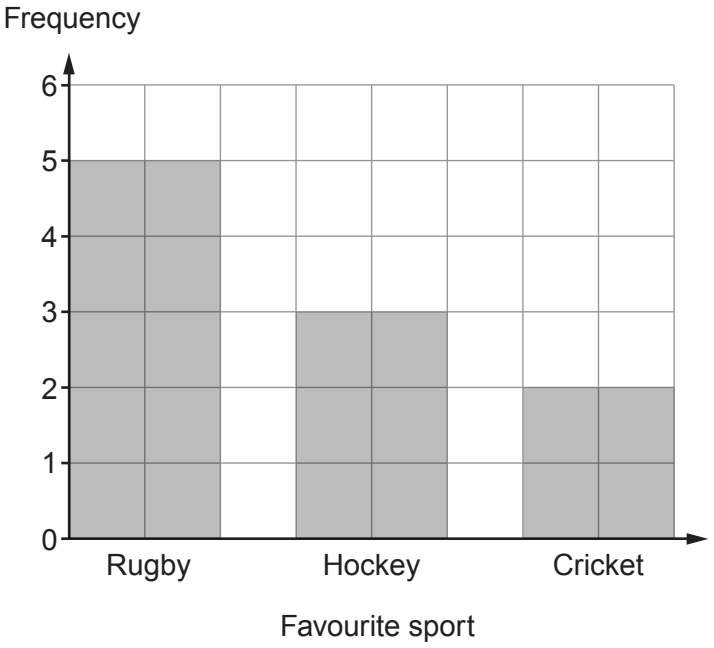
4. Matilda asked 10 of her friends which was their favourite sport.

They each chose one of rugby, hockey or cricket.
Matilda showed the results of her survey in the bar chart below.



Matilda chooses one of her friends at random.

(a) Describe the chance that the friend's favourite sport is cricket.
Circle the best expression from those below. [1]

impossible unlikely an even chance likely certain

(b) Describe the chance that the friend's favourite sport is rugby.
Circle the best expression from those below. [1]

impossible unlikely an even chance likely certain

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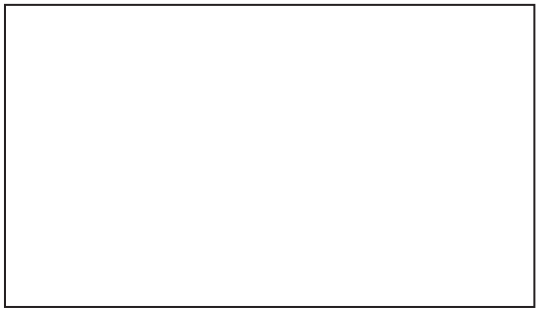
5. Find the perimeter of the rectangle below.
Give the units of your answer. [3]



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Perimeter = ...

6. (a) Write down the next number in this sequence. [1]

71, 79, 87, 95, ...

.....

.....

(b) Write down the next two numbers in this sequence. [2]

40 000, 20 000, 10 000, 5000, ..., ...

.....

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7. (a) Simplify $5k - 8k + 6k$. [1]

.....

(b) Solve these equations.

(i) $15 + x = 60$ [1]

.....

.....

(ii) $20 - y = 9$ [1]

.....

.....

.....

(iii) $6w = 54$ [1]

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8. The Venn diagram below is used to show
- multiples of 5
- factors of 15.

Place the numbers **1**, **3**, **5**, **10** and **15** in the Venn diagram. [2]

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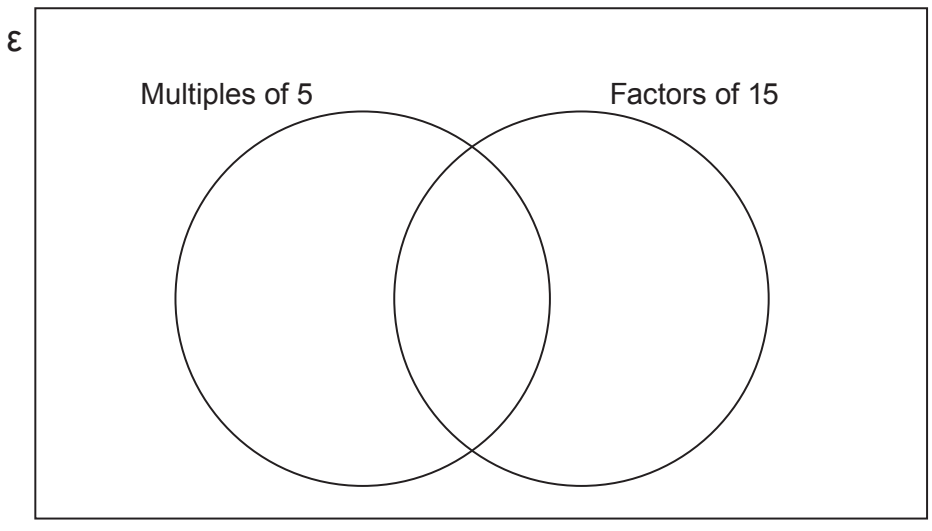

Turn over.

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9. Write down the value of each of the following.

(a) (i) 7^2 [1]

.....

(ii) $\sqrt{81}$ [1]

.....

(b) (i) Write 19·731 correct to 1 decimal place. [1]

.....

(ii) Write 65·4279 correct to 3 decimal places. [1]

.....

10. On the diagram, mark the point *C* with a cross (×) so that:

- $A\hat{B}C = 55°$ and
- $BC = 7{\cdot}4$ cm [2]

A _____ *B*

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11. Ifan has chosen four odd numbers.
Some of the numbers are the same and some of them are different.
Ifan's numbers are all less than 10.

Both the mode and the mean of Ifan's numbers are 7.

What numbers has Ifan chosen? [3]

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.....

.....

Ifan's numbers are ☐ ☐ ☐ ☐

12. Evaluate each of the following.

(a) $0{\cdot}8 \times 0{\cdot}25$ [1]

.....

.....

(b) $13{\cdot}4 - 2{\cdot}96$ [1]

.....

.....

.....

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13. (a) Which of the following is the nearest value to 488 grams?
Circle the correct answer. [1]

0·5 kg 500 kg 50 kg 5 tonnes 0·05 kg

.....

(b) Circle the correct answer for the following. [1]
15 miles is approximately equal to

1500 m 24 km 15 km 2·4 km 3000 m

.....

.....

.....

14. The nth term of a sequence is given by $5n - 1$.

Calculate the sum of the first three terms.
You must show all your working. [3]

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Sum of the first three terms = ...

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15. In the diagram below, *ABC* is a right-angled triangle and *CDE* is an isosceles triangle.

$A\hat{B}C = 90°$, $B\hat{A}C = 64°$ and $CD = CE$.
AD and *BE* are straight lines intersecting at *C*.

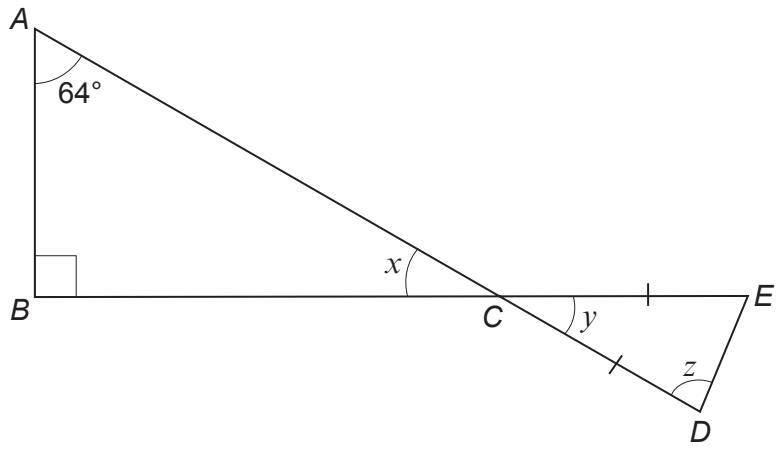

Diagram not drawn to scale

Calculate the size of each of the angles x, y and z. [5]

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.....

x = ... ° y = ... ° z = ... °

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16. In a game, each competitor will have 20 attempts at throwing a ball into a bucket.
They will get 1 point for every ball that lands in the bucket.

Sioned wants to keep a record of the total points for each competitor.
She decides to show the results in a table with the total points recorded in **groups of equal width**.

(a) She starts to draw a table using five groups, as shown below.

Total points	0 to 3	4 to 7	8 to 11	… to …	… to …
Number of competitors					

Explain why these groups will not be suitable. [1]

.....

.....

.....

(b) Sioned considers using the table shown below.
She decides that it is suitable for recording all the total points in **groups of equal width**.
Fill in the two missing numbers in the **top** row. [1]

Total points	0 to 6	7 to	..... to 20
Number of competitors			

.....

.....

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(c) Finally, Sioned decides to use the groups shown in the table below.
The results for the first 100 competitors are shown in the table.

Total points	0 to 2	3 to 5	6 to 8	9 to 11	12 to 14	15 to 17	18 to 20
Number of competitors	5	10	17	22	23	12	11

One of these 100 competitors is chosen at random.

(i) What is the probability that this competitor scored 6, 7 or 8 points? [1]

.....

.....

(ii) Explain why the following statement may be incorrect. [1]

The probability that this competitor scored 19 points is $\frac{11}{100}$.

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17. (a) Express 96 as a percentage of 300. [2]

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(b) Share £48 in the ratio 1 : 7. [2]

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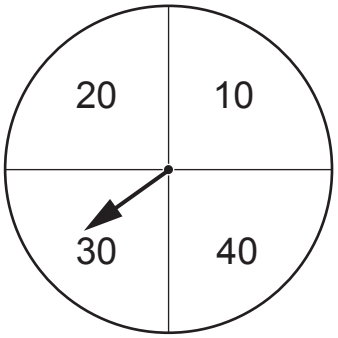
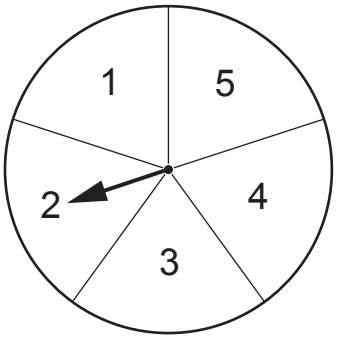
18. Ahmed organises a game using two fair spinners, as shown below.
The first spinner shows the values 10, 20, 30 and 40.
The second spinner shows the values 1, 2, 3, 4 and 5.





In the game, the two spinners are spun and the values shown are added to give a score.
For example, the spinners above score 32.

Ahmed charges £1 for each attempt at the game.
Any player who scores **43 or more** wins £5.

Calculate Ahmed's expected profit when this game is played 100 times. [7]

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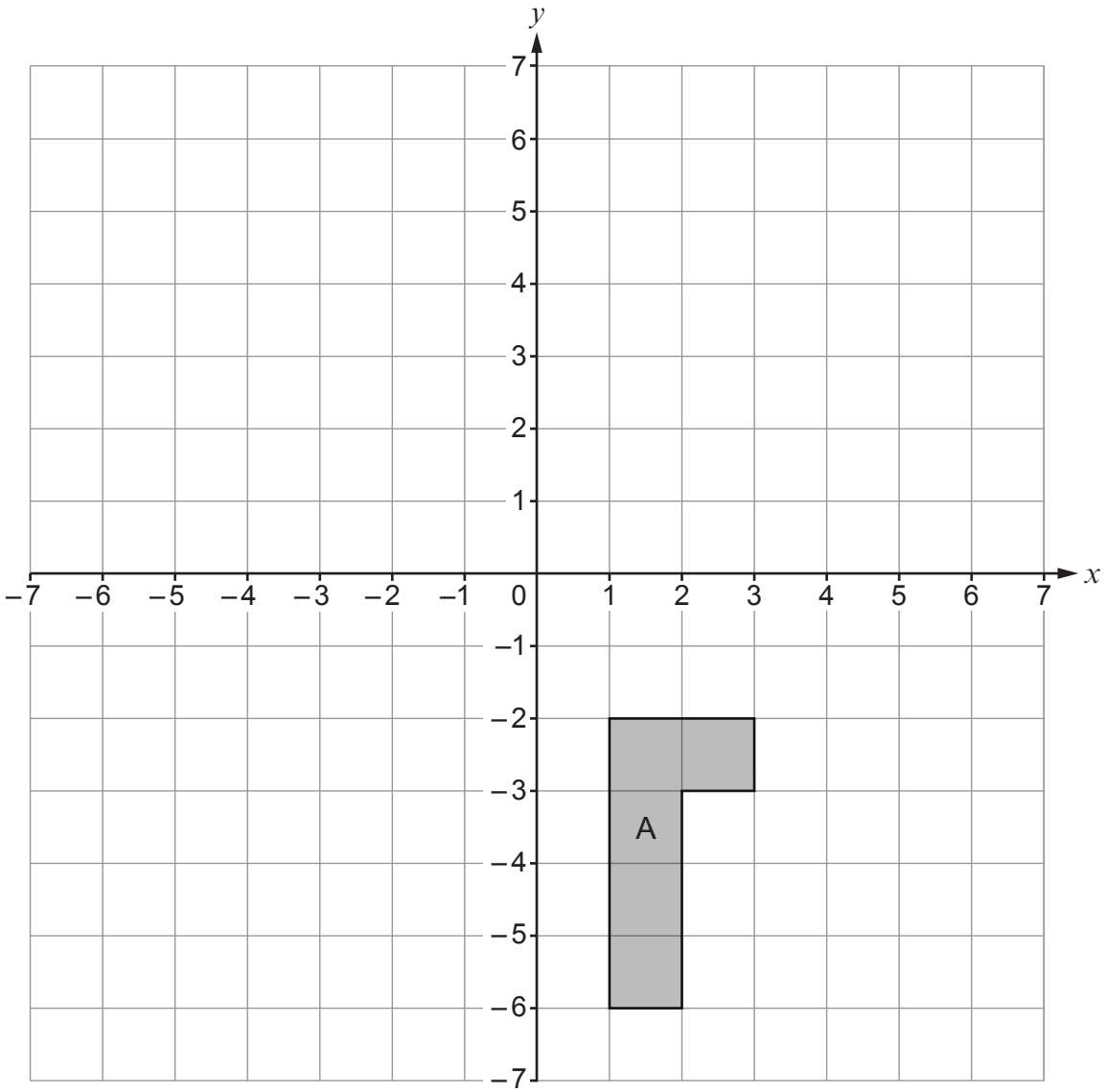
19. (a) Reflect the shape A in the line $x = -1$. [2]



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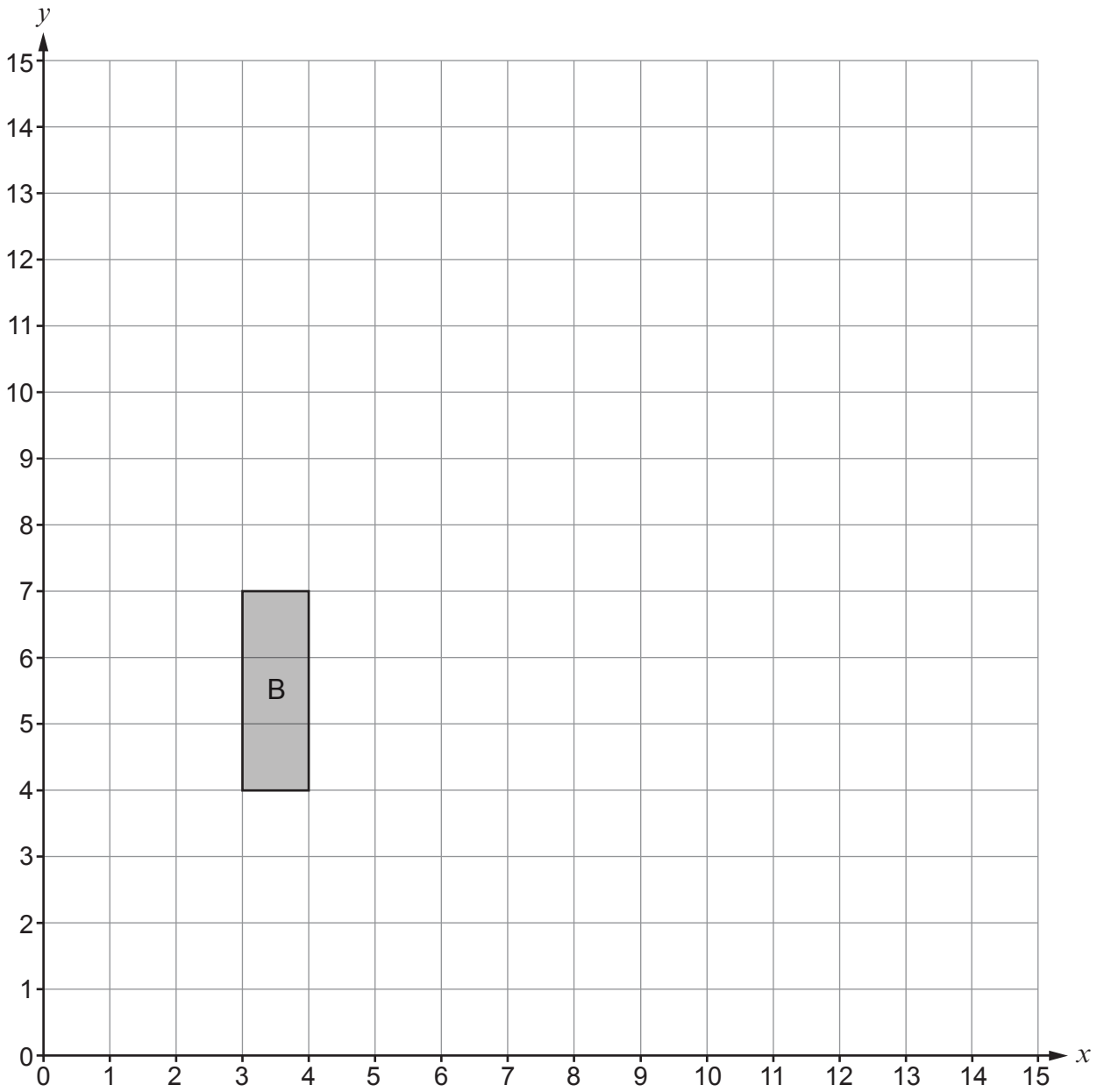
(b) Enlarge the shape B by a scale factor of 2, using (1, 3) as the centre of enlargement. [3]



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