GCSE

3300U10 – 1

THURSDAY, 16 MAY 2024 – MORNING

MATHEMATICS

UNIT 1: NON – CALCULATOR

FOUNDATION TIER

1 hour 30 minutes plus your additional time allowance

THE USE OF A CALCULATOR IS NOT PERMITTED IN THIS EXAMINATION

Surname: _____

First name(s): _____

Centre Number: _____

Candidate Number: 0 _____

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	

ADDITIONAL MATERIALS

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

ITEMS INCLUDED WITH QUESTION PAPER

A separate Formula List.

A separate Diagram Booklet.

Cut out shape for Question 19 (a).

The Diagram Booklet MUST be handed in to the invigilators and sent for marking.

INSTRUCTIONS TO CANDIDATES

Use black ink, black ball – point pen, black felt tip or your usual method.

Write your name, centre number and candidate number in the spaces on the front cover.

Answer ALL questions.

Write your answers in the spaces provided.

If you run out of space, use the additional page(s) at the back of the booklet.
Question numbers must be given for the work written on the additional page(s).

Take π as $3 \cdot 14$

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.

1. (a) Calculate 5620×100

_____

_____

[1 mark]

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

_____

_____

[1 mark]

2. (a) Look at the diagram for Question 2 (a) in the separate Diagram Booklet.

What is the special name of the shape in the diagram?

Circle your answer.

pentagon
hexagon
kite
parallelogram
rhombus

[1 mark]

continued on the next page . . .

Question 2 continued

2. (b) Look at the diagram for Question 2 (b) in the separate Diagram Booklet.

O **is the centre of the circle shown.**

What is the special name of the straight line shown in the diagram?

Circle your answer.

circumference
tangent
diameter
radius
chord

[1 mark]

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 marks + 2 marks OCW]

4. Look at the diagram for Question 4 in the separate Diagram Booklet.

The diagram shows a bar chart.

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.

Matilda chooses one of her friends at random.

continued on the next page . . .

Question 4 continued

4. (a) Describe the chance that the friend's favourite sport is cricket.

Circle the best expression from those below.

impossible
unlikely
an even chance
likely
certain

[1 mark]

continued on the next page . . .

Question 4 continued

4. (b) Describe the chance that the friend's favourite sport is rugby.

Circle the best expression from those below.

impossible
unlikely
an even chance
likely
certain

[1 mark]

5. Look at the diagram for Question 5 in the separate Diagram Booklet.

The diagram IS drawn to scale.

Find the perimeter of the rectangle shown.

Give the units of your answer.

Perimeter = _____

[3 marks]

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

71, 79, 87, 95, _____

[1 mark]

continued on the next page . . .

Question 6 continued

6. (b) Write down the next two numbers in this sequence.

40 000, 20 000, 10 000, 5000, _____, _____

[2 marks]

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

[1 mark]

(b) Solve these equations.

(i) $15 + x = 60$

[1 mark]

(ii) $20 - y = 9$

[1 mark]

continued on the next page . . .

Question 7 (b) continued

7. (b) (iii) $6w = 54$

[1 mark]

8. Look at the Venn diagram for Question 8 in the separate Diagram Booklet.

The Venn diagram is used to show

- multiples of 5
- factors of 15

Place the numbers 1, 3, 5, 10 and 15 in the Venn diagram.

[2 marks]

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

(a) (i) 7^2

[1 mark]

(ii) $\sqrt{81}$

[1 mark]

(b) (i) Write $19 \cdot 731$ **correct to 1 decimal place.**

[1 mark]

(ii) Write $65 \cdot 4279$ **correct to 3 decimal places.**

[1 mark]

10. Look at the diagram for Question 10 in the separate Diagram Booklet.

The diagram shows the line *AB*.

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

- **Angle *ABC* = 55° and**
- ***BC* = 7•5 cm**

[2 marks]

11. Ifan has chosen four odd numbers.

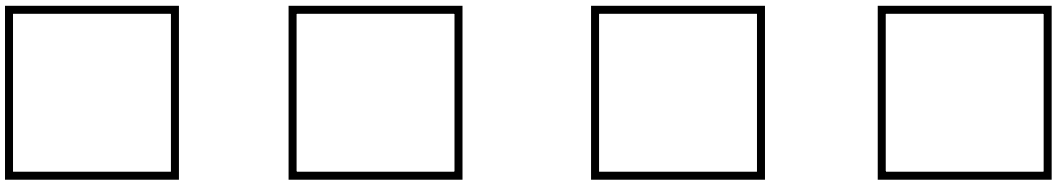
Some of the numbers are the same and some of them are different.

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?

Ifan's numbers are



[3 marks]

12. Evaluate each of the following.

(a) $0 \cdot 8 \times 0 \cdot 25$

[1 mark]

(b) $13 \cdot 4 - 2 \cdot 96$

[1 mark]

13. (a) Which of the following is the nearest value to **488 grams?**

Circle the correct answer.

0•5 kg	500 kg	50 kg	5 tonnes	0• 05 kg

[1 mark]

(b) Circle the correct answer for the following.

15 miles is approximately equal to

1500 m	24 km	15 km	2•4 km	3000 m

[1 mark]

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.

Sum of the first three terms

= _____

[3 marks]

15. Look at the diagram for Question 15 in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

In the diagram, ABC is a right – angled triangle and CDE is an isosceles triangle.

Angle $ABC = 90°$,

angle $BAC = 64°$

and $CD = CE$

Angle $ACB = w$

Angle $ECD = x$

Angle $EDC = y$

AD and BE are straight lines intersecting at C.

continued on the next page . . .

Question 15 continued

Calculate the size of each of the angles *w*, *x* and *y*.

w = _____ °

x = _____ °

y = _____ °

[5 marks]

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.

continued on the next page . . .

Question 16 continued

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

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

Explain why these groups will not be suitable.

_____

_____

_____

_____

_____

[1 mark]

continued on the next page . . .

Question 16 continued

16. (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 TOTAL POINTS column.

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

_____

_____

_____

[1 mark]

continued on the next page . . .

Question 16 continued

16. (c) Look at the table for Question 16 (c) in the separate Diagram Booklet.

Finally, Sioned decides to use the groups shown in the table.

The results for the first 100 competitors are shown in the table.

One of these 100 competitors is chosen at random.

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

_____

_____

_____

[1 mark]

continued on the next page . . .

Question 16 (c) continued

16. (c) (ii) Explain why the following statement may be incorrect.

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

[1 mark]

17. (a) Express 96 as a percentage of 300

[2 marks]

(b) Share £48 in the ratio 1 : 7

[2 marks]

18. Look at the diagram for Question 18 in the separate Diagram Booklet.

Ahmed organises a game using two fair spinners, as shown in the diagram.

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 shown in the diagram 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 marks]

19. (a) Look at the diagram for Question 19 (a) in the separate Diagram Booklet.
The diagram shows a shape on a coordinate grid.

Reflect the shape in the line $x = -1$
A cut out shape has been provided for this question.

[2 marks]

(b) Look at the diagram for Question 19 (b) in the separate Diagram Booklet.
The diagram shows a different shape on a coordinate grid.

Enlarge the shape by a scale factor of 2, using $(1, 3)$ as the centre of enlargement.

[3 marks]

END OF PAPER
TOTAL 65 MARKS

Question Number	Additional pages, if required. Write the question number(s) in the left – hand margin.

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MATHEMATICS

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FOUNDATION TIER

The Diagram Booklet MUST be handed in to the invigilators and sent for marking.

Diagram Booklet

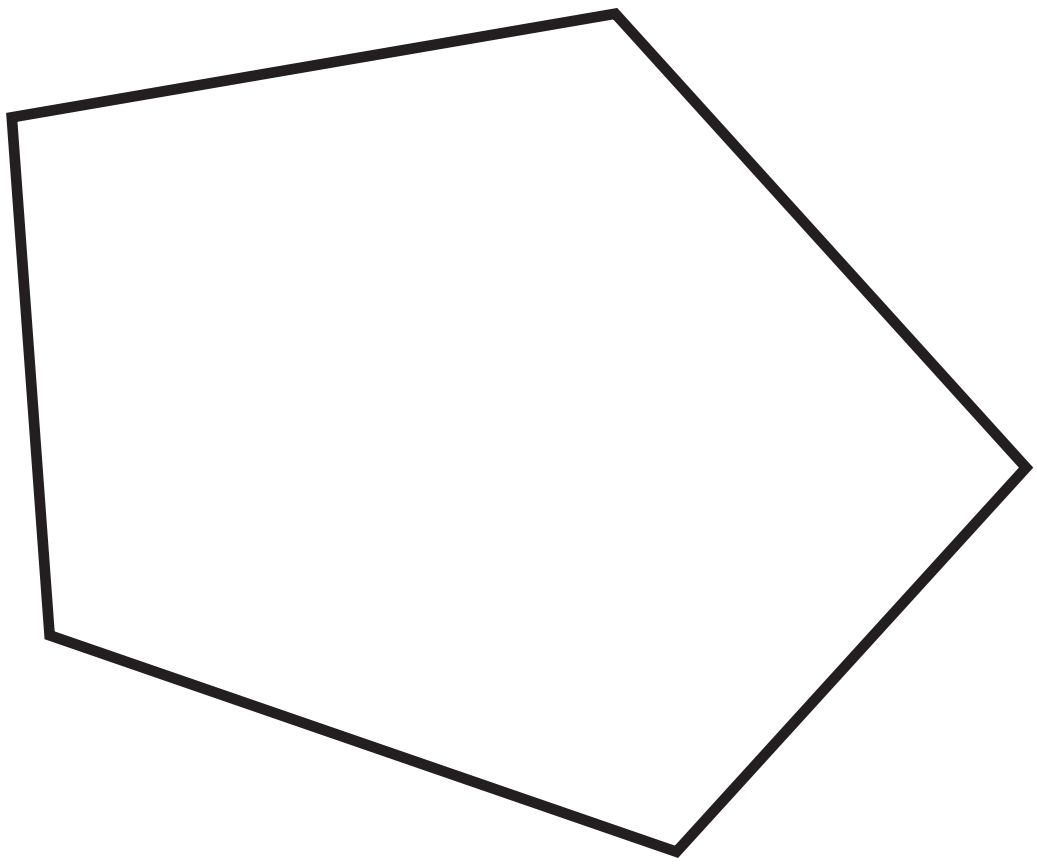
Surname: _____

First name(s): _____

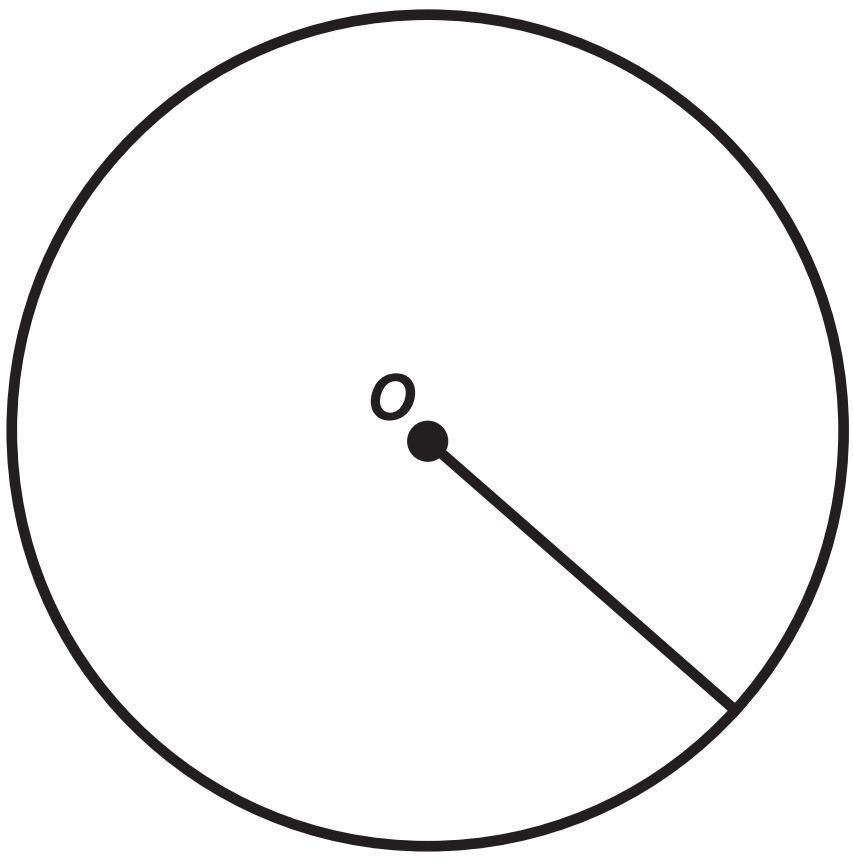
Centre Number: _____

Candidate Number: 0 _____

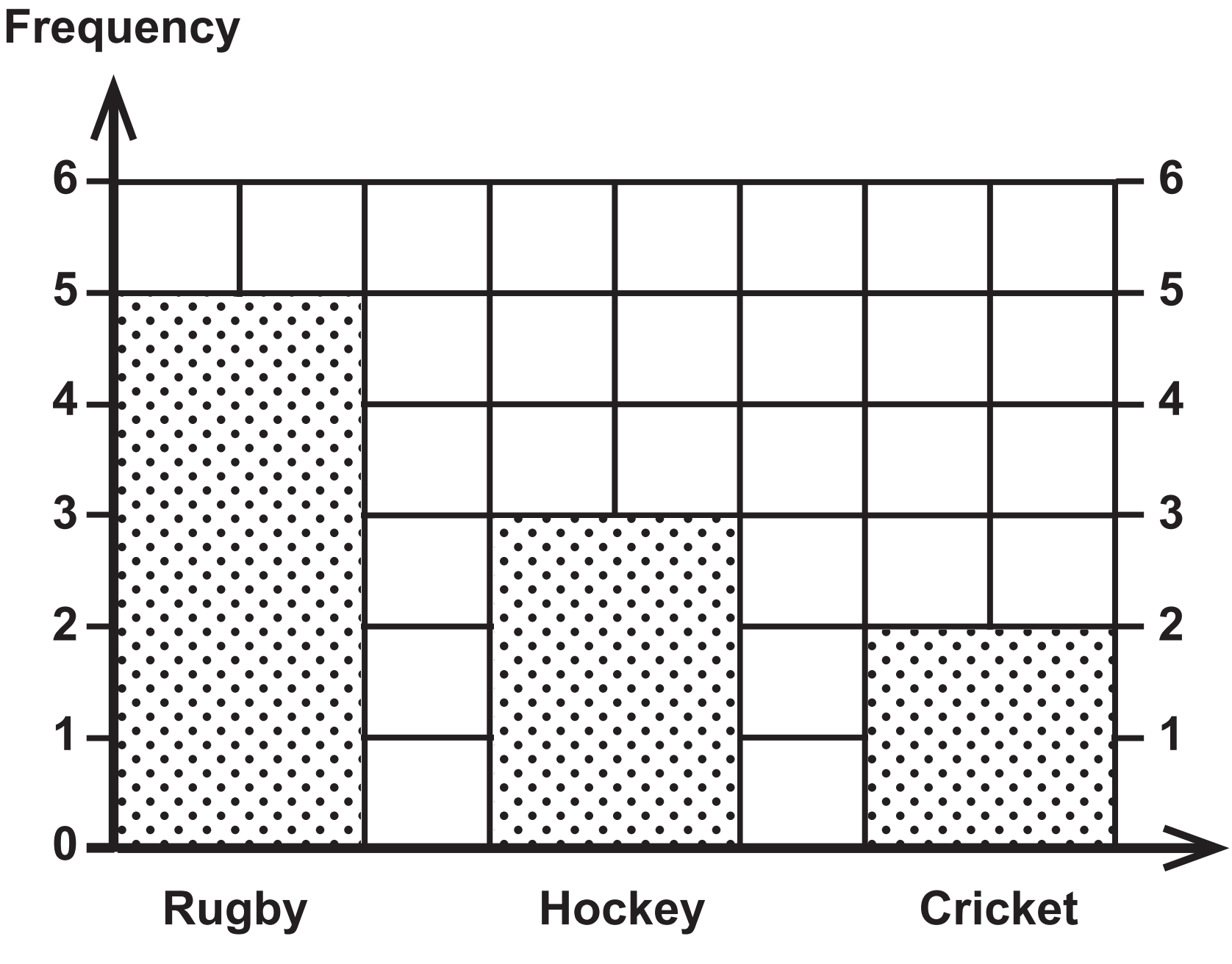
Question 2 (a)



Question 2 (b)



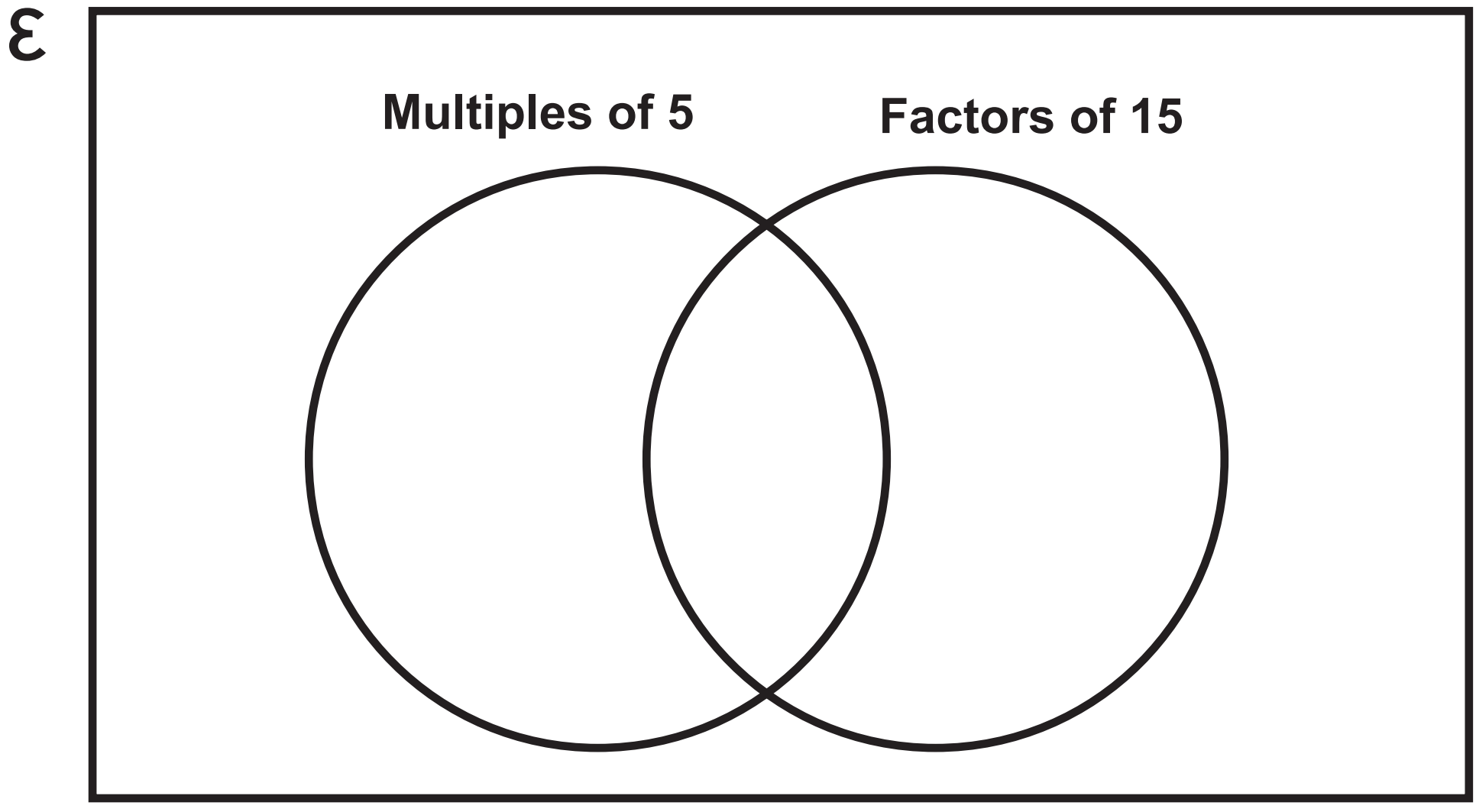
Question 4



Question 5

Diagram IS drawn to scale.

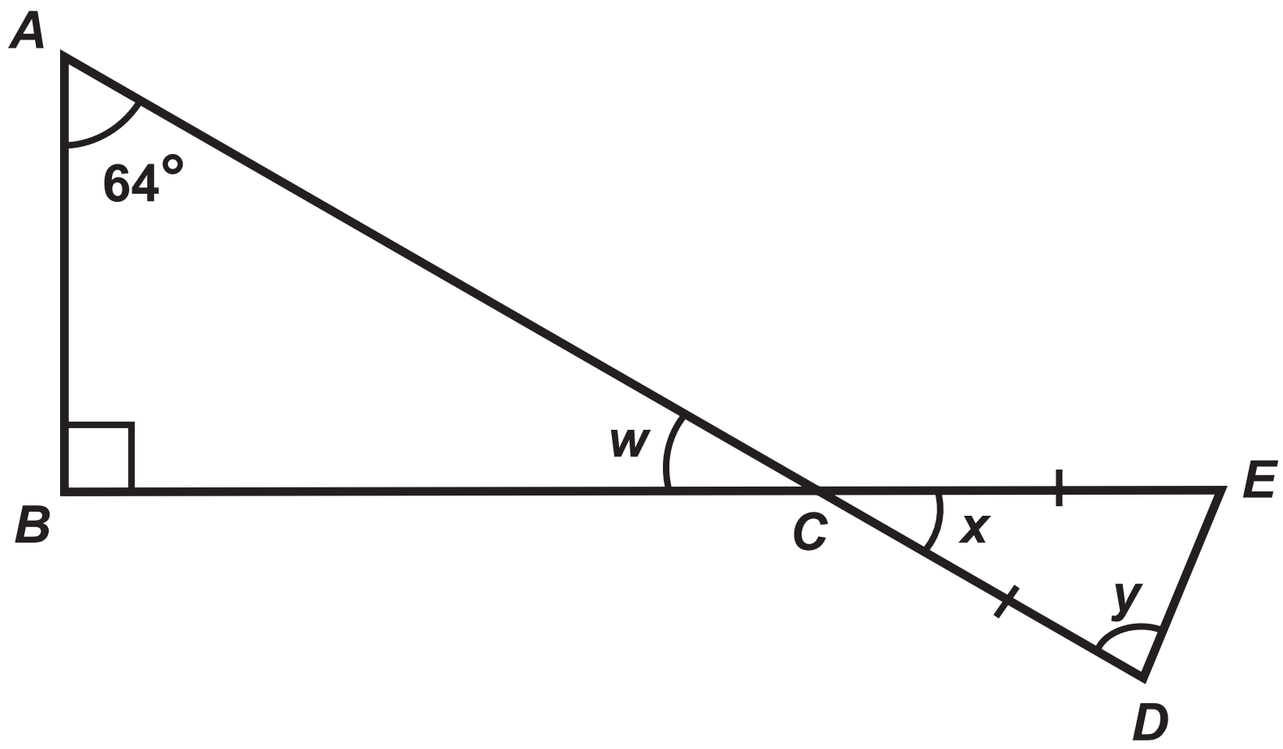
Question 8



Question 10

Question 15

Diagram NOT drawn to scale



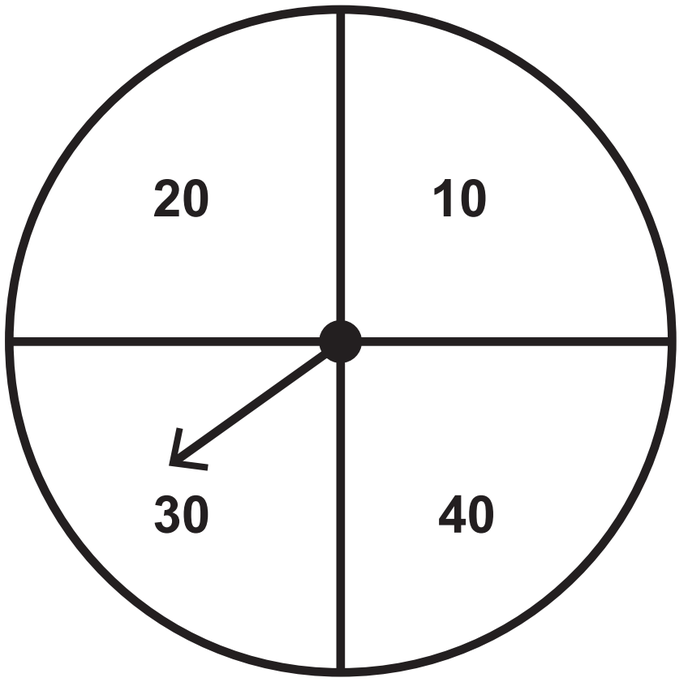
Question 16 (c)

Table

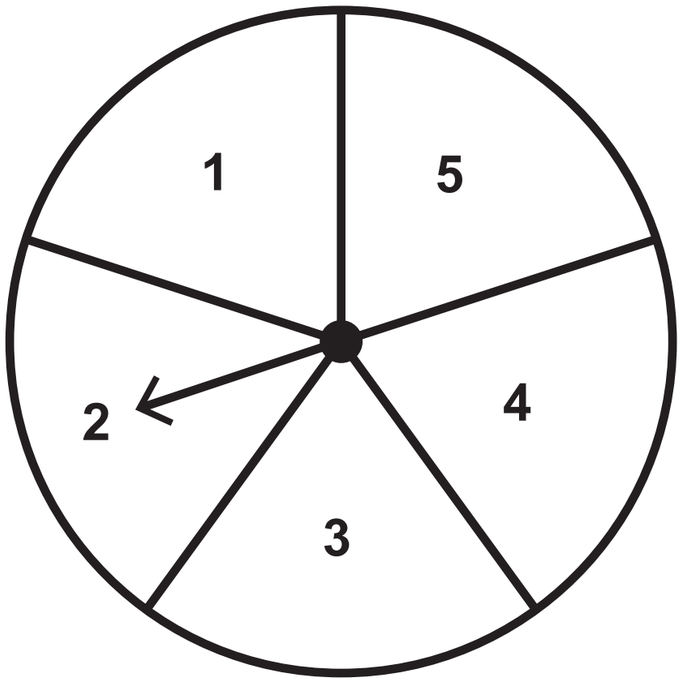
Total points	Number of competitors
0 to 2	5
3 to 5	10
6 to 8	17
9 to 11	22
12 to 14	23
15 to 17	12
18 to 20	11

Question 18

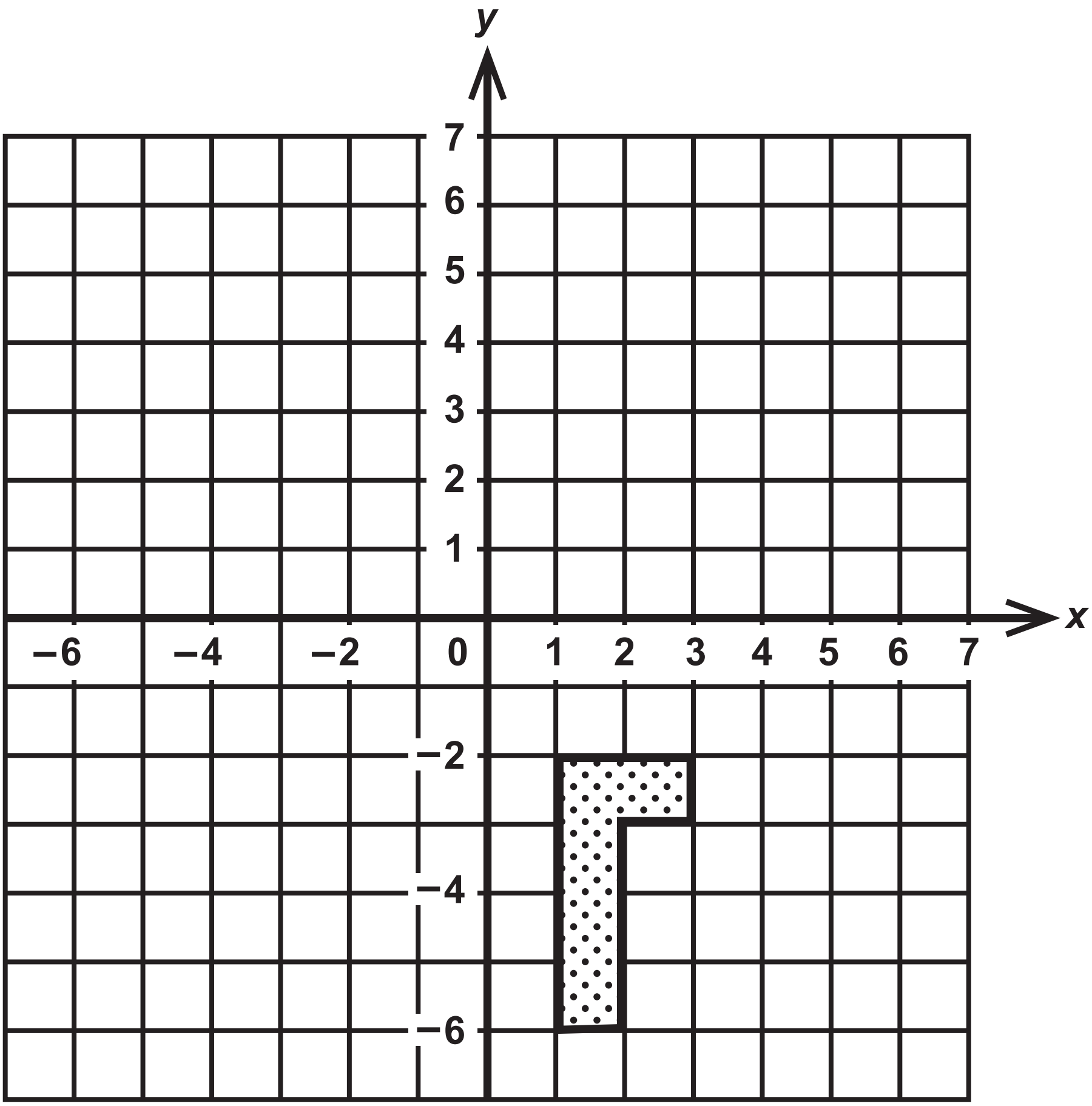
First Spinner



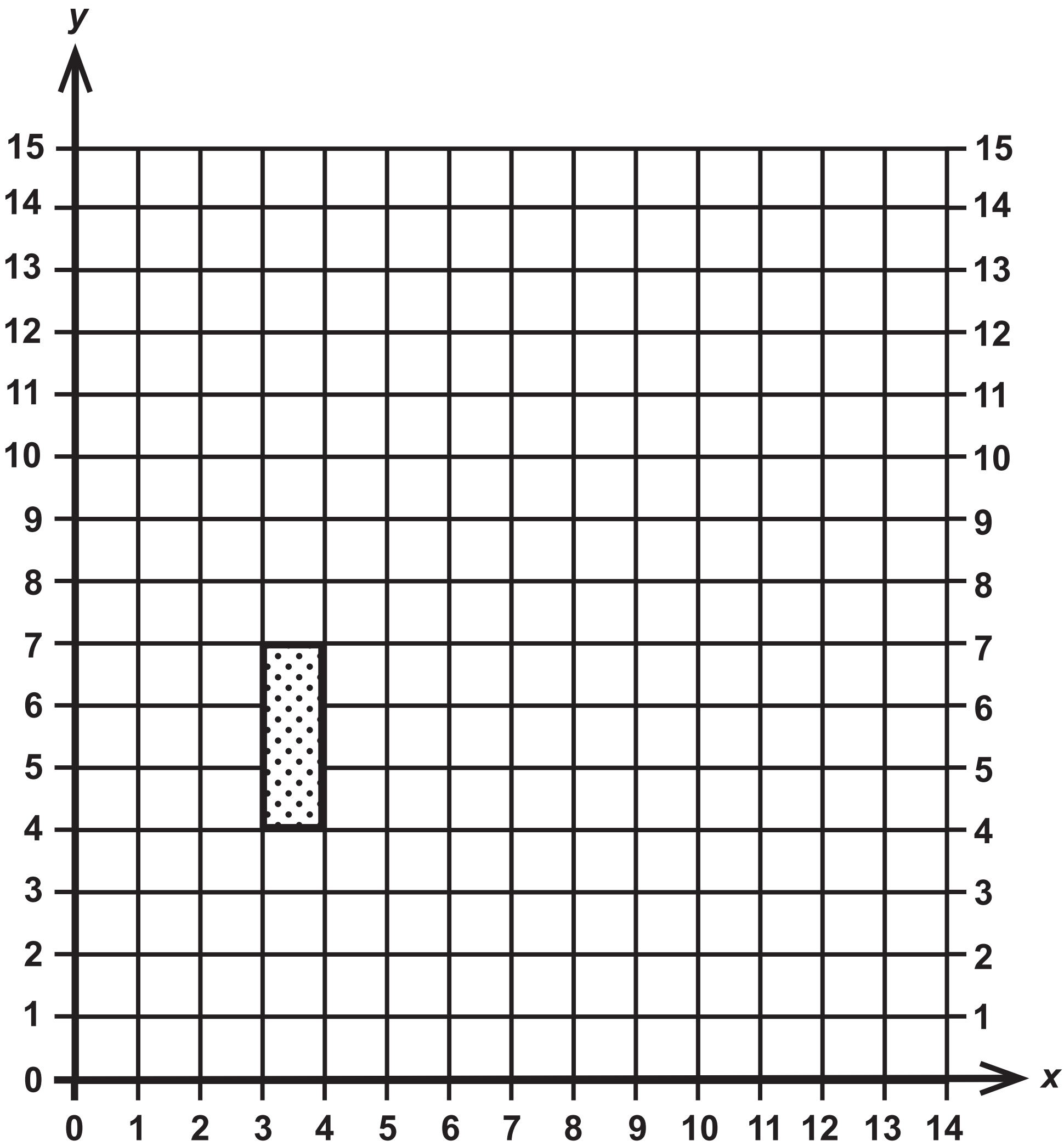
Second Spinner



Question 19 (a)



Question 19 (b)



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MATHEMATICS
and
NUMERACY

FORMULA LIST
FOUNDATION TIER
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You must not write on these formula pages.

Anything you write on these formula pages will gain NO credit.

Formula List – Foundation Tier

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