



GCSE

3300U30 – 1

THURSDAY, 15 MAY 2025 – MORNING

**MATHEMATICS
UNIT 1: NON – CALCULATOR
INTERMEDIATE TIER**

1 hour 45 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.	6	
2.	2	
3.	2	
4.	3	
5.	3	
6.	5	
7.	4	
8.	3	
9.	7	
10.	3	
11.	2	
12.	6	
13.	6	
14.	4	
15.	4	
16.	3	
17.	4	
18.	6	
19.	2	
20.	2	
21.	3	
Total	80	

ADDITIONAL MATERIALS

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

ITEMS INCLUDED WITH QUESTION PAPER

A separate Formula List.

A separate Diagram Booklet.

Shapes for Question 2.

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** the questions in the spaces provided.

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

Take π as $3 \cdot 14$

(Turn over)

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 9, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

(Turn over)

1. (a) Calculate $7^2 \times 2^3$

[2 marks]

(b) Calculate 0.04×0.9

[1 mark]

(c) Calculate 11% of 8400

[2 marks]

continued on the next page . . .

(Turn over)

Question 1 continued

1. (d) Write down the next two numbers in the following sequence.

18, 16, 12, 6, _____ , _____

[1 mark]

(Turn over)

- 2. Look at the diagram for Question 2 in the separate Diagram Booklet. The diagram shows some shaded squares on a grid.**

Shade the least number of squares so that the grid has rotational symmetry of order 4

Cut out squares are provided for this question.

[2 marks]

3. **ESTIMATE** the value of **89×6349**

You must show all your working.

[2 marks]

(Turn over)

4. Write 0.62 , 68% and $\frac{13}{20}$ in ascending order.

You must show all your working.

Smallest value

 Greatest value
[3 marks]

(Turn over)

5. Look at the diagram for Question 5 in the separate Diagram Booklet. The diagram is NOT drawn to scale.

In the diagram:

- EG is a straight line
- FGH is an isosceles triangle
- Angle $FGH = 50^\circ$
- Angle $EFH = x^\circ$

Calculate the value of x .

[3 marks]

(Turn over)

6. Look at the information for Question 6 in the separate Diagram Booklet.

Mari and Ranvir each think of a number.

The information shows some clues to find their numbers.

The product of their numbers is between 100 and 150

Find Mari's number and Ranvir's number, and calculate the product of their numbers.

You must show all your working.

Mari's number is _____

Ranvir's number is _____

**The product of Mari and Ranvir's numbers
is _____**

[5 marks]

(Turn over)

7. There are **200** pupils in a school hall.
The pupils are from Year **7** to Year **11**

One of the pupils is chosen at random.

- (a) Look at the table for Question 7 (a) in the
separate Diagram Booklet.
Complete the table.

[2 marks]

continued on the next page . . .

(Turn over)

Question 7 continued

7. (b) How many of the pupils are in Year 10?

[2 marks]

8. Solve $12y - 3 = 7y + 15$

[3 marks]

(Turn over)

9. IN THIS QUESTION, YOU WILL BE ASSESSED ON THE QUALITY OF YOUR ORGANISATION, COMMUNICATION AND ACCURACY IN WRITING.

Look at the diagram for Question 9 in the separate Diagram Booklet. The diagram is NOT drawn to scale. The diagram shows a trapezium, ***ABCD***.

The area of the right – angled triangle, ***AED***, is 24 cm^2

The length of ***AB*** is 3 cm.

The length of ***DE*** is 4 cm.

The length of ***EC*** is 10 cm.

Calculate the area of the trapezium, ***ABCD***.

You must show all your working.

(Turn over)

10. Geraint cycles 18 miles in 1 hour 30 minutes.
Calculate Geraint's average speed.
Give your answer in miles per hour.

[3 marks]

11. Look at the diagram for Question 11 in the separate Diagram Booklet. The diagram is NOT drawn to scale.

In the diagram:

PR is parallel to SV

Angle $PQT = 65^\circ$

Angle $TQU = 60^\circ$

Angle $RQU = 55^\circ$

Angle $QTU = x$

Angle $VUQ = y$

- (a) Find the size of angle x .

[1 mark]

- (b) Find the size of angle y .

Circle your answer.

55°	115°	120°	125°	135°
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[1 mark]

(Turn over)

12. Look at the diagram for Question 12 in the separate Diagram Booklet. The diagram shows a Venn diagram.

A group of 100 pupils attended their school sports day.

13 pupils did not compete in either Track or Field events.

The expressions in the Venn diagram represent the number of pupils in each category.

The universal set, $\mathcal{E}$, contains all the pupils.

- (a) Find the value of y .

[4 marks]

12. (b) One pupil is chosen at random from the group.
What is the probability that this pupil competed
only in Track events?

[2 marks]

(Turn over)

13. Look at the table for Question 13 in the separate Diagram Booklet. The table shows some of the values of $y = 2x^2 - 6$ for values of x from -3 to 2

(a) Complete the table in the separate Diagram Booklet.

[2 marks]

(b) On the graph paper provided for Question 13 (b) in the separate Diagram Booklet, draw the graph of $y = 2x^2 - 6$ for values of x from -3 to 2

[2 marks]

continued on the next page . . .

(Turn over)

Question 13 continued

13. (c) Draw the line $y = 1$ on the same graph.

Write down the values of x where

the line $y = 1$ cuts the curve $y = 2x^2 - 6$

Give your answers correct to 1 decimal place.

$x =$ _____ and $x =$ _____

[2 marks]

(Turn over)

- 14. A mass is shared in the ratio 3 : 5**

The larger share is 44 lb (pounds).

Calculate the total mass.

Give your answer in kilograms (kg).

You must show all your working.

[illegible]

(Turn over)

15. The mean of five whole numbers is 20

The mean of three of these numbers is 22

The other two numbers have a difference of 6

Find THE OTHER TWO numbers.

[illegible]

[4 marks]

(Turn over)

16. Look at the diagram for Question 16 in the separate Diagram Booklet. The diagram shows the graph of a straight line for values of x from -2 to 2

- (a) Write down the gradient of the straight line in the diagram.

Gradient is _____

[1 mark]

- (b) Write down the equation of the straight line in the form $y = mx + c$, where m and c are whole numbers.

[1 mark]

continued on the next page . . .

(Turn over)

Question 16 continued

- 16. (c) Write down the equation of a different straight line that is parallel to the straight line in the diagram.**

[1 mark]

17. Look at the diagram for Question 17 in the separate Diagram Booklet.

**The diagram shows four patterns: Pattern 1,
Pattern 2, Pattern 3 and Pattern 4**

**Shaded tiles are used to make the patterns as shown
in the diagram.**

**(a) How many shaded tiles would you need to make
Pattern n ?**

[2 marks]

continued on the next page . . .

(Turn over)

Question 17 continued

- 17. (b) What is the number of the pattern you would make when you use exactly 147 shaded tiles?**

[2 marks]

- 18. 5 kg of cherries and 7 kg of grapes cost £88**
2 kg of cherries and 3 kg of grapes cost £36

The cost of 1 kg of cherries is £x.

The cost of 1 kg of grapes is £y.

Use an algebraic method, not trial and improvement, to find the total cost of $\frac{1}{2}$ kg of cherries and 6 kg of grapes.

You must show all your working.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

The total cost of $\frac{1}{2}$ kg of cherries and 6 kg of grapes
is £ _____

[6 marks]
(Turn over)

19. The length of each side of a square is 15 cm, correct to the nearest 1 cm.

Calculate the greatest possible perimeter of this square.

[2 marks]

20. Factorise $x^2 - 11x + 24$

[2 marks]

(Turn over)

21. Look at the diagram for Question 21 in the separate Diagram Booklet. The diagram is NOT drawn to scale. In the diagram, ***ABCD*** and ***ABCE*** are cyclic quadrilaterals.

Angle ***ABC*** = ***y***

Angle ***AEC*** = ***x***

Angle ***ADC*** = **79°**

- (a) Find the size of angle ***X***.

x = _____ $^\circ$

[1 mark]

continued on the next page . . .

(Turn over)

Question 21 continued

21. (b) Calculate the size of angle y .

State the CIRCLE THEOREM that you have used to find your answer.

$y =$ _____^o

Circle Theorem: _____

[2 marks]

END OF PAPER

TOTAL 80 MARKS

(Turn over)

[illegible]

(Turn over)

[illegible]

(Turn over)

[illegible]



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MATHEMATICS

UNIT 1: NON – CALCULATOR

INTERMEDIATE TIER

Diagram Booklet

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

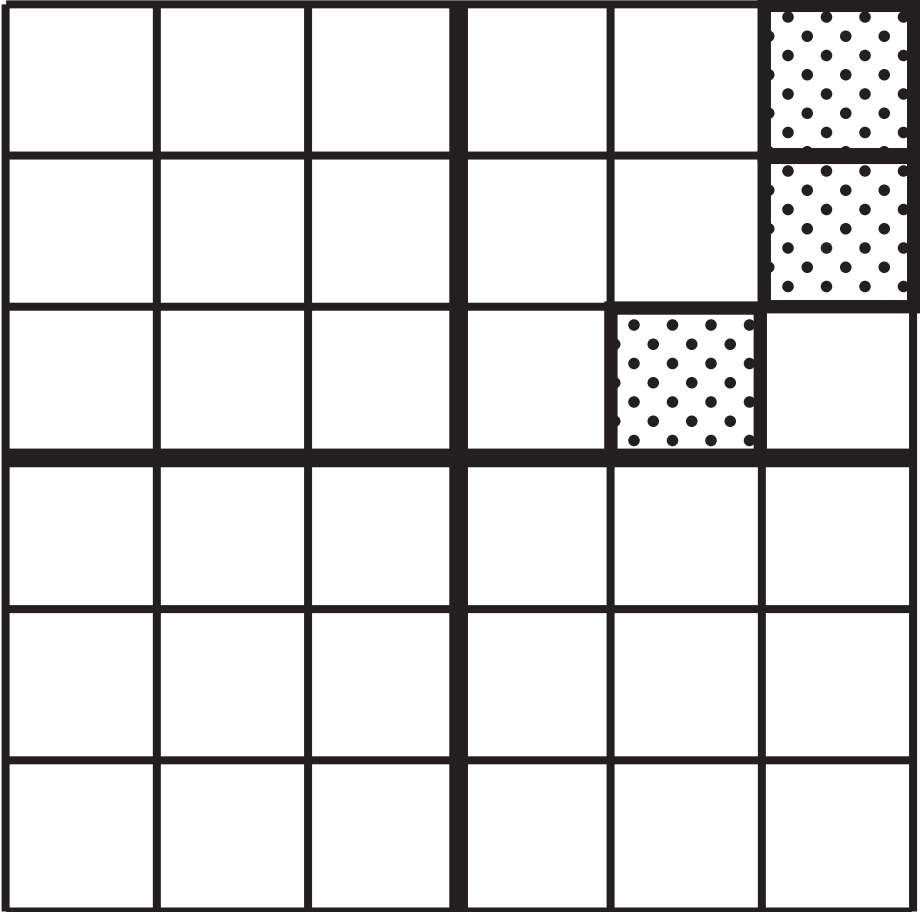
Surname: _____

First name(s): _____

Centre Number: _____

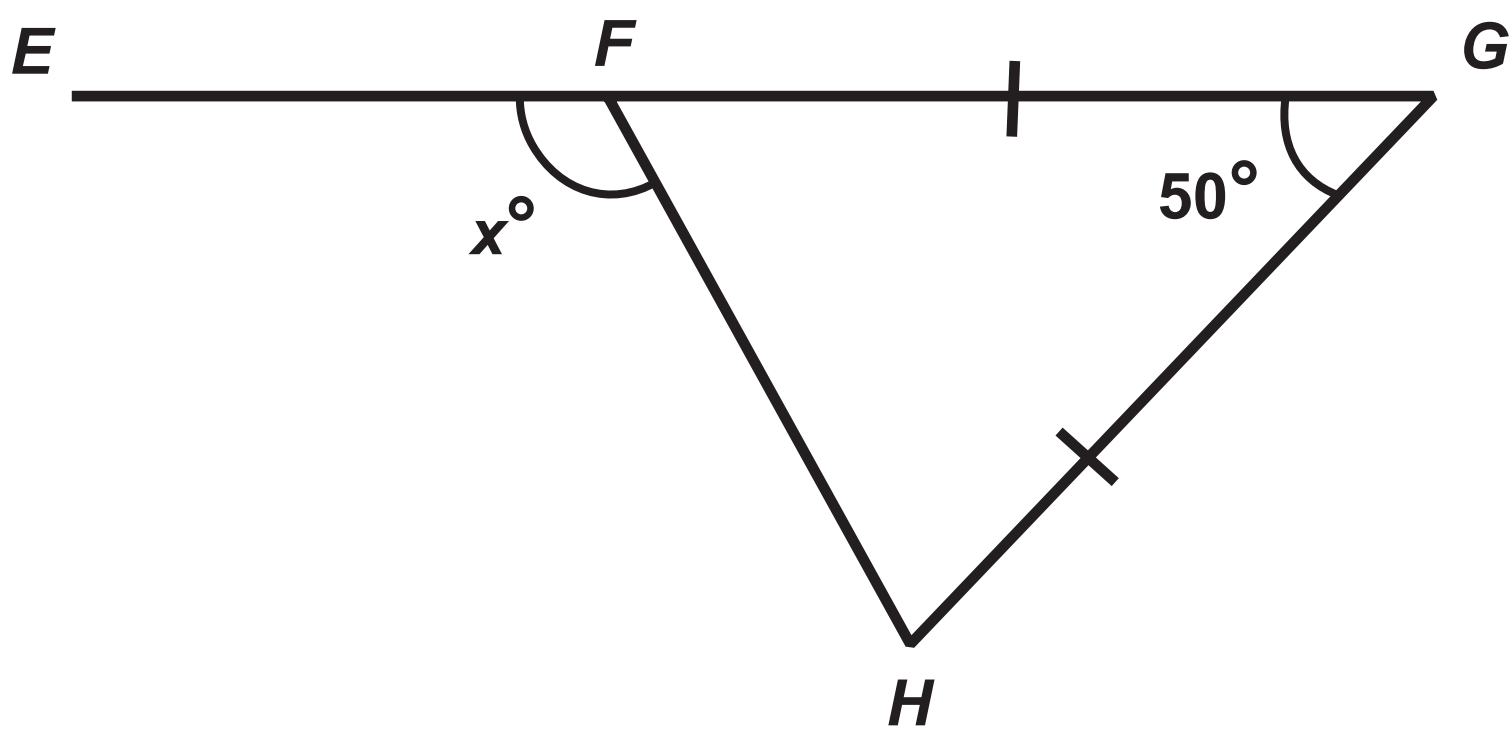
Candidate Number: 0 _____

Question 2



Question 5

Diagram NOT drawn to scale



Question 6

Information

Mari's number
A whole number less than 20
A multiple of 6

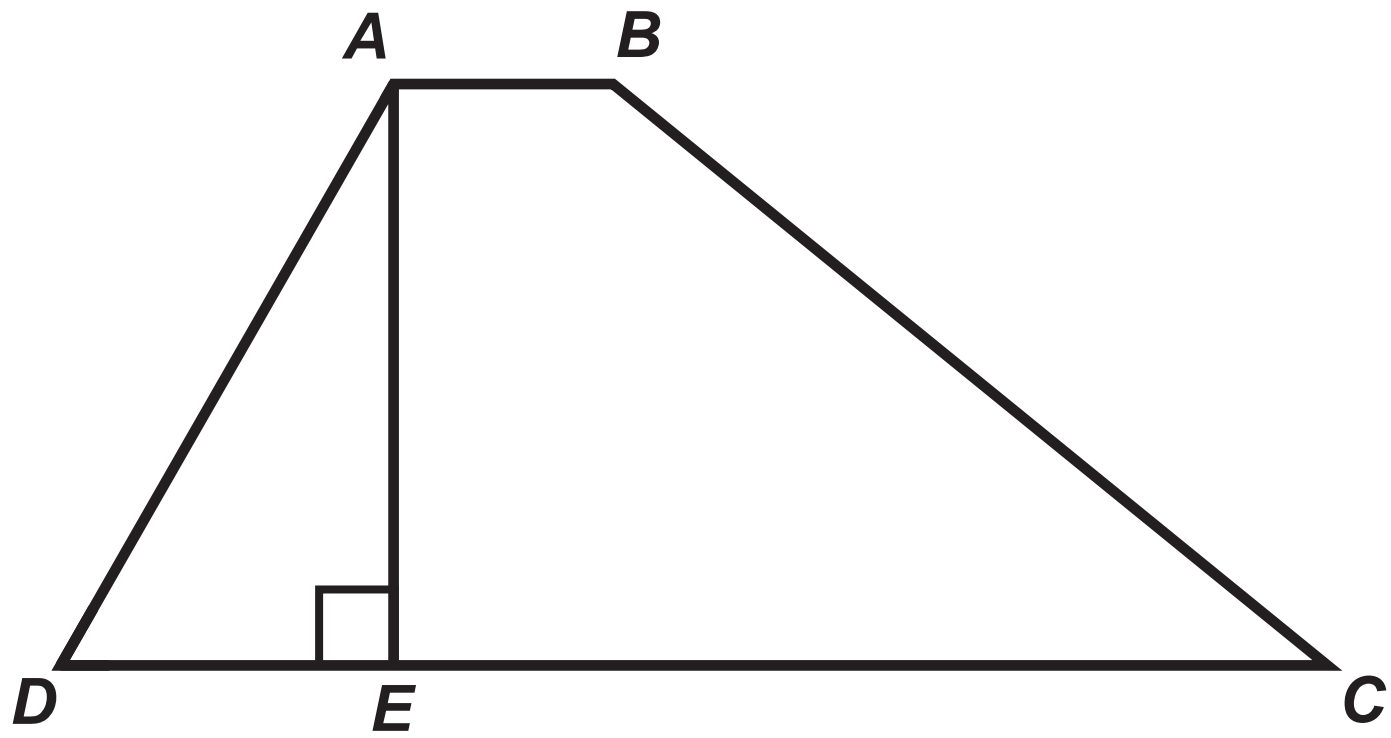
Ranvir's number
Half of Ranvir's number is $\sqrt{25}$

Question 7 (a)

	Probability
Year 7	0.2
Year 8	0.3
Year 9	0.26
Year 10	0.14
Year 11	

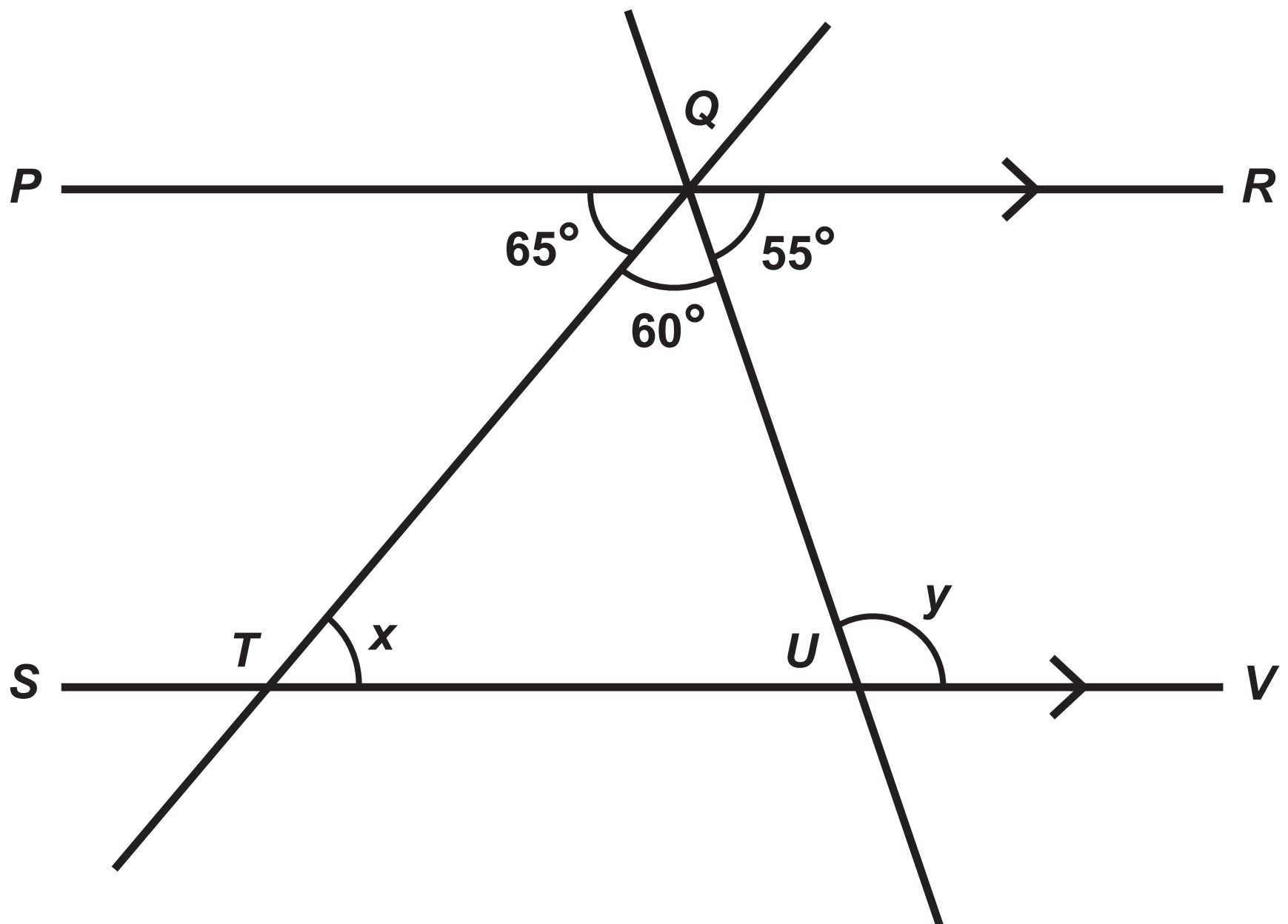
Question 9

Diagram NOT drawn to scale

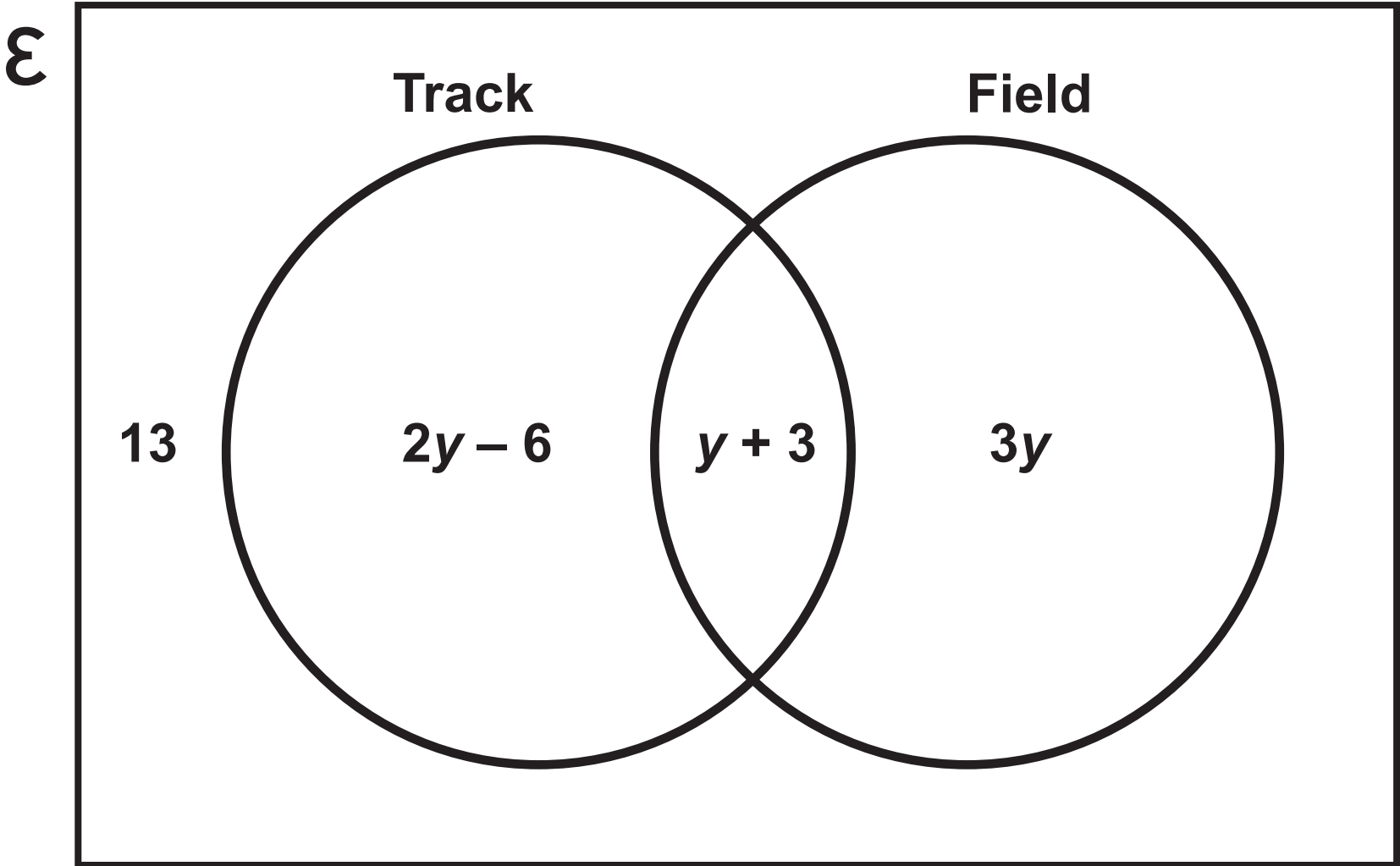


Question 11

Diagram NOT drawn to scale



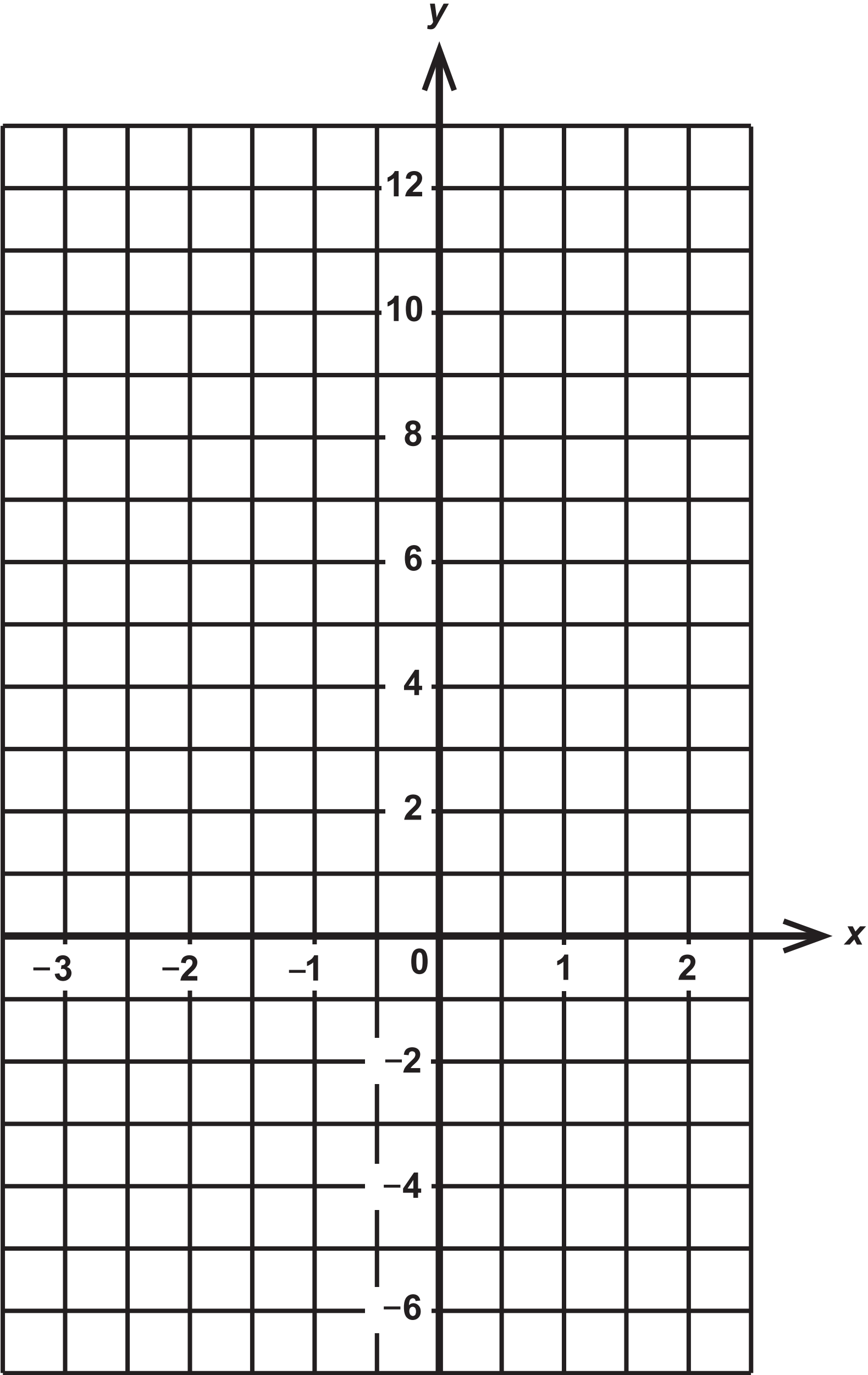
Question 12



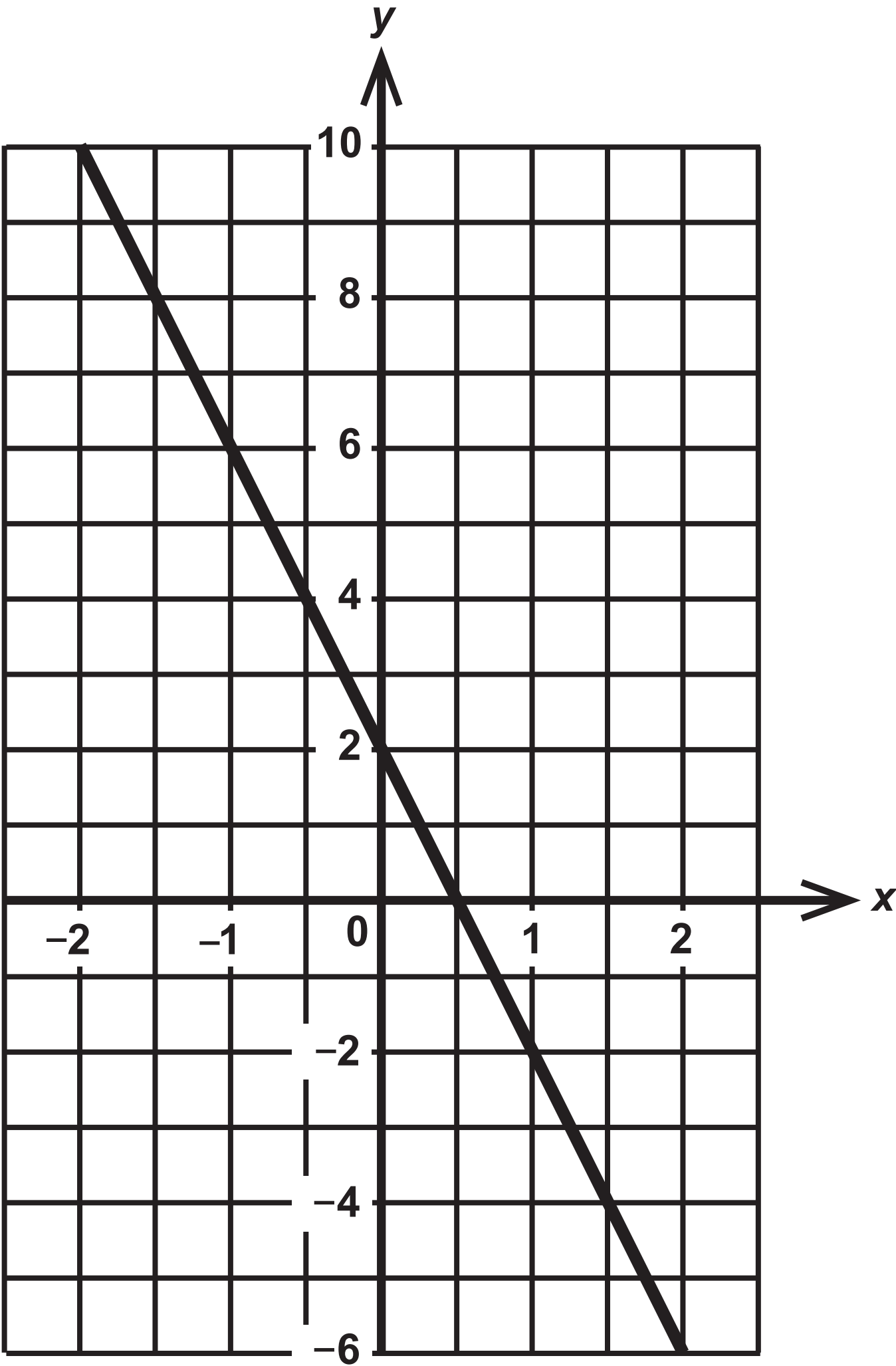
Question 13

x	-3	-2	-1	0	1	2
$y = 2x^2 - 6$		2	-4	-6		2

Question 13 (b)

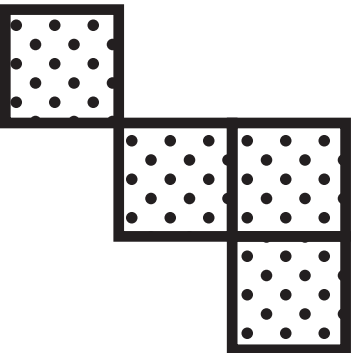


Question 16

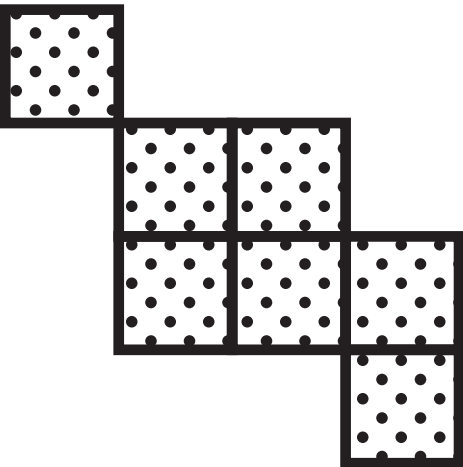


Question 17

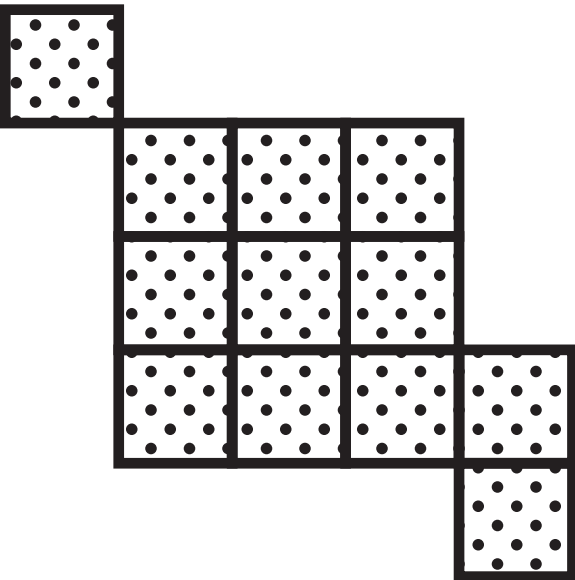
Pattern 1



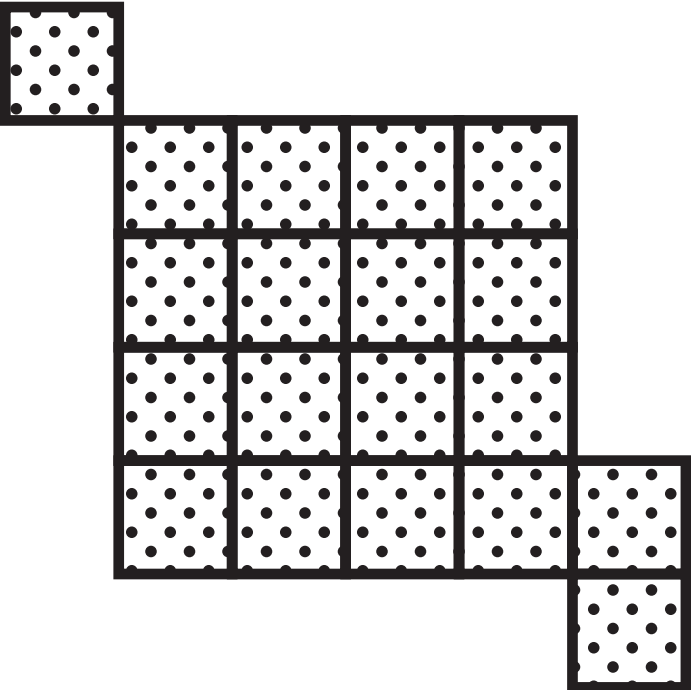
Pattern 2



Pattern 3

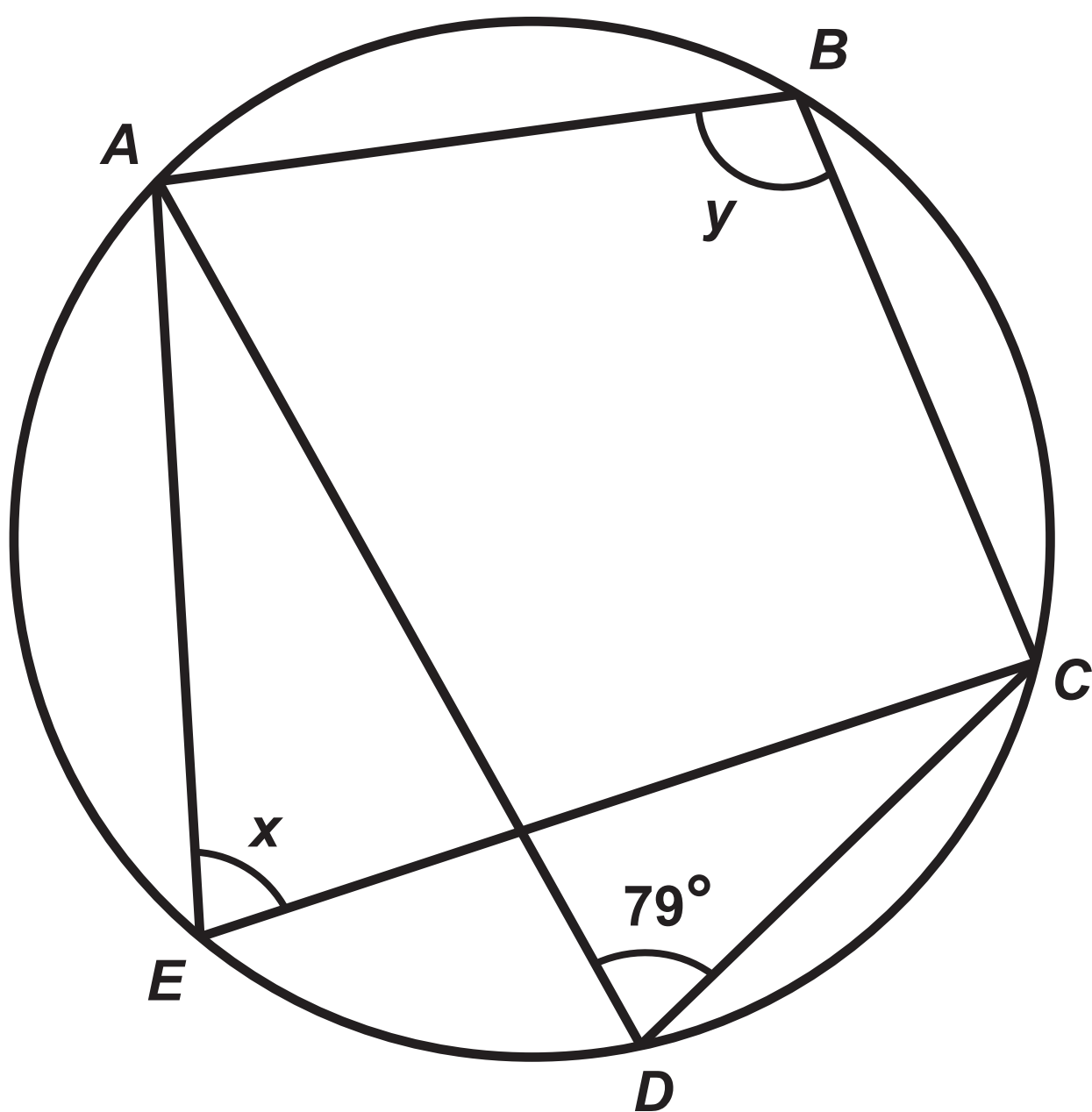


Pattern 4



Question 21

Diagram NOT drawn to scale



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MATHEMATICS – NUMERACY**

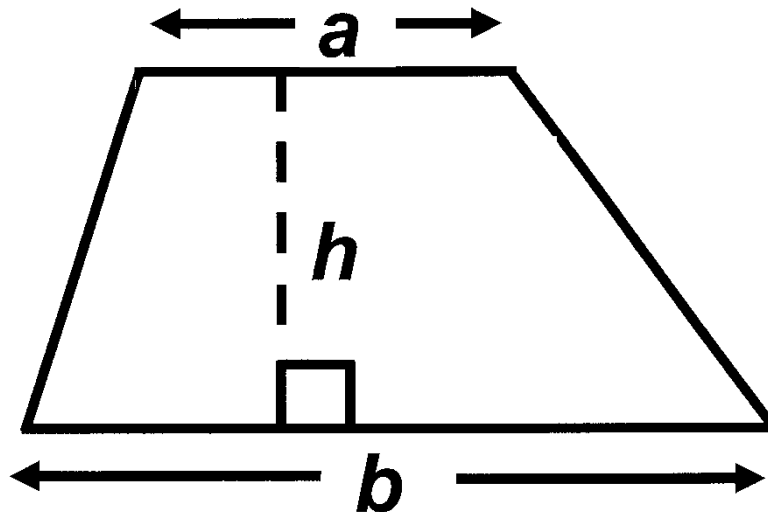
**FORMULA LIST
INTERMEDIATE TIER
GCSE**

You must not write on these formula pages.

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

Formula List – Intermediate Tier

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



Volume of prism =
area of cross – section $\times$ length

