



GCSE

3300U20 –1

WEDNESDAY, 11 JUNE 2025 – MORNING

MATHEMATICS

UNIT 2: CALCULATOR – ALLOWED

FOUNDATION TIER

**1 hour 30 minutes plus your additional
time allowance**

**A CALCULATOR WILL BE REQUIRED
FOR 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.	5	
4.	4	
5.	2	
6.	3	
7.	4	
8.	2	
9.	5	
10.	3	
11.	3	
12.	3	
13.	3	
14.	5	
15.	5	
16.	3	
17.	4	
18.	3	
Total	65	

ADDITIONAL MATERIALS

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

ITEMS INCLUDED WITH QUESTION PAPER

A separate Formula List.

A separate Diagram Booklet.

Models for Question 2 (a).

A cut out shape for Question 13 (b).

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

(Turn over)

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.

Take π as $3 \cdot 14$ or use the π button on your calculator.

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

(Turn over)

- 1. (a) What is four times three hundred and seventy – two?**

Write your answer in figures.

[1 mark]

- (b) Write $1 \cdot 52$ in words.**

[1 mark]

continued on the next page . . .

(Turn over)

Question 1 continued

1. (c) Insert one pair of brackets into the calculation below to make it correct.

$$4 \times 7 + 3 - 1 = 39$$

[1 mark]

- (d) Write the following numbers in ascending order.

$$3 \cdot 2 \quad - 4 \quad 3 \cdot 09 \quad -1$$

 Lowest _____ _____ _____

 _____ → Highest
 [1 mark]

continued on the next page . . .

(Turn over)

Question 1 continued

- 1. (e) Write down the first three multiples of 67**

[1 mark]

continued on the next page . . .

(Turn over)

Question 1 continued

- 1. (f) A number has exactly six factors.
Its factors are 1, 2, 5, 10, 25 and
the number itself.**

What is the number?

[1 mark]

(Turn over)

- 2. (a) Ask for the models for Question 2 (a).**

The models represent five 3D shapes: Shape A, Shape B, Shape C, Shape D and Shape E. The special name for one of the 3D shapes is a cylinder.

Which shape is the cylinder?

Circle the correct shape from the following list.

Shape A
Shape B
Shape C
Shape D
Shape E

[1 mark]

continued on the next page . . .

(Turn over)

Question 2 continued

- 2. (b) Look at the diagram for Question 2 (b) in the separate Diagram Booklet. The diagram shows five polygons. The special name for one of the polygons is a hexagon. Which polygon is the hexagon? Circle the correct shape from the following list.**

Shape P
Shape Q
Shape R
Shape S
Shape T

[1 mark]

(Turn over)

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

Look at the diagram for Question 3 in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

The diagram shows a square and an equilateral triangle.

The length of a side of the square is 12 cm.

The perimeter of the square is EQUAL TO the perimeter of the equilateral triangle.

continued on the next page . . .

(Turn over)

Question 3 continued

Calculate the length of a side of the equilateral triangle.

You must show all your working.

(Turn over)

13

[3 + 2 OCW marks]

(Turn over)

4. (a) Write the next term in the sequence below.

4 28 52 76 _____
[1 mark]

- (b) Look at the diagram for Question 4 (b) in the separate Diagram Booklet. It shows three diagrams:
Diagram 2, Diagram 3 and Diagram 4 representing a number sequence using dots.
Diagram 1 is incomplete.
Draw Diagram 1 in the sequence.

[1 mark]

continued on the next page . . .

(Turn over)

Question 4 continued

4. (c) The sequence of numbers shown below is linear.

31 _____ _____ 16 11

Two of the numbers are missing.

Fill in the missing numbers in the sequence.

Write down the rule for finding the next term in the sequence.

Rule: _____

[2 marks]

(Turn over)

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

The diagram shows a probability scale.

Darren has a bag containing red counters, yellow counters and green counters.

Altogether, there are 8 counters in the bag.

Darren chooses a counter from the bag at random.

On the probability scale, R shows the probability that Darren chooses a red counter.

There is 1 yellow counter in the bag.

continued on the next page . . .

(Turn over)

Question 5 continued

- 5. (a) On the probability scale, mark with a Y the probability that Darren chooses a yellow counter.**

[1 mark]

- (b) On the probability scale, mark with a G the probability that Darren chooses a green counter.**

[1 mark]

(Turn over)

18

- 6. A fifth number is added to the list below.**

13 18 4 17

When the fifth number is added to the list, the range increases by 3

Write down the TWO possible values for the fifth number.

You must show all your working.

(Turn over)

The two possible values are

_____ and _____

[3 marks]

(Turn over)

7. Find the value of each of the following.

(a) $\frac{223 \times 15^2}{130}$

**Write your answer correct to the
nearest 10**

[2 marks]

continued on the next page . . .

(Turn over)

Question 7 continued

7. (b) $\sqrt{14 - 9} + 4$

Write your answer correct to 1 decimal place.

[2 marks]

(Turn over)

8. Ffion thinks of a number.

She multiplies this number by 8

**Ffion then adds 34 to her answer
to get 170**

What number did Ffion think of?

You must show all your working.

(Turn over)

[2 marks]

(Turn over)

9. Find the value of each of the following.

(a) $\frac{3}{4}$ of 122

[2 marks]

(b) 60% of 315

[2 marks]

continued on the next page . . .

(Turn over)

Question 9 continued**9. (c) 3^5**

[1 mark]**(Turn over)**

10. Using ONLY the numbers listed below,

120 121 122 123 124 125 126

write down

(a) a square number,

[1 mark]

(b) a cube number,

[1 mark]

(c) a multiple of 14

[1 mark]

(Turn over)

11. Use the formula $18x + 5y = t$ to find the value of y when $x = 2 \cdot 5$ and $t = 60$

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.

(Turn over)

28

[3 marks]

(Turn over)

- 12. (a) Look at the diagram for Question 12 (a) in the separate Diagram Booklet.**

The diagram shows five quadrilaterals: Square, Trapezium, Rhombus, Kite and Parallelogram. Which ONE of the quadrilaterals has

- rotational symmetry of order 2,**
- AND**
- 2 lines of symmetry?**

Circle the correct shape below.

Square
Trapezium
Rhombus
Kite
Parallelogram

[1 mark]

(Turn over)

Question 12 continued

**12. (b) A cuboid measures 8 cm by
13 cm by 7 cm.**

**Calculate the volume of the
cuboid.**

Volume = _____ cm³

[2 marks]

(Turn over)

- 13. (a) Look at the diagram for Question 13 (a) in the separate Diagram Booklet. The diagram shows a shape on a square grid. Enlarge the shape by a scale factor of 4**

[2 marks]

- (b) Look at the diagram for Question 13 (b) in the separate Diagram Booklet. The diagram shows a shape on a coordinate grid. Translate the shape 3 squares to the right and 5 squares down. A cut out shape is available for this question.**

[1 mark]

(Turn over)

14. (a) Look at the diagram for Question 14 (a) in the separate Diagram Booklet. The diagram shows some tiles in part of a tessellation.

The tiles are all identical regular hexagons.

Each of the interior angles is 120°

Explain why the tiles tessellate.

You must give a reason, based on angle facts, for your answer.

(Turn over)

[1 mark]

continued on the next page . . .

(Turn over)

Question 14 continued

**14. (b) Explain why tiles that are identical
REGULAR PENTAGONS will not
tessellate.**

**You must show working to support
your explanation.**

(Turn over)

35

[4 marks]

(Turn over)

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

There are two diagrams:

Diagram 1 is a pie chart. Diagram 2 is a pictogram.

Two groups of people, Group A and Group B, took part in Adam's survey.

Adam asked each person this question:

“From the colours Red, Blue and Green, which is your favourite colour?”

continued on the next page . . .

(Turn over)

Question 15 continued

There are 92 people in Group A.

The results for Group A are shown in the pie chart.

The results for Group B are shown in the pictogram.

Adam chose one person at random from all the people in both groups.

What is the probability that this person chose GREEN?

(Turn over)

[5 marks]

(Turn over)

16. Look at the diagram for Question 16 in the separate Diagram Booklet.

The diagram shows six blocks.

In the diagram, the expression in each block in the top two rows is found by using the following rule:

“The expression in any block is the sum of the expressions in the two blocks below it.”

Some expressions are already shown. Use the rule to fill in the empty blocks in the diagram.

You must simplify your answers.

(Turn over)

40

[3 marks]

(Turn over)

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

The diagram is NOT drawn to scale.

The diagram shows a sketch of a circle that fits exactly inside a square.

The radius of the circle is 5 cm.

Calculate the total area of the shaded regions.

Give your answer as a decimal.

You must show all your working.

(Turn over)

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.

(Turn over)

Total area of the shaded regions

= _____

[4 marks]

(Turn over)

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

The diagram shows two towns, *A* and *B*, on a map.

The scale of the map is 1 cm represents 4.5 km.

(a) Find the straight-line distance from town *A* to town *B*.

Give your answer in kilometres.

(Turn over)

The straight – line distance from *A* to *B*

= _____ km

[2 marks]

**(b) Find the bearing of town *A* from
town *B*.**

[1 mark]

END OF PAPER

TOTAL 65 MARKS

(Turn over)

[illegible]

(Turn over)

[illegible]

(Turn over)

[illegible]



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Diagram Booklet

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

Surname: _____

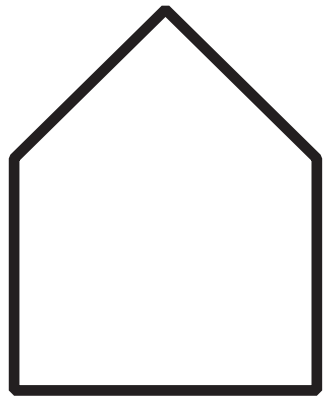
First name(s): _____

Centre Number: _____

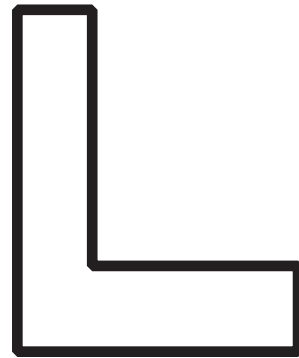
Candidate Number: 0 _____

Question 2 (b)

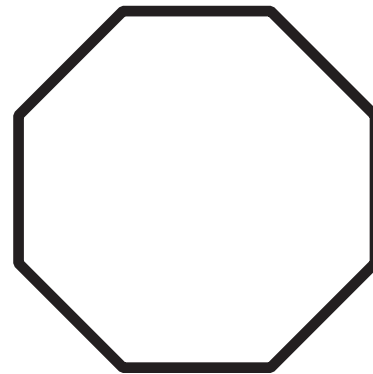
Shape P



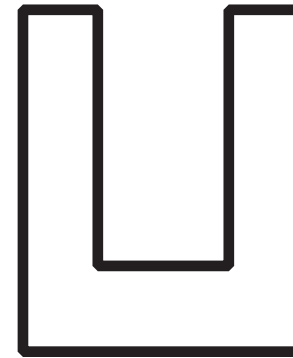
Shape Q



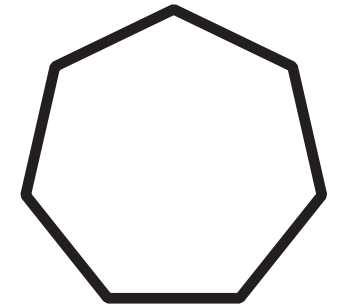
Shape R



Shape S



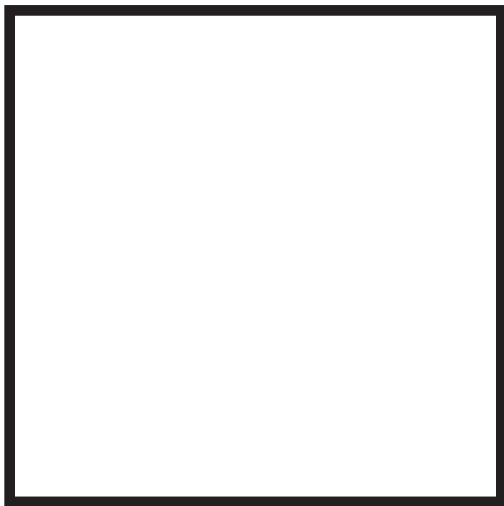
Shape T



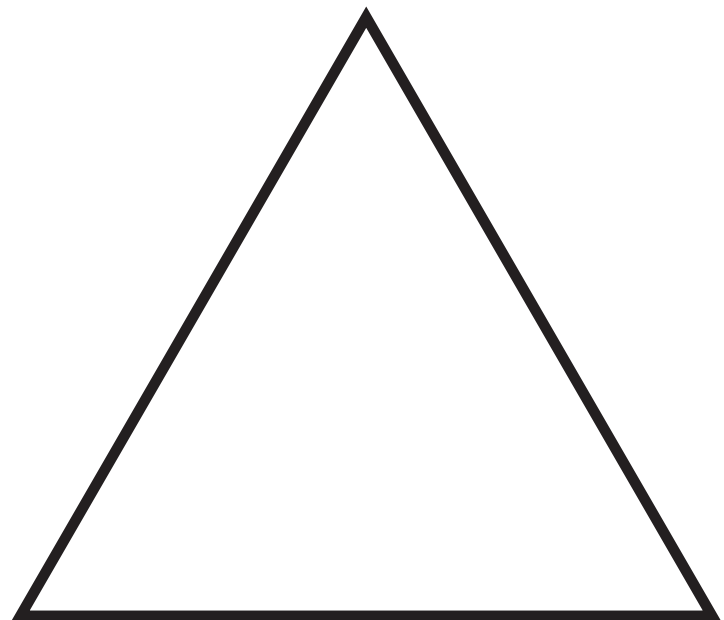
Question 3

Diagram NOT drawn to scale

Square



Equilateral triangle



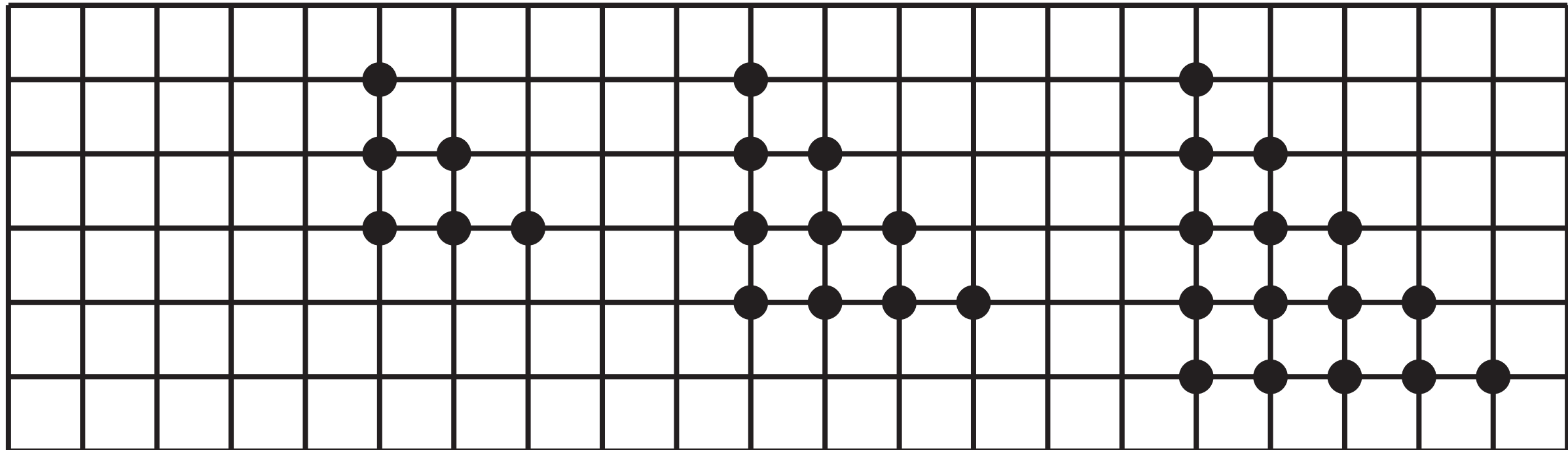
Question 4 (b)

Diagram 1

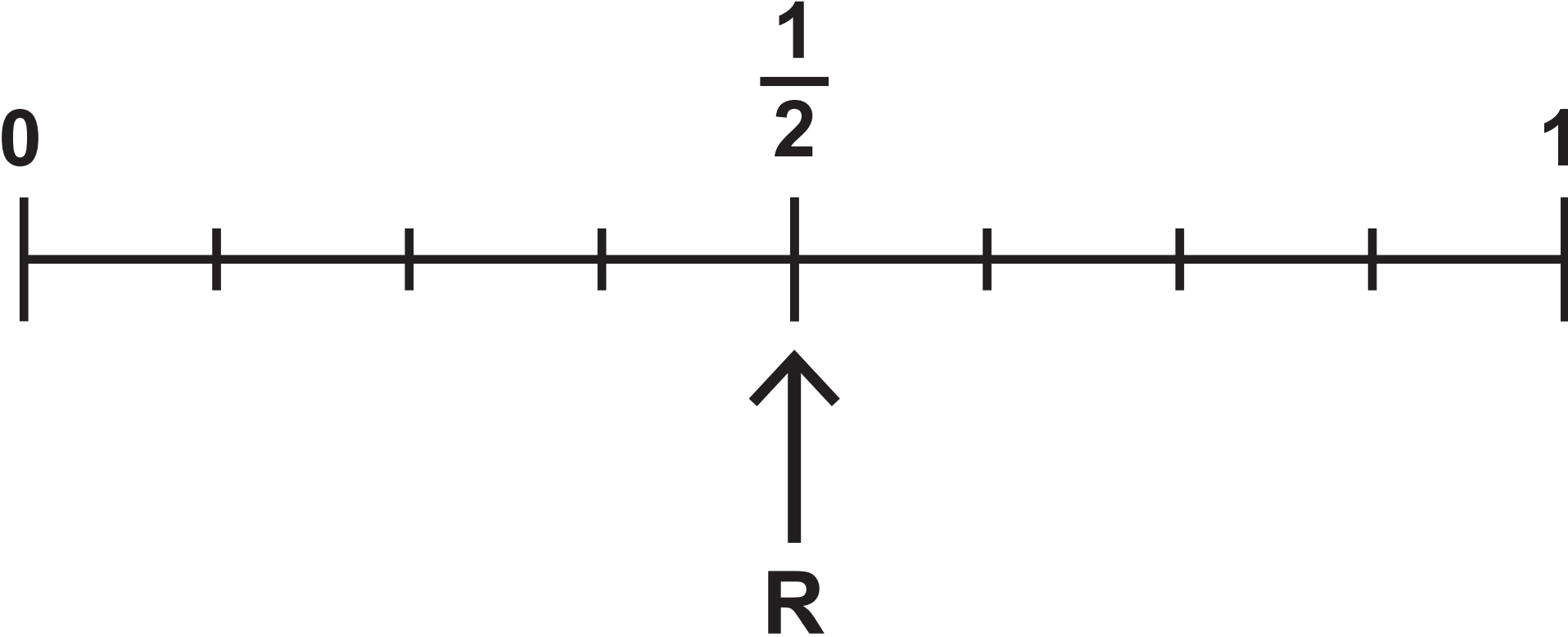
Diagram 2

Diagram 3

Diagram 4

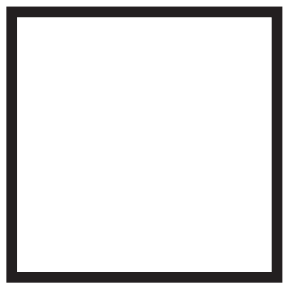


Question 5

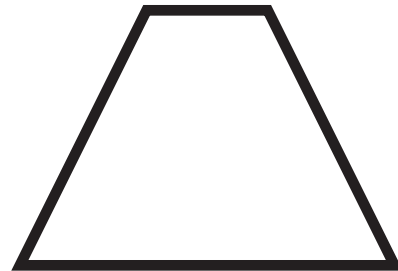


Question 12 (a)

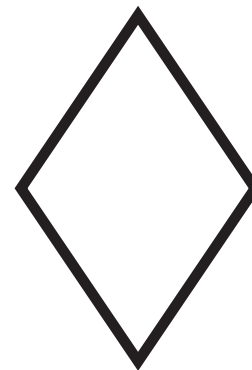
Square



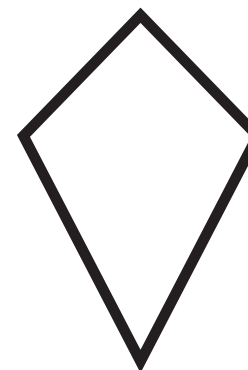
Trapezium



Rhombus



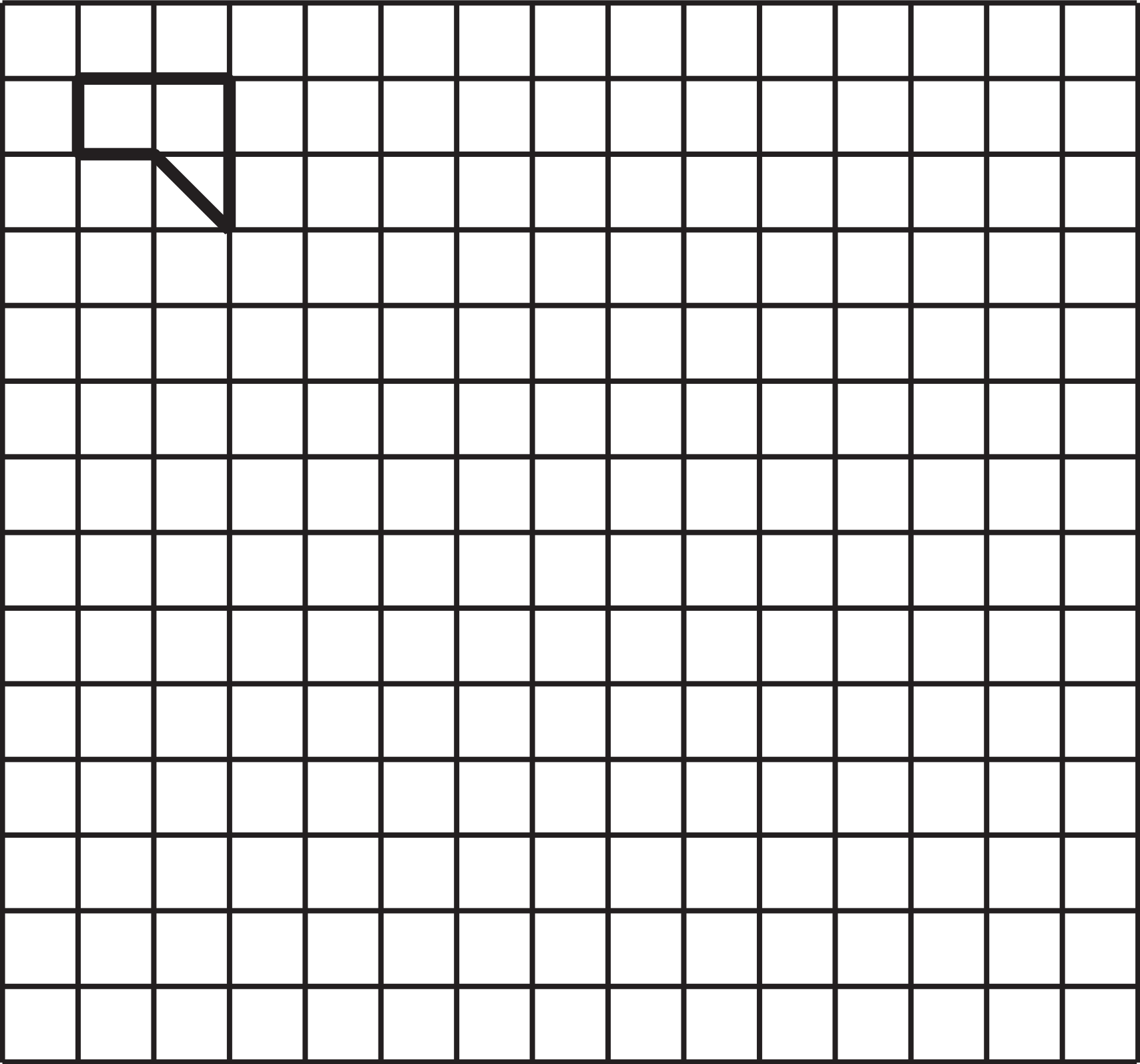
Kite



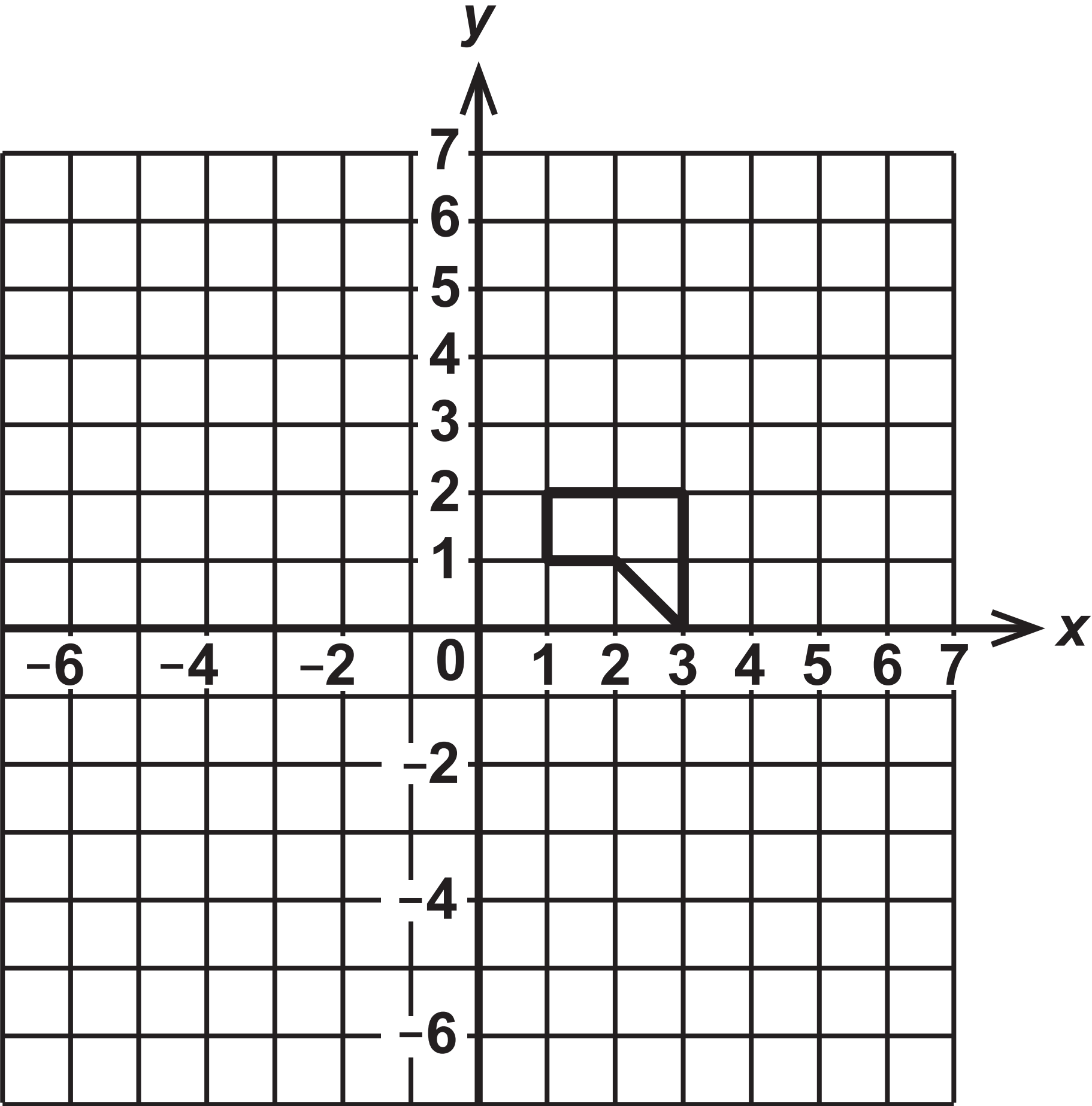
Parallelogram



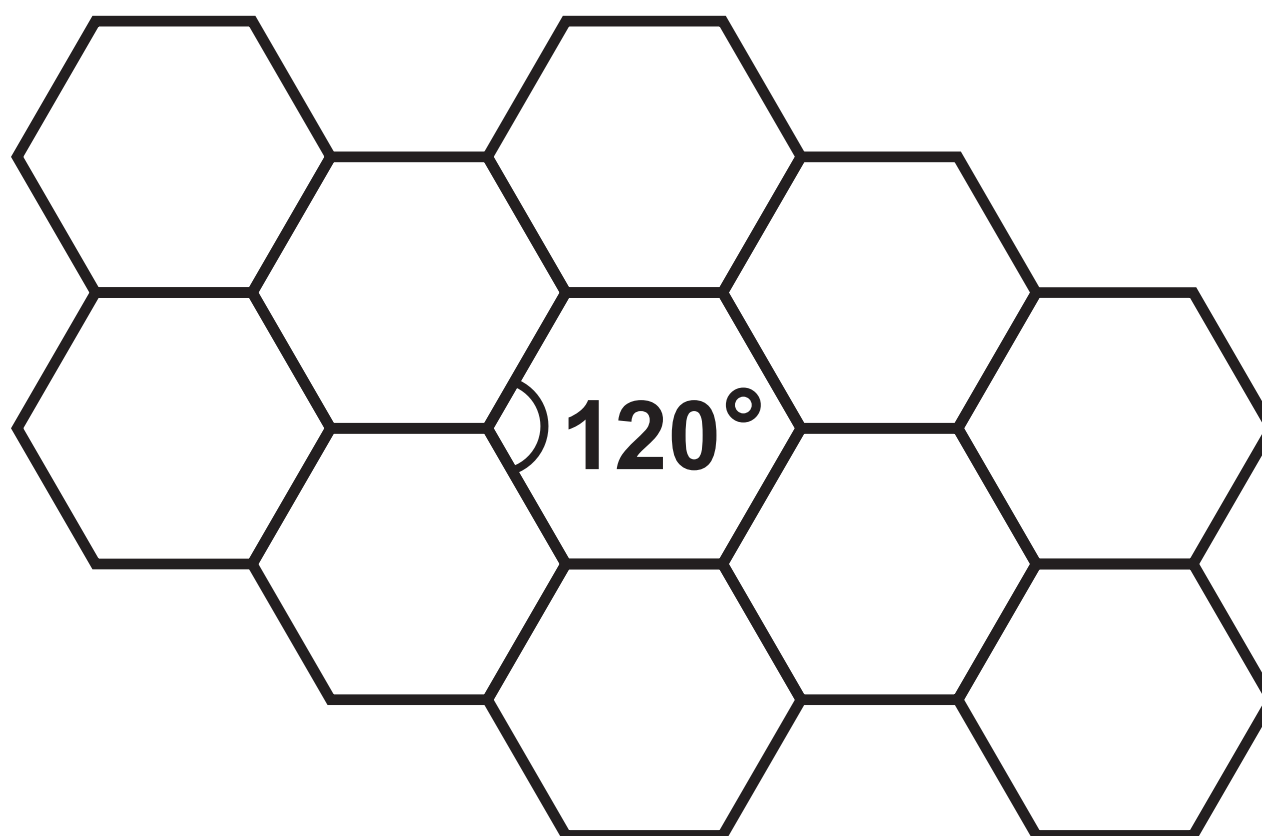
Question 13 (a)



Question 13 (b)



Question 14 (a)



Question 15

Diagram 1
GROUP A

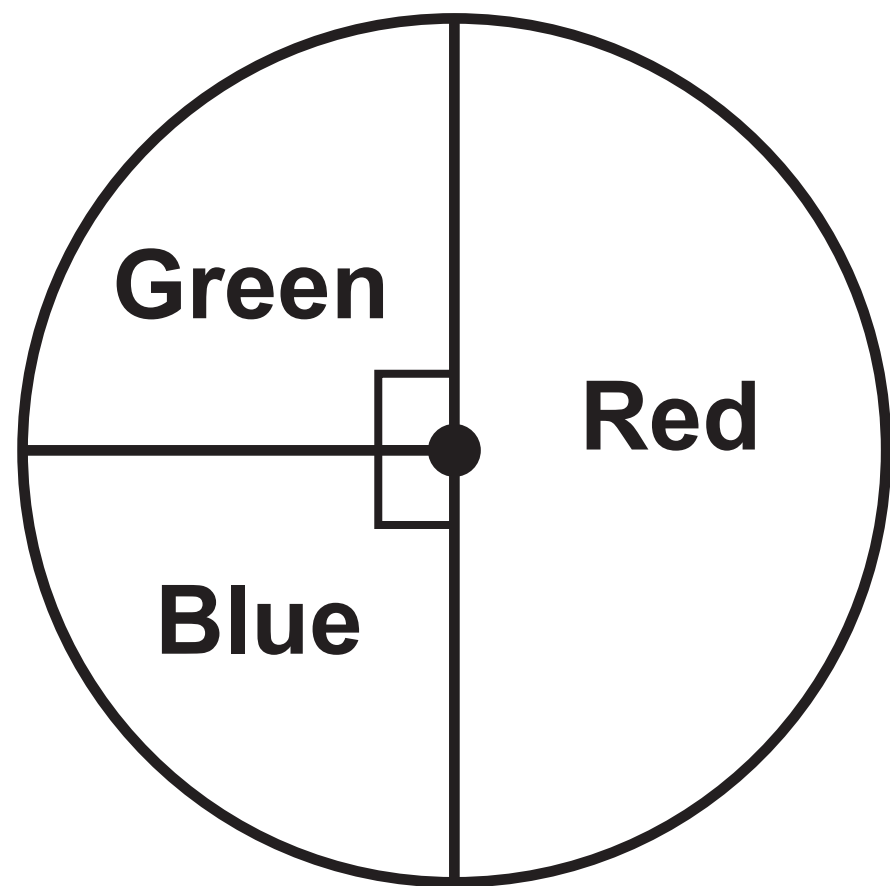
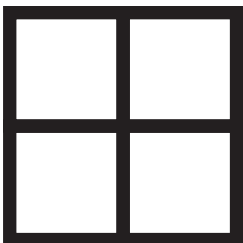
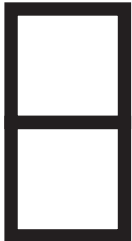
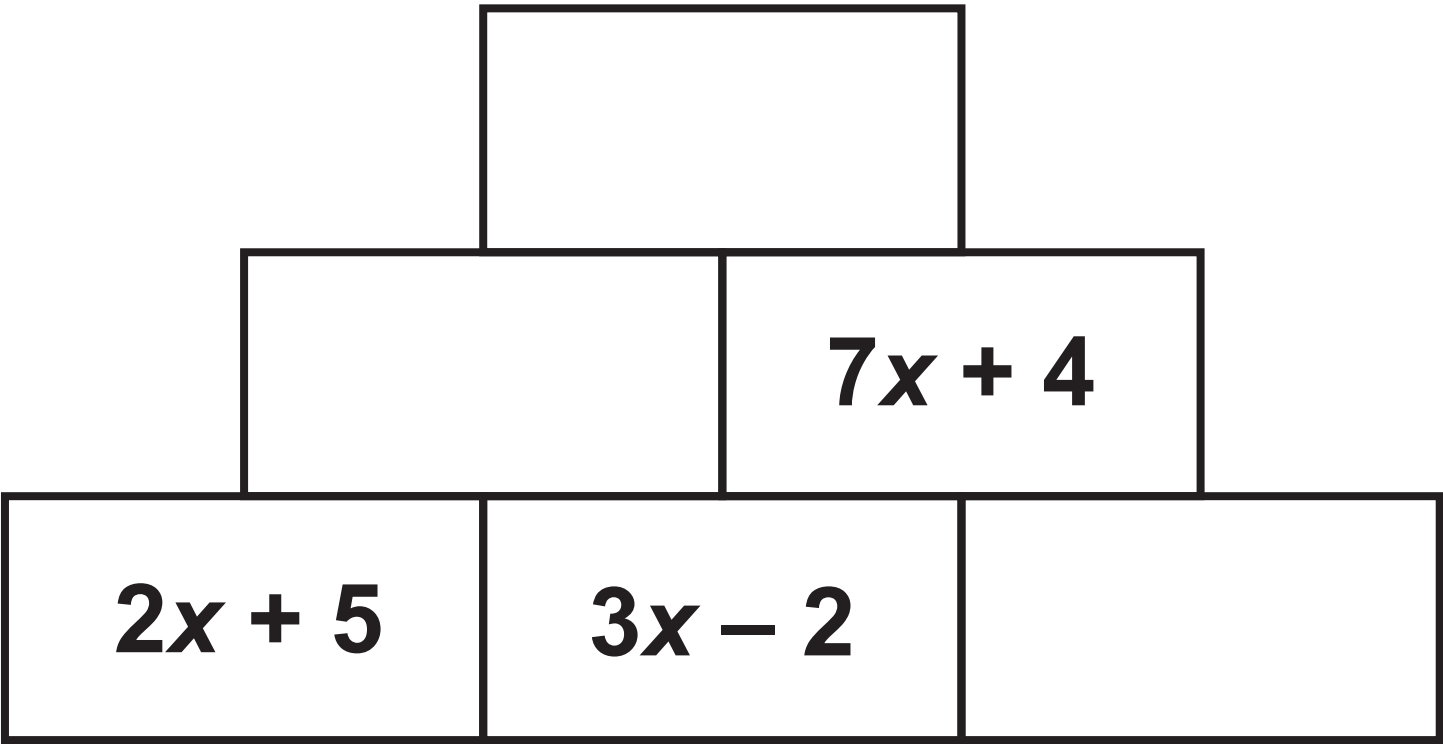


Diagram 2
GROUP B

KEY:  represents 16 people

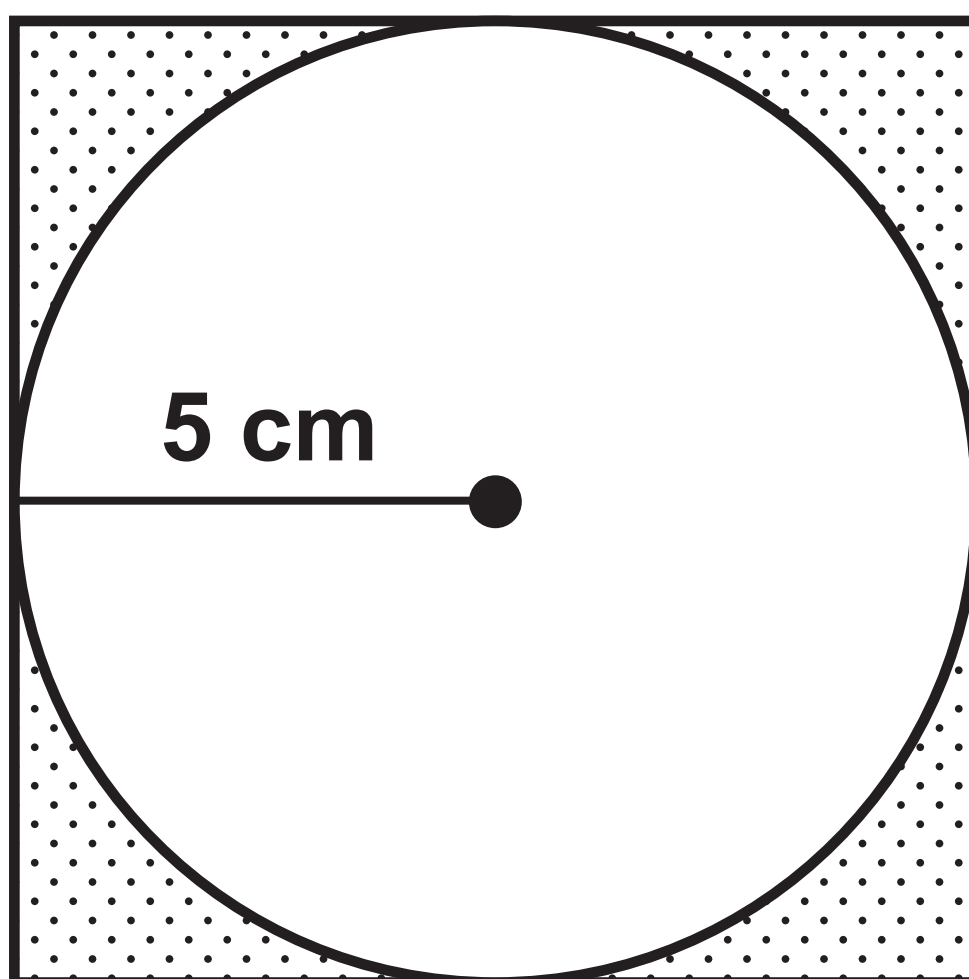
Red	
Green	
Blue	

Question 16



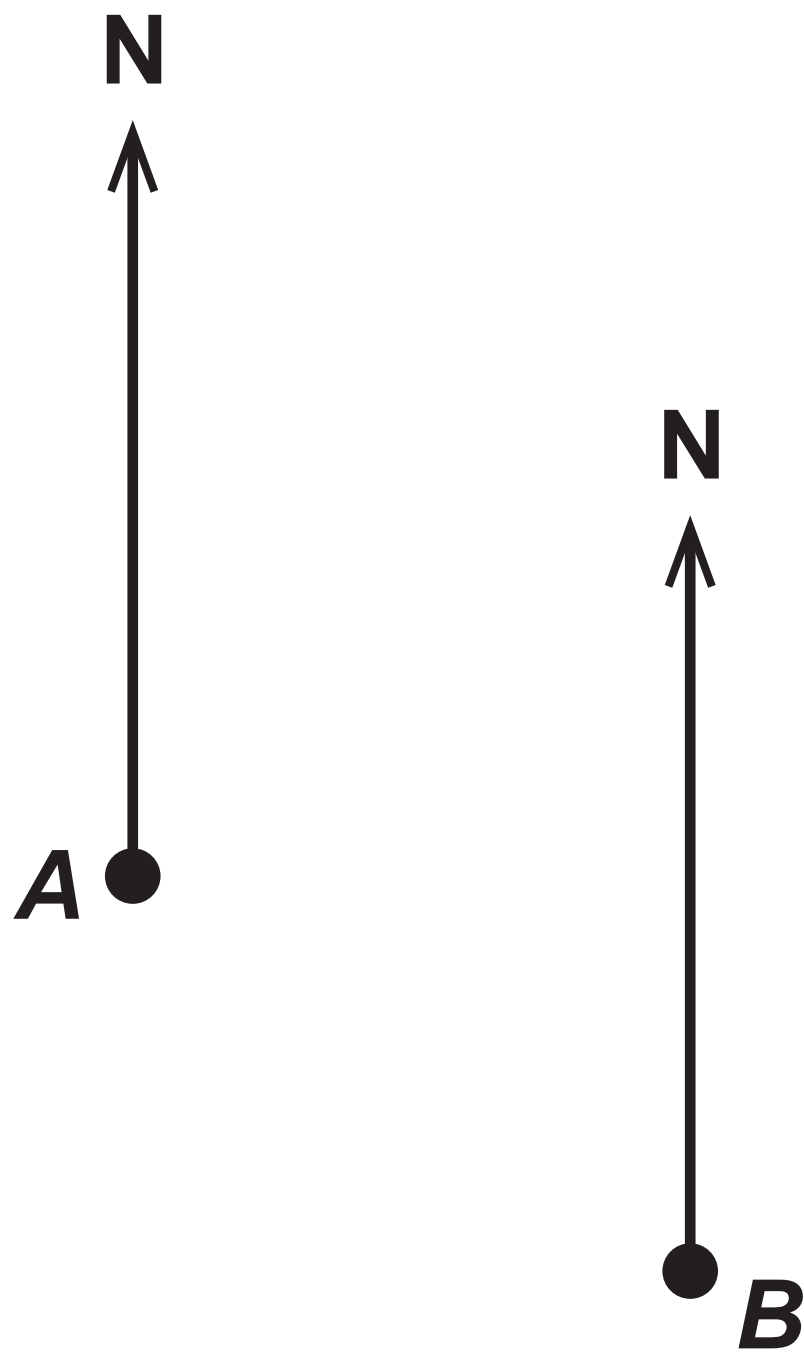
Question 17

Diagram NOT drawn to scale



Question 18

Scale: 1 cm represents 4.5 km



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and

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MATHEMATICS – NUMERACY



**FORMULA LIST
FOUNDATION TIER
GCSE**

**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 $= \frac{1}{2} (a + b) h$

