

GCSE 3300U20-1



MATHEMATICS

**UNIT 2: CALCULATOR – ALLOWED
FOUNDATION TIER**

**THURSDAY, 6 JUNE
2019 – MORNING**

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

**A CALCULATOR
WILL BE REQUIRED
FOR THIS PAPER**

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

Surname:	
Other Names:	
Centre Number:	
Candidate Number:	0

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.

A spare Diagram Booklet.

Models for Question 2 (a) and Question 9.

(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 questions.

Write your answers in the spaces provided.

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

Take π as 3.14 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 9, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

(Turn over)

1. Fill in the boxes below to make each calculation correct.

$$\boxed{9\text{p}} + \boxed{£4.58} = \boxed{£}$$

$$\boxed{43\text{p}} + \boxed{£} = \boxed{£6.27}$$

$$\boxed{12} \times \boxed{59\text{p}} = \boxed{£}$$

$$\boxed{19} \times \boxed{£} = \boxed{£27.55}$$

SPACE FOR WORKING:

(Turn over)

6

[4 marks]

(Turn over)

- 2. Ask for the model for Question 2.
Look at the diagrams for Question 2
in the separate Diagram Booklet.**

**Write down the special name of
each shape.**

(a) Shape A is a

[1 mark]

(b) Shape B is a

[1 mark]

(c) Shape C is a

[1 mark]

(Turn over)

**3. (a) Write down the first 3 multiples
of 47**

[1 mark]

continued on the next page . . .

(Turn over)

Question 3 continued

**3. (b) One of the numbers below is
a factor of 676**

Circle the correct number.

22	32	42	52	62
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[1 mark]

continued on the next page . . .

(Turn over)

Question 3 continued

- 3. (c) When one of the numbers below is divided by 22, there is a remainder of 11**

Circle the correct number.

208	209	210	211	212
------------	------------	------------	------------	------------

(Turn over)

11

[1 mark]

(Turn over)

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

The diagram shows the line AB .

**(a) Mark the midpoint of AB
with a $\times$**

[1 mark]

**(b) Draw a line parallel to AB that
passes through point C .**

[1 mark]

(Turn over)

5. (a) Bethan writes down two square numbers.

She adds her two numbers together.

Her answer is a square number less than 30

Which two square numbers did Bethan write down?

(Turn over)

Bethan's square numbers are

_____ and _____

[2 marks]

continued on the next page . . .

(Turn over)

Question 5 continued

- 5. (b) Harri adds three even numbers together and gets an answer of 23**

Explain how you know that Harri's answer is incorrect.

[1 mark]

(Turn over)

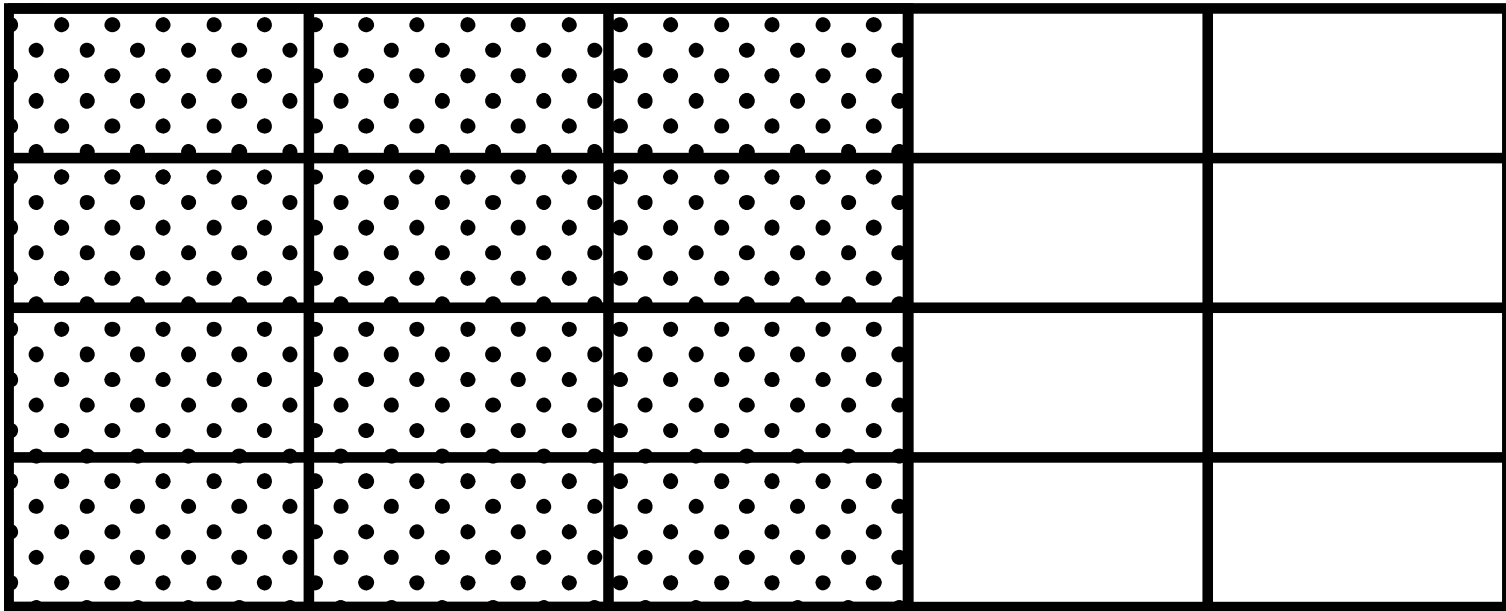
- 6. Look at the statements for Question 6 in the separate Diagram Booklet.**

Circle either TRUE or FALSE for each statement given.

[2 marks]

(Turn over)

7. (a) What percentage of the following shape is shaded?



_____ %

[2 marks]

(Turn over)

Question 7 continued

7. (b) You are given the value of 25% of a number.

Explain how you can find the value of the number.

[1 mark]

continued on the next page . . .

(Turn over)

Question 7 continued

7. (c) Explain how you know that

$\frac{1}{8}$ is greater than $\frac{1}{10}$

[1 mark]

(Turn over)

8. (a) Look at the diagram for Question 8 (a) in the separate Diagram Booklet.

Measure angle *BAC*.

Angle *BAC* = _____°

[1 mark]

- (b) One of the angles below is a reflex angle.

Circle the correct answer.

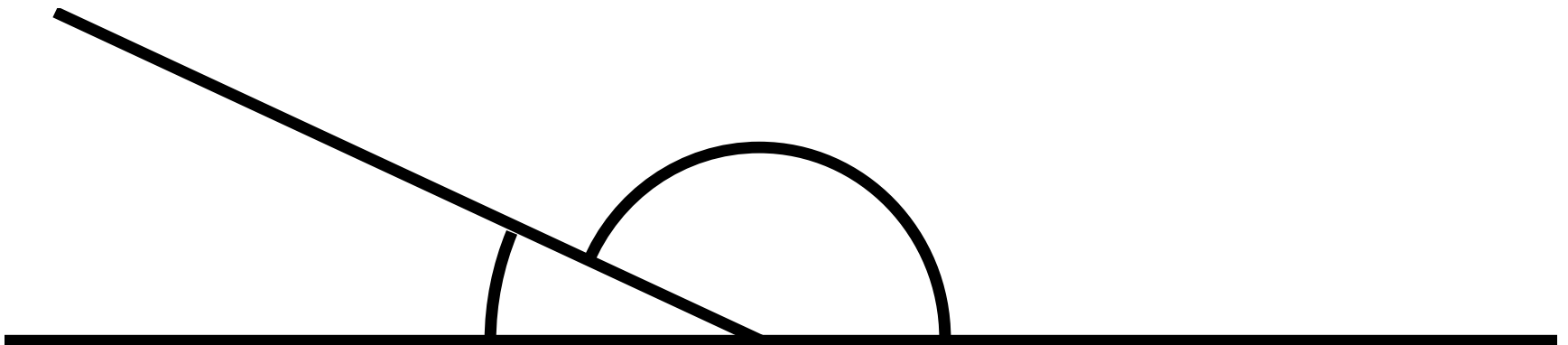
45°	90°	135°	180°	225°
-----	-----	------	------	------

[1 mark]

(Turn over)

Question 8 continued

- 8. (c) The diagram below shows two angles on a straight line.
The diagram is NOT drawn to scale.**



The large angle is 5 times the size of the small angle.

Find the size of each angle.

(Turn over)

Small angle = _____°

Large angle = _____°

[2 marks]

(Turn over)

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

Ask for the model for Question 9.

Cuboid A is made up of a number of cubes as shown on the model. Each cube represents a one centimetre cube.

A different cuboid, Cuboid B, has the same length and width as Cuboid A.

The height of Cuboid B is three times the height of Cuboid A.

(Turn over)

Question 9 continued

What is the volume of Cuboid B?

You must show all your working.

(Turn over)

[3 marks + 2 marks OCW]

(Turn over)

10. (a) Describe IN WORDS the rule for continuing each of the following sequences.

(i) 38, 32, 26, 20, ...

Rule: _____

[1 mark]

continued on the next page . . .

(Turn over)

Question 10 (a) continued

10. (a) (ii) $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, ...

Rule: _____

[1 mark]

continued on the next page . . .

(Turn over)

Question 10 continued

10. (b) (i) Adam has x marbles.

His friend gives him 3 more.

**Write down, in terms of x ,
the total number of marbles
Adam now has.**

[1 mark]

continued on the next page . . .

(Turn over)

Question 10 (b) continued

10. (b) (ii) Petrol costs £ g per litre.

**Write down, in terms
of g , the cost of 15 litres
of petrol.**

[1 mark]

(Turn over)

11. Calculate each of the following.

(a) $4 \cdot 8^2 + \sqrt{28 \cdot 09}$

[2 marks]

continued on the next page . . .

(Turn over)

Question 11 continued

11. (b) $\frac{4}{9}$ of 78.3

[1 mark]

(Turn over)

12. (a) Find the value of $5f + 7g$
when $f = 3.8$ and $g = -2.6$

[2 marks]

continued on the next page . . .

(Turn over)

Question 12 continued

12. (b) Solve the following equation.

**Give your answer correct to
1 decimal place.**

$$7x - 4 = 12$$

(Turn over)

35

[3 marks]

(Turn over)

13. (a) Circle the longest time period from the list given below.

180 minutes
4.5 hours
4 hours 45 minutes
$4\frac{1}{4}$ hours
$\frac{1}{6}$ th of a day

(Turn over)

[1 mark]

13. (b) Circle the longest distance from the list given below.

30 000 mm
250 m
2 km 70 m
4 000 cm
2.4 km

(Turn over)

[1 mark]

continued on the next page . . .

(Turn over)

Question 13 continued

**13. (c) Look at the statements for
Question 13 (c) in the separate
Diagram Booklet.**

**Circle either TRUE or FALSE
for each statement given.**

[2 marks]

(Turn over)

14. Catrin makes the following statement.

If you double the length of each side of a rectangle, you will double its perimeter and also double its area.

Is Catrin correct?

SHOW CLEARLY, using an example, how you came to your decision.

[5 marks]

(Turn over)

15. 18% of £256 is shared in the ratio 2 : 1

Calculate the value of the larger share.

Give your answer to the nearest 10p.

You must show all your working.

(Turn over)

45

(Turn over)

46

[5 marks]

(Turn over)

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

The diagram is NOT drawn to scale.

The diagram shows two congruent triangles.

The coordinates of each vertex are shown.

Find the value of e and the value of f .

(Turn over)

e = _____

f = _____

[2 marks]

continued on the next page . . .

(Turn over)

Question 16 continued

- 16. (b) On the grid provided for Question 16 (b) in the separate Diagram Booklet, draw an enlargement of the rectangle, using a scale factor of 3 and centre (1, 2)**

[3 marks]

(Turn over)

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

**Alison and Sarfraz play a game.
They each have a different bag
of cards.**

**Alison has cards spelling
C A E R N A R F O N in her bag.**

**Sarfraz has cards spelling
A B E R in his bag.**

**They each take a card at random
from their own bag.**

**They make a note of the letter, and
return the card to the bag.**

They each do this 100 times.

(Turn over)

Question 17 continued

Who do you think is likely to choose the letter R more often?

Alison ☐

Sarfraz ☐

You must explain your decision and show all your working.

(Turn over)

(Turn over)

[4 marks]

END OF PAPER

TOTAL 65 MARKS

(Turn over)

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

[illegible]

(Turn over)

[illegible]

(Turn over)

[illegible]

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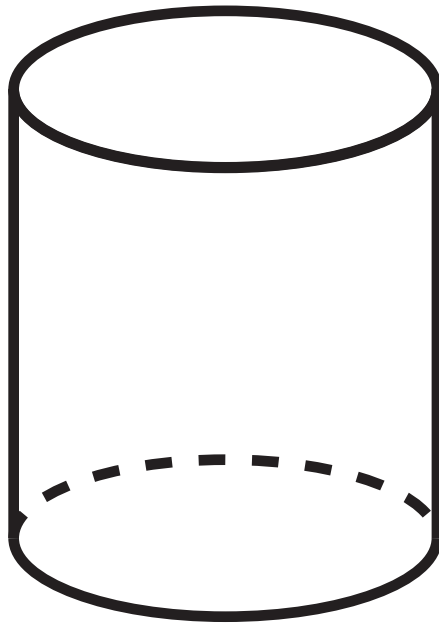
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Diagram Booklet

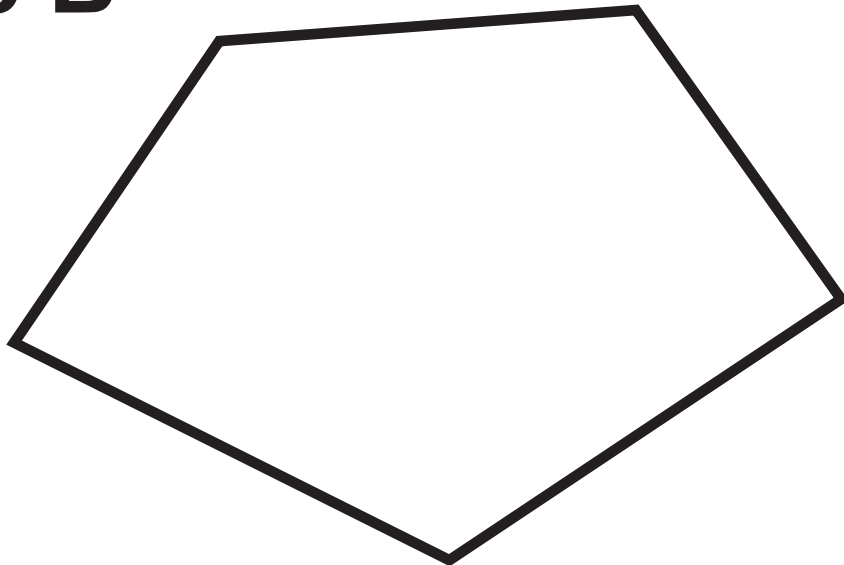
Surname:	
Other Names:	
Centre Number:	
Candidate Number:	0

Question 2

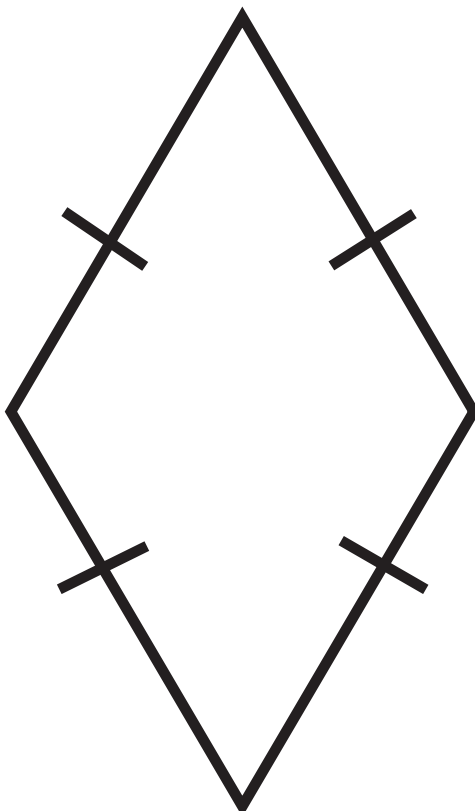
Shape A



Shape B



Shape C



Question 4

A  **B**

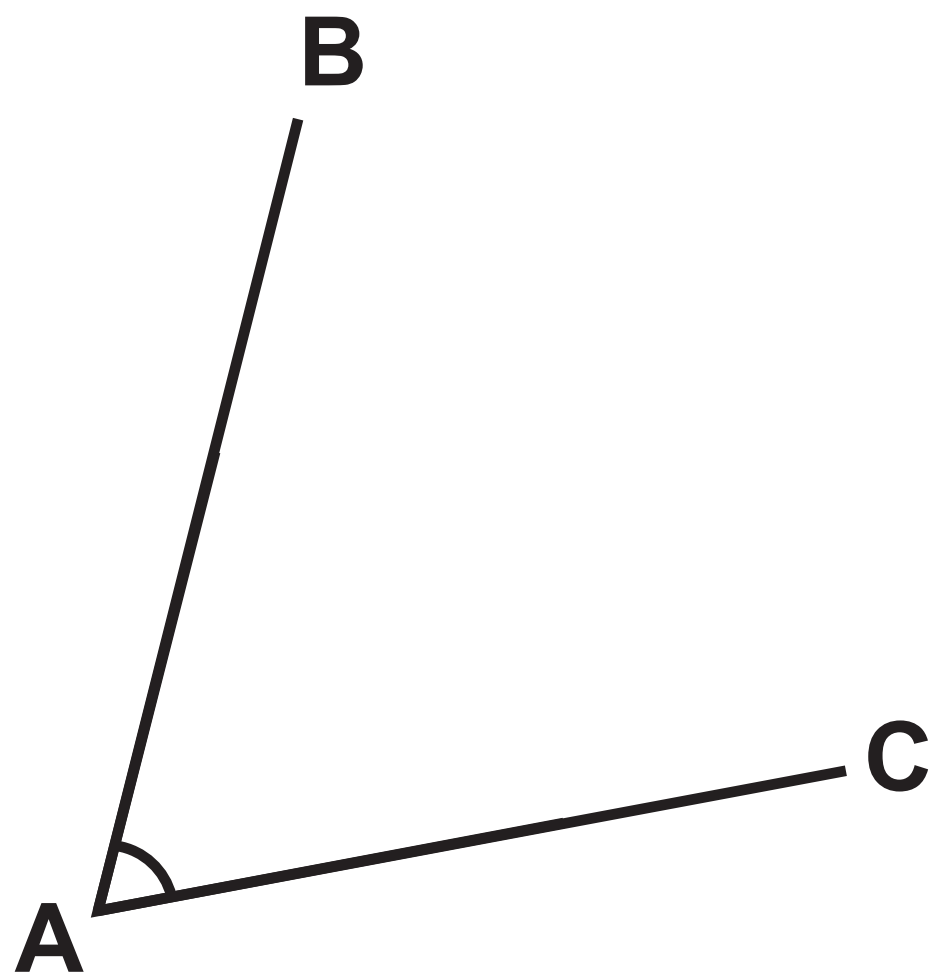

C

Question 6

Statements

STATEMENT		
The length of the diameter of a circle is equal to half the length of its radius.	TRUE	FALSE
A straight line connecting two points on the perimeter of a circle is a chord.	TRUE	FALSE
The circumference is the special name for the space inside a circle.	TRUE	FALSE
Two circles, each with radius 5 cm, must be congruent.	TRUE	FALSE

Question 8 (a)



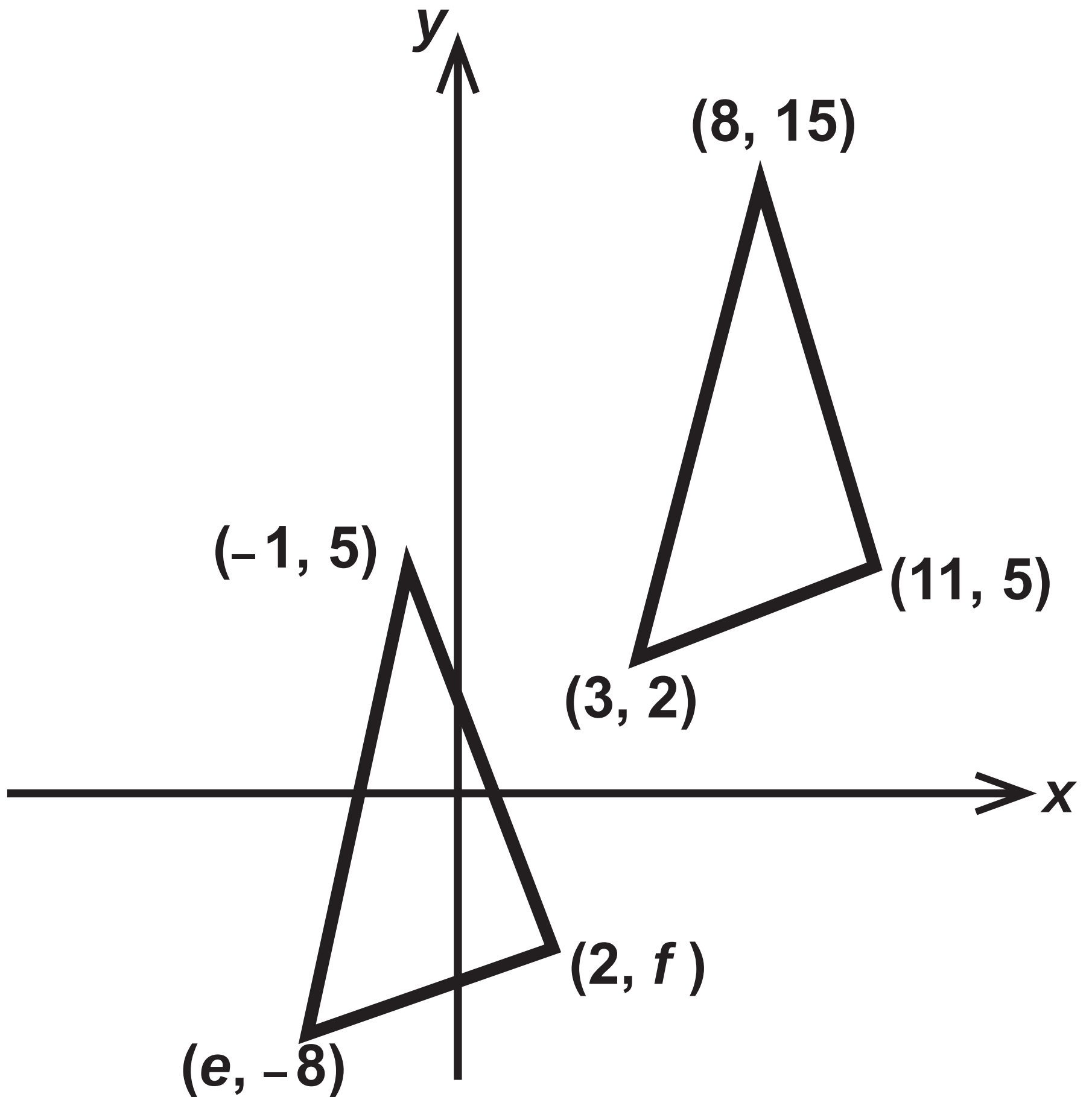
Question 13 (c)

Statements

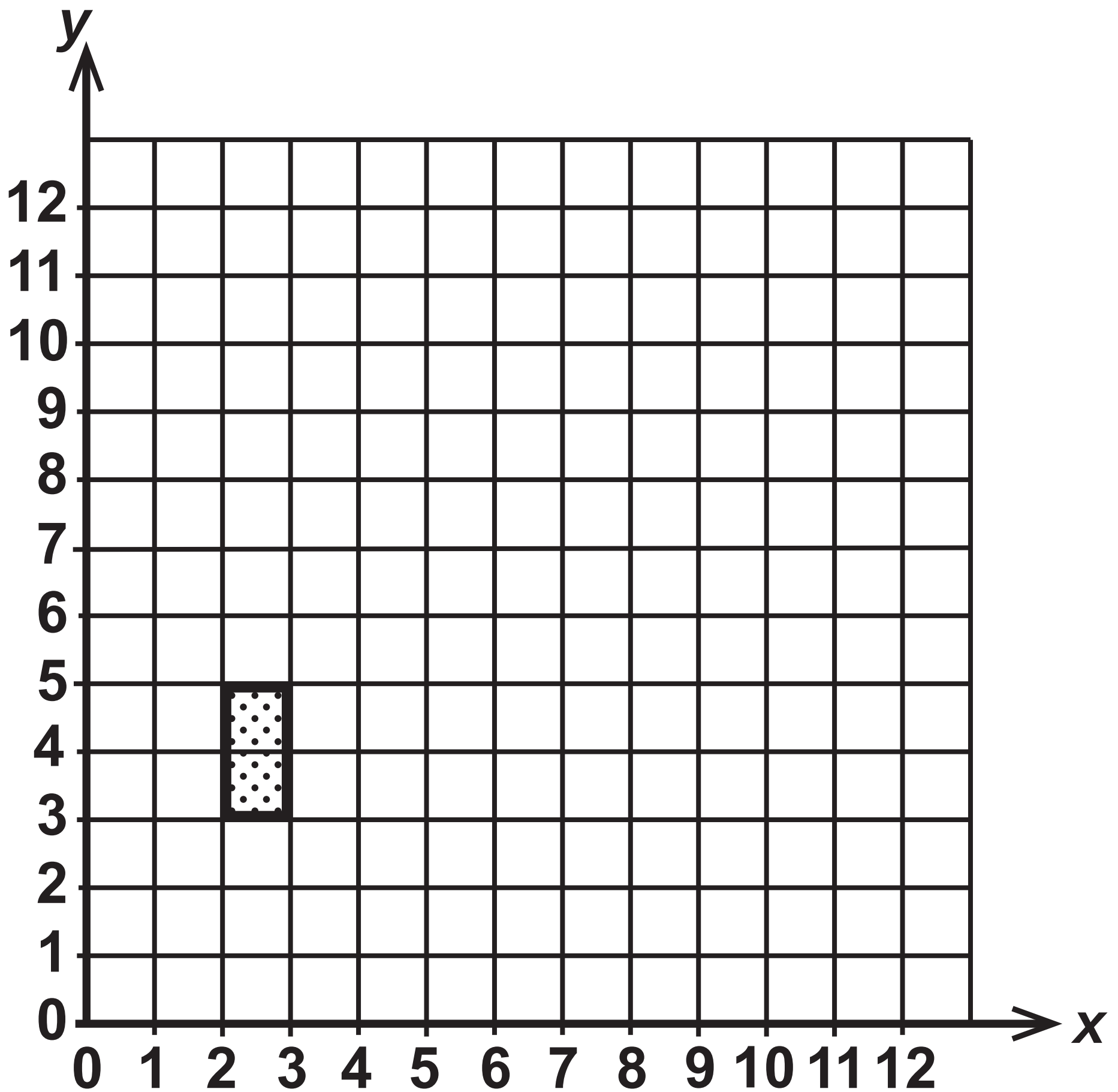
STATEMENT		
7 kilometres is less than 5 miles	TRUE	FALSE
1 kilogram is less than 2 pounds (lb)	TRUE	FALSE
1 litre is less than 1 pint	TRUE	FALSE
8 litres is less than 900 cm ³	TRUE	FALSE

Question 16 (a)

Diagram NOT drawn to scale



Question 16 (b)



Question 17

Alison's cards

C A E R N A R F O N

Sarfraz's cards

A B E R

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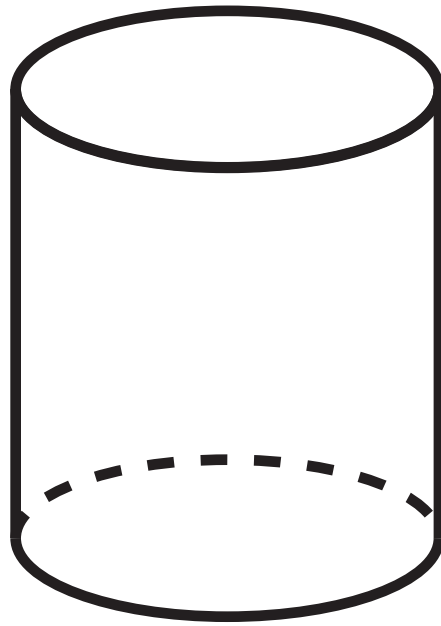
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Spare Diagram Booklet

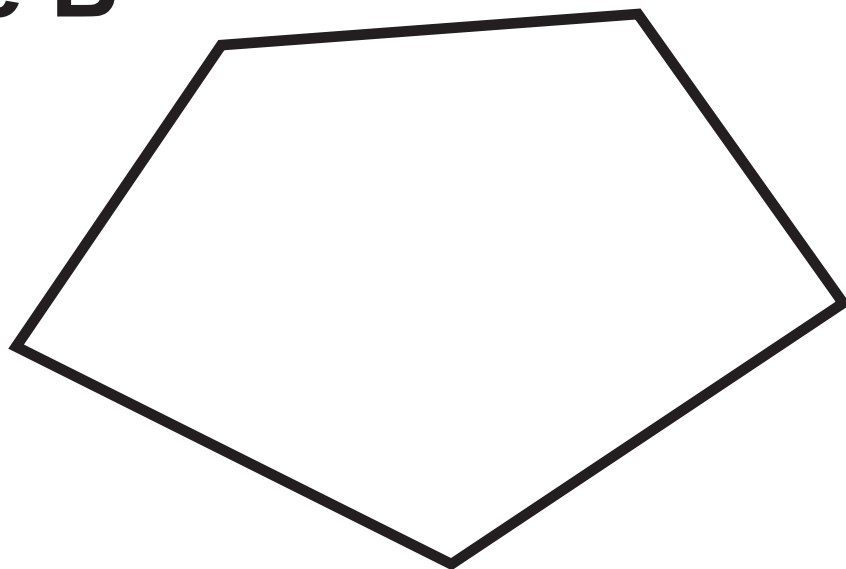
Surname:	
Other Names:	
Centre Number:	
Candidate Number:	0

Question 2

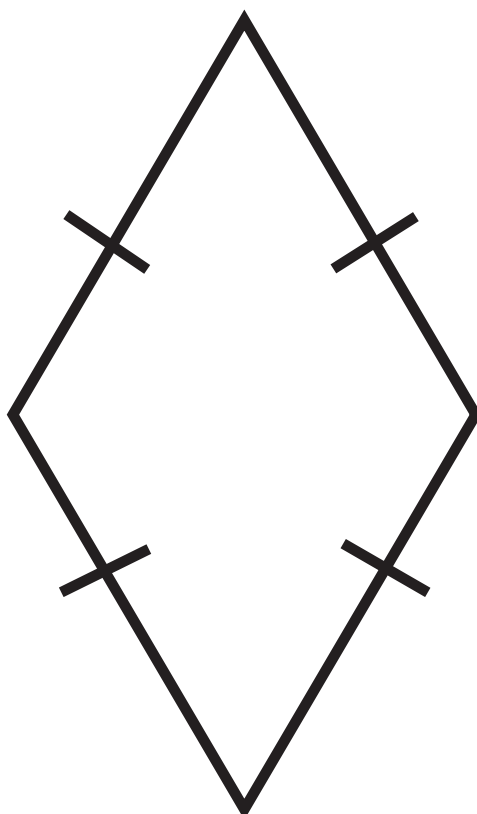
Shape A



Shape B



Shape C



Question 4

A  B

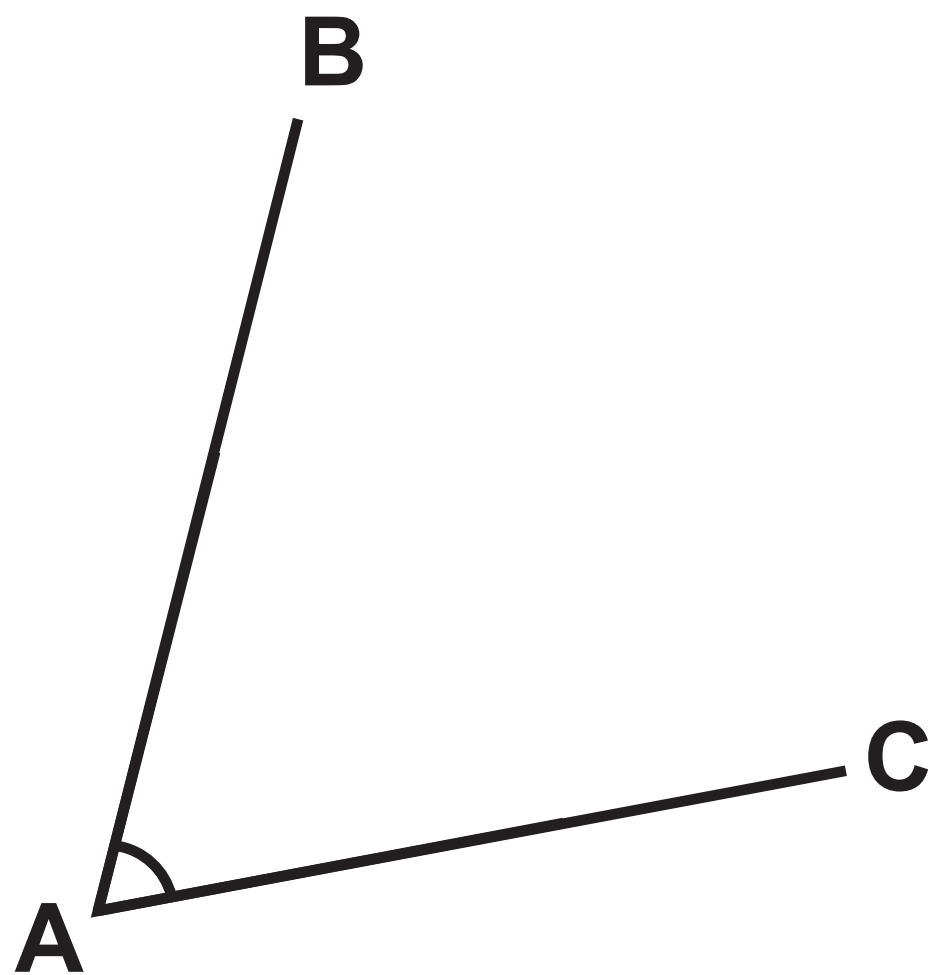

C

Question 6

Statements

STATEMENT		
The length of the diameter of a circle is equal to half the length of its radius.	TRUE	FALSE
A straight line connecting two points on the perimeter of a circle is a chord.	TRUE	FALSE
The circumference is the special name for the space inside a circle.	TRUE	FALSE
Two circles, each with radius 5 cm, must be congruent.	TRUE	FALSE

Question 8 (a)



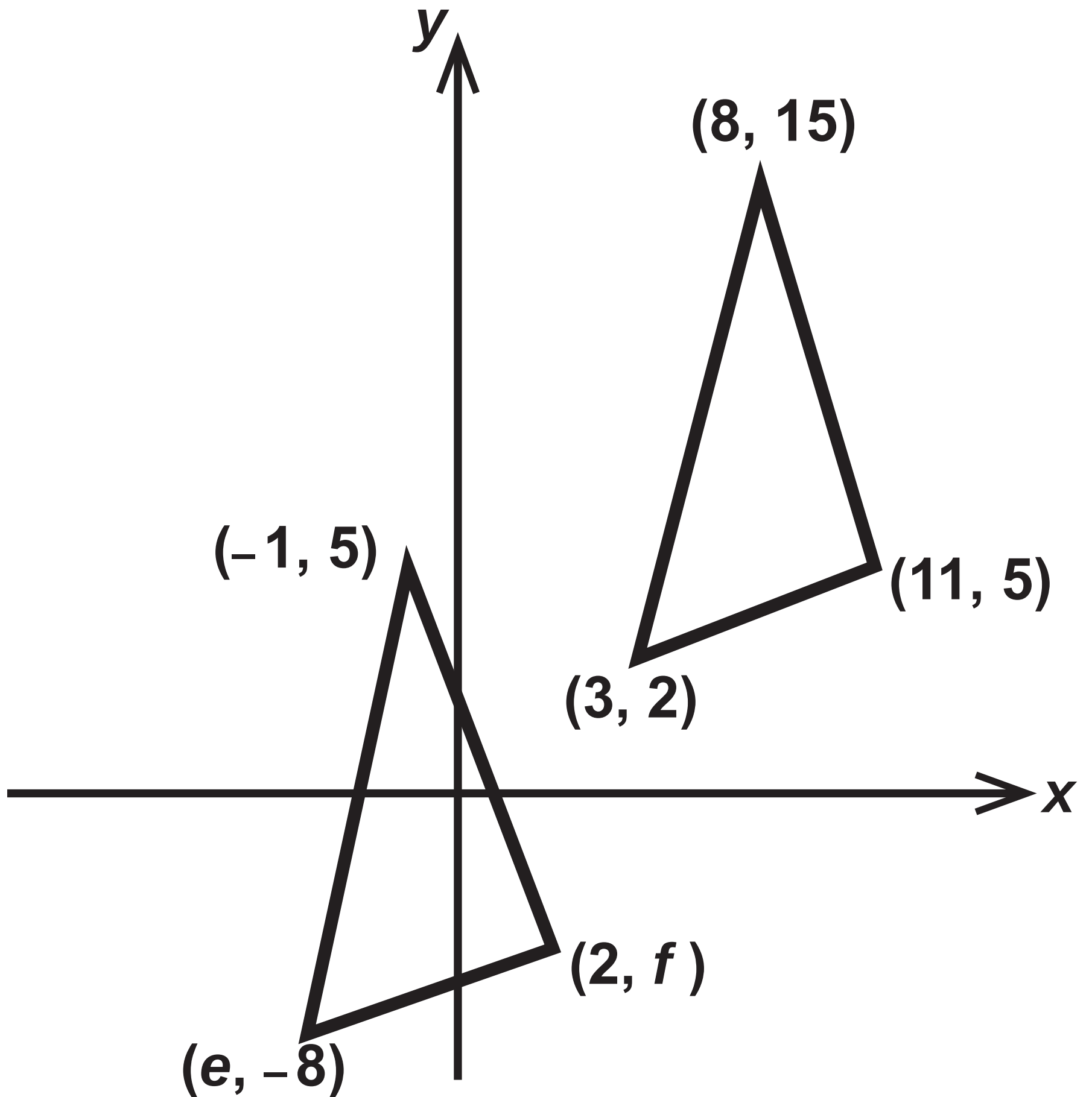
Question 13 (c)

Statements

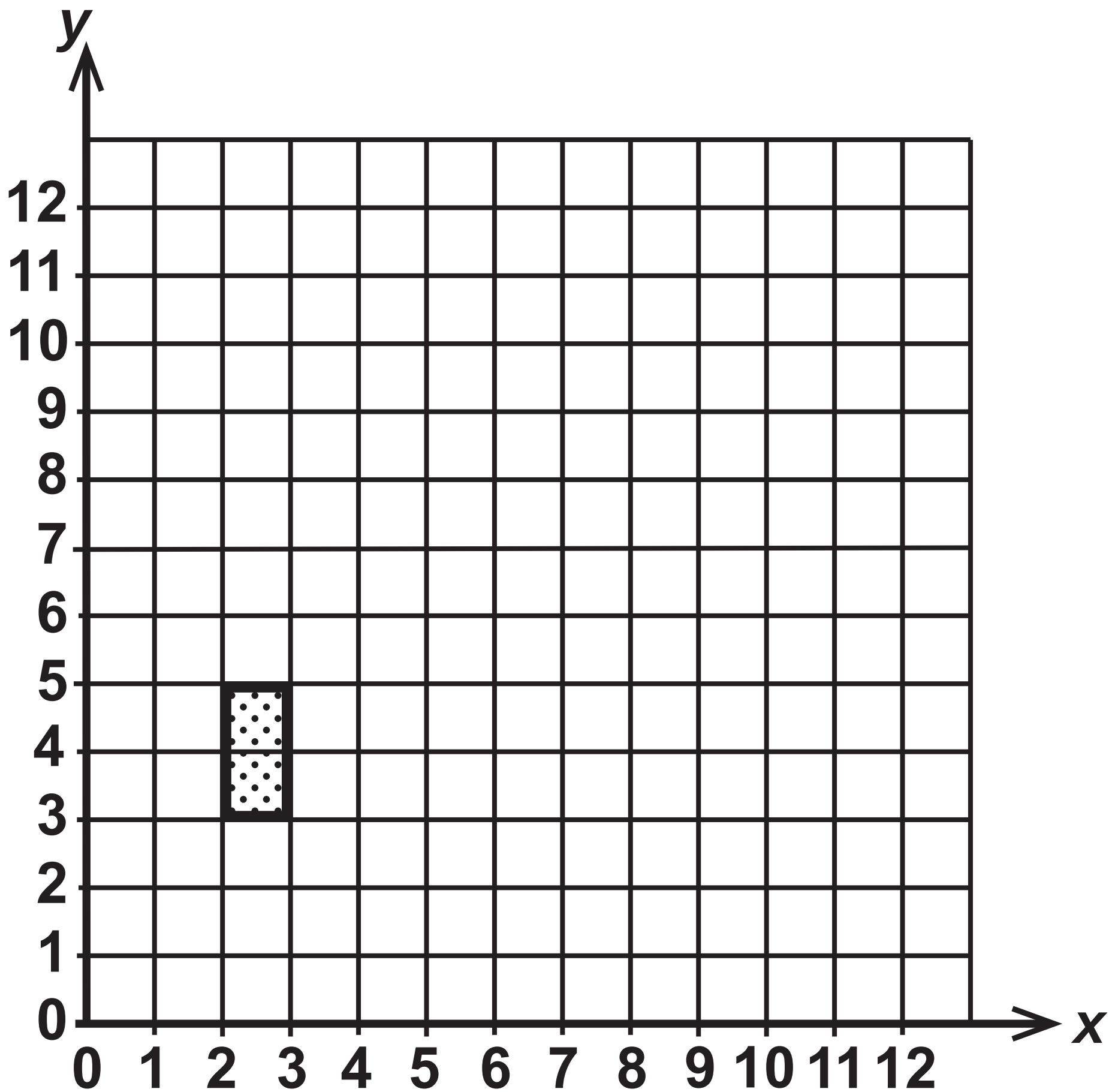
STATEMENT		
7 kilometres is less than 5 miles	TRUE	FALSE
1 kilogram is less than 2 pounds (lb)	TRUE	FALSE
1 litre is less than 1 pint	TRUE	FALSE
8 litres is less than 900 cm ³	TRUE	FALSE

Question 16 (a)

Diagram NOT drawn to scale



Question 16 (b)



Question 17

Alison's cards

C A E R N A R F O N

Sarfraz's cards

A B E R

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

