GCSE

3300U10–1

MONDAY, 11 NOVEMBER 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.	3	
3.	2	
4.	3	
5.	4	
6.	5	
7.	5	
8.	3	
9.	3	
10.	2	
11.	5	
12.	2	
13.	5	
14.	4	
15.	4	
16.	6	
17.	4	
18.	3	
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.
Model for Question 14.

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 this booklet, taking care to number the question(s) correctly.

Take π as 3•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 6, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

1. (a) Look at the diagram for Question 1 (a) in the separate Diagram Booklet. On the diagram, put a cross (X) at the midpoint of *AB*.

[1 mark]

(b) Look at the diagram for Question 1 (b) in the separate Diagram Booklet. On the diagram, draw a line through the point *K* that is perpendicular to *MN*.

[1 mark]

2. (a) Write down the value of the **3** in the number **532 719**

[1 mark]

continued on the next page . . .

Question 2 continued

2. (b) Add the numbers

865 and 92 and 407

[1 mark]

continued on the next page . . .

Question 2 continued

2. (c) Subtract 647 from 1029

[1 mark]

3. (a) **Which is the best metric unit for measuring the mass of a pencil?**

Circle the correct answer.

kilograms
grams
tonnes
centimetres
milligrams

[1 mark]

continued on the next page . . .

Question 3 continued

3. (b) Which is the best metric unit for measuring the distance from Swansea to Wrexham?

Circle the correct answer.

millimetres
metres
kilometres
litres
kilograms

[1 mark]

4. (a) Look at the diagram for Question 4 (a) in the separate Diagram Booklet. The diagram shows the line *EF*.

On the diagram draw angle *DEF* = 55°

[1 mark]

continued on the next page . . .

Question 4 continued

4. (b) Dafydd draws an acute angle.

The angle is the same size as half a right angle.

What is the size of the acute angle?

_____

_____

_____

The size of the acute angle is

_____ **°**

[2 marks]

5. (a) Write 25 378 correct to the nearest 100

[1 mark]

(b) Write down the next number in this sequence.

13, 25, 37, 49, _____

[1 mark]

continued on the next page . . .

Question 5 continued

5. (c) Divide 10 kg by 4

Give your answer in grams.

Answer is _____ g

[2 marks]

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

Look at the diagrams for Question 6 in the separate Diagram Booklet.
The diagrams are NOT drawn to scale.

The first diagram shows a regular hexagon labelled Shape A.
The length of each side is 5 cm.

The second diagram shows a square labelled Shape B.
The length of each side is 7•5 cm.

continued on the next page . . .

Question 6 continued

Show that the perimeter of Shape A is equal to the perimeter of Shape B.
You must show all your working.

[3 marks + 2 marks OCW]

7. Look at the diagram for Question 7 in the separate Diagram Booklet.
The diagram is a pie chart.

Mrs Lewis asked each student in Year 11 what kind of music they preferred.
She gave the students three options: Hip Hop, Pop and Rock.
The pie chart shows the results.

7. (a) Mrs Lewis chooses one of the students at random.
What is the probability that this student chose Hip Hop?

[1 mark]

continued on the next page . . .

Question 7 continued

7. (b) 45 students chose Hip Hop. How many students are there in total?

[2 marks]

continued on the next page . . .

Question 7 continued

7. (c) What fraction of these students chose Pop?

[2 marks]

8. (a) Solve $7x = 63$

[1 mark]

(b) Solve $27 - x = 19$

[1 mark]

continued on the next page . . .

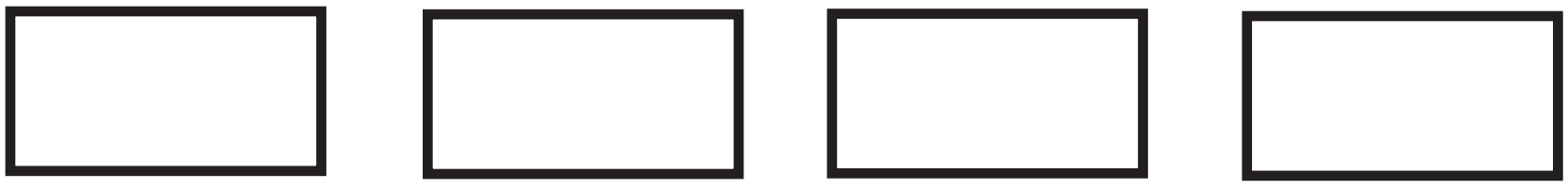
Question 8 continued

8. (c) Simplify $17k - 8k + 5k$

[1 mark]

9. (a) Write these numbers in order in the boxes below.
Start with the smallest number.

3 −17 12 −6



Smallest ⟶ Largest

[1 mark]

(b) Look at the diagram for Question 9 (b) in the separate Diagram Booklet. The diagram shows a number line.
Which number is the arrow pointing to?

The number is _____

[1 mark]

continued on the next page . . .

Question 9 continued

9. (c) Calculate –13 + (–19)

[1 mark]

10. Look at the diagram for Question 10 in the separate Diagram Booklet.
The diagram shows a probability scale.
Jan has 7 carrots and 3 potatoes in a box.
She chooses one vegetable at random from the box.

On the probability scale, mark the points C and P, where:

- C is the probability of Jan choosing a carrot
- P is the probability of Jan choosing a potato.

[2 marks]

11. Look at the diagram for Question 11 in the separate Diagram Booklet. The diagram shows a number machine.

Complete the table below.

INPUT	OUTPUT
–7	
	–100
2 • 5	
n	

Space for working:

[5 marks]

12. **ESTIMATE the value of 33 × 7940**

You must show your approximations in your working.

[2 marks]

13. Bethan has two brothers, Andrew and Richard.

Andrew is 7 years older than Bethan.
Richard is 3 years older than Andrew.

(a) Today, the sum of all their ages is 59 years.

How old are Bethan, Andrew and Richard today?

Bethan = _____ years old

Andrew = _____ years old

Richard = _____ years old

[2 marks]

continued on the next page . . .

Question 13 continued

13. (b) (i) Write down the ratio of Andrew's age to Richard's age when Andrew is 27

Write the ratio in its simplest form.

Ratio of Andrew's age to Richard's age

= _____ : _____

[2 marks]

continued on the next page . . .

Question 13 (b) continued

13. (b) (ii) Explain why the ratio of Andrew's age to Richard's age can never be 1 : 1

[1 mark]

14. Ask for the model for Question 14.

It is a model of a solid.

The model is NOT to scale.

The top surface of the solid is labelled *ABCDEF.*

The height of the solid is 2 cm.

Look at the diagram for Question 14 in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

The diagram shows the top surface of the solid and is labelled *ABCDEF.*

In the diagram:

AB = 12 cm

BC = 12 cm

EF = 5 cm

FA = 16 cm

Angles *ABC*, *BCD*, *DEF*, *EFA* and *FAB* are right angles.

continued on the next page . . .

Question 14 continued

Find the volume of the solid.

You must show all your working.

(Turn over)

(Turn over)

[4 marks]

15. Look at the diagram for Question 15 in the separate Diagram Booklet.
The diagram shows a coordinate grid.
Three of the four vertices of a parallelogram have the following coordinates.

(4, 3) (5, –1) (8, 3)

Plot these points on the coordinate grid.

Then, plot ALL THREE possible points for the fourth vertex.

Write down the coordinates of these three points.

The THREE possible points for the fourth vertex are

(_____ , _____)

(_____ , _____)

(_____ , _____)

[4 marks]

16. Look at the diagrams for Question 16 in the separate Diagram Booklet.
There are 3 diagrams.
Each diagram represents a balance.
For each balance, the total mass on the left−hand side is equal to the total mass on the right−hand side.

Find the values of A, B and C.

A = _____ B = _____ C = _____

[6 marks]

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

The diagram is NOT drawn to scale.

The diagram shows a shape with rotational symmetry of order 6

Find the size of angle *x*.

You must show all your working.

(Turn over)

[4 marks]

18. Look at the diagram for Question 18 in the separate Diagram Booklet.
The diagram is NOT drawn to scale.
The diagram shows a trapezium labelled *ABCD.*

In the diagram:
AB = 8 cm
BC = 9 cm
CD = 10 cm
DA = 15 cm
AD is parallel to *BC*.
Angle *DAB* is a right angle.

Calculate the area of the trapezium shown.
You must give the units of your answer.

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

Diagram Booklet

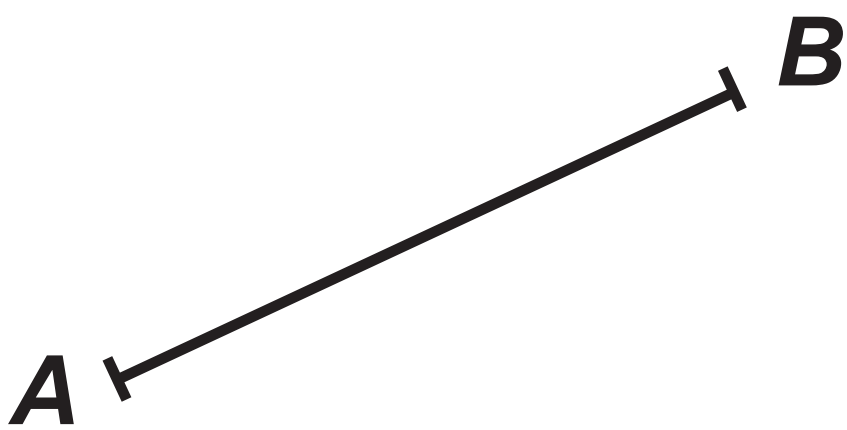
Surname: _____

First name(s): _____

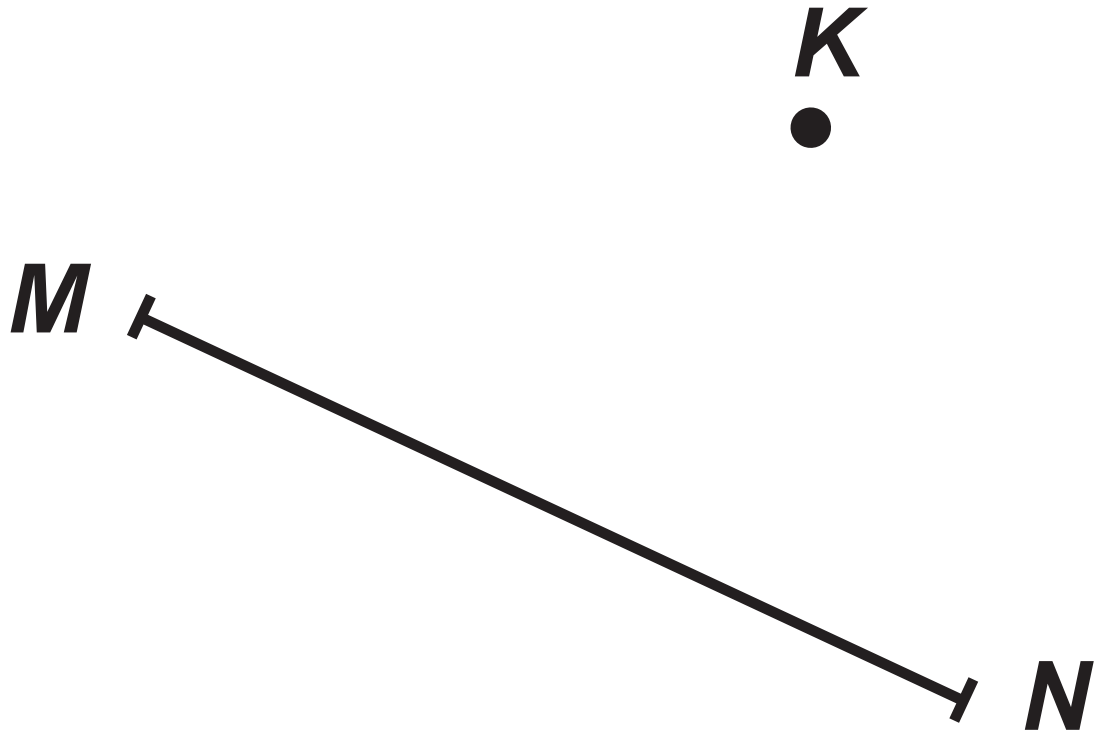
Centre Number: _____

Candidate Number: 0_____

Question 1 (a)



Question 1 (b)



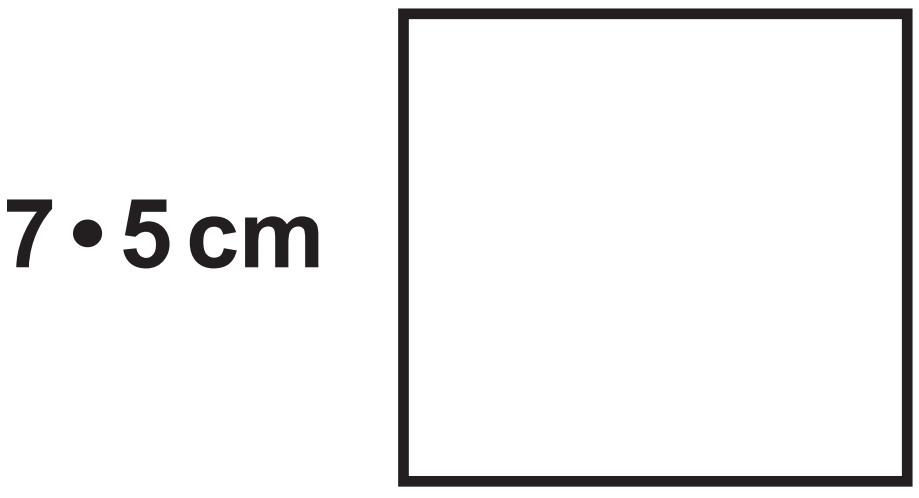
Question 4 (a)

Question 6

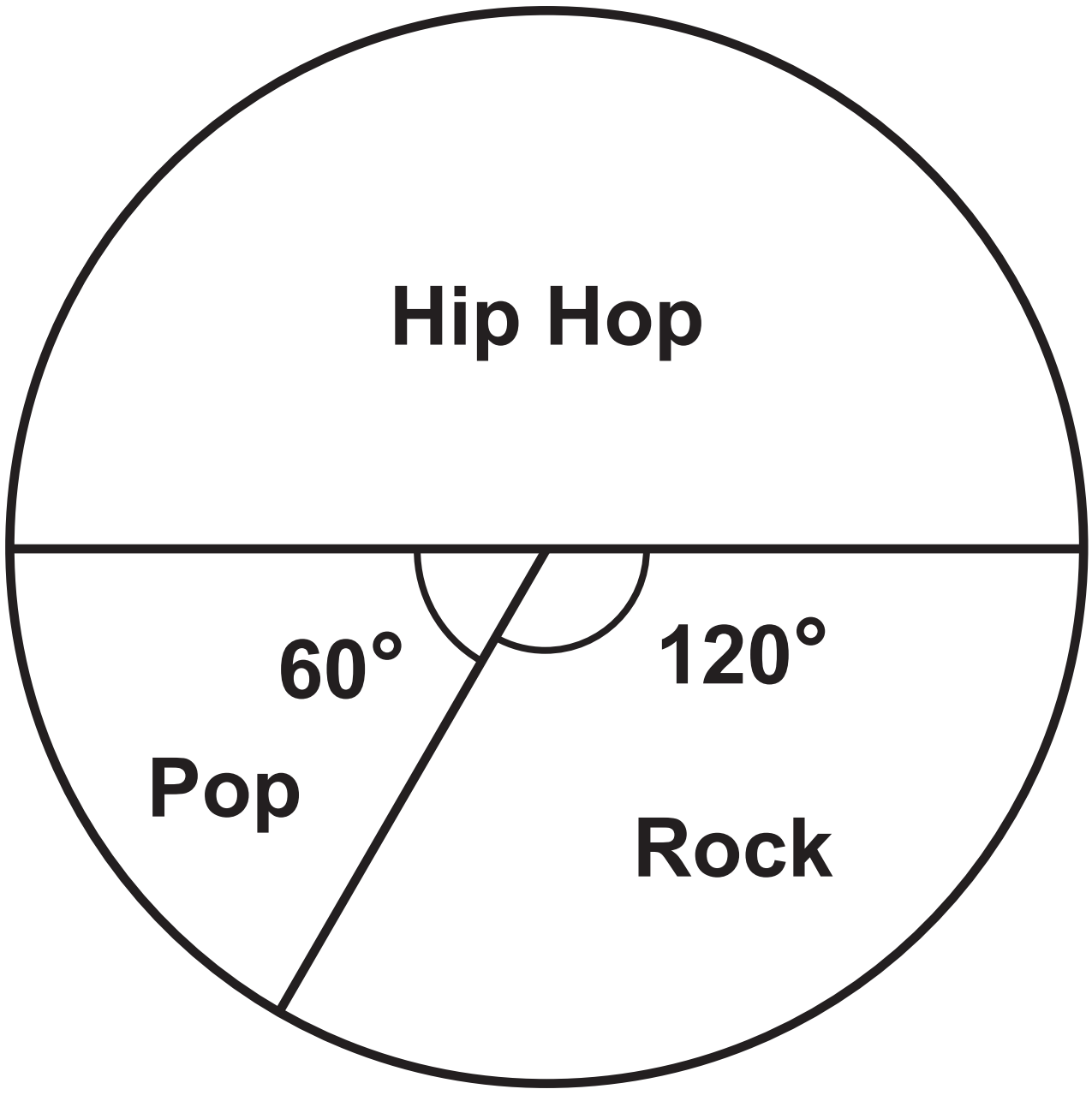
Diagrams NOT drawn to scale

Shape A

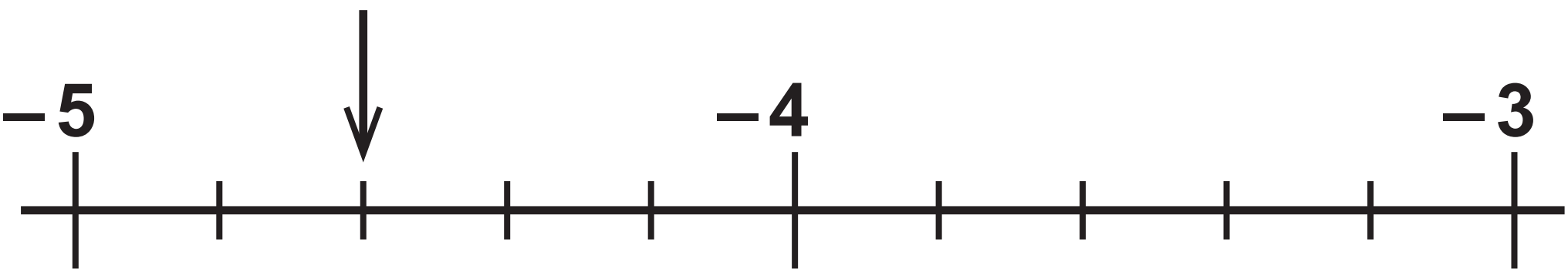
Shape B



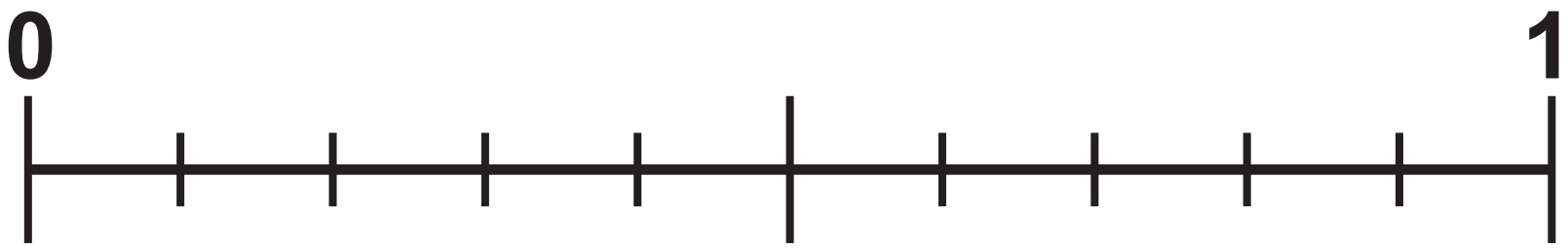
Question 7



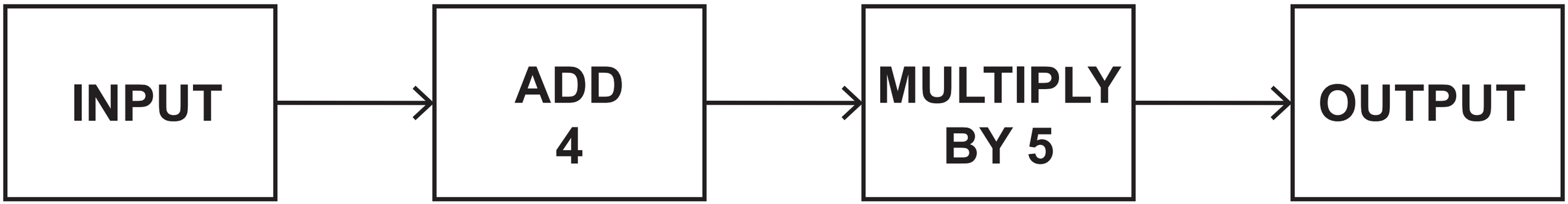
Question 9 (b)



Question 10

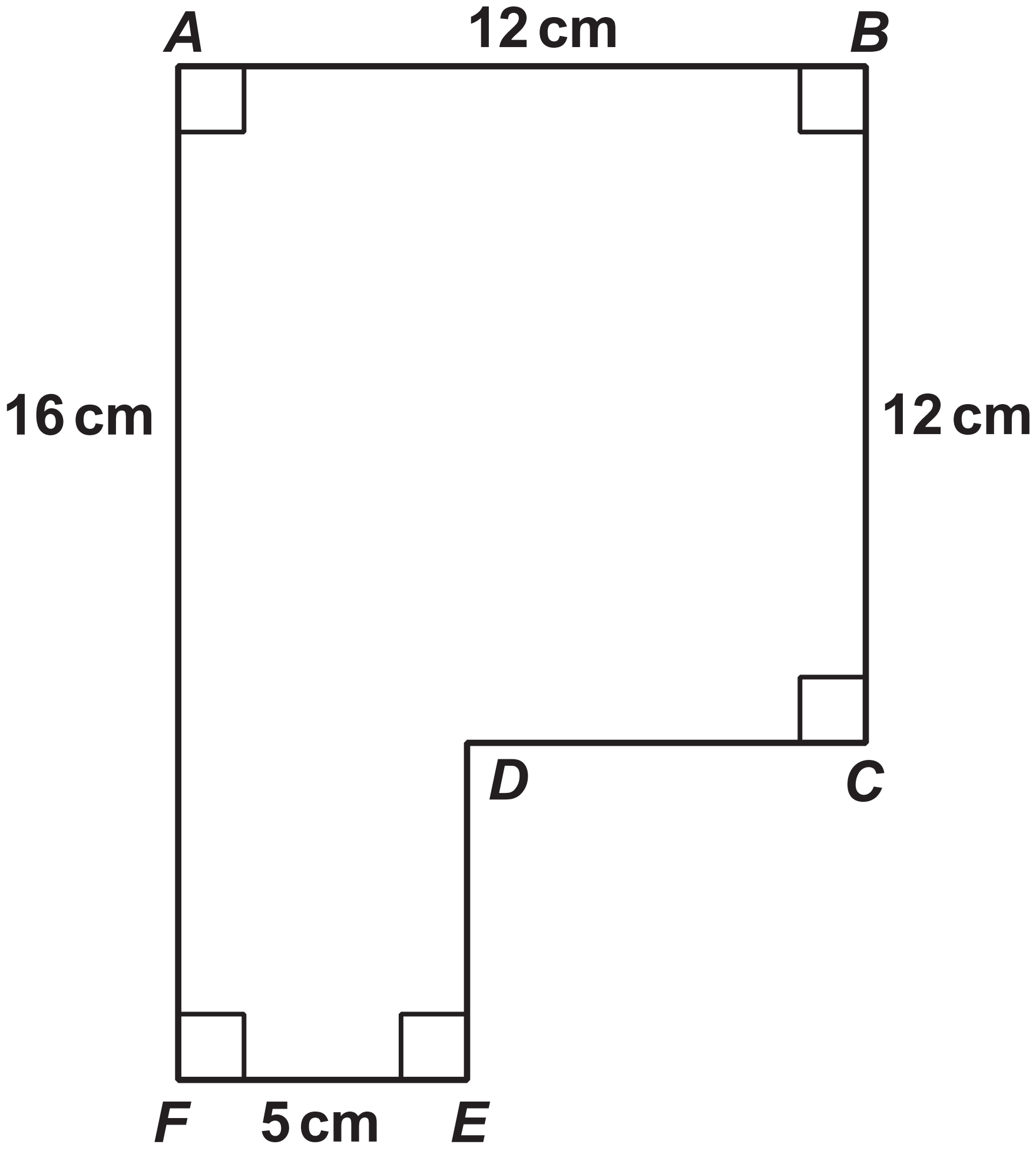


Question 11

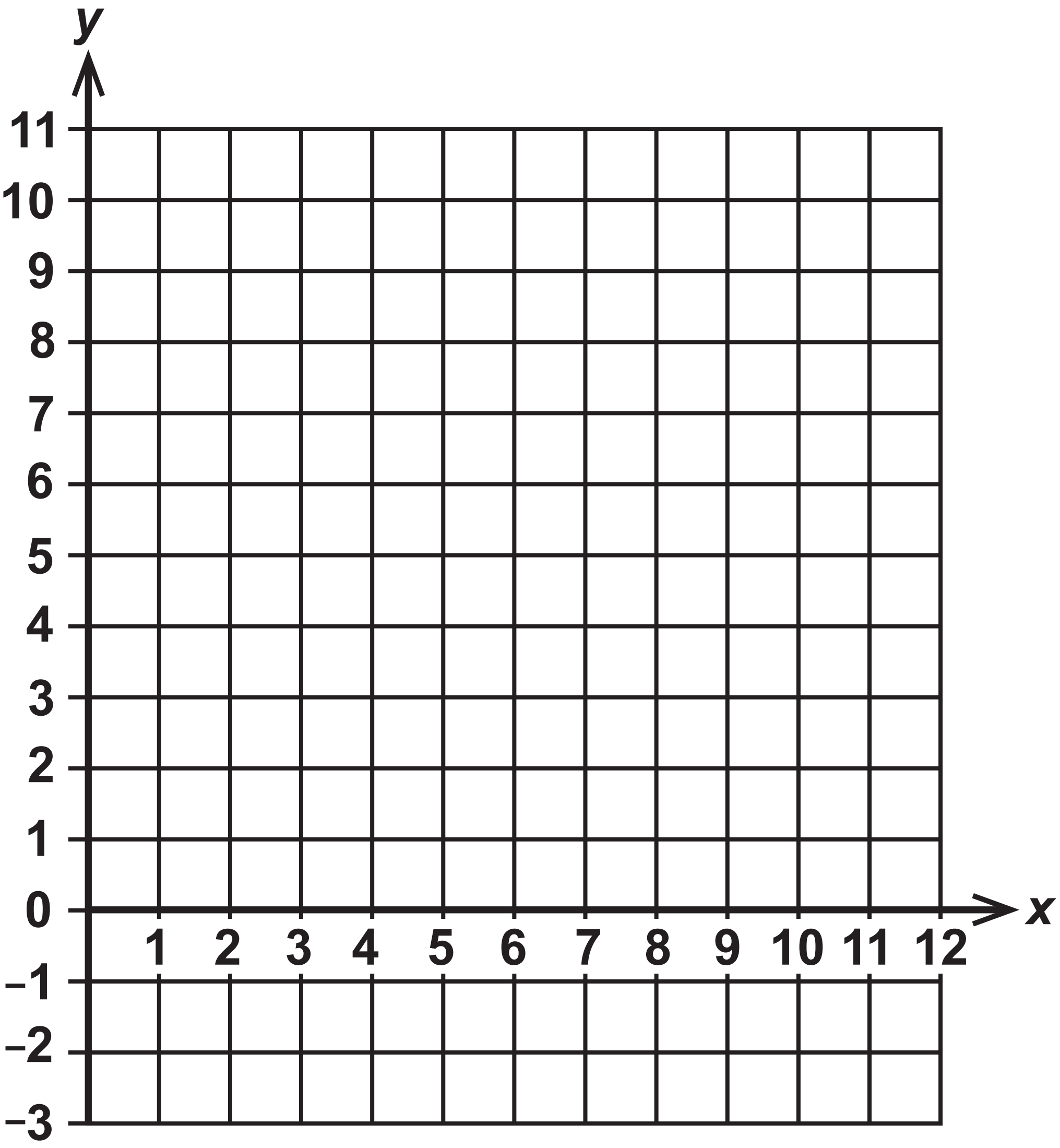


Question 14

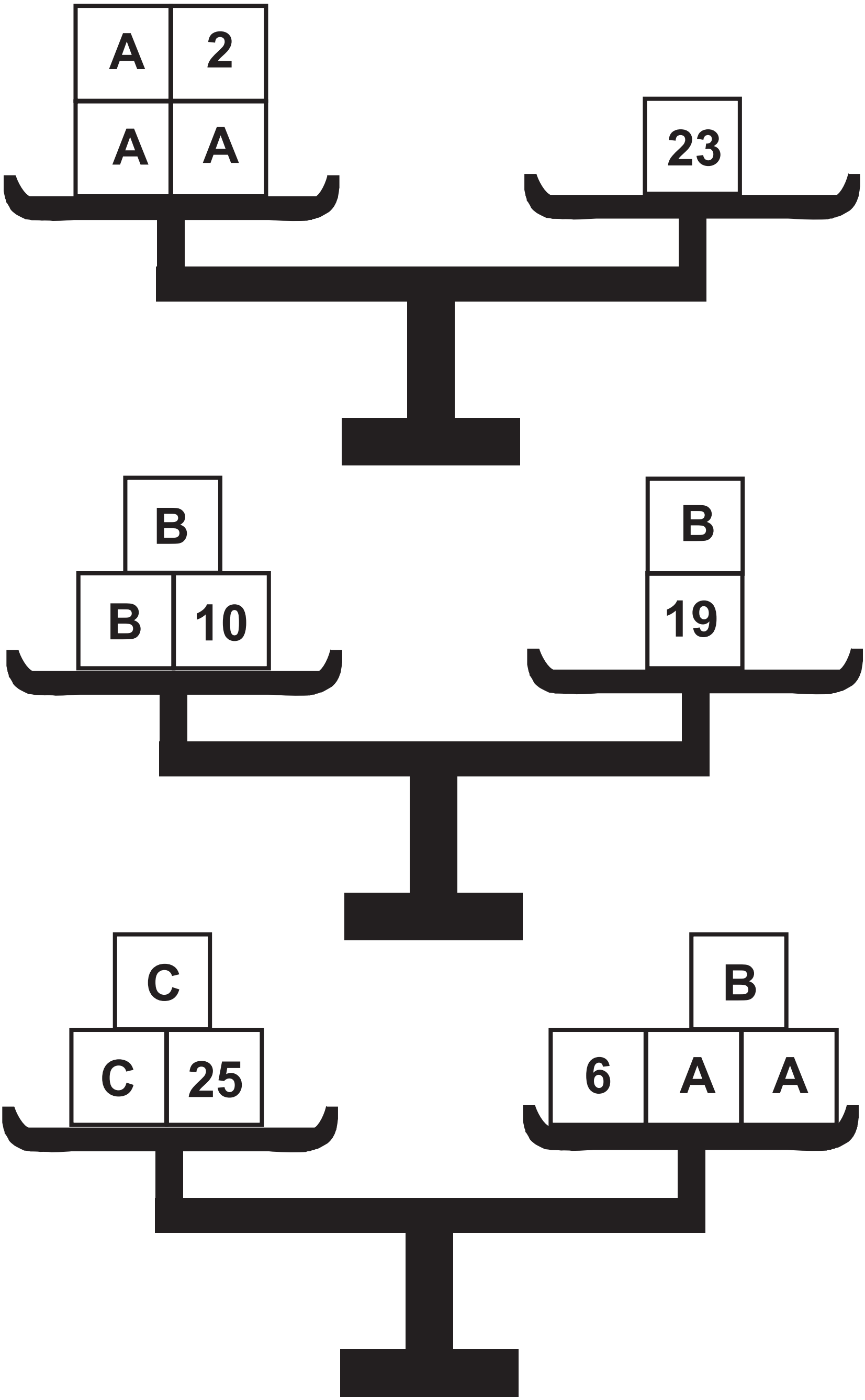
Diagram NOT drawn to scale



Question 15

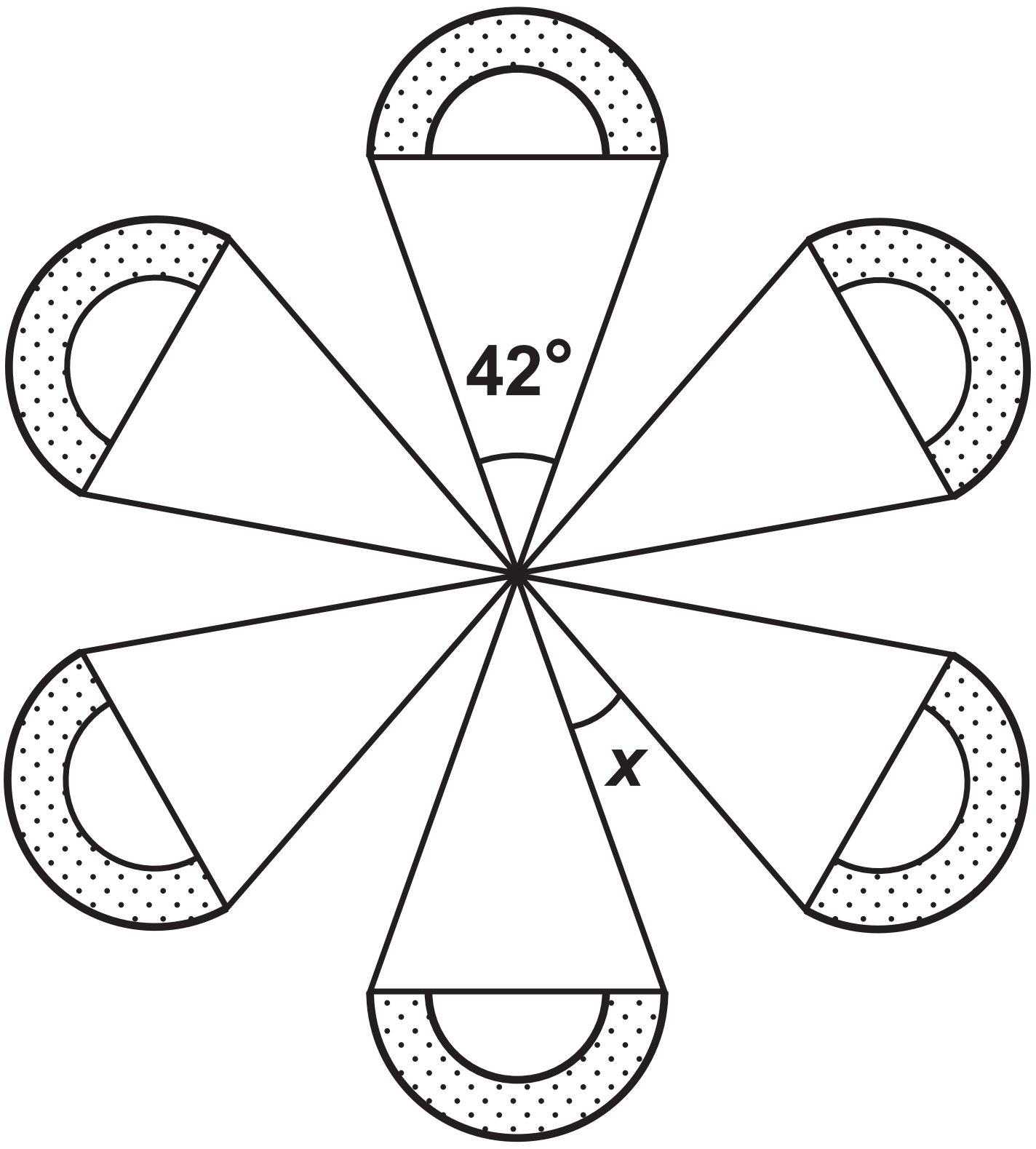


Question 16



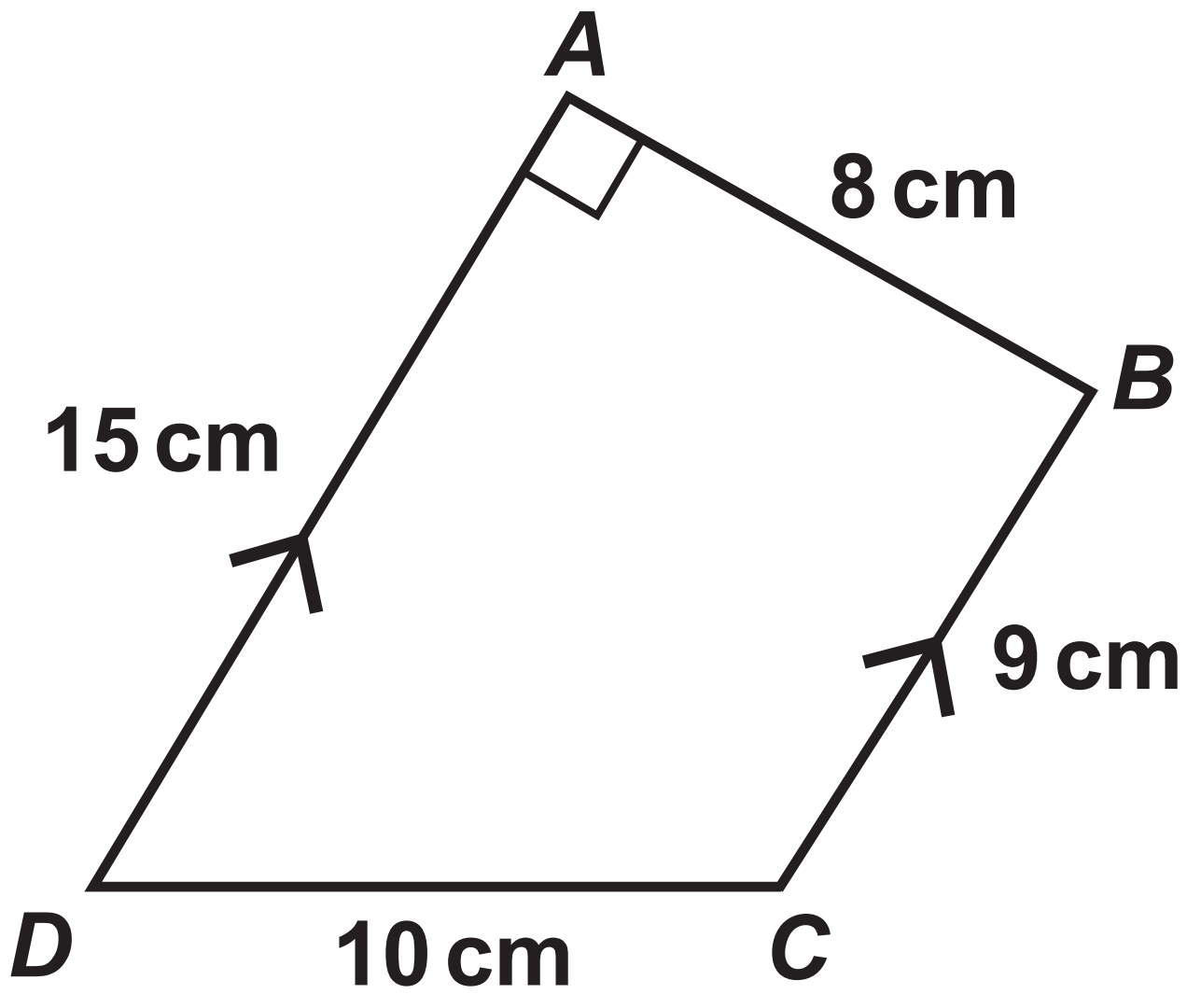
Question 17

Diagram NOT drawn to scale



Question 18

Diagram NOT drawn to scale



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