



Surname _____

Forename(s) _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

GCSE

MATHEMATICS

F

Foundation Tier Paper 1 Non-Calculator

8300/1F

Wednesday 8 November 2023

Morning

Time allowed: 1 hour 30 minutes

At the top of the page, write your surname and forename(s), your centre number, your candidate number and add your signature.

[Turn over]

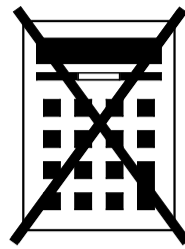


N 0 V 2 3 8 3 0 0 1 F 0 1

MATERIALS

For this paper you must have:

- mathematical instruments
- the Formulae Sheet (enclosed).



You must **NOT** use a calculator.

INSTRUCTIONS

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **ALL** questions.
- You must answer the questions in the spaces provided. Do not write on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.



INFORMATION

- **The marks for questions are shown in brackets.**
- **The maximum mark for this paper is 80.**
- **You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.**

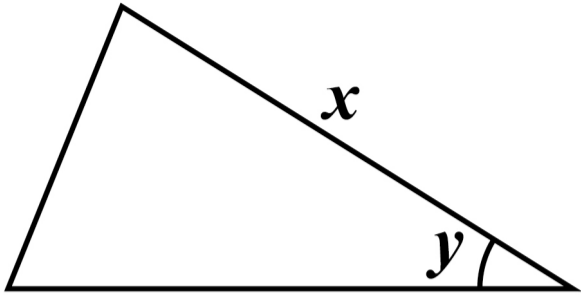
ADVICE

In all calculations, show clearly how you work out your answer.

DO NOT TURN OVER UNTIL TOLD TO DO SO



2 Here is a triangle.



2 (a) Measure the length of side x .

Give your answer in millimetres. [1 mark]

$x =$ _____ mm

2 (b) Measure angle y . [1 mark]

$y =$ _____ °

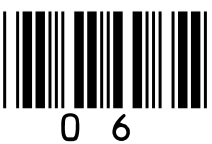
[Turn over]



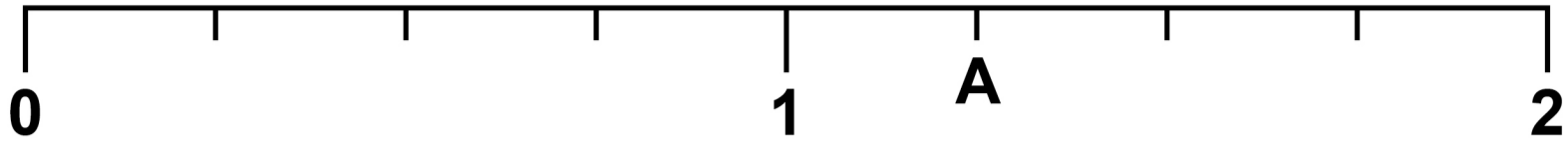
- 3 Write a number in the box to make the statement correct. [1 mark]

$$3.7 < \boxed{}$$

<hr/>
6



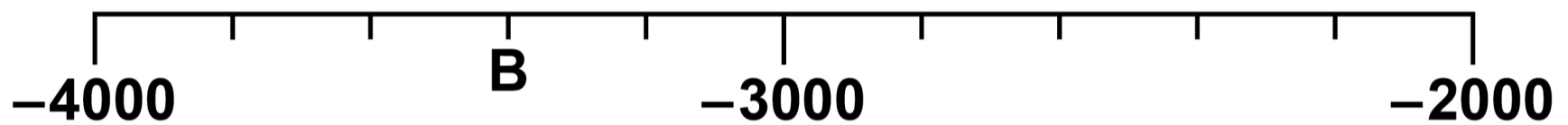
4 (a) Here is a number line.



Which number is at A? [1 mark]

Answer _____

4 (b) Here is another number line.



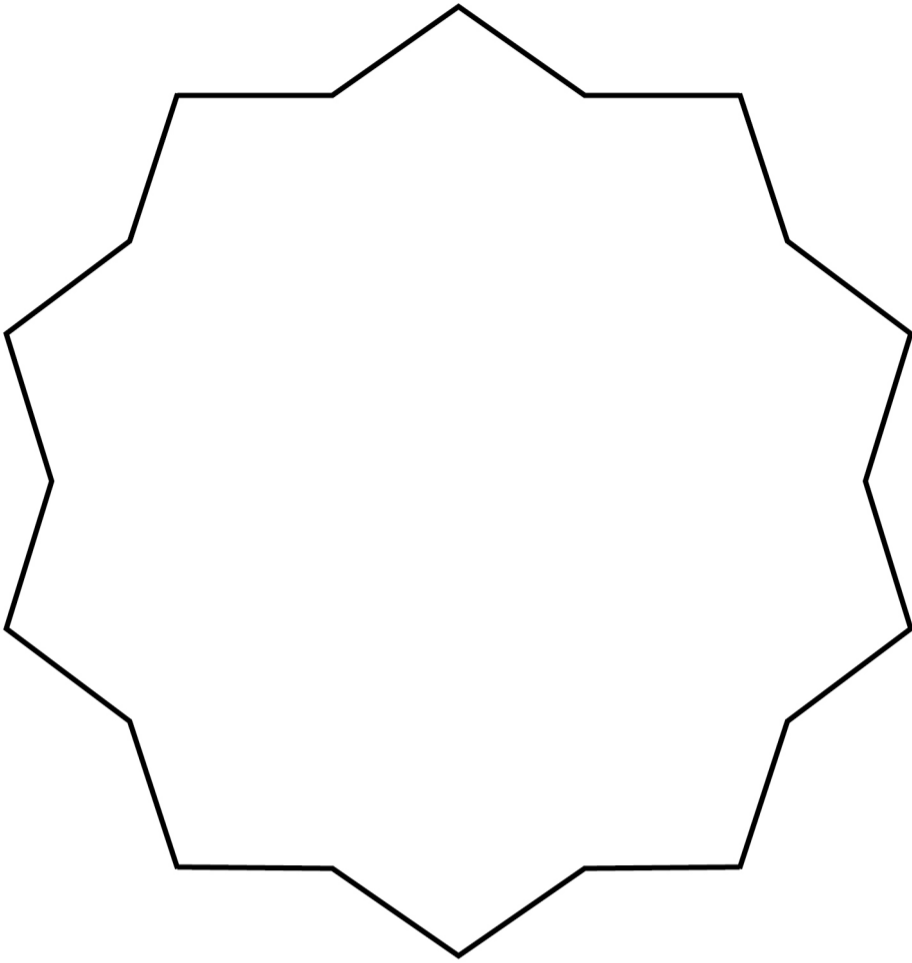
Which number is at B? [1 mark]

Answer _____

[Turn over]



5 Here is a shape.



Write down the order of rotational symmetry of the shape. [1 mark]

Answer _____

3



6 (a) Simplify fully $a + a + a + a$ [1 mark]

Answer _____

6 (b) Factorise $5a + 10$ [1 mark]

Answer _____

6 (c) Multiply out $4(10 - x)$ [2 marks]

Answer _____

[Turn over]



7 Ollie and Rachel run a marathon race.

7 (a) Ollie starts the race at 9.15 am

He takes $3\frac{3}{4}$ hours to finish the race.

At what time does he finish? [2 marks]

Answer _____



- 8 Shamira uses a tally chart to record the vehicles passing her school.

Here is her chart with the tallies.

Each 5-bar gate (𠄎) represents 5 vehicles.

VEHICLE	TALLY	FREQUENCY
Car	𠄎 𠄎 𠄎 𠄎	
Bus	𠄎 𠄎	
Van	𠄎	
Lorry		

- 8 (a) Shamira says,

“The number of cars is more than the TOTAL of the other vehicles because cars have four 5-bar gates and the others only have three 5-bar gates.”

Is she correct?

Tick a box on the opposite page.



Yes

No

Show working to support your answer. [2 marks]

[Turn over]



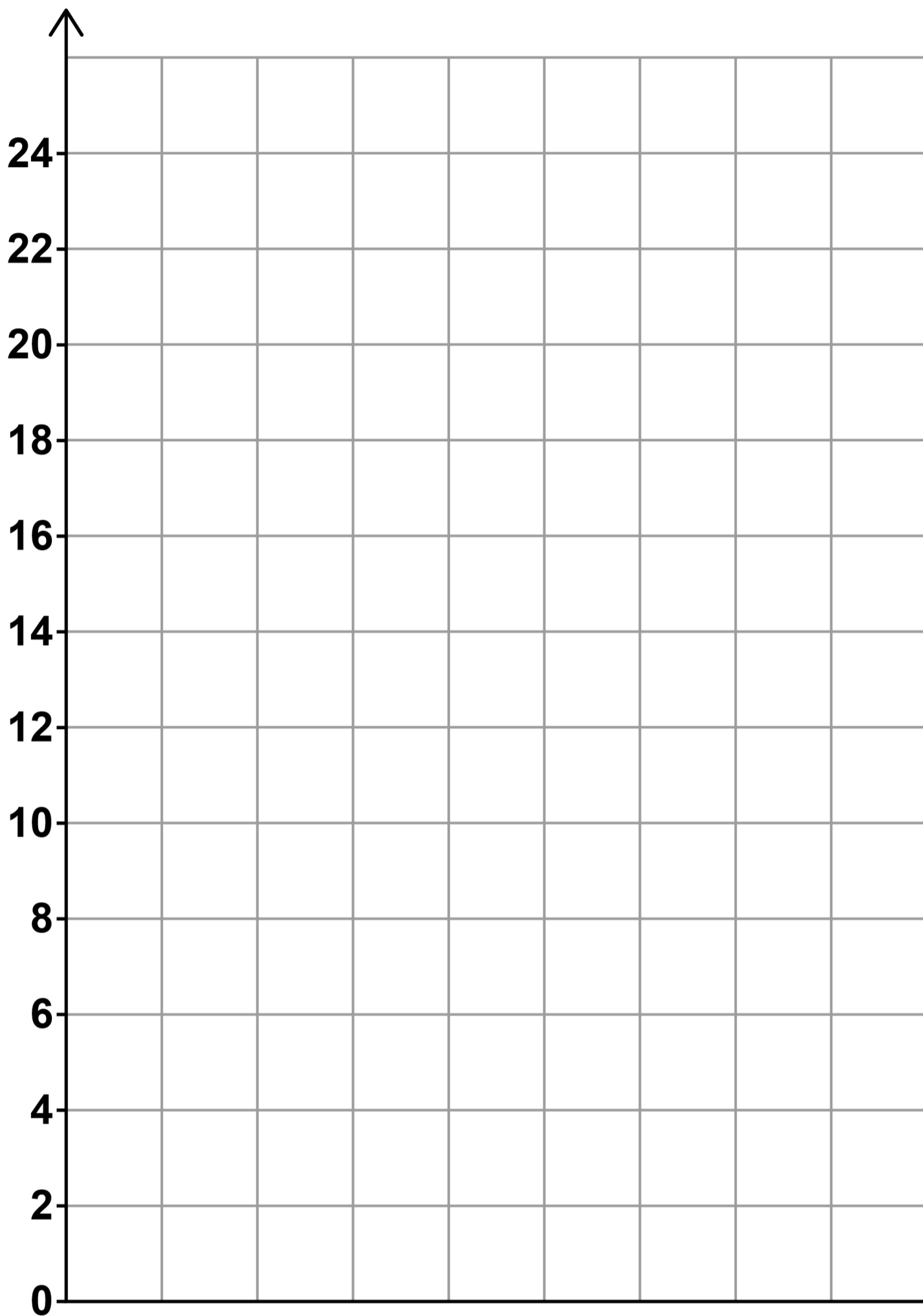
REPEAT OF TALLY CHART

VEHICLE	TALLY	FREQUENCY
Car	/ / / /	
Bus	/ /	
Van	/	
Lorry		

- 8 (b) On the grid opposite, draw a bar chart to represent the data in the tally chart. [3 marks]



Frequency



[Turn over]

$\frac{\quad}{5}$



- 9 Put the whole numbers 1 to 12 into the boxes to make the calculations correct.

Only use each number ONCE. [3 marks]

$$\boxed{} + \boxed{} + \boxed{} = \boxed{7}$$

$$\boxed{} + \boxed{} + \boxed{} = \boxed{32}$$

$$\boxed{} + \boxed{} + \boxed{} = \boxed{15}$$

$$\boxed{} + \boxed{} + \boxed{} = \boxed{24}$$



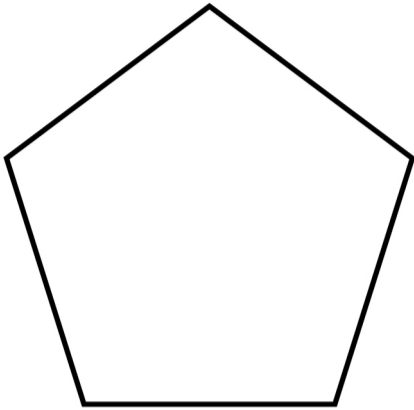
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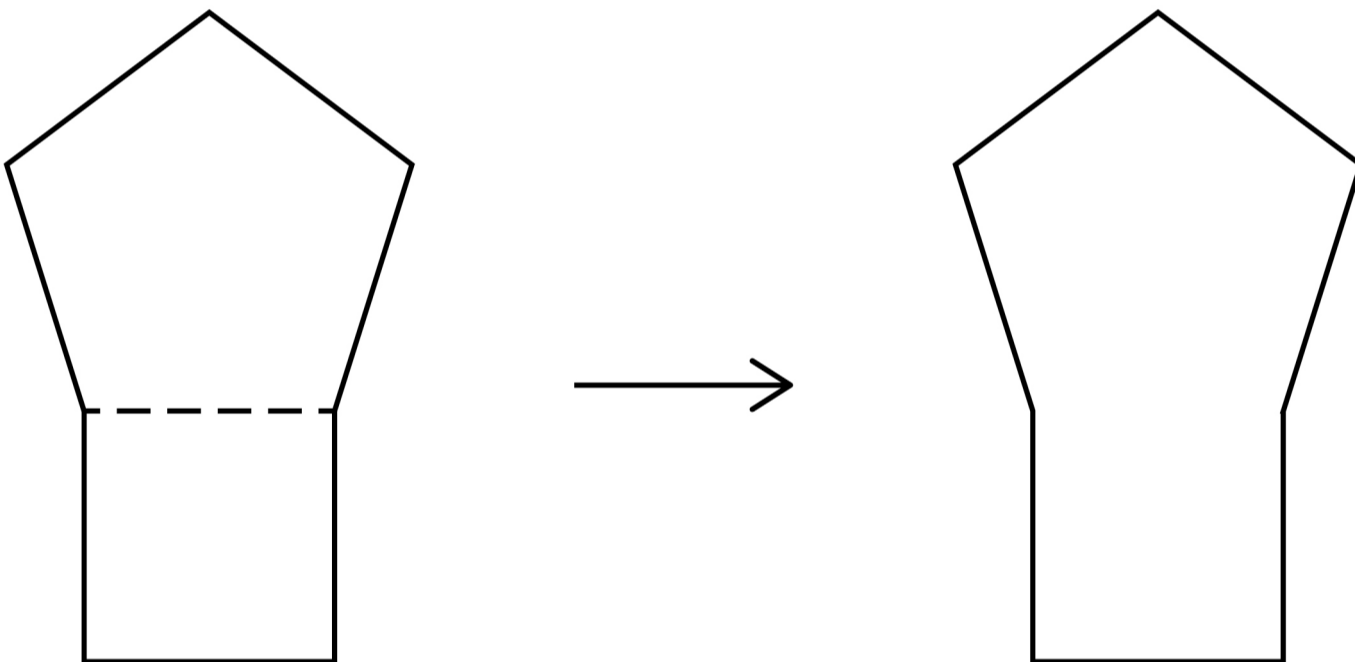


10 A REGULAR pentagon has perimeter 100 mm

The diagrams are not drawn accurately.



A shape is made by joining a square to the pentagon.



Work out the perimeter of the shape. [3 marks]



Answer £ _____

[Turn over]



11 (b) In fact, **THIS WEEK**, Erik
is paid an extra 50p per hour
pays £8.90 tax.

What does this tell you about the amount he
receives?

Tick **ONE** box.

It is less than he expected

It is the same as he expected

It is more than he expected

Show working to support your answer.
[2 marks]



[Turn over]

5



- 12 Complete the list of six numbers so that
the mode is 9
the median is 13
the range is 11
[3 marks]

	9			17	
--	---	--	--	----	--



13 A shape has

- an even number of sides
- more sides than a square
- fewer sides than a decagon

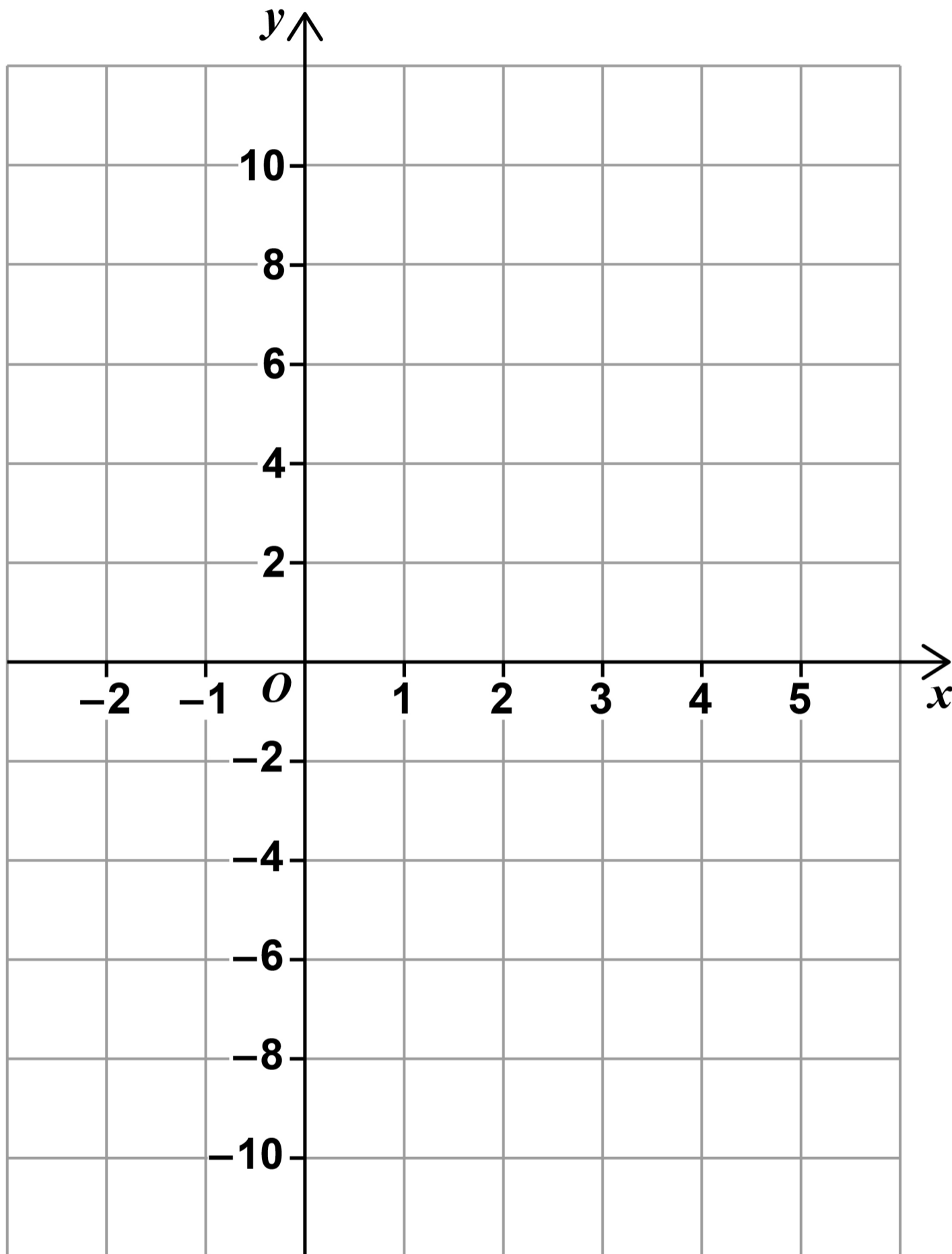
Write down the name of ONE shape this could be.
[1 mark]

Answer _____

[Turn over]



- 14 On the grid, draw the graph of $y = 2x - 6$ for values of x from -2 to 5 [3 marks]



7



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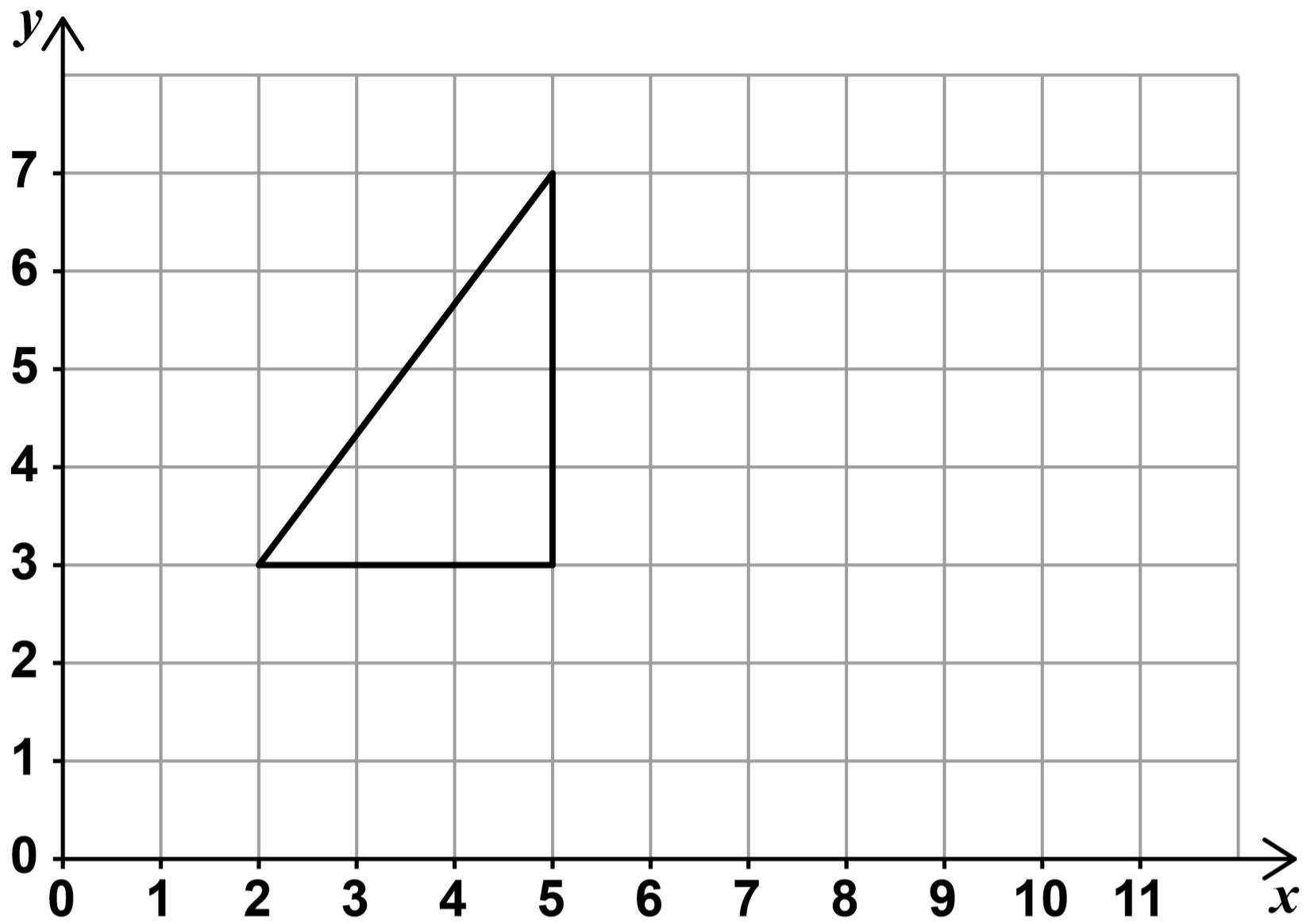


Answer _____

[Turn over]



16 Here is a triangle on a grid.



The triangle is reflected in a vertical line.

Two of the vertices of the reflected triangle are at (7, 3) and (7, 7)



16 (a) What are the coordinates of the other vertex of the reflected triangle? [1 mark]

Answer (_____ , _____)

16 (b) What is the equation of the line of reflection? [1 mark]

Answer _____

[Turn over]

5



19 What does $(A \cup B)$ represent in $P(A \cup B)$?

Circle your answer. [1 mark]

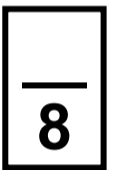
A or B or both

A and B

not A and not B

A but not B

[Turn over]

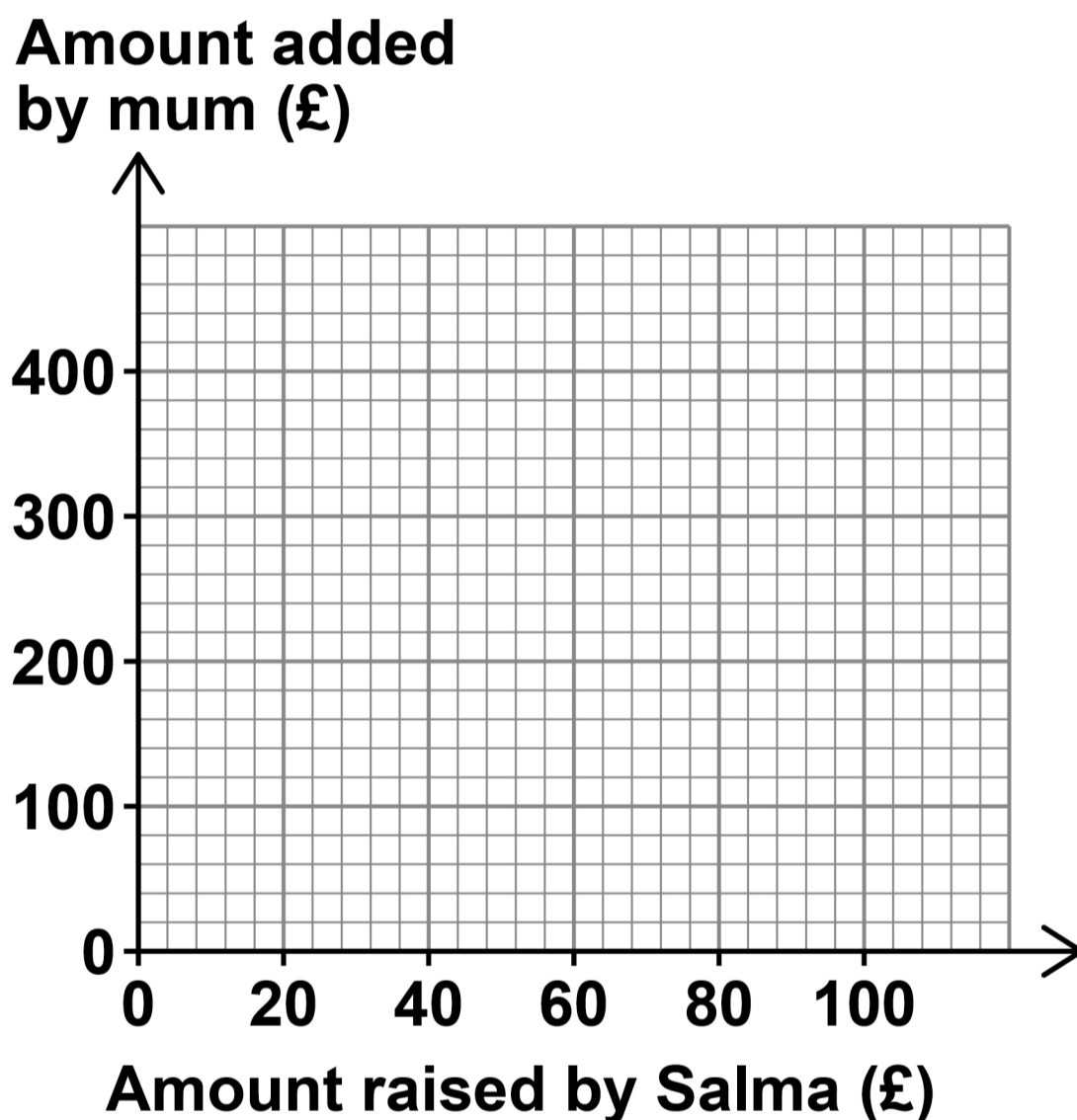


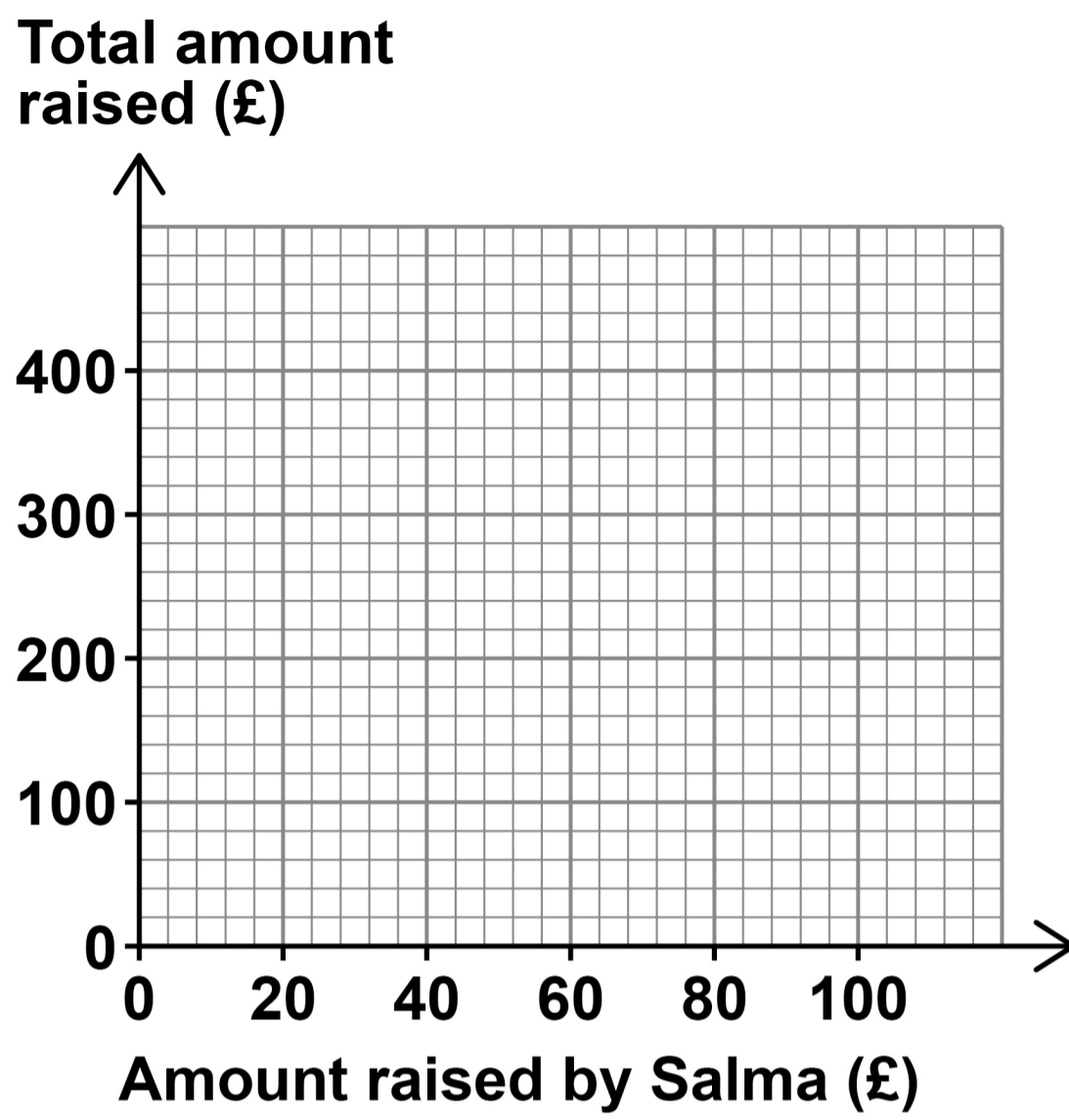
20 Salma is raising money for charity.

Her mum says,

“Whatever amount you raise, I will ADD double that amount.”

Show this information by drawing a graph on EACH grid below and on the opposite page.
[2 marks]





[Turn over]



- 23 Write down the equation of a line parallel to $y = 3x + 1$ [1 mark]

Answer _____

[Turn over]

$\frac{7}{7}$



24 A music company releases 10 albums.

The scatter graph, on the opposite page, shows, for each album,

the number of downloads on the first day

and

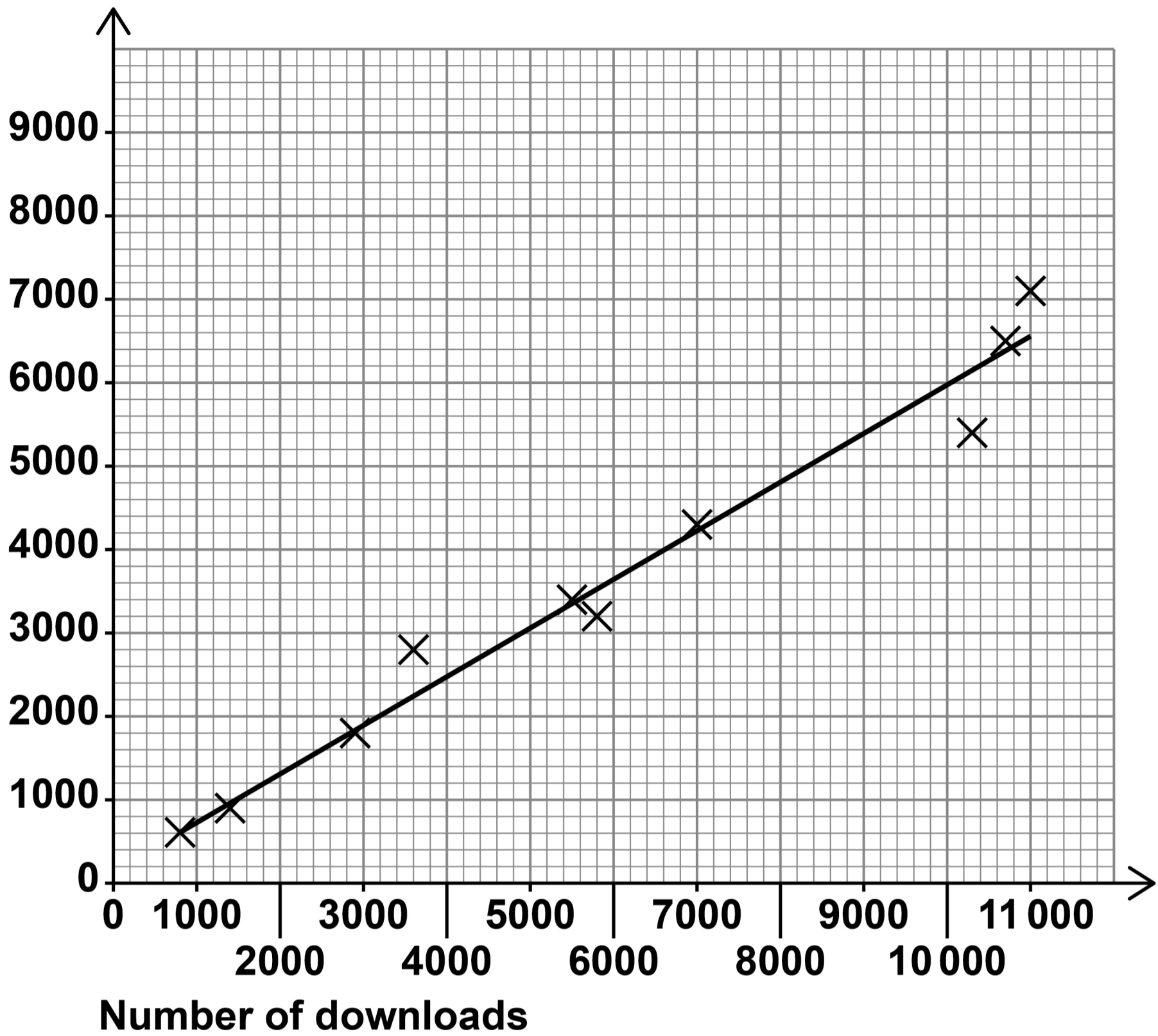
the number of CDs sold on the first day.

A line of best fit has been drawn on the scatter graph.

24 (a) The scatter graph shows positive correlation.

Describe the relationship between number of downloads and number of CDs sold. [1 mark]

Number of
CDs sold



[Turn over]



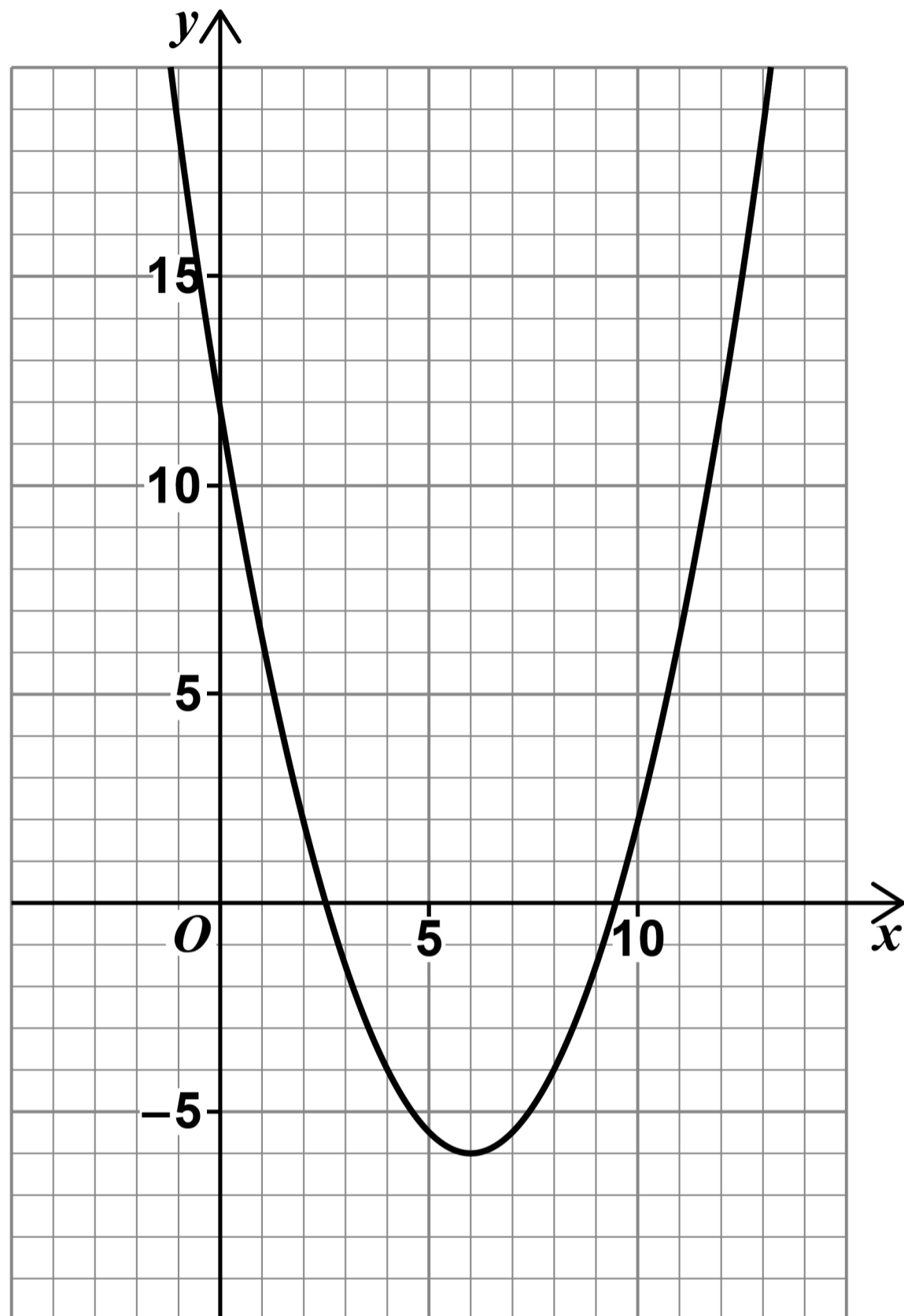
Answer £ _____

4

[Turn over]



26

Here is the graph of $y = 0.5x^2 - 6x + 12$ 

USE THE GRAPH to estimate the solutions of $0.5x^2 - 6x + 12 = 0$ [2 marks]

Answer _____

[Turn over]

5

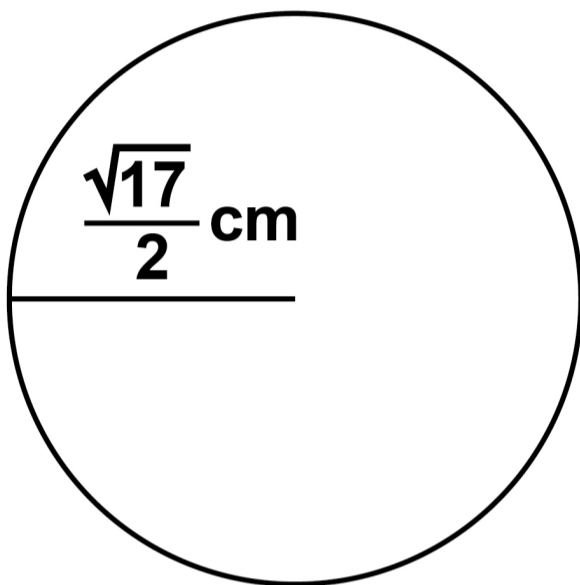


27 Shape A is a circle with radius $\frac{\sqrt{17}}{2}$ cm

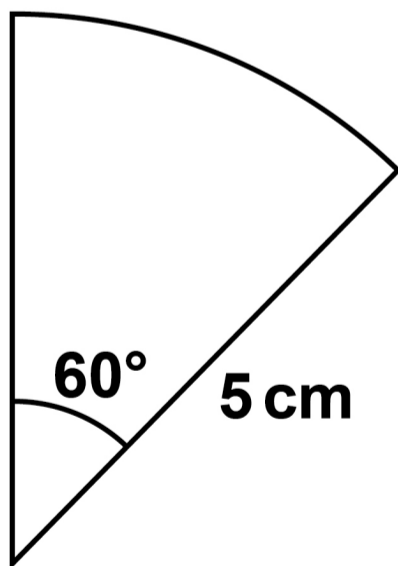
Shape B is a sector of a circle with radius 5 cm

The diagrams are not drawn accurately.

SHAPE A



SHAPE B



Answer _____

28 **Factorise** $x^2 + 2x - 24$ [2 marks]

Answer _____



29 (a) Write 2×10^3 as an ordinary number. [1 mark]

Answer _____

29 (b) Simplify $(2 \times 10^3) : (5 \times 10^{-1})$

Give your answer in the form $n : 1$ [2 marks]

Answer _____ : 1

END OF QUESTIONS

10



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For Examiner's Use	
Pages	Mark
4–6	
7–8	
9–11	
12–15	
16–19	
20–23	
24–26	
28–31	
32–35	
36–39	
40–43	
44–45	
46–49	
TOTAL	

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5 2



2 3 B G 8 3 0 0 / 1 F