



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**



**Answer ALL questions in the spaces provided.**

**1 (a) Write down the value of  $2^3$  [1 mark]**

**Answer** \_\_\_\_\_

**1 (b) Work out  $3.45 + 2.07 - 1.3$  [2 marks]**

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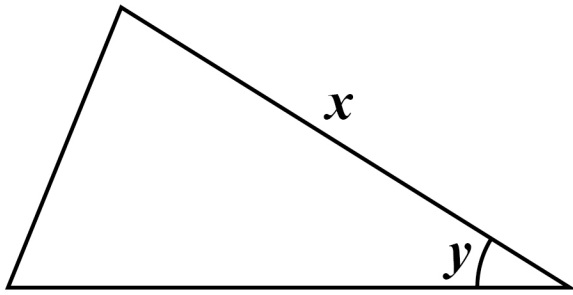
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**Answer** \_\_\_\_\_



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]



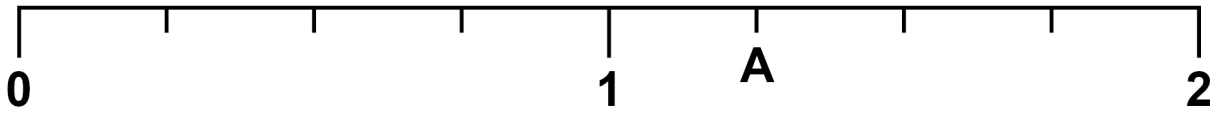
- 3 Write a number in the box to make the statement correct. [1 mark]

$$3.7 < \boxed{\phantom{000}}$$

$$\frac{\phantom{00}}{6}$$



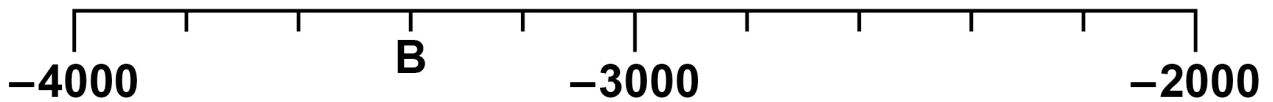
4 (a) Here is a number line.



Which number is at A? [1 mark]

Answer \_\_\_\_\_

4 (b) Here is another number line.



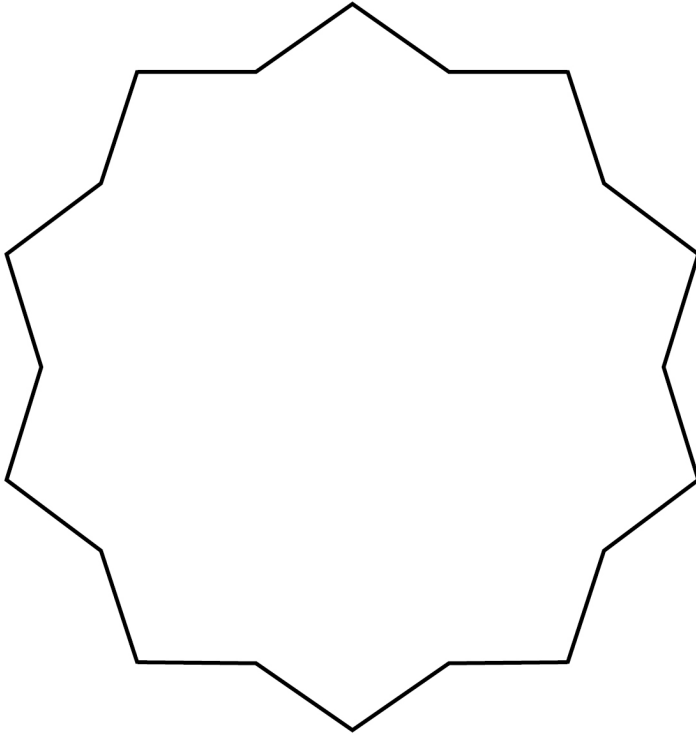
Which number is at B? [1 mark]

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]

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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]

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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 (≡) represents 5 vehicles.

VEHICLE	TALLY	FREQUENCY
Car	≡ ≡ ≡ ≡	
Bus	≡ ≡	
Van	≡	
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]**

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**[Turn over]**



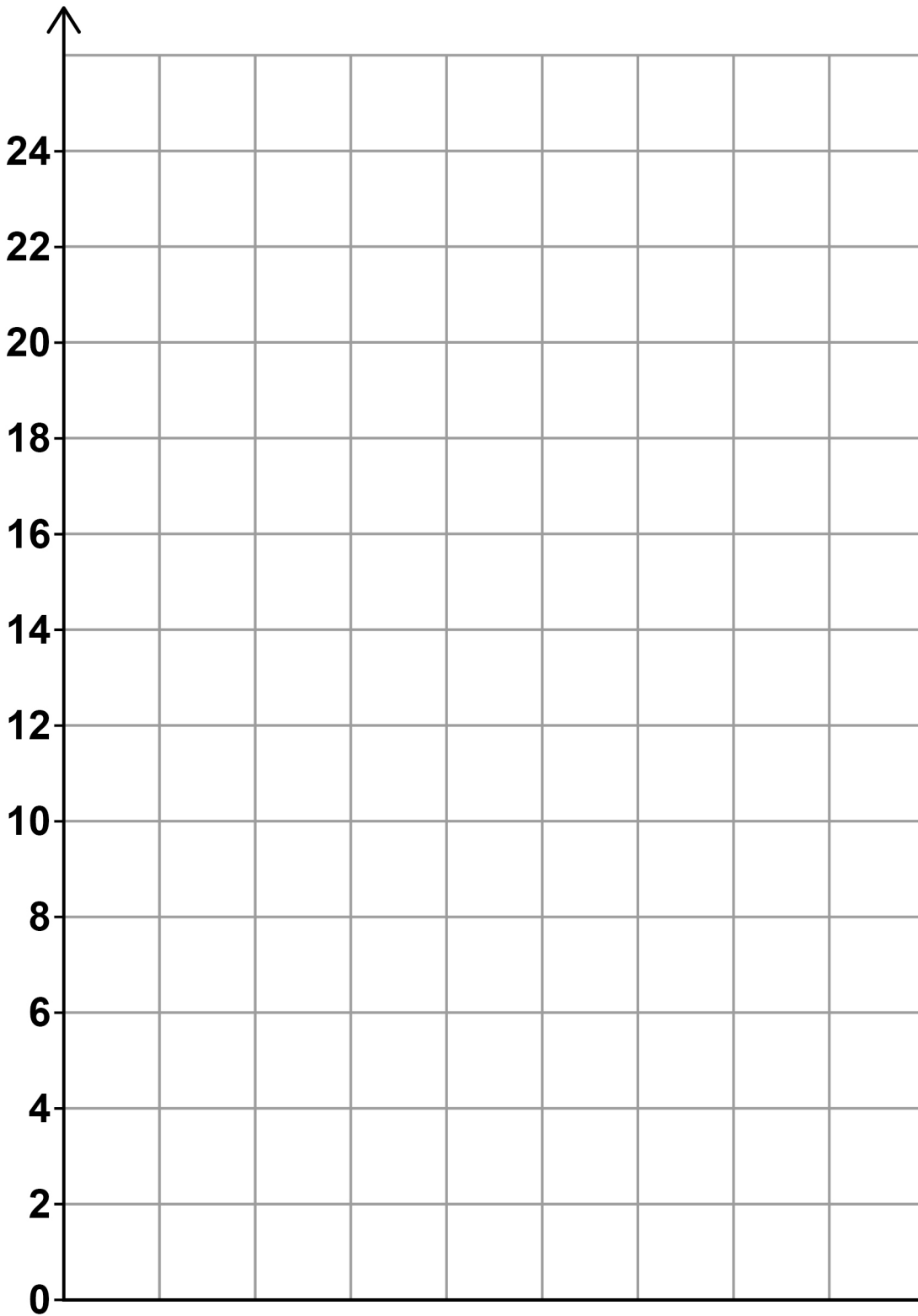
## REPEAT OF TALLY CHART

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]

      
5



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

Only use each number ONCE. [3 marks]

$$\square + \square + \square = \square 7$$

$$\square + \square + \square = \square 32$$

$$\square + \square + \square = \square 15$$

$$\square + \square + \square = \square 24$$



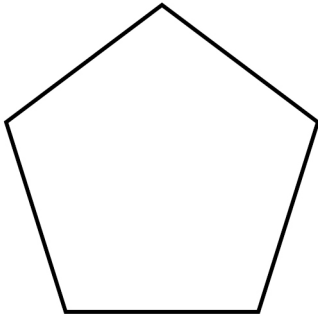
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**[Turn over]**

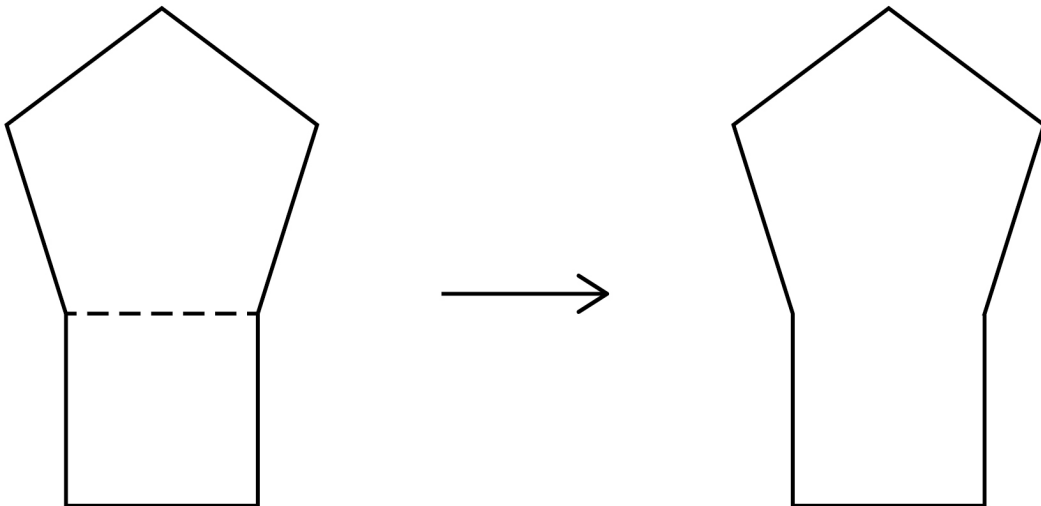


10 A REGULAR pentagon has perimeter 100 mm

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]

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11 Last week, Erik worked for 10 hours.

He paid no tax and received £90

11 (a) This week, Erik works for 15 hours.

He assumes he will be paid at the same rate and pay no tax.

How much does he expect to receive this week?  
[3 marks]

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**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]**

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[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]

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**13** A shape has

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

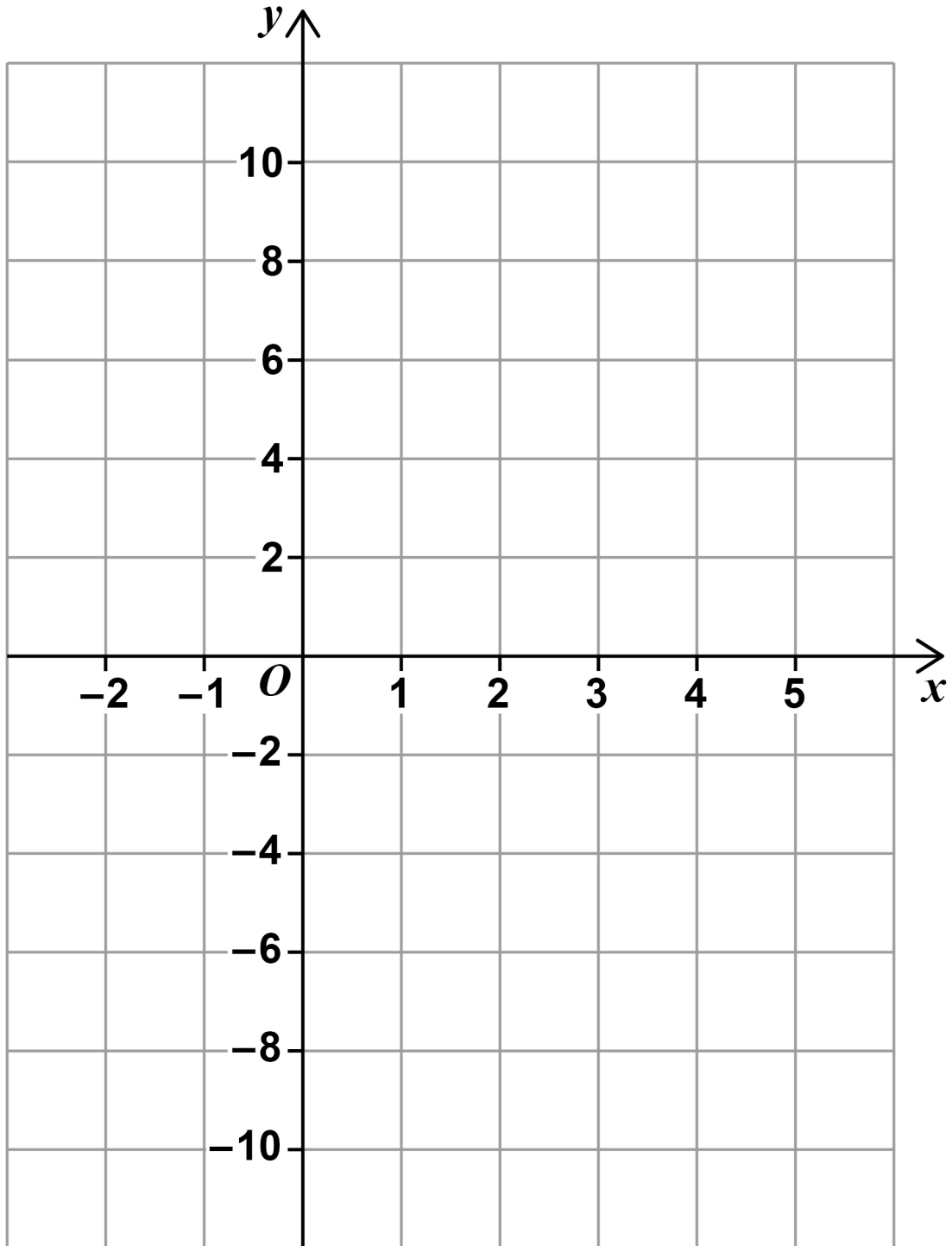
Write down the name of **ONE** shape this could be. [1 mark]

Answer \_\_\_\_\_

[Turn over]



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



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7



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**[Turn over]**





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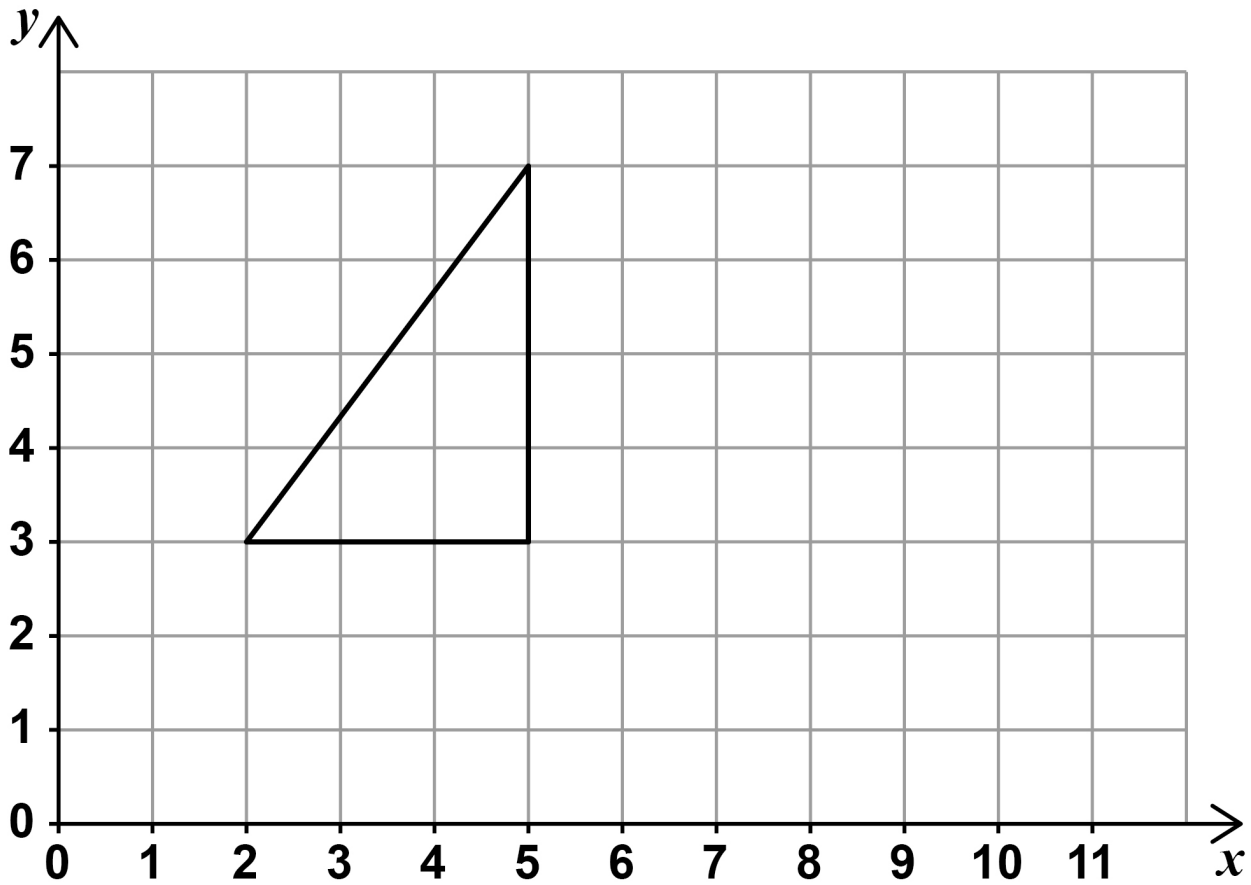
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**Answer** \_\_\_\_\_

**[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



17 Ali has £80

He gives  $\frac{9}{10}$  of his money to Joe.

Joe spends  $\frac{2}{3}$  of this money.

He gives the rest back to Ali.

What fraction of the £80 does Ali have now?

Give your answer in its simplest form. [4 marks]

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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]

8
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20 Salma is raising money for charity.

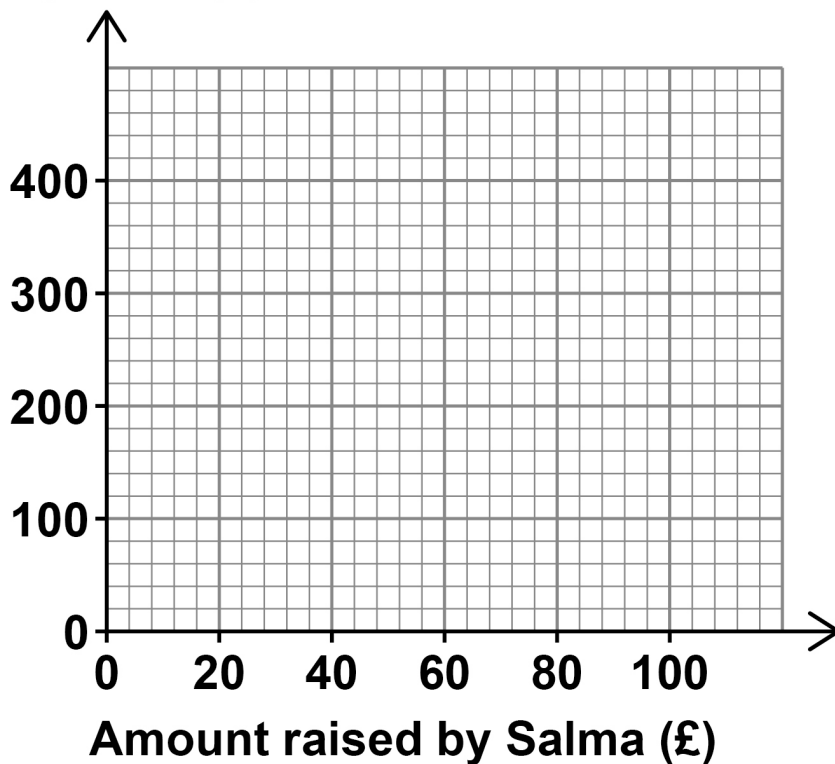
Her mum says,

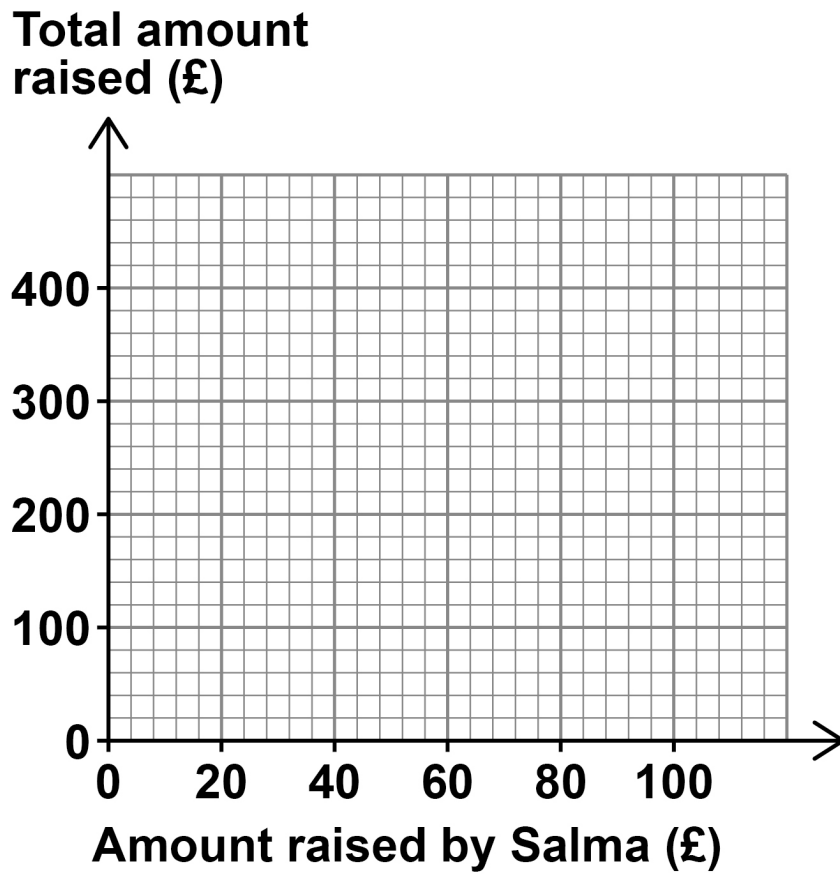
“Whatever amount you raise, I will ADD double that amount.”

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

[2 marks]

Amount added  
by mum (£)





[Turn over]





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

Answer \_\_\_\_\_

7

[Turn over]



**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]**

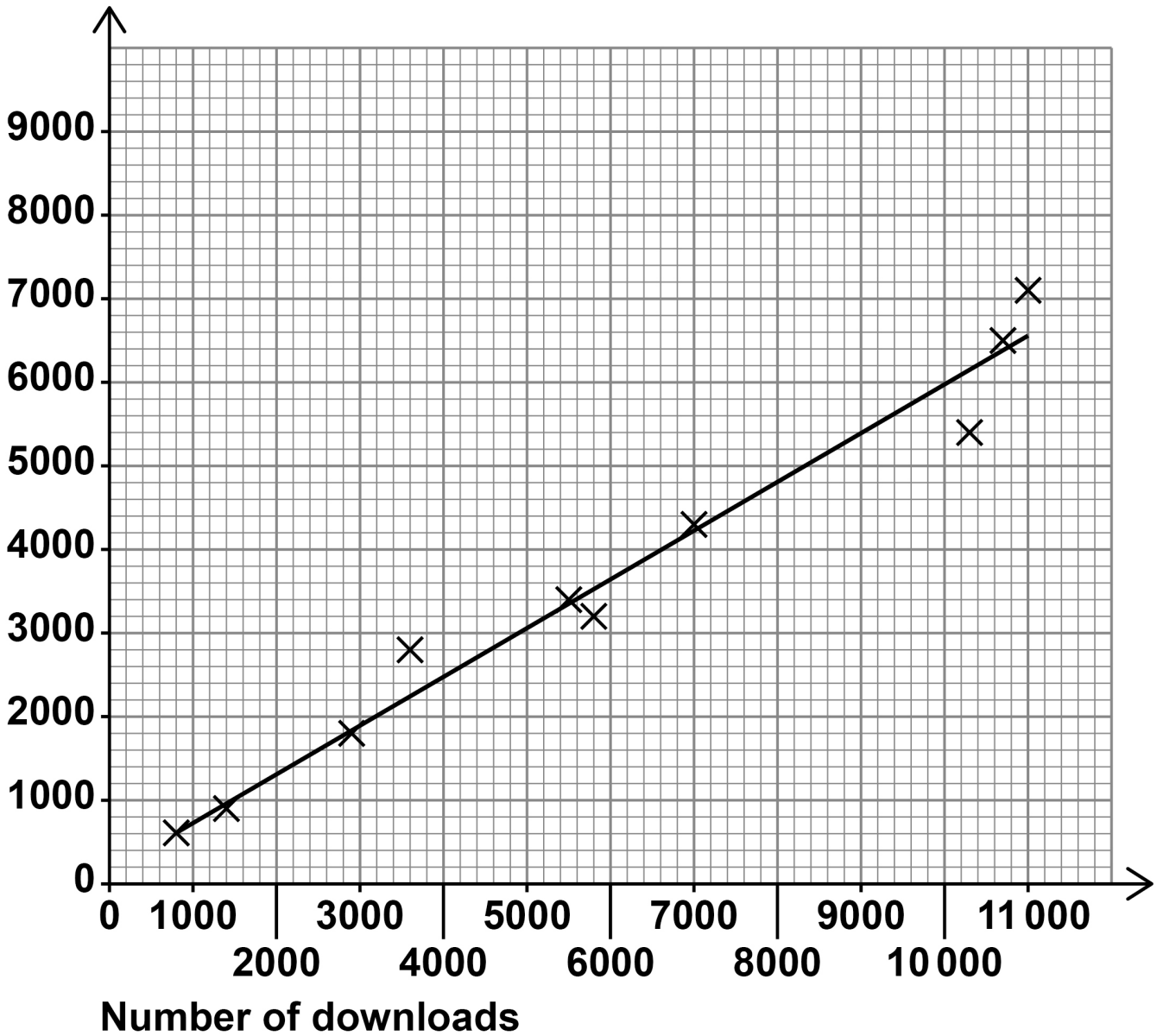
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Number of  
CDs sold



[Turn over]



**24 (b) The company earns  
£2.50 for each download  
and  
£3 for each CD sold.**

**The company releases another album.**

**On the first day it has 9000 downloads.**

**Estimate the TOTAL amount the company  
earns from downloads and CDs of the album  
that day. [3 marks]**

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Answer £ \_\_\_\_\_

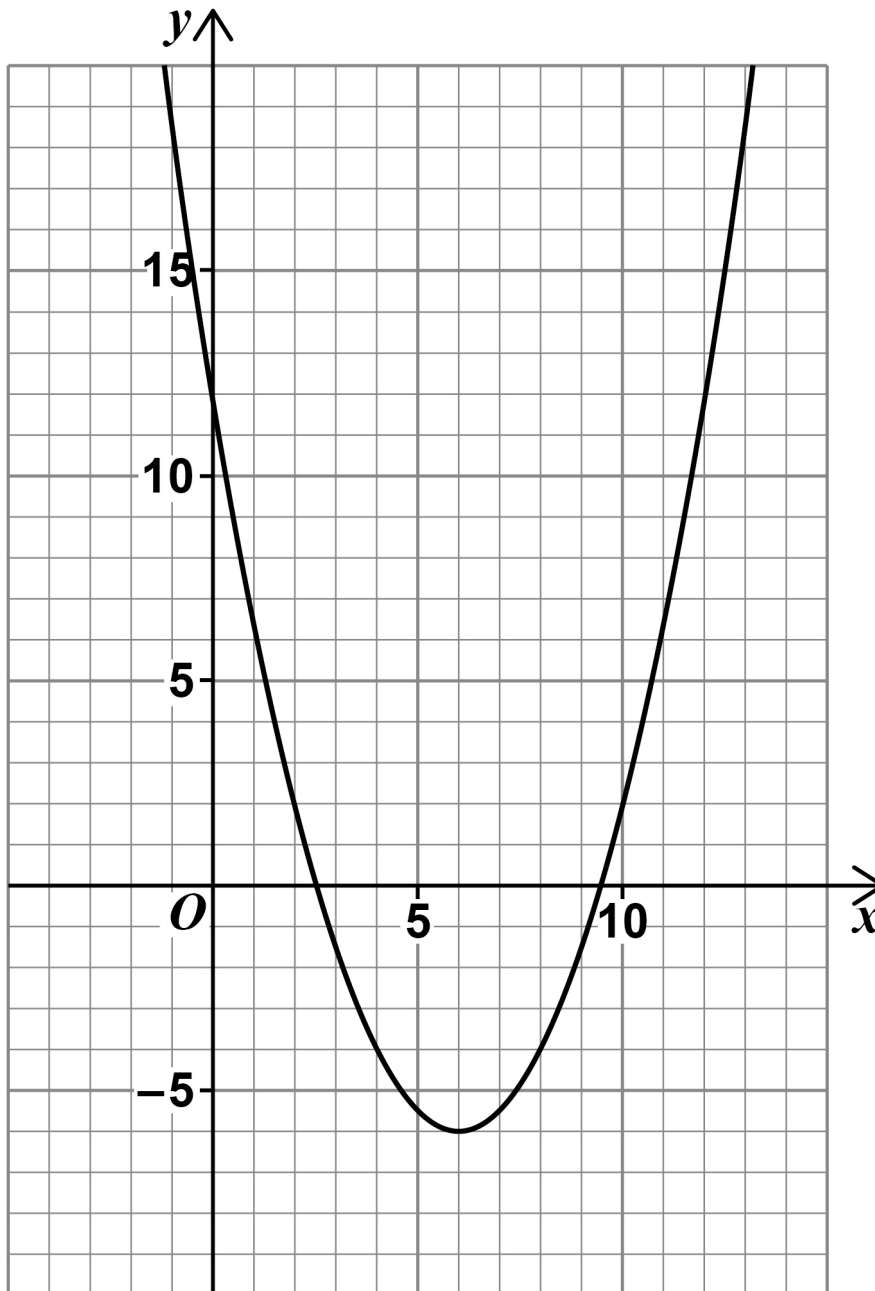
[Turn over]

4





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]

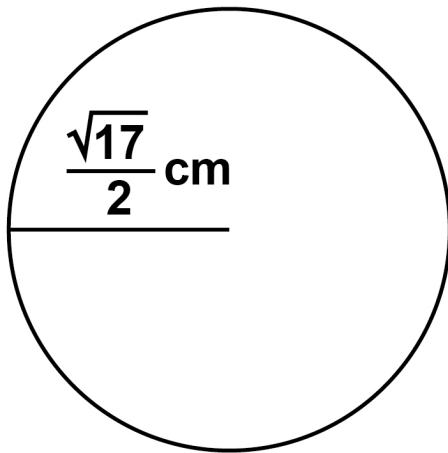


27 Shape A is a circle with radius  $\frac{\sqrt{17}}{2}$  cm

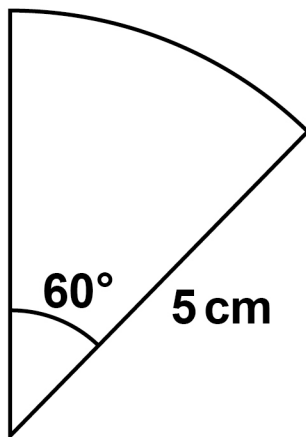
Shape B is a sector of a circle with radius 5 cm

The diagrams are not drawn accurately.

**SHAPE A**



**SHAPE B**





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**Answer** \_\_\_\_\_

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

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**Answer** \_\_\_\_\_



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

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Answer \_\_\_\_\_

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

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

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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	
<b>TOTAL</b>	

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