AQA

Surname _____

Forename(s) _____

Candidate signature _____

I declare this is my own work.

GCSE
MATHEMATICS

F

Foundation Tier   Paper 1 Non-Calculator

Shadow paper based on November 2023 question paper

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
• mathematical instruments

You must **not** use a calculator.

Instructions

• Use black ink or black ball-point pen. Draw diagrams in pencil.
• Fill in the boxes at the top of this page.
• Answer **all** questions.
• You must answer the questions in the spaces provided. Do not write outside the box around each page or 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.

For Examiner's Use	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18–19	
20–21	
22–23	
24–25	
26	
TOTAL	

8300/1F

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

1 (a) Write down the value of 7^2

[1 mark]

Answer _____

1 (b) Work out $5.22 + 1.09 - 2.1$

[2 marks]

_____

_____

_____

_____

_____

Answer _____

2 Here is a quadrilateral.
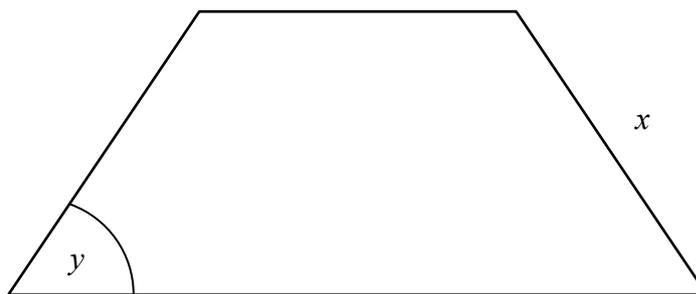
2 (a) Measure the length of side x.

Give your answer in millimetres.

[1 mark]

$x =$ _____ mm

2 (b) Measure angle y.

[1 mark]

$y =$ _____ °

3 Write a number in the box to make the statement correct.

[1 mark]

12.1 >
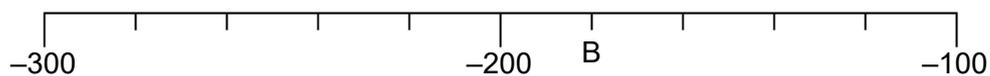
4 (a) Here is a number line.

3   A   4   5

Which number is at A?

[1 mark]

Answer _____

4 (b) Here is another number line.

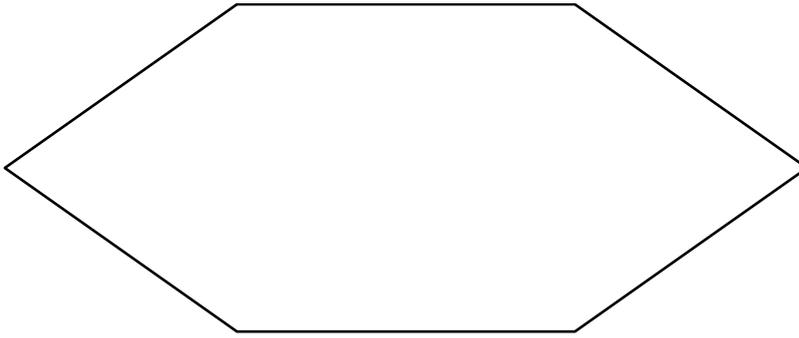

−300   −200   B   −100

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 _____

6 (a)   Simplify fully $b + b + b$

[1 mark]

Answer _____

6 (b)   Factorise $6f + 9$

[1 mark]

Answer _____

6 (c)   Multiply out $3(7 - x)$

[2 marks]

_____

_____

Answer _____

8300/1F

7 Annette and Pete are travelling to London.

7 (a) Annette leaves Manchester at 10.45 am

She takes $4\frac{1}{4}$ hours to travel to London.

At what time does she arrive in London?

[2 marks]

Answer _____

7 (b) Pete has a target of 3 hours 40 minutes to travel from Nantwich to London.

He has been driving for 117 minutes.

To meet his target, how many minutes longer does he have left to drive?

[3 marks]

Answer _____ minutes

10

Turn over ▶

8 Nikola uses a tally chart to record the flavour of sweets in a bag.

Here is her chart with the tallies.

Each 5-bar gate (卌) represents 5 sweets.

Flavour	Tally	Frequency
Orange	卌 卌 卌 ‖	
Lime	卌 ‖‖	
Strawberry	‖‖	
Blackcurrent	卌 ‖‖‖	

8 (a) Nikola says,

"The number of orange sweets is more than the **total** of the other sweets

because orange have three 5-bar gates and the others only have two 5-bar gates."
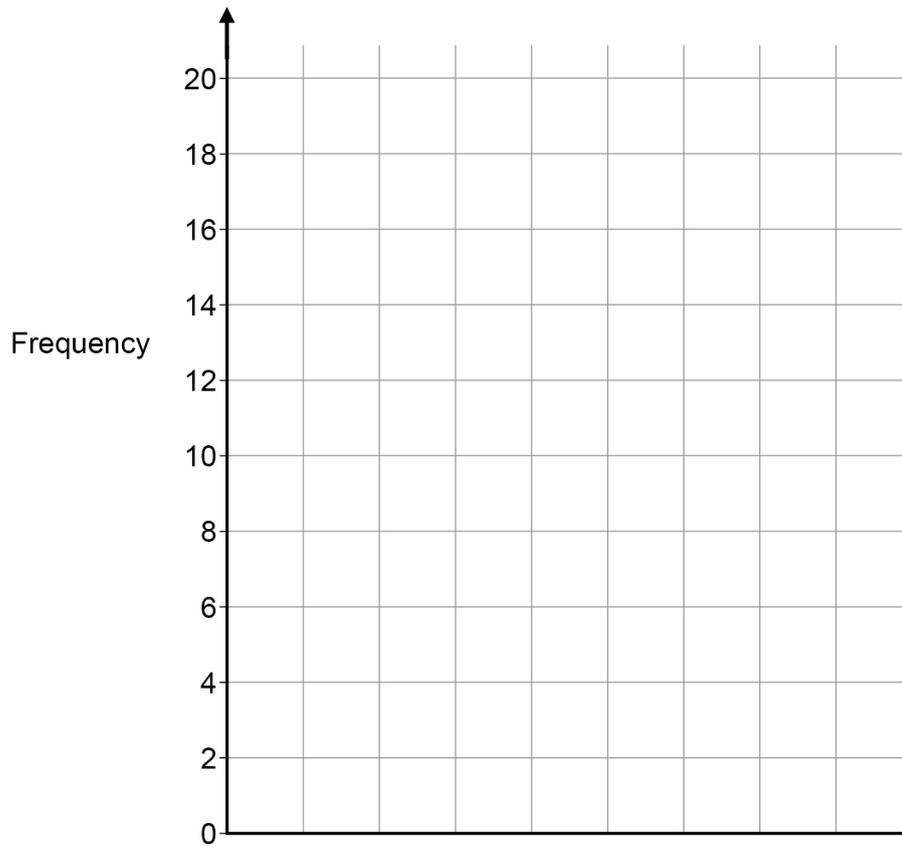
Is she correct?

Tick a box.

Yes ☐   No ☐

Show working to support your answer.

[2 marks]

_____

_____

_____

_____

_____

8 (b) On the grid, draw a bar chart to represent the data in the tally chart.

[3 marks]

Frequency

(vertical axis labelled: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20)

Turn over for the next question

5

Turn over ▶

8300/1F

9 Put the whole numbers 1 to 12 into the boxes to make the calculations correct.
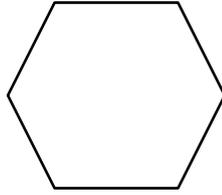
Only use each number **once**.

[3 marks]

$$\boxed{} + \boxed{} + \boxed{} = \boxed{6}$$

$$\boxed{} + \boxed{} + \boxed{} = \boxed{33}$$

$$\boxed{} + \boxed{} + \boxed{} = \boxed{19}$$

$$\boxed{} + \boxed{} + \boxed{} = \boxed{20}$$

Shadow paper based on Nov 2023 question paper

8300/1F

10 A **regular** hexagon has perimeter 180 mm

Not drawn accurately

A shape is made by joining a square to the hexagon.
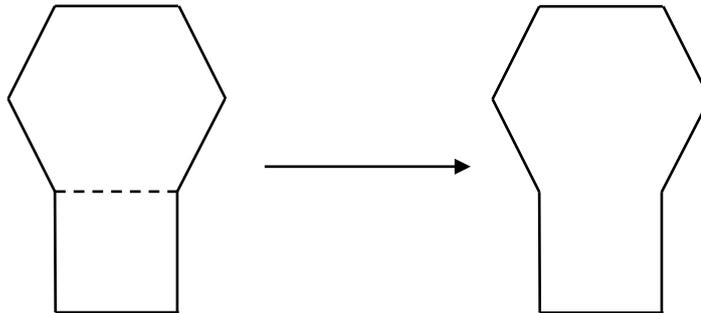
Work out the perimeter of the shape.

[3 marks]

Answer _____ mm

6

Turn over ▶

11 Last week, Emily worked for 9 hours.

She paid no tax and received £72

11 (a) This week, Emily works for 12 hours.

She assumes she will be paid at the same rate and pay no tax.

How much does she expect to receive this week?

[3 marks]

Answer £ _____

11 (b) In fact, **this week**, Emily

is paid an extra 50p per hour

pays £5.70 tax.

What does this tell you about the amount she receives?

Tick **one** box.

☐ It is less than she expected.

☐ It is the same as she expected.

☐ It is more than she expected.

Show working to support your answer.

[2 marks]

Turn over for the next question

5

Turn over ▶

8300/1F

12 Complete the list of six numbers so that

the mode is 10

the median is 12
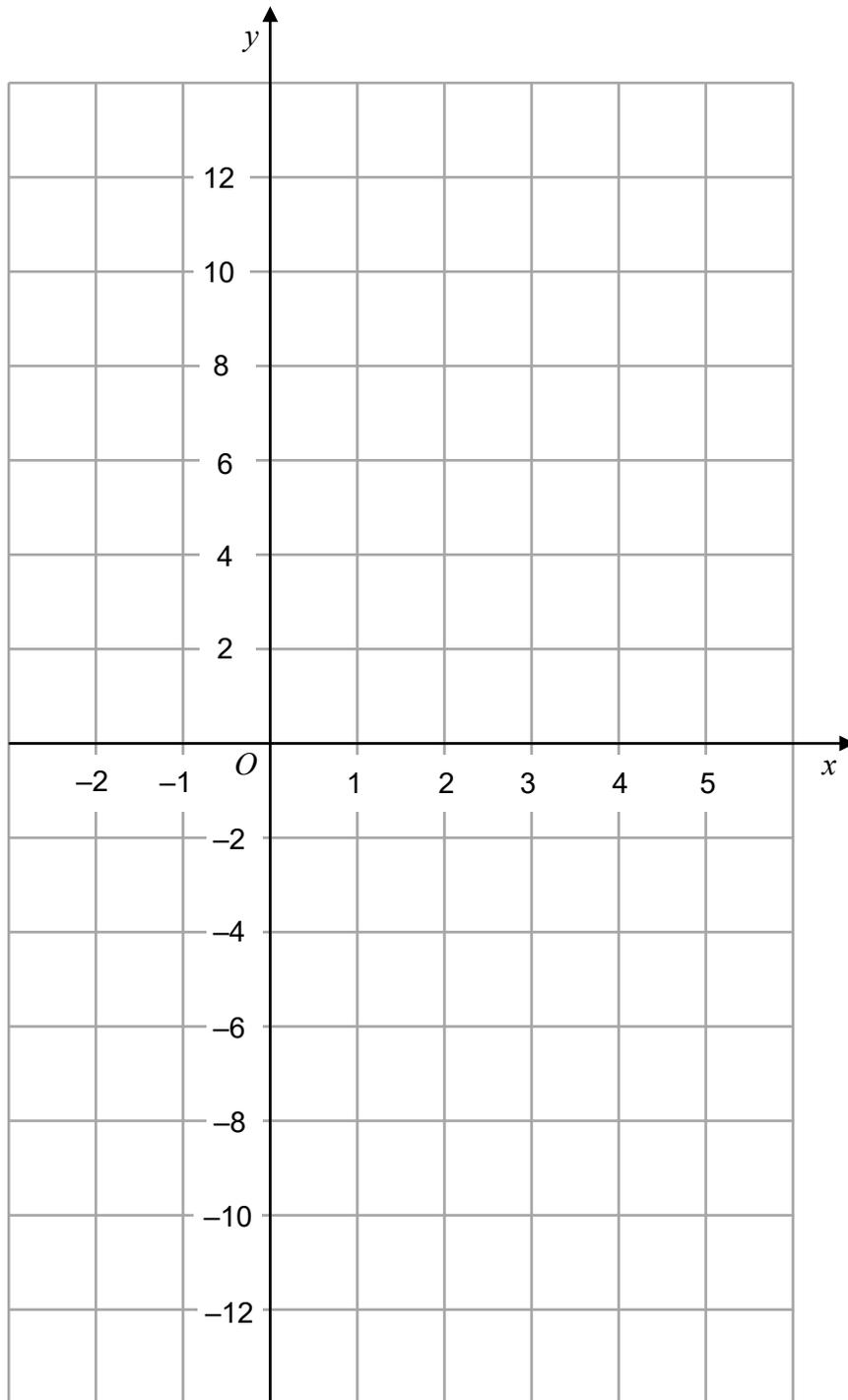
the range is 9

[3 marks]

	10			18	

13 A shape has

- an odd number of sides
- more sides than a triangle
- fewer sides than a hexagon
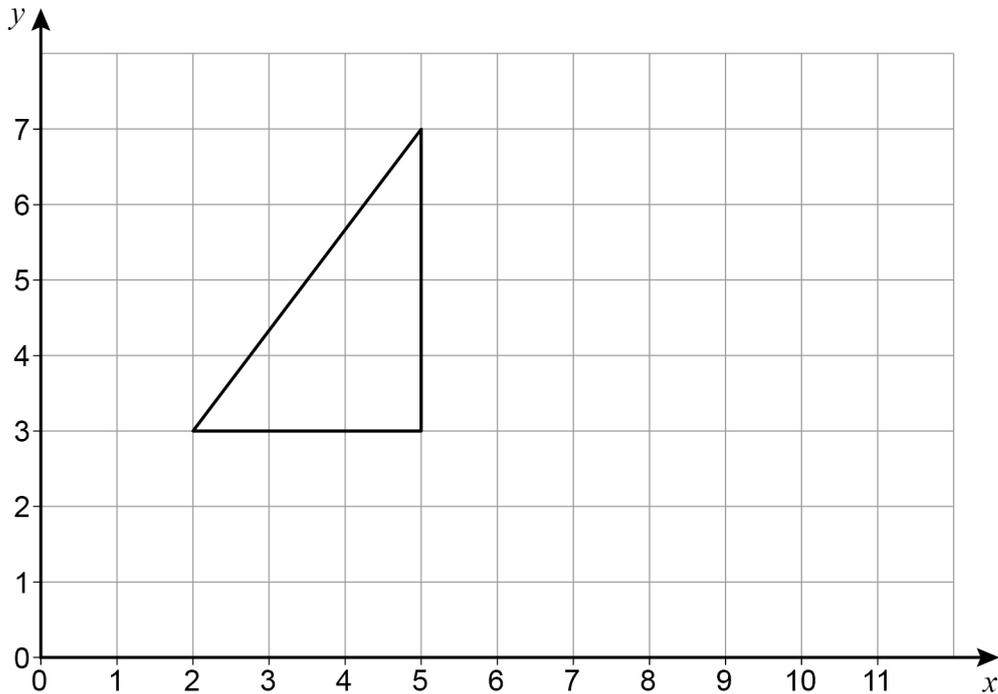
Write down the name of this shape.

[1 mark]

Answer _____

14 On the grid, draw the graph of $y = 4 - 2x$ for values of x from -2 to 5

[3 marks]

Turn over for the next question

7

Turn over ▶

8300/1F

15 Work out $\dfrac{7}{10} + \dfrac{13}{15}$

Give your answer as a mixed number.

[3 marks]

Answer _____

8300/1F

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 (8, 3) and (8, 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 _____

5

Turn over ▶

17   Aliza makes 60 necklaces.

She takes $\frac{4}{5}$ of the necklaces to a market.

At the market she sells $\frac{2}{3}$ of these necklaces.

What fraction of the 60 necklaces does she have left?

Give your answer in its simplest form.

[4 marks]

Answer _____

18 Work out $\sqrt{86 - 5(3^2 + 1)}$

[3 marks]

Answer _____

19 What does (A ∩ B) represent in P(A ∩ B) ?

Circle your answer.

[1 mark]

A or B or both   A and B

not A and not B   A but not B
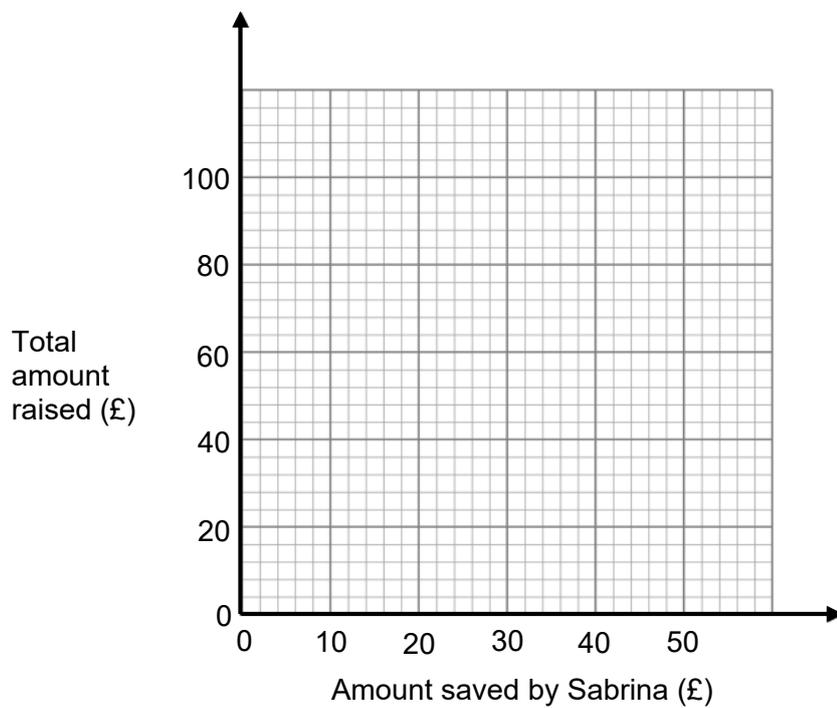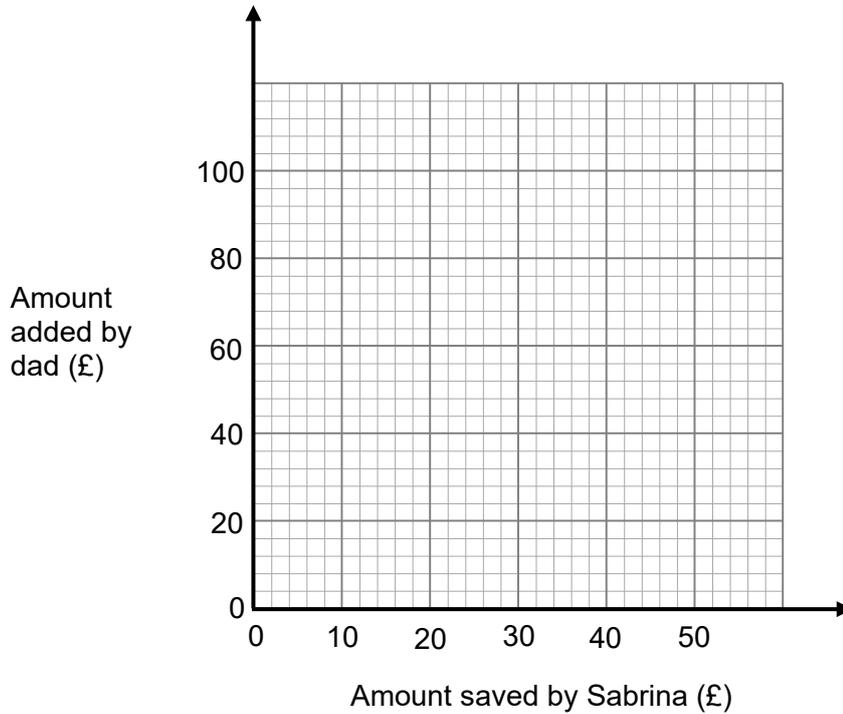
8

Turn over ▶

20 Sabrina is raising money for a car.

Her dad says,

"Whatever amount you raise, I will **add** the same amount."

Show this information by drawing a graph on **each** grid below.

[2 marks]

Amount added by dad (£)

Amount saved by Sabrina (£)

Total amount raised (£)

Amount saved by Sabrina (£)

21 Write down the value of tan 60°

[1 mark]

Answer _____

22 Work out the value of $(2^3 \times 2^4) \div (2^{10} \div 2)$

Give your answer as a decimal.

[3 marks]

_____

_____

_____

_____

_____

_____

_____

Answer _____

23 Write down the equation of a line parallel to $y = 5 - 3x$
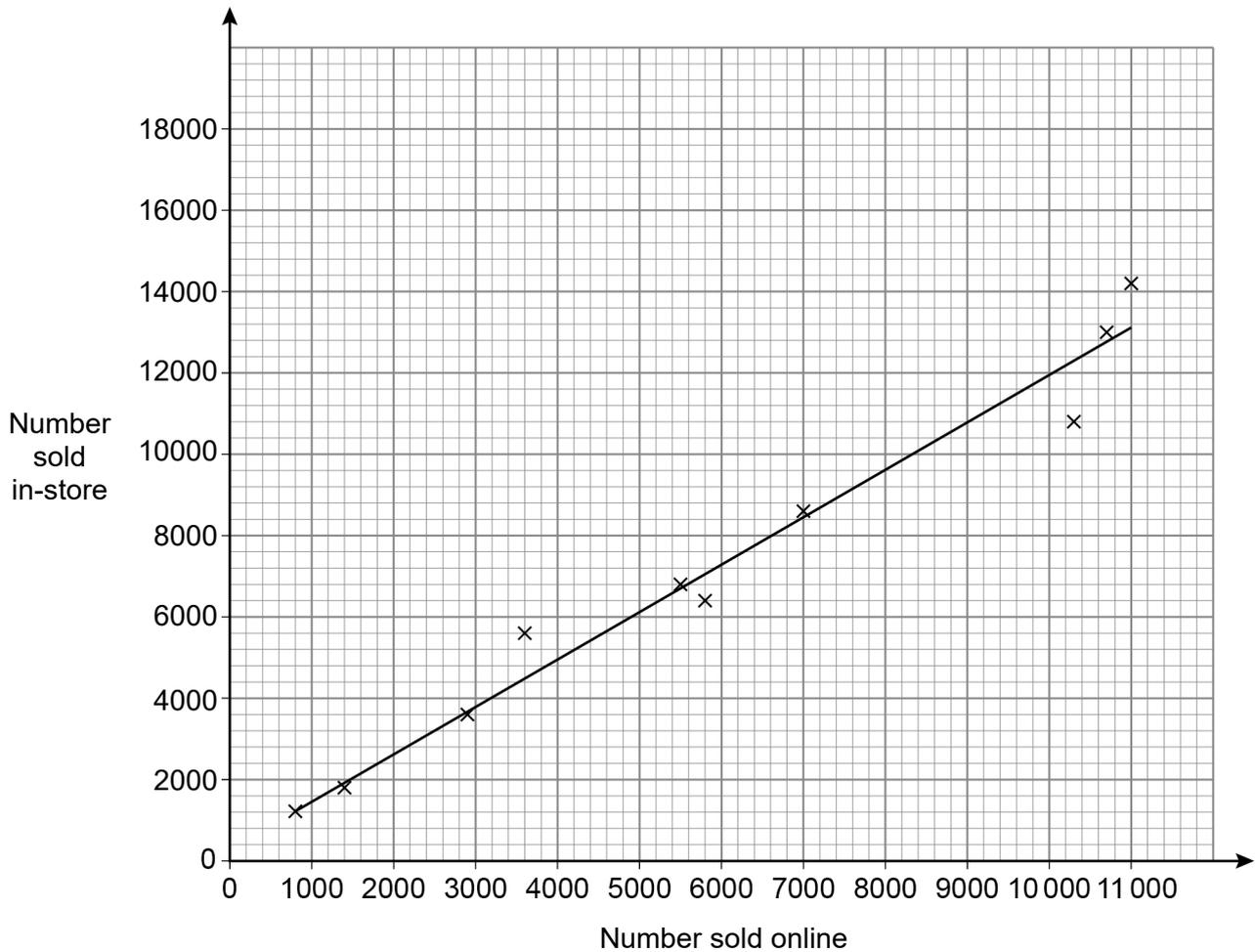
[1 mark]

Answer _____

7

Turn over ▶

24 A company sells 10 new products.

The scatter graph shows, for each product,

the number sold online in the first week

and

the number sold in-store in the first week.

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 products sold online and in-store.
[1 mark]

_____

_____

_____

24 (b) The company earns

£2 for each product sold online

and

£1.50 for each product sold in-store.

The company releases another product.

In the first week it has 8000 sales online.

Estimate the **total** amount the company earns from sales online and in-store in the first week.
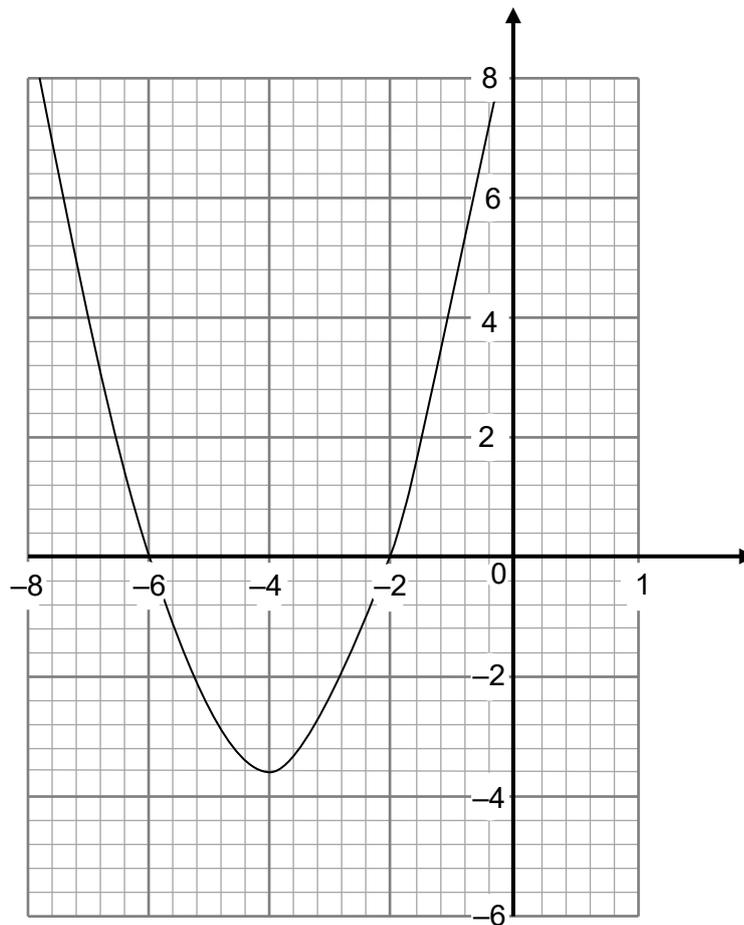**[3 marks]**

_____

_____

_____

_____

_____

_____

_____

_____

Answer £ _____

Turn over ▶

25 40% of a number is 120

Work out 130% of the number.

[3 marks]

Answer _____

26 Here is the graph of $y = x^2 + 8x + 12$

Use the graph to estimate the solutions of $x^2 + 8x + 12$

[2 marks]

Answer _____

5

27 Shape A is a circle with radius $\dfrac{\sqrt{11}}{2}$ cm

Shape B is a sector of a circle with radius 4 cm

Not drawn accurately

Shape A

$\dfrac{\sqrt{11}}{2}$ cm

Shape B

4 cm

60°

Which shape has the greater area, A or B?

You **must** show your working.

[5 marks]

Answer _____

28 Factorise $x^2 - 7x + 12$

[2 marks]

Answer _____

29 (a) Write 1.2×10^4 as an ordinary number.

[1 mark]

Answer _____

29 (b) Simplify $(1.2 \times 10^4) : (2.5 \times 10^{-1})$

Give your answer in the form $n : 1$

[2 marks]

Answer _____ : 1

END OF QUESTIONS

10

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED