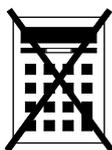# AQA

GCSE
MATHEMATICS

F

Foundation Tier   Paper 1 Non-Calculator
Shadow paper based on the November 2024 paper

Time allowed: 1 hour 30 minutes

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.
• 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	
TOTAL	

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

1 (a) Write down the value of $\sqrt{81}$

[1 mark]

Answer _____

1 (b) Work out the value of 5^3

[1 mark]

_____

Answer _____

1 (c) Write 1 000 as a power of 10

[1 mark]

_____

_____

Answer _____

2 1 pound = 16 ounces

Work out the number of ounces in 4 pounds.

[2 marks]

_____

_____

_____

Answer _____ ounces

3 (a) Write $\frac{5}{2}$ as a mixed number.

[1 mark]

Answer _____

3 (b) Work out $\frac{1}{3} + \frac{1}{3}$

[1 mark]

Answer _____

4 (a) Write down **all** the factors of 12

[2 marks]

Answer _____

4 (b) Mica says,

"When two multiples of 3 are added, the answer is always a multiple of 2"

Give **one** example to show that he is wrong.

[1 mark]

10

Turn over ▶

5 Put these values in order of size, starting with the smallest.

70%   0.8 $\dfrac{3}{5}$

[2 marks]

_____

_____

_____

_____

Answer _____   _____   _____

6 Sally buys two scarves and three hats.

The **total** cost is £33.50

Each scarf costs £5.50

Work out the cost of each hat.
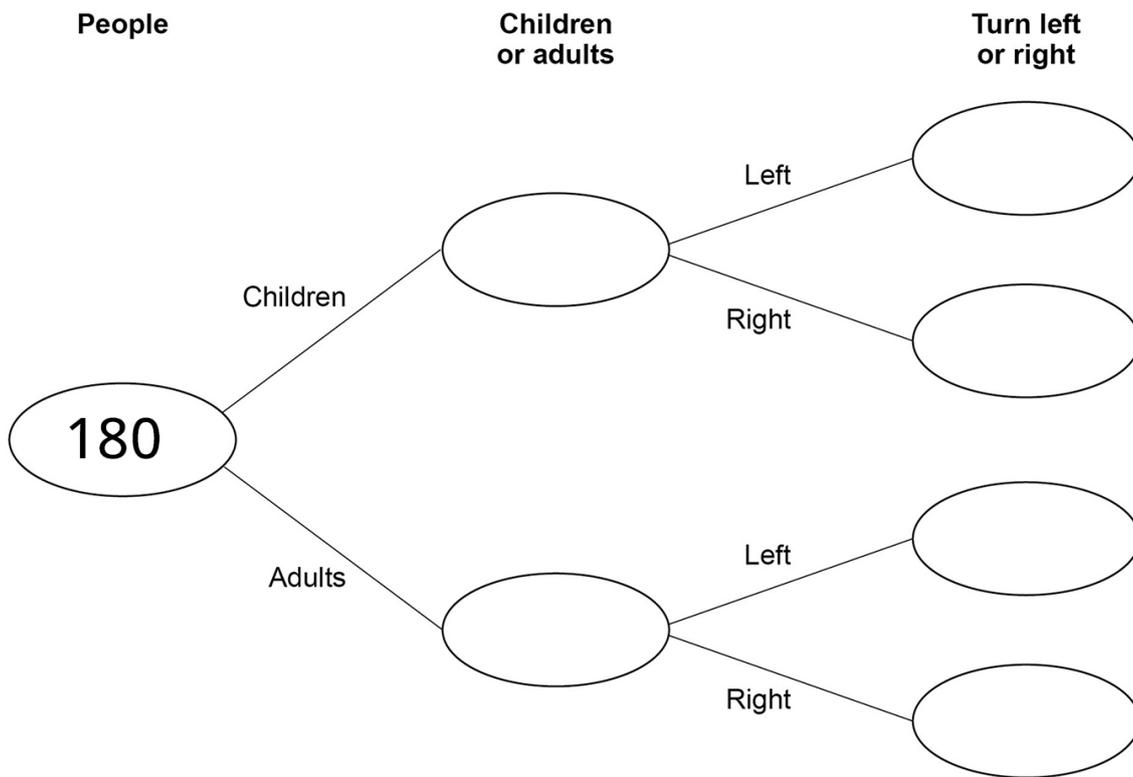
[4 marks]

_____

_____

_____

_____

_____

_____

_____

Answer £ _____

7 180 people visit a maze.

120 are children, the rest are adults.

At the start of the maze you can turn left or right.

65 children turn left.

85 people in total turn left.

7 (a) Complete the frequency tree.

[4 marks]

People | Children or adults | Turn left or right

7 (b) What fraction of the **children** turn left?

Give your answer in its simplest form.

[2 marks]

_____

_____

Answer _____

12

Turn over ▶

8 The table shows information about where students prefer to revise.

Library	Home	In class
28	66	37

Ed draws this bar chart to represent the data.
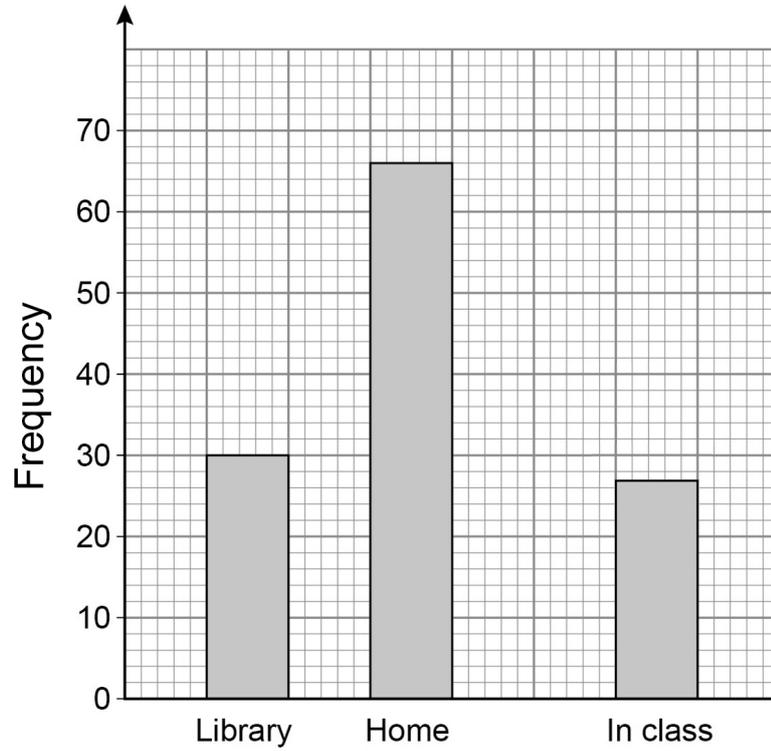
Write down **three** mistakes he has made.

[3 marks]

Mistake 1 _____

_____

Mistake 2 _____

_____

Mistake 3 _____

_____

9 A number is picked at random from the first three positive even numbers.

A number is picked at random from the first four prime numbers.

The two numbers are **multiplied** to get a score.

9 (a) Complete the table.

[4 marks]

prime

×	2	3	5	
2				
even				
6		18		

9 (b) What is the probability that the score is a cube number?

Give your answer as a fraction.

[2 marks]

Answer

Turn over ►

8300/1F

10 (a)   Simplify fully $6m + 7 - 2m + 6$

[2 marks]

Answer _____

10 (b)   Simplify fully $\frac{1}{3}e \times 6f$

[2 marks]

Answer _____

11

Multipack –
6 bags
of crisps

Crisps
65p

The multipack costs 10% **less than** 6 single bags.

Work out the cost of the multipack.

[4 marks]

Answer £ _____

8

Turn over ▶

12 Write the ratio 8 : 2 in the form n : 1

[1 mark]

Answer _____ : 1

13 x and y are two **different positive** numbers.
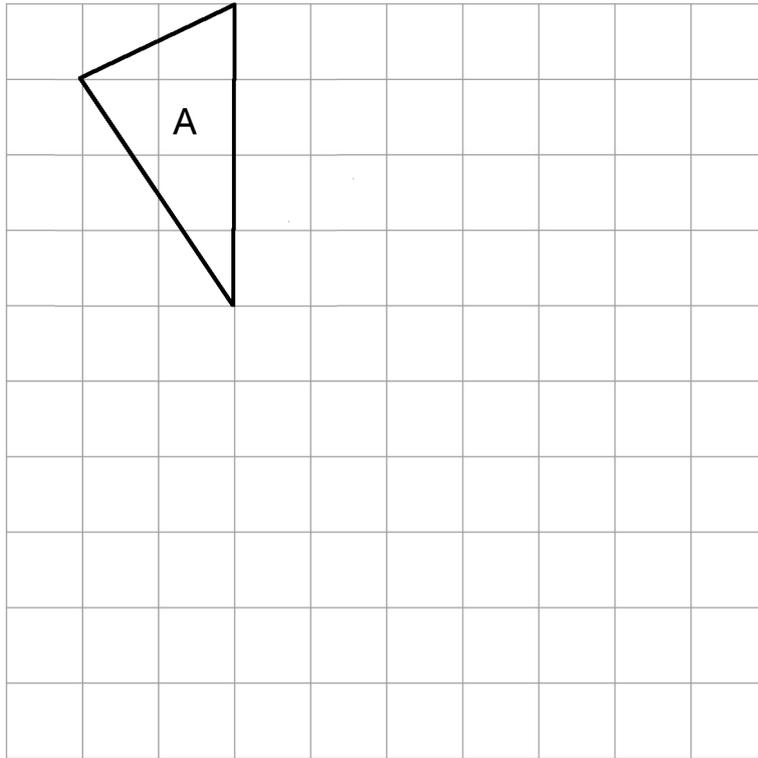
For each statement, tick the correct box.

[2 marks]

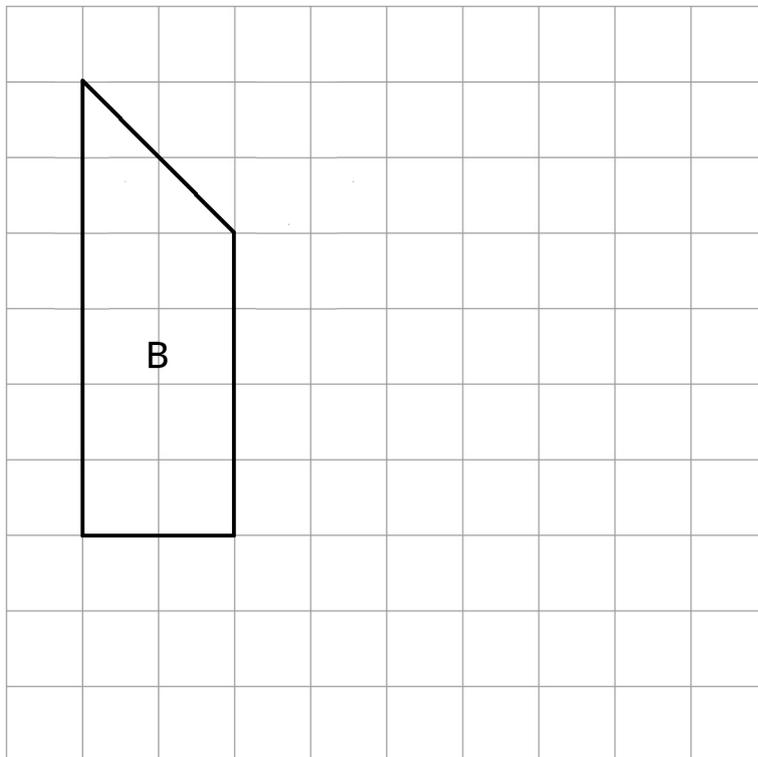|	Never true	Sometimes true	Always true
$x + y$ is negative	☐	☐	☐
$x - y$ is positive	☐	☐	☐

14 (a)   On the grid, draw a shape **congruent** to triangle A.

[1 mark]

14 (b)   On the grid, **enlarge** shape B by scale factor $\frac{1}{2}$

[2 marks]

6

Turn over ▶

15   48 books are either for adults or for children.

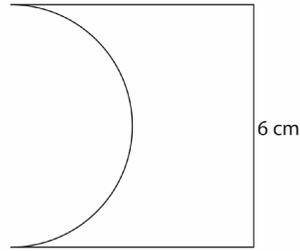number for adults : number for children = 7 : 1

How many **more** books are for adults than for children?
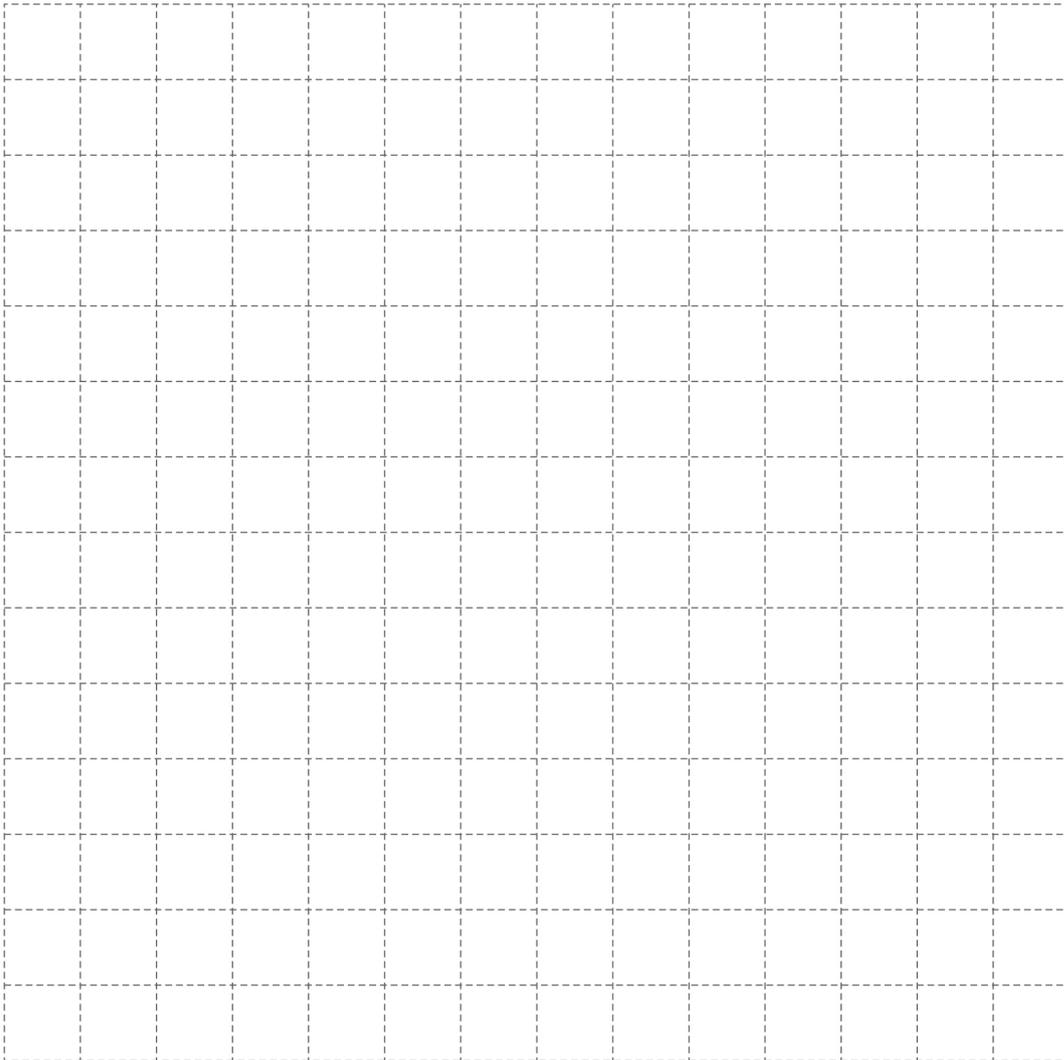
[3 marks]

Answer _____

16 This shape is made from a square with a semicircle removed.

Not drawn accurately

6 cm

On the centimetre grid below, make an accurate drawing of the shape.

[2 marks]
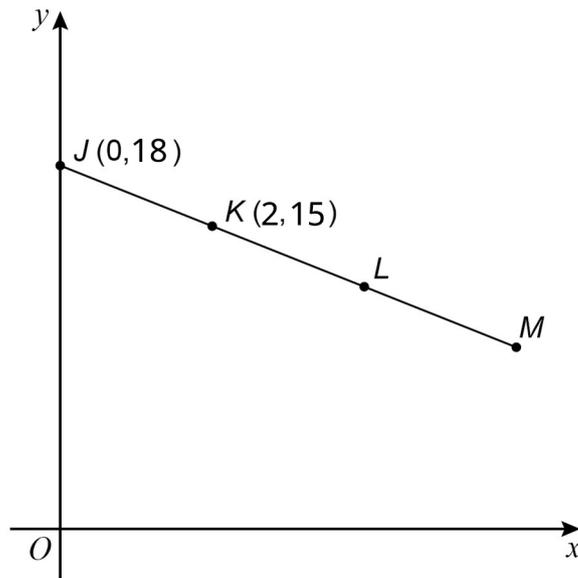

5

17 A car travels 3 miles in 5 minutes.

Work out the average speed in miles per hour.

[3 marks]

Answer _____ mph

18 J (0, 18) and K (2, 15) are points on the straight line *JKLM*.

Not drawn accurately

$JK = KL = LM$

Work out the coordinates of *M*.

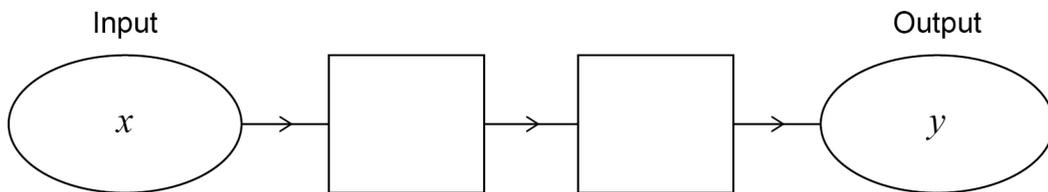**[3 marks]**

Answer (_____ , _____)

6

Turn over ▶

8300/1F

19   Work out the value of 2.5^2

[2 marks]

Answer _____

20 (a)   Complete this number machine so that $y = 5x + 4$

[1 mark]

Input   Output

x →   ☐   →   ☐   → y

20 (b)   Complete this number machine so that $y = 3x - 18$

[1 mark]

Input   Output

x →   ☐   →   × 3   → y
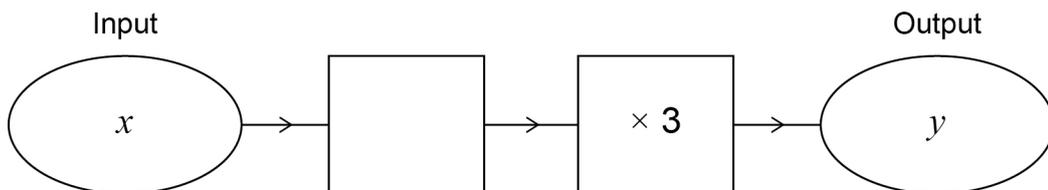
20 (c)   Complete this number machine so that $y = x$

[1 mark]

Input   Output

x →   ÷ 6   →   ☐   → y
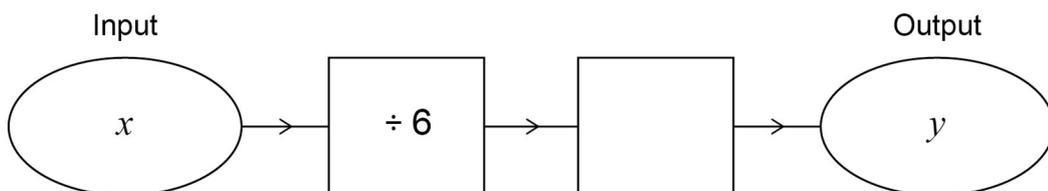
21 Each number in a list is increased by 5

Tick **one** box for each statement.

[3 marks]

	True	False	Cannot tell
The range is increased by 5	☐	☐	☐
The mean is increased by 5	☐	☐	☐
The mode is increased by 5	☐	☐	☐

22 (a) Write the missing term in the geometric progression.

[1 mark]

3   9   27   _____   243

22 (b) A Fibonacci-type sequence begins

-15 3

The sequence is continued by adding the previous two terms.

Work out the next **two** terms.

[2 marks]

_____

_____

Answer _____ and _____

11

Turn over ▶

23 Here is a solid prism.
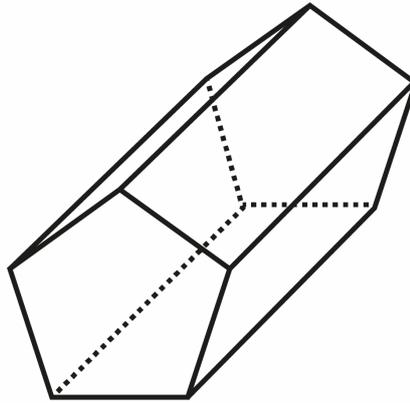
23 (a) How many faces does the prism have?

[1 mark]

Answer _____

23 (b) The prism has

$\qquad$ volume $= 2500 \, \text{cm}^3$

$\qquad$ and

$\qquad$ length $= 20 \, \text{cm}$

Work out the area of the cross-section of the prism.

[2 marks]

_____

_____

_____

_____

Answer _____ cm^2

24 Work out $1\frac{1}{10} - \frac{3}{20}$

Give your answer as a fraction.

[2 marks]

Answer _____

25 Write down the value of cos 90°

[1 mark]

Answer _____

Turn over for the next question

6

Turn over ▶

8300/1F

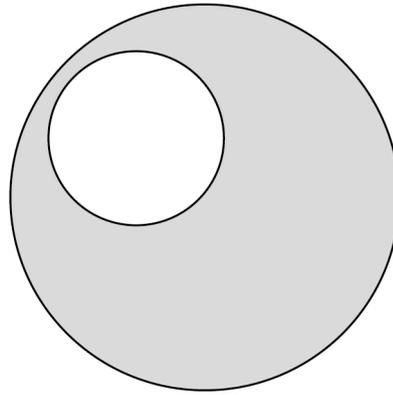**26** A large circle and a small circle are shown.

The radius of the large circle is 15 cm

radius of large circle : radius of small circle = 3 : 1

Not drawn accurately

Work out the shaded area.

Give your answer in terms of π

[4 marks]

Answer _____ cm^2

27 (a) In this part, assume that each person works at the same rate.

10 people can complete a job in 12 hours.

If 15 people work on the same job, how many hours will it take to complete the job?

[2 marks]

Answer _____ hours

27 (b) In fact, of the 15 people

      6 work at the original rate in (a)

      9 work at a faster rate.

What does this mean about the number of hours it will take to complete the job?

Tick **one** box.

[1 mark]

☐   It is greater than the answer to (a)

☐   It is the same as the answer to (a)

☐   It is less than the answer to (a)

☐   It is not possible to say

END OF QUESTIONS

7

There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

Question number	Additional page, if required. Write the question numbers in the left-hand margin.

8300/1F

Question number	**Additional page, if required.** **Write the question numbers in the left-hand margin.**

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