

Surname _____

Forename(s) _____

Candidate signature _____

declare this is my own work.

GCSE MATHEMATICS

F

Foundation Tier

Paper 1 Non-Calculator

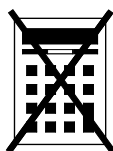
Shadow paper based on June 2024 question paper

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	
22–23	
24–25	
TOTAL	

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

Do not write
outside the
box

1 (a) Work out $350 \div 5$

[1 mark]

Answer _____

1 (b) Work out $2706 - 319$

[2 marks]

Answer _____

2 (a) Complete the statement.

[1 mark]

4 centimetres = _____ millimetres

2 (b) Complete the statement.

[1 mark]

3 kilograms = _____ grams

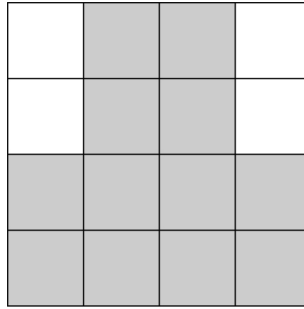
2 (c) Convert 56 kilometres to miles.

Use 8 kilometres = 5 miles

[2 marks]

Answer _____ miles

- 3 (a) Here is a centimetre grid.

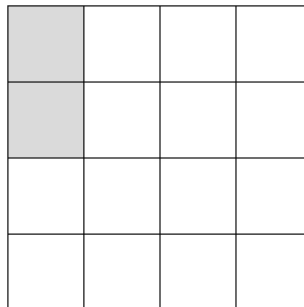


What **percentage** of the grid is now shaded?

[1 mark]

Answer _____ %

- 3 (b) Kai has shaded two small squares on this centimetre grid.



He wants $\frac{1}{2}$ of the grid to be shaded.

How many **more** small squares must he shade?

[2 marks]

Answer _____

4 (a) Here is a list of four numbers.

4.88 5.27 5.38 5.13

Use **one** number from the list to complete each statement.

[2 marks]

The number closest in value to 5 is _____

The number that rounds to 5.3 to 1 decimal place is _____

4 (b) Here is a list of six numbers.

-10 -5 -2 1 6 10

Use **two** numbers from the list to complete each statement.

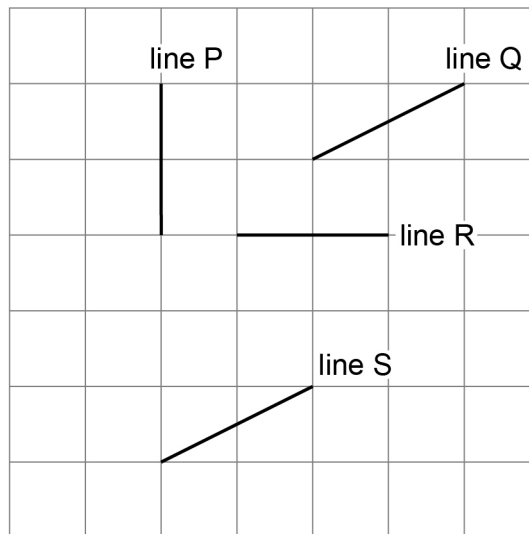
[2 marks]

Two numbers that **add** to make 8 are _____ and _____

Two numbers that **multiply** to make 10 are _____ and _____

Turn over for the next question

- 5 (a) Here are four lines on a square grid.

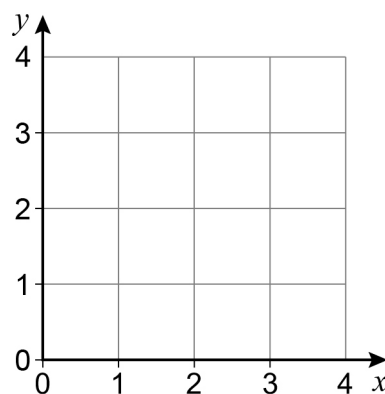


Which **two** lines are perpendicular?

[1 mark]

line _____ and line _____

- 5 (b) Here is a different grid.



There are **four** points on this grid that each have
both coordinates that are whole numbers
and
 $x\text{-coordinate} + y\text{-coordinate} = 5$

Plot the **four** points on the grid.

[2 marks]

6 (a) Write down the value of 5^2

[1 mark]

Answer _____

6 (b) Write down the value of $\sqrt{81}$

[1 mark]

Answer _____

6 (c) Work out the value of 2^5

[1 mark]

Answer _____

Turn over for the next question

*Do not write
outside the
box*

Turn over ►

- 7 (a)** At a dessert shop, childrens ice creams have **two different** flavours
The flavours are
strawberry (S) vanilla (V) chocolate (C)

Complete the table to list all the possible pairs of toppings.

[1 mark]

SV

- 7 (b)** At the shop, brownie bites can be ordered in small portions and large portions.

Small portion
8 brownie bites

Large portion
15 brownie bites

A group of people want to order **exactly** 54 brownie bites

Show how they can do this.

[2 marks]

Number of Small portions _____

Number of Large portions _____

Rulers	35p each
Erasers	50p each

[4 marks]

Answer _____

7

Turn over ►

9

Anna and Shiloh play football

The number of goals they scored in 8 seasons is shown.

Anna	12	15	18	9	17	12	19	22
Shiloh	14	13	11	7	11	14	10	13

9 (a) Complete this table.**[2 marks]**

	Range	Median
Anna		16
Shiloh	7	

9 (b) Which player was more consistent in the number of goals scored each season?

Tick a box.

Anna

☐

Shiloh

☐

Give a reason for your answer.

[1 mark]

10

Work out 15% of 1800

[3 marks]

Answer _____

Turn over for the next question

6**Turn over ►**

- 11** A delivery company uses this formula to deliver parcels within a city.

$$C = 4P + 7$$

C = cost, in £, for the customer

P = number of parcels to be delivered

- 11 (a)** How much does it cost for 5 parcels to be delivered?

[2 marks]

Answer £ _____

- 11 (b)** The cost for another customer was £33

Show why this cost **must** be incorrect.

[1 mark]

12 Two boxes, A and B, each contain coloured discs.

In box A, $\frac{16}{25}$ of the discs are blue.

In box B, $\frac{3}{5}$ of the discs are blue.

Which box has the **greater** proportion of blue discs, A or B?

You **must** show your working.

[2 marks]

Answer _____

Turn over for the next question

- 13 (a)** Two colleagues share £450 in the ratio 1 : 4

Work out the larger share.

[2 marks]

Answer £ _____

- 13 (b)** A breakdancer wins or loses contests in the ratio win : lose = 7 : 3

What fraction of the matches do they win?

[1 mark]

Answer _____

14 Here is a multiplication table.

×	61	63	65	67
61	3721	3843	3965	4087
63	3843	3969	4095	4221
65	3965	4095	4225	4355
67	4087	4221	4355	4489

Use the table to answer the following questions.

14 (a) Work out $4221 \div 67$

[1 mark]

Answer _____

14 (b) Work out 6.3×6.5

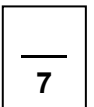
[1 mark]

Answer _____

14 (c) Work out 61×64

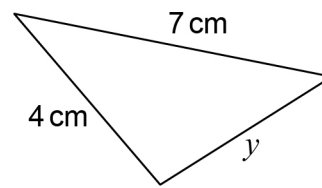
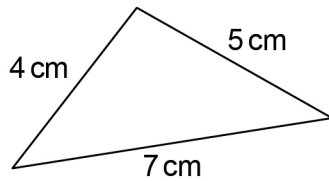
[2 marks]

Answer _____



Turn over ►

15

These two triangles are **congruent**.Not drawn
accuratelyWrite down the value of y .

[1 mark]

 $y =$ _____ cm

16

 c and d are positive numbers. c is even. d is odd.

Tick a box for each expression.

[3 marks]

	Even	Odd	Cannot tell
$c - d$	☐	☐	☐
$2d$	☐	☐	☐
$\frac{c}{2} + d$	☐	☐	☐

17

A linear sequence has

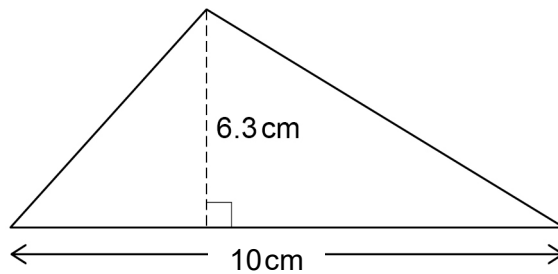
- 1st term = 8
- 1st term + 2nd term = 27

Work out the 6th term.

[4 marks]

Answer _____

18

Not drawn
accurately

Work out the area of this triangle.

[2 marks]

Answer _____ cm^2

- 19** The vector $\begin{pmatrix} 2 \\ -8 \end{pmatrix}$ translates A to B.

Write down the vector that translates B to A.

[1 mark]

Answer $\begin{pmatrix} \\ \end{pmatrix}$

- 20** The attendance for a pop concert is 5800 people to the nearest 100

- 20 (a)** Write down the minimum possible attendance.

[1 mark]

Answer _____

- 20 (b)** Write down the maximum possible attendance.

[1 mark]

Answer _____

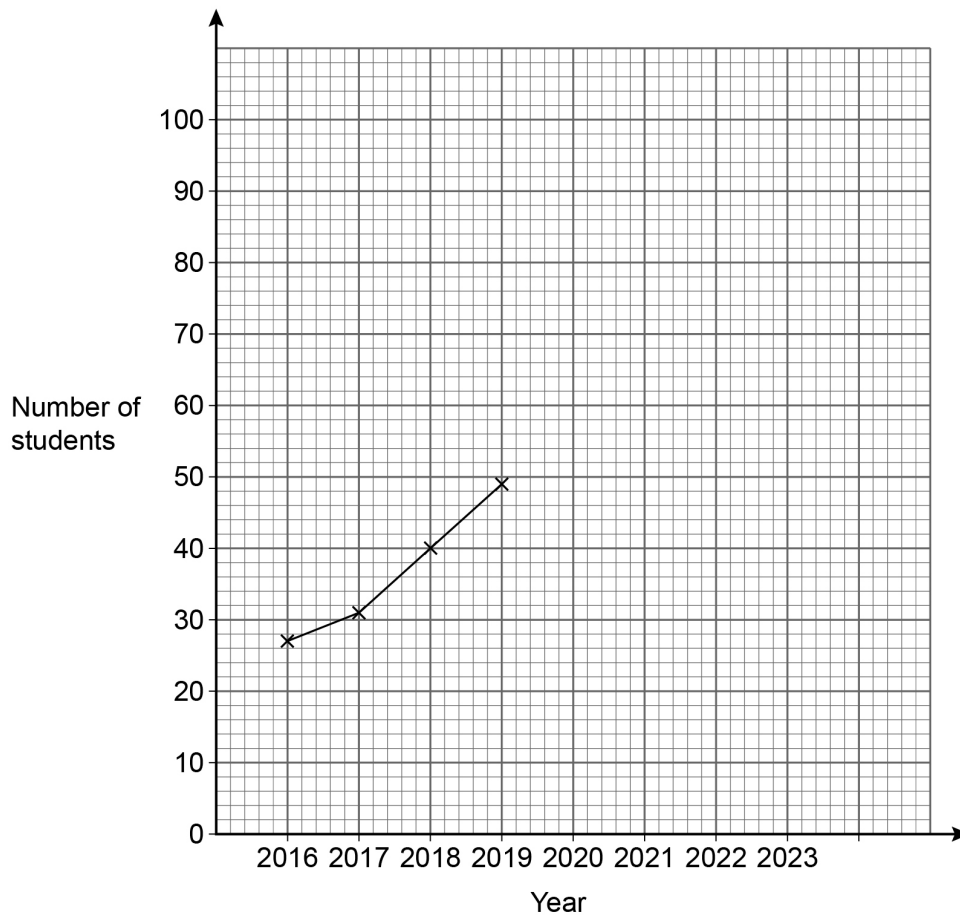
21

The table shows the number of students on a course in different years.

Year	2016	2017	2018	2019	2020	2021	2022	2023
Number of students	27	31	40	49	60	71	77	82

A time-series graph is drawn to represent the data.

The first four points have been plotted.



21 (a) Complete the graph.

[2 marks]

21 (b) Estimate the number of students on the course in 2024.

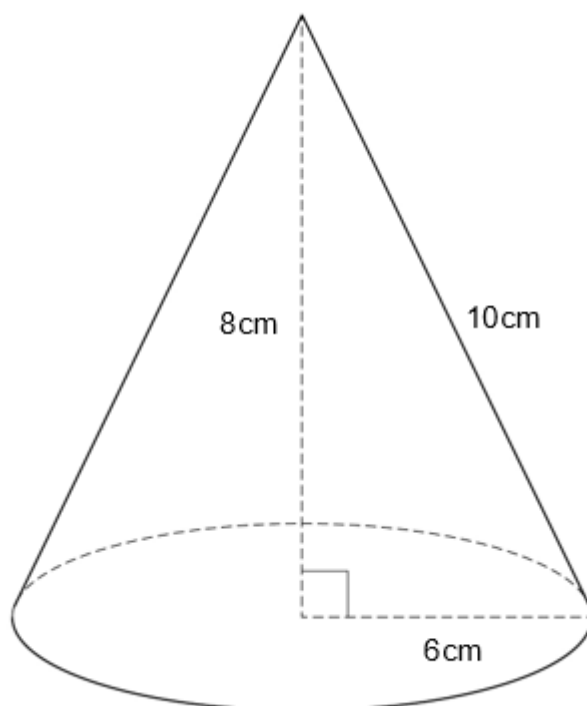
[1 mark]

Answer _____

Turn over ►

22

Here is a cone.

Do not write
outside the
box

22 (a)

Curved surface area of a cone = $\pi r l$
 where r is the radius and l is the slant height

Belinda tries to work out the curved surface area in terms of π

Curved surface area of the cone = $\pi \times 6 \times 8$
 $= 48\pi \text{ cm}^2$

What mistake has she made?

[1 mark]

22 (b) Adrian uses $\pi = 3$ to estimate the area of the **base** of the cone.

Work out his estimate.

[2 marks]

Answer _____ cm^2

22 (c) Belinda uses $\pi = 3.14$ to estimate the area of the **base** of the cone.

Is Belinda's estimate more than or less than Adrian's estimate?

Tick a box.

More than

☐

Less than

☐

Give a reason for your answer.

[1 mark]

Turn over for the next question

23

Each day, Edmund eats

 $\frac{1}{3}$ of a packet of nuts in the morning

and

 $\frac{1}{3}$ of a packet of nuts in the afternoon.

How many packets of nuts does he eat in a week?

[3 marks]

Answer _____

24 Solve $8x - 19 = 4x + 29$

[3 marks]

$x =$ _____

25 In a gallery

the area of the largest room is 38 m^2

the area of the smallest room is 17.2 m^2

Express the area of the largest room as a fraction of the area of the smallest.

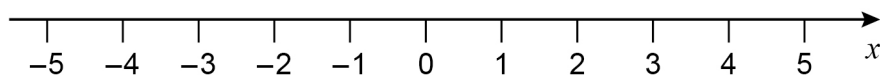
Give your answer in its simplest form.

[3 marks]

Answer _____

26 (a) Represent $-3 < x < 1$ on the number line.

[1 mark]



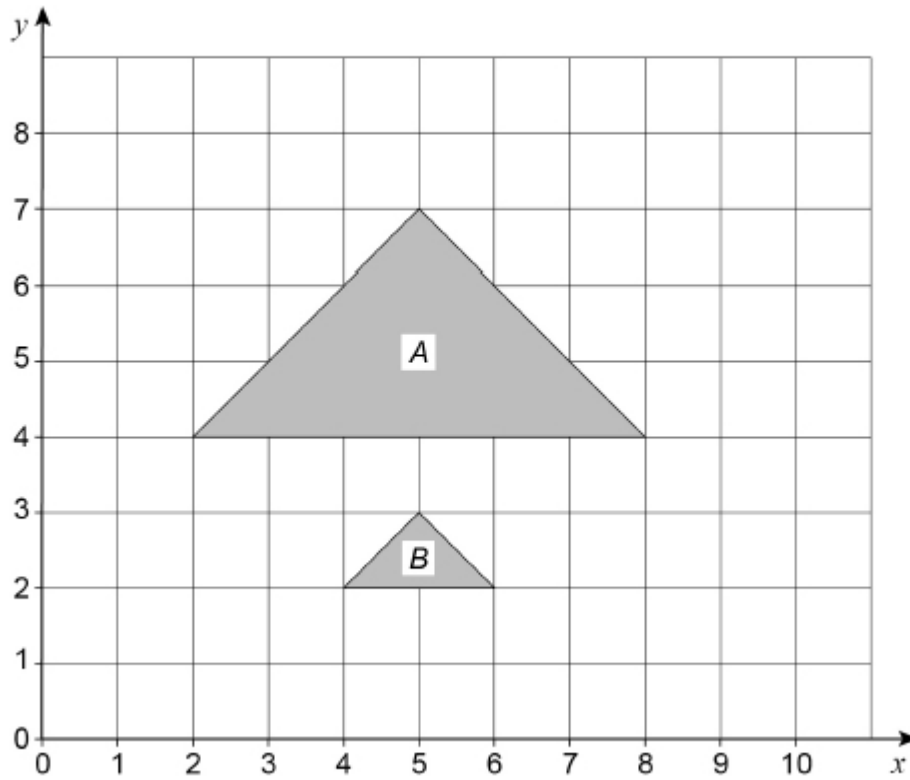
26 (b) Solve $4y + 10 \geq 5$

[2 marks]

Answer _____

27

Describe fully the **single** transformation that maps triangle *A* to triangle *B*.



[3 marks]

END OF QUESTIONS

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ANSWER IN THE SPACES PROVIDED**

[illegible]

Shadow paper based on June 2024 question paper