OCR
Oxford Cambridge and RSA

MR BRADDER MATHS F

Mr Bradder Maths

Predicted Paper 3 ✕ = Came on Real PAPER 3

June 2025

You may use:
- Geometrical instruments
- Tracing paper

Do not use:

MR BRADDER MATHS

First name									
Last name									
Centre number						Candidate number				

INSTRUCTIONS
- Use black ink. You may use an HB pencil for graphs and diagrams.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Read each question carefully before you start to write your answer.
- Where appropriate, your answers should be supported with working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided.
- Additional paper may be used if required but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the barcodes.

INFORMATION
- The total mark for this paper is **102**
- The marks for each question are shown in brackets **[ ]**.
- This document consists of **20** pages.

1 **(a)** Write down 3091 rounded to the nearest hundred

(a) .....[1]

(b) Round 356 to the nearest ten.

(b) ..... [1]

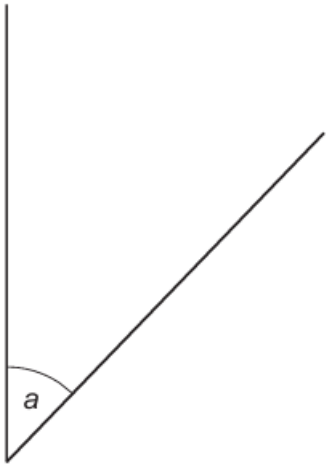
(c) Round 356.052 to 1 decimal place.

(c) .....[1]

2 Write 490 as a product of its prime factors

(a) .....[2]

3 (a) (i) Measure angle *a*.



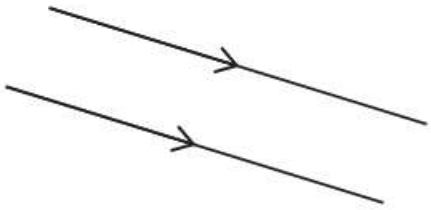
(a)(i) ..... ° **[1]**

(ii) Write down the mathematical name of this type of angle.

(ii) ..... **[1]**

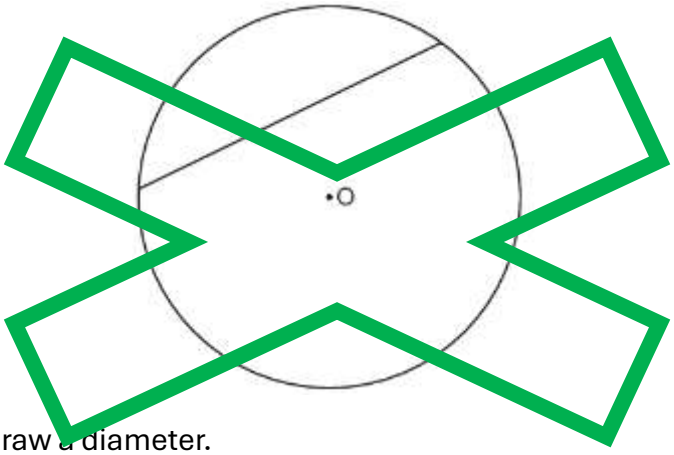
(b) Choose one of these words to complete the following sentence.

perpendicular vertical parallel horizontal



These are ..... lines. **[1]**

4 The diagram shows a circle, centre O, and a line that meets the circle twice.



(a) On the diagram, draw a diameter.

[1]

(b) On the diagram, colour in a segment.

[1]

(c) Write down the mathematical name of the line shown on the diagram.

(c) ..... **[1]**

5 Lev (L), Maria (M) and Nicholas (N) sit in a row of three seats.

(a) Use the table to list all the different orders in which they could sit.
One possible order is already shown in the table.
You may not need to use all the rows in the table.

Seat 1	Seat 2	Seat 3
L	M	N

[2]

(b) All possible orders in which they could sit are equally likely.
What is the probability that Lev (L) sits next to Maria (M)?

(b) .....**[1]**

6 Morgan is playing a computer game.

They can score 0, 1, 2 or 3 points on each turn.

They record their scores for 100 turns. The table shows the relative frequencies of their scores

Score	0	1	2	3
Relative frequency	0.08	0.42	0.38	

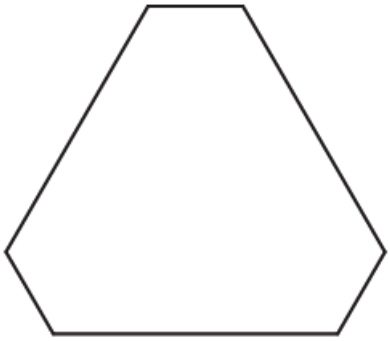
(a) Complete the table. **[2]**

(b) Morgan says I scored more than 160 points in total in my 100 turns.

Is Morgan correct? Show how you decide.

..... **[4]**

7 **(a)** Write down the mathematical name of this polygon.



(a) .....**[1]**

(b) Write down the order of rotation symmetry of the polygon.

(b).....**[1]**

8 **(a)** Write down each of the following.

(i) An odd number.

(a)(i) ..... **[1]**

(ii) A factor of 25.

(ii) .....**[1]**

(iii) A prime number between 20 and 30.

(iii) .....**[1]**

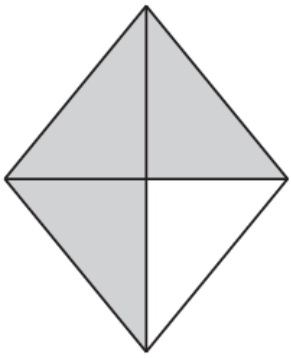
(b) Show that 55 is not a square number.

[2]

9 **(a)** What fraction of this shape is shaded?

(a) ..... **[1]**

(b) What percentage of this shape is shaded?



(b) ..... % **[1]**

(c) Write 0.2 as a fraction. Give your answer in its simplest form.

(c) ..... **[2]**

(d) Work out 80% of 30.

(d) ..... **[2]**

10 **(a)** Multiply out.

$4(3x + 2)$

(a) ..... **[1]**

(b) Factorise.

$3c - 6d$

(b) .....**[1]**

(c) Factorise.

$5x^2 + 10x$

(c) .....**[2]**

11 Decrease 650 by 40%.

.....**[3]**

12 The price of a computer was £750.

In a sale the price is reduced by 20%.

On the final day the sale price is reduced by a further 12%.

How much is saved in total by buying the computer on the final day of the sale?

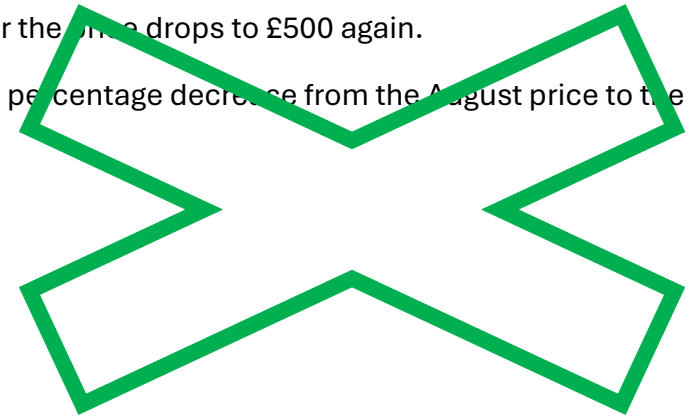
£ ..... **[5]**

13 In July the price of a holiday is £500.

In August the price increases by 25%.

In September the price drops to £500 again.

Work out the percentage decrease from the August price to the September price.



..... % **[4]**

14 Tea Biscuits can be bought in packets of 20 or packets of 24.

All biscuits are identical in size and quality.

Nada says The packet of 24 biscuits is better value.

Is Nada correct? Show how you decide.

Nada is.....because.....

.....**[3]**

15 Anna and Paddy take part in the same fun run.

Anna completed the fun run in 2 hours.

Her average speed was 6 kilometres per hour.

Paddy completed the fun run in 90 minutes.

(a) Work out Paddy's average speed in kilometres per hour.

(a) ..... km/h **[4]**

(b) Anna says

Because I stopped for drinks, my average running speed was faster than 6 kilometres per hour. Give one reason to support Anna's statement.

.....

.....**[1]**

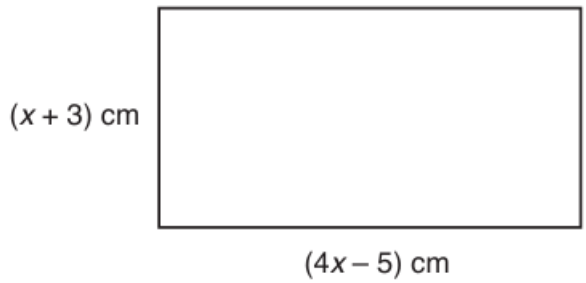
16 The volume of a piece of wood is 620 cm3.

Its density is 0.85 g/cm^3.

Work out its mass.

..... g **[2]**

17 This rectangle has length (4x – 5) cm and width (x + 3) cm.



Not to scale

The perimeter of the rectangle is 46 cm.

Calculate the area of the rectangle.

..... **cm²** **[5]**

18 You are given that 5y = 4x.

(a) Find the value of y when x = 10.

(a) y = ...**[2]**

(b) Write y in terms of x.

(b) y = ...**[1]**

19 Solve the simultaneous equations.

$3x + y = 11$
$x + y = 3$

x= ..... y= ..... **[3]**

20 Four friends are going on holiday together.

They each take a suitcase.

The weight of each suitcase is 25 kg, correct to nearest kilogram.

(a) Complete the error interval for the weight, w kg, of one suitcase.

(a) ..... ≤ w < .....**[2]**

(b) The friends must pay extra if the total weight of their four suitcases is more than 102.4 kg.

Can the friends be certain that they will not have to pay extra?

Show how you decide. ..... because.....

.....

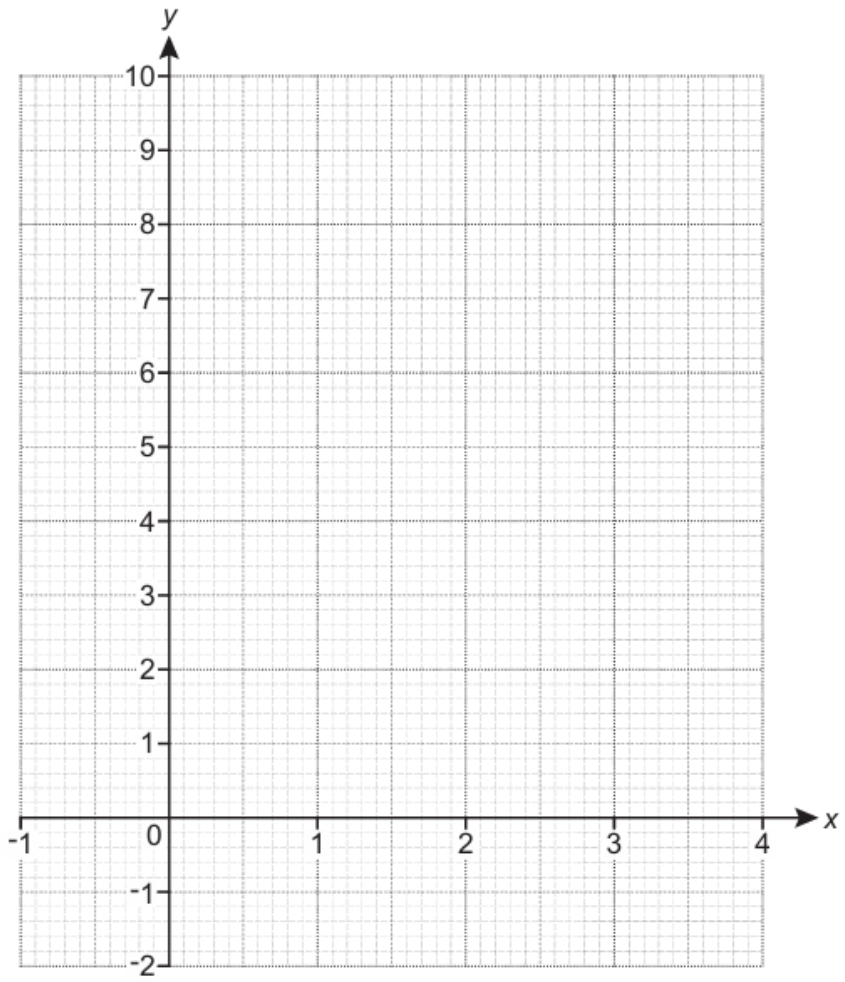
.....**[3]**

21 **(a)** Complete the table for $y = x^2 - 2x$.

x	-1	0	1	2	3	4
y	3	0	-1	0	3	

[1]

(b) Draw the graph of $y = x^2 - 2x$ for $-1 \leqslant x \leqslant 4$.



[2]

(c) Use your graph to solve $x^2 - 2x = 2$.

(c) ..... **[2]**

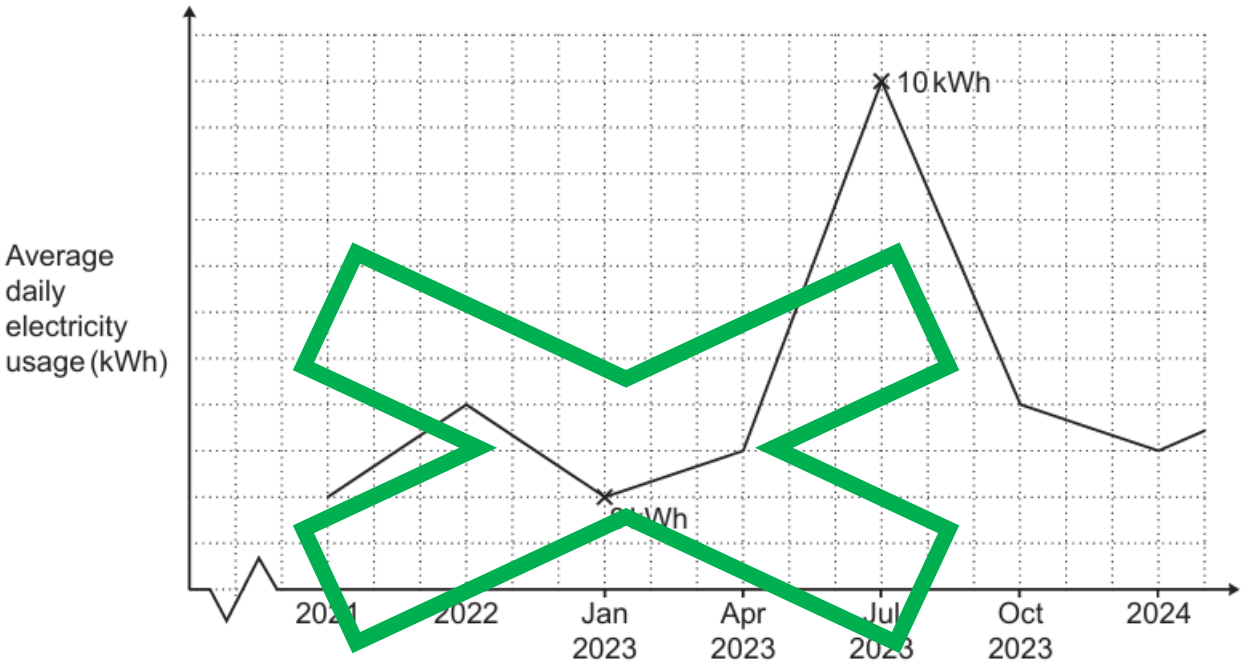
22 A shop records the time taken by its customers to complete a purchase on its website. The results from one day are summarised in this table.

Time taken (t minutes)	Number of customers		
$0 < t \leqslant 3$	6		
$3 < t \leqslant 6$	10		
$6 < t \leqslant 9$	6		
$9 < t \leqslant 12$	2		
$12 < t \leqslant 15$	1		

(a) Calculate an estimate of the mean time taken.

(a) ..... minutes **[4]**

23 The graph shows a household's average daily electricity usage, in kilowatt hours (kWh).



Give two different reasons why this graph is misleading.

Reason 1.....

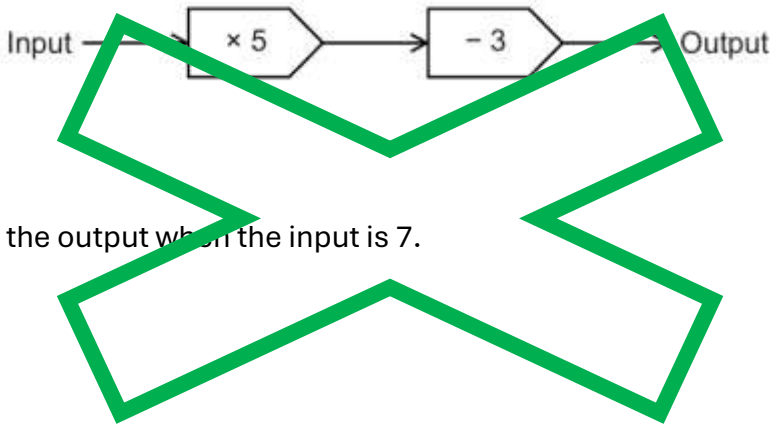
.....

Reason 2:.....

.....

[2]

24 Here is a function machine.



(a) (i) Find the output when the input is 7.

(a)(i) .....**[1]**

(ii) Find the input when the output is 42.

(ii) ..... **[2]**

(b) The input is x and the output is y.

Write an equation for y in terms of x.

(b) .....**[2]**

25 4 people take 3 hours to paint a fence.

Assume that all people paint at the same rate.

(a) How long would it take one of these people to paint the same fence?

(a) ..... hours **[1]**

(b) How long would it take 5 people to paint the same fence?

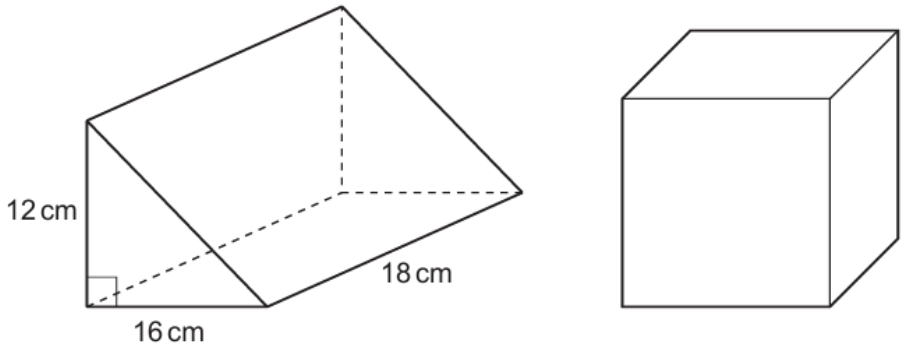
Give your answer in hours and minutes.

(b) ..... hours ..... minutes **[4]**

26 The diagram shows a triangular prism and a cube.

The ends of the prism are right-angled triangles with base 16 cm and height 12 cm.

The prism is 18 cm long.



The volume of the prism is equal to the volume of the cube.

Find the surface area of the cube.

You must show your working.

..... cm^2 **[6]**