Candidate surname	Other names

Maths Planner

AQA

2024 Predicted Paper

Mathematics

PAPER 1 (Non-Calculator)

Foundation Tier

Time 1 hour 30 minutes

Caution: These topics are not guaranteed to show up, please focus on all topic areas. They have been selected using analysis on previous official exam papers.

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Total Marks

80

Q	Topic(s)	Marks
1	FDP Conversions	/ 1
2	Fraction of Amounts	/ 1
3	Converting Metric Units	/ 1
4	Solving One-Step Equations	/ 1
5	Circle Properties	/ 1
6	Inequality Notation	/ 1
7	Order of Operations (BIDMAS)	/ 2
8	Time Calculations	/ 2
9	Simplifying Expressions	/ 2
10	Angles around a Point	/ 2
11	Averages / Primes	/ 3
12	Systematic Listing	/ 2
13	Proportion / Percentages	/ 5
14	Area / Perimeter	/ 4
15	Fraction Operations	/ 6

Q	Topic(s)	Marks
16	Pictograms / Ratio	/ 4
17	Percentage & Fractional Change	/ 4
18	Plans & Elevations / Circumference	/ 4
19	Area of Quadrilaterals	/ 4
20	Solving Inequalities / Number Line	/ 3
21	Standard Form	/ 4
22	Progressions	/ 4
23	Function Machines	/ 2
24	Reciprocals	/ 2
25	Ratio 1:n	/ 1
26	Equation of Straight Lines	/ 1
27	Grouped Frequency Tables	/ 2
28	Pythagoras	/ 3
29	Laws of Indices	/ 4
30	Column Vectors	/ 4

Answers all questions in the spaces provided.

Do not write outside the box

1 Write 85% as a decimal.

[1 mark]

Answer _____

2 Work out $\frac{1}{7}$ of 35

[1 mark]

_____

_____

Answer _____

3 Write 2.5 kilograms in grams.

[1 mark]

Answer _____ g

4 Solve $9x = 54$

[1 mark]

Answer $x =$ _____

Do not write outside the box

5 A circle has a diameter of 11cm.
Write down the length of the radius.

[1 mark]

Answer _____ cm

6 $x \geq y$

Write the **meaning** of this statement in words.

[1 mark]

_____

_____

7 Work out $32 \div 2^3 + 5^2$

[2 marks]

_____

_____

_____

Answer _____

8 A movie starts at 20:08

It runs for $1\frac{1}{3}$ hours.

What time does the movie end?

[2 marks]

_____

_____

_____

Answer _____

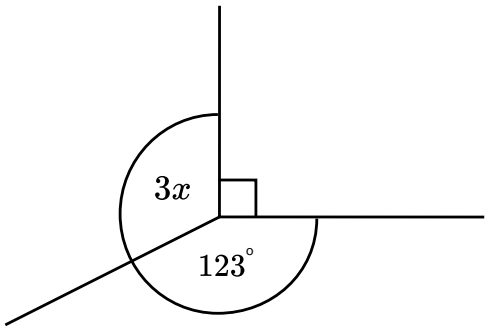
Do not write outside the box

9 Simplify $8a - 3b + 5a - b$

[2 marks]

Answer _____

10 The diagram shows angles around a point.



Work out the value of x

[2 marks]

Answer $x =$ _____

Do not write outside the box

11 For a set of five numbers,

the median is 7

the mode is 4

the range is 9

three of the numbers are prime

Work out the **only** possible set of five numbers.

[3 marks]

Answer _____ _____ _____ _____ _____

12 Two games are played.

In each game you can either **Win**, **Draw** or **Lose**.

Complete all the possible outcomes of results from playing the two games.

[2 marks]

W W		

Do not write outside the box

13 120 students were asked about their average daily screen time.

Here are the results.

	Less than 6 hours	**6 hours or more**
Year 7	26	24
Year 11	28	42

13 (a) What proportion of Year 7 students use their phone for **less than 6 hours**?

[2 marks]

Answer _____

13 (b) What percentage of students use their phone for **6 or more hours**?

[3 marks]

Answer _____ %

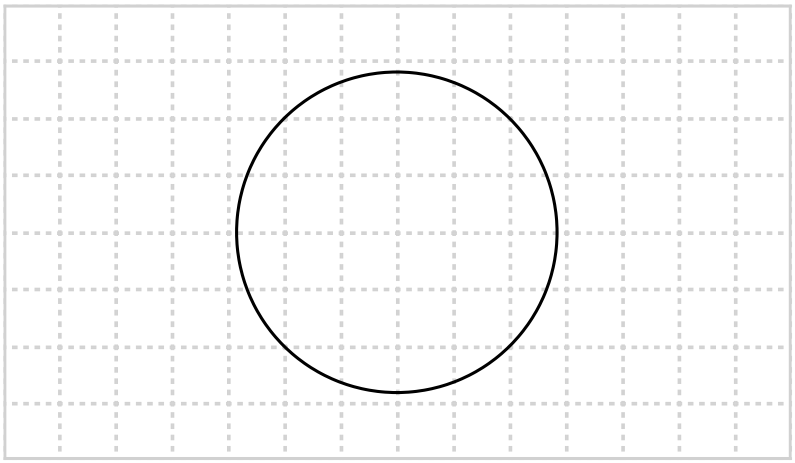
Do not write outside the box

14 (a) One side of a parallelogram is drawn on this centimetre grid.
The parallelogram has **no** right angles.
Complete the parallelogram so it has an **area** of 40 cm²

[2 marks]

14 (b) Each vertex of a square touches the circumference of the circle below.
Work out the perimeter of this square.

[2 marks]



Answer _____cm

Do not write outside the box

15 (a) Work out $2 \div \frac{3}{7}$

Give your answer as a mixed number.

[2 marks]

Answer _____

Here are some fractions

$$\frac{3}{2} \qquad \frac{2}{3} \qquad \frac{5}{8} \qquad \frac{5}{6} \qquad \frac{1}{4}$$

15 (b) Work out their median.

[2 marks]

Answer _____

15 (c) Work out their range.

[2 marks]

Answer _____

Do not write outside the box

16 The incomplete pictogram shows information about the number movie genres tickets sold at a cinema on a Friday night.

Action	
Animation	
Romance	
Horror	

Key:

represents 24 tickets

16 (a) How many Romance movie tickets were sold?

[1 mark]

Answer _____

16 (b) A total of 144 tickets were sold.

Twice as many Animation tickets were sold compared to Horror tickets.

Complete the pictogram.

[3 marks]

Do not write outside the box

17 A house was purchased at the start of 2019 for £435,000.

By the end of 2022 the house had **increased** in value by 12%

Between 2022 and 2023 the price **decreased** in value by $\frac{1}{20}$

Work out the value of the house at the end of 2023.

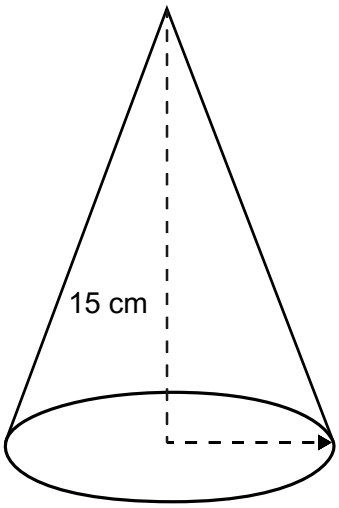
[4 marks]

Answer £ _____

Do not write outside the box

18 (a) Draw a plan view of this cone on the centimetre grid.

[2 marks]



height : radius $= 5 : 1$

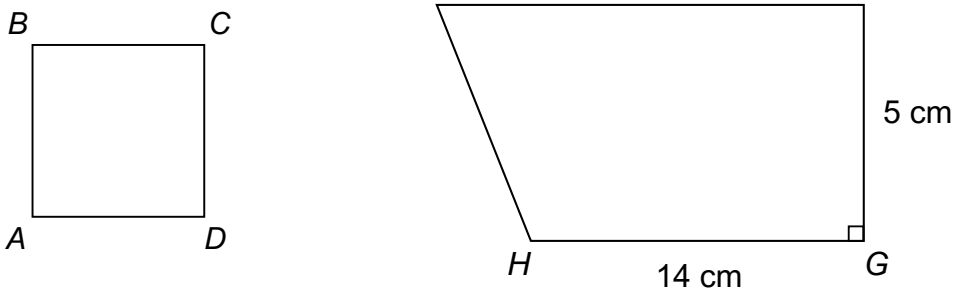
18 (b) Calculate the circumference of the cone's base, in centimetres.
Give your answer in terms of π

[2 marks]

Answer _____

Do not write outside the box

19 *ABCD* is a square.
EFGH is a trapezium.



ABCD has a perimeter of 200 mm

The area of the square is **one third** the area of the trapezium.

Work out the size of length *EF.*

[4 marks]

Answer _____ cm

Do not write outside the box

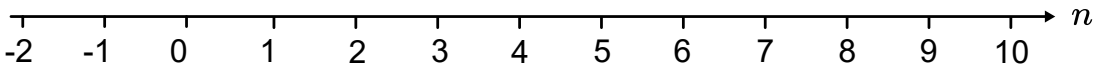
20 (a) Solve $5 < 4n - 3 \leq 25$

[2 marks]

Answer _____ $< n \leq$ _____

20 (b) Represent the inequality for n on the number line below.

[1 mark]



Do not write outside the box

21 (a) Tick the **correct** box for this statement.

[1 mark]

	False	True
$5.2 \times 10^{-3} = 0.00052$	☐	☐

21 (b) Joanne is asked to write an answer to a question in standard form.

She writes 23.1×10^{-4}

The teacher marks it incorrect, explain why.

[1 mark]

21 (c) Work out $4 \times 5.1 \times 10^{3}$

Give your answer in standard form

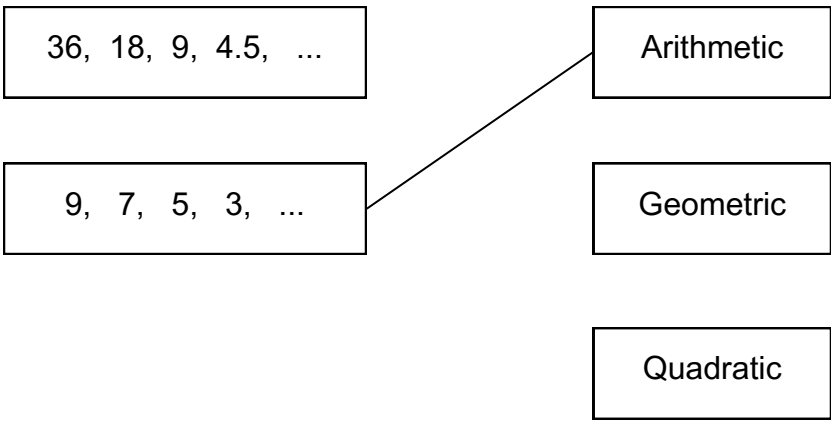
[2 marks]

Answer _____

Do not write outside the box

22 (a) Match the progression on the left with the correct type on the right.
One has been done for you.

[1 mark]



22 (b) A geometric progression has the nth term ar^n

Where,

a is the first term
r is the common ratio
n is the term position

If $a = 3$ and $r = 2$

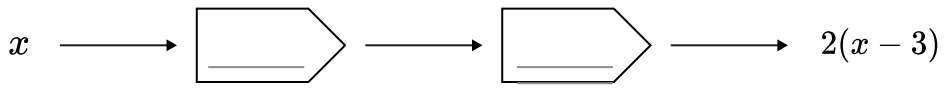
Work out the first three terms of the progression.

[3 marks]

Answer _____ _____ _____

Do not write outside the box

23 Here is a function machine.



Complete the function machine.

[2 marks]

24 Write down the reciprocal of 0.8
Give your answer in its simplest form.

[2 marks]

Answer _____

25 The ratio $x : y = 2 : 3$

If $x : y = 1 : n$

Write down the value of n

[1 mark]

Answer _____

26 A straight line has the equation $y = 4 + 5x$

Write down the coordinates of the y-intercept

[1 mark]

Answer _____

Do not write outside the box

27 The table below gives information about the time taken for a group of runners to complete a 5 km park run.

Time (t minutes)	Frequency
$20 < t \leq 22$	2
$22 < t \leq 24$	4
$24 < t \leq 28$	3
$28 < t \leq 32$	7
$32 < t \leq 36$	4

Tick **one box** for each statement.

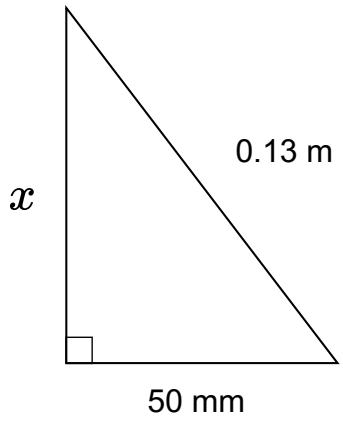
[2 marks]

	Cannot be true	**Might be true**	**Definitely true**
The range of the running times is 16 minutes	☐	☐	☐
The median running time was 31 minutes	☐	☐	☐

Do not write outside the box

28 Use Pythagoras to work out the value of x, in centimetres.

[3 marks]



Answer _____ cm

Do not write outside the box

29 **(a)** Simplify $(2b^3)^3$

[2 marks]

Answer _____

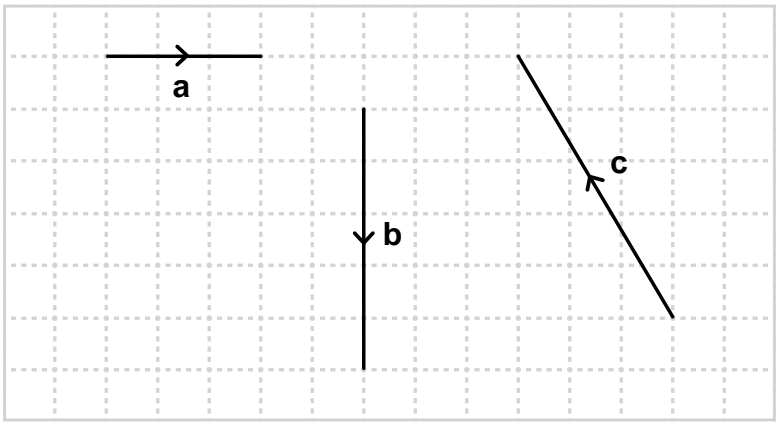
29 **(b)** $(4 \times 2^3)^5 = 2^x$

Find the value of x **[2 marks]**

Answer _____

Do not write outside the box

30 The diagram shows the vectors **a**, **b** and **c**.



30 (a) What is **c** as a column vector?

[2 marks]

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

30 (b) Work out **a** + **b** as a column vector.

[2 marks]

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

END OF QUESTIONS