



Answer all questions in the spaces provided.

Do not write  
outside the  
box

1 (a) Which of these is a cube number? Circle your answer. [1 mark]

3, 4, 9, 25, 125, 70, 81

\_\_\_\_\_

1 (b) Solve  $3x = 24$  [1 mark]

x= \_\_\_\_\_

1 (c) Solve  $y + 5 = 25$  [1 mark]

y= \_\_\_\_\_

2 Here is a list of numbers.

6 7 2 10 12 10 14 10

2 (a) Write down the mode.

[1 mark]

Answer.....

2 (b) Work out the median.

[2 marks]

Answer.....

2 (c) Work out the range.

[1 mark]

Answer.....

7

Turn over ►

3 (a) Work out the value of  $2x + 8y$  when  $x = 2$  and  $y = -4$

[ 2 marks ]

Answer.....

3 (b) Find 75% of 86

[ 2 marks ]

Answer.....

4 (a) Complete these statements with one of the following symbols = > < <math>></math>

[3 marks]

$-9$    $-5$

$25 \div 5$    $4.29$

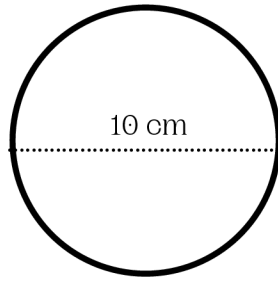
$(-8)^2$    $64$

4 (b) Match the numbers to the correct description.

[3 marks]

	16
Prime	125
Square	11
Cube	20
Triangular	10
	110

5 (a) Here is a circle.



Not drawn  
accurately

Work out the the ratio  
circle area : circle circumference.

[3 marks]

Give your answer in its simplest form.

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5 (b) Simplify  $a^2x a^{-5}x a^3x b^2x b^6$

[2 marks]

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6 (b) Factorise fully  $x^2 + 8x + 20$

[2 marks]

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6 (c) Simplify  $\frac{(4bc^2)^3}{8bc}$

[2 marks]

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$$A = 2^3 \times 5^2 \times 6$$

$$B = 4 \times 5^2 \times 6$$

7 (a) Write down the number that A represents.

[1 mark ]

Answer.....

7 (b) Find the Highest Common Factor (HCF) of 2A and B.

[2 marks]

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Answer.....

8 (a) The mass of  $25 \text{ cm}^3$  of aluminum is 67.5 grams.

[2 marks]

Work out the mass of  $80 \text{ cm}^3$  of aluminum.

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Answer..... grams.

8 (b) Complete the names of these shapes.

[3 marks]

**Shape**

**Name**



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9 (a) In a classroom, the ratio of boys to girls is 2 : 6  
Write the fraction of students who are girls.

[1 mark]

Answer \_\_\_\_\_

In the same classroom  
the ratio of students who prefer Maths to those who prefer French is 8 : 2

9 (b) Write the percentage of students who prefer Maths.

[1 mark]

Answer \_\_\_\_\_ %

10 (a) Tom buys a laptop for £1200.  
He pays a deposit of £240.  
He pays the rest in 12 equal monthly payments.  
Work out the amount of each monthly payment.

[3 marks]

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10 (b) If  $y = 9$

[2 marks]

Work out the value of  $y^3 - 5y$

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Answer .....







14 (a) In 2005, the price of a movie ticket was £7.40.  
By 2020, it had risen to £14.15.

[3 marks]

Work out the percentage increase in the movie ticket price.

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Answer \_\_\_\_\_

14 (b) When  $x^2 = 25$  the only value that it can be is 5  
Is this true or false? Tick a box.

[1 mark]

True

False

Reason \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



15 The table below shows information about the marks of 25 students in a math quiz.

Mark	Frequency (Number of Students)
12	4
13	8
14	3
15	6
16	4
	Total = 25

[3 marks]

The students who scored below the average mark are required to attend extra sessions.

How many students will have to attend the extra sessions?

You must show your working.

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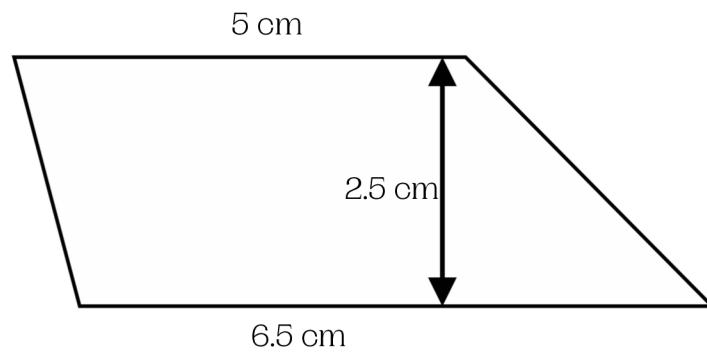
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Answer \_\_\_\_\_

16 Here is a trapezium



Not drawn accurately

Work out the area of the trapezium.

[2 marks]

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Answer \_\_\_\_\_

17 Expand  $y(y - 6)$

[1 mark]

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Answer \_\_\_\_\_

18 Work out the square root of 64 million.  
Circle your answer.

[1 mark]

800

8000

80000

8000000

19 Circle the decimal that is closest in value to  $\frac{3}{5}$

[1 mark]

0.55

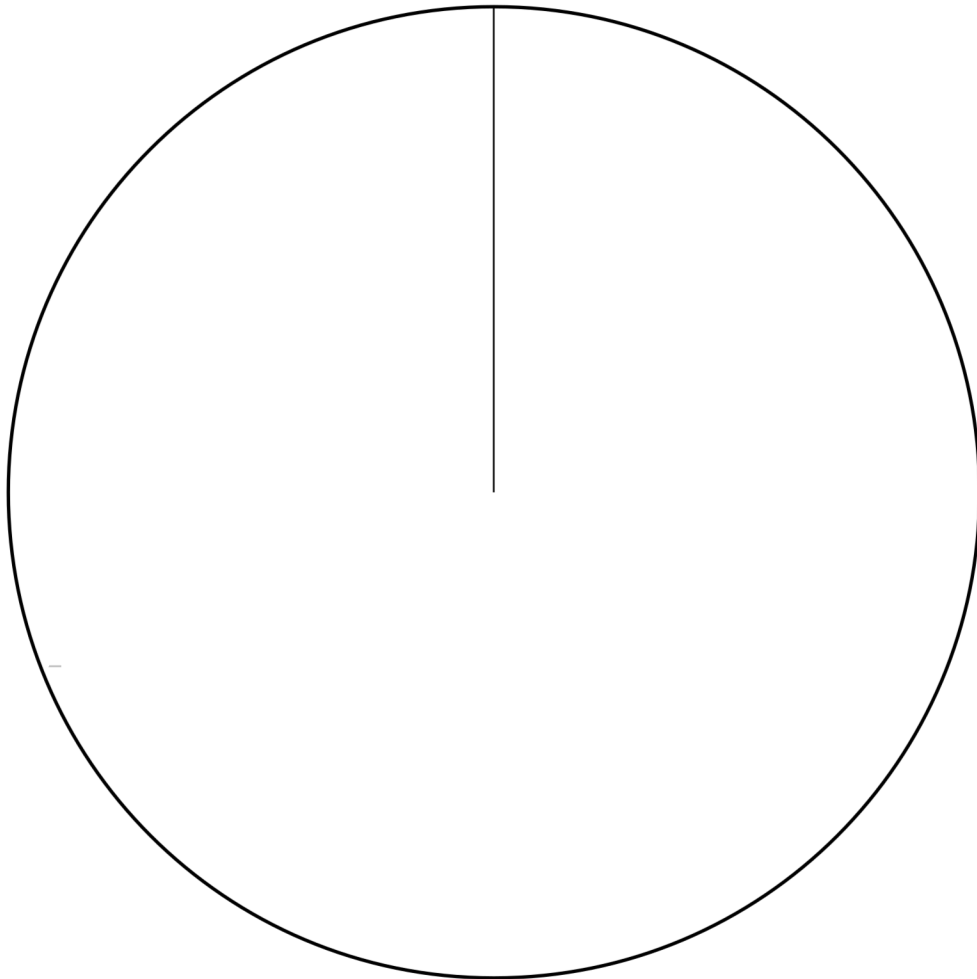
0.6

0.65

0.7

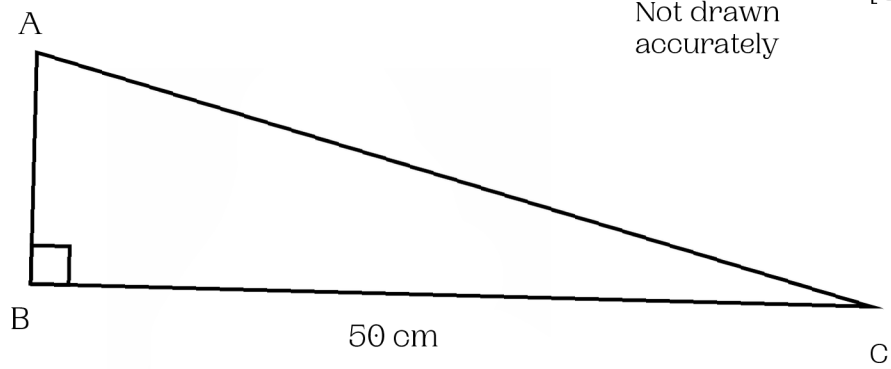
- 20 Eeshu checks the viewers of her YouTube channel and finds that the ratio of subscribers to non-subscribers is 1:4. Draw and label a pie chart to show the subscription status of Eeshu's viewers.

[3 marks]



21 Here is triangle ABC

[4 marks]



$$BC : AC = 2 : 3$$

Work out the length of AB

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Answer \_\_\_\_\_ cm

22 Car A travels a distance of 60 km. [2 marks]  
The time taken for the journey is 30 minutes.

22 (a) Work out the average speed that car A travelled.

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Answer ..... km/h

Car B travels the same journey.  
The time taken for car B was 10 minutes faster than car A. [3 marks]

22 (b) Work out the average speed that car B travelled.

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Answer ..... km/h

23 List all the factors of 48

[1 mark]

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Answer \_\_\_\_\_

END OF QUESTIONS

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