



Name: _____ **Date:** _____ **Score:** _____ / 50

1 Ravi writes 56 000 as 56×10^3 .

Is this in standard form? Give a reason, and write 56 000 correctly in standard form.

(2 marks)

Answer _____

2 An L-shape is made by joining a rectangle 8 cm by 5 cm to a rectangle 4 cm by 3 cm. The two rectangles do not overlap.

Work out the total area of the L-shape.

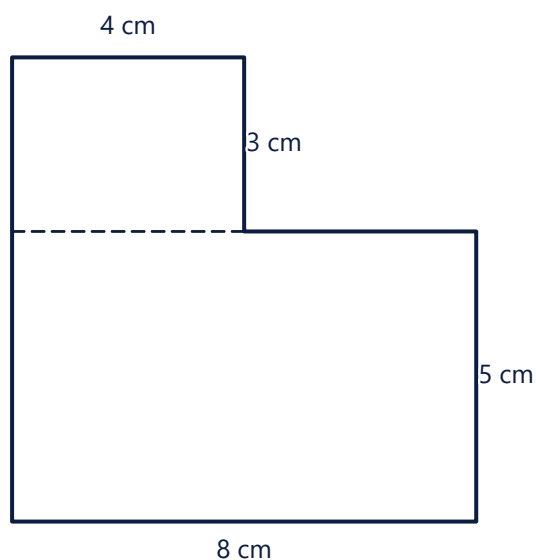


Diagram NOT accurately drawn

(2 marks)

Answer _____

3 A cuboid measures 6 cm by 4 cm by 3 cm.

Work out the volume of the cuboid.

State the units of your answer.

(2 marks)

Answer _____

- 4 A ship sails 24 km due north and then 10 km due east.
Work out the straight-line distance of the ship from its starting point.

(3 marks)

Answer _____

- 5 A pupil is constructing a 60° angle at point P on a straight line. She puts the compass point on P , sets the radius to 5 cm and draws an arc that crosses the line at Q . She keeps the compasses at 5 cm, puts the point on Q and draws a second arc that crosses the first arc at R .

Explain why angle RPQ is 60° .

(2 marks)

Answer _____

- 6 The table shows the heights, h cm, of 20 plants.

Height (h cm)	Frequency
$140 \leq h < 150$	3
$150 \leq h < 160$	8
$160 \leq h < 170$	6
$170 \leq h < 180$	3

- a. Work out an estimate for the mean height.
b. Explain why your answer to part (a) is only an estimate.

(3 marks)

Answer _____

- 7 Priya invests £1500 in a savings account for 4 years.
The account pays simple interest at a rate of $R\%$ per year.
At the end of 4 years, Priya has received a total of £180 in interest.
Work out the value of R .

(3 marks)

Answer _____

8 Amber runs 15.6 km in 1 hour 30 minutes.

Work out her average speed in km/h.

(3 marks)

Answer _____

9 Work out the value of $(3^5 \times 3^{-2}) \div 3$

(2 marks)

Answer _____

10 Is 97 a prime number? Show how you know.

(2 marks)

Answer _____

11 Complete the table of values for $y = x^2 - 2$

x	-2	-1	0	1	2
y	2		-2		2

(2 marks)

Answer _____

12 Work out $5 - 2\frac{3}{8}$

Give your answer as a mixed number.

(2 marks)

Answer _____

13 Here are the first four terms of an arithmetic sequence.

20 17 14 11

Find an expression, in terms of n , for the n th term of the sequence.

(2 marks)

Answer _____

- 14** In a sale a pair of boots is reduced by 30%. The sale price is £42.

Work out the original price of the boots.

(3 marks)

Answer _____

- 15** Triangle A has vertices at $(2, 2)$, $(4, 2)$ and $(2, 6)$.

Triangle B has vertices at $(1, 1)$, $(2, 1)$ and $(1, 3)$.

Triangle C has vertices at $(-1, 1)$, $(-2, 1)$ and $(-1, 3)$.

- Describe fully the single transformation that maps triangle A onto triangle B .
- Describe fully the single transformation that maps triangle B onto triangle C .

(4 marks)

Answer _____

- 16** Find the lowest common multiple (LCM) of 15 and 18

(3 marks)

Answer _____

- 17** Find the value of n in each of these.

a. $7^n \times 7^4 = 7^{10}$

b. $3^8 \div 3^n = 3^5$

(2 marks)

Answer _____

- 18** The exchange rate is $\text{£}1 = \text{€}1.14$.

Nadia changes $\text{£}250$ into euros.

Work out how many euros she gets.

(2 marks)

Answer _____

19 A school buys pens in packs of 12 and pencils in packs of 20.

The ratio of the number of packs of pens to the number of packs of pencils bought is 5 : 2.

Show that the ratio of the number of pens to the number of pencils bought is 3 : 2.

(4 marks)

Answer _____

20 The probability that a bus is late is 0.12.

Tamsin catches the bus on 250 days. Work out how many days you would expect the bus to be late.

(2 marks)

Answer _____

End of questions | Total 50 marks