Day 251 **C Tier 10-a-day: Model Solutions**

1 Probability with dice

A fair six-sided dice is rolled.
Write down the probability of rolling
(a) a multiple of 3
(b) a 6

(a) 2 out of 6 numbers: $\frac{2}{6} = \frac{1}{3}$

(b) 1 out of 6 numbers: $\frac{1}{6}$

Answer: (a) $\frac{1}{3}$ (b) $\frac{1}{6}$

2 Writing numbers in figures

Write five thousand six hundred and eleven in figures.

Write each part: 5000 + 600 + 11
Add the parts together
Answer: 5611

3 Substitution

Work out the value of 7 + t when t = 11.

7 + 11 = 18
Answer: 18

4 Negative numbers

Work out −12 + 9.

Use a number line
−12 + 9 = −3
Answer: −3

5 Solving equations

Solve x + 5 = 16

Subtract 5 from both sides
x = 16 − 5 = 11
Answer: x = 11

6 Perimeter of an L-shape

The diagram shows an L-shape.
All the corners are right angles.
Work out the perimeter of the shape.
The diagram is not drawn accurately.

Find the two missing sides.
Missing horizontal side: 12 − 7 = 5
Missing vertical side: 7 − 2 = 5
Add all six sides: 12 + 2 + 5 + 5 + 7 + 7 = 38
Answer: 38 m

7 Using formulae

The perimeter, P cm, of a square with side length s cm is given by the formula P = 4s.
(a) Work out the value of P when s = 9.
(b) Work out the value of s when P = 28.

(a) P = 4 × 9 = 36
(b) 4s = 28, so s = 28 ÷ 4 = 7
Answer: (a) P = 36 (b) s = 7

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8 Scatter graphs

The scatter graph shows information about height above sea level and temperature.
What type of correlation does the scatter graph show?

As height above sea level increases, temperature decreases
This is negative correlation
Answer: Negative correlation

9 Enlargement

A rectangle is 3 cm long and 2 cm wide.
It is enlarged by scale factor 2.
Write down the length and the width of the enlarged rectangle.

Multiply each length by 2
3 × 2 = 6
2 × 2 = 4
Answer: length 6 cm, width 4 cm

10 Order of operations

Work out 5 + 3 × 6.

Multiply first
3 × 6 = 18
5 + 18 = 23
Answer: 23