Day 237 **C Tier 10-a-day: Model Solutions**

1 Writing ratios

On a bus there are 14 adults and 13 children.
Write down the ratio of children to adults.

The ratio of children to adults is written 13 : 14
Answer: 13 : 14

2 Ordering negative numbers

Write these numbers in order, starting with the smallest.
3, 5, 2, 8, −6

Use a number line: negative numbers are smaller the further they are from 0
Answer: −6, 2, 3, 5, 8

3 Perimeter of a rectangle

The diagram shows a rectangle.
Work out the perimeter of the rectangle.
The diagram is not drawn accurately.

Add up all four sides
14 + 13 + 14 + 13 = 54
Answer: 54 mm

4 Line graphs

The line graph shows the depth of water in a tank at different times.
At what time was the depth of water greatest?

The highest point on the graph is 15 cm
This is at 2 pm
Answer: 2 pm

5 Simplifying expressions

Simplify 5y + 5y + 4m + 4m

Collect the m terms: 4 + 4 = 8m
Collect the y terms: 5 + 5 = 10y
Answer: 8m + 10y

6 Scatter graphs

Here is a scatter graph of test mark against hours of revision.
Describe the correlation.

As hours of revision increases, test mark also increases
This is positive correlation
Answer: Positive correlation

7 Metric units

Change 300 centimetres to metres.

1 m = 100 cm
300 ÷ 100 = 3
Answer: 3 m

8 Substitution

Work out the value of 6(z + 8) when z = 7.

Brackets first: 7 + 8 = 15
6 × 15 = 90
Answer: 90

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9 Cost from area

A rectangular hall floor is 7 m long and 4 m wide.
Flooring costs £8 per m^2.
Work out the cost of covering the hall floor.

Area = 7 × 4 = 28 m^2
Cost = 28 × £8 = £224
Answer: £224

10 Number puzzles

I think of a number.
I divide it by 3.
My answer is 11.
What number did I think of?

Work backwards: multiply by 3
11 × 3 = 33
Answer: 33