Day 2 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of 3x when x = 8.

3x means 3 × x
3 × 8 = 24
Answer: 24

2 Probability with dice

A fair 12-sided dice numbered 1 to 12 is rolled.
Write down the probability of rolling
(a) a 6
(b) a 1

(a) 1 out of 12 numbers: $\frac{1}{12}$

(b) 1 out of 12 numbers: $\frac{1}{12}$

Answer: (a) $\frac{1}{12}$ **(b)** $\frac{1}{12}$

3 Using formulae

The cost, C pounds, of n tickets is given by the formula C = 2n.
(a) Work out the value of C when n = 9.
(b) Work out the value of n when C = 12.

(a) C = 2 × 9 = 18
(b) 2n = 12, so n = 12 ÷ 2 = 6
Answer: (a) C = 18 (b) n = 6

4 Names of polygons

A polygon has 4 sides.
Write down the name of this polygon.

A shape with 4 sides is called a quadrilateral
Answer: quadrilateral

5 Metric units

Change 4 metres to centimetres.

1 m = 100 cm
4 × 100 = 400
Answer: 400 cm

6 The median of an even number of values

Here are the shoe sizes of some students.
8 4 3 8 4 9
Work out the median.

Put the numbers in order: 3 4 4 8 8 9
The middle two numbers are 4 and 8
Halfway between them: (4 + 8) ÷ 2 = 6
Answer: 6

7 Time

A film starts at 3:45 pm.
It lasts for 45 minutes.
At what time does it finish?

3:45 pm + 45 minutes = 4:30 pm
Answer: 4:30 pm

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8 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: 6 − 4 = 2
Missing vertical side: 12 − 4 = 8
Add all six sides: 6 + 4 + 2 + 8 + 4 + 12 = 36
Answer: 36 cm

9 Equations of lines

A straight line passes through the points
(7, 0), (7, 5), (7, 6)
Write down the equation of the line.

Every point has x-coordinate 7, so the line is vertical
Answer: x = 7

10 Completing a table

The table shows the favourite colour of 25 children.
Work out the number of children for Red.

Add the known numbers: 3 + 4 + 9 = 16
25 − 16 = 9
Answer: 9