Day 53 **C Tier 10-a-day: Model Solutions**

1 The mean

Here are the shoe sizes of some students.
3 4 5
Work out the mean.

Add up the values: 3 + 4 + 5 = 12
Divide by 3: 12 ÷ 3 = 4
Answer: 4

2 Substitution

Work out the value of $x^2 + 1$ when x = 8.

$x^2 = 8 \times 8 = 64$
64 + 1 = 65
Answer: 65

3 Probability from a bag

A bag contains 6 red, 3 blue and 6 yellow counters.
One is taken at random.
Write down the probability that it is red.

There are 15 in total, and 6 are red
Probability = $\frac{6}{15} = \frac{2}{5}$
Answer: $\frac{2}{5}$

4 Compass directions and turns

Priya is facing east.
Priya turns 90° anticlockwise.
Which direction is Priya facing now?

90° is 1 quarter turn
Turning anticlockwise from east: east → north
Answer: north

5 Completing a table

The table shows the types of film 40 people watched.
Work out the number of people for Action.

Add the known numbers: 17 + 3 + 5 = 25
40 − 25 = 15
Answer: 15

6 Naming quadrilaterals

Write down the name of the quadrilateral that has opposite sides equal and parallel, and no lines of symmetry.

The quadrilateral with opposite sides equal and parallel, and no lines of symmetry is a parallelogram
Answer: parallelogram

7 Using formulae

The cost, C pounds, of n tickets is given by the formula C = 6n.
(a) Work out the value of C when n = 5.
(b) Work out the value of n when C = 12.

(a) C = 6 × 5 = 30
(b) 6n = 12, so n = 12 ÷ 6 = 2
Answer: (a) C = 30 (b) n = 2

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8 Division with remainders

39 cards are shared equally between 6 children.
(a) How many does each child get?
(b) How many are left over?

39 ÷ 6 = 6 remainder 3
Answer: (a) 6 (b) 3

9 Shaded area

The diagram shows a rectangle with a smaller rectangle cut out of it.
Work out the area of the shaded part.
The diagram is not drawn accurately.

Big rectangle: 11 × 9 = 99
Small rectangle: 6 × 6 = 36
Shaded area: 99 − 36 = 63
Answer: 63 cm^2

10 Order of operations

Work out 3 + 6 × 5.

Multiply first
6 × 5 = 30
3 + 30 = 33
Answer: 33