Day 173 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of 6k when k = 4.

6k means 6 × k
6 × 4 = 24
Answer: 24

2 Distance from speed and time

A coach travels at 70 km/h for 4 hours.
How far does it travel?

Distance = speed × time
70 × 4 = 280
Answer: 280 km

3 Mass and capacity conversions

Change
(a) 300 cl into litres
(b) 3 litres into cl

(a) 100 cl = 1 litres, so divide by 100: 300 ÷ 100 = 3
(b) 1 litres = 100 cl, so multiply by 100: 3 × 100 = 300
Answer: (a) 3 litres (b) 300 cl

4 Solving equations

Solve x + 15 = 18

Subtract 15 from both sides
x = 18 − 15 = 3
Answer: x = 3

5 Number puzzles

I think of a number.
I subtract 7.
My answer is 15.
What number did I think of?

Work backwards: add 7
15 + 7 = 22
Answer: 22

6 Ratio, finding the other part

In a box of beads, the ratio of red to blue is 1 : 4.
There are 36 blue.
Work out the number of red.

36 ÷ 4 = 9 for each part
1 × 9 = 9
Answer: 9

7 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: 8 × 6 = 48
Small rectangle: 4 × 4 = 16
Shaded area: 48 − 16 = 32
Answer: 32 cm^2

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8 The nth term

The nth term of a sequence is n + 2.
Work out the 7th term of the sequence.

Put n = 7 into n + 2
7 + 2 = 9
Answer: 9

9 Division in context

Each minibus holds 50 people.
152 people need a lift.
How many minibuses are needed?

152 ÷ 50 = 3 remainder 2
The extra people need another minibus
Answer: 4

10 Probability of not getting a colour

A bag contains 2 blue counters, 1 green counters and 3 red counters.
One is taken at random.
Write down the probability that it is not green.

Number that are not green: 2 + 3 = 5
Total: 6

Probability = $\frac{5}{6}$

Answer: $\frac{5}{6}$