Day 313 **C Tier 10-a-day: Model Solutions**

1 Writing ratios

A shelf has 3 fiction books and 4 non-fiction books.
Write down the ratio of fiction to non-fiction.

The ratio of fiction to non-fiction is written 3 : 4
Answer: 3 : 4

2 Squares and roots

Work out $\sqrt{25}$.

5 × 5 = 25
So the square root of 25 is 5
Answer: 5

3 Volume by counting cubes

A box holds 1 cm cubes in layers.
Each layer is 8 cubes long and 2 cubes wide.
There are 4 layers.
How many cubes are there altogether?

Cubes in one layer: 8 × 2 = 16
Number of layers: 4
16 × 4 = 64
Answer: 64 cubes

4 Number puzzles

I think of a number.
I divide it by 6.
My answer is 7.
What number did I think of?

Work backwards: multiply by 6
7 × 6 = 42
Answer: 42

5 Solving equations

Solve 4a = 48

4a means 4 × a, so divide both sides by 4
a = 48 ÷ 4 = 12
Answer: a = 12

6 Estimation

Estimate the value of 34 + 29 by rounding each number to the nearest 10.

34 rounds to 30 and 29 rounds to 30
30 + 30 = 60
Answer: 60

7 Currency conversion

£1 = €1.10
Change £70 into euros.

£70 × 1.10 = €77
Answer: €77

8 The nth term

The nth term of a sequence is n + 2.
Work out the 10th term of the sequence.

Put n = 10 into n + 2
10 + 2 = 12
Answer: 12

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9 Travel graphs

The graph shows a journey. Mia drives from home to a shop and then back home.
(a) How far from home is the shop?
(b) For how many hours did the journey stop at the shop?

(a) The highest point of the graph is 20 km
(b) The graph is flat from 2 to 4 hours: 2 hours
Answer: (a) 20 km (b) 2 hours

10 Perimeter of a square from its area

A square tile has an area of 81 cm^2.
Work out the perimeter of the tile.

Side × side = 81, so the side is 9 cm (because 9 × 9 = 81)
Perimeter = 4 × 9 = 36
Answer: 36 cm