Day 248 **C Tier 10-a-day: Model Solutions**

1 Cost from area

A rectangular lawn is 3 m long and 7 m wide.
Turf costs £12 per m^2.
Work out the cost of covering the lawn.

Area = 3 × 7 = 21 m^2
Cost = 21 × £12 = £252
Answer: £252

2 Probability of an event not happening

The probability that it rains tomorrow is $\frac{7}{10}$.
Work out the probability that this does not happen.

P(not) = 1 − P(event)
$1 - \frac{7}{10} = \frac{3}{10}$
Answer: $\frac{3}{10}$

3 Length conversions

Change
(a) 9 km into m
(b) 500 cm into m

(a) 1 km = 1000 m, so multiply by 1000: 9 × 1000 = 9000
(b) 100 cm = 1 m, so divide by 100: 500 ÷ 100 = 5
Answer: (a) 9000 m (b) 5 m

4 Substitution

q = 7 and x = 2
Work out the value of
(a) q − x
(b) q + 3x

(a) 7 − 2 = 5
(b) 7 + 3 × 2 = 13
Answer: (a) 5 (b) 13

5 Ordering decimals

Write these numbers in order, starting with the smallest.
0.6, 0.7, 0.61, 0.55

Write each with the same number of decimal places
0.55, 0.60, 0.61, 0.70
Answer: 0.55, 0.6, 0.61, 0.7

6 Proportion

3 buns cost £2.25.
Work out the cost of 2 buns.

Cost of one bun: 225p ÷ 3 = 75p
75p × 2 = 150p
150p = £1.50
Answer: £1.50

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7 Division in context

Each coach holds 25 people.
87 people need a lift.
How many coaches are needed?

87 ÷ 25 = 3 remainder 12
The extra people need another coach
Answer: 4

8 Function machines

Here is a function machine.
The output is 42.
Work out the input.

Work backwards using the opposite operations
42 + 8 = 50
50 ÷ 5 = 10
Answer: 10

9 Timetables

The table shows the times of two buses.
How many minutes does Bus 2 take to go from Ashby to Brook?

09:25 − 09:05
Count on from 09:05 to 09:25
Answer: 20 minutes

10 Perimeter from area

A rectangle has an area of 48 m^2.
Its width is 6 m.
Work out the perimeter of the rectangle.

Length = area ÷ width = 48 ÷ 6 = 8
Perimeter = 8 + 6 + 8 + 6 = 28
Answer: 28 m