Day 221 **C Tier 10-a-day: Model Solutions**

1 Length conversions

Change
(a) 3 m into cm
(b) 3.5 m into cm

(a) 1 m = 100 cm, so multiply by 100: 3 × 100 = 300
(b) 1 m = 100 cm, so multiply by 100: 3.5 × 100 = 350
Answer: (a) 300 cm (b) 350 cm

2 Substitution

Work out the value of $\frac{x}{9}$ when x = 72.

$\frac{x}{9}$ means x ÷ 9
72 ÷ 9 = 8
Answer: 8

3 Probability of an event not happening

The probability that the team wins on Saturday is $\frac{7}{12}$.
Work out the probability that this does not happen.

P(not) = 1 − P(event)
$1 - \frac{7}{12} = \frac{5}{12}$
Answer: $\frac{5}{12}$

4 Equivalent fractions

Find the missing number.
$\frac{3}{10} = \frac{9}{?}$

3 × 3 = 9, so multiply the bottom by 3 as well
10 × 3 = 30
Answer: 30

5 Volume of a cuboid

The diagram shows a cuboid.
Work out the volume of the cuboid.
The diagram is not drawn accurately.

Volume = length × width × height
4 × 4 × 2
4 × 4 = 16, then 16 × 2 = 32
Answer: 32 m^3

6 Counting outcomes

A café has 6 hats and 5 scarves.
Sam wears one hat and one scarf.
How many different choices are there?

6 × 5 = 30
Answer: 30

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7 Number puzzles

Tara thinks of a number.
Tara adds 3.
The answer is 19.
What number did Tara think of?

Subtract 3 from 19
19 − 3 = 16
Answer: 16

8 Multiples: smallest common

Find the smallest number that is a multiple of both 2 and 5.

Multiples of 2: 2, 4, 6, 8, 10
Multiples of 5: 5, 10
10 is in both lists
Answer: 10

9 Cost from perimeter

A rectangular garden is 16 m long and 11 m wide.
Fencing costs £5 per metre.
Work out the cost of putting fence all the way round the garden.

Perimeter = 16 + 11 + 16 + 11 = 54 m
Cost = 54 × £5 = £270
Answer: £270

10 Adding fractions

Work out $\frac{1}{11} + \frac{5}{11}$.

The denominators are the same, so add the numerators
1 + 5 = 6
Answer: $\mathbf{\frac{6}{11}}$