Day 118 **C Tier 10-a-day: Model Solutions**

1 Angles in a right angle

The diagram shows a right angle split into two angles.
Work out the size of angle q.
The diagram is not drawn accurately.

The square corner is a right angle, which is 90°
90 − 40 = 50
Answer: q = 50°

2 Sequences

Here are the first four terms of a sequence.
44, 34, 24, 14
Write down the next term.

The terms go down by 10 each time
14 − 10 = 4
Answer: 4

3 Reading a scale

The diagram shows part of a measuring scale.
Write down the reading shown by the arrow.

The labelled marks go up in 1000. There are 5 small steps between labelled marks, so each small step is 1000 ÷ 5 = 200.
The arrow is 4 small steps after 2000.
2000 + 4 × 200 = 2800
Answer: 2800 ml

4 Solving equations

Solve $\frac{a}{7} = 8$

$\frac{a}{7}$ means a ÷ 7, so multiply both sides by 7
a = 8 × 7 = 56
Answer: a = 56

5 The median of an even number of values

Here are the shoe sizes of some students.
5 4 8 8 8 3 7 3
Work out the median.

Put the numbers in order: 3 3 4 5 7 8 8 8
The middle two numbers are 5 and 7
Halfway between them: (5 + 7) ÷ 2 = 6
Answer: 6

6 Division with remainders

34 stickers are shared equally between 4 children.
(a) How many does each child get?
(b) How many are left over?

34 ÷ 4 = 8 remainder 2
Answer: (a) 8 (b) 2

7 Reading a straight-line graph

The graph shows the cost of fabric.
Use the graph to find the length of fabric that can be bought for £24.

Go across from £24 on the vertical axis to the line, then down
Amount = 6 m
Answer: 6 m

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8 Simplifying fractions

Write $\frac{10}{45}$ in its simplest form.

Divide the top and bottom by 5

$\frac{10}{45} = \frac{2}{9}$

Answer: $\frac{2}{9}$

9 Sampling

Kira wants to find out what music people in a town like.
Kira asks only people at a rock concert.
Give a reason why this sample may be biased.

People at a rock concert are more likely to like rock music

Answer: People at a rock concert are more likely to like rock music

10 Substitution into formulae

Use the formula T = 4a − 3b to work out the value of T when a = 5 and b = 6.

T = 4 × 5 − 3 × 6

= 20 − 18 = 2

Answer: T = 2