Day 90 **C Tier 10-a-day: Model Solutions**

1 Simplifying ratios

A pencil case has 24 erasers and 9 pens.
Write the ratio of erasers to pens in its simplest form.

Divide both numbers by 3
24 ÷ 3 = 8 and 9 ÷ 3 = 3
Answer: 8 : 3

2 Factors

Here is a list of numbers.
20, 32, 6, 15, 30
Write down the factor of 32.

A factor divides exactly into 32
32 ÷ 32 = 1
Answer: 32

3 Reading a clock

The clock shows the time now.
(a) Write down the time shown.
(b) What time will it be in 30 minutes?

(a) The minute hand points to 4, which is 4 × 5 = 20 minutes past, and the hour hand has passed the 5, so the time is 5:20
(b) 5:20 + 30 minutes = 5:50
Answer: (a) 5:20 (b) 5:50

4 Map scales

On a map, 1 cm represents 100 km.
Two towns are 8 cm apart on the map.
Work out the real distance between the towns.

8 × 100 = 800
Answer: 800 km

5 Ordering negative numbers

Write these numbers in order, starting with the smallest.
2, 6, −7, 0, −1

Use a number line: negative numbers are smaller the further they are from 0
Answer: −7, −1, 0, 2, 6

6 Coordinates

Here are three points.
(0, 6), (6, 0), (8, 4)
Which point lies on the x-axis?

A point on the x-axis has y-coordinate 0
Answer: (6, 0)

7 Estimating measurements

Which is the best estimate for the mass of an adult?
700 kg 7 g 70 kg 70 g

Adults weigh tens of kilograms
The best estimate is 70 kg
Answer: 70 kg

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8 Substitution into formulae

Use the formula T = 6x − 4y to work out the value of T when x = 6 and y = 5.

T = 6 × 6 − 4 × 5
= 36 − 20 = 16
Answer: T = 16

9 Perimeter of a square from its area

A square tile has an area of 9 cm^2.
Work out the perimeter of the tile.

Side × side = 9, so the side is 3 cm (because 3 × 3 = 9)
Perimeter = 4 × 3 = 12
Answer: 12 cm

10 Multiples: smallest common

Find the smallest number that is a multiple of both 2 and 9.

Multiples of 2: 2, 4, 6, 8, 10, 12, 14, 16, 18
Multiples of 9: 9, 18
18 is in both lists
Answer: 18