Day 264 **C Tier 10-a-day: Model Solutions**

1 Length conversions

Change
(a) 3 km into m
(b) 8 m into cm

(a) 1 km = 1000 m, so multiply by 1000: 3 × 1000 = 3000
(b) 1 m = 100 cm, so multiply by 100: 8 × 100 = 800
Answer: (a) 3000 m (b) 800 cm

2 Writing numbers in words

Write the number 6620 in words.

Split the number: 6000 + 600 + 20
Answer: six thousand six hundred and twenty

3 Rates

A printer prints 12 pages each minute.
How many minutes does it take to reach 108 pages?

108 ÷ 12 = 9
Answer: 9 minutes

4 Ordering decimals

Write these numbers in order, starting with the smallest.
0.2, 0.21, 0.3, 0.25

Write each with the same number of decimal places
0.20, 0.21, 0.25, 0.30
Answer: 0.2, 0.21, 0.25, 0.3

5 Scatter graphs

The scatter graph shows information about height and arm span.
What type of correlation does the scatter graph show?

As height increases, arm span also increases
This is positive correlation
Answer: Positive correlation

6 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
6 × 2 × 4
6 × 2 = 12, then 12 × 4 = 48
Answer: 48 cm^3

7 Sequences

Here are the first four terms of a sequence.
3, 6, 9, 15
Each term is found by adding the two terms before it.
Write down the next two terms.

9 + 15 = 24
15 + 24 = 39
Answer: 24, 39

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8 Perimeter of a square from its area

A square lawn has an area of 9 m^2.
Work out the perimeter of the lawn.

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

9 Pattern sequences

Matchsticks are used to make a pattern of squares.
The diagram shows the first three patterns.
How many matchsticks are needed for
(a) Pattern 8
(b) Pattern 9

Pattern 1, 2, 3 have 4, 7, 10 matchsticks
Each pattern has 3 more matchsticks than the one before
Pattern 8: 4 + 3 × 7 = 25
Pattern 9: 4 + 3 × 8 = 28
Answer: (a) 25 (b) 28

10 Order of operations

Work out 9 + 2 × 6.

Multiply first
2 × 6 = 12
9 + 12 = 21
Answer: 21