Day 186 **C Tier 10-a-day: Model Solutions**

1 Units of time

How many months are there in 9 years?

1 year = 12 months
9 × 12 = 108
Answer: 108

2 Writing expressions

Simplify a × 6

Write the number first, then the letters in alphabetical order, with no × signs
Answer: 6a

3 Angles on a straight line

The diagram shows a straight line.
Work out the size of angle q.
The diagram is not drawn accurately.

Angles on a straight line add up to 180°
180 − 75 = 105
Answer: q = 105°

4 Fractions, decimals and percentages

Write 90% as a decimal.

90% means 90 out of 100
90 ÷ 100 = 0.9
Answer: 0.9

5 Volume by counting cubes

A tray holds 1 cm cubes in layers.
Each layer is 3 cubes long and 3 cubes wide.
There are 2 layers.
How many cubes are there altogether?

Cubes in one layer: 3 × 3 = 9
Number of layers: 2
9 × 2 = 18
Answer: 18 cubes

6 Simplifying fractions

Write $\frac{16}{20}$ in its simplest form.

Divide the top and bottom by 4
$\frac{16}{20} = \frac{4}{5}$

Answer: $\frac{4}{5}$

7 Substitution

Work out the value of m^2 when m = 3.

m^2 means m × m
3 × 3 = 9
Answer: 9

8 Stem and leaf diagrams

The stem and leaf diagram shows the times, in seconds, taken by runners.
Write down the largest value.

The last row has the largest stem and its last leaf is the largest
35
Answer: 35

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9 Angles between clock hands

The minute hand of a clock turns clockwise from the 11 to the 12.
Through what angle does it turn?

Each number gap on a clock is 360 ÷ 12 = 30°
From 11 to 12 is 1 gaps
1 × 30 = 30
Answer: 30°

10 Pie chart angles

60 students were asked about their favourite fruit.
12 of them chose bananas.
The results are shown in a pie chart.
Work out the angle of the sector for those students.

360° ÷ 60 = 6° for each student
12 × 6° = 72°
Answer: 72°