Day 219 **C Tier 10-a-day: Model Solutions**

1 Writing expressions

Simplify $6 \times m$

Write the number first, then the letters in alphabetical order, with no × signs

Answer: 6m

2 Perimeter and area of a square

A square tile has sides of length 6 cm.
(a) Work out its perimeter.
(b) Work out its area.

(a) A square has 4 equal sides: $4 \times 6 = 24$
(b) Area = side × side: $6 \times 6 = 36$

Answer: (a) 24 cm (b) 36 cm^2

3 Ordering fractions

Write these fractions in order, starting with the largest.

$\frac{3}{9}, \frac{6}{9}, \frac{1}{9}$

The denominators are all 9, so compare the numerators
6, 3, 1 (numerators in order)

Answer: $\frac{6}{9}, \frac{3}{9}, \frac{1}{9}$

4 Solving equations

Solve $\frac{m}{6} = 8$

$\frac{m}{6}$ means $m \div 6$, so multiply both sides by 6
$m = 8 \times 6 = 48$

Answer: m = 48

5 Probability of an event not happening

The probability that the post arrives before 9 am is $\frac{3}{4}$.

Work out the probability that this does not happen.

P(not) = 1 − P(event)
$1 - \frac{3}{4} = \frac{1}{4}$

Answer: $\frac{1}{4}$

6 Ordering negative numbers

Write these numbers in order, starting with the smallest.

1, 4, 3, −5, −1

Use a number line: negative numbers are smaller the further they are from 0

Answer: −5, −1, 1, 3, 4

7 Reading a pie chart

32 people were asked about their favourite sport.
The pie chart shows the results.
How many people chose Golf?

The Golf sector is a half of the pie chart
$32 \div 2 = 16$

Answer: 16

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8 Substitution

Work out the value of $5x - 5$ when $x = 2$.

$5x = 5 \times 2 = 10$
$10 - 5 = 5$
Answer: 5

9 Timetables

The table shows the times of two buses.
How many minutes does Bus 1 take to go from Park Road to Library?

10:35 – 10:20
Count on from 10:20 to 10:35
Answer: 15 minutes

10 Volume and surface area of a cube

A cube has sides of length 4 m.
(a) Work out the volume of the cube.
(b) Work out the total surface area of the cube.

(a) Volume $= 4 \times 4 \times 4 = 64$
(b) Each face is a square of area $4 \times 4 = 16$
A cube has 6 faces: $6 \times 16 = 96$
Answer: (a) 64 m^3 (b) 96 m^2