Day 213 **C Tier 10-a-day: Model Solutions**

1 Addition

Work out 232 + 162.

Add the hundreds, tens and units
232 + 162 = 394
Answer: 394

2 Tally charts

The tally chart shows the pets owned by some students.
Work out the total number of students.

Dog 5, Cat 13, Bird 14
5 + 13 + 14 = 32
Answer: 32

3 Writing expressions

Simplify c × 6

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

4 24-hour clock

Write 10:00 using the 12-hour clock.
Use am or pm in your answer.

Times before 12:00 are am
10:00 = 10:00 am
Answer: 10:00 am

5 Powers

Work out $9^2 + 5$.

$9^2 = 81$
81 + 5 = 86
Answer: 86

6 Reflecting a point

The point P has coordinates (−1, 1).
P is reflected in the y-axis.
Write down the coordinates of the image of P.

The y-coordinate stays the same and the x-coordinate changes sign
Answer: (1, 1)

7 The mean

Here are the numbers of books read by some students.
11 12 4
Work out the mean.

Add up the values: 11 + 12 + 4 = 27
Divide by 3: 27 ÷ 3 = 9
Answer: 9

8 Volume and surface area of a cube

A cube has sides of length 2 cm.
(a) Work out the volume of the cube.
(b) Work out the total surface area of the cube.

(a) Volume = 2 × 2 × 2 = 8
(b) Each face is a square of area 2 × 2 = 4
A cube has 6 faces: 6 × 4 = 24
Answer: (a) 8 cm^3 (b) 24 cm^2

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9 Simplifying fractions

Write $\frac{12}{21}$ in its simplest form.

Divide the top and bottom by 3

$\frac{12}{21} = \frac{4}{7}$

Answer: $\frac{4}{7}$

10 Substitution

Work out the value of $7(p - 1)$ when $p = 7$.

Brackets first: $7 - 1 = 6$

$7 \times 6 = 42$

Answer: 42