Day 198 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of 15 − z when z = 7.

15 − 7 = 8

Answer: 8

2 Reading coordinates

Write down the coordinates of
(a) point A
(b) point C

Read the x-coordinate (across) first, then the y-coordinate (up or down).
(a) A: (3, 2)
(b) C: (1, 4)

Answer: (a) (3, 2) (b) (1, 4)

3 Number sequences

Here is a number sequence.
3, 8, 13, 18, ...
Write down the next two numbers.

The sequence goes up by 5 each time
18 + 5 = 23, 23 + 5 = 28

Answer: 23, 28

4 Pictograms

The pictogram shows the number of cars washed on four days.
How many more cars on Mon than on Thu?

Mon: 4 × 2 = 8
Thu: 1.5 × 2 = 3
8 − 3 = 5

Answer: 5

5 Reflecting a point

The point P has coordinates (3, −5).
P is reflected in the line y = −1.
Write down the coordinates of the image of P.

The point is 4 from the line, so the image is 4 on the other side: −1 + 4 = 3

Answer: (3, 3)

6 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 5
(b) Pattern 9

Pattern 1, 2, 3 have 4, 7, 10 matchsticks
Each pattern has 3 more matchsticks than the one before
Pattern 5: 4 + 3 × 4 = 16
Pattern 9: 4 + 3 × 8 = 28

Answer: (a) 16 (b) 28

7 Scatter graphs

The scatter graph shows information about age of car and value.
What type of correlation does the scatter graph show?

As age of car increases, value decreases
This is negative correlation

Answer: Negative correlation

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8 Using formulae

The perimeter, P cm, of a square with side length s cm is given by the formula P = 4s.
(a) Work out the value of P when s = 8.
(b) Work out the value of s when P = 24.

(a) P = 4 × 8 = 32
(b) 4s = 24, so s = 24 ÷ 4 = 6
Answer: (a) P = 32 (b) s = 6

9 Fractions of amounts

Work out $\frac{1}{3}$ of £18.

Divide by 3
18 ÷ 3 = 6
Answer: £6

10 Perimeter from area

A rectangle has an area of 78 cm^2.
Its width is 6 cm.
Work out the perimeter of the rectangle.

Length = area ÷ width = 78 ÷ 6 = 13
Perimeter = 13 + 6 + 13 + 6 = 38
Answer: 38 cm