Day 359 **C Tier 10-a-day: Model Solutions**

1 Compass directions and turns

A ship is facing north.
A ship turns 90° anticlockwise.
Which direction is the ship facing now?

90° is 1 quarter turn
Turning anticlockwise from north: north → west
Answer: west

2 The mode

Here are the ages of some children.
7 11 12 7 8 10 13 11 7 9
Write down the mode.

The mode is the value that appears most often
7 appears 3 times
Answer: 7

3 Perimeter of a rectangle

A rectangular field is 5 m long and 2 m wide.
Work out the perimeter.

Add up all four sides
5 + 2 + 5 + 2 = 14
Answer: 14 m

4 Collecting like terms

Simplify 7t + 5t

All the terms are in t, so just add or subtract the numbers in front of t
Answer: 12t

5 Completing a table

The table shows the favourite fruit of 50 students.
Work out the number of students for Orange.

Add the known numbers: 4 + 2 + 16 = 22
50 − 22 = 28
Answer: 28

6 Special sequences

Here are the first four terms of a sequence.
5, 10, 20, 40
Write down the next term.

Each term is double the one before
40 × 2 = 80
Answer: 80

7 Enlargement

A rectangle is 4 cm long and 1 cm wide.
It is enlarged by scale factor 5.
Write down the length and the width of the enlarged rectangle.

Multiply each length by 5
4 × 5 = 20
1 × 5 = 5
Answer: length 20 cm, width 5 cm

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8 Negative numbers: temperature

The temperature is 1°C.
It falls by 4°C.
What is the new temperature?

$1 - 4 = -3$

Answer: −3°C

9 Coordinates

ABCD is a rectangle.
A is the point (5, 3), B is the point (1, 3) and C is the point (1, 7).
Write down the coordinates of D.

AB is horizontal so D has the same x-coordinate as A: 5
BC is vertical so D has the same y-coordinate as C: 7

Answer: (5, 7)

10 Ordering negative numbers

Write these numbers in order, starting with the largest.
−2, 0, 3, −4, 2

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

Answer: 3, 2, 0, −2, −4