Day 258 **C Tier 10-a-day: Model Solutions**

1 Compass directions and turns

A robot is facing west.
A robot turns 270° clockwise.
Which direction is the robot facing now?

270° is 3 quarter turns
Turning clockwise from west: west → north → east → south
Answer: south

2 Which expression

Which of these means 4 added to y?

$\frac{y}{4}$, 4y, y + 4, y^2

4 added to y is written y + 4
Answer: y + 4

3 Units of time

How many days are there in 5 weeks?

1 week = 7 days
5 × 7 = 35
Answer: 35

4 Reading a scale

The diagram shows part of a measuring scale.
Write down the reading shown by the arrow.

The labelled marks go up in 2. There are 4 small steps between labelled marks, so each small step is 2 ÷ 4 = 0.5.
The arrow is 1 small steps after 0.
0 + 1 × 0.5 = 0.5
Answer: 0.5 mm

5 Reading straight line graphs

The graph shows the cost of a taxi journey.
(a) Work out the cost of a journey of 4 miles.
(b) Femi pays £10 for a taxi. How many miles was the journey?

(a) Go up from 4 on the bottom axis to the line, then across: £8
(b) Go across from 10 on the cost axis to the line, then down: 5
Answer: (a) £8 (b) 5

6 Midpoint of a line

P is the point (2, 0).
Q is the point (2, 8).
Work out the coordinates of the midpoint of PQ.

Find the number halfway between the x-coordinates: (2 + 2) ÷ 2 = 2
Find the number halfway between the y-coordinates: (0 + 8) ÷ 2 = 4
Answer: (2, 4)

7 Equations of lines

A straight line passes through the points
(2, 2), (3, 2), (7, 2)
Write down the equation of the line.

Every point has y-coordinate 2, so the line is horizontal
Answer: y = 2

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8 Distance from speed and time

A train travels at 30 mph for 2 hours.
How far does it travel?

Distance = speed × time
30 × 2 = 60
Answer: 60 miles

9 Order of operations

Work out 2 × 2 + 9.

Multiply first
2 × 2 = 4
4 + 9 = 13
Answer: 13

10 The range

Here are the ages of some children.
13 5 14 6 12
Work out the range.

Range = largest value − smallest value
14 − 5 = 9
Answer: 9