Day 234 **C Tier 10-a-day: Model Solutions**

1 The mean

Here are the numbers of books read by some students.
5 7 3
Work out the mean.

Add up the values: 5 + 7 + 3 = 15
Divide by 3: 15 ÷ 3 = 5
Answer: 5

2 Volume by counting cubes

A tray holds 1 cm cubes in layers.
Each layer is 7 cubes long and 2 cubes wide.
There are 2 layers.
How many cubes are there altogether?

Cubes in one layer: 7 × 2 = 14
Number of layers: 2
14 × 2 = 28
Answer: 28 cubes

3 Collecting like terms

Simplify 3q + 7q

All the terms are in q, so just add or subtract the numbers in front of q
Answer: 10q

4 Time from distance and speed

A cyclist travels 80 km at 10 km/h.
How long does the journey take?

Time = distance ÷ speed
80 ÷ 10 = 8
Answer: 8 hours

5 Time

A swimming lesson starts at 5:20 pm.
It lasts for 1 hour 10 minutes.
At what time does it finish?

5:20 pm + 1 hour = 6:20 pm
6:20 pm + 10 minutes = 6:30 pm
Answer: 6:30 pm

6 Reading straight line graphs

The graph shows the cost of hiring a bike.
(a) Work out the cost of hiring the bike for 5 hours.
(b) Ravi pays £12 to hire the bike. For how many hours does Ravi hire it?

(a) Go up from 5 on the bottom axis to the line, then across: £20
(b) Go across from 12 on the cost axis to the line, then down: 3
Answer: (a) £20 (b) 3

7 Money: wages

Nina earns £12 for each hour of work.
Nina works for 3 hours.
How much does Nina earn?

£12 × 3 = £36
Answer: £36

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8 Reflection on a grid

The point P is drawn on the grid.
P is reflected in the line y = 4.
Write down the coordinates of the image of P.

P is (5, 2)
P is 2 squares below the line, so the image is 2 squares above
y-coordinate: 4 + 2 = 6
Answer: (5, 6)

9 Probability of not getting a colour

A bag contains 3 white beads, 6 red beads and 3 blue beads.
One is taken at random.
Write down the probability that it is not blue.

Number that are not blue: 3 + 6 = 9
Total: 12
Probability = $\frac{9}{12} = \frac{3}{4}$

Answer: $\frac{3}{4}$

10 Multiplication

Work out 36 × 3.

30 × 3 = 90 and 6 × 3 = 18
90 + 18 = 108
Answer: 108