Day 157 **C Tier 10-a-day: Model Solutions**

1 Compass directions and turns

Sam is facing west.
Sam turns 180° clockwise.
Which direction is Sam facing now?

180° is 2 quarter turns
Turning clockwise from west: west → north → east
Answer: east

2 Bar charts

The bar chart shows the types of film some people watched.
Work out the total number of people.

8 + 2 + 7 + 5 + 10 = 32
Answer: 32

3 24-hour clock

Write 4:50 pm using the 24-hour clock.

pm times: add 12 to the hour, e.g. 4 + 12 = 16
4:50 pm = 16:50
Answer: 16:50

4 Fractions of amounts

Work out $\frac{1}{2}$ of 18 litres.

Divide by 2
18 ÷ 2 = 9
Answer: 9 litres

5 Fractions of a group

Sam answers 16 questions and gets 6 correct.
What fraction of the questions did Sam get correct? Give your answer in its simplest form.

$\frac{6}{16}$

Divide top and bottom by 2: $\frac{3}{8}$

Answer: $\frac{3}{8}$

6 Map scales

On a map, 1 cm represents 50 km.
On the map, two towns are 11 cm apart.
Work out the real distance between the towns.

1 cm represents 50 km
11 × 50 = 550
Answer: 550 km

7 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) Zoe pays £30 for a taxi. How many miles was the journey?

(a) Go up from 4 on the bottom axis to the line, then across: £40
(b) Go across from 30 on the cost axis to the line, then down: 3
Answer: (a) £40 (b) 3

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8 Probability of not getting a colour

A bag contains 4 white counters, 6 blue counters and 1 yellow counters.
One is taken at random.
Write down the probability that it is not yellow.

Number that are not yellow: 4 + 6 = 10
Total: 11

Probability = $\frac{10}{11}$

Answer: $\mathbf{\frac{10}{11}}$

9 Substitution into formulae

Use the formula K = 5m − 4n to work out the value of K when m = 5 and n = 3.

K = 5 × 5 − 4 × 3
= 25 − 12 = 13
Answer: K = 13

10 Multiples: smallest common

Find the smallest number that is a multiple of both 3 and 5.

Multiples of 3: 3, 6, 9, 12, 15
Multiples of 5: 5, 10, 15
15 is in both lists
Answer: 15