Day 335 **C Tier 10-a-day: Model Solutions**

1 The mode

Here are the shoe sizes of some students.
5 6 8 5 8 4 5 9 5 8
Write down the mode.

The mode is the value that appears most often
5 appears 4 times
Answer: 5

2 Reflecting a point

The point P has coordinates (2, −6).
P is reflected in the x-axis.
Write down the coordinates of the image of P.

The x-coordinate stays the same and the y-coordinate changes sign
Answer: (2, 6)

3 Probability with dice

A fair 12-sided dice numbered 1 to 12 is rolled.
Write down the probability of rolling
(a) a 7
(b) a 11

(a) 1 out of 12 numbers: $\frac{1}{12}$

(b) 1 out of 12 numbers: $\frac{1}{12}$

Answer: (a) $\frac{1}{12}$ (b) $\frac{1}{12}$

4 Substitution

Work out the value of $y^2 + 6$ when y = 2.

$y^2 = 2 \times 2 = 4$
4 + 6 = 10
Answer: 10

5 24-hour clock

Write 8:35 pm using the 24-hour clock.

pm times: add 12 to the hour, e.g. 8 + 12 = 20
8:35 pm = 20:35
Answer: 20:35

6 Reading straight line graphs

The graph shows the cost of hiring a bike.
(a) Work out the cost of hiring the bike for 2 hours.
(b) Leah pays £20 to hire the bike. For how many hours does Leah hire it?

(a) Go up from 2 on the bottom axis to the line, then across: £8
(b) Go across from 20 on the cost axis to the line, then down: 5
Answer: (a) £8 (b) 5

7 Venn diagrams

Some students were asked whether they like tea or coffee.
The Venn diagram shows the results.
How many students were asked altogether?

Add all four numbers: 12 + 5 + 4 + 1 = 22
Answer: 22

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8 Subtracting decimals

Work out 9.9 − 7.3.

Line up the decimal points
9.9 − 7.3 = 2.6
Answer: 2.6

9 Translating a point

The point A has coordinates (−1, 6).
A is moved 6 right and 3 up.
Write down the coordinates of the new point.

x-coordinate: −1 + 6 = 5
y-coordinate: 6 + 3 = 9
Answer: (5, 9)

10 Order of operations

Work out 9 × 5 + 3.

Multiply first
9 × 5 = 45
45 + 3 = 48
Answer: 48