Day 103 **C Tier 10-a-day: Model Solutions**

1 Function machines

Here is a function machine.
Work out the output when the input is 6.

6 × 2 = 12
12 − 4 = 8
Answer: 8

2 Faces, edges and vertices

How many vertices does a pentagonal prism have?

A pentagonal prism: 5 corners on each end: 2 × 5 = 10
Answer: 10

3 Reading a table

The table shows the number of sandwiches each day.
Work out the total number of sandwiches on Tuesday and Friday.

Tuesday: 38, Friday: 39
38 + 39 = 77
Answer: 77

4 Number puzzles

Ravi thinks of a number.
Ravi adds 7.
The answer is 24.
What number did Ravi think of?

Subtract 7 from 24
24 − 7 = 17
Answer: 17

5 Currency conversion

£1 = $2.00
Change £10 into US dollars.

£10 × 2.00 = $20
Answer: $20

6 Midpoint of a line

P is the point (3, 0).
Q is the point (3, 8).
Work out the coordinates of the midpoint of PQ.

Find the number halfway between the x-coordinates: (3 + 3) ÷ 2 = 3
Find the number halfway between the y-coordinates: (0 + 8) ÷ 2 = 4
Answer: (3, 4)

7 Coordinates

(a) Write down the coordinates of point W.
(b) Which point has coordinates (2, −3)?

(a) W is left 3 and down 1
(b) Go right 2 and down 3: this is point B
Answer: (a) (−3, −1) (b) B

8 Timetables

The table shows the times of two buses.
Jo gets on Bus 1 at School.
What time does Jo get to Hospital?

Read along the row for Hospital in the Bus 1 column
Answer: 10:40

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9 Perimeter of a square from its area

A square picture has an area of 144 cm^2.
Work out the perimeter of the picture.

Side × side = 144, so the side is 12 cm (because 12 × 12 = 144)
Perimeter = 4 × 12 = 48
Answer: 48 cm

10 Expected number

The probability that a bus is late is $\frac{1}{4}$.

There are 40 buses in a week.
How many buses would you expect to be late?

Expected number = probability × number of trials
$\frac{1}{4} \times 40 = 10$
Answer: 10