Day 326 **C Tier 10-a-day: Model Solutions**

1 Function machines

Here is a function machine.
Work out the output when the input is 2.

2 × 4 = 8
8 + 14 = 22
Answer: 22

2 Reading a straight-line graph

The graph shows the cost of cheese.
Use the graph to find the cost of 2 kg of cheese.

Go up from 2 on the horizontal axis to the line, then across
Cost = £6
Answer: £6

3 Mass and capacity conversions

Change
(a) 15 litres into cl
(b) 12 tonnes into kg

(a) 1 litres = 100 cl, so multiply by 100: 15 × 100 = 1500
(b) 1 tonnes = 1000 kg, so multiply by 1000: 12 × 1000 = 12000
Answer: (a) 1500 cl (b) 12000 kg

4 Ordering negative numbers

Write these numbers in order, starting with the largest.
−7, 5, 0, −6, 6

Use a number line: negative numbers are smaller the further they are from 0
Answer: 6, 5, 0, −6, −7

5 Reflecting a point

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

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

6 Ordering fractions

Write these fractions in order, starting with the largest.
$\frac{3}{12}, \frac{1}{12}, \frac{5}{12}$

The denominators are all 12, so compare the numerators
5, 3, 1 (numerators in order)
Answer: $\frac{5}{12}, \frac{3}{12}, \frac{1}{12}$

7 The mode

Here are the numbers of books read by some students.
6 8 5 3 9 3 7 4 2
Write down the mode.

The mode is the value that appears most often
3 appears 2 times
Answer: 3

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8 Sequences

Here are the first four terms of a sequence.
9, 14, 19, 24
Is 62 a term in this sequence?
You must show your working.

The terms go up by 5 each time
Continue the sequence: 9, 14, 19, 24, 29, 34, 39, 44, 49, 54, 59, 64
62 is not in the list
Answer: No

9 Circles with an approximate pi

A circle has a diameter of 8 cm.
Work out its circumference.
Use π = 3.14

Circumference = π × diameter
3.14 × 8 = 25.12
Answer: 25.12 cm

10 Writing expressions

Simplify 5 × m × n

Write the number first, then the letters in alphabetical order, with no × signs
Answer: 5mn