Day 286 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of $x - 3$ when $x = 7$.

$7 - 3 = 4$

Answer: 4

2 Bar charts

The bar chart shows the ways some students travel to school.
Work out the total number of students.

$40 + 35 + 45 + 10 = 130$

Answer: 130

3 Number line

The number line shows an arrow.
Write down the number the arrow points to.

The numbers go up by 1 for each mark
The arrow points to -2

Answer: -2

4 Rotational symmetry

Write down the order of rotational symmetry of
(a) a scalene triangle
(b) a parallelogram

(a) A scalene triangle fits onto itself 1 time in a full turn
(b) A parallelogram fits onto itself 2 times in a full turn

Answer: (a) 1 (b) 2

5 Time

A film starts at 8:10 pm.
It lasts for 3 hours 10 minutes.
At what time does it finish?

8:10 pm + 3 hours = 11:10 pm
11:10 pm + 10 minutes = 11:20 pm

Answer: 11:20 pm

6 Simplifying expressions

Simplify $2x + b + 2x + 6b$

Collect the b terms: $1 + 6 = 7b$
Collect the x terms: $2 + 2 = 4x$

Answer: $7b + 4x$

7 Area of a rectangle

The diagram shows a rectangle.
Work out the area of the rectangle.
The diagram is not drawn accurately.

Area = length × width
$6 \times 2 = 12$

Answer: 12 cm^2

8 Sampling

Amir wants to find out how many hours of sleep teenagers get.
Amir asks only students in the first lesson of the day.
Give a reason why this sample may be biased.

The students are all from one group and the sample is small and not random

Answer: The students are all from one group and the sample is small and not random

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9 Cost from perimeter

A rectangular pond is 6 m long and 4 m wide.
Edging costs £8 per metre.
Work out the cost of putting edging all the way round the pond.

Perimeter = 6 + 4 + 6 + 4 = 20 m
Cost = 20 × £8 = £160
Answer: £160

10 Order of operations

Work out 3 + 4 × 3.

Multiply first
4 × 3 = 12
3 + 12 = 15
Answer: 15