Day 156 **C Tier 10-a-day: Model Solutions**

1 Names of polygons

How many sides does a quadrilateral have?

A quadrilateral has 4 sides

Answer: 4

2 Writing ratios

In a class there are 3 boys and 4 girls.
Write down the ratio of boys to girls.

The ratio of boys to girls is written 3 : 4

Answer: 3 : 4

3 Sequences

Here is a sequence with one number missing.
12, 24, 36, ?, 60
Work out the missing number.

The terms go up by 12 each time
36 + 12 = 48

Answer: 48

4 Subtracting decimals

Work out 6.93 − 3.34.

Line up the decimal points
6.93 − 3.34 = 3.59

Answer: 3.59

5 Area of a triangle

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

Area of a triangle = base × height ÷ 2
13 × 4 = 52
52 ÷ 2 = 26

Answer: 26 m^2

6 Function machines

Here is a function machine.
The output is 79.
Work out the input.

Work backwards using the opposite operations
79 − 13 = 66
66 ÷ 6 = 11

Answer: 11

7 Expected number

The probability that a bus is late is $\frac{1}{5}$.

There are 45 buses in a week.
How many buses would you expect to be late?

Expected number = probability × number of trials

$\frac{1}{5} \times 45 = 9$

Answer: 9

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8 Angles in parallel lines

Two parallel lines are crossed by a straight line.
Work out the size of angle q.
Give a reason for your answer.

The angles are on opposite sides of the transversal between the parallel lines, so they are alternate angles
Alternate angles are equal
q = 70°
Answer: q = 70° (alternate angles)

9 Time

A film starts at 3:30 pm.
It lasts for 1 hour 30 minutes.
At what time does it finish?

3:30 pm + 1 hour = 4:30 pm
4:30 pm + 30 minutes = 5:00 pm
Answer: 5:00 pm

10 Substitution

Work out the value of 7(z + 7) when z = 7.

Brackets first: 7 + 7 = 14
7 × 14 = 98
Answer: 98