**Day 202** **C Tier 10-a-day: Model Solutions**

## 1 Writing ratios

In a class there are 8 boys and 5 girls.
Write down the ratio of girls to boys.

The ratio of girls to boys is written 5 : 8
**Answer: 5 : 8**

## 2 Subtraction

Work out 846 − 348.

846 − 348 = 498
**Answer: 498**

## 3 Function machines

Here is a function machine.
Work out the output when the input is 3.

3 × 4 = 12
12 − 3 = 9
**Answer: 9**

## 4 Vertically opposite angles

The diagram shows two straight lines crossing.
(a) Work out the size of angle b.
(b) Work out the size of angle x.
The diagram is not drawn accurately.

(a) Vertically opposite angles are equal
b = 60°
(b) Angles on a straight line add up to 180°
180 − 60 = 120
**Answer: (a) b = 60° (b) x = 120°**

## 5 Solving equations

Solve $\frac{h}{7} = 5$

$\frac{h}{7}$ means h ÷ 7, so multiply both sides by 7
h = 5 × 7 = 35
**Answer: h = 35**

## 6 Number puzzles

I think of a number.
I divide it by 6.
My answer is 16.
What number did I think of?

Work backwards: multiply by 6
16 × 6 = 96
**Answer: 96**

## 7 Sequences

Here are the first four terms of a sequence.
35, 31, 27, 23
Write down the next term.

The terms go down by 4 each time
23 − 4 = 19
**Answer: 19**

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## 8 Probability with dice

A fair six-sided dice is rolled.
Write down the probability of rolling
(a) a multiple of 4
(b) a 1

(a) 1 out of 6 numbers: $\frac{1}{6}$

(b) 1 out of 6 numbers: $\frac{1}{6}$

**Answer: (a) $\frac{1}{6}$ (b) $\frac{1}{6}$**

## 9 Order of operations

Work out 5 × 5 + 2.

Multiply first
5 × 5 = 25
25 + 2 = 27
**Answer: 27**

## 10 Translating a point

The point A has coordinates (1, 4).
A is moved 2 left and 4 down.
Write down the coordinates of the new point.

x-coordinate: 1 − 2 = −1
y-coordinate: 4 − 4 = 0
**Answer: (−1, 0)**