Day 185 **C Tier 10-a-day: Model Solutions**

1 Which expression

Which of these means 9 added to m?

m^2, 9m, $\frac{m}{9}$, m + 9

9 added to m is written m + 9

Answer: m + 9

2 Rotational symmetry

Write down the order of rotational symmetry of
(a) a rhombus
(b) a regular hexagon

(a) A rhombus fits onto itself 2 times in a full turn
(b) A regular hexagon fits onto itself 6 times in a full turn

Answer: (a) 2 (b) 6

3 Division

Work out 100 ÷ 5.

5 × 20 = 100
So 100 ÷ 5 = 20

Answer: 20

4 Sequences

Here are the first four terms of a sequence.
63, 57, 51, 45
Write down the next term.

The terms go down by 6 each time
45 − 6 = 39

Answer: 39

5 Bar charts

The bar chart shows the favourite sport of some students.
Work out the total number of students.

10 + 25 + 40 + 5 + 35 = 115

Answer: 115

6 Perimeter of a regular polygon

The perimeter of a regular hexagon is 60 m.
Work out the length of one side.

A regular hexagon has 6 equal sides
60 ÷ 6 = 10

Answer: 10 m

7 Expected number

The probability that a seed grows is $\frac{1}{5}$.

Mia plants 40 seeds.
How many seeds would you expect to grow?

Expected number = probability × number of trials
$\frac{1}{5}$ × 40 = 8

Answer: 8

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8 Fractions, decimals and percentages

Write 0.25 as a fraction in its simplest form.

$0.25 = \frac{25}{100}$

Simplify the fraction

Answer: $\frac{1}{4}$

9 Substitution

Work out the value of 7(b − 7) when b = 8.

Brackets first: 8 − 7 = 1

7 × 1 = 7

Answer: 7

10 Relative frequency

A coin is flipped 50 times and lands on heads 8 times.
Estimate the probability that it lands on heads next time.
Give your answer as a decimal.

Relative frequency = $\frac{8}{50}$

8 ÷ 50 = 0.16

Answer: 0.16