Day 233 **C Tier 10-a-day: Model Solutions**

1 Radius and diameter

The diameter of a pond is 10 m.
Work out the radius.

The radius is half the diameter
10 ÷ 2 = 5
Answer: 5 m

2 Expected number

The probability that a seed grows is 0.4.
Mia plants 40 seeds.
How many seeds would you expect to grow?

Expected number = probability × number of trials
0.4 × 40 = 16
Answer: 16

3 Simplifying expressions

Simplify 3p + 3y + 4p + 5y

Collect the p terms: 3 + 4 = 7p
Collect the y terms: 3 + 5 = 8y
Answer: 7p + 8y

4 Money: saving

Kiran wants to buy a game for £37.
Kiran has saved £16.
How much more does Kiran need?

£37 − £16 = £21
Answer: £21

5 Angles in a quadrilateral

The diagram shows a quadrilateral.
Work out the size of angle q.
The diagram is not drawn accurately.

Angles in a quadrilateral add up to 360°
135 + 60 + 100 = 295
360 − 295 = 65
Answer: q = 65°

6 Function machines

Here is a function machine.
The output is 52.
Work out the input.

Work backwards using the opposite operations
52 + 8 = 60
60 ÷ 4 = 15
Answer: 15

7 Powers

Work out 10^5.

$10^5 = 10 \times 10 \times 10 \times 10 \times 10$
$= 100000$
Answer: 100000

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8 Cost from area

A rectangular lawn is 9 m long and 7 m wide.
Turf costs £8 per m^2.
Work out the cost of covering the lawn.

Area = $9 \times 7 = 63$ m^2
Cost = $63 \times £8 = £504$
Answer: £504

9 Probability of not getting a colour

A bag contains 5 green marbles, 4 black marbles and 4 red marbles.
One is taken at random.
Write down the probability that it is not green.

Number that are not green: $4 + 4 = 8$
Total: 13
Probability = $\frac{8}{13}$
Answer: $\mathbf{\frac{8}{13}}$

10 Inequalities

n is a whole number.
Write down all the possible values of n when
$-2 < n \leq 4$

n is bigger than -2 and at most 4
The smallest whole number is -1 and the largest is 4
Answer: $-1, 0, 1, 2, 3, 4$