Day 165 **C Tier 10-a-day: Model Solutions**

1 Angles in a triangle (words)

Two of the angles in a triangle are 47° and 89°.
Work out the size of the third angle.

Angles in a triangle add up to 180°
47 + 89 = 136
180 − 136 = 44
Answer: 44°

2 Money: totals

Femi buys a cap and a scarf.
A cap costs £1.00.
A scarf costs £1.10.
Work out the total cost.

£1.00 + £1.10
100p + 110p = 210p = £2.10
Answer: £2.10

3 Length conversions

Change 5 m into cm.

1 m = 100 cm, so multiply by 100: 5 × 100 = 500
Answer: 500 cm

4 Probability of an event not happening

The probability that a seed grows is 0.5.
Work out the probability that this does not happen.

P(not) = 1 − P(event)
1 − 0.5 = 0.5
Answer: 0.5

5 Angles in a quadrilateral

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

Angles in a quadrilateral add up to 360°
85 + 75 + 90 = 250
360 − 250 = 110
Answer: y = 110°

6 Substitution

x = 6 and y = 4
Work out the value of
(a) x + y
(b) x − y

(a) 6 + 4 = 10
(b) 6 − 4 = 2
Answer: (a) 10 (b) 2

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7 Probability of not getting a colour

A bag contains 1 red sweets, 3 black sweets and 3 blue sweets.
One is taken at random.
Write down the probability that it is not black.

Number that are not black: 1 + 3 = 4
Total: 7

Probability = $\frac{4}{7}$

Answer: $\frac{4}{7}$

8 Pattern sequences

The diagram shows the first three patterns in a sequence made by Dev.
Each pattern is made from counters.
How many counters are in Pattern 5?

Pattern n is n rows of (n + 1): 1 × 2, 2 × 3, 3 × 4
Pattern 5 is 5 × 6 = 30
Answer: 30

9 Expected number

The probability that a bus is late is $\frac{1}{10}$.

There are 60 buses in a week.
How many buses would you expect to be late?

Expected number = probability × number of trials

$\frac{1}{10} \times 60 = 6$

Answer: 6

10 Prime numbers

Write down the prime number in this list.
25, 35, 43, 51

A prime number has exactly two factors, 1 and itself
25 = 5 × 5
35 = 5 × 7
51 = 3 × 17
Answer: 43