Day 337 **C Tier 10-a-day: Model Solutions**

1 Time conversions

Change 360 minutes into hours.

60 minutes = 1 hours, so divide by 60: 360 ÷ 60 = 6

Answer: 6 hours

2 The range

Here are the ages of some children.
9 12 9 5 9 6
Work out the range.

Range = largest value − smallest value
12 − 5 = 7

Answer: 7

3 Rounding

Write 7288 to the nearest thousand.

Look at the hundreds digit, which is 2
2 is less than 5, so round down

Answer: 7000

4 Probability from a bag

A bag contains 8 green, 6 red and 1 yellow sweets.
One is taken at random.
Write down the probability that it is red.

There are 15 in total, and 6 are red

Probability = $\frac{6}{15} = \frac{2}{5}$

Answer: $\frac{2}{5}$

5 Number puzzles

I think of a number.
I multiply it by 9.
My answer is 81.
What number did I think of?

Work backwards: divide by 9
81 ÷ 9 = 9

Answer: 9

6 Two-way tables

The two-way table shows some information.
Work out the missing number, shown by ?

Year 7 row: 10 + 3 = 13

Answer: 13

7 Substitution

Work out the value of 9x − 29 when x = 4.

9x = 9 × 4 = 36
36 − 29 = 7

Answer: 7

8 Perimeter of a square from its area

A square mat has an area of 81 cm^2.
Work out the perimeter of the mat.

Side × side = 81, so the side is 9 cm (because 9 × 9 = 81)
Perimeter = 4 × 9 = 36

Answer: 36 cm

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9 Pattern sequences

Matchsticks are used to make a pattern of triangles.
The diagram shows the first three patterns.
How many matchsticks are needed for
(a) Pattern 8
(b) Pattern 9

Pattern 1, 2, 3 have 3, 5, 7 matchsticks
Each pattern has 2 more matchsticks than the one before
Pattern 8: $3 + 2 \times 7 = 17$
Pattern 9: $3 + 2 \times 8 = 19$
Answer: (a) 17 (b) 19

10 Multiplying multiples of 10

Work out 30×40.

Work out $3 \times 4 = 12$
Then put the zeros back on
Answer: 1200