Day 246 **C Tier 10-a-day: Model Solutions**

1 Number puzzles

Nina thinks of a number.
Nina adds 10.
The answer is 34.
What number did Nina think of?

Subtract 10 from 34
34 − 10 = 24
Answer: 24

2 Units of time

How many seconds are there in 7 minutes?

1 minute = 60 seconds
7 × 60 = 420
Answer: 420

3 Scaling a recipe

A recipe for a rice dish for 20 people uses 750 g of rice.
Work out how much rice is needed for 4 people.

4 people is 5 times fewer than 20 people
750 ÷ 5 = 150
Answer: 150 g

4 Coordinates

Write down the coordinates of
(a) point F
(b) point Q

Go across first (x), then up (y)
F is 7 across and 7 up
Q is 5 across and 2 up
Answer: (a) (7, 7) (b) (5, 2)

5 Angles in parallel lines

Two parallel lines are crossed by a straight line.
Work out the size of angle q.
Give a reason for your answer.

The angles are in matching positions, so they are corresponding angles
Corresponding angles are equal
q = 125°
Answer: q = 125° (corresponding angles)

6 Equivalent fractions

Find the missing number.

$\frac{2}{5} = \frac{?}{15}$

5 × 3 = 15, so multiply the top by 3 as well
2 × 3 = 6
Answer: 6

7 Reflecting a point

The point P has coordinates (−1, 2).
P is reflected in the y-axis.
Write down the coordinates of the image of P.

The y-coordinate stays the same and the x-coordinate changes sign
Answer: (1, 2)

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8 Timetables

The table shows the times of two buses.
How many minutes does Bus 1 take to go from Park Road to Library?

08:45 − 08:20
Count on from 08:20 to 08:45
Answer: 25 minutes

9 The median

Here are the marks in a test.
12 9 19 5 16 19 5 11 9
Work out the median.

Put the numbers in order: 5 5 9 9 11 12 16 19 19
The middle number is 11
Answer: 11

10 Circles with an approximate pi

A circle has a radius of 50 cm.
Work out its circumference.
Use π = 3.14

Diameter = 2 × 50 = 100 cm
Circumference = π × diameter = 3.14 × 100 = 314
Answer: 314 cm