**Day 92** **C Tier 10-a-day: Model Solutions**

## 1 Fractions of a shape

What fraction of the shape is shaded?

There are 10 equal parts
9 parts are shaded

Fraction shaded = $\frac{9}{10}$

**Answer:** $\frac{9}{10}$

## 2 Rates

A baker makes 5 loaves each hour.
How many hours does it take to reach 20 loaves?

20 ÷ 5 = 4
**Answer: 4 hours**

## 3 Choosing units

Which unit is best for measuring the capacity of a car fuel tank?
Choose from: ml, litres

A fuel tank holds about 50 litres
So the best unit is litres
**Answer: litres**

## 4 Distance from speed and time

A coach travels at 70 km/h for 5 hours.
How far does it travel?

Distance = speed × time
70 × 5 = 350
**Answer: 350 km**

## 5 Angles in parallel lines

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

The angles are on opposite sides of the transversal between the parallel lines, so they are alternate angles
Alternate angles are equal
y = 60°
**Answer: y = 60° (alternate angles)**

## 6 Special sequences

Here are the first four terms of a sequence.
4, 40, 400, 4000
Write down the next two terms.

Each term is 10 times the one before
4000 × 10 = 40000
40000 × 10 = 400000
**Answer: 40000, 400000**

## 7 Counting outcomes

A café has 4 sandwiches and 4 drinks.
A lunch deal is one sandwich and one drink.
How many different choices are there?

4 × 4 = 16
**Answer: 16**

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## 8 Number puzzles

I think of a number.
I multiply it by 9.
My answer is 144.
What number did I think of?

Work backwards: divide by 9
144 ÷ 9 = 16
**Answer: 16**

## 9 Circles with an approximate pi

A circle has a diameter of 13 cm.
Use π = 3 to work out an estimate for its circumference.

Circumference = π × diameter
3 × 13 = 39
**Answer: 39 cm**

## 10 Substitution into formulae

Use the formula T = 5m − 6n to work out the value of T when m = 5 and n = 2.

T = 5 × 5 − 6 × 2
= 25 − 12 = 13
**Answer: T = 13**