Day 72 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of z − 8 when z = 15.

15 − 8 = 7

Answer: 7

2 Perimeter on a square grid

The diagram shows a shape drawn on a square grid.
Each square has a side of length 1 m.
Work out the perimeter of the shape.

Count the length of each side going round the shape.
7 + 1 + 4 + 3 + 3 + 4 = 22

Answer: 22 m

3 Metric units

Change 4 cm to millimetres.

1 cm = 10 mm
4 × 10 = 40

Answer: 40 mm

4 Coordinates

ABCD is a rectangle.
A is the point (0, 0), B is the point (0, 5) and C is the point (5, 5).
Write down the coordinates of D.

AB is vertical so D has the same y-coordinate as A: 0
BC is horizontal so D has the same x-coordinate as C: 5

Answer: (5, 0)

5 Two-way tables

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

The row total is 16 and the other number is 4
16 − 4 = 12

Answer: 12

6 Enlargement

A rectangle is 6 cm long and 3 cm wide.
It is enlarged by scale factor 2.
Write down the length and the width of the enlarged rectangle.

Multiply each length by 2
6 × 2 = 12
3 × 2 = 6

Answer: length 12 cm, width 6 cm

7 Time from distance and speed

A car travels 50 miles at 10 mph.
How long does the journey take?

Time = distance ÷ speed
50 ÷ 10 = 5

Answer: 5 hours

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8 Angles between clock hands

Work out the smaller angle between the hour hand and the minute hand of a clock at 1 o'clock.

There are 12 hours round a clock, so each hour is 360 ÷ 12 = 30°
At 1 o'clock the hands are 1 hours apart (going the short way: 1)
1 × 30 = 30
Answer: 30°

9 Timetables

The table shows the times of two buses.
Jo gets on Bus 2 at Park Road.
What time does Jo get to Station?

Read along the row for Station in the Bus 2 column
Answer: 10:50

10 Substitution into formulae

Use the formula C = 4m − 5n to work out the value of C when m = 3 and n = 2.

C = 4 × 3 − 5 × 2
= 12 − 10 = 2
Answer: C = 2