Day 47 **C Tier 10-a-day: Model Solutions**

1 Addition

Work out 255 + 419.

Add the hundreds, tens and units
255 + 419 = 674
Answer: 674

2 Bar charts

The bar chart shows the favourite fruit of some students.
Work out the total number of students.

4 + 15 + 5 + 18 + 9 = 51
Answer: 51

3 Solving equations

Solve 8 + a = 12

Subtract 8 from both sides
a = 12 − 8 = 4
Answer: a = 4

4 Frequency tables

The table shows the number of brothers and sisters of each student in a class.
Work out the total frequency.

5 + 9 + 1 + 2 + 7 = 24
Answer: 24

5 Substitution

Work out the value of c^3 when c = 3.

c^3 means c × c × c
3 × 3 × 3 = 27
Answer: 27

6 Two-way tables

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

Coffee column: 5 + 8 = 13
Answer: 13

7 Squares and roots

Work out 5^3.

5^3 = 5 × 5 × 5
= 125
Answer: 125

8 Cost from perimeter

A rectangular play area is 7 m long and 9 m wide.
Fencing costs £8 per metre.
Work out the cost of putting fence all the way round the play area.

Perimeter = 7 + 9 + 7 + 9 = 32 m
Cost = 32 × £8 = £256
Answer: £256

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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 7
(b) Pattern 9

Pattern 1, 2, 3 have 3, 5, 7 matchsticks
Each pattern has 2 more matchsticks than the one before
Pattern 7: $3 + 2 \times 6 = 15$
Pattern 9: $3 + 2 \times 8 = 19$
Answer: (a) 15 (b) 19

10 Circles with an approximate pi

A circle has a radius of 2 cm.
Work out its circumference.
Use $\pi = 3.14$

Diameter $= 2 \times 2 = 4$ cm
Circumference $= \pi \times$ diameter $= 3.14 \times 4 = 12.56$
Answer: 12.56 cm