Day 5 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of $a - 4$ when $a = 7$.

$7 - 4 = 3$

Answer: 3

2 Negative numbers: temperature

The temperature is −4°C.
It rises by 6°C.
What is the new temperature?

$-4 + 6 = 2$

Answer: 2°C

3 Fractions of a group

Out of 25 people at a party, 10 are children.
What fraction of the people are children? Give your answer in its simplest form.

$\frac{10}{25}$

Divide top and bottom by 5: $\frac{2}{5}$

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

4 Tables of values

The table shows some values of x and y.
(a) Write down the value of y when x = 5.
(b) Write down the value of x when y = 4.

(a) Find 5 in the top row; the number underneath is 16
(b) Find 4 in the bottom row; the number above is 1

Answer: (a) 16 (b) 1

5 Area on a square grid

The diagram shows a shape drawn on a square grid.
Each square has an area of 1 cm^2.
Work out the area of the shape.

Count the squares in the shape.
Split into two rectangles: $3 \times 4 = 12$ and $1 \times 3 = 3$
$12 + 3 = 15$

Answer: 15 cm^2

6 Prime numbers

Write down the prime number in this list.
49, 47, 33, 27

A prime number has exactly two factors, 1 and itself
$49 = 7 \times 7$
$33 = 3 \times 11$
$27 = 3 \times 9$

Answer: 47

7 Enlargement

A rectangle is 5 cm long and 1 cm wide.
It is enlarged by scale factor 3.
Write down the length and the width of the enlarged rectangle.

Multiply each length by 3
$5 \times 3 = 15$
$1 \times 3 = 3$

Answer: length 15 cm, width 3 cm

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8 Sharing in a ratio

Sam and Aisha share £32 in the ratio 3 : 1.
Work out how much each person gets.

Number of parts = 3 + 1 = 4
One part = 32 ÷ 4 = 8
Sam: 3 × 8 = 24 Aisha: 1 × 8 = 8
Answer: Sam £24, Aisha £8

9 Division in context

Each minibus holds 30 people.
72 people need a lift.
How many minibuses are needed?

72 ÷ 30 = 2 remainder 12
The extra people need another minibus
Answer: 3

10 Cost from perimeter

A rectangular garden is 12 m long and 6 m wide.
Fencing costs £5 per metre.
Work out the cost of putting fence all the way round the garden.

Perimeter = 12 + 6 + 12 + 6 = 36 m
Cost = 36 × £5 = £180
Answer: £180