Day 308 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of 8 + t when t = 10.

8 + 10 = 18

Answer: 18

2 Finish time

A lesson starts at 12:30 pm.
It lasts 55 minutes.
At what time does the lesson end?

Add the minutes: 12:30 pm + 55 minutes = 1:25 pm

Answer: 1:25 pm

3 Scaling a recipe

A recipe for a rice dish for 5 people uses 250 g of butter.
Work out how much butter is needed for 25 people.

25 people is 5 times as many as 5 people
250 × 5 = 1250

Answer: 1250 g

4 Angles in a quadrilateral

The diagram shows a quadrilateral.
Work out the size of angle a.
The diagram is not drawn accurately.

Angles in a quadrilateral add up to 360°
90 + 80 + 75 = 245
360 − 245 = 115

Answer: a = 115°

5 Proportion

2 cartons cost £1.70.
Work out the cost of 9 cartons.

Cost of one carton: 170p ÷ 2 = 85p
85p × 9 = 765p
765p = £7.65

Answer: £7.65

6 Prime numbers

Write down the prime number in this list.
9, 21, 11, 15

A prime number has exactly two factors, 1 and itself
9 = 3 × 3
21 = 3 × 7
15 = 3 × 5

Answer: 11

7 Simplifying expressions

Simplify 2c + 6 + 7c

Letters: 2c + 7c = 9c
Numbers: 6 on its own

Answer: 9c + 6

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8 Time conversions

Change
(a) 600 seconds into minutes
(b) 5 years into months

(a) 60 seconds = 1 minutes, so divide by 60: 600 ÷ 60 = 10
(b) 1 years = 12 months, so multiply by 12: 5 × 12 = 60
Answer: (a) 10 minutes (b) 60 months

9 Inequalities

n is a whole number.
Write down all the possible values of n when
$-2 < n < 1$

n is bigger than −2 and smaller than 1
The smallest whole number is −1 and the largest is 0
Answer: −1, 0

10 Adding fractions

Work out $\frac{2}{9} + \frac{6}{9}$.

The denominators are the same, so add the numerators
2 + 6 = 8
Answer: $\mathbf{\frac{8}{9}}$