Day 147 **C Tier 10-a-day: Model Solutions**

1 Rates

A machine makes 8 bottles each hour.
How many bottles does it make in 4 hours?

8 × 4 = 32
Answer: 32 bottles

2 Subtraction

Work out 339 − 127.

339 − 127 = 212
Answer: 212

3 Angles round a point

The diagram shows 4 angles round a point.
Work out the size of angle b.
The diagram is not drawn accurately.

Angles round a point add up to 360°
120 + 90 + 60 = 270
360 − 270 = 90
Answer: b = 90°

4 Metric units

Change 2 kg to grams.

1 kg = 1000 g
2 × 1000 = 2000
Answer: 2000 g

5 Mass and capacity conversions

Change 8 litres into ml.

1 litres = 1000 ml, so multiply by 1000: 8 × 1000 = 8000
Answer: 8000 ml

6 Expressions for perimeter

A square has sides of length x cm.
Write an expression for the perimeter of the shape.
Give your answer in its simplest form.

Perimeter = x + x + x + x
= 4x
Answer: 4x cm

7 Cost from area

A rectangular patio is 3 m long and 3 m wide.
Paving costs £12 per m^2.
Work out the cost of covering the patio.

Area = 3 × 3 = 9 m^2
Cost = 9 × £12 = £108
Answer: £108

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8 Probability of not getting a colour

A bag contains 2 yellow sweets, 1 black sweets and 5 red sweets.
One is taken at random.
Write down the probability that it is not red.

Number that are not red: 2 + 1 = 3
Total: 8

Probability = $\frac{3}{8}$

Answer: $\mathbf{\frac{3}{8}}$

9 Tables of values

The table shows some values of x and y.
(a) Write down the value of y when x = 1.
(b) Write down the value of x when y = 18.

(a) Find 1 in the top row; the number underneath is 9
(b) Find 18 in the bottom row; the number above is 4
Answer: (a) 9 (b) 4

10 Pie chart angles

90 students were asked about their way of travelling to school.
18 of them walk to school.
The results are shown in a pie chart.
Work out the angle of the sector for those students.

360° ÷ 90 = 4° for each student
18 × 4° = 72°
Answer: 72°