Day 232 **C Tier 10-a-day: Model Solutions**

1 Length conversions

Change
(a) 7 cm into mm
(b) 8 km into m

(a) 1 cm = 10 mm, so multiply by 10: 7 × 10 = 70
(b) 1 km = 1000 m, so multiply by 1000: 8 × 1000 = 8000
Answer: (a) 70 mm (b) 8000 m

2 Writing numbers in figures

Write eight thousand and two in figures.

Write each part: 8000 + 2
Add the parts together
Answer: 8002

3 Area of a triangle

The diagram shows a triangle.
Work out the area of the triangle.
The diagram is not drawn accurately.

Area of a triangle = base × height ÷ 2
8 × 8 = 64
64 ÷ 2 = 32
Answer: 32 cm^2

4 24-hour clock

Write 10:40 using am or pm.

Times before 12:00 are am
Answer: 10:40 am

5 Simplifying expressions

Simplify 5n + 9 + 5n

Letters: 5n + 5n = 10n
Numbers: 9 on its own
Answer: 10n + 9

6 Fractions of a group

Out of 10 people at a party, 6 are children.
What fraction of the people are children? Give your answer in its simplest form.

$\frac{6}{10}$

Divide top and bottom by 2: $\frac{3}{5}$

Answer: $\frac{3}{5}$

7 Formulae in words

Here is a rule to work out the fare for a taxi journey.
Fare (£) = 7 × number of miles + 5
Work out the fare for a journey of 7 miles.

Fare (£) = 7 × 7 + 5
= 49 + 5 = 54
Answer: £54

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8 Cost from area

A rectangular floor is 6 m long and 3 m wide.
Carpet costs £8 per m^2.
Work out the cost of covering the floor.

Area = 6 × 3 = 18 m^2
Cost = 18 × £8 = £144
Answer: £144

9 Ordering fractions

Write these fractions in order, starting with the smallest.
$\frac{2}{12}, \frac{8}{12}, \frac{9}{12}$

The denominators are all 12, so compare the numerators
2, 8, 9 (numerators in order)
Answer: $\mathbf{\frac{2}{12}, \frac{8}{12}, \frac{9}{12}}$

10 Pie chart angles

40 students were asked about their favourite fruit.
5 of them chose bananas.
The results are shown in a pie chart.
Work out the angle of the sector for those students.

360° ÷ 40 = 9° for each student
5 × 9° = 45°
Answer: 45°