Day 30 **C Tier 10-a-day: Model Solutions**

1 Compass directions and turns

Sam is facing north.
Sam turns 180° clockwise.
Which direction is Sam facing now?

180° is 2 quarter turns
Turning clockwise from north: north → east → south
Answer: south

2 Solving equations

Solve $\frac{a}{6} = 3$

$\frac{a}{6}$ means a ÷ 6, so multiply both sides by 6
a = 3 × 6 = 18
Answer: a = 18

3 Rounding money

Round £2.19 to the nearest 10p.

Look at the last digit, which is 9
5 or more, so round up
Answer: £2.20

4 Substitution

Work out the value of $\frac{h}{9}$ when h = 72.

$\frac{h}{9}$ means h ÷ 9
72 ÷ 9 = 8
Answer: 8

5 Rates

A printer prints 3 pages each minute.
How many pages does it print in 7 minutes?

3 × 7 = 21
Answer: 21 pages

6 Number puzzles

I think of a number.
I multiply it by 5.
My answer is 45.
What number did I think of?

Work backwards: divide by 5
45 ÷ 5 = 9
Answer: 9

7 Time from distance and speed

A train travels 420 miles at 60 mph.
How long does the journey take?

Time = distance ÷ speed
420 ÷ 60 = 7
Answer: 7 hours

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8 Time

A lesson starts at 3:50 pm.
It finishes at 5:20 pm.
How long does it last?

3:50 pm to 4:00 pm is 10 minutes
4:00 pm to 5:00 pm is 1 hour
5:00 pm to 5:20 pm is 20 minutes
Add the parts together
Answer: 1 hour 30 minutes

9 Cost from area

A rectangular patio is 7 m long and 5 m wide.
Paving costs £12 per m^2.
Work out the cost of covering the patio.

Area = 7 × 5 = 35 m^2
Cost = 35 × £12 = £420
Answer: £420

10 Formulae in words

Here is a rule to work out the fare for a taxi journey.
Fare (£) = 3 × number of miles + 20
Work out the fare for a journey of 8 miles.

Fare (£) = 3 × 8 + 20
= 24 + 20 = 44
Answer: £44