**Day 14** **C Tier 10-a-day: Model Solutions**

## 1 Solving equations

Solve 9w = 18

9w means 9 × w, so divide both sides by 9
w = 18 ÷ 9 = 2
**Answer: w = 2**

## 2 Multiples

Here is a list of numbers.
13, 66, 65, 57, 31
Write down the multiple of 11.

Check which number is in the 11 times table
11 × 6 = 66
**Answer: 66**

## 3 Distance from speed and time

A runner travels at 8 km/h for 3 hours.
How far does it travel?

Distance = speed × time
8 × 3 = 24
**Answer: 24 km**

## 4 Duration of a journey

A film starts at 9:50 am and finishes at 11:20 am.
How long is the film?

Count on from 9:50 am to 11:20 am:
10 minutes to 10:00 am
1 hour to 11:00 am
20 minutes to 11:20 am
Total: 1 hour 30 minutes
**Answer: 1 hour 30 minutes**

## 5 Simplifying expressions

Simplify 3n + 4q + 2n + 4q

Collect the n terms: 3 + 2 = 5n
Collect the q terms: 4 + 4 = 8q
**Answer: 5n + 8q**

## 6 Midpoint of a line

C is the point (−1, 1).
D is the point (5, 9).
Work out the coordinates of the midpoint of CD.

Find the number halfway between the x-coordinates: (−1 + 5) ÷ 2 = 2
Find the number halfway between the y-coordinates: (1 + 9) ÷ 2 = 5
**Answer: (2, 5)**

## 7 Fractions, decimals and percentages

Write 90% as a fraction in its simplest form.

$90\% = \frac{90}{100}$

Simplify: divide the top and bottom by 10

$= \frac{9}{10}$

**Answer:** $\frac{9}{10}$

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## 8 The nth term

The nth term of a sequence is 4n + 2.
Work out the 7th term of the sequence.

Put n = 7 into 4n + 2
4 × 7 + 2 = 30
**Answer: 30**

## 9 Stem and leaf diagrams

The stem and leaf diagram shows the ages, in years, of people in a club.
Work out the range.

Largest = 57, smallest = 30
57 − 30 = 27
**Answer: 27**

## 10 Adding fractions

Work out $\frac{7}{9} - \frac{5}{9}$.

The denominators are the same, so subtract the numerators
7 − 5 = 2
**Answer:** $\frac{2}{9}$