Day 105 **C Tier 10-a-day: Model Solutions**

1 Perimeter and area of a square

A square has sides of length 4 m.
(a) Work out its perimeter.
(b) Work out its area.

(a) A square has 4 equal sides: 4 × 4 = 16
(b) Area = side × side: 4 × 4 = 16
Answer: (a) 16 m (b) 16 m^2

2 Line graphs

The line graph shows the depth of water in a tank at different times.
Write down the depth of water at 11 am.

Go up from 11 am to the line, then across to the scale: 14 cm
Answer: 14 cm

3 Reading a scale

The diagram shows part of a measuring scale.
Write down the reading shown by the arrow.

The labelled marks go up in 1. There are 2 small steps between labelled marks, so each small step is 1 ÷ 2 = 0.5.
The arrow is 1 small steps after 3.
3 + 1 × 0.5 = 3.5
Answer: 3.5 ml

4 Probability of an event not happening

The probability that the bus is late is $\frac{7}{10}$.

Work out the probability that this does not happen.

P(not) = 1 − P(event)
$1 - \frac{7}{10} = \frac{3}{10}$
Answer: $\frac{3}{10}$

5 Estimation

Estimate the value of 34 + 42 by rounding each number to the nearest 10.

34 rounds to 30 and 42 rounds to 40
30 + 40 = 70
Answer: 70

6 Reading a pie chart

44 children were asked about their favourite animal.
The pie chart shows the results.
How many children chose Cat?

The Cat sector is a half of the pie chart
44 ÷ 2 = 22
Answer: 22

7 Time

A film starts at 2:45 pm.
It finishes at 5:15 pm.
How long does it last?

2:45 pm to 3:00 pm is 15 minutes
3:00 pm to 5:00 pm is 2 hours
5:00 pm to 5:15 pm is 15 minutes
Add the parts together
Answer: 2 hours 30 minutes

Day 105 **C Tier 10-a-day: Model Solutions**

8 The nth term

The nth term of a sequence is 4n.
Write down the first three terms of the sequence.

Put n = 1, 2, 3 into 4n
4 × 1 = 4, 4 × 2 = 8, 4 × 3 = 12
Answer: 4, 8, 12

9 Bearings from compass points

Bearings are measured clockwise from north.
Write down the three-figure bearing of
(a) west
(b) north-east

North is 000°. Each compass point to the right (clockwise) is a further 45°.
(a) west is 270°
(b) north-east is 045°
Answer: (a) 270° (b) 045°

10 Pattern sequences

The diagram shows the first three patterns in a sequence made by Kim.
Each pattern is made from dots.
How many dots are in Pattern 7?

The patterns have 1, 3, 6 dots
Each pattern has one more row than the last: add 1, then 2, then 3, ...
Counting on: 1, 3, 6, 10, 15, 21, 28
Answer: 28