Day 320 **C Tier 10-a-day: Model Solutions**

1 Probability words

Choose a word from the list to describe the probability of the event.
A bag contains 1 red counter and 3 blue counters. Without looking, a counter is taken. It is blue.
impossible, unlikely, even chance, likely, certain

3 of the 4 counters are blue
So the event is likely
Answer: likely

2 Solving equations

Solve $q - 8 = 5$

Add 8 to both sides
$q = 5 + 8 = 13$
Answer: $q = 13$

3 Volume by counting cubes

A box holds 1 cm cubes in layers.
Each layer is 3 cubes long and 5 cubes wide.
There are 2 layers.
How many cubes are there altogether?

Cubes in one layer: $3 \times 5 = 15$
Number of layers: 2
$15 \times 2 = 30$
Answer: 30 cubes

4 Ordering negative numbers

Write these numbers in order, starting with the largest.
8, −1, 4, 1, −5

Use a number line: negative numbers are smaller the further they are from 0
Answer: 8, 4, 1, −1, −5

5 Rates

A baker makes 2 loaves each hour.
How many loaves does the baker make in 9 hours?

$2 \times 9 = 18$
Answer: 18 loaves

6 Estimation

Estimate the value of 58 + 16 by rounding each number to the nearest 10.

58 rounds to 60 and 16 rounds to 20
60 + 20 = 80
Answer: 80

7 Shaded area

The diagram shows a rectangle with a smaller rectangle cut out of it.
Work out the area of the shaded part.
The diagram is not drawn accurately.

Big rectangle: $14 \times 8 = 112$
Small rectangle: $8 \times 6 = 48$
Shaded area: $112 - 48 = 64$
Answer: 64 cm^2

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8 Forming and solving equations

Sam has x stickers.
A friend gives Sam 12 more stickers.
Sam now has 20 stickers.
(a) Write down an equation using x.
(b) Solve your equation to find how many stickers Sam had at the start.

(a) $x + 12 = 20$
(b) $x = 20 - 12 = 8$
Answer: (a) $x + 12 = 20$ (b) $x = 8$

9 Perimeter of an L-shape

The diagram shows an L-shape.
All the corners are right angles.
Work out the perimeter of the shape.
The diagram is not drawn accurately.

Find the two missing sides.
Missing horizontal side: $12 - 9 = 3$
Missing vertical side: $11 - 7 = 4$
Add all six sides: $12 + 7 + 3 + 4 + 9 + 11 = 46$
Answer: 46 cm

10 Probability of not getting a colour

A bag contains 5 red marbles, 6 white marbles and 8 yellow marbles.
One is taken at random.
Write down the probability that it is not red.

Number that are not red: $6 + 8 = 14$
Total: 19
Probability = $\frac{14}{19}$
Answer: $\frac{14}{19}$