Day 280 **C Tier 10-a-day: Model Solutions**

1 Substitution

Work out the value of b − 9 when b = 13.

13 − 9 = 4

Answer: 4

2 Reflecting a point

The point P has coordinates (−6, 6).
P is reflected in the x-axis.
Write down the coordinates of the image of P.

The x-coordinate stays the same and the y-coordinate changes sign

Answer: (−6, −6)

3 Negative numbers: temperature

The temperature is −6°C.
It rises by 12°C.
What is the new temperature?

−6 + 12 = 6

Answer: 6°C

4 Sequences

Here are the first four terms of a sequence.
6, 14, 22, 30
Is 86 a term in this sequence?
You must show your working.

The terms go up by 8 each time
Continue the sequence: 6, 14, 22, 30, 38, 46, 54, 62, 70, 78, 86, 94
86 is in the list

Answer: Yes

5 Vertically opposite angles

The diagram shows two straight lines crossing.
Work out the size of angle x.
The diagram is not drawn accurately.

Vertically opposite angles are equal
x = 70°

Answer: x = 70°

6 Currency conversion

£1 = $1.25
Change £20 into US dollars.

£20 × 1.25 = $25

Answer: $25

7 Coordinates

(a) Write down the coordinates of point A.
(b) Which point has coordinates (−1, 3)?

(a) A is right 3 and up 1
(b) Go left 1 and up 3: this is point B

Answer: (a) (3, 1) (b) B

8 Estimation

Estimate the value of 32 + 47 by rounding each number to the nearest 10.

32 rounds to 30 and 47 rounds to 50
30 + 50 = 80

Answer: 80

Day 280 **C Tier 10-a-day: Model Solutions**

9 Cost from perimeter

A rectangular field is 10 m long and 10 m wide.
Fencing costs £6 per metre.
Work out the cost of putting fence all the way round the field.

Perimeter = 10 + 10 + 10 + 10 = 40 m
Cost = 40 × £6 = £240
Answer: £240

10 Probability of not getting a colour

A bag contains 3 blue sweets, 3 black sweets and 8 red sweets.
One is taken at random.
Write down the probability that it is not red.

Number that are not red: 3 + 3 = 6
Total: 14
Probability = $\frac{6}{14} = \frac{3}{7}$

Answer: $\frac{3}{7}$