Day 245 **C Tier 10-a-day: Model Solutions**

1 Multiplying and dividing by 10 and 100

Work out 3.2 × 100.

Multiplying by 100 moves each digit 2 places to the left

Answer: 320

2 Solving equations

Solve h − 12 = 8

Add 12 to both sides

h = 8 + 12 = 20

Answer: h = 20

3 Simplifying ratios

Simplify the ratio 56 : 63

Divide both numbers by 7

56 ÷ 7 = 8 and 63 ÷ 7 = 9

Answer: 8 : 9

4 Rotational symmetry

Write down the order of rotational symmetry of

(a) a regular pentagon

(b) a kite

(a) A regular pentagon fits onto itself 5 times in a full turn

(b) A kite fits onto itself 1 time in a full turn

Answer: (a) 5 (b) 1

5 Cost of one item

2 pencils cost £1.30.

Work out the cost of one pencil.

130p ÷ 2 = 65p

Answer: 65p

6 Tables of values

Complete the table of values for y = x + 4.

When x = 1: y = 1 + 4 = 5

When x = 3: y = 3 + 4 = 7

Answer: x = 1: y = 5; x = 3: y = 7

7 Estimation

Estimate the value of 81 + 29 by rounding each number to the nearest 10.

81 rounds to 80 and 29 rounds to 30

80 + 30 = 110

Answer: 110

8 Cost from perimeter

A rectangular field is 9 m long and 3 m wide.

Fencing costs £3 per metre.

Work out the cost of putting fence all the way round the field.

Perimeter = 9 + 3 + 9 + 3 = 24 m

Cost = 24 × £3 = £72

Answer: £72

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9 Inequalities

n is a whole number.
Write down all the possible values of n when
$0 \leq n \leq 4$

n is at least 0 and at most 4
The smallest whole number is 0 and the largest is 4
Answer: 0, 1, 2, 3, 4

10 Relative frequency

A coin is flipped 40 times and lands on heads 14 times.
Estimate the probability that it lands on heads next time.
Give your answer as a fraction in its simplest form.

Relative frequency = $\frac{14}{40}$

$= \frac{7}{20}$

Answer: $\frac{7}{20}$