Day 249 **C Tier 10-a-day: Model Solutions**

1 Writing numbers in words

Write the number 6648 in words.

Split the number: 6000 + 600 + 48

Answer: six thousand six hundred and forty-eight

2 Solving equations

Solve c − 8 = 4

Add 8 to both sides

c = 4 + 8 = 12

Answer: c = 12

3 Multiples

Here is a list of numbers.

55, 12, 43, 32, 70

Write down the multiple of 3.

Check which number is in the 3 times table

3 × 4 = 12

Answer: 12

4 Angles on a straight line

Three lines meet at a point on a straight line.

Work out the size of angle x.

The diagram is not drawn accurately.

Angles on a straight line add up to 180°

70 + 60 = 130

180 − 130 = 50

Answer: x = 50°

5 Pattern sequences

Matchsticks are used to make a pattern of squares.

The diagram shows the first three patterns.

How many matchsticks are needed for

(a) Pattern 5

(b) Pattern 6

Pattern 1, 2, 3 have 4, 7, 10 matchsticks

Each pattern has 3 more matchsticks than the one before

Pattern 5: 4 + 3 × 4 = 16

Pattern 6: 4 + 3 × 5 = 19

Answer: (a) 16 (b) 19

6 Angles in parallel lines

Two parallel lines are crossed by a straight line.

Work out the size of angle b.

Give a reason for your answer.

The angles are on opposite sides of the transversal between the parallel lines, so they are alternate angles

Alternate angles are equal

b = 110°

Answer: b = 110° (alternate angles)

7 Tables of values

Complete the table of values for y = x + 5.

When x = 0: y = 0 + 5 = 5

When x = 3: y = 3 + 5 = 8

Answer: x = 0: y = 5; x = 3: y = 8

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8 Relative frequency

A biased dice is rolled 50 times. It lands on a six 23 times.
Estimate the probability that it lands on a six next time.
Give your answer as a fraction in its simplest form.

Relative frequency = $\frac{23}{50}$

Answer: $\frac{23}{50}$

9 Division in context

Each coach holds 25 people.
97 people need a lift.
How many coaches are needed?

97 ÷ 25 = 3 remainder 22
The extra people need another coach
Answer: 4

10 Time from distance and speed

A cyclist travels 24 km at 12 km/h.
How long does the journey take?

Time = distance ÷ speed
24 ÷ 12 = 2
Answer: 2 hours