Day 155 **C Tier 10-a-day: Model Solutions**

1 The mode

Here are the marks in a test.
14 16 3 14 20 17 12 19 9 8
Write down the mode.

The mode is the value that appears most often
14 appears 2 times
Answer: 14

2 Solving equations

Solve 14 + x = 23

Subtract 14 from both sides
x = 23 − 14 = 9
Answer: x = 9

3 Lines of symmetry

Write down the number of lines of symmetry of
(a) a rectangle
(b) a regular heptagon

(a) A rectangle has 2 lines of symmetry
(b) A regular heptagon has 7 lines of symmetry
Answer: (a) 2 (b) 7

4 Best buys

Pencils are sold in two packs.
Pack A has 2 and costs 70p.
Pack B has 6 and costs £2.70.
Which pack is better value?

Pack A: 70p ÷ 2 = 35p each
Pack B: 270p ÷ 6 = 45p each
Pack A is cheaper per item
Answer: Pack A

5 Duration of a journey

A train leaves at 11:00 am and arrives at 1:15 pm.
How long does the journey take?

Count on from 11:00 am to 1:15 pm:
2 hours to 1:00 pm
15 minutes to 1:15 pm
Total: 2 hours 15 minutes
Answer: 2 hours 15 minutes

6 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 6
(b) Pattern 8

Pattern 1, 2, 3 have 4, 7, 10 matchsticks
Each pattern has 3 more matchsticks than the one before
Pattern 6: 4 + 3 × 5 = 19
Pattern 8: 4 + 3 × 7 = 25
Answer: (a) 19 (b) 25

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7 Number puzzles

I think of a number.
I divide it by 5.
My answer is 6.
What number did I think of?

Work backwards: multiply by 5
6 × 5 = 30
Answer: 30

8 Sharing in a ratio

Sam and Isla share 21 stickers in the ratio 3 : 4.
Work out how much each person gets.

Number of parts = 3 + 4 = 7
One part = 21 ÷ 7 = 3
Sam: 3 × 3 = 9 Isla: 4 × 3 = 12
Answer: Sam 9, Isla 12

9 Division with remainders

13 cards are shared equally between 3 children.
(a) How many does each child get?
(b) How many are left over?

13 ÷ 3 = 4 remainder 1
Answer: (a) 4 (b) 1

10 Tables of values

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

When x = 2: y = 2 + 4 = 6
When x = 4: y = 4 + 4 = 8
Answer: x = 2: y = 6; x = 4: y = 8