**Day 199** **C Tier 10-a-day: Model Solutions**

## 1 Cost of one item

9 apples cost £4.50.
Work out the cost of one apple.

450p ÷ 9 = 50p
**Answer: 50p**

## 2 Missing numbers

Find the missing number.
4 × ? = 8

8 ÷ 4 = 2
**Answer: 2**

## 3 Angles round a point

The diagram shows 4 angles round a point.
Work out the size of angle q.
The diagram is not drawn accurately.

Angles round a point add up to 360°
115 + 70 + 100 = 285
360 − 285 = 75
**Answer: q = 75°**

## 4 Number line

The number line shows an arrow.
Write down the number the arrow points to.

The numbers go up by 1 for each mark
The arrow points to 5
**Answer: 5**

## 5 Perimeter of a regular polygon

The perimeter of a regular octagon is 72 m.
Work out the length of one side.

A regular octagon has 8 equal sides
72 ÷ 8 = 9
**Answer: 9 m**

## 6 Two-way tables

The two-way table shows some information.
Work out the missing number, shown by ?

Year 8 row: 4 + 18 = 22
**Answer: 22**

## 7 Pattern sequences

The diagram shows the first three patterns in a sequence made by Hugo.
Each pattern is made from counters.
How many counters are in Pattern 4?

Pattern n is n rows of (n + 1): 1 × 2, 2 × 3, 3 × 4
Pattern 4 is 4 × 5 = 20
**Answer: 20**

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## 8 Fractions, decimals and percentages

Write 10% as a fraction in its simplest form.

10% = $\frac{10}{100}$

Simplify: divide the top and bottom by 10

= $\frac{1}{10}$

**Answer:** $\frac{1}{10}$

## 9 Substitution into formulae

Use the formula K = 4x + 6y to work out the value of K when x = 2 and y = 4.

K = 4 × 2 + 6 × 4

= 8 + 24 = 32

**Answer: K = 32**

## 10 Perimeter from area

A rectangle has an area of 30 $m^2$.

Its width is 5 m.

Work out the perimeter of the rectangle.

Length = area ÷ width = 30 ÷ 5 = 6

Perimeter = 6 + 5 + 6 + 5 = 22

**Answer: 22 m**