Day 240 **C Tier 10-a-day: Model Solutions**

1 Halves, quarters and thirds

Write down a quarter of 60.

Halve, then halve again: 30, then 15

Answer: 15

2 Number puzzles

Isla thinks of a number.
Isla adds 7.
The answer is 31.
What number did Isla think of?

Subtract 7 from 31

31 − 7 = 24

Answer: 24

3 Perimeter of a regular polygon

The perimeter of a regular octagon is 24 mm.
Work out the length of one side.

A regular octagon has 8 equal sides

24 ÷ 8 = 3

Answer: 3 mm

4 Pictograms

The pictogram shows the number of cars washed on four days.
How many cars on Mon?

Mon has 2 symbols

2 × 10 = 20

Answer: 20

5 Ordering fractions

Write these fractions in order, starting with the largest.

$\frac{4}{12}, \frac{1}{12}, \frac{5}{12}$

The denominators are all 12, so compare the numerators

5, 4, 1 (numerators in order)

Answer: $\mathbf{\frac{5}{12}, \frac{4}{12}, \frac{1}{12}}$

6 Reading straight line graphs

The graph shows the cost of printing photos.
(a) Work out the cost of printing 5 photos.
(b) Leah spends £20 printing photos. How many photos does Leah print?

(a) Go up from 5 on the bottom axis to the line, then across: £24

(b) Go across from 20 on the cost axis to the line, then down: 4

Answer: (a) £24 (b) 4

7 Area on a square grid

The diagram shows a shape drawn on a square grid.
Each square has an area of 1 m^2.
Work out the area of the shape.

Count the squares in the shape.

Split into two rectangles: 2 × 3 = 6 and 3 × 4 = 12

6 + 12 = 18

Answer: 18 m^2

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8 Relative frequency

Out of 20 trains, 10 were late.
Estimate the probability of being late.
Give your answer as a fraction in its simplest form.

Relative frequency = $\frac{10}{20}$

$= \frac{1}{2}$

Answer: $\frac{1}{2}$

9 Cost from perimeter

A rectangular garden is 7 m long and 3 m wide.
Fencing costs £6 per metre.
Work out the cost of putting fence all the way round the garden.

Perimeter = 7 + 3 + 7 + 3 = 20 m
Cost = 20 × £6 = £120
Answer: £120

10 Division in context

Each minibus holds 20 people.
47 people need a lift.
How many minibuses are needed?

47 ÷ 20 = 2 remainder 7
The extra people need another minibus
Answer: 3