Day 138 **C Tier 10-a-day: Model Solutions**

1 The median

Here are the shoe sizes of some students.
9 7 7 6 5 6 7 8 4
Work out the median.

Put the numbers in order: 4 5 6 6 7 7 7 8 9
The middle number is 7
Answer: 7

2 Ordering negative numbers

Write these numbers in order, starting with the smallest.
−1, 5, −8, 0, 6

Use a number line: negative numbers are smaller the further they are from 0
Answer: −8, −1, 0, 5, 6

3 Number puzzles

Dev thinks of a number.
Dev adds 6.
The answer is 32.
What number did Dev think of?

Subtract 6 from 32
32 − 6 = 26
Answer: 26

4 Fractions of a group

In a class of 10 students, 4 walk to school.
What fraction of the students walk to school? Give your answer in its simplest form.

$\frac{4}{10}$

Divide top and bottom by 2: $\frac{2}{5}$

Answer: $\frac{2}{5}$

5 Simplifying expressions

Simplify 5y + m + 3m + y

Collect the m terms: 1 + 3 = 4m
Collect the y terms: 5 + 1 = 6y
Answer: 4m + 6y

6 Reading coordinates

Write down the coordinates of
(a) point B
(b) point C

Read the x-coordinate (across) first, then the y-coordinate (up or down).
(a) B: (−3, −3)
(b) C: (−2, 3)
Answer: (a) (−3, −3) (b) (−2, 3)

7 Powers

Work out 3^3.

$3^3 = 3 \times 3 \times 3$
$= 27$
Answer: 27

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8 Cost from perimeter

A rectangular play area is 12 m long and 7 m wide.
Fencing costs £5 per metre.
Work out the cost of putting fence all the way round the play area.

Perimeter = 12 + 7 + 12 + 7 = 38 m
Cost = 38 × £5 = £190
Answer: £190

9 Equivalent fractions

Find the missing number.

$\frac{2}{3} = \frac{?}{12}$

3 × 4 = 12, so multiply the top by 4 as well
2 × 4 = 8
Answer: 8

10 Coordinates

(a) Write down the coordinates of point C.
(b) Which point has coordinates (2, 2)?

(a) C is right 2 and down 3
(b) Go right 2 and up 2: this is point U
Answer: (a) (2, −3) (b) U