Worked answers | Coordinates, patterns and graphs

Tables and rules

6 questions | 15 marks

Equivalent correct methods earn the corresponding marks.

1. For $y = 2n + 5$, find the outputs for $n = 0, 1, 2$. [2 marks]

$2 \times 0 + 5 = 5$; $2 \times 1 + 5 = 7$; $2 \times 2 + 5 = 9$.

Answer: 5,7,9.

2. For $y = 6n$, find the output at $n = 4$. [2 marks]

$6 \times 4 = 24$.

Answer: 24.

3. Complete the missing output using the constant-addition pattern. [2 marks]

Input-output pairs

Input	Output
0	2
1	6
2	10
3	?

Add 4 each time: 2,6,10,14.

Answer: 14.

4. Give a simple rule for the supplied pairs and check it at $n = 2$. [3 marks]

Pairs

n	y
0	2
1	6
2	10
3	14

Each input increase of 1 adds 4 to output.

At $n = 0$ the output is 2.

Answer: $y = 4n + 2$; at $n = 2$ it gives 10.

5. For $y = 3n + 1$, find the input giving output 22. [3 marks]

$3n + 1 = 22$.

Subtract 1: $3n = 21$.

Divide by 3: $n = 7$.

Answer: 7.

6. Does $y = 2n + 4$ match every pair $(1, 6), (2, 8), (3, 11)$? Explain. [3 marks]

$2 \times 3 + 4 = 10$.

Testing only the first two rows would miss the mismatch.

Answer: No. At input 3 it gives 10, not 11.