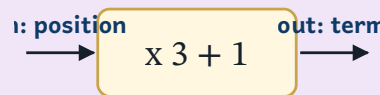


Rules for patterns using words and tables

A **rule** links a term's **position** to its value. A table of position and value helps you find it.

→ Position $\times 4 - 1$ gives 3, 7, 11, 15... (term $n = 4n - 1$).



FIND THE RULE FOR 4, 7, 10, 13, ...

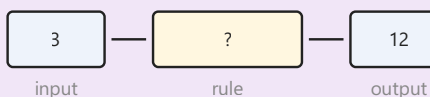
- 1 It goes up 3 each time, so the rule uses $3 \times$ position.
- 2 Position 1 gives 4, so the rule is $3 \times \text{position} + 1$.
- 3 Check position 4: $3 \times 4 + 1 = 13$. ✓

HOW TO ANSWER TODAY

- **Find the rule.** Look at how each input changes to its output. Try \times first, then $+$ or $-$.
 $3 \rightarrow 6, 5 \rightarrow 10, 7 \rightarrow 14 \rightarrow$ rule is $\times 2$
- **Function machine.** Do EACH step of the rule in order to the input.
 Rule $\times 4 + 2$, input 5 $\rightarrow 5 \times 4 = 20, + 2 = 22$

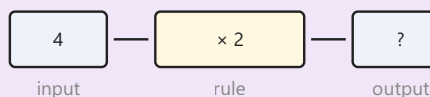
WARM-UP

1



5th class are tracking the bird feeder at the classroom window. On day 3 they count 12 visiting birds, on day 9 they count 36, and on day 10 they count 40. What rule maps the day number to the number of birds counted?

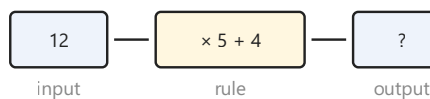
2



Mr Ó Sé is using the photocopier in the staffroom to run off worksheets for 5th class tomorrow. The photocopier is set to a rule of $\times 2$, so it doubles whatever number of sheets he feeds in. If he feeds in 4 sheets, how many copies come out?

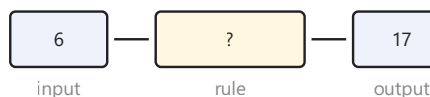
PRACTICE

1



Aoife's granny is baking barmbrack for the Halloween weekend. Each loaf needs 5 spoons of sultanas plus 4 extra spoons for the topping. If she bakes 12 loaves, how many spoons of sultanas does she use altogether?

2



Saoirse and her brother do extra jobs at home each week. For every euro Saoirse earns from chores, her parents top it up with the same bonus so she ends up with more. When Saoirse earned €6 she got €17, when she earned €8 she got €19, and when she earned €1 she got €12. What is the rule for working out her total from her chore money?