Lesson 102

Describing a rule in words

MODULE 8 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS ALGEBRA

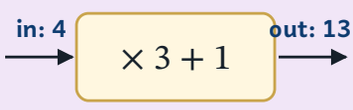
To continue a number pattern, look at how each term changes. The **rule** describes the change — usually 'add the same amount each time' or 'multiply by the same factor each time'.

→ **3, 7, 11, 15, …** rule: add 4. Next: 19.

→ **2, 6, 18, 54, …** rule: multiply by 3. Next: 162.

TRY IT ON THE LINE

For each input → output pair, describe the rule in plain words (e.g. 'add 5', 'multiply by 3 then add 2').

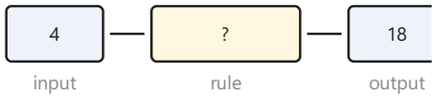


1. 1 → 4, 2 → 7, 3 → 10. Rule = _____
2. 1 → 2, 2 → 5, 3 → 10. Rule = _____
3. 10 → 5, 20 → 10, 30 → 15. Rule = _____

PRACTICE

1. The 5th class library tracks how many books are borrowed each week. The first four weeks show **5**, **15**, **25** and **35** books borrowed. If the pattern continues, how many books will be borrowed in the next week?

   What comes next in the sequence: 5, 15, 25, 35, ___ ?

2. 

   At break time in 5th class, Niamh shares out biscuits from a packet. For every group that comes to her table, she gives them **14** more biscuits than the number of children in the group. When **4** children come, she gives **18** biscuits; when **2** come, she gives **16**; when **9** come, she gives **23**. What is the rule she is using?

CHALLENGE

1. Cian saves his pocket money in a jar. Each week he counts what is left and writes the amount in his copy: **€14**, **€11**, **€8**, **€5**. If the pattern continues, how much will be in the jar next week?

   What comes next in the sequence: 14, 11, 8, 5, ___ ?

2.

   Cian is selling raffle tickets for the 5th class GAA fundraiser. Each book of tickets costs the same in euros, plus a fixed booklet fee added to every order. His sales notebook shows: **9** books → **€58**; **6** books → **€40**; **8** books → **€52**. What is the rule linking the number of books to the total cost?