

Module assessment – pattern hunt

MODULE 8 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS

ALGEBRA

HOW TO ANSWER TODAY

- Solve for x.** Do the OPPOSITE operation to both sides. + becomes -; × becomes ÷.
 $x + 7 = 15 \rightarrow x = 15 - 7 = 8$ $3x = 21 \rightarrow x = 21 \div 3 = 7$
- Letter expressions.** A letter stands for a number. Swap the letter for its value, then work out the answer.
 If $n = 3$, then $2n + 5 = 2 \times 3 + 5 = 11$
- Find the rule.** Look at how each input changes to its output. Try × first, then + or -.
 $3 \rightarrow 6, 5 \rightarrow 10, 7 \rightarrow 14 \rightarrow$ rule is $\times 2$

WARM-UP

Solve for x:

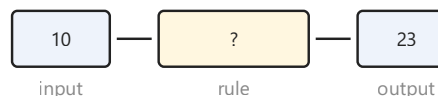
- a. $x - 13 = 2$ b. $x + 4 = 17$ c. $x + 13 = 21$ d. $x + 9 = 25$

PRACTICE

- 1 Mr Ó Briain is taking the roll on Monday morning in 5th class. He notices that the number of pupils present is given by $3n - 1$, where n is the number of tables in the room. If $n = 9$, how many pupils are present?

If $n = 9$, what is the value of $3n - 1$?

2



Ms Murphy is decorating the 5th class room for World Book Day. For every shelf she fills with books, she pins up a fixed number of bunting flags around the room. She notices a pattern between books used and total decorations: $10 \rightarrow 23$, $6 \rightarrow 19$, $3 \rightarrow 16$. What is the rule?

CHALLENGE

- 1 Mr Ó Briain hands out pencils from the classroom store. Each table gets $3(n - 1) + 4$ pencils, where n is the number of pupils at the table. If $n = 6$, how many pencils does the table get?

If $n = 6$, what is the value of $3(n - 1) + 4$?

- 2 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, ___?

REFLECT

When you find a rule, do you describe it in words first or with letters? Why?