

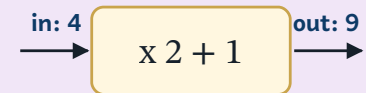
Substituting values into expressions

MODULE 10 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS

ALGEBRA

Substituting means replacing the letter with a number and working the expression out (remember order of operations).

→ $2n + 1$ when $n = 4$ → $2 \times 4 + 1 = 9$.



FIND THE VALUE OF $3n + 4$ WHEN $n = 5$

- 1 Replace n with 5: $3 \times 5 + 4$.
- 2 Multiply first: $15 + 4 = 19$.

HOW TO ANSWER TODAY

- **Letter expressions.** A letter stands for a number. Swap the letter for its value, then work out the answer.
If $n = 3$, then $2n + 5 = 2 \times 3 + 5 = 11$
- **Property names.** Order swaps ($a + b = b + a$) → commutative. Brackets move ($(a+b)+c = a+(b+c)$) → associative. One spreads over two ($a(b+c) = ab+ac$) → distributive.
 $5 + 3 = 3 + 5$ → commutative · $2 \times (4 + 5) = 2 \times 4 + 2 \times 5$ → distributive

WARM-UP

Complete the function table for the rule $2n + 1$.

	$2n + 1$
a. $n = 1$	
b. $n = 2$	
c. $n = 5$	
d. $n = 10$	

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 Mr Ó Briain is sorting the classroom store and writes this on the board: $(7 \times 9) \times 2 = 7 \times (9 \times 2)$. He asks 5th class which property of operations it shows. Is it the commutative, associative, or distributive property?

Which property of operations does this equation show: $(7 \times 9) \times 2 = 7 \times (9 \times 2)$? (Choose: commutative, associative, or distributive.)