

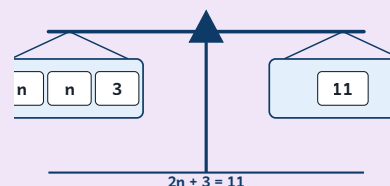
Solving two-step equations

MODULE 10 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS

ALGEBRA

A **two-step equation** is undone in two stages — undo the adding/subtracting first, then the multiplying/dividing.

$$\rightarrow 2n + 3 = 11 \rightarrow -3 \rightarrow 2n = 8 \rightarrow \div 2 \rightarrow n = 4.$$

**SOLVE $2n + 3 = 11$**

- 1 Undo the $+ 3$ first: $2n = 11 - 3 = 8$.
- 2 Undo the $\times 2$: $n = 8 \div 2 = 4$.
- 3 Check: $2 \times 4 + 3 = 11$. ✓

HOW TO ANSWER TODAY

- **Solve in two steps.** Undo the $+$ or $-$ first, then undo the $\times$ or $\div$.

$$2x + 5 = 13 \rightarrow 2x = 8 \rightarrow x = 4$$

WARM-UP

1

Find x so the scale balances.

Ms Daly is lining up 5th class at the door before going to the yard. She makes **5** equal rows of pupils, then **4** extra pupils join the back of the line, giving **19** pupils in total. If x is the number of pupils in each row, then $5x + \mathbf{4} = \mathbf{19}$. How many pupils are in each row?

2

Find x so the scale balances.

5th class are travelling to the Burren in Clare on a coach trip. The minibus has **4** teachers on board and the same number of pupils, x , in each of **6** rows. Altogether there are **64** people on the coach. How many pupils are in each row?