

Representing situations as equations

MODULE 10 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS

Turn a word problem into an **equation** by naming the unknown with a letter, then solve it to answer the question.

→ 'A number doubled is 18' → $2n = 18$ → **$n = 9$** .

HOW TO ANSWER TODAY

- **Solve in two steps.** Undo the + or – first, then undo the × or ÷.
 $2x + 5 = 13 \rightarrow 2x = 8 \rightarrow x = 4$
- **Solve for x.** Do the OPPOSITE operation to both sides. + becomes –; × becomes ÷.
 $x + 7 = 15 \rightarrow x = 15 - 7 = 8$ $3x = 21 \rightarrow x = 21 \div 3 = 7$

 WARM-UP

1



Find x so the scale balances.

Cian and his sister Róisín share their pocket money fairly. Cian gets twice as many euros as Róisín, and then their granny adds €4 to Cian's share. Cian ends up with €14. If Róisín gets €x, then $2x + 4 = 14$. How much does Róisín get?

2



Find x so the scale balances.

Aoife is setting up a sleepover and needs 25 biscuits on the tray for everyone. She has already put x biscuits on the tray and then adds 9 more to reach 25. Solve for x in the equation $x + 9 = 25$ to find how many biscuits she started with.

 PRACTICE

1



Find x so the scale balances.

5th class are heading on a school tour to the Cliffs of Moher. The total cost is €58, made up of a €13 coach charge plus €9 per pupil for the visitor centre ticket. How many pupils, x , are going on the tour?

2



Find x so the scale balances.

On sports day, 5th class scores a total of 70 points across the relay events. Each team scores the same number of points, x , and there are 7 teams, so $7x = 70$. How many points did each team score?