

Using a box or a letter for the unknown

MODULE 10 · ALGEBRA — PATTERNS, RULES AND NUMBER SENTENCES

ALGEBRA

HOW TO ANSWER TODAY

- **Solve for x.** Do the OPPOSITE operation to both sides. + becomes -; $\times$ becomes $\div$.

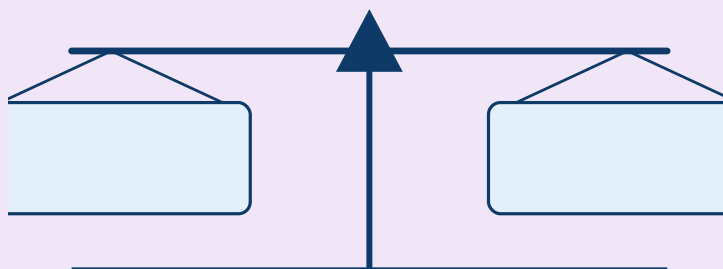
$$x + 7 = 15 \rightarrow x = 15 - 7 = 8 \quad 3x = 21 \rightarrow x = 21 \div 3 = 7$$

- **Property names.** Order swaps ($a + b = b + a$) $\rightarrow$ commutative. Brackets move ($((a+b)+c = a+(b+c))$) $\rightarrow$ associative. One spreads over two ($a(b+c) = ab+ac$) $\rightarrow$ distributive.

$$5 + 3 = 3 + 5 \rightarrow \text{commutative} \quad 2 \times (4 + 5) = 2 \times 4 + 2 \times 5 \rightarrow \text{distributive}$$

TRY IT ON THE LINE

Use the balance to find the missing number that keeps both sides equal.



1. Work out the value that balances each number sentence.
2. Check by putting your number back into the sentence.
3. Write the matching fact-family sentence.

PRACTICE

1



Find x so the scale balances.

Cian and his sister save the same amount of pocket money each week for **7** weeks. Together they have saved **€70** in total, so $7x = 70$, where x is the amount saved each week. What is the value of x?

2



Find x so the scale balances.

Mr Ó Briain pins up **81** homework stickers on the classroom noticeboard, arranged in **9** equal rows with x stickers in each row. Solve $9x = 81$ to find how many stickers are in each row.