

Turning a word problem into a number sentence

MODULE 10 · ALGEBRA — PATTERNS, RULES AND NUMBER SENTENCES

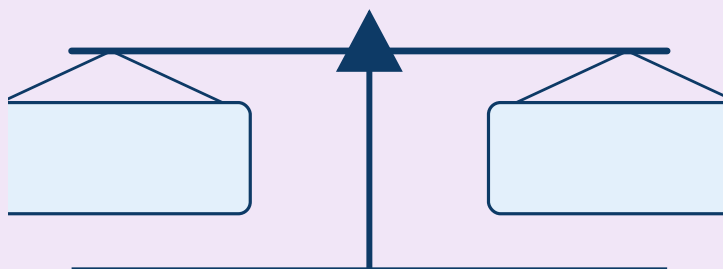
ALGEBRA

HOW TO ANSWER TODAY

- **Solve for x.** Do the OPPOSITE operation to both sides. $+$ becomes $-$; $\times$ becomes $\div$.
 $x + 7 = 15 \rightarrow x = 15 - 7 = 8$ · $3x = 21 \rightarrow x = 21 \div 3 = 7$
- **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.
 $5 + 3 = 3 + 5 \rightarrow$ commutative · $2 \times (4 + 5) = 2 \times 4 + 2 \times 5 \rightarrow$ 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 Cian and his sister Aoife are checking their maths homework at the kitchen table. Aoife says that $(7 \times 9) \times 2 = 7 \times (9 \times 2)$ without doing the sum. Which property of operations is she using: commutative, associative, or distributive?

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