

The equals sign means balance

MODULE 10 · ALGEBRA — PATTERNS, RULES AND NUMBER SENTENCES

ALGEBRA

HOW TO ANSWER TODAY

- **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.

$5 + 3 = 3 + 5 \rightarrow$ commutative $\cdot 2 \times (4 + 5) = 2 \times 4 + 2 \times 5 \rightarrow$ distributive

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

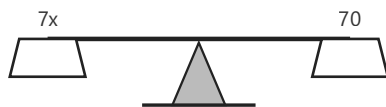
$$x + 7 = 15 \rightarrow x = 15 - 7 = 8 \cdot 3x = 21 \rightarrow x = 21 \div 3 = 7$$

 STRETCH PROBLEMS

- 1** 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.)

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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 ?