

Forming an equation from a story

MODULE 8 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS

ALGEBRA

To turn a story into an **equation**, give the unknown a **letter**, then write what the story says using = and the operations (+, −, ×, ÷).

→ *'I think of a number, add 4, and get 11.'* → $n + 4 = 11$, so $n = 7$.

→ *'Three times my number plus 2 equals 17.'* → $3n + 2 = 17$, so $n = 5$.

→ *'I share €30 between my brother and me. He gets €6 more than me.'* → $n + (n + 6) = 30$, so $n = 12$.

HOW TO ANSWER TODAY

- **Solve in two steps.** Undo the + or − first, then undo the × or ÷.

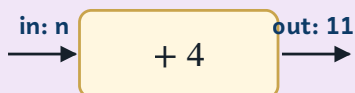
$$2x + 5 = 13 \rightarrow 2x = 8 \rightarrow x = 4$$

- **Solve for x.** Do the OPPOSITE operation to both sides. + becomes −; × becomes ÷.

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

TRY IT ON THE LINE

Turn the story into an equation. Use n to stand for the unknown number.



1. 'I think of a number, add 4, and get 11.' Equation: _____

Solution: $n =$ _____

2. 'Three times my number plus 2 equals 17.' Equation: _____

Solution: $n =$ _____

3. 'I share 30 sweets between my friend and me. My friend gets 6 more than me.' Equation: _____ Solution: $n =$ _____

PRACTICE

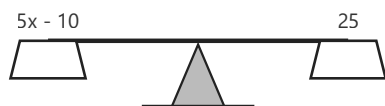
1



Find x so the scale balances.

Saoirse packs the same number of grapes into each of **4** small pots in her lunchbox, then adds **9** extra grapes loose on top. Altogether her lunchbox holds **45** grapes. If x is the number of grapes in each pot, solve $4x + \mathbf{9} = \mathbf{45}$ to find how many grapes are in each pot.

2



Find x so the scale balances.

Granny gives the same number of sweets to each of her **5** grandchildren after Sunday dinner. They put **10** sweets back into the tin to share later, leaving **25** sweets on the table. If x is the number of sweets each child got, then $5x - \mathbf{10} = \mathbf{25}$. What is x ?