

Notes & Steps



Key idea

Do the inverse (opposite) to both sides.
Add \leftrightarrow Subtract | Multiply \leftrightarrow Divide

Example 1: addition

Solve $x + 5 = 12$. Inverse of $+5$ is -5 .

$$x + 5 - 5 = 12 - 5$$

$$x = 7$$

Check: $7 + 5 = 12$

Example 2: subtraction

Solve $x - 3 = 8$. Inverse of -3 is $+3$.

$$x - 3 + 3 = 8 + 3$$

$$x = 11$$

Check: $11 - 3 = 8$

Example 3: multiplication

Solve $3x = 15$. Inverse of $\times 3$ is $\div 3$.

$$3x \div 3 = 15 \div 3$$

$$x = 5$$

Check: $3 \times 5 = 15$

Example 4: division

Solve $\frac{x}{4} = 7$. Inverse of $\div 4$ is $\times 4$.

$$\frac{x}{4} \times 4 = 7 \times 4$$

$$x = 28$$

Check: $28 \div 4 = 7$

Try these

- $x + 7 = 15$
- $x - 5 = 9$
- $4x = 20$
- $\frac{x}{3} = 6$

Common mistake

Forgetting to do the same to both sides.
 $x + 3 = 7$ means subtract 3 from both sides, not just move the 3. For $x - 4 = 10$ add 4 (not subtract 4). Undo what's been done to x .