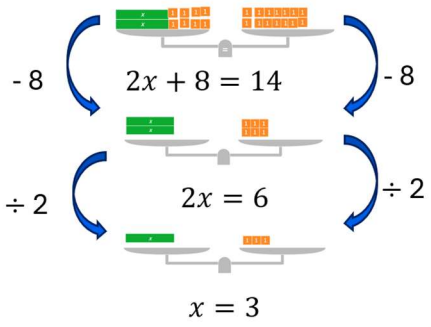
Solving Two-Step Equations On a Balance Scale

Solving an equation means finding the value of the unknown variable (e.g., x). One way to understand solving equations is by using a balance scale approach. (Images were created using free virtual manipulatives available at Polypad.com.)

To solve a two-step equation on a balance scale:

1. Model the equation on a balance scale.
2. Use the inverse operations to isolate x on one side of the scale. Keep the scale balanced by doing the same operation on both sides.
3. Check your answer by substituting the value of x back into the original equation. If both sides are equal, it's correct.
4. State your final answer.

Example: $2x + 8 = 14$



Check

(2 x 3) + 8 = 14 ✓

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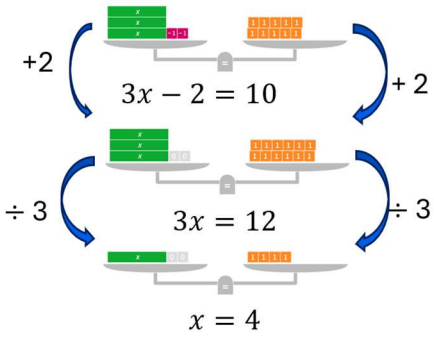
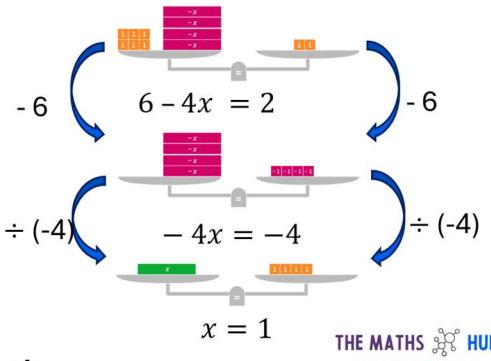
Example: $3x - 2 = 10$



Check

(3 x 4) - 2 = 10 ✓

Example: $6 - 4x = 2$



Check

6 – (4 x 1) = 2 ✓

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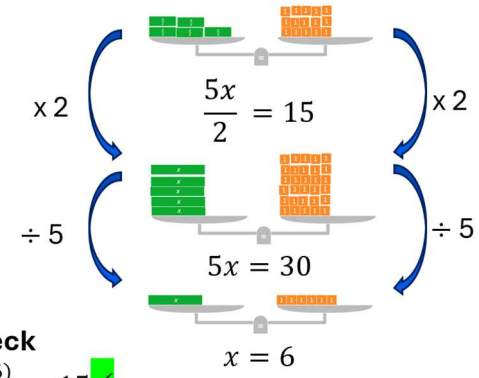
Solving an equation means finding the value of the unknown variable (e.g., x). One way to understand solving equations is by using a balance scale approach. Images were created using free virtual manipulatives available at Polypad.com.

Example: $\frac{5x}{2} = 15$



$\frac{5x}{2} = 15$

$5x = 30$

$x = 6$

Check

$\frac{(5 \times 6)}{2} = 15$ ✓

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