

**SKILL #10**

CODE: ALG.3

# Solving One-Step Equations

**Core Concept**

An equation shows that two expressions are equal — like a balanced scale .

Solving an equation means finding the value of the variable that makes both sides equal.

For one-step equations, you only need one operation to solve for the variable.

**Golden Rule of Equations**

Do the opposite operation to undo what's happening to the variable.

**Types of One-Step Equations**

Equation Type	What to Do	Example
$x + a = b$	Subtract $a$ from both sides	$x + 5 = 7 \rightarrow x = 2$
$x - a = b$	add $a$ from both sides	$x - 5 = 7 \rightarrow x = 12$
$ax = b$	Divide both sides by $a$	$5x = 35 \rightarrow x = 7$
$\frac{x}{a} = b$	Multiply both sides by $a$	$\frac{x}{5} = 7 \rightarrow x = 35$

**Common Mistakes to Avoid**

- ✗ Forgetting to do the operation on both sides.
- ✗ Using the same operation instead of the inverse.
- ✗ Misunderstanding how to handle negative numbers or fractions



Your goal is to isolate the variable on one side of the equation by doing the opposite operation on both sides.

**Crack the Lock!**

Each equation you solve gives you one digit of the code.

- $x + 6 = 14$
- $3x = 12$
- $x \div 2 = 5$
- $x - 7 = -2$

**Resource Links**