SKILL #12

CODE: ALG.5

# Solving Two-Steps Equations

## Core Concept

A two-step equation requires two operations to solve.

Your goal is still the same: isolate the variable using inverse operations, but now you do it in two moves!

## The Strategy (2 Steps)

1. Undo addition or subtraction
2. Undo multiplication or division

Always undo the constant first, then the coefficient.

### Examples

| Equation | Step 1 | Step 2 | Solution |
|---|---|---|---|
| $2x + 3 = 11$ | Subtract 3 --> $2x = 8$ | Divide both sides by 2 --> $x = 4$ | $x = 4$ |
| $\frac{x}{4} - 7 = -2$ | Add 7 --> $\frac{x}{4} = 5$ | Multiply both sides by 4 --> $x = 20$ | $x = 20$ |
| $-3x + 2 = -4$ | Subtract 2 --> $-3x = -6$ | Divide both sides by $-3$ --> $x = 2$ | $x = 2$ |
| $\frac{x}{2} + 5 = 2$ | Subtract 5 --> $\frac{x}{2} = -3$ | Multiply both sides by 2 --> $x = -6$ | $x = -6$ |

## Why This Skill Matters

- It's the gateway to solving any algebraic equation
- Teaches order of operations in reverse
- Real-life formulas and multi-step problems often rely on it

## Common Mistakes to Avoid

❌ Trying to divide first before removing the constant

❌ Forgetting to apply the inverse operation correctly

❌ Mismanaging negative signs or fractions

❌ Not checking the answer by plugging it back in

## Crack the Lock!

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

1) $5 - 2x = 9$
2) $\frac{x}{2} + 5 = 8$
3) $-\frac{x}{3} + 4 = 3$
4) $15x - 30 = 15$

_ _ _

## Resource Links

By: SALAH ALKMALI