

# Instructor Solution: Solving Linear Equations

## Problem:

Solve for x:  $2x + 5 = 13$

## Step-by-Step Solution:

Step 1: Subtract 5 from both sides

$$2x + 5 - 5 = 13 - 5$$

$$2x = 8$$

Step 2: Divide both sides by 2

$$2x / 2 = 8 / 2$$

$$x = 4$$

Step 3: Verify the solution

Substitute  $x = 4$  back into the original equation:

$$2(4) + 5 = 13$$

$$8 + 5 = 13$$

$$13 = 13 \checkmark$$

Therefore,  $x = 4$  is the solution.

**Method: Algebraic manipulation using inverse operations**