

# Modified System Responses by Understanding Level

Age: 12

Experience: Middle school student

Question: How to solve a two step equation?

## Understanding Level 1:

A two-step equation means you do two things to find  $x$ .

Example:  $2x + 3 = 9$

Step 1: Subtract 3 from both sides  $\rightarrow 2x = 6$

Step 2: Divide both sides by 2  $\rightarrow x = 3$

That's it!

## Understanding Level 3:

Two-step equations undo operations in reverse order.

For  $2x + 3 = 9$ :

1. Subtract 3:  $2x = 6$

2. Divide by 2:  $x = 3$

Always perform inverse operations on both sides to keep the balance.

## Understanding Level 5:

Two-step equations apply inverse operations in the opposite order of PEMDAS.

Take  $3x - 5 = 10$ :

1. Add 5 to both sides to undo subtraction:  $3x = 15$

2. Divide both sides by 3 to undo multiplication:  $x = 5$

Key point: isolate the variable by reversing the original operations.