

# System Responses Tailored by Understanding Level

Age: 12

Experience: Middle school student

Question: How to solve a two step equation?

## Level 1 Response:

To solve a two-step equation like  $2x + 3 = 9$ :

1. Subtract 3 from both sides:  $2x = 6$ .

2. Divide both sides by 2:  $x = 3$ .

That's it!

## Level 3 Response:

A two-step equation requires you to perform two inverse operations to isolate  $x$ .

For example,  $2x + 3 = 9$ :

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

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

Always keep the equation balanced by doing the same operation on both sides.

## Level 5 Response:

Two-step equations involve reversing the order of operations to isolate the variable.

Let's solve  $3x - 5 = 10$ :

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

Step 2: Divide both sides by 3 (undo multiplication):  $x = 5$ .

Key points:

- Use inverse operations in reverse: subtraction  $\leftrightarrow$  addition, multiplication  $\leftrightarrow$  division.
- Always perform each step on both sides to maintain balance.
- Check your solution by plugging back into the original equation.