**how to solve 2x + 3 = 6**

**Student Question:** how to solve 2x + 3 = 6

Questions and Answers: [{'question': 'What is your goal when solving an equation like this?', 'answer': "To isolate the variable 'x' on one side of the equation."}, {'question': "What operation is currently being applied to the variable 'x' along with 3 and can be removed in order to help achieve the goal?", 'answer': "Addition of '3' is being applied to the term '2x'."}, {'question': 'What is the inverse operation of addition?', 'answer': 'Subtraction'}, {'question': "What should you subtract from both sides of the equation to isolate the term with 'x'?", 'answer': 'Subtract 3 from both sides of the equation.'}, {'question': 'After subtracting 3 from both sides, what does the equation look like?', 'answer': '2x = 3'}, {'question': "What operation is currently being applied to the variable 'x'?", 'answer': 'Multiplication by 2'}, {'question': 'What is the inverse operation of multiplication?', 'answer': 'Division'}, {'question': 'What do you need to do to both sides of the equation to solve for x?', 'answer': 'Divide both sides by 2'}, {'question': 'What is the final answer for x?', 'answer': 'x = 1.5 or x = 3/2'}]

**Follow-up Question:** Alright, let's delve a bit deeper: "What is your goal when trying to solve an equation like this?"

**Expected Answer:** To isolate the variable 'x' on one side of the equation.

isolate x in the one side of the equation

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** What operation involves 'x' and 3 that we could trim down?

**Expected Answer:** Addition of '3' is being applied to the term '2x'.

addition of 3

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** What is the arithmetic method that reverses the process of addition?

**Expected Answer:** Subtraction

subtraction

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** "What step could we take to isolate 'x' in this equation? This will help us find the value of 'x'."

**Expected Answer:** Subtract 3 from both sides of the equation.

don't know

{'result': 'incorrect'}

**is\_correct**: **False**

Incorrect. Try again.

subtract 3 from both sides

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** "What does the new equation resemble after subtracting 3 from both sides?"

**Expected Answer:** 2x = 3

2x = 3

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** In the given context, could you explain the current operation on 'x'?

**Expected Answer:** Multiplication by 2

multiplication by 2

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** "I'm curious, can you tell me which operation serves as the inverse to multiplication?"

**Expected Answer:** Division

division

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** To solve for x, which operation would you apply equally to both sides of the equation?

**Expected Answer:** Divide both sides by 2

divide both side by 2

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.

**Follow-up Question:** Could you show me how you'd solve for x in this equation?

**Expected Answer:** x = 1.5 or x = 3/2

dont know

{'result': 'incorrect'}

**is\_correct**: **False**

Incorrect. Try again.

x = 3/2

{'result': 'correct'}

**is\_correct**: True

Correct answer! Moving to the next question.