2 Step Equations Worksheet

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Part 1: Building a Foundation

What is the first step in solving a 2-step equation of the form ax + b = c?

Hint: Think about how to isolate the variable.

- ◯ Multiply both sides by a
- ◯ Add b to both sides
- ◯ Subtract b from both sides
- ◯ Divide both sides by a

Which of the following are common operations used in solving 2-step equations? (Select all that apply)

Hint: Consider the basic arithmetic operations.

- ☐ Addition
- ☐ Subtraction
- ☐ Multiplication
- ☐ Division

Explain in your own words what a 2-step equation is and provide an example.

Hint: Think about the structure of the equation and how to solve it.

List the two main operations typically involved in solving a 2-step equation and describe their purpose.

Hint: Consider the operations that help isolate the variable.

1. What is the first operation?

2. What is the second operation?

Part 2: Understanding and Interpretation

In the equation 4x + 5 = 21, what is the purpose of subtractinging 5 from both sides?

Hint: Think about isolating the variable term.

- ◯ To eliminate the variable
- ◯ To isolate the variable term
- ◯ To balance the equation
- ◯ To simplify the equation

Which of the following statements are true about verifying a solution to a 2-step equation? (Select all that apply)

Hint: Consider the steps involved in checking your work.

- ☐ Substitute the solution back into the original equation.
- ☐ Ensure both sides of the equation are equal.
- ☐ Check that the variable is isolated.
- ☐ The solution must be a whole number.

Describe the process of solving the equation 3x - 4 = 11 and explain why each step is necessary.

Hint: Break down the steps and their significance.

Part 3: Application and Analysis

Solve the equation 2x + 7 = 15. What is the value of x?

Hint: Isolate x by performing inverse operations.

- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6

Which of the following equations are solved correctly? (Select all that apply)

Hint: Check each solution step by step.

- ☐ 5x + 3 = 18; x = 3
- ☐ 4x - 2 = 10; x = 3
- ☐ 6x + 9 = 27; x = 3
- ☐ 7x - 5 = 16; x = 3

Create a real-world scenario where solving a 2-step equation would be necessary, and solve the equation.

Hint: Think about situations involving quantities and relationships.

Part 4: Evaluation and Creation

What is the error in solving the equation 3x + 4 = 19 by subtractinging 4 and then dividing by 2?

Hint: Consider the order of operations.

- ◯ Incorrect subtraction
- ◯ Incorrect division
- ◯ Incorrect order of operations
- ◯ No error

Analyze the following solutions and identify which ones have errors. (Select all that apply)

Hint: Check each solution against the original equation.

- ☐ 2x + 3 = 11; x = 4
- ☐ 5x - 7 = 18; x = 5
- ☐ 4x + 6 = 22; x = 4
- ☐ 3x - 5 = 10; x = 5

Break down the steps involved in solving the equation 7x - 3 = 25 and explain the reasoning behind each step.

Hint: Detail each operation and its purpose.

If a student solved the equation 6x + 8 = 20 and found x = 2, what is the best evaluation of their solution?

Hint: Consider the correctness of the solution.

- ◯ Correct, because both sides are equal
- ◯ Incorrect, because the subtraction was wrong
- ◯ Incorrect, because the division was wrong
- ◯ Correct, because the operations were performed correctly

Create a 2-step equation that has a solution of x = 5. Which of the following equations meet this criterion? (Select all that apply)

Hint: Think about how to manipulate the equation to find x.

- [ ] 2x + 5 = 15
- [ ] 3x - 5 = 10
- [ ] 4x + 1 = 21
- [ ] 5x - 10 = 15

Design a complex problem involving a 2-step equation and provide a detailed solution, explaining each step and its significance.

Hint: Consider a scenario that requires multiple steps to solve.