

Solving Multi Step Equations Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the first step in solving a multi-step equation?

undefined. Isolate the variable

undefined. Simplify both sides of the equation ✓

undefined. Use the distributive property

undefined. Check the solution

The first step is to simplify both sides of the equation.

What is the first step in solving a multi-step equation?

undefined. Isolate the variable ✓

undefined. Simplify both sides of the equation

undefined. Use the distributive property

undefined. Check the solution

The first step is to isolate the variable.

Which of the following are properties of equality? (Select all that apply)

undefined. Addition Property of Equality ✓

undefined. Subtraction Property of Equality ✓

undefined. Multiplication Property of Equality ✓

undefined. Substitution Property of Equality ✓

The properties of equality include addition, subtraction, multiplication, and substitution.

Which of the following are properties of equality? (Select all that apply)

undefined. **Addition Property of Equality** ✓

undefined. **Subtraction Property of Equality** ✓

undefined. **Multiplication Property of Equality** ✓

undefined. **Substitution Property of Equality** ✓

The properties of equality include addition, subtraction, multiplication, and substitution.

Explain why it is important to perform the same operation on both sides of an equation when solving it.

Perform the same operation on both sides to maintain the equality of the equation.

Explain why it is important to perform the same operation on both sides of an equation when solving it.

Perform the same operation on both sides to maintain the equality of the equation.

List the four main operations used in solving multi-step equations.

1. What is the first operation?

Addition

2. What is the second operation?

Subtraction

3. What is the third operation?

Multiplication

4. What is the fourth operation?

Division

The four main operations are addition, subtraction, multiplication, and division.

Part 2: Comprehension and Application

If you have the equation $3(x + 2) = 18$, what is the first step to simplify it?

undefined. Divide both sides by 3

undefined. Subtract 2 from both sides

undefined. Distribute the 3 into the parentheses ✓

undefined. Add 2 to both sides

The first step is to distribute the 3 into the parentheses.

If you have the equation $3(x + 2) = 18$, what is the first step to simplify it?

undefined. Divide both sides by 3

undefined. Subtract 2 from both sides

undefined. Distribute the 3 into the parentheses ✓

undefined. Add 2 to both sides

The first step is to distribute the 3 into the parentheses.

When solving the equation $2x - 5 = 15$, which steps are necessary? (Select all that apply)

undefined. Add 5 to both sides ✓

undefined. Subtract 5 from both sides

undefined. Divide both sides by 2 ✓

undefined. Multiply both sides by 2

You need to add 5 to both sides and then divide by 2.

When solving the equation $2x - 5 = 15$, which steps are necessary? (Select all that apply)

undefined. Add 5 to both sides ✓

undefined. Subtract 5 from both sides ✓

undefined. Divide both sides by 2

undefined. Multiply both sides by 2

Necessary steps include adding or subtract 5 and then dividing by 2.

Describe how you would check if your solution to a multi-step equation is correct.

You can check your solution by substituting it back into the original equation to see if both sides are equal.

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You can check your solution by substituting it back into the original equation to see if both sides are equal.

Solve the equation $4x + 7 = 31$. What is the value of x ?

undefined. 6 ✓

undefined. 7

undefined. 8

undefined. 9

The value of x is 6.

Solve the equation $4x + 7 = 31$. What is the value of x ?

undefined. 6 ✓

undefined. 7

undefined. 8

undefined. 9

The value of x is 6.

Given the equation $5(y - 3) = 20$, which of the following are correct steps to solve for y ? (Select all that apply)

undefined. Divide both sides by 5 ✓

undefined. Add 3 to both sides ✓

undefined. Subtract 3 from both sides

undefined. Multiply both sides by 5

You need to divide both sides by 5 and then add 3 to both sides.

Given the equation $5(y - 3) = 20$, which of the following are correct steps to solve for y ? (Select all that apply)

undefined. Divide both sides by 5 ✓

undefined. Add 3 to both sides

undefined. Subtract 3 from both sides ✓

undefined. Multiply both sides by 5

Correct steps include dividing by 5 and then adding or subtract 3.

Solve the equation $2(a + 4) = 3a - 6$ and explain each step you took to find the solution.

First, distribute the 2, then combine like terms and isolate a.

Solve the equation $2(a + 4) = 3a - 6$ and explain each step you took to find the solution.

You would distribute, combine like terms, and isolate a.

Part 3: Analysis, Evaluation, and Creation

In the equation $6z - 4 = 2z + 8$, what should be your first step to isolate the variable z?

undefined. Add 4 to both sides

undefined. Subtract 2z from both sides ✓

undefined. Add 2z to both sides

undefined. Subtract 6z from both sides

The first step is to subtract 2z from both sides.

In the equation $6z - 4 = 2z + 8$, what should be your first step to isolate the variable z?

undefined. Add 4 to both sides

undefined. Subtract 2z from both sides ✓

undefined. Add 2z to both sides

undefined. Subtract 6z from both sides

The first step is to subtract 2z from both sides.

Which of the following equations require the use of the distributive property to simplify? (Select all that apply)

undefined. $3(x + 5) = 15$ ✓

undefined. $4x - 2 = 10$

undefined. $2(3y - 4) = 8$ ✓

undefined. $x/2 + 3 = 7$

The equations that require distribution are $3(x + 5) = 15$ and $2(3y - 4) = 8$.

Which of the following equations require the use of the distributive property to simplify? (Select all that apply)

undefined. $3(x + 5) = 15$ ✓

undefined. $4x - 2 = 10$

undefined. $2(3y - 4) = 8$ ✓

undefined. $x/2 + 3 = 7$

Equations that require the distributive property include those with parentheses.

Analyze the equation $7x + 2 = 3x + 18$. Describe the steps you would take to solve for x and why each step is necessary.

You would first subtract $3x$ from both sides, then subtract 2, and finally divide by 4.

Analyze the equation $7x + 2 = 3x + 18$. Describe the steps you would take to solve for x and why each step is necessary.

You would isolate x by moving terms and combining like terms.

Which strategies can be used to solve complex multi-step equations effectively? (Select all that apply)

undefined. **Breaking down the equation into simpler parts** ✓

undefined. Using a calculator for every step

undefined. **Checking each step for accuracy** ✓

undefined. **Writing down each step clearly** ✓

Effective strategies include breaking down the equation into simpler parts, checking each step for accuracy, and writing down each step clearly.

Which strategies can be used to solve complex multi-step equations effectively? (Select all that apply)

undefined. **Breaking down the equation into simpler parts** ✓

undefined. Using a calculator for every step

undefined. Checking each step for accuracy ✓

undefined. Writing down each step clearly ✓

Strategies include breaking down the equation and checking each step.

Create your own multi-step equation and provide a detailed solution. Explain each step and the reasoning behind it.

Create an equation such as $3(x - 1) + 4 = 10$ and explain the steps taken to solve it.

Create your own multi-step equation and provide a detailed solution. Explain each step and the reasoning behind it.

You should create an equation and explain the steps taken to solve it.