Solving Two Step Equations Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the first step in solving the equation \(3x + 4 = 10 \)?

undefined. A) Divide both sides by 3
undefined. B) Subtract 4 from both sides ✓
undefined. C) Add 4 to both sides
undefined. D) Multiply both sides by 3

The first step is to subtract 4 from both sides.

Which of the following are inverse operations?

undefined. A) Addition and subtraction ✓
undefined. B) Multiplication and division ✓
undefined. C) Addition and multiplication
undefined. D) Subtraction and division

Addition and subtraction, multiplication and division are inverse operations.

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

Perform the same operation on both sides to keep the equation balanced and valid.

List the two main operations typically involved in solving a two-step equation.

1. First operation
Addition or subtraction

2. Second operation
Multiplication or division

The two main operations are addition/subtraction and multiplication/division.

Part 2: Understanding and Interpretation

In the equation \(5x - 7 = 18 \), what operation should be performed first?

undefined. A) Add 7 to both sides ✓
undefined. B) Subtract 7 from both sides
undefined. C) Divide both sides by 5
undefined. D) Multiply both sides by 5

The first operation is to add 7 to both sides.

Which of the following statements are true about two-step equations?

undefined. A) They always have a variable on both sides.
undefined. B) They require two operations to solve. ✓
undefined. C) They can be solved by guessing the value of the variable.
undefined. D) They can represent real-world problems. ✓

Two-step equations require two operations to solve and can represent real-world problems.

Describe how solving a two-step equation is similar to solving a real-world problem.

Both processes involve isolating a variable and applying logical reasoning to find a solution.

Part 3: Application and Analysis

Solve the equation \(4x + 5 = 21 \). What is the value of \(x \)?

undefined. A) 3
undefined. B) 4 ✓
undefined. C) 5
undefined. D) 6

The value of x is 4.

Which of the following are correct solutions for the equation \(2x - 3 = 7 \)?

undefined. A) \(x = 5 \) ✓
undefined. B) \(x = 2 \)
undefined. C) \(x = 10 \)
undefined. D) \(x = 3 \)

The correct solution is x = 5.

A recipe requires \(3x + 2 \) cups of flour to make 10 cookies. If you have 8 cups of flour, how many cookies can you make?

You can make 8 cookies with the available flour.

If \(7x + 2 = 30 \), what is the relationship between the operations needed to solve for \(x \)?

undefined. A) Addition and division
undefined. B) Subtraction and multiplication
undefined. C) Subtraction and division ✓
undefined. D) Addition and multiplication

The operations needed are subtraction and division.

Explain how the process of solving \(5x + 3 = 18 \) changes if the equation is modified to \(5x - 3 = 18 \).

The process changes in the first step; you would add 3 instead of subtract.

Part 4: Evaluation and Creation

Evaluate the solution to the equation \(8x + 5 = 37 \). What is the correct value of \(x \)?

undefined. A) 4 ✓
undefined. B) 5
undefined. C) 6

undefined. D) 7

The correct value of x is 4.

Evaluate the following solutions for the equation \(3x - 9 = 12 \). Which are correct?

undefined. A) \(x = 7 \) ✓
undefined. B) \(x = 6 \) ✓
undefined. C) \(x = 5 \)
undefined. D) \(x = 4 \)

The correct solution is x = 7 and x = 6.

Create a real-world scenario that can be represented by the equation \(2x + 6 = 20 \). Describe the scenario and solve the equation.

A possible scenario could involve budgeting or shopping.

Propose two different two-step equations that have the solution \(x = 3 \).

1. First equation
\(2x + 4 = 10 \)

2. Second equation
\(5x - 12 = 3 \)

Examples could include \(2x + 4 = 10 \) and \(5x - 12 = 3 \).