

Solving One Step Equations Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

Which operation would you use to solve the equation $(x + 7 = 12)$?

Hint: Think about how to isolate (x) .

- A) Addition
- B) Subtraction ✓
- C) Multiplication
- D) Division

■ You would use subtraction to isolate (x) .

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

Hint: Consider the operations that maintain equality.

- A) Addition Property ✓
- B) Subtraction Property ✓
- C) Multiplication Property ✓
- D) Exponential Property

■ The Addition Property and Subtraction Property are correct.

Explain in your own words what a one-step equation is and why it is called "one-step."

Hint: Think about the number of operations needed to solve it.

A one-step equation is an equation that can be solved in one operation, hence the name.

List the inverse operations for the following:

Hint: Think about what operation undoes another.

1. Addition

Subtraction

2. Multiplication

Division

The inverse of addition is subtraction, and the inverse of multiplication is division.

Part 2: Comprehension and Application

If you have the equation $x - 5 = 10$, what is the first step to solve for x ?

Hint: Consider how to isolate x .

- A) Add 5 to both sides ✓**
- B) Subtract 5 from both sides
- C) Multiply both sides by 5
- D) Divide both sides by 5

The first step is to add 5 to both sides.

Which of the following equations can be solved using division? (Select all that apply)

Hint: Look for equations where (x) is multiplied by a number.

- A) $(3x = 9)$ ✓
- B) $(x + 4 = 8)$
- C) $(\frac{x}{2} = 6)$ ✓
- D) $(x - 7 = 3)$

The equations $(3x = 9)$ and $(\frac{x}{2} = 6)$ can be solved using division.

Solve the equation $(\frac{x}{4} = 7)$ and explain each step you took to find the solution.

Hint: Think about how to isolate (x) .

To solve, multiply both sides by 4 to get $(x = 28)$.

Solve the equation $(5x = 25)$. What is the value of (x) ?

Hint: Think about how to isolate (x) .

- A) 1
- B) 5 ✓
- C) 10
- D) 25

The value of (x) is 5.

Part 3: Analysis, Evaluation, and Creation

If you solve the equation $(x - 9 = 4)$ and get $(x = 13)$, what property of equality did you use?

Hint: Consider what operation you performed to isolate (x) .

- A) Addition Property ✓
- B) Subtraction Property
- C) Multiplication Property
- D) Division Property

■ You used the Addition Property of Equality.

Evaluate the solutions for the following equations. Which solutions are correct? (Select all that apply)

Hint: Check each solution by substituting back into the original equation.

- A) $(x + 5 = 10)$, solution: $(x = 5)$ ✓
- B) $(3x = 9)$, solution: $(x = 3)$ ✓
- C) $(x - 4 = 6)$, solution: $(x = 10)$
- D) $(\frac{x}{2} = 8)$, solution: $(x = 16)$ ✓

■ The correct solutions are A, B, and D.

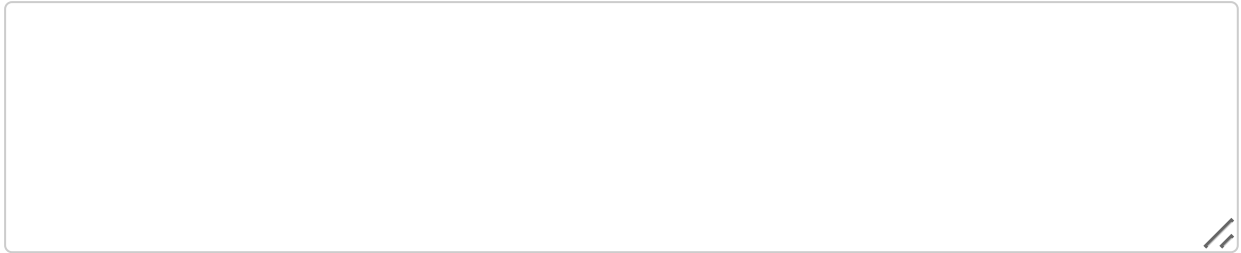
Create your own one-step equation and provide a detailed explanation of how to solve it. Include the solution and verify its correctness.

Hint: Think about a simple equation you can create.

■ Create an equation like $(x + 3 = 7)$ and explain the steps to solve it.

Compare and contrast solving the equations $(x + 6 = 10)$ and $(x - 6 = 10)$. How do the steps differ?

Hint: Think about the operations needed for each equation.



| The first equation requires subtraction, while the second requires addition.