

Solving Systems Of Equations By Elimination Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the primary goal of the elimination method in solving systems of equations?

undefined. A) To graph the equations

undefined. B) To eliminate one variable ✓

undefined. C) To find the slope

undefined. D) To substitute variables

The primary goal is to eliminate one variable to solve for the other.

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The primary goal is to eliminate one variable to solve for the other.

Which of the following are steps in the elimination method? (Select all that apply)

undefined. A) Align equations vertically ✓

undefined. B) Multiply equations by a constant ✓

undefined. C) Divide both sides by a variable

undefined. D) Add or subtract equations to eliminate a variable ✓

Steps include aligning equations, multiplying by constants, and adding or subtracting equations.

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undefined. B) Multiply equations by a constant ✓

undefined. C) Divide both sides by a variable

undefined. D) Add or subtract equations to eliminate a variable ✓

Steps include aligning equations, multiplying by constants, and adding or subtracting.

Explain why it might be necessary to multiply one or both equations by a constant in the elimination method.

Multiplying by a constant helps to align coefficients for easier elimination of a variable.

Explain why it might be necessary to multiply one or both equations by a constant in the elimination method.

Multiplying by a constant helps to align coefficients for elimination.

List two advantages of using the elimination method over the substitution method.

1. Advantage 1

It can be quicker for larger systems.

2. Advantage 2

It avoids dealing with fractions.

Elimination can be faster for certain systems and avoids complications with fractions.

Part 2: Comprehension and Application

When using the elimination method, what does it mean if you end up with a statement like $0 = 0$?

undefined. A) The system has no solution

undefined. B) The system has one solution

undefined. C) The system has infinitely many solutions ✓

undefined. D) The system needs to be graphed

This indicates that the system has infinitely many solutions.

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It indicates that the system has infinitely many solutions.

Which scenarios indicate a system of equations has no solution? (Select all that apply)

undefined. A) The lines are parallel ✓

undefined. B) The equations are identical

undefined. C) The elimination results in a false statement ✓

undefined. D) The lines intersect at one point

No solution occurs when lines are parallel or when elimination leads to a false statement.

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No solution occurs when lines are parallel or lead to a false statement.

Describe a real-world scenario where solving a system of equations using elimination would be useful.

Real-world scenarios include budgeting or mixing solutions.

Describe a real-world scenario where solving a system of equations using elimination would be useful.

Real-world scenarios could include budgeting, mixing solutions, or comparing rates.

Given the system of equations: $3x + 4y = 10$, $6x + 8y = 20$. What is the result after applying the elimination method?

undefined. A) $x = 2$, $y = 1$

undefined. B) No solution

undefined. **C) Infinitely many solutions ✓**

undefined. D) $x = 0$, $y = 0$

The result indicates that the system has infinitely many solutions.

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undefined. **C) Infinitely many solutions ✓**

undefined. D) $x = 0$, $y = 0$

The result indicates infinitely many solutions.

Solve the following system using the elimination method: $x + 2y = 3$, $2x + 4y = 6$.

The solution will show the values of x and y , if they exist.

Solve the following system using the elimination method: $x + 2y = 3$, $2x + 4y = 6$.

The solution will show the relationship between x and y .

Part 3: Analysis, Evaluation, and Creation

What does it imply about the system if, after elimination, you derive an equation like $0 = 5$?

undefined. A) The system is consistent

undefined. **B) The system is inconsistent ✓**

undefined. C) The system is dependent

undefined. D) The system has a unique solution

This indicates that the system is inconsistent and has no solution.

What does it imply about the system if, after elimination, you derive an equation like $0 = 5$?

undefined. A) The system is consistent

undefined. B) The system is inconsistent ✓

undefined. C) The system is dependent

undefined. D) The system has a unique solution

This indicates that the system is inconsistent.

Which of the following are possible outcomes when solving a system of equations using elimination? (Select all that apply)

undefined. A) A single solution ✓

undefined. B) No solution ✓

undefined. C) Infinitely many solutions ✓

undefined. D) A solution that changes based on substitution

Possible outcomes include a single solution, no solution, or infinitely many solutions.

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Possible outcomes include a single solution, no solution, or infinitely many solutions.

Analyze the following system and determine the nature of its solutions: $5x + 2y = 10$, $10x + 4y = 20$.

The analysis will reveal whether the system has a unique solution, no solution, or infinitely many solutions.

Analyze the following system and determine the nature of its solutions: $5x + 2y = 10$, $10x + 4y = 20$.

The system may have dependent solutions.

Design a real-world problem that can be solved using the elimination method. Describe the problem and the system of equations that represent it.

The problem should illustrate a scenario where two variables interact.

Design a real-world problem that can be solved using the elimination method. Describe the problem and the system of equations that represent it.

The problem should illustrate the use of elimination in a real context.