

Solving Systems of Linear Equations by the Elimination Method

Procedures for the Elimination Method

1. Rewrite both equations in standard form.
2. Multiply either equation or both equations by a nonzero number so that the coefficients of x or y will have a sum of 0.
3. Add the resulting equations.
4. Simplify then solve the resulting equation.
5. Substitute the value obtained to any of the original equations.
6. Check the values of the variables obtained against the linear equations in the system.

Practice Exercises

Solve each system of linear equation using the elimination method.

1.
$$\begin{cases} 2x + y = 12 \\ 3x + y = 17 \end{cases}$$
2.
$$\begin{cases} 3x + 4y = 4 \\ x - 2y = 0 \end{cases}$$
3.
$$\begin{cases} 6x + 25 = 5y \\ 8x + 9y = 45 \end{cases}$$
4.
$$\begin{cases} 3x + 4y = 7 \\ 3x + 4y = 8 \end{cases}$$
5.
$$\begin{cases} 3x + 4y = 19 \\ 7x - 2y = -1 \end{cases}$$

Problem Set

Solve each system of linear equation using the elimination method.

1.
$$\begin{cases} 2x - 3y = 12 \\ 4x + 3y = 24 \end{cases}$$
2.
$$\begin{cases} 5x + 11 = 7y \\ 8y - 18 = 3x \end{cases}$$
3.
$$\begin{cases} 3x + 4y = 7 \\ 2x - 2y = 7 \end{cases}$$
4.
$$\begin{cases} x = y + 1 \\ x - y = 1 \end{cases}$$
5.
$$\begin{cases} 2x + y = 4 \\ x + 2y = 4 \end{cases}$$

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