

More Solving Systems By Elimination

Sometimes there won't be an easy variable to eliminate!

Steps:

1. Choose a variable to eliminate. **Make the coefficients opposites by multiplying**
2. Eliminate that variable by adding or subtracting one equation from the other
3. Solve the new equation
4. Substitute your answer to find the other variable

EXAMPLES

$$-2x + 6y = -16 \quad -3x - 12y = -24$$

Which coefficients can be made inverses? _____ and _____

Need to multiply by _____

$$\underline{\hspace{1cm}} \cdot (-2x + 6y = -16)$$

$$\underline{\hspace{1cm}} x + \underline{\hspace{1cm}} y = \underline{\hspace{1cm}}$$

Add the two equations!

$$\begin{array}{r} -3x - 12y = -24 \\ + \quad -4x + 12y = -32 \\ \hline \end{array}$$

Solve!

$$x = \underline{\hspace{1cm}}$$

Substitute into either equation!

$$-3x - 12y = -24$$

$$-3(\underline{\hspace{1cm}}) - 12y = -24$$

$$\underline{\hspace{1cm}} - 12y = -24$$

$$-12y = \underline{\hspace{1cm}}$$

$$y = \underline{\hspace{1cm}}$$

Solution:

$$-x + y = 4 \quad 8x - 6y = -25$$

Which coefficients can be made inverses? _____ and _____

Need to multiply by _____

$$\underline{\hspace{1cm}} \cdot (-x + y = 4)$$

$$\underline{\hspace{1cm}} x + \underline{\hspace{1cm}} y = \underline{\hspace{1cm}}$$

Add the two equations!

$$\begin{array}{r} 8x - 6y = -25 \\ + \quad -8x + 8y = 32 \\ \hline \end{array}$$

Solve!

$$y = \underline{\hspace{1cm}}$$

Substitute into either equation!

$$-x + y = 4$$

$$-x + (\underline{\hspace{1cm}}) = 4$$

$$-x = \underline{\hspace{1cm}}$$

$$x = \underline{\hspace{1cm}}$$

Solution: