

U13-4 Solving Systems Using Elimination – Add/Subtract

Elimination Method:

Elimination by Adding

Step 1: Determine if any of the terms are opposites.

$$\begin{array}{r} 5x - 6y = -32 \\ 3x + 6y = 48 \end{array}$$

What operation could be used to eliminate a variable?

Step 2: To solve, add like terms and solve for x.

$$\begin{array}{r} 5x - 6y = -32 \\ + 3x + 6y = 48 \\ \hline \end{array}$$

Step 3: To find y, substitute the value you found for x in step 2 into either equation.

Solution: (____, ____)

Step 4: Check your solution in BOTH equations.

Elimination by Subtracting

Step 1: Can you eliminate any of the terms by subtracting?

$$\begin{array}{r} x + 2y = 8 \\ 3x + 2y = 6 \end{array}$$

How can you eliminate the y term?

Step 2: To solve, subtract each term and solve for x

******When you subtract, change the signs of all the terms in the 2nd equation. ******

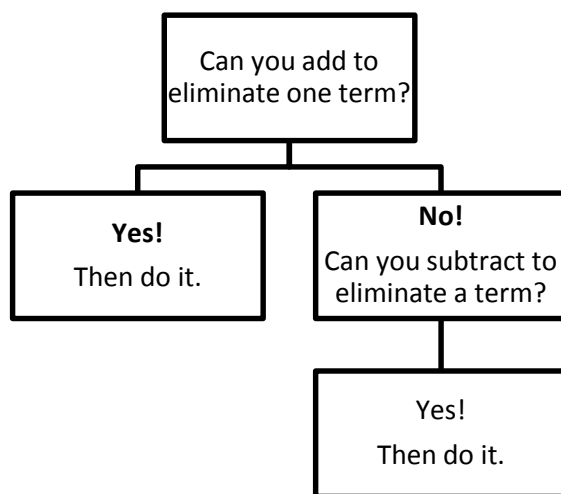
$$\begin{array}{r} x + 2y = 8 \\ - 3x + 2y = 6 \\ \hline \end{array}$$

Step 3: To find y, substitute the value you found for x into either equation.

Solution: (____, ____)

Step 4: Check your solution in BOTH equations.

Elimination Practice Using Addition or Subtraction: Solve each system using elimination:



1.
$$\begin{cases} 6x - 8y = 40 \\ 5x + 8y = 48 \end{cases}$$

2.
$$\begin{cases} 6x + 3y = 30 \\ -6x + 7y = 30 \end{cases}$$

3.
$$\begin{cases} -3x + 2y = 0 \\ -3x + 5y = 9 \end{cases}$$

4.
$$\begin{cases} -3x + 4y = 29 \\ 3x + 2y = -17 \end{cases}$$

$$5. \begin{cases} 4p - q = 105 \\ 4p + 7q = -15 \end{cases}$$

$$6. \begin{cases} x - y = 13 \\ y - x = -13 \end{cases}$$

$$7. \begin{cases} 2x + 2y = -2 \\ 5x - 2y = 9 \end{cases}$$

$$8. \begin{cases} -x + 2y = -9 \\ -3x + 2y = -19 \end{cases}$$

