

## Lesson 4-13 → Elimination with TWO Standard Form Equations

Cool trick when "x" or "y" coefficients are the SAME

You can subtract it all

$$\begin{aligned}6x + 3y &= 33 \\4x + 3y &= 27\end{aligned}$$

$$\begin{array}{r}6x + 3y = 33 \\-(4x + 3y = 27) \\ \hline\end{array}$$

$$2x = 6$$

$$\begin{array}{l} \rightarrow 6x - 4x = 2x \\ \rightarrow 3y - 3y = 0 \\ \rightarrow 33 - 27 = 6 \end{array}$$

$$x = 3$$

Now solve for "y"

$$\begin{aligned}6x + 3y &= 33 \\6(3) + 3y &= 33 \\18 + 3y &= 33 \\-18 & \quad -18 \\3y &= 15\end{aligned}$$

ANSWER:

$$3, 5$$

$$y = 5$$

when "x" or "y" coefficients are Opposites  
You can ADD it all

$$\left. \begin{array}{l} 3x + 5y = 59 \\ -3x + 2y = 11 \end{array} \right\}$$

$$\begin{array}{r} 3x + 5y = 59 \\ + (-3x + 2y = 11) \\ \hline \end{array}$$

$$7y = 70$$

$$3x + (-3x) = 0$$

$$5y + 2y = 7y$$

$$59 + 11 = 70$$

$$y = 10$$

Now solve for "x"

$$3x + 5y = 59$$

$$3x + 5(10) = 59$$

$$3x + 50 = 59$$

$$\begin{array}{r} -50 \\ -50 \end{array}$$

ANSWER (3, 10)

$$3x = 9$$

$$x = 3$$