Linear Systems Skills
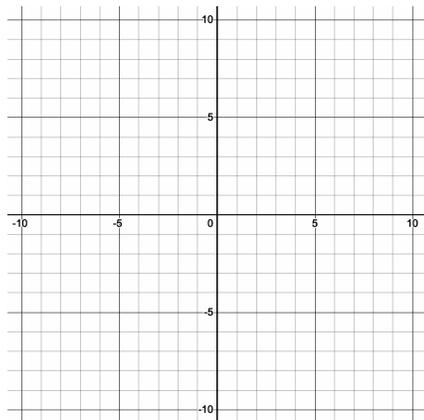
1. Solve the linear system by graphing, then confirm your answer by solving with substitution.

a) $\begin{array}{l} -4x + 3y = 24 \\ x + 3y = 9 \end{array}$

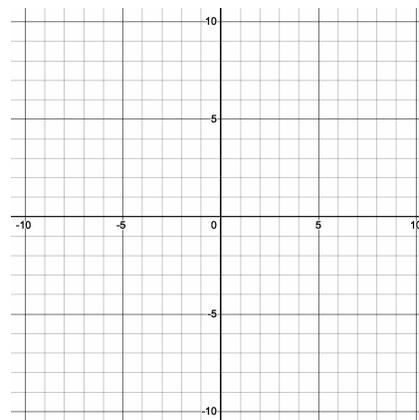Solution is?

2. Solve the linear system by substitution. What do you notice?

   Then solve by graphing to confirm what is happening.
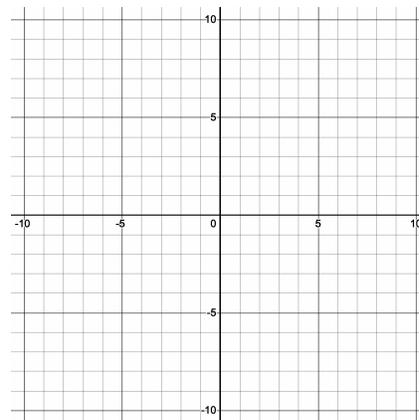
$$x + 3y = 12$$
$$2x + 6y = 6$$

3. Solve the linear system by substitution. What do you notice? $-2x + y = -1$

   Then solve by graphing to confirm what is happening. $y = 2x - 1$

Recall

Adding and Subtracting Polynomials

Polynomials can be added or subtracted. In the past we arranged these operations horizontally:

$$= (2x - 3y + 6) + (5x + 7y - 3)$$
$$= 2x - 3y + 6 + 5x + 7y - 3$$
$$= 7x + 4y - 3$$

$$= (7x - 2y + 5) - (-3x + 4y - 4)$$
$$= 7x - 2y + 5 + 3x - 4y + 4$$
$$= 10x - 6y + 9$$

However, we can choose to arrange these operations vertically, like so:

$$\begin{array}{r} 2x - 3y + 6 \\ + \quad 5x + 7y - 3 \\ \hline 7x + 4y - 3 \end{array}$$

$$\begin{array}{r} 7x - 2y + 5 \\ - \quad -3x + 4y - 4 \\ \hline 10x - 6y + 9 \end{array}$$

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4. Now, try adding or subtracting these polynomials.

a)

$$\begin{array}{r} 3x + 9y + 6 \\ + \quad 5x + 7y + 2 \\ \hline \end{array}$$

b)

$$\begin{array}{r} 7x + 3y + 9 \\ - \quad 2x + 11y + 2 \\ \hline \end{array}$$

c)

$$\begin{array}{r} 4x - 5y + 11 \\ + \quad 5x + 2y + 5 \\ \hline \end{array}$$

d)

$$\begin{array}{r} -7x + 2y - 9 \\ - \quad 5x - y - 3 \\ \hline \end{array}$$