Lesson 13 Summary

Let's think about the linear equation $2x - 4y = 12$. If we know $(0, -3)$ is a solution to the equation, then we also know $(0, -3)$ is a point on the graph of the equation. Since this point is on the y-axis, we also know that it is the vertical intercept of the graph. But what about the coordinate of the horizontal intercept, when $y = 0$? Well, we can use the equation to figure it out.

$$\begin{aligned} 2x - 4y &= 12 \\ 2x - 4(0) &= 12 \\ 2x &= 12 \\ x &= 6 \end{aligned}$$

Since $x = 6$ when $y = 0$, we know the point $(6, 0)$ is on the graph of the line. No matter the form a linear equation comes in, we can always find solutions to the equation by starting with one value and then solving for the other value.

* Always look for the most efficient way to solve for a variable.

* Linear Equations can also be in written in standard form $Ax + By = C$ where A, B, and C are numbers. You can always rewrite this equation in $y = mx + b$ form

Ex: $x + 3y = 12$ (Standard form)

$-x \quad -x$ (move x to other side - take it's opposite)

$\frac{3y}{3} = \frac{-x + 12}{3}$ ← must divide everything by 3 then distribute

$y = -\frac{1}{3}x + 4$

$-x = -1x$

"understood 1"