What's Going On?

Checking In

Minds on Slope and y-Intercept?

Action! Standard Form Equations

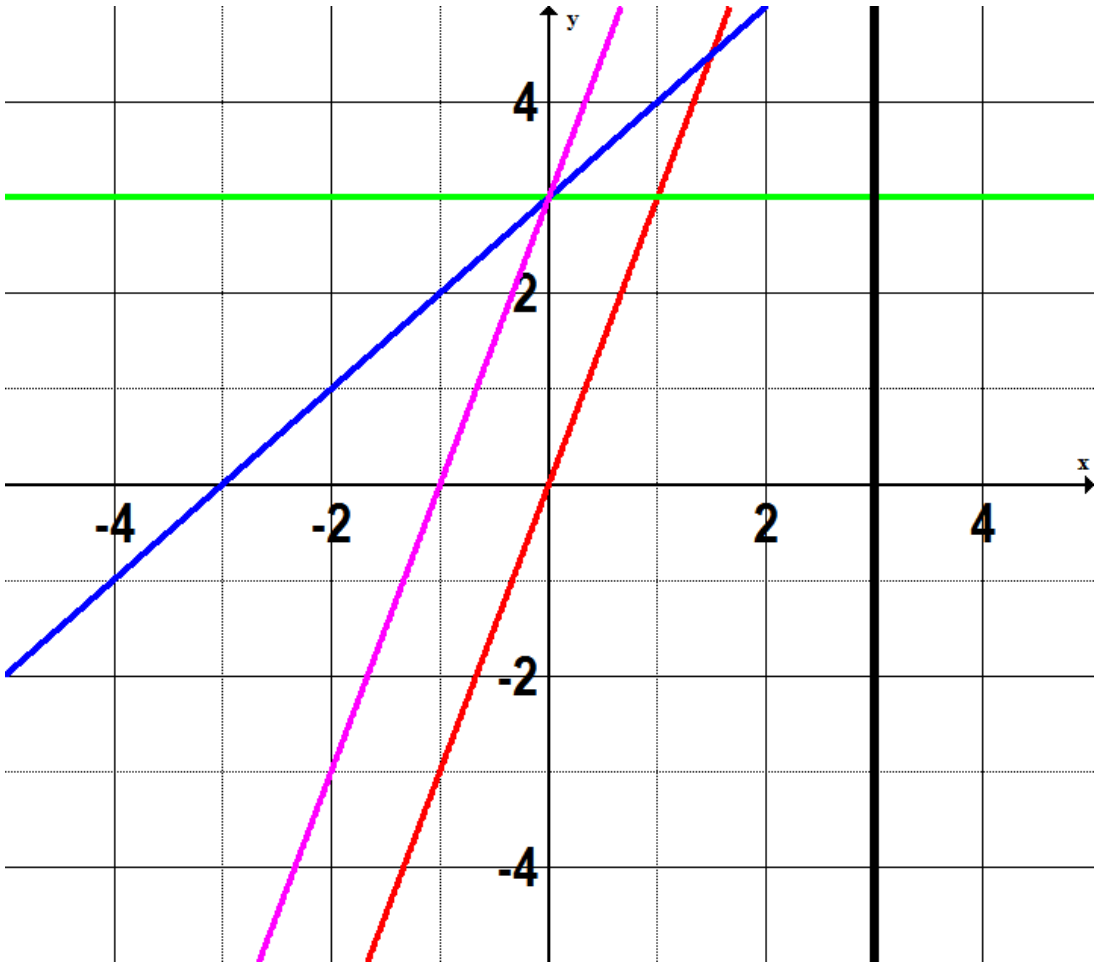
Consolidation Exit Card and Practice

Learning Goal - I will understand how to convert between Slope y-intercept Form and Standard Form.

L.G.L.

Copy and complete the table below on your LGL page from the previous lesson.

Equation	Slope	y-Intercept
y = 3x	3	0
y = 3	0	3
y = x + 3	1	3
y = 3x + 3	3	3
x = 3	undefined	none



Minds on

Slope and y-Intercept?

$y = 2x - 3$

The slope is 2

The y-intercept is -3

$6x - 3y - 9 = 0$

What's the slope and y-intercept???

The slope is 2

The y-intercept is -3

The slope is 2
The y-intercept is -3
BUT WHY?????

Minds on

Today's topic!

Standard Form Equations

$Ax + By + C = 0$

$6x - 3y - 9 = 0$

What's the slope and y-intercept???

This line is in...**Standard Form**

We can only get the slope and y-intercept from lines that are in the form **y = mx + b**!!

Minds on

Standard Form Equations

$6x - 3y - 9 = 0$

What's the slope and y-intercept???

$y = mx + b$

To find the slope and y-intercept, we need to get the line into slope y-intercept form.
Basically... we need to isolate/rearrange and solve for y!!
(Remember this? We did it a few units ago!)

We will do this on the next slide.
Get excited!

Minds on

Standard Form Equations

$6x - 3y - 9 = 0$

What's the slope and y-intercept???

1. First, we move every term except the term with the ***y*** in it to the **right side**.

$6x - 3y - 9 = 0$

$-6x \quad +9 \quad -6x + 9$

$-3y = -6x + 9$

2. Next, we divide every term by the **coefficient on y** to get y by itself.

$$\frac{-3y}{-3} = \frac{-6x}{-3} + \frac{9}{-3}$$

$y = 2x - 3$

$y = 2x - 3$

The slope is 2
The y-intercept is -3
BUT WHY?????

→ That's why!

Action!

Standard Form Equations

Standard form equations are in the form $Ax + By + C = 0$

A, B, and C are integers! (no fractions)

Standard Form Equations are useful for many reasons but they are **not ideal** for finding the slope and y-intercept.

So, we often have to rearrange Standard Form Equations into slope y-intercept form ($y = mx + b$)

Action!

You Try With A Partner!!

Determine the slope and y-intercept of the line.

$$3x + 5y - 15 = 0$$

1. First, we move every term except the term with the ***y*** in it to the **right side**.

$$3x + 5y - 15 = 0$$
$$-3x \qquad +15 \quad -3x + 15$$

2. Next, we divide every term by the **coefficient on y** to get y by itself.

$$\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5}$$

$$y = \frac{-3x}{5} + 3$$

The slope is $\frac{-3}{5}$

The y-intercept is 3

Action!

You Try On Your Own!!

Determine the slope and y-intercept of the line.

$$2x - 9y + 27 = 0$$

1. First, we move every term except the term with the ***y*** in it to the **right side**.

$$2x - 9y + 27 = 0$$
$$-2x \qquad -27 \quad -2x - 27$$

2. Next, we divide every term by the **coefficient on y** to get y by itself.

$$\frac{-9y}{-9} = \frac{-2x}{-9} - \frac{27}{-9}$$

$$y = \frac{2x}{9} + 3$$

A negative over a negative is a positive!!!

the slope is 2/9
the y-intercept is 3

$$2x - 9y + 27 = 0$$

$$+9y \qquad +9y$$

$$\frac{9y}{9} = \frac{2x}{9} + \frac{27}{9}$$

$$y = \frac{2}{9}x + 3$$

Consolidation

Exit Card

On the half piece of scrap provided, write your name and the question, then SHOW ALL YOUR STEPS

Find the slope and y-intercept of the line in Standard Form below.

5x - 4y - 20 = 0

Consolidation

Practice it!

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