

Name _____

"Teacher"

d 1/2

Date January 18, 2018

Section 2.E.6

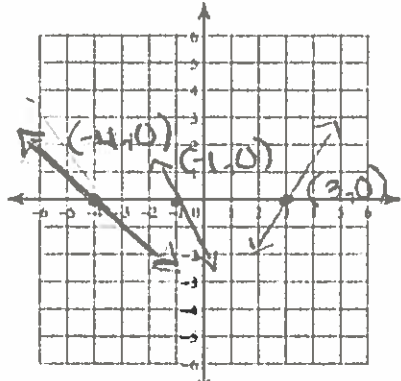
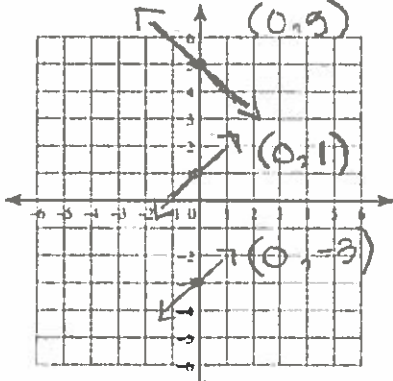
Linear Equations - Standard Form

general $x +$

$Ax + By = C =$ whole numbers.

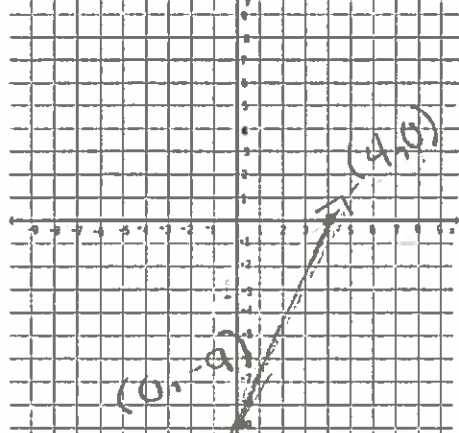
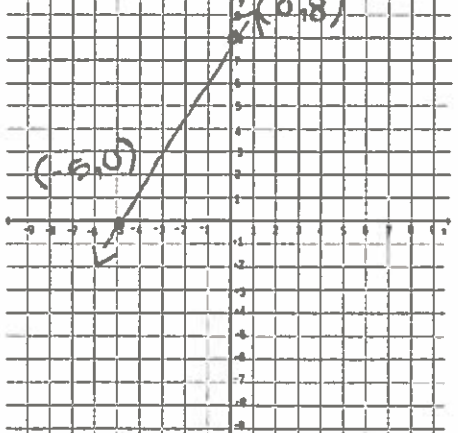
This form is most useful when we want to find

x- and y- intercepts

<p>X-Intercept The x-intercept is on the <u>x</u> axis. What do you notice about all the ordered pairs on this axis? on the x-axis all y-values are (0)</p> 	<p>Y-Intercept The y-intercept is on the <u>y</u> axis. What do you notice about all the ordered pairs on this axis? on the y-axis all x-values are (0)</p> 
<p>Therefore, to find the x-intercept, set $y = 0$</p>	<p>Therefore, to find the y-intercept, set $x = 0$</p>

Memory Trick!

Take the bill away from the other team.

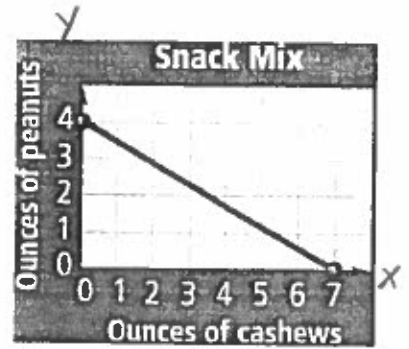
<p>Ex. 1</p>		<p>You Try 2</p>	
<p>Equation: $9x - 4y = 36$</p>		<p>Equation: $-8x + 5y = 40$</p>	
<p>Find the x-intercept set $y = 0$ $9x - 4(0) = 36$ $9x = 36$ $\frac{9x}{9} = \frac{36}{9}$ $x = 4$ $(4, 0)$</p>	<p>Find the y-intercept set $x = 0$ $9(0) - 4y = 36$ $-4y = 36$ $\frac{-4y}{-4} = \frac{36}{-4}$ $y = -9$ $(0, -9)$</p>	<p>Find the x-intercept set $y = 0$ $-8x + 5(0) = 40$ $-8x = 40$ $\frac{-8x}{-8} = \frac{40}{-8}$ $x = -5$ $(-5, 0)$</p>	<p>Find the y-intercept $-8(0) + 5y = 40$ $5y = 40$ $\frac{5y}{5} = \frac{40}{5}$ $y = 8$ $(0, 8)$</p>
<p>Graph</p> 		<p>Graph</p> 	

Standard Form in Real-Life Scenarios

- This form of a linear equation happens when y does not really depend on x .
- You still have two variables that are related in the situation.

3) An athlete wants to make a snack of peanuts and cashews that will contain exactly 28g total of protein. Cashews have 4g of protein per ounce, and peanuts have 7g of protein per ounce. Write a standard form equation for the scenario. (Define your variables first.)

x : Ounces of cashews $4x + 7y = 28$
 y : Ounces of peanuts $Ax + By = C$



If the athlete's snack had only cashews, how many ounces of cashews would she need?
 (We are really finding the x -int.)

Set Peanuts = 0 $4x + 7(0) = 28$
 $y = 0$ $\frac{4x}{4} = \frac{28}{4}$
 $x = 7$

If the athlete's snack had only peanuts, how many ounces of peanuts would she need?
 (We are really finding the y -int.)

Set Cashews = 0 $4(0) + 7y = 28$
 $x = 0$ $\frac{7y}{7} = \frac{28}{7}$
 $y = 4$

4) Target sells bags of hot fries for \$2 each and honey buns for \$1.25 each. You want to spend exactly \$20 on snacks. Write a standard form equation that describes the items you can purchase. (Define your variables first.)

x : Bag of Hotfries $2x + 1.25y = 20$
 y : Honeybuns $Ax + By = C$

If you don't buy any hot fries, how many honey buns can you buy? What did you just find? $\rightarrow y$ -int

Set $x = 0$ $2(0) + 1.25y = 20$
 $\frac{1.25y}{1.25} = \frac{20}{1.25} = y = 16 \text{ honeybuns.}$

If you don't buy any honey buns, how many bags of hot fries can you buy? What did you just find? x -int

Set $y = 0$ $2x + 1.25(0) = 20$
 $\frac{2x}{2} = \frac{20}{2} \quad x = 10 \text{ hotfries}$

Could you buy 8 honey buns and 5 bags of hot fries? SHOW WORK.

$y = 8$ $x = 5$
 $2x + 1.25y = 20$ $10 + 10 = 20$
 $2(5) + 1.25(8) = 20$ Yes.