

# Warmup 10/ (# of days off you just had + 5)

DO ALL OF THESE AT THE TOP OF YOUR WARMUP PAGE, IN THE MARGIN ABOVE MONDAY!!!

- ▣ Find your goal from the first 9 weeks and take it off of the #goals cabinet. (You can do whatever you want with it/throw it away if you want) Please try to remember which one was yours – don't take someone else's!
1. On your new **WEEK 1** Warmup page, write what your goal was. Did you meet your goal completely? A little bit? Not at all?
  2. Write about how you think the first 9 weeks in math went for you. Any thoughts/impressions you have about your performance or the class in general. Whatever comes to your mind!
  3. Write a few sentences about your fall break. Fun things you did, places you went, etc.

# Warm-Up (Together)

What is the formula for slope-intercept form?

Write the equation that describes each line in slope-intercept form.

1. slope =  $-\frac{1}{2}$  , y-intercept = -4

$$y = -\frac{1}{2}x - 4$$

2. slope = 5 ,  $(-3, -1)$  is on the line

$$-1 = 5(-3) + b \rightarrow -1 = -15 + b \rightarrow 14 = b$$

$$y = 5x + 14$$

3.

Time (hr)	Distance
1	60
3	180
4	240
5.5	330

$$y = 60x$$

# RESTROOM PASSES

- Put your unused ones in the tray!!! Even if you've used some but not all.
- Save your new ones! You will not get more if you lose them.
- Write your name on them now!!!

# Presents...

- ▣ **Each week, you get 1 Meigs Moolah if:**
  - ▣ You did all of your homework on time that week, including ALEKS
  - ▣ You turned in each day of warmups with **each question** complete
  
- ▣ Starting now, I will try to hand them out every Monday.

# Return of the Quizzes

# BACK TO THIS PAGE

## Table of Contents

Simplifying & Interpreting Expressions	p.1
Solving Equations	p.2
Fractions & Story Problems	p.3
Equations with No Solution or Infinite Solutions	p.4
Inequalities	p.5
Compound Inequalities	p.6
Solving for a Variable	p.7
What is a Function?	p. 8
Continuous or Discrete	p. 9
Domain & Range	p. 10
<b>Slope</b>	<b>p. 11</b>
<b>Slope WITHOUT a graph</b>	<b>p. 12</b>
<b>Slope-Intercept Form</b>	<b>p. 13</b>
<b>Standard Form</b>	<b>p. 14</b>

# Objective:

Learn about linear functions and  
Standard Form

# Review: Slope Intercept Form

▣ Graph:  $y = 4x + 3$

▣ Graph:  $y = -2x + 1$

▣ Graph:  $y = 7$

▣ Graph  $x = 2$



Any guesses on what shape will the graph of this equation be?

Can you think of an  $(x, y)$  pair that makes this equation true???

$$5x - 10y = 20$$

4

0

6

8

0

-2

1

2

$(4, 0)$

$(0, -2)$

$(6, 1)$

$(8, 2)$

# Standard Form for a Line

$$Ax + By = C$$

where  $A$ ,  $B$ , and  $C$  are real numbers and  $A$  and  $B$  are not both 0

# Take Notice!

- $x$  and  $y$  both have exponents of 1.
- $x$  and  $y$  are not multiplied together.
- $x$  and  $y$  do not appear in denominators, exponents, or radical signs.

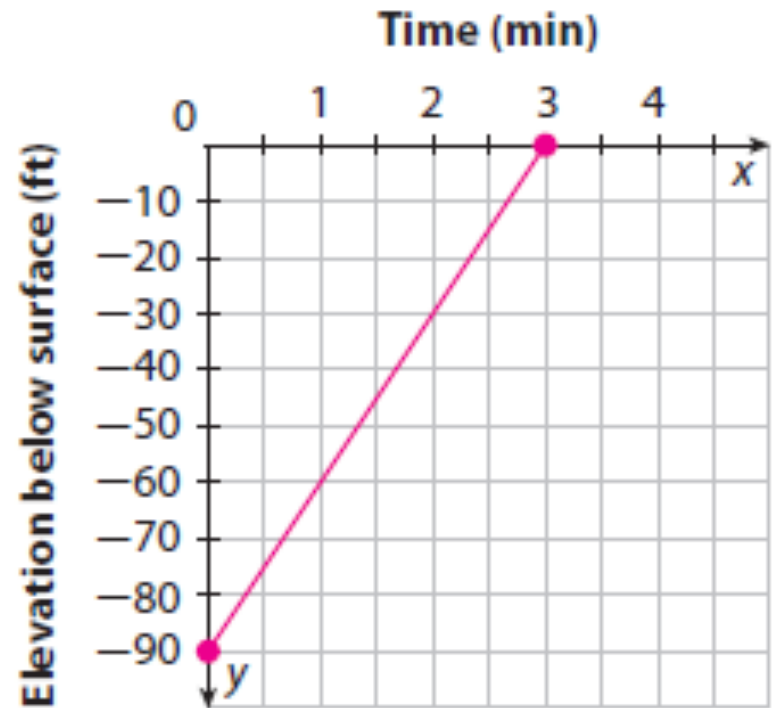
# Standard Form is very common!!!

- ▣ \_\_\_\_\_ has \$\_\_\_\_\_.
- ▣ He/she wants to buy some \_\_\_\_\_ and some \_\_\_\_\_.
- ▣ Each \_\_\_\_\_ costs \$\_\_\_\_\_.
- ▣ Each \_\_\_\_\_ costs \$\_\_\_\_\_.
- ▣ Write an equation.

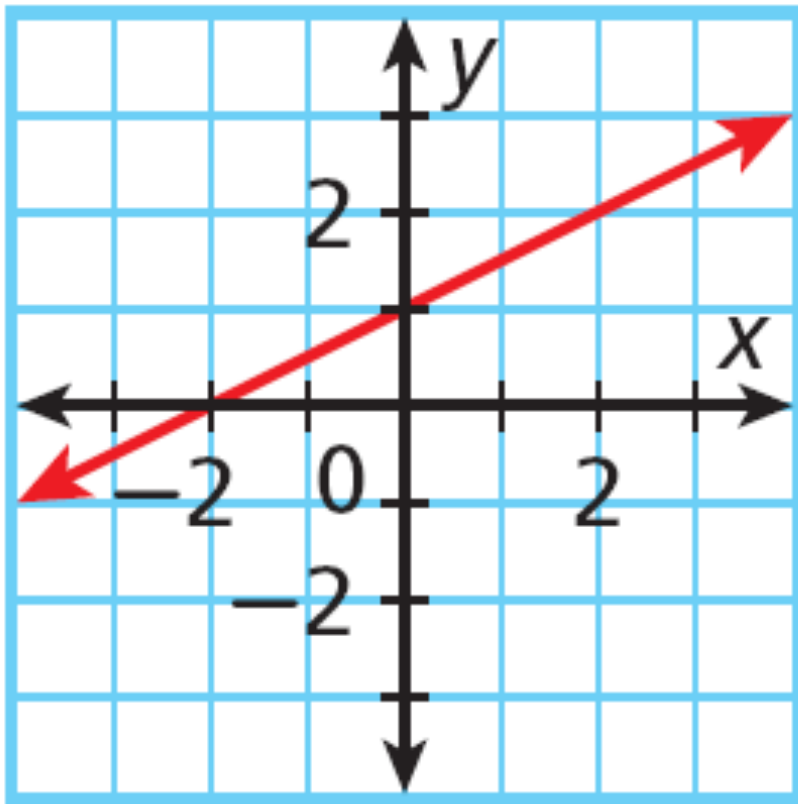
## Review

The **x-intercept** is the x-coordinate of the point where the graph intersects the x-axis. The y-coordinate of this point is always 0.

The **y-intercept** is the y-coordinate of the point where the graph intersects the y-axis. The x-coordinate of this point is always 0.



**Find the x- and y-intercepts.**



The graph intersects the y-axis at  $(0, 1)$ . The y-intercept is 1.

The graph intersects the x-axis at  $(-2, 0)$ . The x-intercept is -2.

## Find the x- and y-intercepts. $5x - 2y = 10$

To find the x-intercept, replace y with 0 and solve for x.

$$5x - 2y = 10$$

$$5x - 2(0) = 10$$

$$5x - 0 = 10$$

$$5x = 10$$

$$\frac{5x}{5} = \frac{10}{5}$$

$$x = 2$$

The x-intercept is 2.

To find the y-intercept, replace x with 0 and solve for y.

$$5x - 2y = 10$$

$$5(0) - 2y = 10$$

$$0 - 2y = 10$$

$$-2y = 10$$

$$\frac{-2y}{-2} = \frac{10}{-2}$$

$$y = -5$$

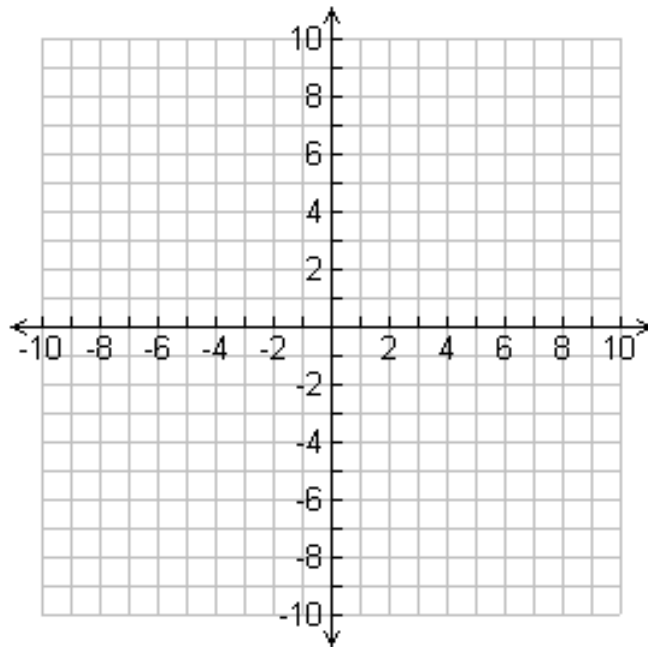
The y-intercept is -5.

**Find the x and y intercepts from  
a linear equation in standard form.  
Then graph the function.**

$$-3x + 5y = 30$$

The x-intercept is -10; (-10, 0)

The y-intercept is 6; (0, 6)



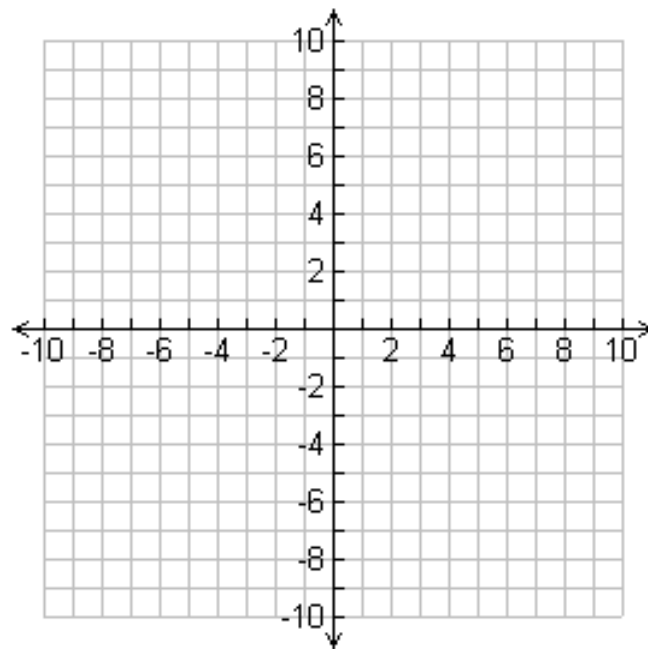


**Find the x and y intercepts from  
a linear equation in standard form.  
Then graph the function.**

$$-4x - 5y = 40$$

The x-intercept is -10; (-10, 0)

The y-intercept is -8; (0, -8)

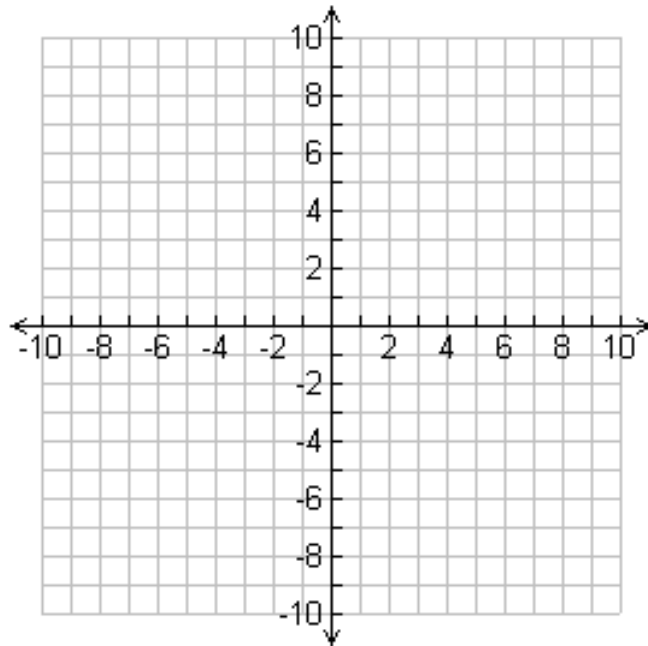


**Find the x and y intercepts from  
a linear equation in standard form.  
Then graph the function.**

$$2x - 3y = -6$$

The x-intercept is -6; (-6, 0)

The y-intercept is 2; (0, 2)

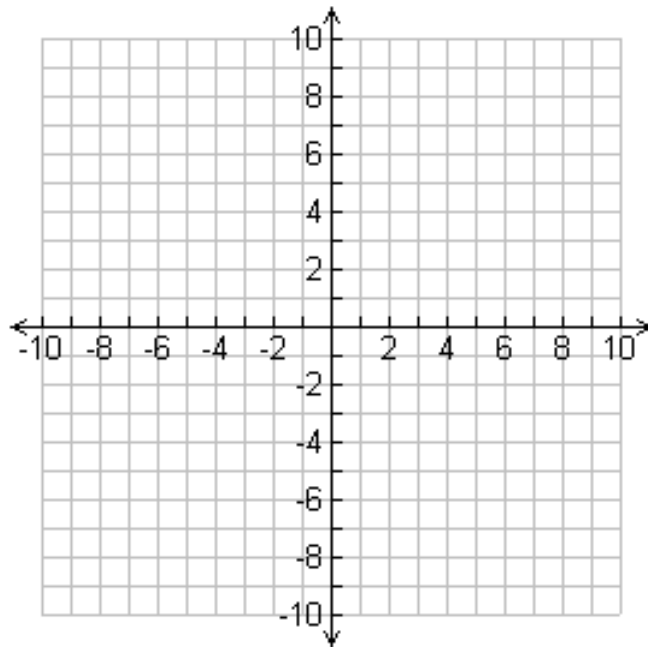


**Find the x and y intercepts from  
a linear equation in standard form.  
Then graph the function.**

$$3/5x + 1/3y = 3$$

The x-intercept is 5; (5, 0)

The y-intercept is 9; (0, 9)



**The school sells pens for \$2.00 and notebooks for \$3.00. You have \$60 to spend on notebooks and pens.**

**A. Write an equation for this situation.**

$$2p + 3n = 60$$

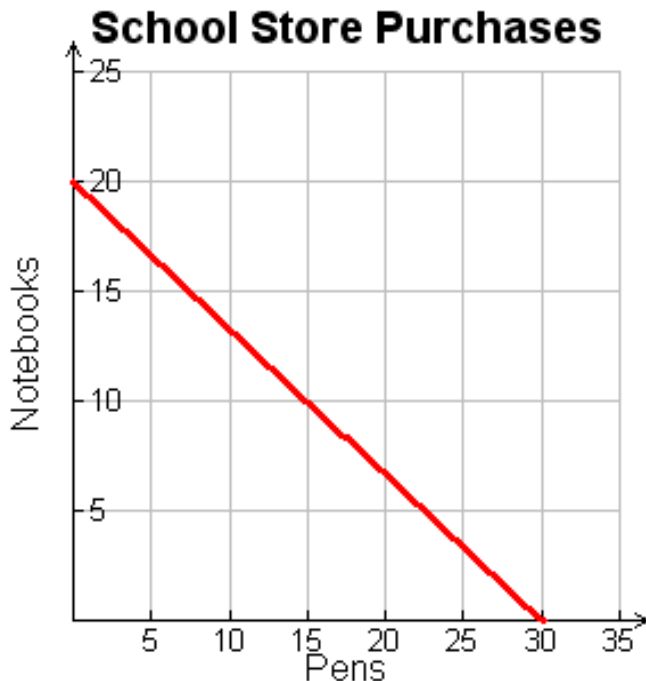
**B. Find the intercepts.**

$$(30, 0) \quad (0, 20)$$

**C. Sketch a graph for the function**

**The school sells pens for \$2.00 and notebooks for \$3.00. The equation  $2x + 3y = 60$  describes the number of pens  $x$  and notebooks  $y$  that you can buy for \$60.**

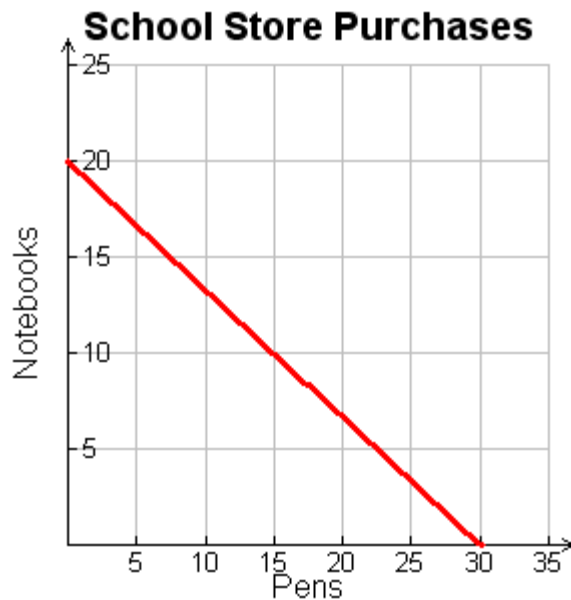
**Graph the function and find its intercepts.**



x-intercept: 30; y-intercept: 20

**The school sells pens for \$2.00 and notebooks for \$3.00. The equation  $2x + 3y = 60$  describes the number of pens  $x$  and notebooks  $y$  that you can buy for \$60.**

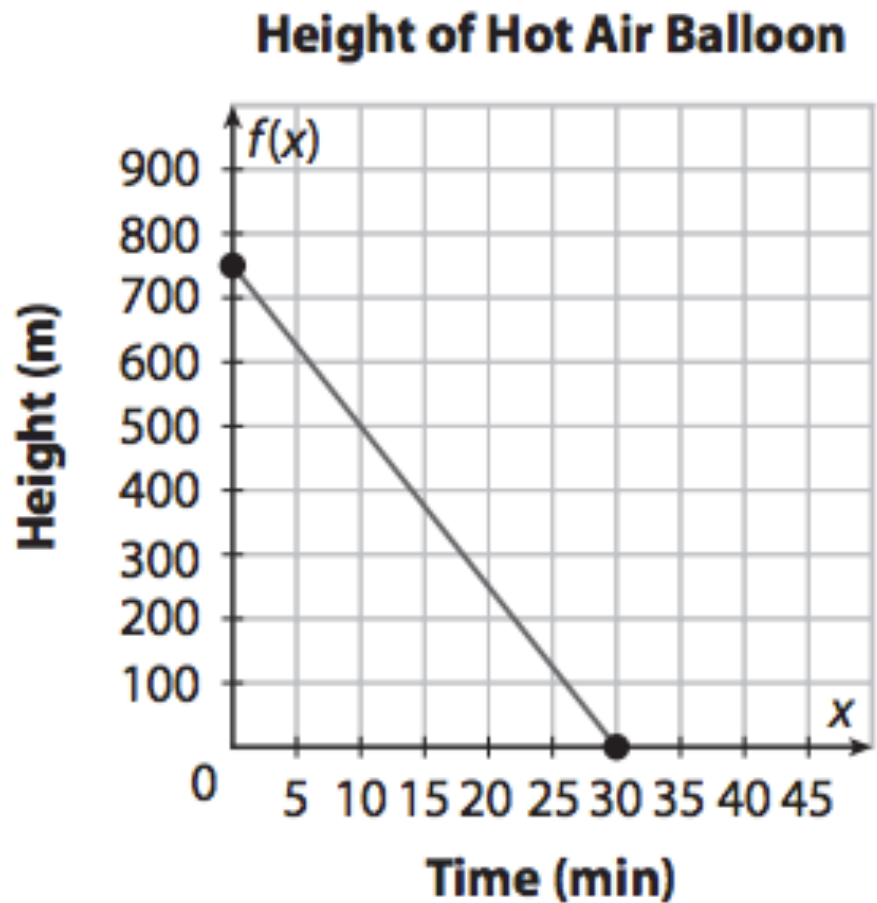
**What does each intercept represent?**



x-intercept: 30. This is the number of pens that can be purchased if no notebooks are purchased.

y-intercept: 20. This is the number of notebooks that can be purchased if no pens are purchased.

Interpret the intercepts.



Homework

Worksheet