# Guided Notes 5

5.2: Using Intercepts

**A.** The intercepts are where a graph intersects the X-and Y-axis.

X-intercept from graph:

Y-intercepts from graph:

**B.** **1.** The **y-intercept** of a graph is the y-coordinate of the point where the graph intersects the y-axis. The x-coordinates of this point is always 0.

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

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

**1.** $3x - 2y = 6$

**2.** $-5x + 6y = 60$

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

-5x + 6(_____) = 60

The x-intercept is _____.

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

-5(_____) + 6y = 60

The y-intercept is _____.

**D. Reflect**

If the point (5,0) is on a graph, is (5,0) the y-intercept of the graph? Explain.

**E.** Find and interpret the x- and y- intercepts of each situation.

1. The Sandia Peak Tramway in Albuquerque, NM, travels a distance of about 4500 meters to the top of Sandia Peak. Its speed is 300 meters per minute. The function f(x) = 4500 -300x gives the tram's distance in meters from the top of the peak after x minutes. (Find the x- and y-intercepts and graph the situation)

2. A hot air balloon is 750 meters above the ground and begins to descend at a constant rate of 25 meters per minute. The function f($x$) = 750 -25$x$ represents the height of the hot air balloon after $x$ minutes. (Find the x- and y-intercepts and graph the situation)

**F. Reflect**

**Critique Reasoning** A classmate says that the graph shows the path of the tram. Do you agree? (See the graph from the video or the book on pg. 177)

**G.** Use the intercepts to graph the line described by each equation.

1. $\frac{1}{2}y = 3 - \frac{3}{4}$

2. $18y = 12x + 108$

   Write in standard form: _____

   Now graph the line, by plotting the points, _____ and _____ and draw the _____ through them.

**H. Elaborate**

1. A linen intersects the y-axis at the points (a,b). Is b=0? Explain.

2. What does a negative y-intercept mean for real-world application?

3. How can we find the x-intercept of the graph of a linear equation using the equation? How is using the graph of a linear equation to find the intercepts like using the equation?