Essential Question: How can I write and graph linear inequalities in two variables?

Questions:

How do we determine a solution?

What did we do with the coordinates? (ordered pairs)

Notes:

Example 1:
Which ordered pairs are solution of the inequality $5y - 3x \leq 7$?

a. $(0,0)$
$5(0) - 3(0) \leq 7$

Yes this is a solution

b. $(3,5)$
$5(5) - 3(3) \leq 7$
$25 - 9 \leq 7$
$16 \leq 7$
Not a solution

c. $(-2,5)$
$5(-5) - 3(-2) \leq 7$

Yes this is a solution

Summary:
Example 2:

Apple juice costs $2 per bottle, and cranberry juice costs $3 per bottle. Tamiko has at most $18 with which to buy drinks for a club picnic. She let $x$ represent the number of bottles of apple juice and lets $y$ represent the number of bottles of cranberry juice.

a. Write an inequality linear equation for this situation.

\[ 2x + 3y \leq 18 \]

b. Graph the inequality linear equation.

Find y-int

\[ \frac{3y}{3} = \frac{18}{3} \]

\[ y = 6 \]

Find x-int

\[ \frac{2x}{2} = \frac{18}{2} \]

\[ x = 9 \]

"Solid line because inequality can be equal to"