Algebra I **Name** _____ **Period** _____
Lesson 7.1: Graphing Inequalities

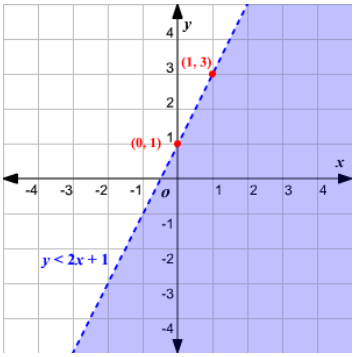
Learning Goals:
Write an inequality in two variables.
Graph an inequality in two variables.

Notes

A linear inequality in 2 variables has _infinitely many solutions_____.

The solutions are any ordered pairs (x, y) that make the inequality TRUE.

The ordered pairs are located in the shaded_____ area of the graph and on the solid line_____.



Inequality Symbol	Type of Boundary Line	Shaded Area
≤	Solid	Below the line
≥	Solid	Above the line
<	Dashed	Below the line
>	Dashed	Above the line

Identifying Solutions of a Linear Inequality

Steps:

- Replace x and y with their respective values.
- Simplify.
- If the inequality is TRUE, then the ordered pair is a SOLUTION.
- If the inequality is FALSE, then the ordered pair is NOT a solution.

Is the ordered pair a solution of y > x – 3?

1. (1, 2)
   2 > 1 - 3
   2 > -2 true
   (1, 2) is a solution

2. (-3, -7)
   -7 > -3 – 3
   -7 > -6 false
   (-3, -7) is not a solution

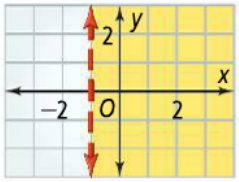
Graphing a Linear Inequality in One Variable

Steps:

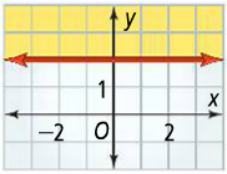
- Write the inequality in slope-intercept form.
- Draw the boundary line. Solid or dashed?
- Shade above or below the line.

Graph each inequality in one variable.

3. $x > -1$



4. $y \geq 2$



Graphing a Linear Inequality in Two Variables

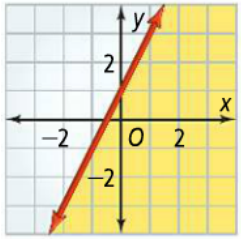
Steps:

- Write the inequality in slope-intercept form.
- Draw the boundary line. Solid or dashed?
- Shade above or below the line.
- *If you are not sure what side to shade, choose a **test point** and see if it a solution for the inequality.*

Graph each inequality in two variables.

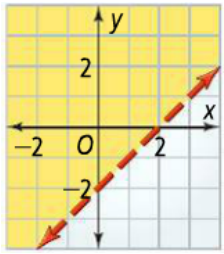
5. $y - 1 \leq 2x$

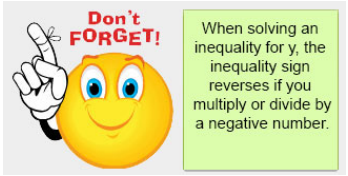
$y \leq 2x + 1$



6. $-y < -x + 2$

$y > x - 2$





Classwork/Homework: 7.1 Graphing a Linear Inequality