

Math 1313
Chapter 3 – Section 3.1
Part I – Graphing Linear Inequalities

Linear inequalities in two variables are of the form:

$$ax + by \leq c,$$

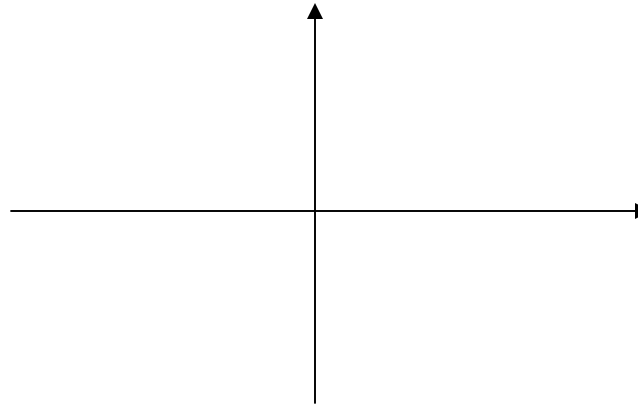
where \leq can be replaced with \geq , $<$ or $>$.

To graph a linear inequality:

1. Write the inequality as an equation.
2. Find at least two points on the line, plot the points and sketch the line. The line will be solid if the inequality is \leq or \geq and dashed if the inequality is $<$ or $>$.
3. Test a point not on the line to determine which half plane will be shaded.

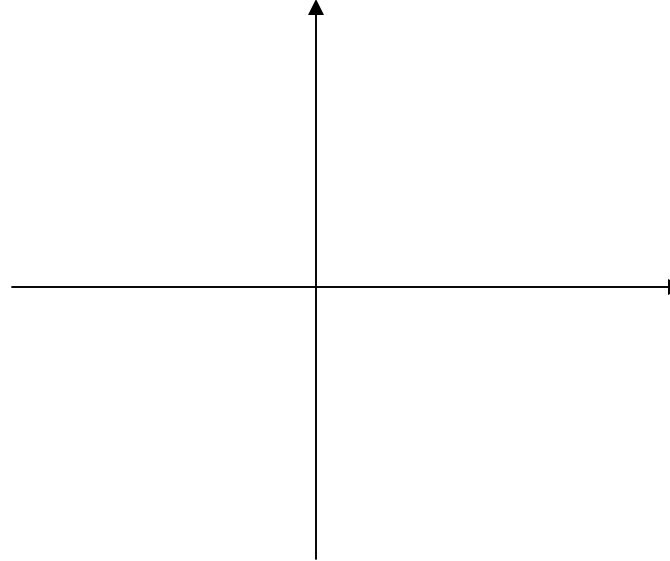
Example 1: Determine the solution set for the following inequality.

$$y < x - 3$$



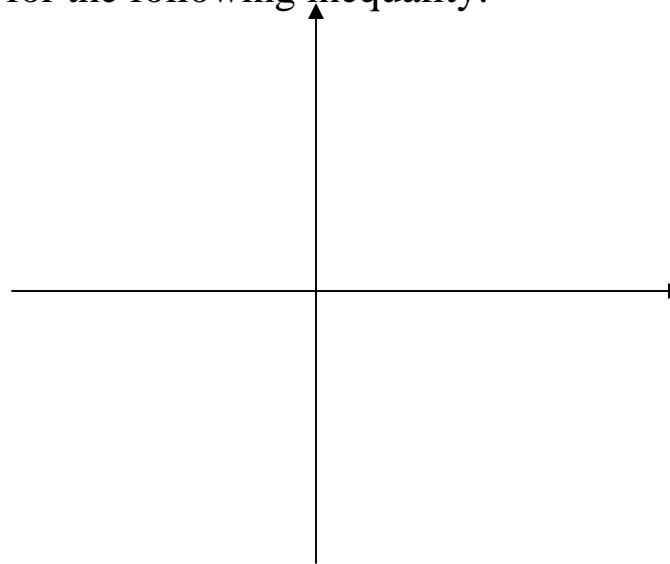
Example 2: Determine the solution set for the following inequality.

$$2x - 5y \geq 10$$



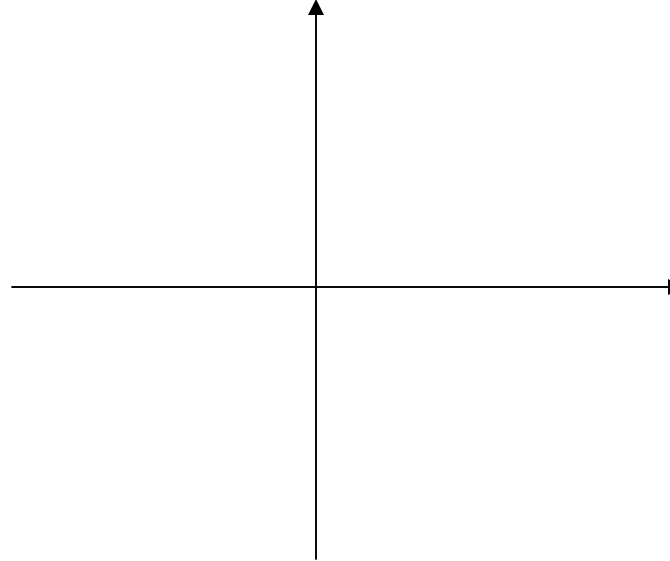
Example 3: Determine the solution set for the following inequality.

$$y \leq 4$$



Example 4: Determine the solution set for the following inequality.

$$x > -1$$



Example 5: Determine the solution set for the following inequality.

$$8x + 4y > 0$$

