Lesson 4 Graphing Linear Inequalities

Steps to Graphing Linear Inequalities

1. Graph the equation using $y = mx + b$
   - Use a dotted/dashed line if original is $< or >$
   - Use a solid line if original is $\leq or \geq$

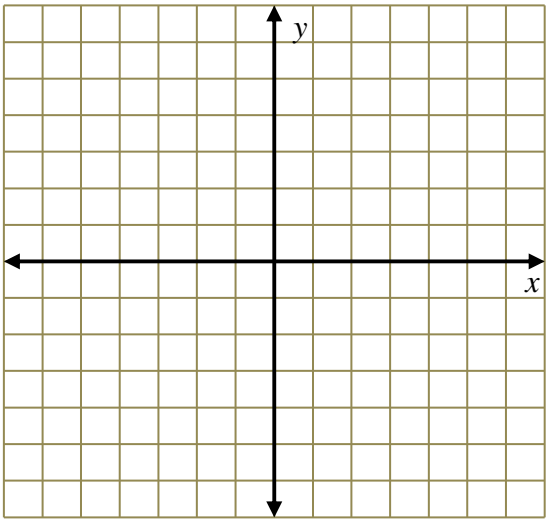
2. Determine which side to shade
   - Choose a test point NOT on the line and substitute into original inequality
     - If TRUE, shade side containing the point
     - If FALSE, shade opposite side (NOT containing the point)

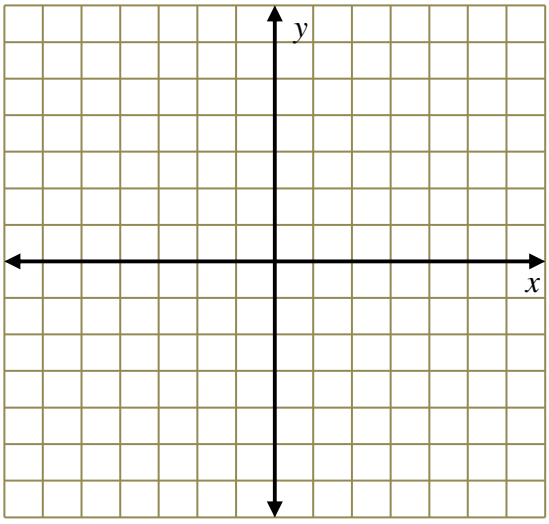
Note:

- (0, 0) is the easiest test point to use, unless the graph passes through it

- The solution will be a half-plane

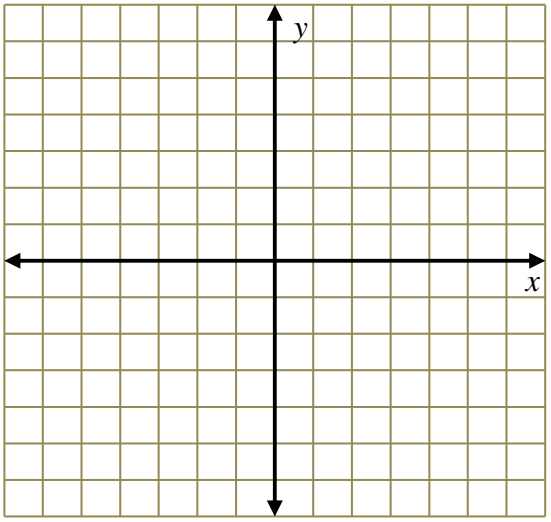
The graph of a line separates the graph into 3 distinct regions.



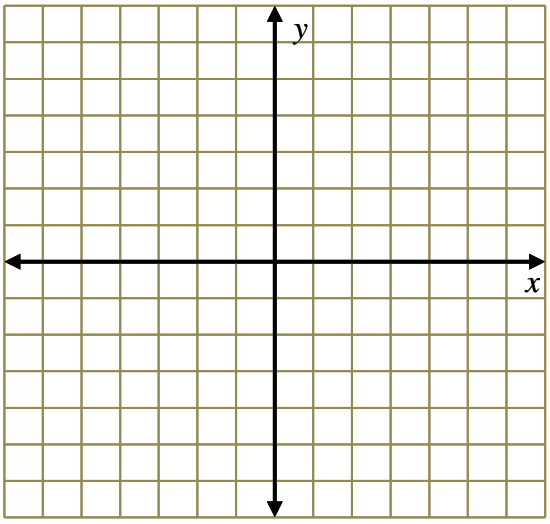


Example 1
Sketch the inequalities:

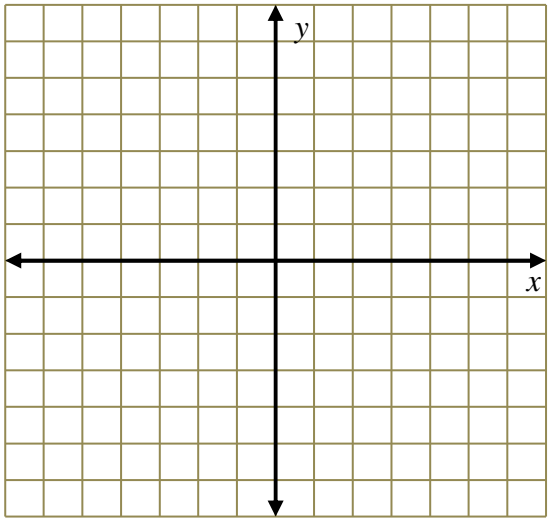
a.) $y \leq -2x + 4$



b.) $3x - y > 3$



c.) $2x - 3y \geq 6$



d.) $y - 3 \geq 0$