3.5 Graphing Linear Inequalities in Two Variables

First, solving inequalities is a lot like solving equations:

BUT… there's ONE BIG RULE!

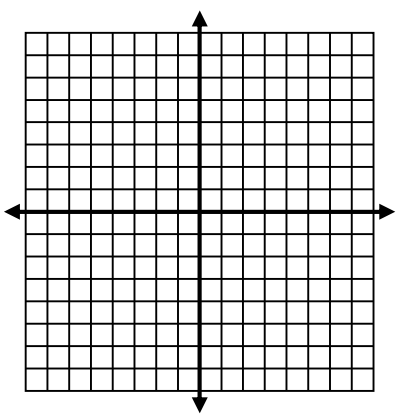
When using inverse operations to solve inequalities, if you **multiply or divide by a negative**, you have to:

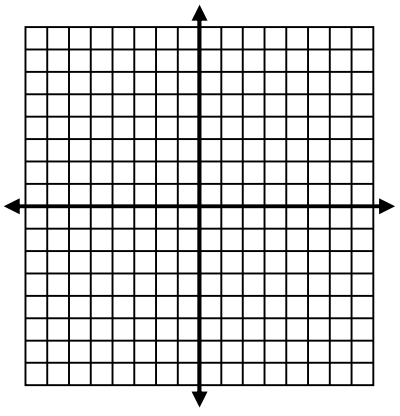
Now you are ready to graph linear inequalities, by first solving for y.

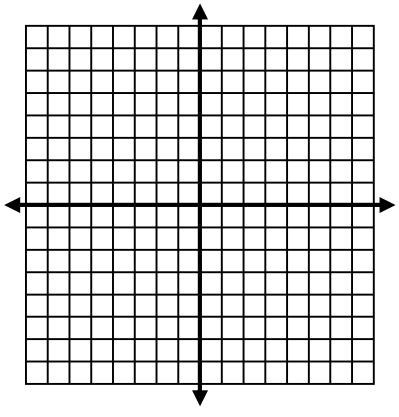
Inequality symbols	**Shading rules**	
$<$	$y < mx + b$	shade _____
$>$	$y > mx + b$	shade _____

Example 1: Graph the following inequalities.

a) $2x + 3y \leq 6$ b) Graph $3x + 5y > 15$ c) $x + 2y < -8$

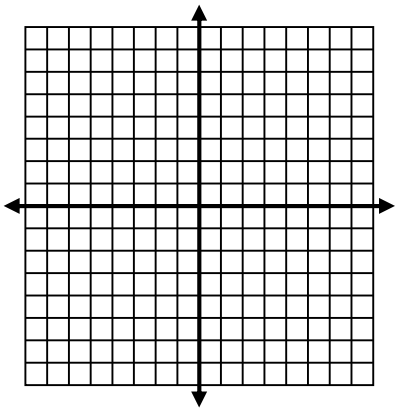




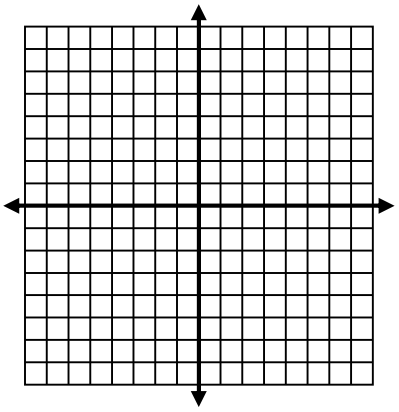


Example 2:

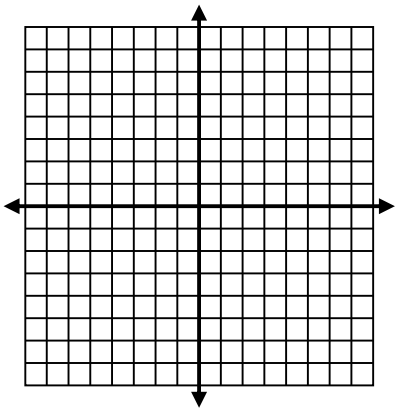
a) $x - y > 5$



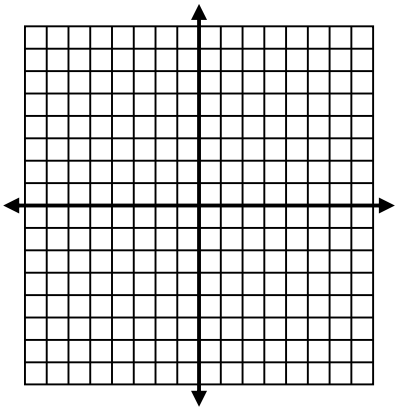
b) $2x - 4y < 8$



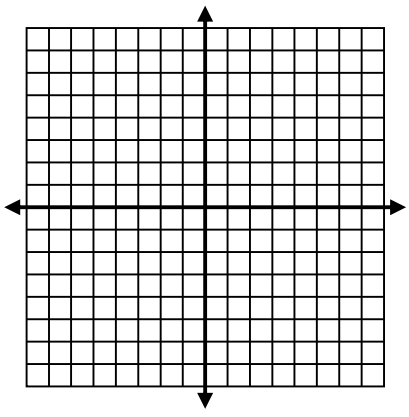
c) $x > -3$



d) $y \leq 1$



e) $y \geq -2x$



f) $y < \frac{1}{3}x$