

Notes #12 ~ Sect. 2.7: Two-Variable Inequalities

To graph a linear inequality or an absolute value inequality:

Step 1: Graph the boundary line.

A dashed boundary line indicates that the line is not a part of the solution.
A solid boundary line indicates that the line is a part of the solution.

Step 2: Decide which side of the line contains solutions to the inequality and shade.

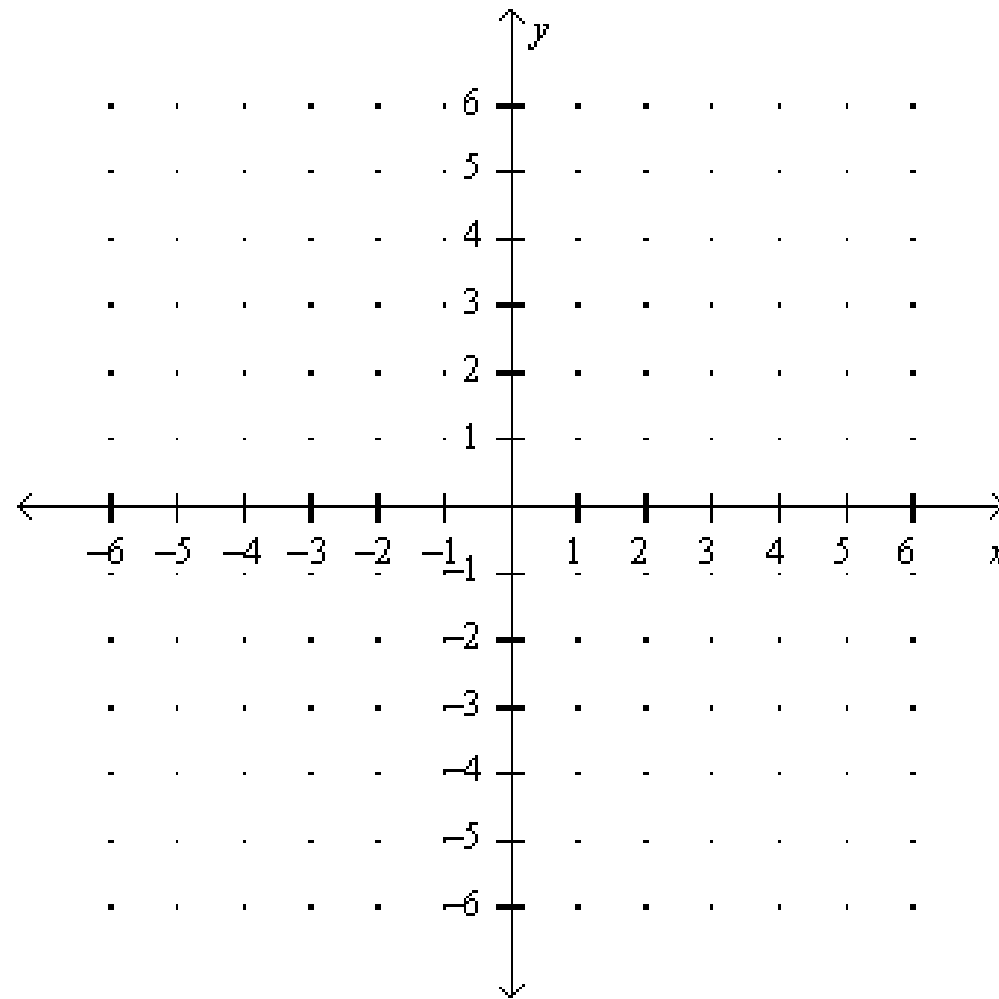
Pick a point not on the line and test it.

If it's true, shade the area that includes that point.

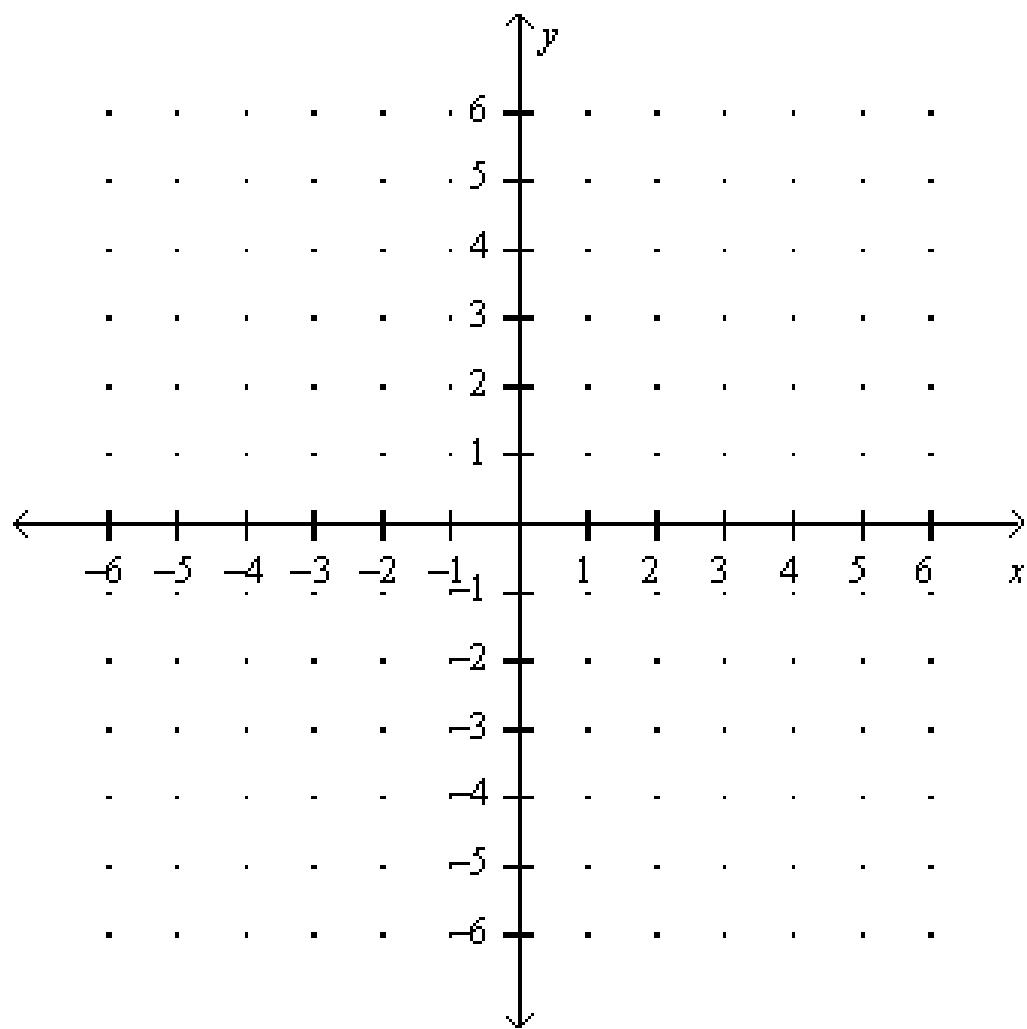
If it's false, shade the area that does not include the point.

Ex. 1: Graph each inequality.

a) $y > \frac{3}{2}x + 1$

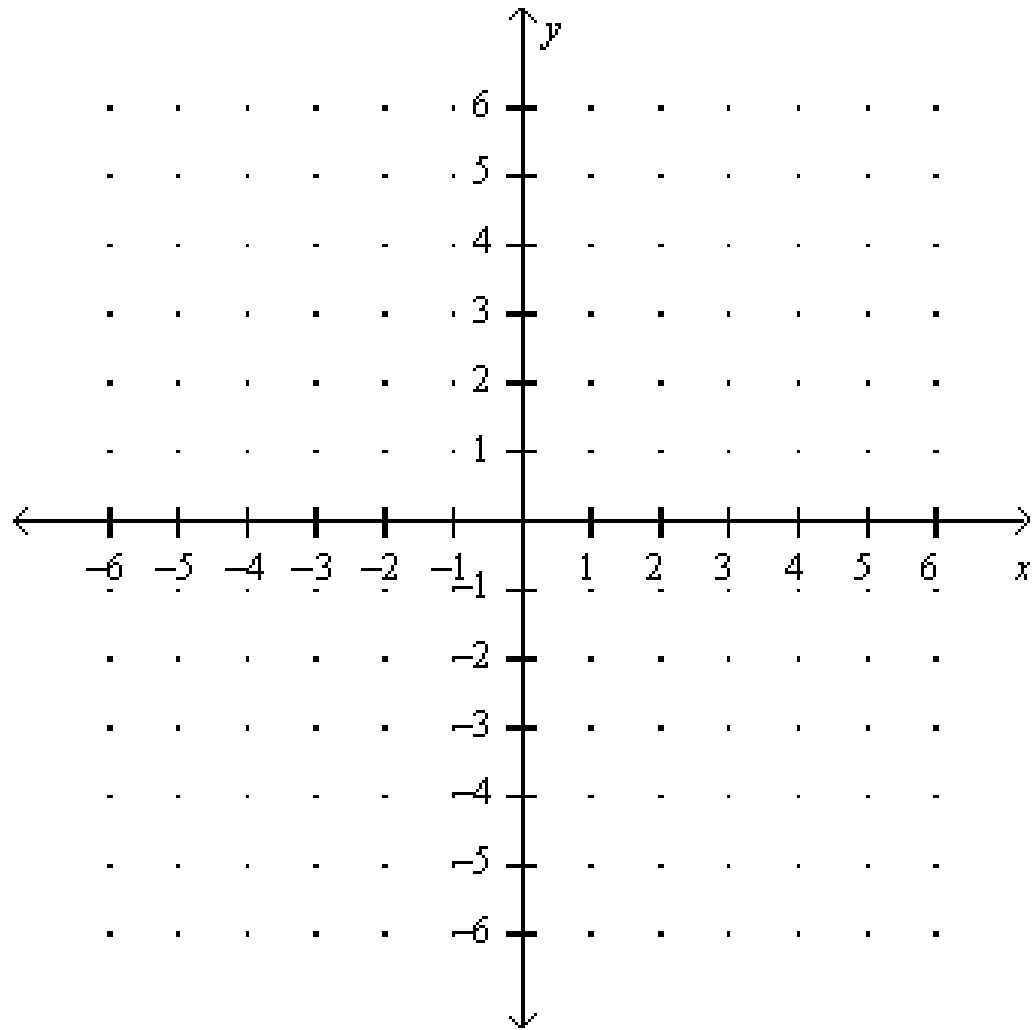


b) $4x + 2y \leq 4$

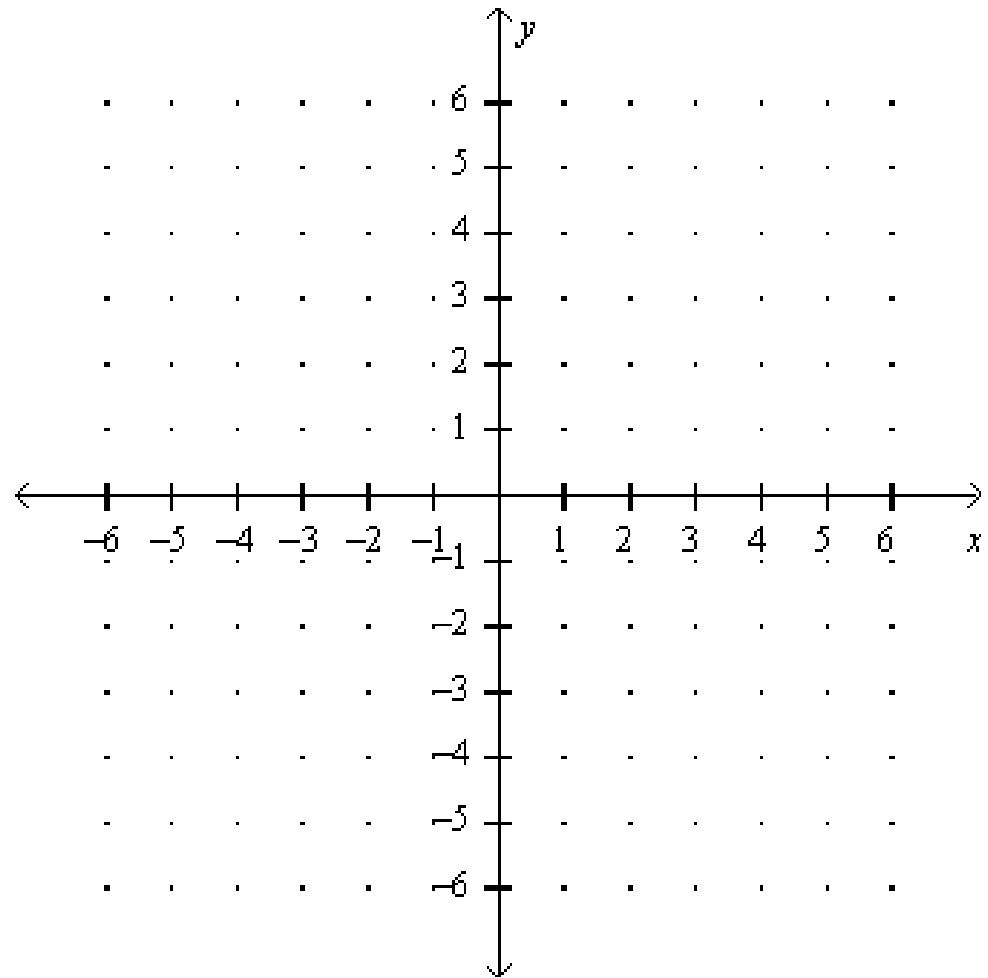


Ex. 2: Graph each absolute value inequality.

a) $y \geq |2x| - 3$



$$b) \quad 2y + 3 \leq -|x - 5|$$



Ex. 3: Write an inequality for each graph. In each case, the equation for the boundary line is given.

a) $y = |x - 2| - 1$

b) $y = -\frac{1}{2}x + 3$

