Name _____ Class _____ Date _____

4-5 Reteaching

Linear Inequalities

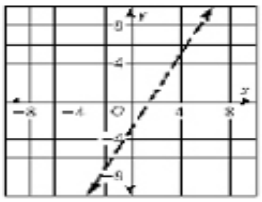
To graph an inequality, graph the line and find the solution region by substituting a test point. The point (0, 0) is a good one unless the line goes through the origin.

Problem

What is the graph of $y > 2x - 3$?

Begin by graphing the line $y = 2x - 3$. Take random values for x, find the corresponding y values, and create a table.

x	$y = 2x - 3$
−2	−7
−1	−5
0	−3
1	−1
2	1



The ordered pairs are (–2, –7), (–1, –5), (0, –3), (1, –1), and (2, 1). You can graph the line using these points. The line should be dashed because the inequality symbol is >.

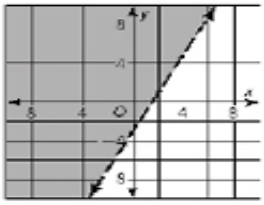
To determine which region to shade, substitute (0, 0) into the inequality to see if it is a solution.

$y > 2x - 3$

$0 \stackrel{?}{>} 2(0) - 3$

$0 > -3$ ✔

The point (0, 0) satisfies the inequality and is above the line. Therefore, shade the region above the line, which is the solution region.



Exercises

Graph each linear inequality.

1. $y < x + 2$
2. $y > 3x - 4$
3. $x + y < -3$
4. $x - 2y > -1$