Name _____ Class _____ Date _____

Reteaching 6-5

Linear Inequalities

OBJECTIVE: Graphing linear inequalities **MATERIALS:** Graph paper

To graph inequalities, use the same strategies used to graph equations. Remember that the boundary line is solid if the inequality has an equal sign (indicating that the points on the boundary line are part of the solution) and dashed if the inequality does not have an equal sign (indicating that the points on the boundary line are not part of the solution).

Example

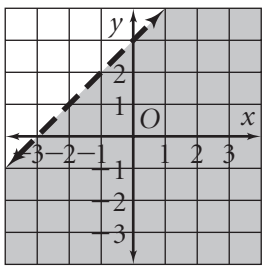
Graph the inequality $y - 3 < x$.

a. The equation of the boundary line is $y - 3 = x$. Rewrite the equation in the form $y = mx + b$.

$y = x + 3$

b. Graph the boundary line, $y = x + 3$. Since coordinates of points on the boundary line do not make the inequality true, graph a dashed line.

c. Use these guidelines for shading: If the inequality sign is less than (<), then shade the lower region of the graph (or the left region, for the vertical lines). Otherwise, shade the upper region of the graph (or the right region, for vertical lines).



d. Test the point (0, 0) from the shaded region. See whether (0, 0) satisfies the original inequality.

$y - 3 < x$

$0 - 3 < 0$

$-3 < 0$ **True**

The inequality is true for (0, 0). So the shaded region is correct.

Exercises

Follow steps a–d above to graph each linear inequality.

1. $y < x + 2$ **2.** $y \leq 2x + 1$ **3.** $y > x$

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