

Algebra I
Notes 6.5, Part 1 Graphing Inequalities

Objectives: Determine the boundary line and graph the solution of an inequality.

REVIEW:

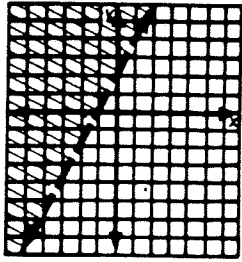
_____ - greater than

_____ - greater than or equal to

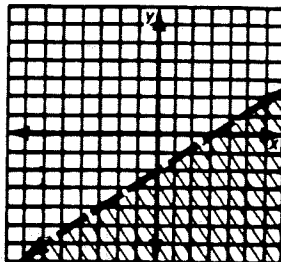
_____ - less than

_____ - less than or equal to

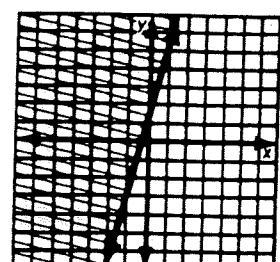
EXAMPLES
OF LINEAR
INEQUALITY
SOLUTIONS:



$$y > 2x + 2$$



$$y < \frac{2}{3}x - 2$$



$$y \geq 4x + 1$$

The solution to a linear inequality is a _____-plane.

A boundary line divides the coordinate plane into two _____ - _____.

The boundary line is included in the solution when the inequality is a _____ or a _____.

When the boundary line is included in the solution, the boundary line will be _____.

The boundary line is NOT included in the solution when the inequality is a _____ or a _____.

When the boundary line is NOT included in the solution, the boundary line will be _____.

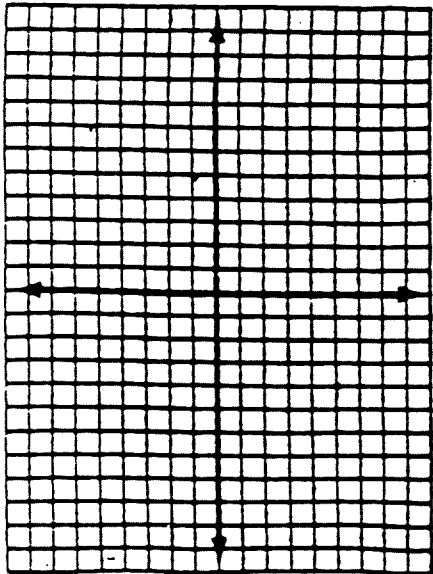
One of the half planes will be the solution side and coordinates on that side of the boundary line will make the inequality *true* (coordinates on the other side of the boundary line will make the inequality *false*). You will indicate the solution side by shading that half-plane.

TO GRAPH AN INEQUALITY IN SLOPE-INTERCEPT FORM:

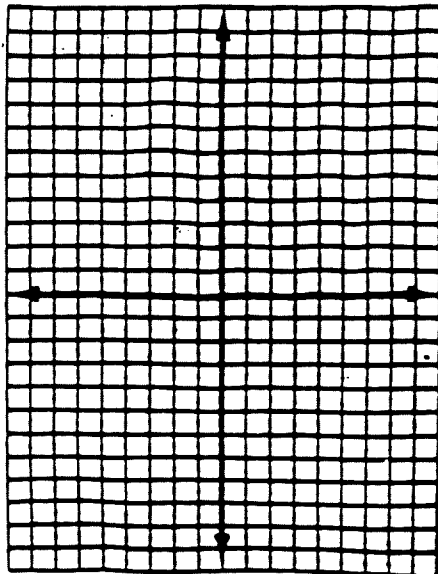
1. Graph the boundary line for the related equation.
2. Determine if the boundary line is solid (\geq or \leq) or dashed ($>$ or $<$).
3. Pick a *test point* in either half-plane.
4. Determine if the *test point* is *true* or *false* for the inequality.
5. *Shade* the side of the inequality that has *true* results.

Classroom Practice

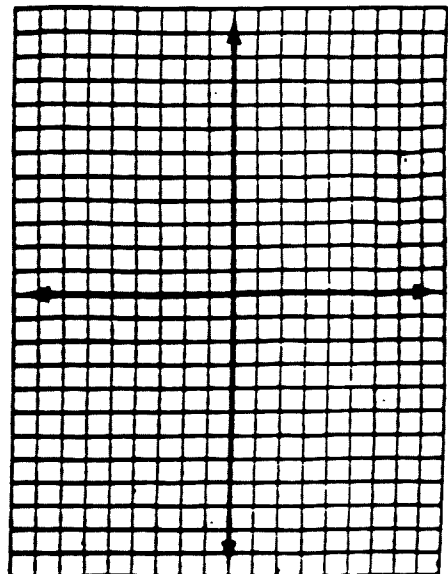
1. $y > x + 5$



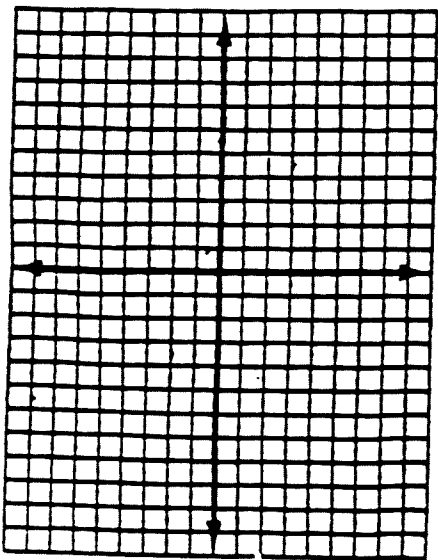
2. $y \leq 2x + 1$



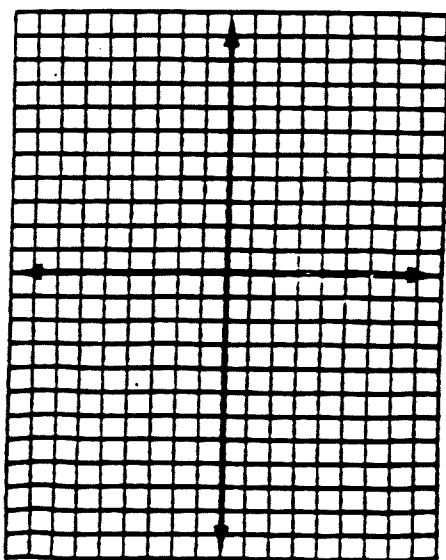
3. $y \geq x - 2$



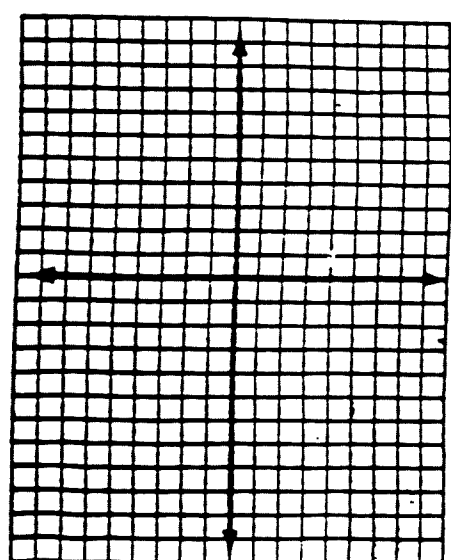
4. $y \geq 4x + 3$



5. $y < -3x + 5$



6. $y > x - 6$



Determine if the boundary line will be solid or dashed.

7. $y < 2x + 5$ _____

8. $y \leq -3x + 5$ _____

9. $y \geq 5x - 2$ _____

10. $y > 4x - 1$ _____