

## Notes 7.8 Graphing Linear Inequalities in the Coordinate Plane

### symbols

- $>$  is greater than  
 $\geq$  is greater than or equal to  
 $<$  is less than  
 $\leq$  is less than or equal to

$\geq$ $\leq$	graph a <u>solid</u> boundary line; the line IS part of the solution
$>$ $<$	graph a <u>dashed</u> boundary line; the line IS NOT part of the solution

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

Which side do you shade?

### slope-intercept inequalities

$$\left. \begin{array}{l} y > mx + b \\ y \geq mx + b \end{array} \right\} \begin{array}{l} \text{shade} \\ \text{above} \end{array} \quad \left. \begin{array}{l} y < mx + b \\ y \leq mx + b \end{array} \right\} \begin{array}{l} \text{shade} \\ \text{below} \end{array}$$

### standard form inequalities $Ax + By < C$

use the test point method (pick a test point NOT on the boundary line)

usually pick  $(0, 0)$

if the test point makes the inequality true

shade the side with the test point

if the test point makes the inequality false

shade the other side

$$\begin{array}{l} 3+0 > 0 \\ T \end{array}$$

$$\begin{array}{l} 0+4 < 0 \\ F \end{array}$$