INEQUALITIES

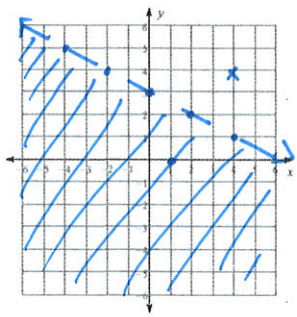
Two Variables

GRAPHING INEQUALITIES IN THE COORDINATE PLANE

Greater Than $y > x$ **DOTTED LINE** **SHADE ABOVE**	**Less Than** $y < x$ **DOTTED LINE** **SHADE BELOW**
Greater Than or Equal To $y \geq x$ **SOLID LINE** **SHADE ABOVE**	**Less Than or Equal To** $y \leq x$ **SOLID LINE** **SHADE BELOW**

EXAMPLE 1: GRAPH THE FOLLOWING INEQUALITY

$$y < -\frac{1}{2}x + 3$$



EVERYTHING IN THE SHADED REGION IS CONSIDERED A SOLUTION

SO (0, 1) IS A SOLUTION

BUT (4, 4) IS NOT

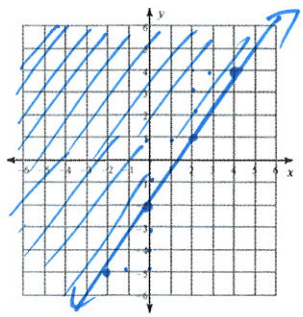
EXAMPLE 2: GRAPH THE FOLLOWING INEQUALITY

$$2y + 4 \geq 3x$$

$-4 \quad -4$

$$\frac{2y}{2} \geq \frac{3x-4}{2}$$

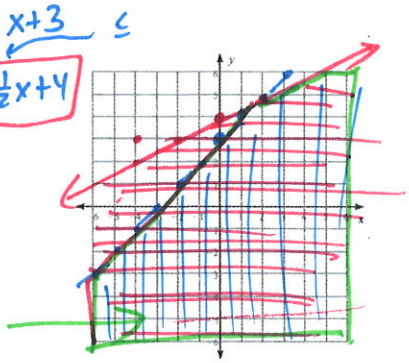
$$y \geq \frac{3}{2}x - 2$$



EXAMPLE 3: GRAPHING A SYSTEM OF INEQUALITIES

$$-x + y < 3 \qquad y < x + 3$$

$$y - 4 \leq \frac{1}{2}x \qquad y \leq \frac{1}{2}x + 4$$



THE AREA THAT IS DOUBLE SHADED IS CONSIDERED THE SOLUTION SET

EXAMPLE 4: GRAPHING A SYSTEM OF INEQUALITIES

$$x \geq 3$$
$$y > -2$$

SOLUTION SET