

### UNIT 3 LESSON 6 – SYSTEM OF EQUATIONS – LINEAR INEQUALITIES

We already know how to graph one linear inequality. (Shade above/below....Dotted line/Solid line)

Now we will graph a system and determine the solution(s).

Solution(s) to the system is where the **SHADING OVERLAPS EACH OTHER.**

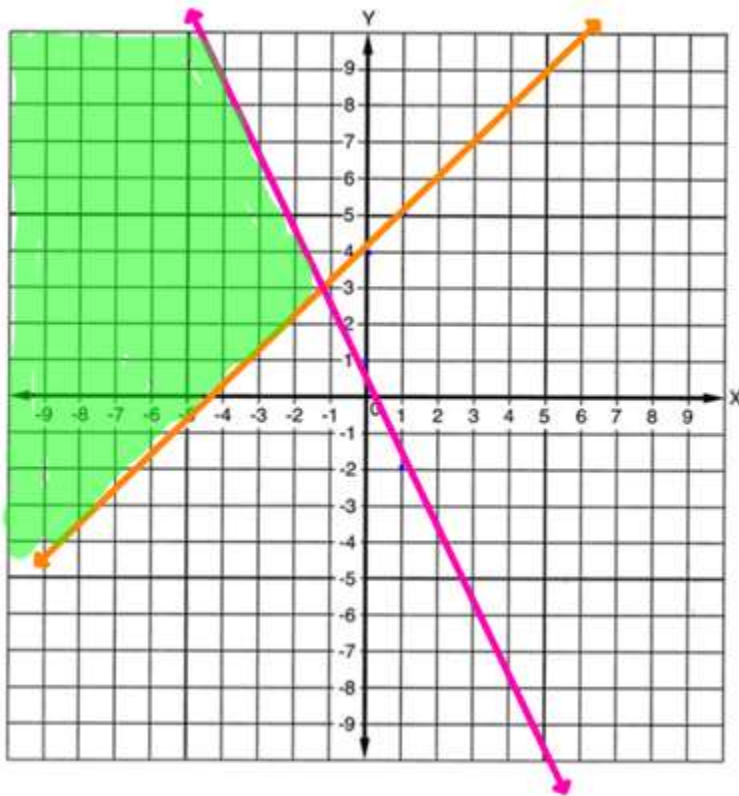
**Example 1)** Solve the following system of inequalities graphically:

$$y \geq x + 4 \quad \text{AND} \quad 3x + y \leq 1 \quad \text{REMEMBER...the equation needs to be in "y=mx+b" format}$$

Convert the 2<sup>nd</sup> equation into  $y=mx+b$  format

$$y \leq -3x + 1$$

Now you can graph both equations



**YOU TRY!!!**

**Example 2)** Solve the following system of inequalities graphically:

$$y < 3x - 6 \quad \text{AND} \quad y + 4 \geq x$$

**Example 3)** Solve the following system of inequalities graphically:

$$2y < -2x + 2 \quad \text{AND} \quad 6y - 12x \leq 18$$