

# Steps for Graphing Systems of Inequalities

1. Solve for  $y$ . ( $y=mx+b$ )

2. Graph  $y$ -int. ( $b$ ) ( $0,b$ )

3. Use slope ( $m$ ) to graph next point

4. Decide dashed or solid

5. Decide shading

6. Go back to step 1 for 2nd inequality

7. Solution is where shading overlaps

Example: Solve the system of inequalities by graphing.  
 $3x - 4y < 4$   
 $x + 2y \leq 8$

$$\begin{array}{r}
 3x - 4y < 4 \\
 -3x \quad -3x \\
 \hline
 -4y < -3x + 4 \\
 \frac{-4}{-4} < \frac{-3x+4}{-4} \\
 y > \frac{3}{4}x - 1
 \end{array}$$

$$\begin{array}{r}
 x + 2y \leq 8 \\
 -x \quad -x \\
 \hline
 2y \leq -x + 8 \\
 \frac{2}{2}y \leq \frac{-x+8}{2} \\
 y \leq -\frac{1}{2}x + 4
 \end{array}$$

Shade above  
 $> , \geq$

Shade below  
 $< , \leq$

Solid Line  
 $\geq$  or  $\leq$

Dashed Line  
 $>$  or  $<$

