

Systems of Linear Inequalities

set of TWO inequalities on the same graph



Steps for Graphing Systems of Inequalities

Name: _____

1. Write in Slope Intercept Form
2. Graph y-intercept
3. Graph Slope
4. Solid or Dotted Line?
5. Shade Above or Below?
6. Repeat (1-5) for 2nd Inequality

Example: Solve the system of inequalities by graphing.

$$\begin{aligned} 3x - 4y &< 4 \\ x + 2y &\leq 8 \end{aligned}$$

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

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

Solution Set in Double Shaded Area

Shade above $> \geq$	Shade below $< \leq$
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Solid Line $\geq \leq$	Dashed Line $< >$
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