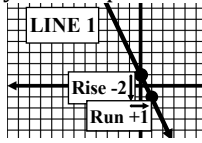
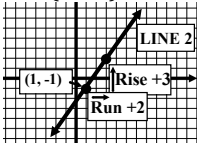
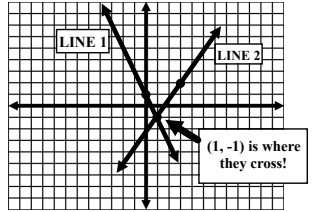
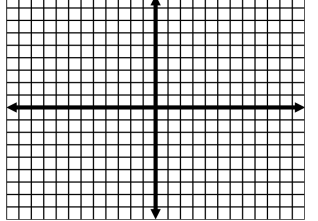
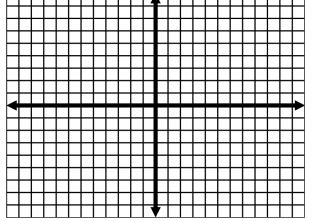
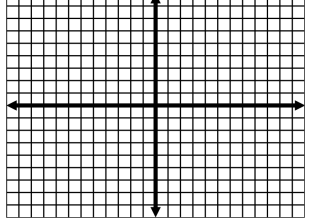
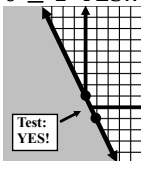
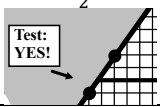
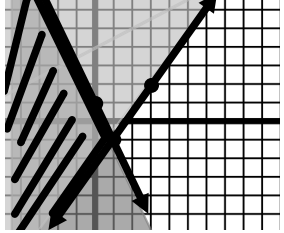
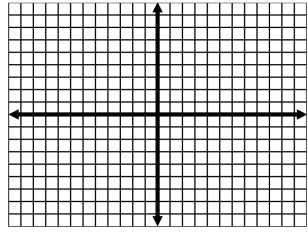
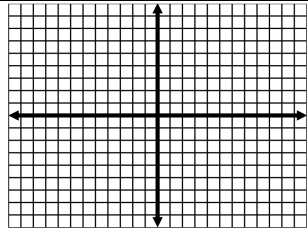


Solving Systems by Graphing

To solve systems by graphing, all you have to do is graph both lines and see where they meet. The point where they cross is called the SOLUTION to the system.

<p>EXAMPLE</p> $\begin{cases} y = -2x + 1 \\ y + 1 = \frac{3}{2}(x - 1) \end{cases}$ <p>First, graph each line. Line #1 is in slope-int. form. Line #2 is in pt-slope form.</p> <p>Then, see where they cross—that's your solution!</p>	<p>Line 1: $y = -2x + 1$ $y = mx + b$</p> <p>slope: $m = -2 = \frac{-2}{1}$ $\frac{RISE-2}{RUN+1}$</p> <p>y-intercept: $b = 1$...so (0, 1)</p> 	<p>Line 2: $y + 1 = \frac{3}{2}(x - 1)$ $y - y_1 = m(x - x_1)$</p> <p>slope: $m = \frac{3}{2}$ $\frac{RISE-3}{RUN+2}$</p> <p>point: $x_1 = 1$ & $y_1 = -1$ so... (1, -1)</p> 	 <p>Number of solutions: ONE INF. MANY NONE If, only one, what is the... Solution: (1, -1) (where they cross)</p>
<p>1.</p> $\begin{cases} 2y + 3x = 6 \\ y + 3 = 3(x - 4) \end{cases}$	<p>Line 1: $2y + 3x = 6$</p>	<p>Line 2: $y + 3 = 3(x - 4)$</p>	 <p>Number of solutions: ONE INF. MANY NONE If, only one, what is the... Solution: _____</p>
<p>2.</p> $\begin{cases} y = -\frac{1}{2}x + 3 \\ y = 2x - 2 \end{cases}$	<p>Line 1: $y = -\frac{1}{2}x + 3$</p>	<p>Line 2: $y = 2x - 2$</p>	 <p>Number of solutions: ONE INF. MANY NONE If, only one, what is the... Solution: _____</p>
<p>3.</p> $\begin{cases} y - 2 = 3(x + 1) \\ y = 3x + 5 \end{cases}$	<p>Line 1: $y - 2 = 3(x + 1)$</p>	<p>Line 2: $y = 3x + 5$</p>	 <p>Number of solutions: ONE INF. MANY NONE If, only one, what is the... Solution: _____</p>

Now, for inequalities. The lines below are the same as the on the previous page. Re-graph the lines (solid or dotted), then test to decide which way to shade.

<p>EXAMPLE</p> $\begin{cases} y \leq -2x + 1 \\ y + 1 \geq \frac{3}{2}(x - 1) \end{cases}$ <p>You already graphed these lines. Just test to see where to shade 'em.</p>	<p>Line 1: $y \leq -2x + 1$ SOLID!!! Test (0, 0)</p> $0 \leq -2(0) + 1$ $0 \leq 1 \text{ YES!!}$ 	<p>Line 2: $y + 1 \geq \frac{3}{2}(x - 1)$ SOLID!!! Test (0, 0)</p> $0 + 1 \geq \frac{3}{2}(0 - 1)$ $1 \geq \frac{3}{2}(-1)$ $1 \geq -\frac{3}{2} \text{ YES!!!}$ 	 <p><i>The area that's shaded for BOTH is the answer!</i></p>
<p>1.</p> $\begin{cases} 2y + 3x < 6 \\ y + 3 \geq 3(x - 4) \end{cases}$	<p>Line 1: $2y + 3x < 6$</p>	<p>Line 2: $y + 3 \geq 3(x - 4)$</p>	
<p>2.</p> $\begin{cases} y > -\frac{1}{2}x + 3 \\ y < 2x - 2 \end{cases}$	<p>Line 1: $y > -\frac{1}{2}x + 3$</p>	<p>Line 2: $y < 2x - 2$</p>	
<p>3.</p> $\begin{cases} y - 2 \geq 3(x + 1) \\ y \geq 3x + 5 \end{cases}$	<p>Line 1: $y - 2 \geq 3(x + 1)$</p>	<p>Line 2: $y \geq 3x + 5$</p>	