Name: _____

Lesson 6.5 – Graphing Inequalities

Symbols

Examples

1) $x + 3 \leq 5$

2) $-2x \geq 8$

3) $1 > \frac{1}{3}x$

4) $-3(x + 1) > 9$

RULES

1) When you multiply or divide both sides by a negative, you MUST _____

2) For < OR > , you must use a _____

3) For ≤ OR ≥ , you must use a _____

4) An inequality can have _____ solutions or _____ solutions

Assignment:

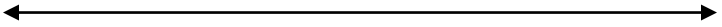
1) $x + 1 \leq 2$

2) $-3x \geq -6$

3) $\frac{1}{3}x > 4$

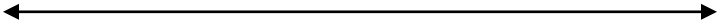
4) $-2(x + 3) < 6$

5) $y - 9 \leq -2y$



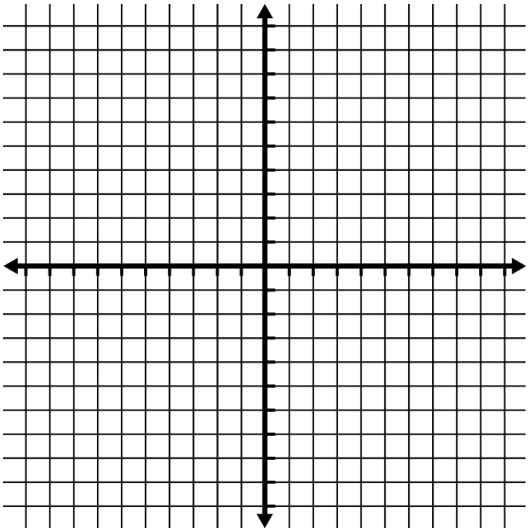
6) $-n + 2 \geq 2n + 11$

7) $x - 3x > -2x - 7$

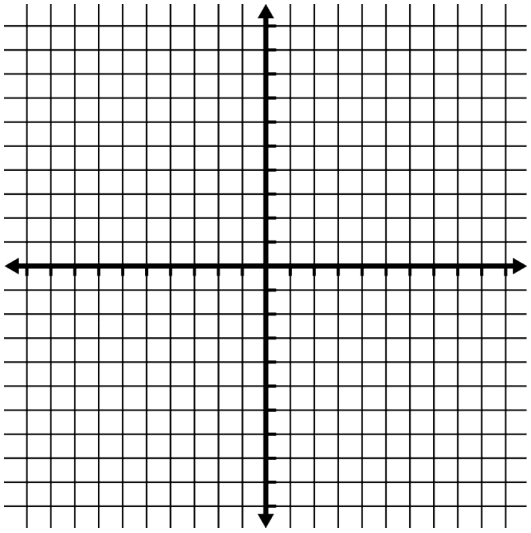


GRAPHING IN TWO DIMENSIONS

$x \geq 2$



$y < 3$



Graphing Linear Inequalities

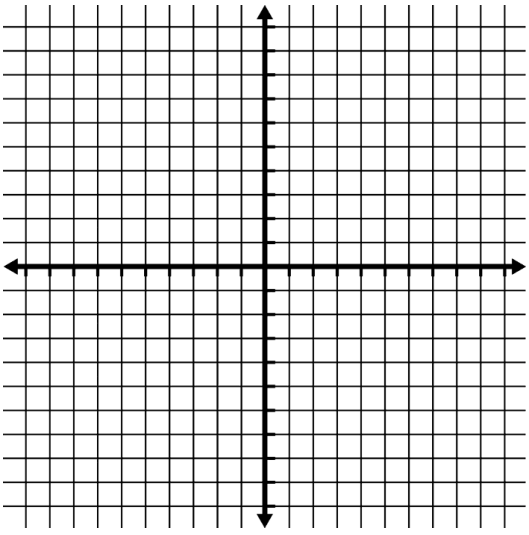
STEP #1

Example: Graph $x + 2y < 4$

STEP #2

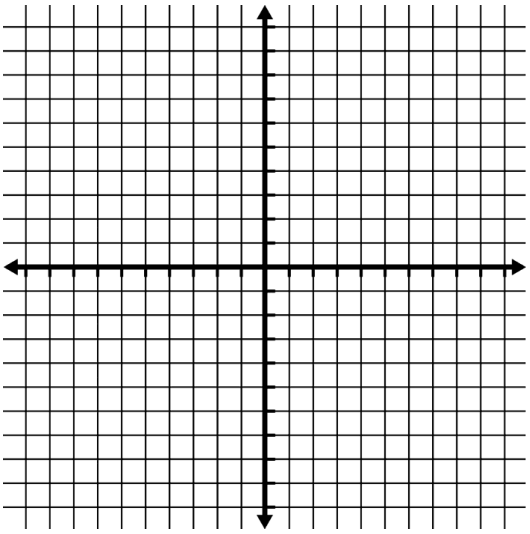
STEP #3

STEP #4

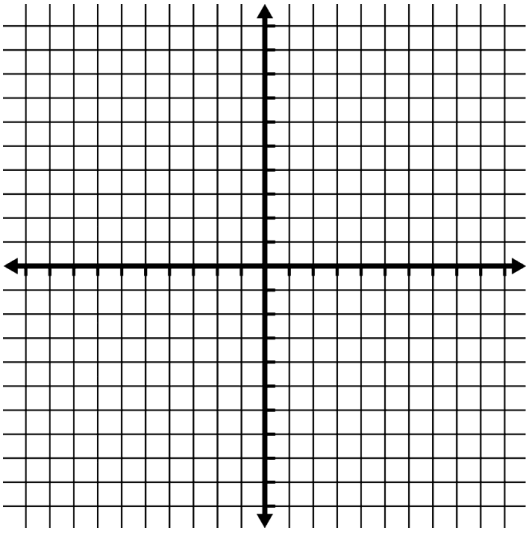


Assignment:

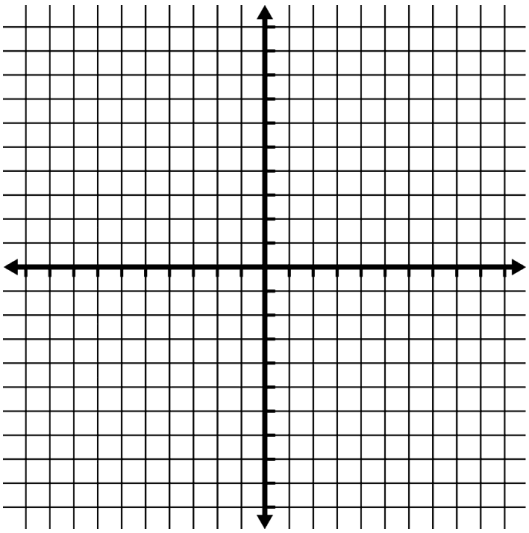
1) $y > -\frac{1}{2}x - 3$



2) $3x - 2y \leq 6$



3) $-3(x - y) \geq 6$



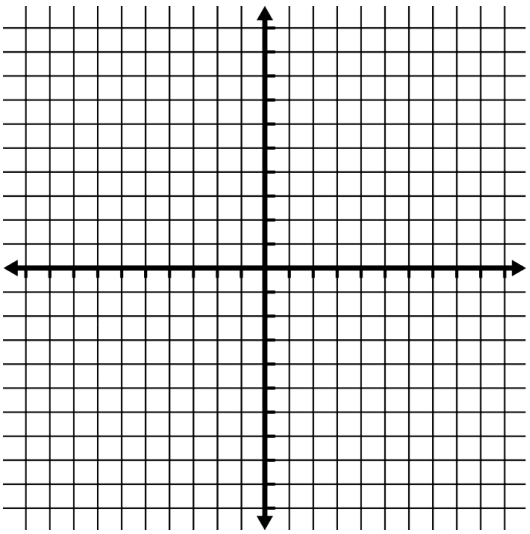
System of Inequalities

Symbols:

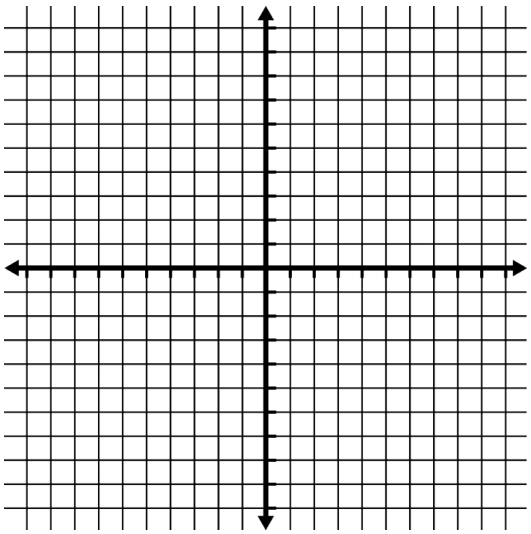
SYSTEMS OF INEQUALITIES

In a system of inequalities, you are trying to figure out _____

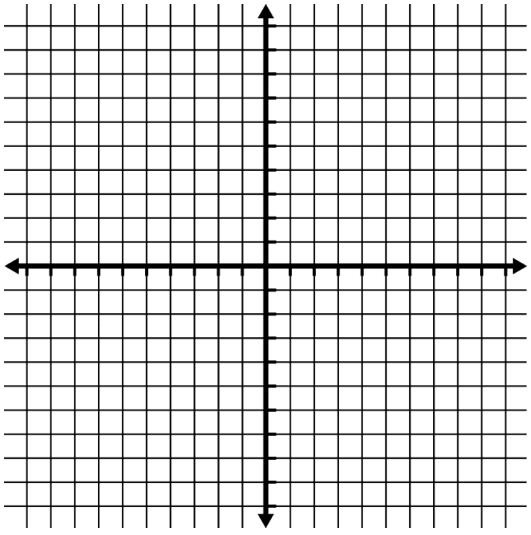
Example #1: $-2 < x \leq 3$



Example #2: $\begin{matrix} x < 5 \\ y \geq -2 \end{matrix}$

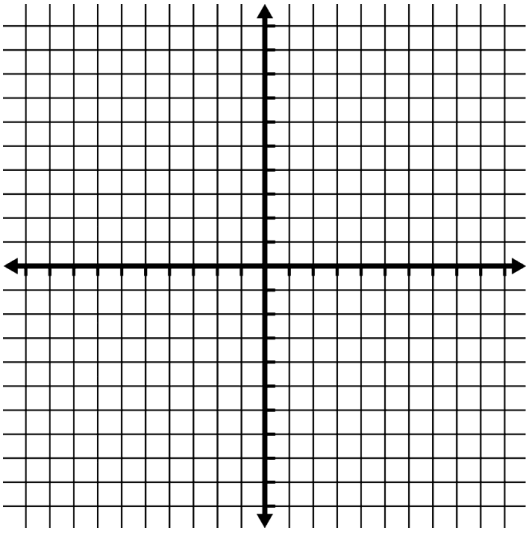


Example #3: $\begin{matrix} 2x + y \leq 6 \\ 3x - 2y \leq 6 \end{matrix}$

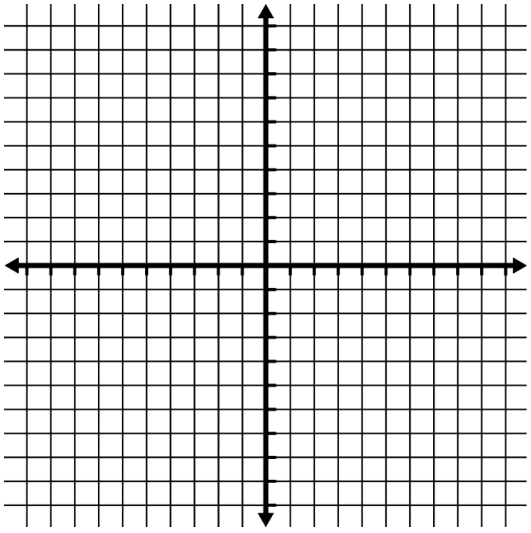


Assignment:

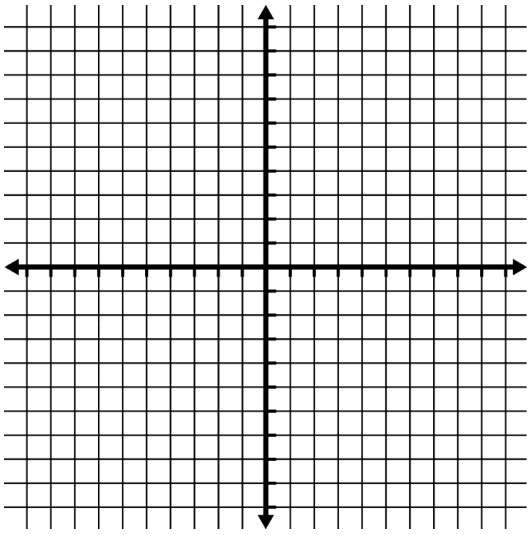
1) $y \geq 2x - 1$
$y < -x + 5$



2) $4x - 3y \geq 12$
$3x + 2y \leq 6$



3) $2x + 3y > 6$
$3x - 2y > 12$



Practice Quiz:

1) Solve the inequality and display your answer on the number line

$-2(x+3) < 6$

2) Solve the following system of inequalities by graphing. Label two specific coordinates in the solution space.

$y < 2x + 5$

$y \geq -\frac{1}{2}x + 1$