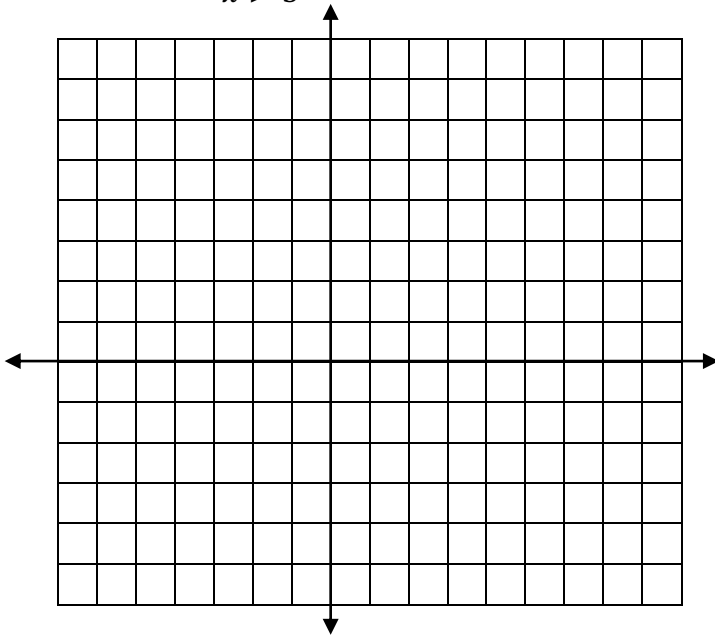# Systems of Linear Inequalities

- A system of linear inequalities is a set of two or more inequalities that are graphed using a single coordinate system.
- The solution to a system of linear inequalities is a region formed by an overlap of all individual solutions.
- If all the individual solutions do not overlap, the system has no solution. Note that if for example 3 out of 4 inequalities overlap, the system still has no solution.
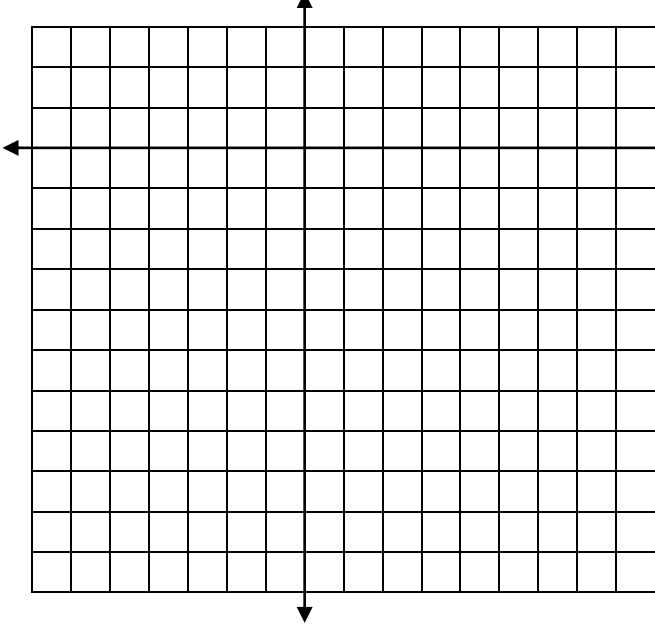
Examples: Describe the solution to the given system:
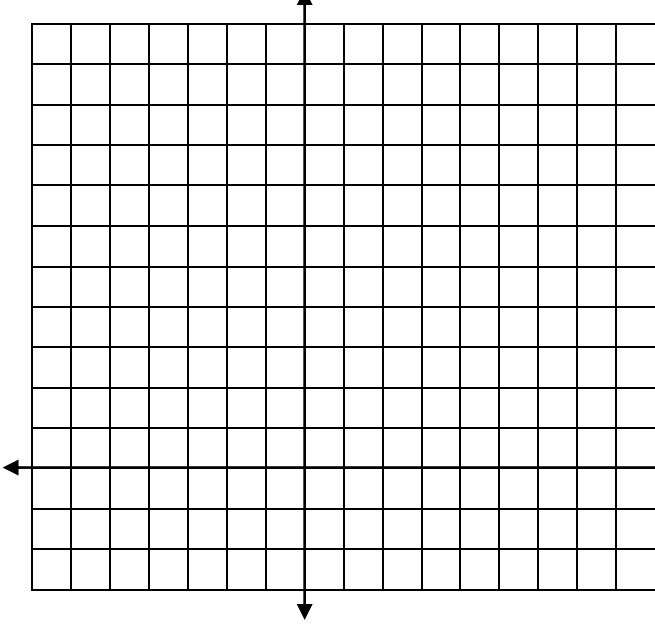
a) $y < 3x + 1$
   $y \geq 2$
   $x > 5$

∴ The solution is the region _____,

_____the points on _____;

_____, _____the points on _____ ;

and _____, _____ the points on

_____.

b) $y > -0.5x - 9$
   $y \le 2x$
   $2x > 3y$

∴ The solution is the region

_____ ,

_____ the points on

_____ ;

_____ ,

_____ the points on

_____ ;

and _____ ,

_____ the points on

_____ .

a) $y > -\dfrac{2}{7}x + 8$
   $y \le x$
   $2y > 3x$

∴ The solution is the region

_____ ,

_____ the points on

_____ ;

_____ ,

_____ the points on

_____ ;

and _____ ,

_____ the points on

_____ .