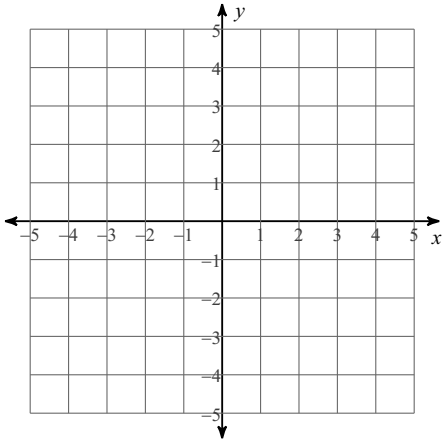


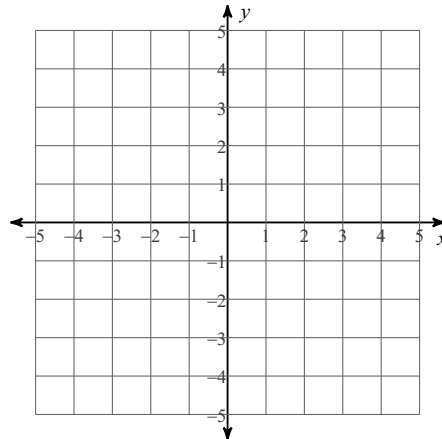
SM3-A HW #12-2 (systems of inequalities)

Sketch the solution to each system of inequalities.

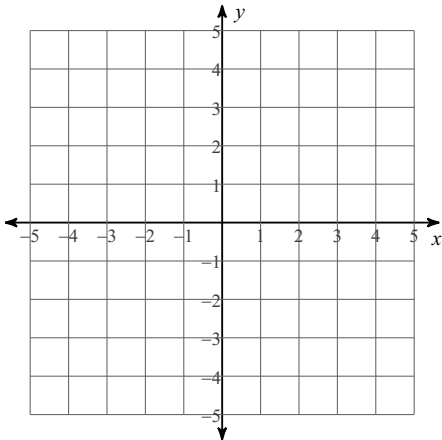
1)  $y \geq x - 2$   
 $y \geq 6x + 3$



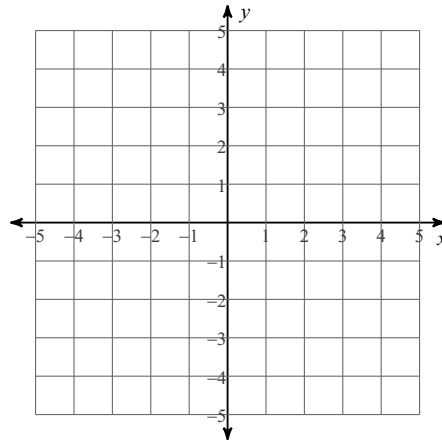
2)  $y \leq -x + 2$   
 $y < \frac{1}{3}x - 2$



3)  $x + 2y \geq -4$   
 $x - y > -1$

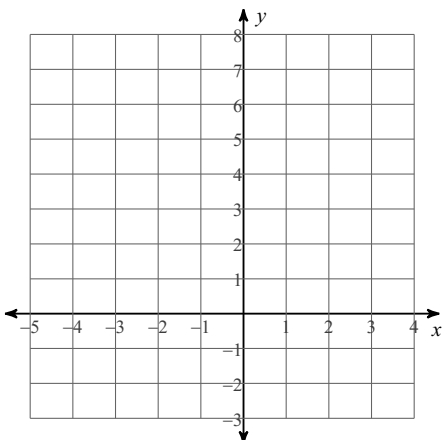


4)  $x < -3$   
 $x - 3y < -9$



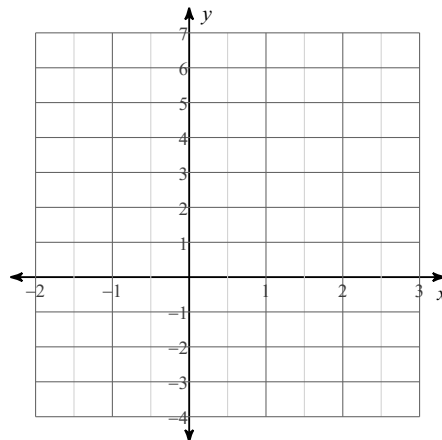
5) Graph the solution to the system of inequalities.

$y > x^2 + 1$   
 $y \leq -|x + 1| + 5$



6) Graph the solution to the system of inequalities.

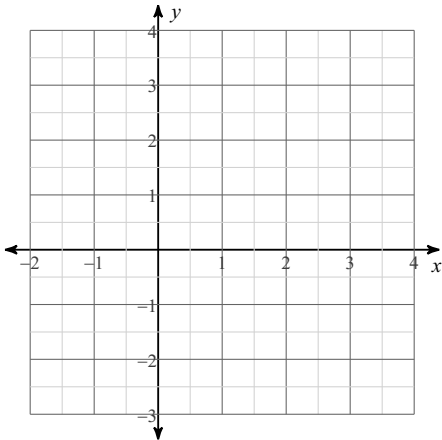
$y < x^{\frac{1}{3}} + 4$   
 $y \leq x^3 - 2$



7) Graph the solution to the system of inequalities.

$$y > 2\sqrt[3]{x-2} + 1$$

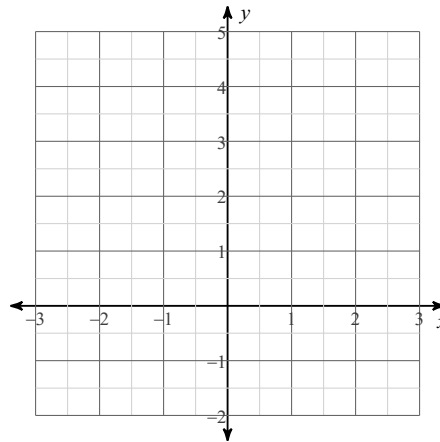
$$y \leq -(x-1)^2 + 3$$



8) Graph the solution to the system of inequalities.

$$y > x + 1$$

$$y \leq -x^2 + 4$$



9) Solve the system using elimination.

"One step, rewrite, one step rewrite...."

$$-5x + 12y = -10$$

$$4x - 6y = 8$$

10) Solve the system using substitution.

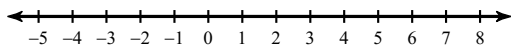
"One step, rewrite, one step rewrite...."

$$-x + y = 0$$

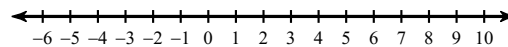
$$2x + 2y = -8$$

**Write the solution to each compound inequality three different ways:  
(1) simplified inequality, (2) graph, (3) interval notation.**

11)  $p + 9 \geq 5$  and  $p + 2 < 7$



12)  $6n > 30$  or  $n - 8 < -9$



13) Write the solution to the quadratic inequality:

- (1) simplified inequality
- (2) graph
- (3) interval notation

$$0 \leq 2x^2 - x - 6$$

14) Write the solution to the quadratic inequality:

- (1) simplified inequality
- (2) graph
- (3) interval notation

$$0 > 4x^2 - 2x - 5$$