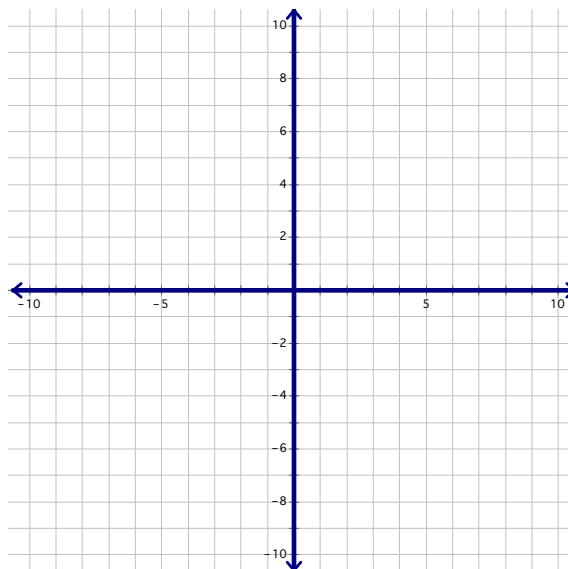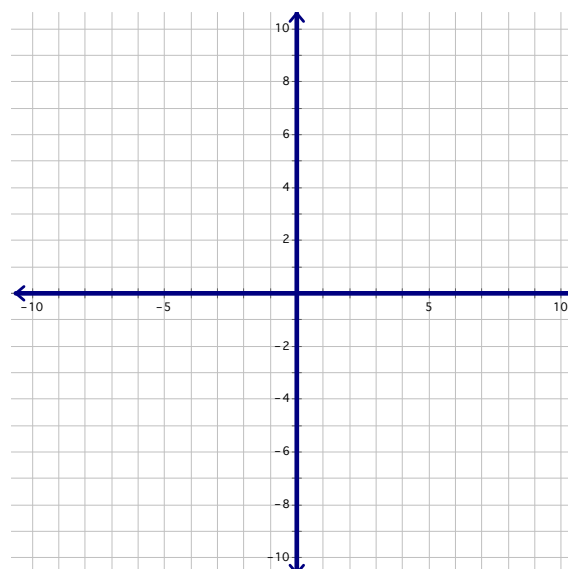**Pre-Calculus CP 1 – Section 7.5 Notes**   Name: _____
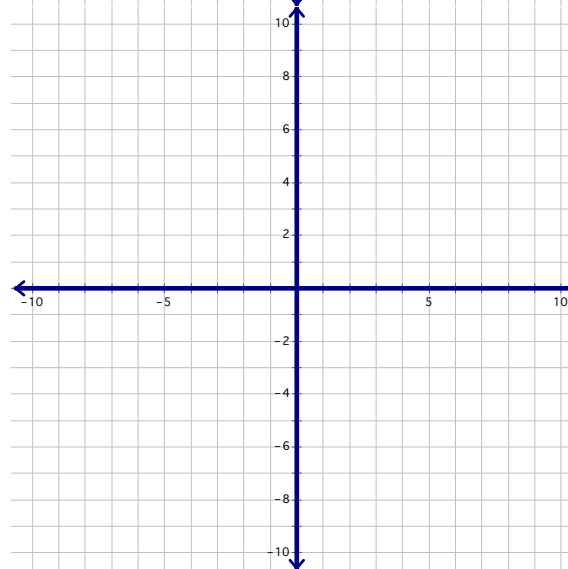**Graphing all types of Systems of Inequalities**

Ex 1: Sketch the graph of $y \geq x^2 - 3$
   You should know this one and be able
   to graph it using transformations!

Ex. 2: Sketch the graph of $x < y^2 + 1$
   This is NOT a function – try graphing by
   plotting some points

Ex. 3: Sketch the graph of $x^2 + y^2 \leq 16$
   You should recognize this graph
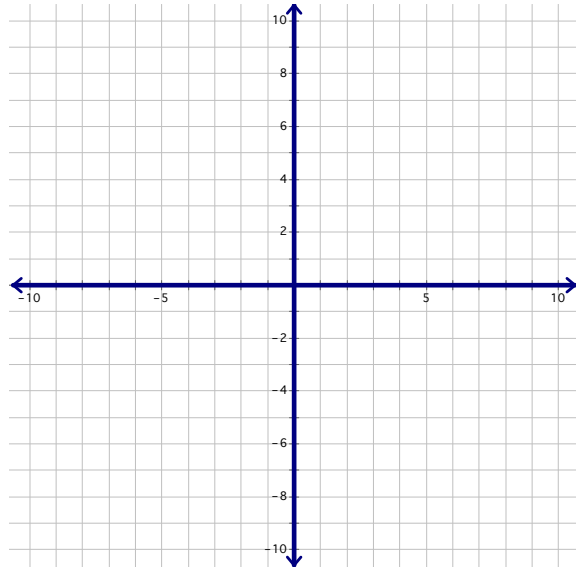   from earlier in the year….

Pre-Calculus CP 1 – Section 7.5 Notes
Graphing all types of Systems of Inequalities

Now let's try doing MORE than one at once!

Ex. 4: Sketch the graph of the system- be sure to shade your final answer (feasible region) darker than the rest!
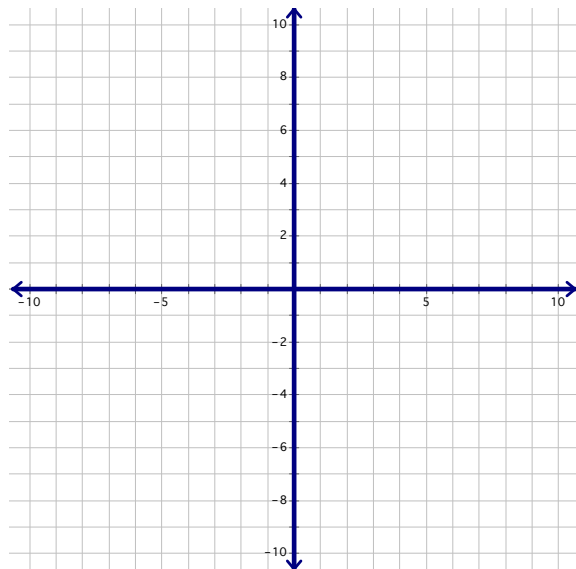
$$x^2 + (y-1)^2 \leq 4$$
$$2x - y > -2$$

Ex. 5: Sketch the graph of the system- be sure to shade your final answer (feasible region) darker than the rest!

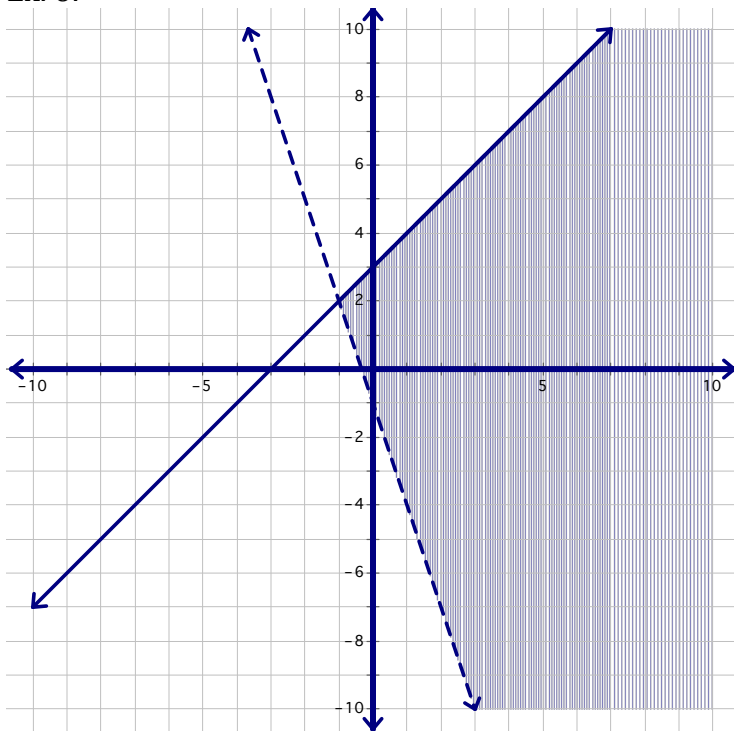$$x^2 > y - 3$$
$$3x - 4y \leq -12$$
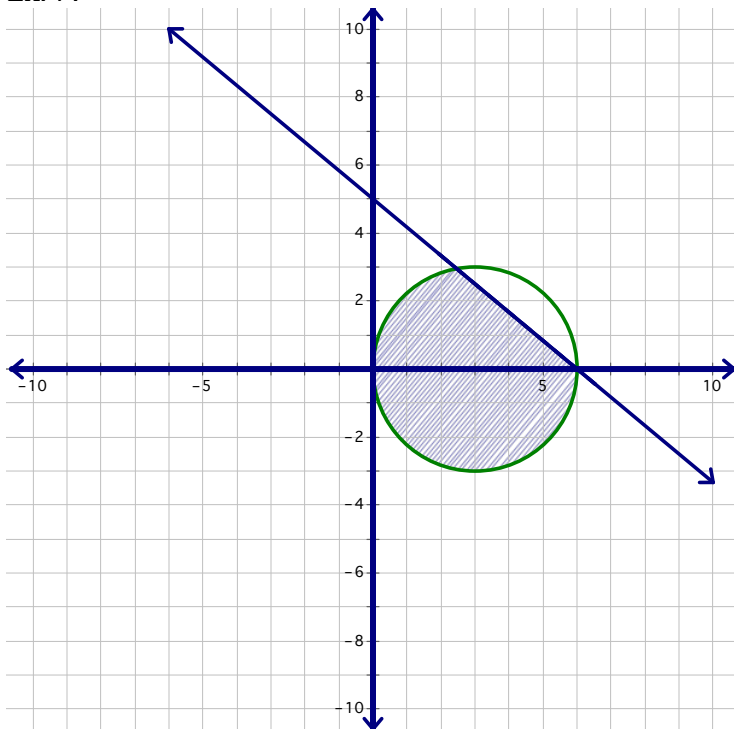
Pre-Calculus CP 1 – Section 7.5 Notes
Graphing all types of Systems of Inequalities

Let's try going the other way- WRITE the system of equations based on the graph below:
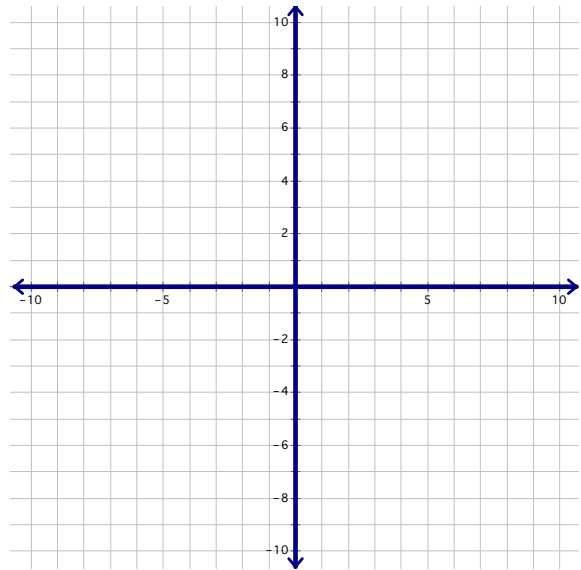
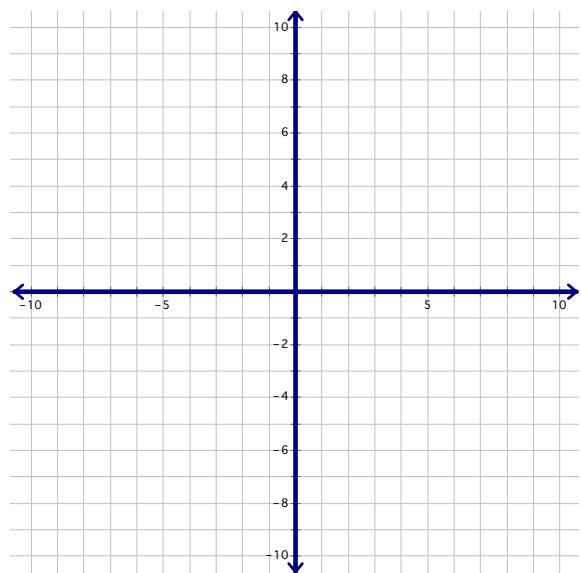Ex. 6:

Ex. 7:

Pre-Calculus CP 1 – Section 7.5 Notes
Graphing all types of Systems of Inequalities

For the following, use the set of vertices given to graph the feasible region and derive a set of inequalities that would give you that region:

Ex. 8: A rectangle with vertices (-3,2), (-3,6), (3,6), (3,2)

Ex. 9: A triangle with vertices (-1,0), (2,0), (0,4)

Homework: p. 548 #2, 11, 43, 46, 57, 58, 59, 62, 63, 72