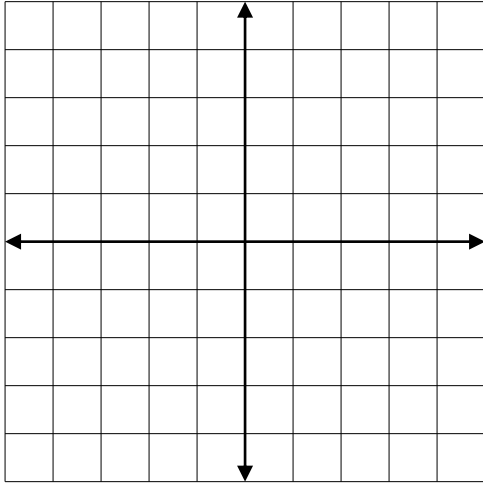


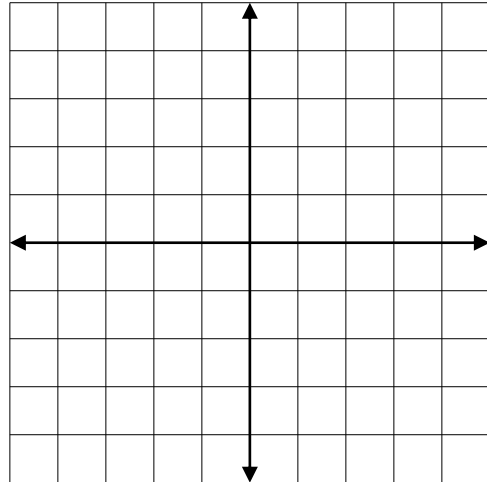
YOU MUST SHOW YOUR WORK WHENEVER POSSIBLE!

1. Graph the solution set for each system of inequalities. Determine a solution. Check its validity.

a) $x + 2y < 6$
 $x < y$



b) $y \leq 2x - 4$
 $y \geq -\frac{3}{2}x + 3$



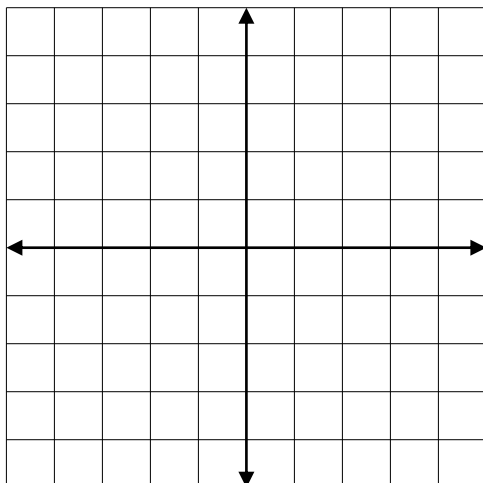
2. For each system of linear inequalities, explain whether the boundaries and their points of intersection are part of the solution region.

a) $\{ \langle, y \rangle \mid y \geq -2x, x \in \mathbb{R}, y \in \mathbb{R} \}$
 $\{ \langle, y \rangle \mid x - y > -3, x \in \mathbb{R}, y \in \mathbb{R} \}$

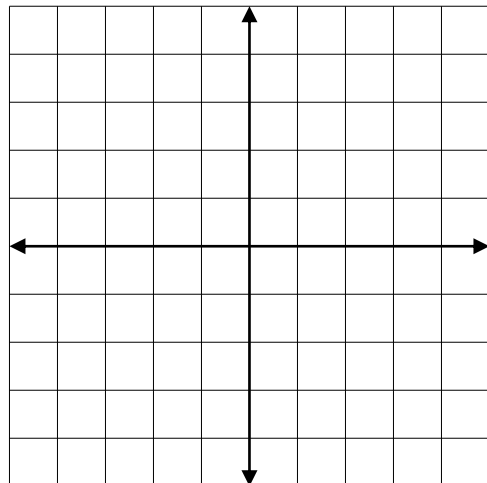
b) $\{ \langle, y \rangle \mid x + y \leq -2, x \in I, y \in I \}$
 $\{ \langle, y \rangle \mid 2y \geq x, x \in I, y \in I \}$

3. Graph each system. Determine a solution for each.

a) $\{ \langle, y \rangle \mid x + y \leq 3, x \in \mathbb{R}, y \in \mathbb{R} \}$
 $\{ \langle, y \rangle \mid y > 2, x \in \mathbb{R}, y \in \mathbb{R} \}$



b) $\{ \langle, y \rangle \mid 2x + y > 0, x \in W, y \in W \}$
 $\{ \langle, y \rangle \mid y > x, x \in W, y \in W \}$

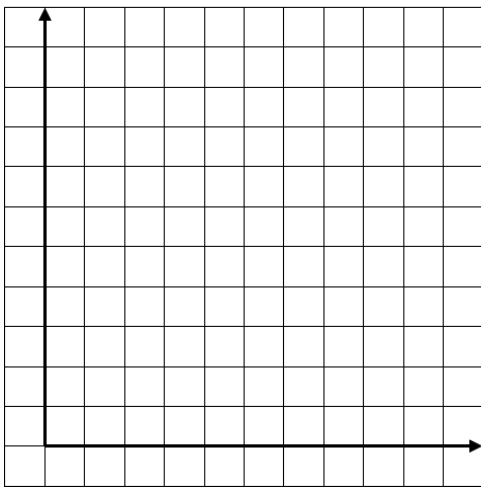


4. The staff in a cafeteria are making two kinds of sandwiches: egg salad and ham & cheese:
- a maximum of 450 sandwiches are needed
 - based on previous demand, there should be at least twice as many ham and cheese sandwiches as egg salad sandwiches

a) Define the variables and write a system of inequalities that models this situation.

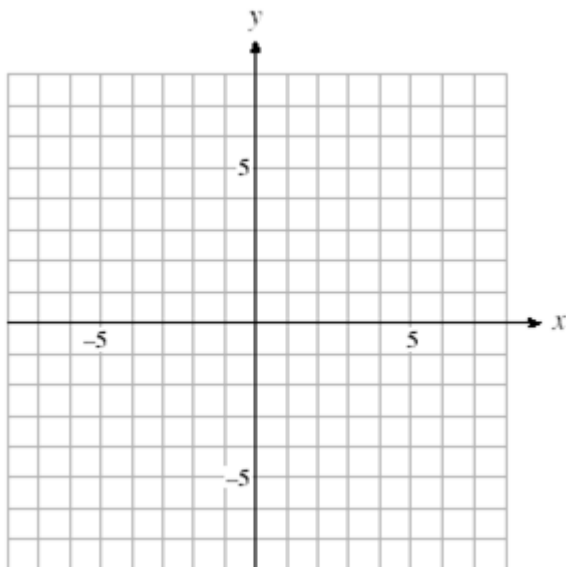
b) Describe the restrictions on the variables in this situation.

c) Graph the system to determine the solution set.



d) Suggest two combinations of numbers of sandwiches that the cafeteria staff could make.

5. a) Graph the solution set for $9x + 18y < 18$
 $3x - 6y \leq 18$.
 Determine a solution. Check its validity.



b) Is each point below a possible solution to the system? Substitute to find out.

i) $(4, -1)$

ii) $(-4, -2)$

iii) $(2, -2)$

iv) $(-2, 2)$