|	$y <$	$y \leq$	$y >$	$y \geq$
Shading (above or below?)	BELOW	BELOW	ABOVE	ABOVE
Line (solid or dashed?)	DASHED	SOLID	DASHED	SOLID
Points on line (solutions or not solutions)	NOT Solutions	SOLUTIONS	NOT Solutions	SOLUTIONS

Example: Graph and name three solutions to the system of inequalities:

$$\begin{cases} y < \dfrac{2}{3}x - 3 \\ x + y \geq 2 \end{cases}$$

**STEP 1:** Make sure all the inequality equations are in the form of y=mx+b.

$$\begin{cases} y < \dfrac{2}{3}x - 3 \\ y \geq -x + 2 \end{cases}$$

STEP 2: Graph the first inequality. Make sure to pay attention if it should be SOLID or DASHED. Take note of whether you are supposed to shade BELOW or ABOVE the line.
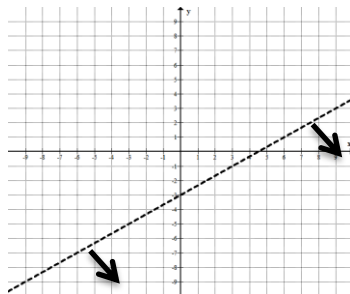
(Would shade below)

STEP 3: Graph the second inequality. Shade the overlap of both inequalities. (This will be the solution to the system of inequalities.)
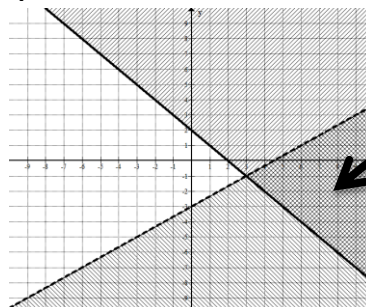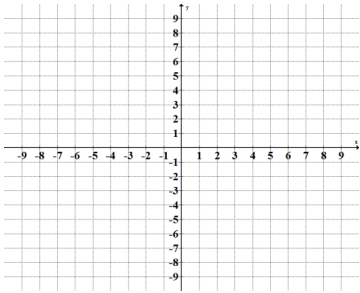

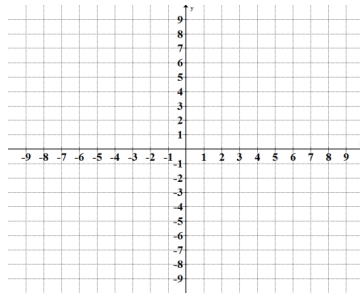SOLUTION

3 solutions: (6, -1) , (6, -4) , (9, 1)

Practice

For numbers 1-3, graph the system and give 3 possible solutions.

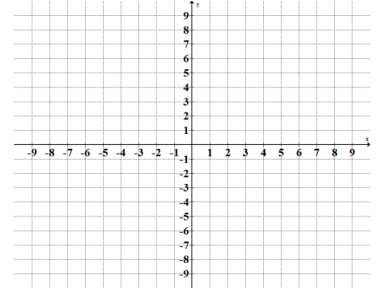1. $\begin{cases} y \geq 3x \\ y < -\dfrac{1}{2}x - 4 \end{cases}$

2. $\begin{cases} 2x + y \geq -2 \\ y - 2 \leq 4x \end{cases}$

3. $y > \dfrac{1}{2}|x - 2| - 6$

Solutions: Solutions: Solutions:
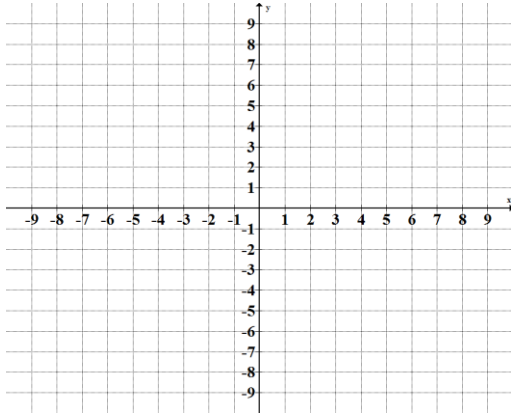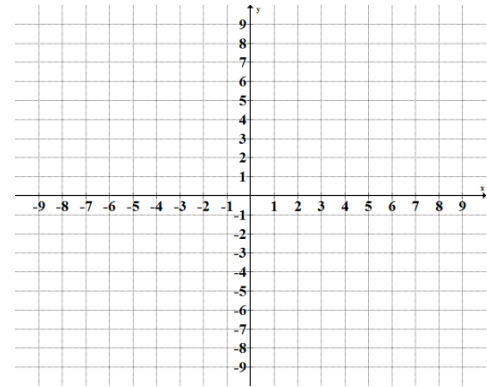
For numbers 4-5, find the area of the enclosed region.

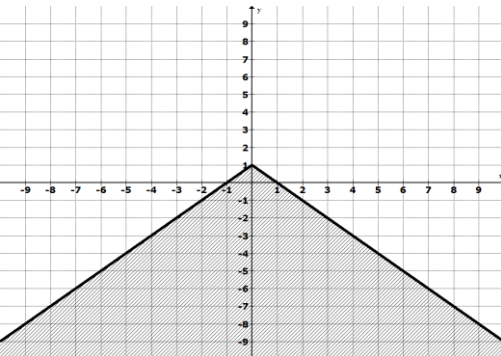4. $\begin{cases} x \geq -4 \\ y \geq \dfrac{3}{2}x - 2 \\ y \leq 4 \end{cases}$

5. $\begin{cases} 2x + y \geq -6 \\ y \leq 6 \\ x \leq 1 \end{cases}$

Area: Area:

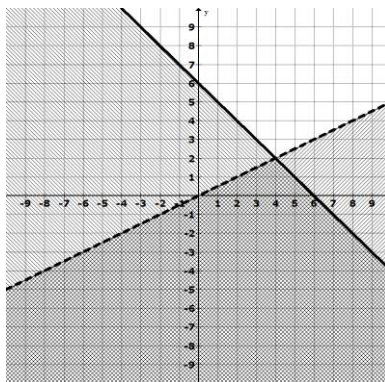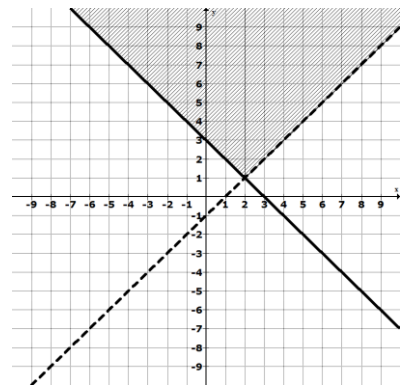**For numbers 5-7, write the inequality and give a possible solution.**

5.

Inequality:

Solution:

6.

Inequality:

Solution:

7.

Inequality:

Solution: