PROBLEM SET 3-3
(Systems of Inequalities)

Graph:

1. $f(x)=\begin{cases}2x+1, if\ x\le -2\\ -x+3, if\ x\ge 1\end{cases}$

Solve:

2. A psychologist needs at least 40 subjects for her experiment. She cannot use more than 30 children. Write and graph a system of inequalities.

Solve each system of inequalities by graphing:

3. $\begin{cases}2x-3y<9\\ x+y>-2\end{cases}$

4. $\begin{cases}y>-2x\\ 2x-y\ge 2\end{cases}$

5. $\begin{cases}y\ge x-3\\ y<\frac{1}{2}x+3\end{cases}$

6. $\begin{cases}y<-\frac{1}{3}x+1\\ y>|2x-1|\end{cases}$

7. $\begin{cases}y\le -\frac{4}{3}x\\ y\ge -|x|\end{cases}$

8. $\begin{cases}y>-2\\ y\le -|x-3|\end{cases}$

9. $\begin{cases}-2y<4x+2\\ y>|2x+1|\end{cases}$

10. $\begin{cases}y\ge 1\\ y<|x|+1\end{cases}$

11. $\begin{cases}x+y\ge -1\\ y\le -|x-3|-1\end{cases}$

12. $\begin{cases}y<x-1\\ y>-|x-2|+1\end{cases}$

13. $\begin{cases}2x+y\le 3\\ y>|x+3|-2\end{cases}$

14. $\begin{cases}y\ge -2x+4\\ x>-3\\ y\ge 1\end{cases}$