Name_____ Class_____ Date_____

3-3 Practice

Form G

Systems of Inequalities

Find all whole number solutions of each system using a table.

1. $\begin{cases} -x + y = 1 \\ x + 2y \le 20 \end{cases}$

2. $\begin{cases} x - y \ge 1 \\ 2x + 3y \le 21 \end{cases}$

3. $\begin{cases} y < -2x + 4 \\ y \le x + 2 \end{cases}$

4. $\begin{cases} x - y \le 2 \\ 2x + y \le 5 \end{cases}$

5. $\begin{cases} y > 4x + 2 \\ y - x \le 3 \end{cases}$

6. $\begin{cases} y < -\frac{x}{3} + 3 \\ 2x + y \ge 4 \end{cases}$

7. The dry cleaner charges \$4 to clean a pair of pants and \$3 to clean a shirt. You want to get at least 8 items cleaned. You have \$32 to spend on dry cleaning.

a. Write a system of inequalities to model the situation.

b. Solve the system by using a table.

Solve each system of inequalities by graphing.

8. $\begin{cases} y > x + 2 \\ y \le -x + 1 \end{cases}$

9. $\begin{cases} y \le x + 3 \\ y \ge x + 2 \end{cases}$

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

11. $\begin{cases} x - 2y < 3 \\ 2x + y > 8 \end{cases}$

12. $\begin{cases} -3x + y < 3 \\ x + y > -1 \end{cases}$

13. $\begin{cases} x + 2y > 4 \\ 2x - y > 6 \end{cases}$

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

15. $\begin{cases} 3 < 2x - y \\ x - 3y \le 4 \end{cases}$

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

Name_____ Class _____ Date_____

3-3 Practice (continued) *Form K*

Systems of Inequalities

17. Suppose you are buying two kinds of notebooks for school. A spiral notebook costs \$2, and a three-ring notebook costs \$5. You must have at least 6 notebooks. The cost of the notebooks can be no more than \$20.

a. Write a system of inequalities to model the situation.

b. Graph and solve the system.

18. A camp counselor needs no more than 30 campers to sign up for two mountain hikes. The counselor needs at least 10 campers on the low trail and at least 5 campers on the high trail.

a. Write a system of inequalities to model the situation.

b. Graph and solve the system.

Solve each system of inequalities by graphing.

19. $\begin{cases} y < x - 3 \\ y \geq \lvert x - 4 \rvert \end{cases}$

20. $\begin{cases} -2x + y > 1 \\ y > \lvert x \rvert \end{cases}$

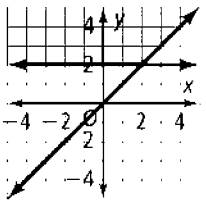
21. $\begin{cases} y < -3 \\ y < -\lvert x \rvert \end{cases}$

22. $\begin{cases} y \geq -2 \\ y \leq -\lvert x + 3 \rvert \end{cases}$

23. $\begin{cases} y < x + 3 \\ y > \lvert x - 1 \rvert \end{cases}$

24. $\begin{cases} y > x \\ y < \lvert x + 2 \rvert \end{cases}$

25. Error Analysis Your homework assignment is to solve the system $\begin{cases} y \geq 2 \\ y \geq \lvert x \rvert \end{cases}$ using a graph. You turn in the graph at the right. What did you do wrong? Draw a correct graph.



26. Open-Ended Write a system of inequalities that has no solution.

27. A doctor needs at least 60 adults for a medical study. He cannot use more than 40 men in the study. Write a system of inequalities to model the situation and solve the system by graphing.