Algebra 1: 7.1 & 7.2 Quiz Review **Name** _____ **Period** ____
Linear Inequalities & Systems of Inequalities
SHOW YOUR WORK!!

Define each of the following terms. Use your notes and the Carnegie Learning handout for chapter 7 if you need help.

1) Linear Inequality - _____

_____

2) Systems of Linear Inequalities - _____

_____

3) Constraints - _____

_____

Fill in the blanks.

4) The ordered pairs are located in the _____ area of the graph and on the

_____.

5) Ordered pairs that make the inequality or inequalities true are called _____.

6) Solutions for a system of inequalities are _____ the ordered pairs in the

_____ shaded region.

7) If the shaded regions do not overlap, there is _____ solution.

Determine if the graph of each linear inequality will have a DASHED or SOLID line AND if you shade ABOVE or BELOW the line.

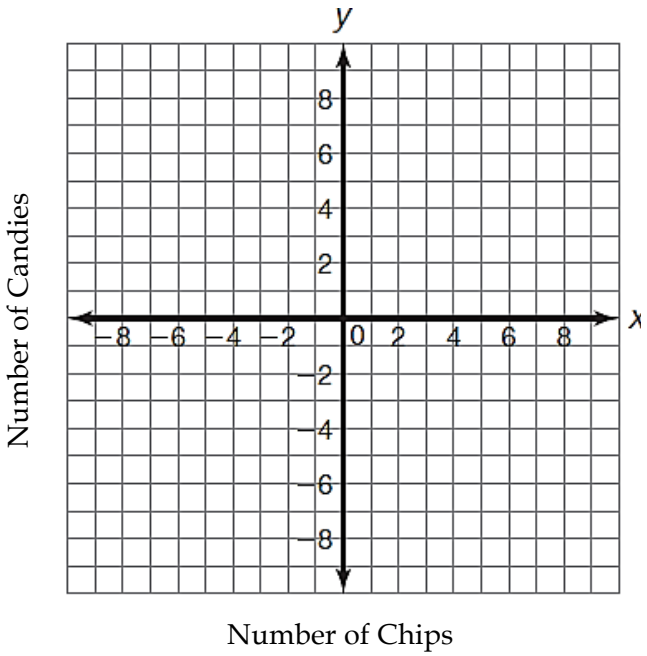
8) $y < 14x - 7$ 9) $y - 9x \geq 3$ 10) $4x - 2y \leq 8$

11) Jacob can spend ***no more than*** $4 for chips and candy. Chips cost $1 each and candy costs $0.50 each.

a. Write a linear inequality to represent the number of ways Jacob can spend $4.

b. Graph the inequality. Don't forget to shade!

c. Use the graph to determine if the ordered pair (3, 2) is a solution to the problem situation?

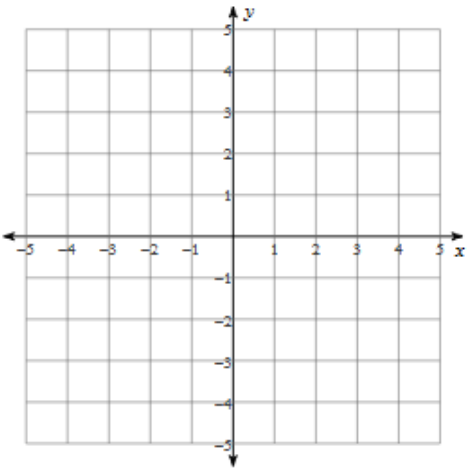


d. Prove algebraically that the ordered pair (4, 8) is a solution to the problem situation.

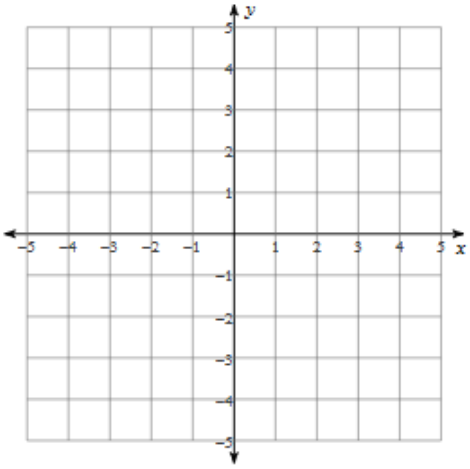
e. Does the ordered pair (-2, -3) make sense as a solution in the context of this problem situation? Why or why not?

Graph each of the linear inequalities.

12) $y < -\frac{2}{3}x + 3$



13) $x - 5y \geq -10$



Write a system of linear inequalities for each problem situation. Remember to define your variables.

14) Pablo's truck can carry ***a maximum of*** 1,000 pounds. He loads his truck with 20-pound bags of cement and 80-pound bags of cement. He plans to load ***at least*** 10 bags of cement into his truck.

15) Kathryn makes flower arrangements to sell in her shop. She can make a small arrangement in 30 minutes (or 1/2 hour) that sells for $20. She can make a large arrangement in 1 hour that sells for $50. Kathryn hopes to make ***at least*** $350 by working ***no more than*** 8 hours.

Prove algebraically whether the given point is a solution to the system of linear inequalities.

16) $\begin{cases} x+5y<-1 \\ 2y\geq -3x-2 \end{cases}$

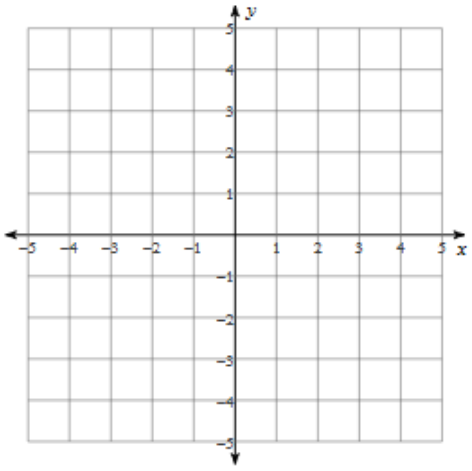
Point: (0, -1)

17) $\begin{cases} 4x+y<21 \\ \frac{1}{2}x\leq 36-5y \end{cases}$

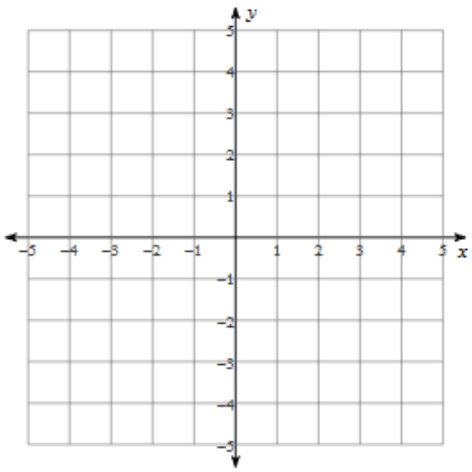
Point: (3, 7)

Graph each system of linear inequalities.

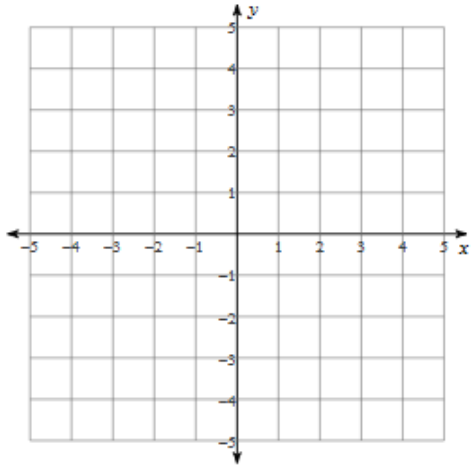
18) $\begin{cases} y\leq -2x-3 \\ y<-\frac{2}{3}x+1 \end{cases}$



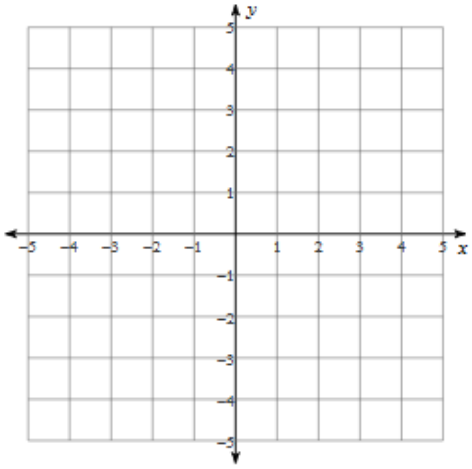
19) $\begin{cases} y\geq -2x+2 \\ y<-2 \end{cases}$



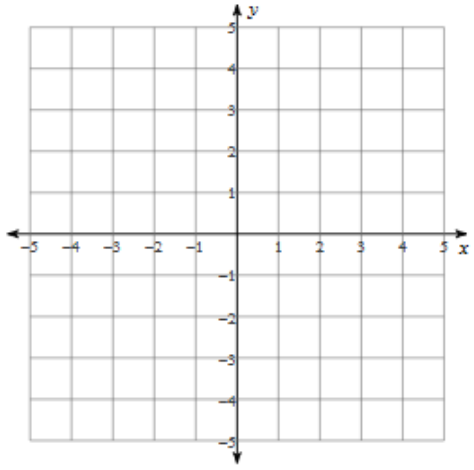
20) $\begin{cases} y > -\frac{1}{2}x - 2 \\ y \le -\frac{1}{2}x + 3 \end{cases}$



21) $\begin{cases} y \le \frac{1}{3}x - 2 \\ y > \frac{1}{3}x + 1 \end{cases}$



22) $\begin{cases} x + y \le 1 \\ x - 3y \le 9 \end{cases}$



23) $\begin{cases} x + 2y < 4 \\ 2x - y > 3 \end{cases}$