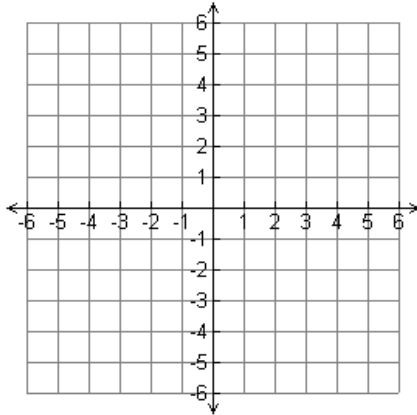


1. Graph each system on the grid provided to find a solution. Check your solution algebraically.

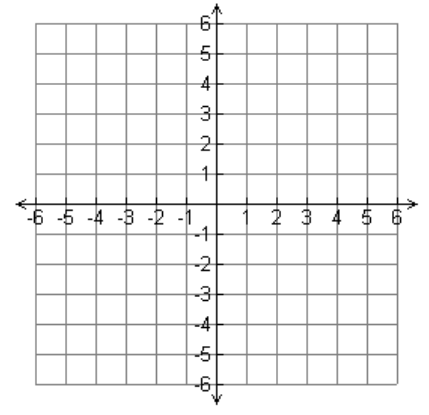
a) $\begin{cases} 2x + 4y = -4 \\ y = x + 2 \end{cases}$

Solution: _____



b) $\begin{cases} 3x - y = 3 \\ \frac{1}{3}y = x - 1 \end{cases}$

Solution: _____



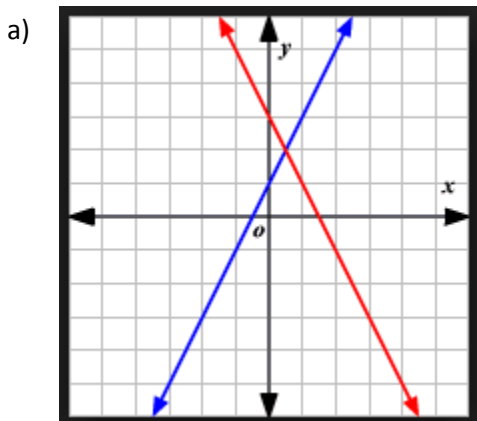
2. Does the system of equations have no solution or infinitely many solutions?

a) $\begin{cases} x + y = -4 \\ 2x + 2y = 6 \end{cases}$

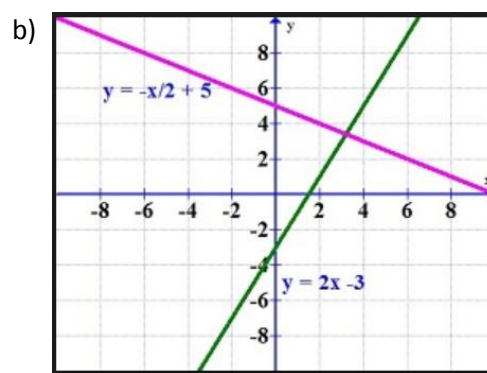
b) $\begin{cases} x = -\frac{3}{2}y + 3 \\ 4x + 6y = 12 \end{cases}$

c) $\begin{cases} 6x + 3y = -6 \\ y = -2x - 2 \end{cases}$

3. Estimate the solution of the system of equations.



Solution: _____



Solution: _____

4. For each word problem, define your variables, write a system of equations, and solve.

a) Sue plans to mix peppermints worth \$1.20 per lb. with chocolates worth \$2.40 per lb. to get a 40 lb. mix that is worth \$1.65 per lb. How much of each should she use?

Variables : _____

Show work here

Equations: _____

Solution _____

b) Mrs. Johnson's exam is worth 145 points contains 50 questions. Multiple choice questions are worth two points and extended response questions are worth five points. How many of each type of question is on the test?

Variables : _____

Show work here

Equations: _____

Solution _____

c) 75 people attended a baseball game. Everyone there was a fan of either the home team or the away team. The number of home team fans has 90 less than 4 times the number of away team fans. How many home team and away team fans attended the game?

Variables : _____

Show work here



Equations: _____

Solution _____

What is the solution of the system of equations?

5) $\begin{cases} y = \frac{3}{5}x + 2 \\ 2x + 5y = 85 \end{cases}$ Solution: _____

6) $\begin{cases} y = -\frac{2}{3}x + 4 \\ 2x + 3y = -6 \end{cases}$ Solution: _____

7. A fashion designer makes and sells hats. The material for each hat costs \$5.50. The hats sell for \$12.50 each. The designer spends \$1400 on advertising. How many hats must the designer sell to break even?

Variable(s): _____

Show work here

Equation(s): _____

Solution _____

8) Solve each system. (similar to #8-10)

a) $\begin{cases} -8x - 10y = 28 \\ 4x + 10y = -24 \end{cases}$ Solution: _____

b) $\begin{cases} 7x + 4y = -4 \\ 5x + 8y = 28 \end{cases}$ Solution: _____

c) $\begin{cases} x + y = 6 \\ 5x + 5y = 10 \end{cases}$ Solution: _____

d) $\begin{cases} -2x - 7y = 22 \\ -7x - 5y = -1 \end{cases}$ Solution: _____

11) Jackson and Gabe are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Jackson sold 3 small boxes of oranges and 14 large boxes of oranges for a total of \$203. Gabe sold 11 small boxes of oranges and 11 large boxes of oranges for a total of \$220. Find the cost each of one small box of oranges and one large box of oranges.

Show work here

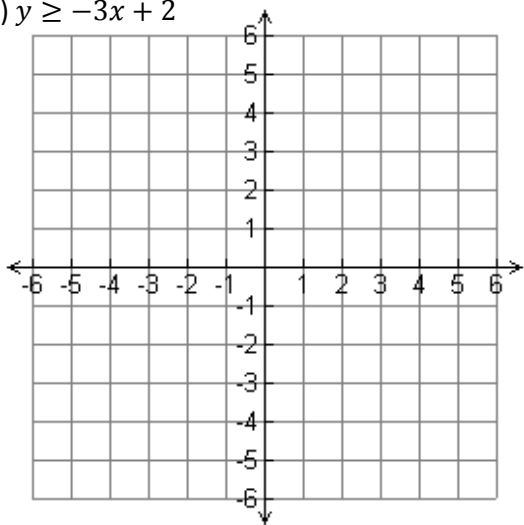
Variable(s) : _____

Equation(s): _____

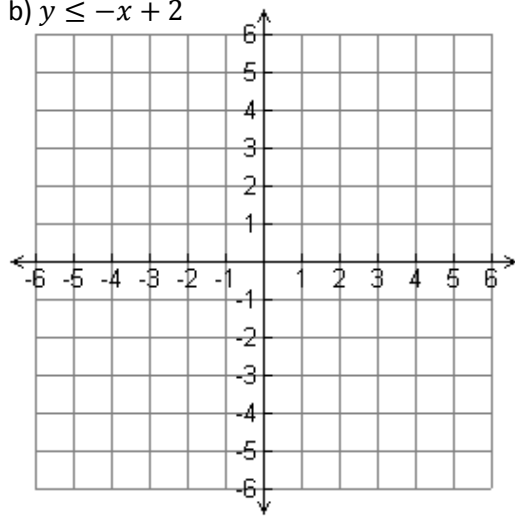
Solution _____

12) Graph the inequalities.

a) $y \geq -3x + 2$

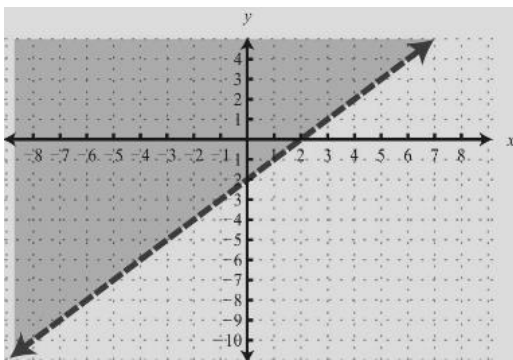


b) $y \leq -x + 2$

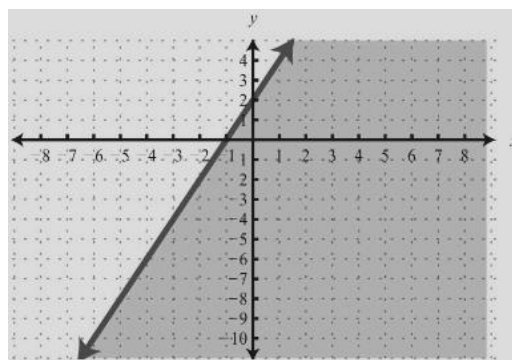


13) Write the inequality for the graph.

a)



b)



Inequality: _____

Inequality: _____

14) In the area below a dashed line through the points $(-4, 5)$ and $(8, 5)$ is shaded. Write an inequality for the graph.

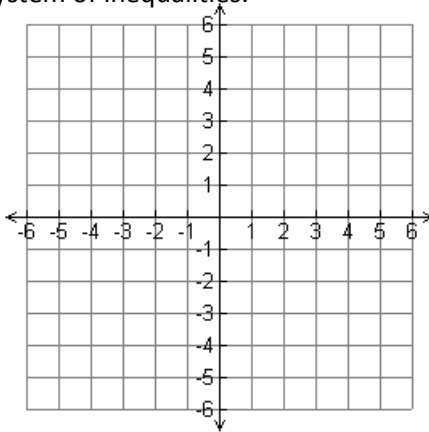
Inequality: _____

15) In the graph of an inequality, the region to the right of a solid vertical line through the point (4, 6) is shaded. What inequality does the graph represent?

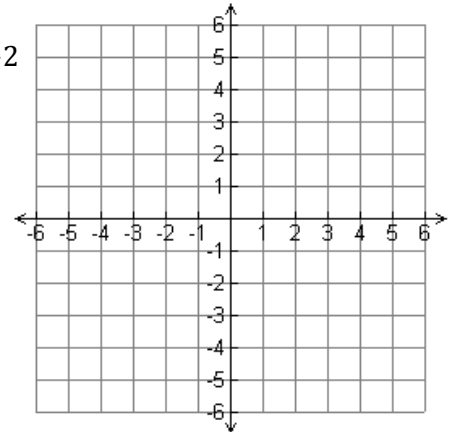
Inequality: _____

16) Graph the system of inequalities.

a)
$$\begin{cases} x \leq -3 \\ y < \frac{5}{3}x + 2 \end{cases}$$

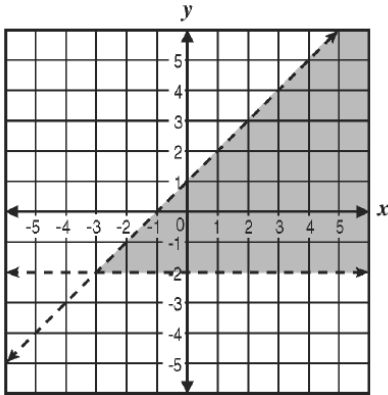


b)
$$\begin{cases} 3x + 2y \geq -2 \\ x - 2y < 4 \end{cases}$$



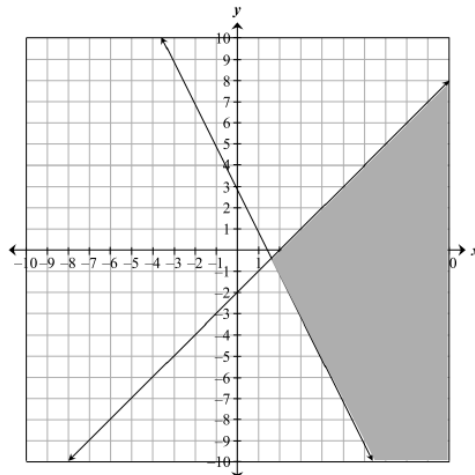
17) Choose the best answer to each of the following.

a) What system of inequalities best represents the graph shown below?



- A. $y > -2$ and $y > x + 1$ B. $y > -2$ and $y < x + 1$
 C. $y < -2$ and $y > x + 1$ D. $y < -2$ and $y < x + 1$

b) Which system of linear inequalities is represented by this graph?



- A.
$$\begin{cases} y \geq \frac{1}{2}x + 3 \\ y \geq x - 2 \end{cases}$$
 B.
$$\begin{cases} y \geq 2x + 3 \\ y \leq x - 2 \end{cases}$$
 C.
$$\begin{cases} 2x - y \geq 3 \\ x + y \leq 2 \end{cases}$$
 D.
$$\begin{cases} 2x + y \geq 3 \\ x - y \geq 2 \end{cases}$$

18) Karsen and Grace are selling cookie dough for a school fundraiser. Customers can buy packages of chocolate chip cookie dough and packages of gingerbread cookie dough. Karsen sold 8 packages of chocolate chip cookie dough and 12 packages of gingerbread cookie dough for a total of \$364. Grace sold 1 package of chocolate chip cookie dough and 4 packages of gingerbread cookie dough for a total of \$93. Find the cost each of one package of chocolate chip cookie dough and one package of gingerbread cookie dough.

Show work here

Variables: _____

Equations: _____

Solution _____

19) The administration at the school Karsen and Grace attend from Item 18 wants to make at least \$1000 with the fundraiser. Let x be the number of packages of chocolate chip cookie dough and y be the number of packages of gingerbread cookie dough sold. Write an inequality to show the number of packages that need to be sold.

Inequality: _____