Mod 5 Review Honors

Name_____   Period_____

1. What strategies have we developed to solve systems of equations?

2. What strategies have we developed to solve systems of inequalities?

3. What does the solution set to a system of an equations look like?

4. What does the solution set to a system of inequalities look like?

5. How many solutions are there to a system of equations? Give a graphical example of each possibility.

6. How many solutions are there to a system of inequalities? Give a graphical example.

7. Solve the following system of equations using **substitution** and by **graphing**:
$$\begin{cases} y = 16 - x \\ x - y = 9 \end{cases}$$
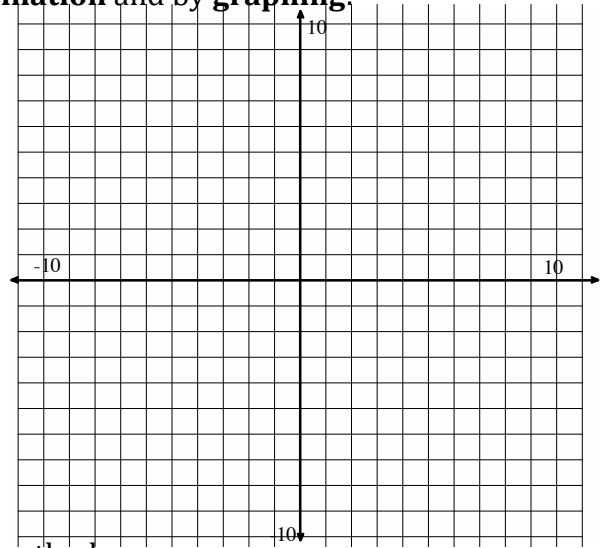
Show work for substitution below:
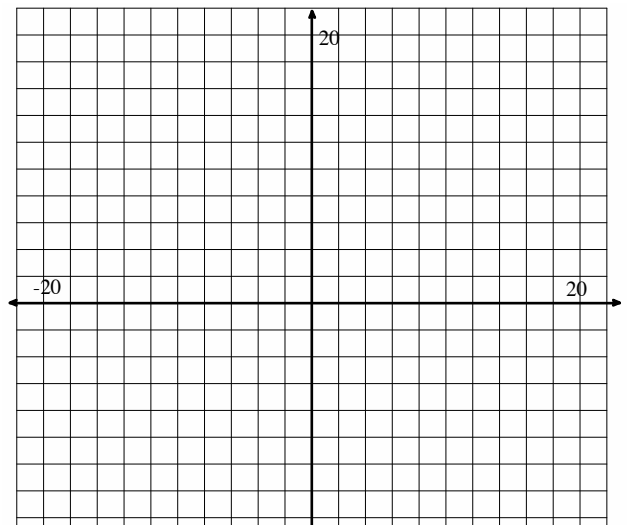
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8. Solve the following system of equations using **elimination** and by **graphing**:

$$\begin{cases} 3x + 5y = 7 \\ 2x - 3y = 11 \end{cases}$$

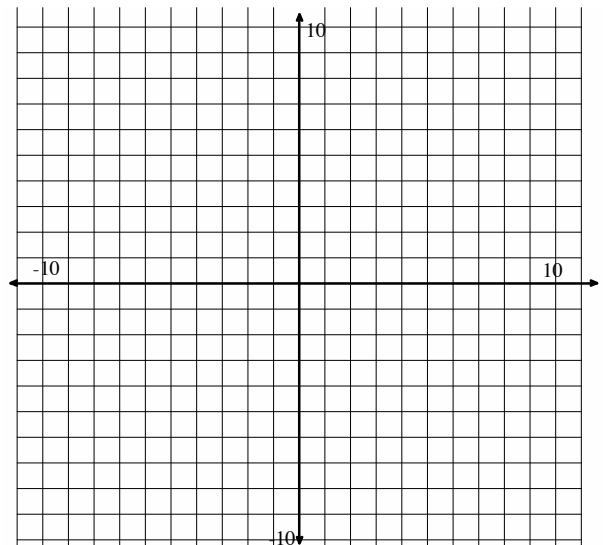Show work for elimination below

9. Solve the following system of equations using any method

$$\begin{cases} 2x + 6y = 18 \\ 3x + 2y = 13 \end{cases}$$

10. Solve the following system of inequalities:

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

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Solve each of the systems of equations below using an appropriate method (substitution or elimination)

11. $\begin{cases} y = -x + 2 \\ y = 3x - 6 \end{cases}$

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

Solve the following systems of inequalities.

13. $\begin{cases} y \le \frac{3}{4}x - 5 \\ y > -2x + 1 \end{cases}$

14. $\begin{cases} 4x + 3y \le 24 \\ 6x - 9y \le 18 \end{cases}$

Circle the points that are solutions to the system of inequalities.

15. $\begin{cases} x + y > 4 \\ 2x + 3y \le 12 \end{cases}$
a. (0,4)
b. (4,1)
c. (2,1)

16. $\begin{cases} y \le \frac{1}{2}x - 3 \\ y \le 4x - 3 \end{cases}$
a. (-2,2)
b. (2,1)
c. (0,-3)

Circle the points that are solutions to the system of equations.

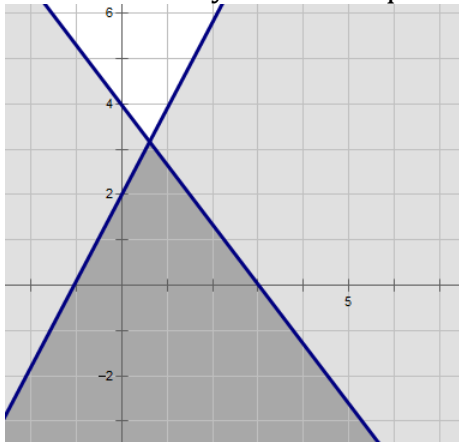17. $\begin{cases} y = \frac{1}{2}x - 3 \\ y = 4x - 3 \end{cases}$
a. (0, 3)
b. (10,2)
c. No solution

18. $\begin{cases} y = 3x + 7 \\ y = -3x - 5 \end{cases}$
a. (0,0)
b. (-2,1)
c. (-1, 4)

19. Write the system of inequalities that matches the following graph

20. When graphing an inequality what does a dotted line mean?

Solve the following systems of equations by **using a method other than graphing**. Use whatever method is most efficient for the given system. Write your answer as a coordinate point.

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

22. $\begin{cases} -7x - 2y = -13 \\ x - 2y = 11 \end{cases}$

23. You are shopping at Walmart for popsicles. You want to get blue-raspberry and cherry flavors. The blue-raspberry are bigger, so they cost $1.50 each while the cherry are only $1. Walmart is having a special and you get a free gift if you spend over $25. You want to find all of the different combinations of popsicles that you could buy and get a free gift.

(a) Write an inequality for the situation above.

(b) Find all of the solutions to your inequality

(c) Are all of the solutions that you found in (b) viable?