

Mod 2 Review Honors

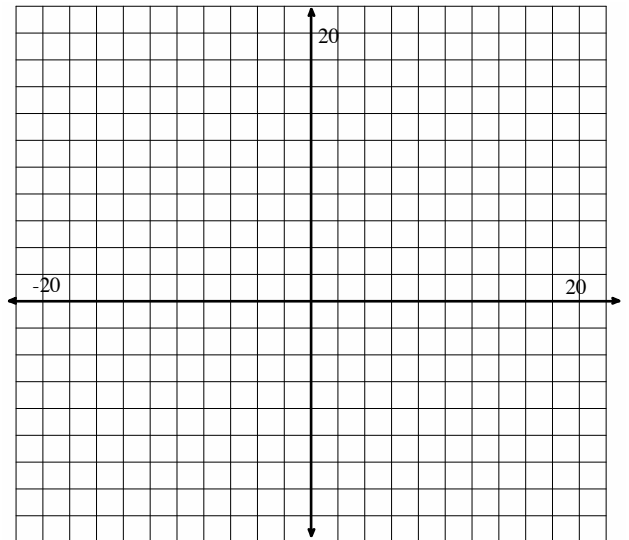
Name _____

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**:

$$\begin{cases} x + y = 16 \\ x - y = 9 \end{cases}$$

Show work for substitution below:

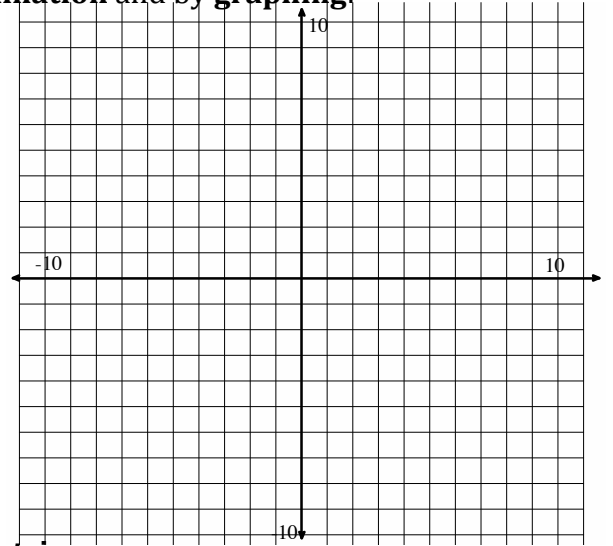


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8. Solve the following system of equations using **elimination** and by **graphing**:

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

Show work for elimination below

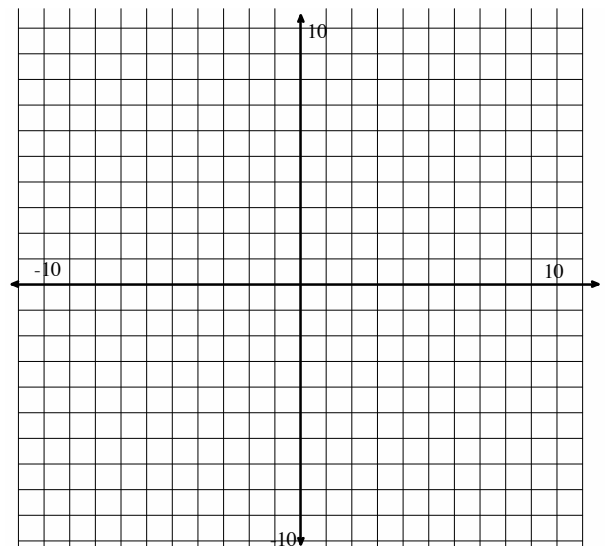


9. Solve the following system of equations **using a matrix**:

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

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. Use a **matrix on one of the two systems**, whichever one the matrix row reduction method fits with best.

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

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

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

15.
$$\begin{cases} x + y > 4 \\ 2x + 3y \leq 12 \end{cases}$$

- a. (0,4)
- b. (4,1)
- c. (2,1)

16.
$$\begin{cases} y \leq \frac{1}{2}x - 3 \\ y \leq 4x - 3 \end{cases}$$

- a. (-2,2)
- b. (2,1)
- c. (0,-3)

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

17.
$$\begin{cases} y = \frac{1}{2}x - 3 \\ y = 4x - 3 \end{cases}$$

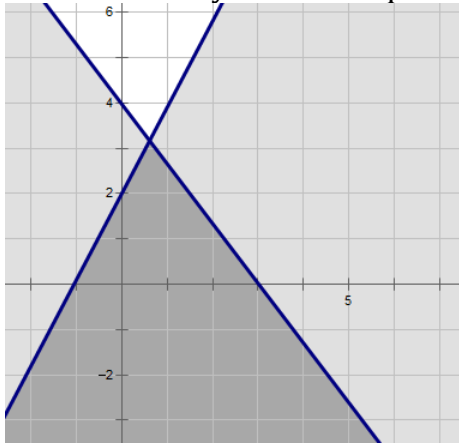
- a. (0, 3)
- b. (10,2)
- c. No solution

18.
$$\begin{cases} y = 3x + 7 \\ y = -3x - 5 \end{cases}$$

- a. (0,0)
- b. (-2,1)
- c. (-1, 4)

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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?