Mod 5 Review Honors

Name_____ Period_____

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

   Graphing, Substitution, Elimination

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

   Graphing with shading

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

   Usually it is an ordered pair, example, (x, y) . Sometimes it is "No Solution" or "Infinitely many solutions or Many solutions"

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

   A graph with double shading 

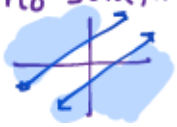
5. How many solutions are there to a system of equations? Give a graphical example of each possibility.

   One 

   None 

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

   Infinitely many 

   no solutions 

7. Solve the following system of equations using **substitution** and by **graphing**:

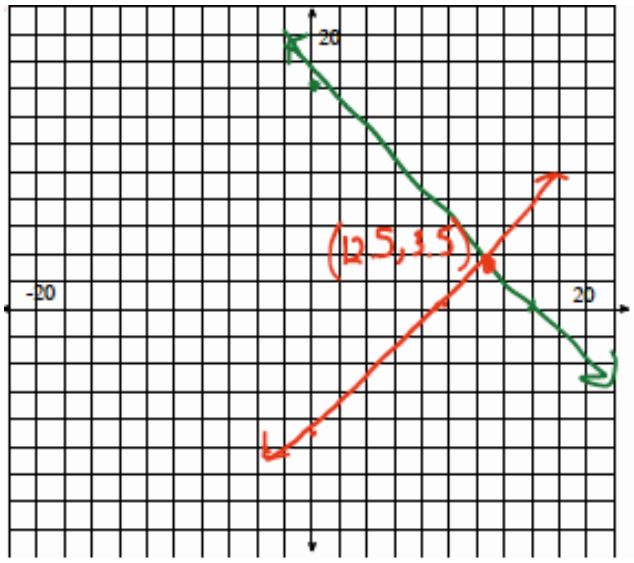
   $\begin{cases} y = 16 - x \\ x - y = 9 \end{cases}$

   Show work for substitution below:

$x-(16-x)=9$
$x-16+x=9$
$2x-16=9$
$+16\ +16$
$\frac{2x}{2}=\frac{25}{2}$
$x=12.5$

$y=16-12.5$
$y=3.5$

$(12.5, 3.5)$



Mod 5 Review Honors

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

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

$3x + 5y = 7 - 3x$

$-3x$

$\frac{5y}{5} = \frac{7}{5} - \frac{3x}{5}$

$y = -\frac{3}{5}x + 1\frac{2}{5}$

Show work for elimination below

$9x + 15y = 21$

$10x - 15y = 55$

$\frac{19x}{19} = \frac{76}{19}$

$x = 4$

$3(4) + 5y = 7$

$12 + 5y = 7$

$-12 \quad -12$

$5y = -5$

$y = -1$

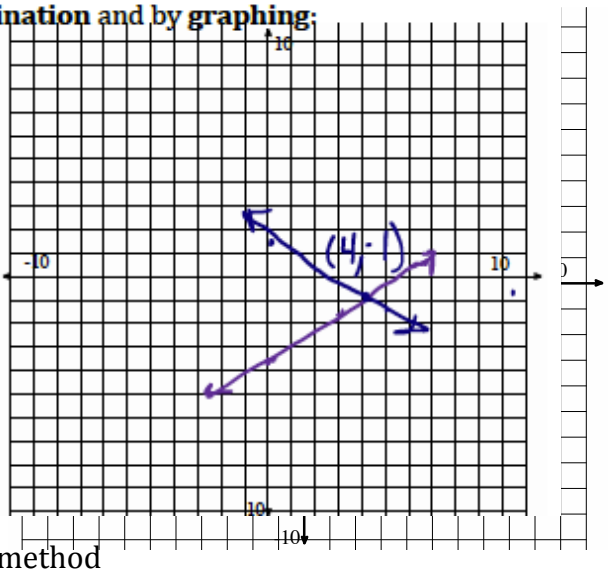
$(4, -1)$

$2x - 3y = 11 \cdot 2x \quad -3$

$-2x$

$\frac{-3y}{-3} = \frac{11}{-3} - \frac{2x}{-3}$

$y = \frac{2}{3}x - 3\frac{2}{3}$



9. Solve the following system of equations using any method

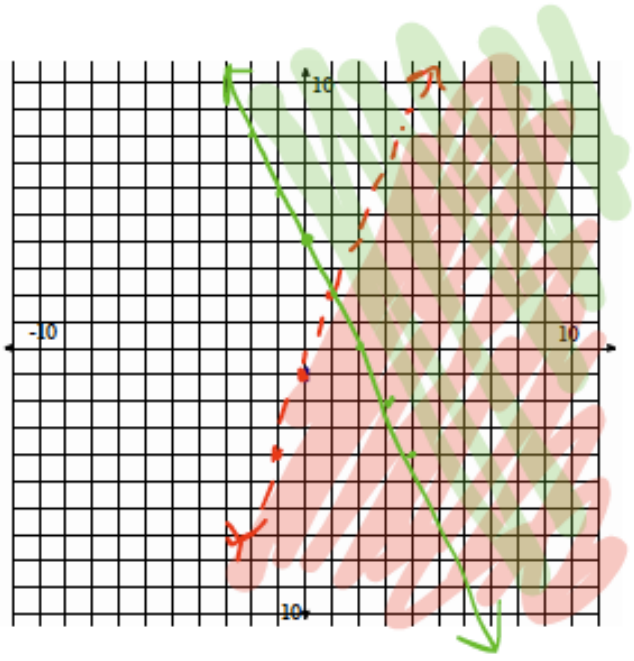
$\begin{cases} 2x + 6y = 18 \\ 3x + 2y = 13 \end{cases}$

Answer: (3,2)

10. Solve the following system of inequalities:

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

Remember, the only way to solve inequalities is to graph them.



Mod 5 Review Honors

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

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

$-y + 2 = 3x - 6$
$+x + 6 \quad +x + 6$
$\frac{8}{4} = \frac{4x}{4}$
$2 = x$

$y = 3(2) - 6$
$y = 0$

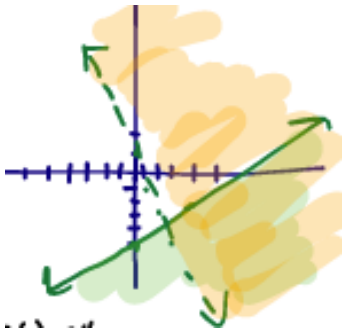
$(2, 0)$

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

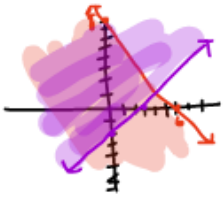
Answer: (-2, 1)

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

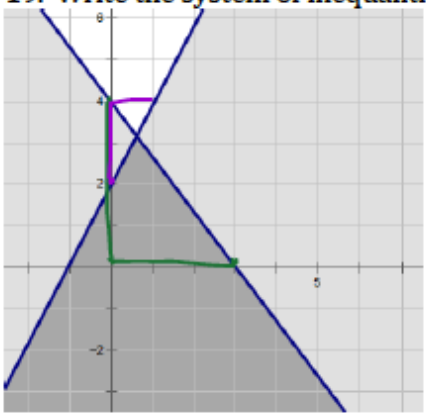
18. $\begin{cases} y = 3x + 7 \\ y = -3x - 5 \end{cases}$

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

None of the answers are correct

Mod 5 Review Honors

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



$y \leq -\frac{4}{3}x + 4$

$y \leq 2x + 2$

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

It means that the points on the line are not solutions.

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. $\begin{cases} x = (y - 1) \\ -3x + 2y = -1 \end{cases}$ $x = 4 - 1$ $x = 3$ $(3, 4)$

$-3(y - 1) + 2y = -1$

$-3y + 3 + 2y = -1$

$-y + 3 = -1$ $+y = +4$

22. $\begin{cases} -7x - 2y = -13 \\ -x + 2y = 11 \end{cases}$ $\frac{-8x}{-8} = \frac{-24}{-8}$ $x = 3$ $\frac{-2y}{-2} = \frac{8}{-2}$ $y = -4$ $(3, -4)$

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.

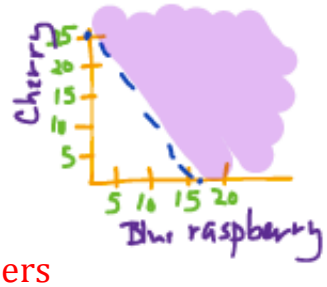
b = blue raspberry c = cherry

(a) Write an inequality for the situation above.

$1.50b + 1c > 25$

(b) Find all of the solutions to your inequality

b	c
0	25
$16\frac{2}{3}$	0



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

No, because only the whole numbers will work since you can't buy fractions or decimals of popsicles.