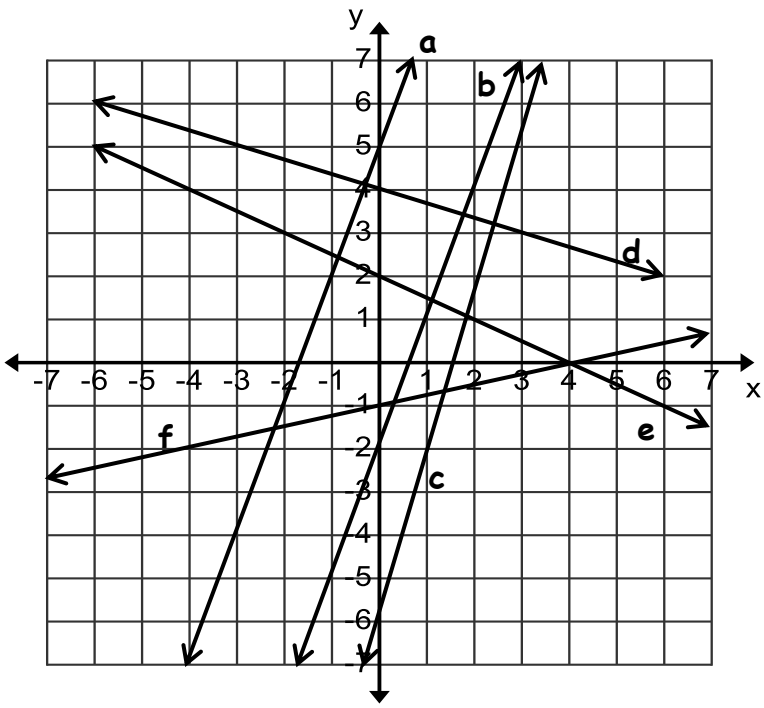
Unit 1 Review: Systems of Equations & Inequalities Name: _____

1. Which two lines have no common solution?

2. Which two lines have the point (4, 0) as the common solution?

3. Which line matches the equation y = 4x – 6?

4. Which line matches the equation y = ¼ x – 1?




For numbers 5-7, tell which method (graphing, substitution, or elimination/combination) you would use to solve each system. ***Explain why.***

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

6. $\begin{cases} 2x - 4y = 2 \\ -2x + 5y = 3 \end{cases}$

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

For #8 – 13, solve the following systems using any method desired.

8. $\begin{cases} x + y = 7 \\ 6x + y = 2 \end{cases}$

9. $\begin{cases} 2x + y = 5 \\ x - 2 = y \end{cases}$

10. $\begin{cases} 6x + 6y = 6 \\ 2x + 2y = 2 \end{cases}$

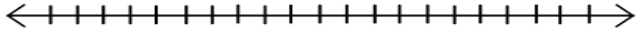
11. $\begin{cases} y = 3x - 1 \\ y = 3x + 5 \end{cases}$

12. $\begin{cases} 3x - y = 4 \\ 2x + 2y = 24 \end{cases}$

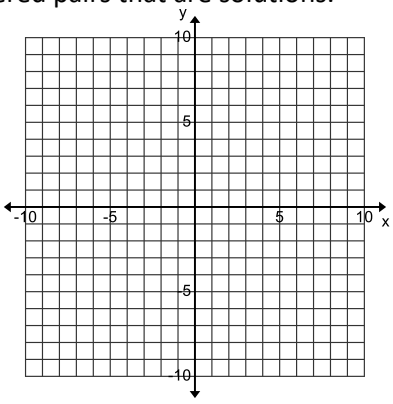
13. $\begin{cases} x = 2y - 5 \\ 3x + 2y = 1 \end{cases}$

14. Joe buys 5 notebooks and 3 pens for $10.80. Julia buys 8 notebooks and 3 pens for $15.30. How much is a notebook? How much is a pen?

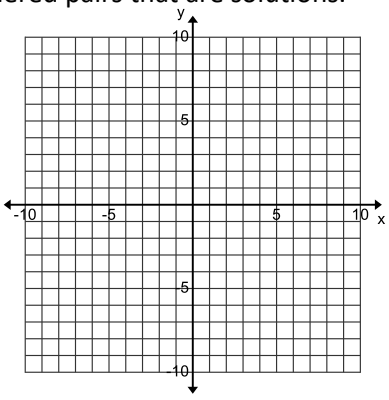
15. Solve and graph, then write a compound inequality to represent the graph: $|3 - x| + 11 \geq 16$



16. Graph $y > 2x - 7$.
Give 2 ordered pairs that are solutions.

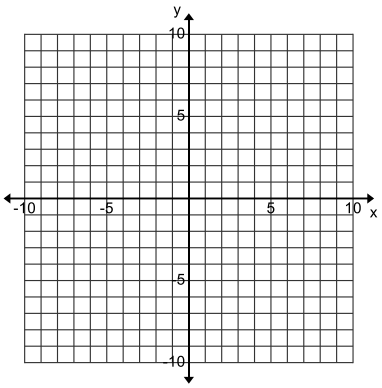



17. Graph $x - 3y > 6$.
Give 2 ordered pairs that are solutions.



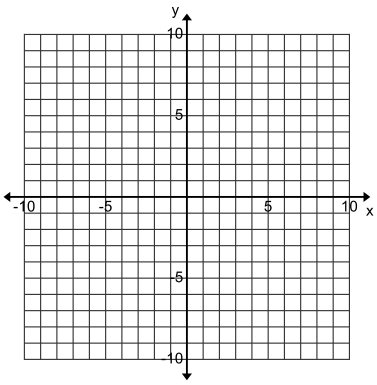

18. Graph $\begin{cases} y \leq 3x - 1 \\ y > -2x + 4 \end{cases}$

Give 2 ordered pairs that are solutions.




19. Graph $\begin{cases} y \leq 3 \\ y > -x + 3 \end{cases}$

Can (-2,2) be a solution to the system? Explain why or why not.

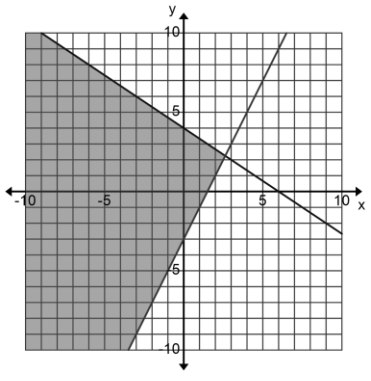



**#20 – 21: Identify your variables and write a system of equations for each problem.**
**<u>Do not solve the system.</u>**

20. Two numbers have a sum of 15. One number is 3 less than the other number. What is each number?

21. You spend $13 to rent 5 movies for the weekend. New releases rent for $3 and regular movies rent for $2. How many regular movies and how many new releases did you rent?

22. Write the system of equations that is graphed at the right.



Perform the given operation with the given matrices.

23. $\begin{bmatrix} 3 & 4 \\ 5 & -1 \\ 2 & 6 \end{bmatrix} + \begin{bmatrix} 3 & 4 \\ 5 & -1 \\ 2 & 6 \end{bmatrix}$

24. $\begin{bmatrix} -2 & 0 \\ 4 & 3 \\ 2 & 3 \end{bmatrix} - \begin{bmatrix} 2 & 4 & -1 \\ 0 & 3 & 5 \end{bmatrix}$

25. $-3\begin{bmatrix} 1 & 1 \\ 2 & -3 \\ 4 & -5 \end{bmatrix}$

Solve the following systems using matrices.

26. $\begin{cases} 6x + 6y = -6 \\ 5x + y = -13 \end{cases}$

27. $\begin{cases} -2x + 6y = 6 \\ -7x + 8y = -5 \end{cases}$

28. Given the following matrix, what would the next step be when solving a system of equations? Write your explanation and give the new matrix.

$$\begin{bmatrix} 1 & 0 & 3 \\ 8 & 1 & 24 \end{bmatrix}$$

29. What is the solution to the system represented by the matrix in # 28?