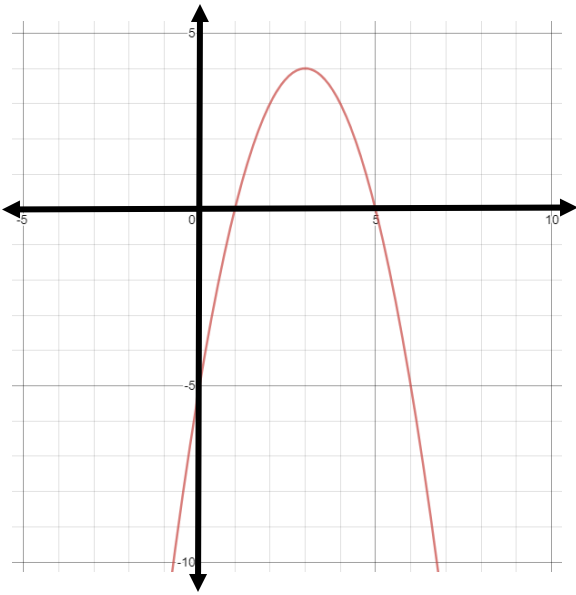


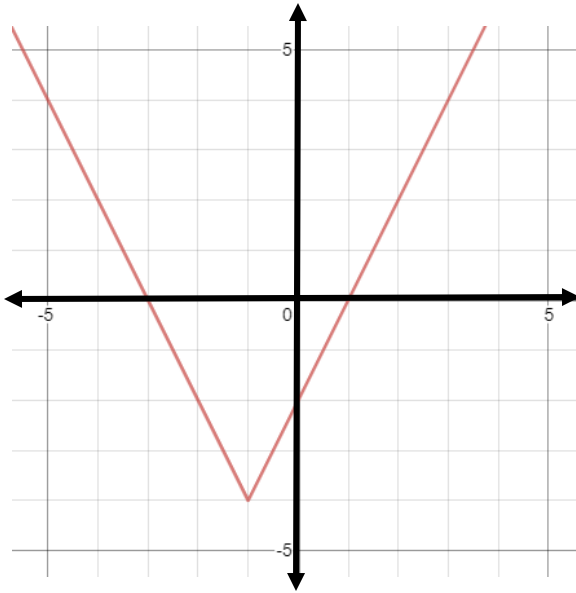
**Math 3 Topic 1 Test Review**

Name: \_\_\_\_\_ Per: \_\_\_\_\_



Use the graph at the left to identify the following:

1. Domain:
2. Range:
3. Positive interval(s):
4. Negative interval(s):
5. Increasing interval(s):
6. Decreasing interval(s):
7. x-intercept(s):
8. y-intercept(s):
9. Write an equation that represents the graph:
10. Find the average rate of change on the interval [2,5]



Use the graph at the left to identify the following:

11. Domain:
12. Range:
13. Positive interval(s):
14. Negative interval(s):
15. Increasing interval(s):
16. Decreasing interval(s):
17. x-intercept(s):
18. y-intercept(s):
19. Write an equation that represents the graph:
20. Find the average rate of change on the interval [-2, 3]

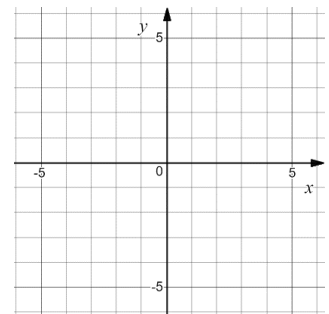
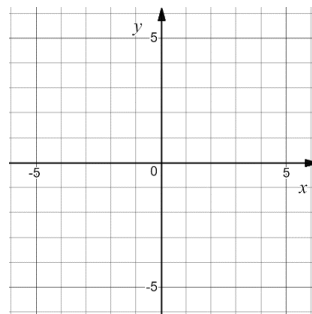
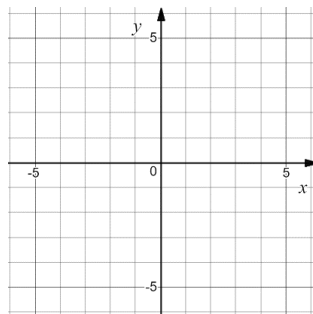
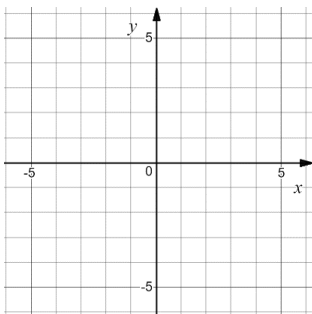
**Graph the following functions:**

21.  $f(x) = -|x - 4| + 2$

22.  $f(x) = 3|x + 1| - 2$

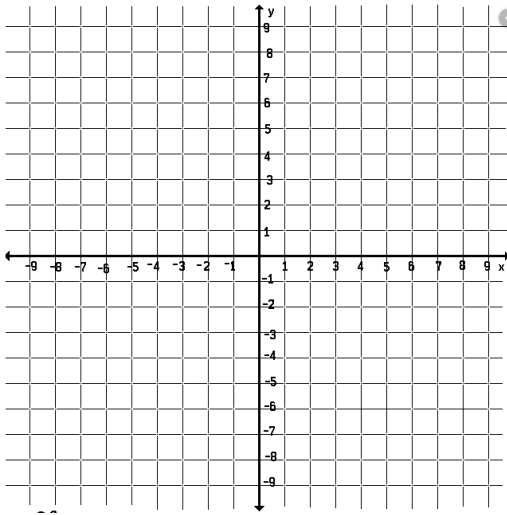
23.  $f(x) = (x - 2)^2 - 3$

24.  $f(x) = -(x + 1)^2 + 2$

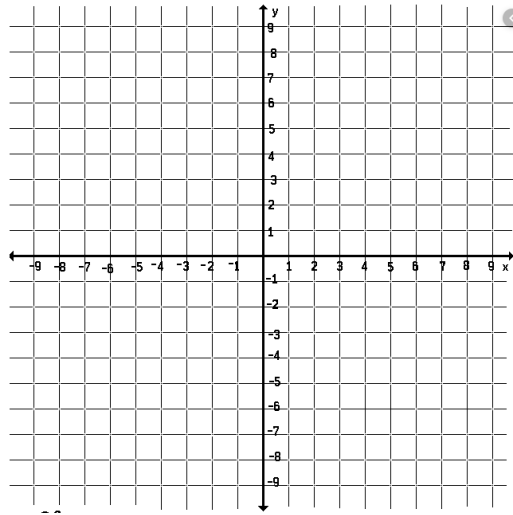


Graph the following piecewise functions:

$$25. \quad f(x) = \begin{cases} -x & -3 \leq x < -1 \\ 1 & -1 \leq x < 3 \\ 5x - 14 & 3 \leq x < 4 \end{cases}$$



$$26. \quad f(x) = \begin{cases} 2x + 3 & -3 \leq x < -1 \\ -3x - 2 & -1 \leq x < 1 \\ -5 & 1 \leq x < 5 \end{cases}$$



Without graphing, use the piecewise function to evaluate the following:

$$27. \quad f(x) = \begin{cases} -x + 6 & -4 \leq x < 0 \\ 4x - 1 & 1 \leq x < 6 \\ 7 & 6 \leq x < 8 \end{cases}$$

a.  $f(-3)$

b.  $f(6)$

c.  $f(3)$

Determine if each of the points is a solution to the system of linear equations or inequalities.

$$28. \quad \begin{cases} x + 2y = 5 \\ -3x - y = -5 \end{cases}$$

a.  $(3, 1)$

b.  $(1, 2)$

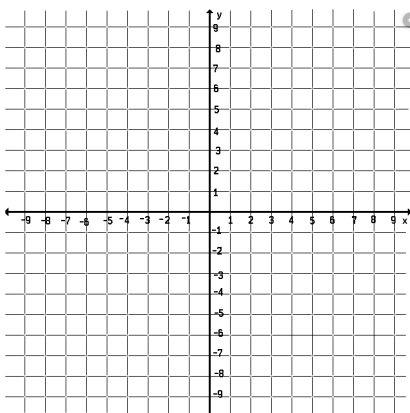
$$29. \quad \begin{cases} 2x - 3y < 1 \\ x + 4y \geq 9 \end{cases}$$

a.  $(5, 1)$

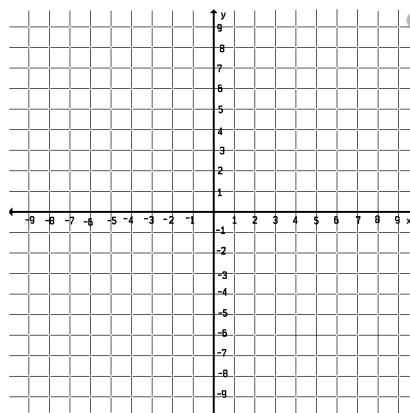
b.  $(1, 2)$

Solve the system by graphing.

$$30. \quad \begin{cases} y = -x + 3 \\ y = \frac{3}{2}x - 2 \end{cases}$$



$$31. \quad \begin{cases} y = x - 1 \\ 2x + 3y = 12 \end{cases}$$



Solve the system using substitution.

$$32. \begin{cases} y = 2x + 10 \\ y = -2x - 6 \end{cases}$$

$$33. \begin{cases} y = -2x - 3 \\ 4y + x = 16 \end{cases}$$

Solve the system using elimination.

$$34. \begin{cases} 2x + 5y = -24 \\ 3x - 5y = 14 \end{cases}$$

$$35. \begin{cases} 2x + 3y = 12 \\ 5x - y = 13 \end{cases}$$

Determine if each system has either no solution or infinitely many solutions.

$$36. \begin{cases} 2x + 5y = -13 \\ -2x - 5y = 15 \end{cases}$$

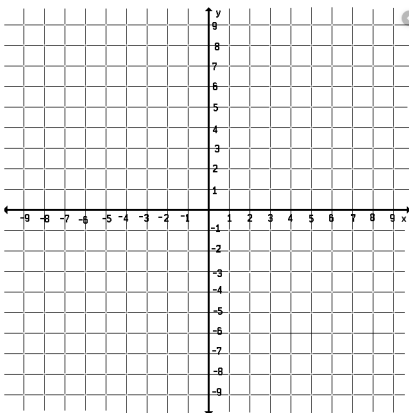
$$37. \begin{cases} y = \frac{1}{3}x - 4 \\ y = \frac{1}{3}x + 1 \end{cases}$$

$$38. \begin{cases} y = \frac{2}{5}x - 2 \\ y = \frac{2}{5}x - 2 \end{cases}$$

$$39. \begin{cases} -3x + 7y = 12 \\ 3x - 7y = -12 \end{cases}$$

Graph the solution set to the following systems of linear inequalities:

$$40. \begin{cases} y < -3x + 2 \\ y \geq x - 1 \end{cases}$$



$$41. \begin{cases} 2x + 2y < 6 \\ y < x + 2 \end{cases}$$

