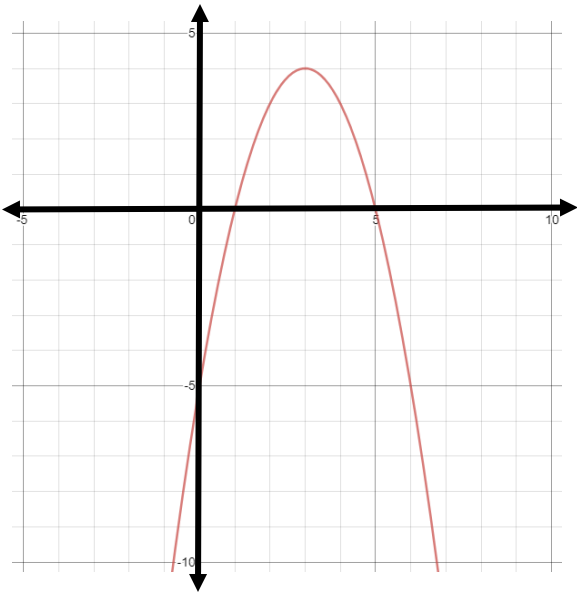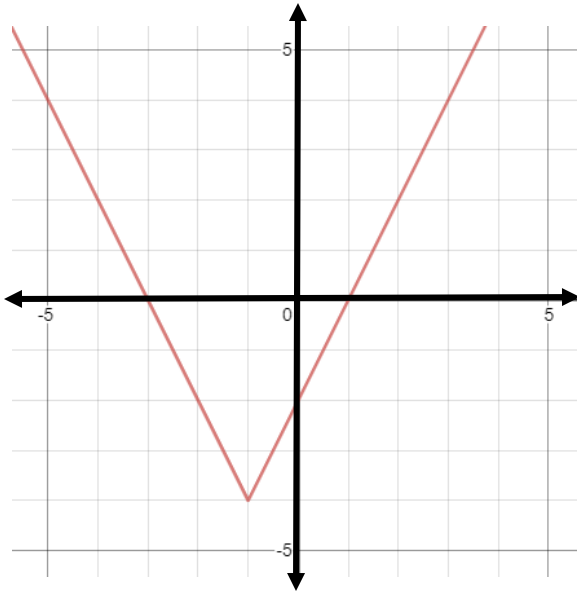**Math 3 Topic 1 Test Review**   Name:_____ Per:_____

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:

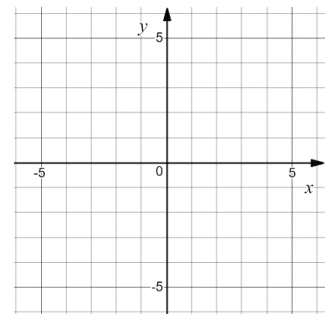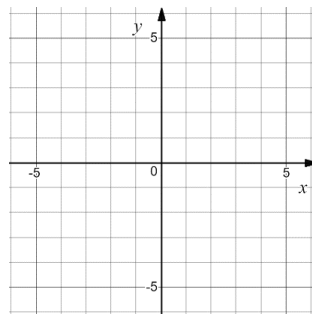20. Find the average rate of change on the interval [-2, 3]
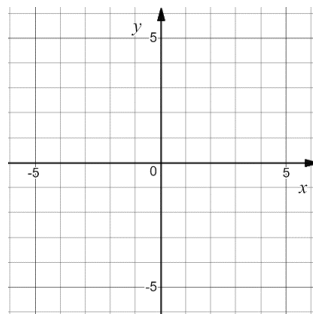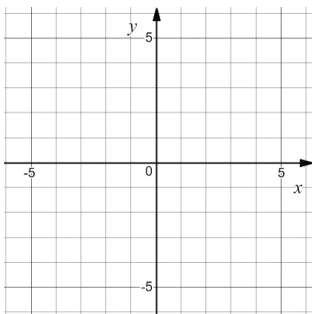
Graph the following functions:

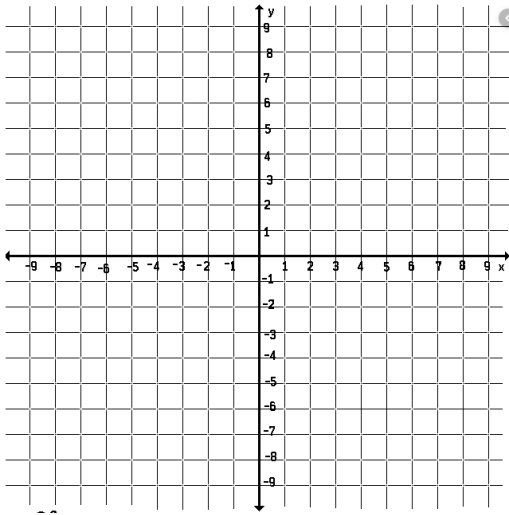21. $f(x) = -|x - 4| + 2$ 22. $f(x) = 3|x + 1| - 2$ 23. $f(x) = (x - 2)^2 - 3$ 24. $f(x) = -(x + 1)^2 + 2$
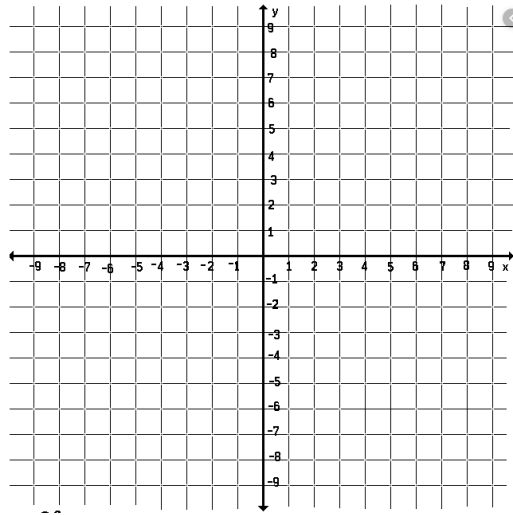
Graph the following piecewise functions:

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

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

<u>Without graphing</u>, use the piecewise function to evaluate the following:

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

   a. $f(-3)$

   b. $f(6)$

   c. $f(3)$