Math 1 Transformation of Functions Activity Name_____

1. **Complete the table of values for these functions.**

   a. **Graph all three equations:** $y = f(x)$, $y = f(x) - 3$, **and** $y = f(x) + 2$.

   b. **Write an explicit formula for g(x) and h(x).**

x	$f(x) = 2x + 1$	$g(x) = f(x) - 3$	$h(x) = f(x) + 2$
-3			
-2			
-1			
0			
1			
2			
3			

For each table below, assume the function f is defined for all real numbers. Calculate $g(x) = f(x) - 2$ in the last column in the tables below, and show your work. What do you notice about $g(x)$? Could the function be linear or exponential? Write a linear or an exponential function formula that generates the same input–output pairs as given in the table.

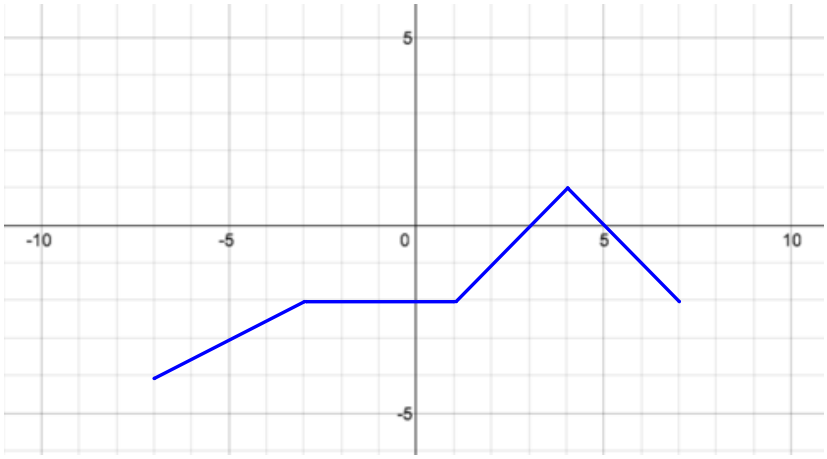
2.

x	$f(x)$	$g(x) = f(x) - 2$
1	-3	
2	1	
3	5	
4	9	
5	13	

3.

x	$f(x)$	$g(x) = f(x + 1)$
0	2	
1	6	
2	18	
3	54	
4	162	

4. Using the graph of f below, graph g(x) = f(x) + 2.



5. Suppose the graph of f is given. Write an equation for each of the following graphs after the graph of f has been transformed as described. Note that the transformations are not cumulative.

a. Translate 5 units upward.

b. Translate 3 units downward.