Name _____ **Date** _____

Function Transformations Homework : DUE NEXT CLASS

#1 – 4. Describe in words each combined transformation, IN ORDER.

1. $f(x - 1) + 5$

2. $2g(x - 1)$

3. $-3g(x) - 7$

4. $-\frac{1}{2}\, h(x - 4) + 1$

#5 – 8. Write the following descriptions in function notation.

Example: A vertical stretch of 2, and a shift up 2. *Answer: $y = 2f(x) + 2$*

5. A reflection across the x-axis, and a shift left 2 _____

6. A vertical shrink of ½ , and a shift up 7 _____

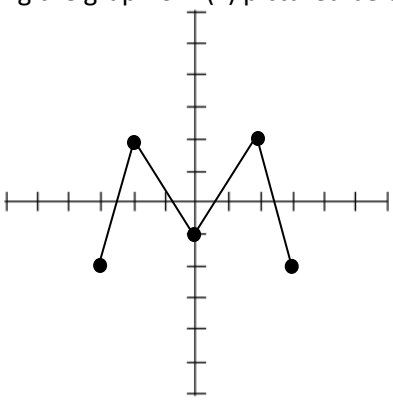
7. A vertical stretch of 3, a reflection across the x-axis, and a shift down 3

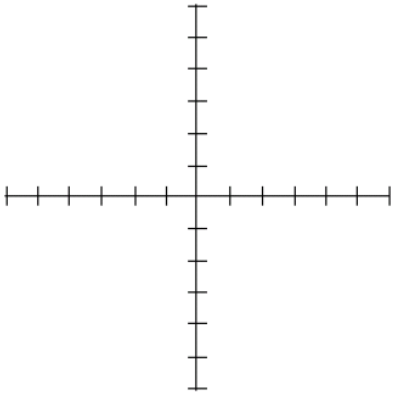
_____

8. A reflection across the x-axis, a vertical stretch of 2, and a shift up 1 and right 1.

_____

9. Using the graph of h(x) pictured below, sketch the transformation $h(x - 1) + 3$.





#10 – 20. For each function below, fill in the missing squares.

f(x) Equation	Name of Family of Functions	Domain & Range of Parent Function	Description of Transformation	Domain & Range of f(x)
10. $f(x) = \|x - 3\|$				
11.	Quadratic		Vertical stretch x4 Up 3	
12. $f(x) = 5x + 2$				
13. $f(x) = (x + 6)^2 - 2$				
14. $f(x) = 2^x + 1$				
15.	Linear		Down 2	
16. $f(x) = ½\|x\|$				
17. $f(x) = 3(2^x)$				
18.	Absolute value		Reflect over x-axis Up 1	
19.	Exponential (base 2)		Left 2	
20. $f(x) = -2x + 1$				