

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

Date: \_\_\_\_\_

**Unit: Functions**

**CW: Transformations of Functions**

**Describe in words each transformation in the correct order.**

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

2)  $2g(x - 1)$

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

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

5)  $10g(x - 5) - 7$

6)  $-h(x + 2) + 3$

**Write each description using function notation.**

7) A reflection over the x axis and a shift left 2

\_\_\_\_\_

8) A vertical shift of  $\frac{1}{2}$  and a shift up 7

\_\_\_\_\_

9) A vertical stretch of 3, a reflection over the x-axis, and a shift down 3

\_\_\_\_\_

10) A reflection over the x-axis, a vertical stretch of  $\frac{3}{4}$  and a shift up 1 and right 1

\_\_\_\_\_

**Write each discription using the function given.**

11) A quadratic function with a vertical stretch of 4, a shift up 2 and right 7

\_\_\_\_\_

12) A cubic function that has a horizontal shift right 3 and then reflects over the x- axis and then shifts down 4 units.

\_\_\_\_\_

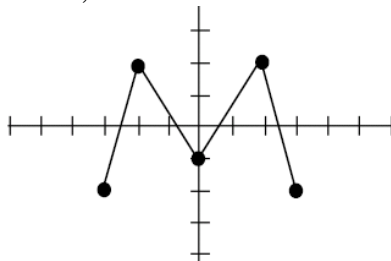
13) A square root function that has a horizontal shift left 2 and then reflects over the y- axis and then shifts up 6 units.

\_\_\_\_\_

14) An absolute value function that has a horizontal shift right 1 and then reflects over the x- axis, has a vertical stretch of 4 and then then shifts down 7 units.

\_\_\_\_\_

15) Using the graph of  $h(x)$  pictured below,

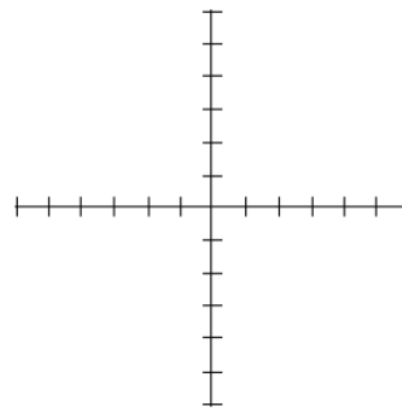
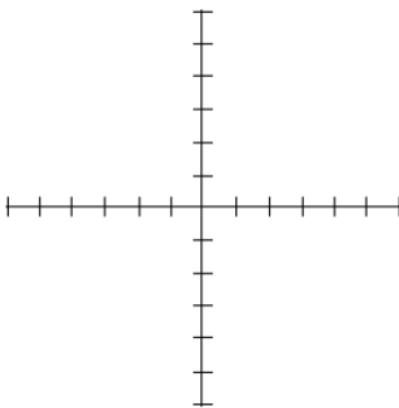
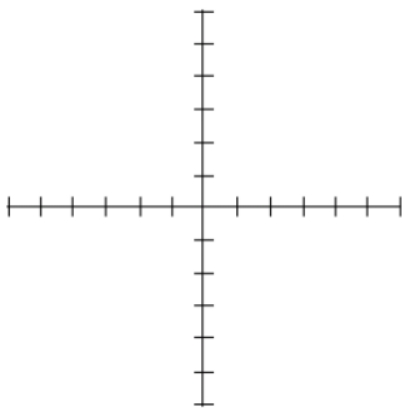


Sketch the following transformations. (If it helps, draw the original function)

$$h(x - 1) + 3$$

$$-h(x + 2) - 3$$

$$-h(x - 3) + 2$$



Fill in the missing parts to the chart.

Equation	Parent Function	Description of shifts	New Vertex Point
$f(x) =  x - 3  + 1$			
$g(x) = -(x + 6)^2 - 2$			
$h(x) = 2\sqrt{-x} + 5$			
$j(x) = -3(x - 4)^3 + 9$			
$f(x) = \frac{1}{2}(x + 2)^2$			
$f(x) = 4 x - 10  - 7$			
$h(x) = 2\sqrt{-x - 9} + 5$			