Name: Key Hour: ____ Date: ____

Function Transformations Practice II

Directions: For each of the following, state the name/equation of the parent function, identify the values of *a*, *h* and *k*, and describe the transformations, using the proper vocabulary.

1) $f(x) = -\sqrt{x+2} - 1$ $a = -1$ $h = -2$ $k = -1$

~~Parent Function~~: Family Name Radical Even Parent Function Equation: $f(x) = \sqrt{x}$

Transformations: Vertical reflection, Translation 2L, 1D

2) $f(x) = -(x-2)^3 - 4$ $a = -1$ $h = 2$ $k = -4$

~~Parent Function~~: Polynomial odd Parent Function Equation: $f(x) = x^3$

Transformations: Vertical reflection, Translation 2R, 4D

3) $f(x) = 2(x+2)^2 + 5$ $a = 2$ $h = -2$ $k = 5$

~~Parent Function~~: Polynomial even Parent Function Equation: $f(x) = x^2$

Transformations: Vertical stretch of 2, Translation 2L, 5U

4) $f(x) = -\frac{1}{2}x + 5$ $a = -\frac{1}{2}$ $h = 0$ $k = 5$

~~Parent Function~~: Linear Parent Function Equation: $f(x) = x$

Transformations: Vertical reflection, vertical shrink of $\frac{1}{2}$ Translation 5U

5) $f(x) = -2|x+1| + 3$ $a = -2$ $h = -1$ $k = 3$

~~Parent Function~~: Absolute value Parent Function Equation: $f(x) = |x|$

Transformations: Vertical reflection, vertical stretch of 2, translation 1L, 3U

Directions: For each of the following identify the values of a, h and k, and describe the transformations, using the proper vocabulary. NOTE: There is not a specified parent function!

6) $y = f(x+2)$ $a = 1$ $h = -2$ $k = 0$

Transformations: Translation 2L

7) $y = f(x) + 5$ $a = 1$ $h = 0$ $k = 5$

Transformations: Translation 5U

8) $y = \frac{1}{2}f(x)$ $a = \frac{1}{2}$ $h = 0$ $k = 0$

Transformations: Vertical shrink of $\frac{1}{2}$

9) $y = -f(x)$ $a = -1$ $h = 0$ $k = 0$

Transformations: Vertical reflection

10) $y = 2f(x-5)$ $a = 2$ $h = 5$ $k = 0$

Transformations: Vertical stretch of 2, translation 5R

11) $y = -f(x) - 10$ $a = -1$ $h = 0$ $k = -10$

Transformations: Vertical reflection, translation 10D

12) $y = -\frac{1}{3}f(x-1) + 2$ $a = -\frac{1}{3}$ $h = 1$ $k = 2$

Transformations: Vertical reflection
Vertical shrink of $\frac{1}{3}$
Translation 1R, 2U

* Note that there are no negative #'s in any descriptions of the transformations