

Key
Name: _____ Hour: _____ Date: _____

Function Transformations Practice 2

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

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

Parent Function: $f(x) = x^2$

Transformations: *vertical stretch of 2*
Translation 3L, 4D

2) $f(x) = x^2 - 1$ $a = 1$ $h = 0$ $k = -1$

Parent Function: $f(x) = x^2$

Transformations: *Translation 1D*

3) $h(x) = 2|x - 1|$ $a = 2$ $h = 1$ $k = 0$

Parent Function: $h(x) = |x|$

Transformations: *vertical stretch of 2*
Translation 1R

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

Parent Function: $f(x) = \sqrt{x}$

Transformations: *Translation 2R*

5) $g(x) = x^3 + 3$ $a = 1$ $h = 0$ $k = 3$

Parent Function: $g(x) = x^3$

Transformations: *Translation 3U*

$$6) h(x) = |x + 5| - 2$$

$$a = 1$$

$$h = -5$$

$$k = -2$$

Parent Function: $h(x) = |x|$

Transformations: Translation 5L, 2D

$$7) g(x) = -3\sqrt{x+1}$$

$$a = -3$$

$$h = -1$$

$$k = 0$$

Parent Function: $g(x) = \sqrt{x}$

Transformations: Vertical reflection, vertical stretch of 3
Translation 1L

$$8) f(x) = \frac{3}{4}x^3 + 5$$

$$a = \frac{3}{4}$$

$$h = 0$$

$$k = 5$$

Parent Function: $f(x) = x^3$

Transformations: Vertical shrink of $\frac{3}{4}$

$$9) g(x) = -0.2x + 1$$

$$a = -.2$$

$$h = 0$$

$$k = 1$$

Parent Function: $g(x) = x$

Transformations: Vertical reflection, vertical shrink of .2
Translation 1U

$$10) h(x) = 6(x+9)^2 + 1$$

$$a = 6$$

$$h = -9$$

$$k = 1$$

Parent Function: $h(x) = x^2$

Transformations: Vertical stretch of 6
Translation 9L, 1U