Transformations of Quadratic Functions
3.12 Homework

Name _____

Date _____ **Per** _____

Vertex Form of Quadratic Function

$$y = a(x-h)^2 + k$$

Vertex: (h,k)

State the vertex of the following quadratic functions.

1) $y = (x-4)^2 + 3$

2) $y = (x+2)^2 - 5$

3) $y = (x-7)^2 - 1$

4) $y = (x+9)^2 + 10$

Without using your calculator, state all of the transformations from the parent function for the following equations.

5) $y = \frac{1}{2}(x-2)^2 + 4$

Transformations:

1.

2.

3.

6) $y = (x+7)^2 - 3$

Transformations:

1.

2.

7) $y = -(x-9)^2 - 8$

Transformations:

1.

2.

3.

8) $y = 3(x+1)^2 + 2$

Transformations:

1.

2.

3.

9) List the following quadratic functions from narrowest to widest.

$y = -3x^2$ $\quad$ $y = -\frac{1}{3}x^2$ $\quad$ $y = \frac{1}{4}x^2$ $\quad$ $y = 7x^2$

10) The function $y = (x-2)^2 + 4$ was transformed 2 units right and 1 units down. Write the equation of the transformed function.

11) The function $y = (x+2)^2 - 9$ was transformed 3 units left and 7 units up. Write the equation of the transformed function.