Name:_____ Date:_____

HW: Graphing Quadratics and Chacteristics

Part A: Describe the transformations: Make sure to mention horizontal, vertical movement as well as if the graph stretches or shrinks and if it reflects over the x axis

1) $f(x) = -3(x-2)^2 + 4$	2) $f(x) = (x+3)^2$
3) $f(x) = \frac{2}{3}(x-5)^2 - 1$	4) $f(x) = -(x+1)^2 + 6$

Part B: Convert each of the following into standard form

5) $f(x) = (x-3)^2 + 2$	6) $f(x) = 3(x-2)^2 - 4$
7) $f(x) = -(x-6)^2 + 1$	

Part C: Convert each of the following into vertex form: (Number 8 has been done for you—hint, find the vertex first!)

8) $f(x) = x^2 - 6x + 10$ Vertex = $\frac{6}{2(1)}$= 3 vertex is (3,1) **So $\boldsymbol{f(x) = (x-3)^2 + 1}$**	9) $f(x) = x^2 + 4x - 1$

10) $f(x) = x^2 - 10x + 25$	11) $f(x) = -x^2 - 8x - 14$

Part D: Write the vertex form equation given the following transformations

12) Reflection over the x axis, right 4 and up 6	13) Stretched by a factor of 3, left 2 and down 7
14) Reflection over the x axis and right 1	15) Shrunk by a factor of $\frac{1}{2}$ and down 4

Part E: Graph the quadratics and determine the characteristics

$f(x) = 2x^2 - 8x + 6$

Vertex:_____

Zeros: _____

Interval of Increase:_____

Interval of Decrease:_____

Axis of Symmetry:_____

Y-Intercept:_____