Unit 5: Quadratic Functions **Name: _____**

Day 16 Notes Solving Quadratic Equations **Date: _____ Hour: ____**

Last time we learned how to solve equations by taking square roots. These equations were all in standard form, $y = ax^2 + c$, with $b = 0$. When an equation is in vertex form we can use a similar process to find the solutions.

Find the x-intercepts of each the equation, if possible.

Example 1: $y = (x - 6)^2 - 49$

Example 2: $f(x) = (x - 2)^2 + 100$

Example 3: Find the zeros of the equation. $f(x) = (x - 1)^2 - 10$
(Round these answers to the nearest tenth)

Find the solutions of the equation, if possible.

Example 4: $y = 4(x + 9)^2 - 256$

Example 5: $f(x) = -(x + 15)^2 + 625$

Homework: Find the x-intercepts for each of the following equations, if possible. Show all work for full credit.

1. $y = (x - 3)^2 - 121$

2. $y = (x + 5)^2 - 81$

3. $y = (x + 10)^2 - 144$

4. $y = (x + 4)^2 + 64$

5. $y = 3(x + 2)^2 - 75$

6. $y = 6(x + 4)^2 - 96$

7. $y = -(x - 1)^2 + 225$

8. $y = -5(x + 3)^2 + 245$

9. $y = 2(x + 5)^2 - 24$

10. $y = -(x + 4)^2 + 29$

11. **Find the vertex, equation for the axis of symmetry, and the intercepts. Use this information to graph the function.**

$y = (x - 5)^2 - 9$

Vertex: _____

AOS: _____

y-intercept: _____

x-intercepts:

_____