Name _____Date _____Pd _____

ALG2 - 3rd Nine Weeks REVIEW (Part 1)

Part 1: Quadratic Functions (Test 7A)

Write the quadratic function in vertex form. Then identify the vertex.

1. $g(x) = x^2 + 12x - 37$ Vertex form: _____Vertex: _____

Find the discriminant of each quadratic equation and then state the number and type of solutions. ** HINT: Be sure you get it in standard form first with it equal to zero.

2. $-v^2 - 2v + 6 = 7$

Discriminant: _____

Number and type of solutions: _____

3. $4m^2 - 4m + 8 = 7$

Discriminant: _____

Number and type of solutions: _____

4. $x^2 - x + 6 = 0$

Discriminant: _____

Number and type of solutions: _____

Identify the a, b, and c in each equation and then SOLVE using the QUADRATIC FORMULA. **HINT: Find the discriminant FIRST!!!

5. $2n^2 - 8n - 18 = 0$ a=_____ b=_____ c=_____ Solutions: _____

6. $4b^2 - 64 = 0$ a=_____ b=_____ c=_____ Solutions: _____

7. The height of a cannonball at any time after being shot into the air is modeled by the function $h(t) = -16t^2 + 60t + 3.5$ where 3.5 feet is the initial height of the cannonball and h(t) is the height (in feet) of the ball t seconds after being shot into the air. Use your calculator to answer the following questions.

a) From what height was the cannonball launched? _____

b) What is the maximum height of the cannonball to the nearest tenth of a foot? _____

c) When does the cannonball hit the ground? _____

**HINTS:

- Draw a picture! The maximum height will be the y-value of the vertex.
- Find the x-value of the vertex by using the equation for the axis of symmetry $x = \frac{-b}{2a}$.
- The height of the cannonball is 0 when the cannonball touches the ground.

Part 2: Solving Systems of Equations (Test 8)

Part 3: Exponent Rules (Test 10)