Alegbra 2   Name: _____

Projectile Motion Problems   Date: _____ Period: ____

Essential Question: *How would a calculator make this problem easier to do?*

Learning Targets: *Students will be able to…*

- *use quadratic equations to model real life problems.*
- *identify the y-intercept, vertex, and axis of symmetry of a quadratic equation in standard form.*

Use the equation $h(t) = -16t^2 + V_0 t + H_0$ **for all of these problems.**

1) An object in launched directly upward at 64 feet per second (ft/s) from a platform 80 feet high. What will be the object's maximum height? When will it attain this height?

2) Some fireworks are fired vertically into the air from the ground at an initial velocity of 80 feet per second. Find the highest point reached by the projectile just as it explodes.

3) A ball is kicked vertically upward with an initial velocity of 48 feet per second. If the ball started from the ground, find the time it will take for the ball to hit the ground again.

4) An overzealous golfer hits a flop shot with a sand wedge to get out of the corner of a sand trip with an initial velocity of 45 feet per second. What is the maximum height that the golf ball will reach?