Solving Quadratic Equation Word Problems B

Name:_____ Period:_____

Directions: Solve each word problem by setting up a quadratic equation and solving it. Round all decimals to the nearest hundredth. Please answer the question in a complete sentence.

Use the formula below to help you set up the equations.

$$h(t) = -\frac{1}{2}gt^2 + v_i t + h_i$$

$h(t)$ = height of object at t seconds

t = time (in seconds)

v_i = initial velocity

g = gravity (9.8 meters/sec^2) (32 feet/sec^2)

h_i = initial height of object

1. A ball is thrown up into the air at 28 meters per second at an initial height of 2 meters. When will it be 40 meters above the ground?

2. A football is punted into the air at an initial velocity of 54.5 feet per second at an initial height of 2.5 feet. When will it be 35 feet high?

3. A baseball is hit with an initial upward velocity of 77.4 feet per second at an initial height of 2 feet. When will the baseball be 80 feet above the ground?

4. A person is on a ledge of a 350 foot cliff. He or she throws a rock **up** into the air at a rate of 20.8 feet per second. When will the rock be 200 feet above the ground?

5. The same person on the same 350 foot cliff then throws a rock **down** at a speed of 15.7 feet per second. When will that rock be 200 feet above the ground?

6. The same person on the same 350 foot cliff then drops a rock. When will that rock be 200 feet above the ground?