Solving Quadratic Equation Word Problems A

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 53 feet per second at an initial height of 6 feet. When will it hit the ground?

2. A rock is thrown straight up into the air at an initial velocity of 16 meters per second at an initial height of 2 meters. When will it hit the ground?

3. A baseball is hit with an initial upward velocity of 45.6 feet per second at an initial height of 1.5 feet. When will the baseball hit the ground?

4. A football is punted with an initial upward velocity of 28.5 meters per second at an initial height of 1 meter. When will the football hit the ground?

5. A person is on a ledge of a 150 m cliff. He or she throws a rock **up** into the air at a rate of 15.4 meters per second. When will it hit the ground?

6. The same person on the same 150 meter cliff then throws a rock **down** at a speed of 18.4 meters per second. When will that rock hit the ground?

7. The same person on the same 150 meter cliff then **drops** a third rock. When will that rock hit the ground?

8. A ball is thrown up into the air with a rate of 42.8 feet per second with an initial height of 6 feet. When will it be 28 feet above the ground?