Solving Quadratic Equations by Factoring (Word Problems)

Name ________________________
Period ____

1. A relief package is released from a helicopter at 1600 feet. The height of the package can be modeled by the equation $h = -16t^2 + 1600$, where h is the height of the package in feet and t is the time in seconds. The pilot wants to know how long it will take for the package to hit the ground.

a. Write the equation that you are trying to solve. ____

b. Solve the equation by factoring.

2. The height of a flare fired from the deck of a ship in distress can be modeled by $h = -16t^2 + 104t + 56$, where h is the height of the flare above water and t is the time in seconds. Find the time it takes the flare to hit the water.

a. Write the equation that you are trying to solve. ____

b. Solve the equation by factoring.

3. The height of a rocket launched upward from a 160-foot cliff is modeled by $h = -16t^2 + 48t + 160$, where h is the height in feet and t is the time in seconds.

a. Write the equation that you are trying to solve. ____

b. Solve the equation by factoring.

4. Robert threw a rock off a bridge into the river. The distance from the rock to the river is modeled by the equation $h = -16t^2 - 16t + 60$, where h is the height in feet and t is the time in seconds. Find how long it took the rock to hit the surface of the water.

a. Write the equation that you are trying to solve. ____

b. Solve the equation by factoring.

5. During a game of golf, Kayley hits her ball out of a sand trap. The height of the golf ball is modeled by the equation $h = -16t^2 + 20t - 4$, where h is the height in feet and t is the time in seconds since the ball was hit. Find how long it takes Kayley's golf ball to hit the ground.

a. Write the equation that you are trying to solve. ____

b. Solve the equation by factoring.

6. The height of a rock thrown off a cliff can be modeled by the equation $h = -16t^2 - 8t + 120$, where h is the height in feet and t is the time in seconds. How long does it take the rock to reach the ground?

a. Write the equation that you are trying to solve. ____

b. Solve the equation by factoring.