Name _____

Algebra 1B

8.11 Maximum/Minimum Problems WS Day 1

- 1. Ian throws a ball up in the air and lets it fall to the ground. The height of the ball, h(t), is modeled by the equation $h(t) = -16t^2 + 6t + 3$, with h(t) measured in feet, and time, t, measured in seconds. The number 3 in h(t) represents
 - (1) the maximum height of the ball
 - (2) the height from which the ball is thrown
 - (3) the number of seconds it takes for the ball to reach the ground
 - (4) the number of seconds it takes for the ball to reach its maximum height

2. Jason dived off a cliff into the ocean in Acapulco, Mexico while vacationing with some friends. His height can be modeled by the function $h(t) = -16t^2 + 16t + 480$, where t is the time in seconds and h is the height in feet.

a. What does the 480 represent in the equation (in terms How long did it take for Jason to reach his maximum height?

b. What was the highest point that Jason reached?

c. Jason hit the water after how many seconds?

3. A model rocket is projected straight upward from the ground level according to the height equation h(t) = -16t² + 192t where h is the height in feet and t is the time in seconds. At what time is the height of the rocket at a maximum and what is that height?