Math-13 Sections 01 and 02

Homework #6

Due: Midnight 10/13

A ball is thrown upward off of a 100 ft cliff at a velocity of 64 ft/s. The equation of motion for the ball is:

$$h(t) = 100 + 64t - 16t^2$$

1. Using the *definition of the derivative* (i.e., not the derivative formulas), determine $h'(t)$.
2. How fast is the ball traveling and in which direction (up or down) after 5 sec?
3. What is the ball's height after 5 sec?
4. What is the equation of the tangent line to the curve at $t = 5$?
5. What is the equation of the normal line to the curve at $t = 5$?