MATH 160 Session #19

A ball is tossed vertically upward so that its height in feet above ground t seconds after being released is given by s(t) where $s(t) = -16t^2 + 64t + 8$.

Show how to use the definition of instantaneous velocity to find the ball's velocity 2 seconds after being released.

$$v(2) = \lim_{h \to 0} \frac{s(2+h) - s(2)}{h}$$

Show how to use the definition of the slope of the tangent to the graph of s at the point (2, s(2)) to find the slope of the tangent to the graph of $s(t) = -16t^2 + 64t + 8$ at the point (2, 72). After you find the slope of that tangent line, write an equation for that tangent line.

Evaluate: $$\lim_{h \to 0} \frac{s(t+h) - s(t)}{h}$$