Calculus AB

2-4

(Day 3)

Chain Rule - Harmonic Motion

Example:

A buoy oscillates in simple harmonic motion as waves go past. At a given time, it is noted that the buoy moves a total of 3.5 feet from its low point to its high point, and that it returns to its high point every 10 seconds. Write an equation that describes the motion of the buoy if at time $t = 0$ sec, it is at its high point.

What is the rate of change of the buoy at 7 seconds into the wave?

Use the fact that $| x | = \sqrt{x^2}$ to develop a rule for the derivative of $| x |$.

Assignment:
Pg 139
108, 112-114,
124 - 127