Quiz 5; Wednesday, February 24 MATH 53 with Professor Stankova Section 116; 3-4 GSI: Eric Hallman

Student name:

You have 10 minutes to complete the quiz. Calculators are not permitted, and remember to show your calculations and explain your reasoning in order to receive full credit.

1. A ball is dopped from the top of Sather Tower (starting position (0, 0, 93.6) meters). If the acceleration due to gravity is $(0, 0, -9.8)m/s^2$, find the ball's position as a function of time.

2. Using the formula $\kappa = |d\mathbf{T}|/|ds|$ or $\kappa = |\mathbf{T}'(t)|/|\mathbf{r}'(t)|$, find the curvature of the ball's path as a function of time. Explain your answer.