

MthU242  
Northeastern University  
Quiz #11  
20 Minutes

Calculus II  
Professor Gilmore  
Apr. 10, 2008

Name: \_\_\_\_\_.

Show All Your Work

1. Find the velocity and the position vectors of a particle moving with acceleration given by  $\mathbf{a}(t) = t^2\vec{i} + \sin(t)\vec{j} + \vec{k}$  and with  $\mathbf{v}(0) = \vec{j}$  and  $\mathbf{p}(0) = \vec{i}$ .

2. Find the velocity, acceleration and speed of a particle which has its position in space given by  $\mathbf{p}(t) = (t^3, \sqrt[2]{t^5}, \sin(t^2))$ .