

**Math 225: Calculus III**

**Quiz 3** Feb. 7/9, 1995

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

Section: \_\_\_\_\_

1. The tangential component of acceleration of an object with position  $r(t) = e^t \mathbf{i} + e^{-t} \mathbf{j} + \sqrt{2}t$  is  $a_T(t) = e^t - e^{-t}$ . Determine the normal component of acceleration,  $a_N(t)$ .

2. Find the equation of the line tangent to the curve

$$r(t) = \cos(t)\mathbf{i} - \sin(t)\mathbf{j} + 2t$$

at the point  $(-1, 0, 2\pi)$ .