Calculus III Quiz 2

Don't forget to write down clearly your **Name**: and **Net Id:**

1. Vector projection (5 points) Find the speed of the particle moving in the trajectory $\mathbf{r}(t) = (\sqrt{2}\sin t, \sqrt{2}\cos t, t)$ as a function of t.

2. Space curve derivatives (5 points) Show that, if a space curve $\mathbf{r}(t)$, $t \in \mathbb{R}$, satisfies $\|\mathbf{r}(t)\| = \mathrm{c}$, where c is a constant, then $\mathbf{r}'(t) \perp \mathbf{r}(t)$ for any t.