Math 226/229 – Quiz

Name _____

- **Write as neatly as you can!**
- **No calculators are allowed.**
- **You must show your work to obtain full credit.**

1. (*7 points*) For $\vec{r}(t) = \langle 3\cos t, 3\sin t, t\rangle$, find $\overrightarrow{T}, \overrightarrow{N}$ and $\overrightarrow{B}$ at the point $(3, 0, 0)$. Find an equation of the normal plane at this point.

2. (*3 points*) Find the velocity and position vectors of a particle that has the given acceleration and the given initial velocity and position:

$$\vec{a}(t) = \langle 1, 0, 3\rangle, \qquad \vec{v}(0) = \langle 1, 0, 0\rangle, \qquad \vec{r}(0) = \langle 0, 1, 0\rangle.$$