Collected Assignment on Sections 13.2 and 13.3

Math 232 Section 1
Due: February 24, 2006 10:10AM Name (Print): _____

Be sure to justify your answers. Use full sentences.

1. Let $\vec{r}(t) = e^{2t}\vec{i} + e^{-4t}\vec{j}$. (a) Sketch the plane curve of $\vec{r}(t)$ and indicate the orientation. (b) Find $\vec{r}\,'(t)$. (c) Add $\vec{r}(0)$ and $\vec{r}\,'(0)$ to your graph in part (a).

2. The curve C is parameterized by $x = \sin t + 2$, $y = \cos t$ and $z = t$. Find two unit tangent vectors to C at $P(2, 1, 0)$.

3. Problem 26 on page 861, Section 13.2.

4. Problem 32 on page 861, Section 13.2. Note: The angle of intersection of the two curves is the angle between the two tangent vectors at the point of intersection.

5. Problem 12 on page 868, Section 13.3. You will need a few trig identities to simplify this.