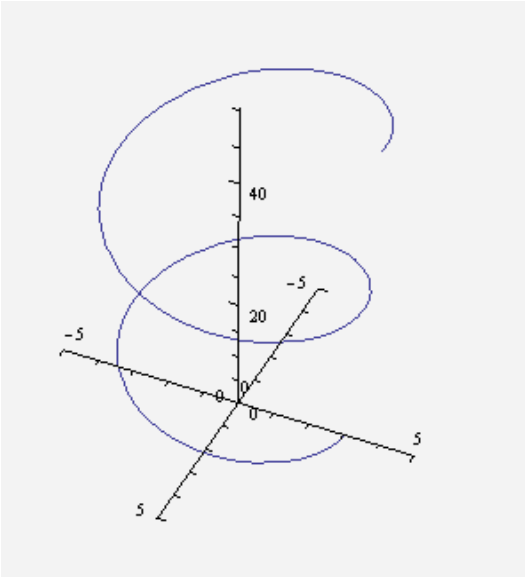
QUIZ 5 - MATH 251 Friday, October 18

YOUR NAME:_____ George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Find the unit tangent, the unit normal and the binormal vector for the space curve $\boldsymbol{r}(t) = \langle 3\sin t, 3\cos t, 4t\rangle$ at $t = \dfrac{\pi}{2}$.



2. Find an equation for the position vector $\boldsymbol{r}(t)$ of a moving particle if its acceleration is given by $\boldsymbol{a}(t) = \langle e^t, 2t, t+1 \rangle$ and the velocity and position vectors at the beginning of motion are $\boldsymbol{v}(0) = \langle 1, 0, 1 \rangle$ and $\boldsymbol{r}(0) = \langle 2, 1, 1 \rangle$.