MATH 261 Quiz 3 Name: .
Fall 15

Show all work. 5 points each.

1. Find the equation of the tangent line to the curve $\mathbf{r}(t) = \langle t-1, e^{-t}, -2t\rangle$ at the point $\mathbf{r}(0)$.

2. Find the equation of the normal plane for $\mathbf{r}(t) = \langle t-1, -2t^2, e^{2t}\rangle$ at $t_0 = -1$.

$$Z(\sum_{m,n}\langle f, M^n T^{\frac{m}{2}} g\rangle M^n T^{\frac{n}{2}} g) = Z(f)(t,v)\left(|Z(g)(t,v)|^2 + |Z(g)(t-\frac{1}{2},v)|^2\right)$$