Name: June 16, 2015 MAC 2313.8326 Cyr

> Quiz 6 You must show all work to receive full credit!!

Problem 1. Let $f(x, y, z) = xe^{-yz}$ and $\mathbf{v} = \langle 1, 1, 1 \rangle$. (a) (4 pts) Find $D_{\mathbf{v}}f(1, 2, 0)$.

(b) (2 pts) Find the equation of the tangent plane to the level surface $xe^{-yz} = 1$ at the point (1, 2, 0).

Problem 2. (4 pts) Let $g(x,y) = x^2 - y^2$, $x = e^u \cos v$, $y = e^u \sin v$. Find $\frac{\partial g}{\partial u}$ at the point $(u,v) = (0,\pi)$.