MAC 2313 Cal3   **Quiz 4**   18 Feb 2003   <u>**Name:**</u>

Show **ALL** work for credit; be neat. Calculators can be used for graphing and calculating only. Give exact answers when possible.

1. Use the Chain Rule to find $\partial z/\partial u$ and $\partial z/\partial v$ when $z = xe^{-y} + ye^{-x}$, $x = u\sin v$ and $y = v\cos u$.

2. Find the linear, $L(x,y)$, and quadratic, $Q(x,y)$, Taylor polynomials valid near $(1, 3)$ for the function $f(x,y) = x^3 + xy + y^2$.