Name: June 11, 2015 MAC 2313.8326 Cyr

Quiz 5 You must show all work to receive full credit!!

**Problem 1.** (4 pts) Let  $f(x,y) = \frac{x}{x+4y}$ . Evaluate  $\left. \frac{\partial f}{\partial y} \right|_{(2,-1)}$  and  $\left. \frac{\partial^2 f}{\partial y^2} \right|_{(2,-1)}$ .

**Problem 2.** Let  $f(x, y, z) = \frac{xy}{z}$ . (a) (5 pts) Find the linearization L(x, y, z) of f at the point (2, 1, 2).

(b) (1 pt) Use your linearization to approximate the value  $\frac{(2.05)(0.9)}{2.01}$ .