Name:
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MAC 2313.8443
Cyr

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

Problem 1. (6 pts) Let $f(x, y) = xy^2 - xy + 3x^3y$.
(a) Find an equation of the tangent plane to $f(x, y)$ at the point $(1, 3)$.

(b) Calculate the directional derivative of $f(x, y)$ in the direction of $\mathbf{v} = \langle -1, 5 \rangle$ at the point $(1, 3)$.

Problem 2. (4 pts) Let $g(x, y) = (x - y)e^x$, $x = u - v$, $y = u + v$. Use the chain rule to evaluate the partial derivative $\dfrac{\partial g}{\partial v}$ at the point $(x, y) = (1, 4)$.