KF

Math 301 (072)
Quiz 1 (9.1-9.8)

Name: ID #: Section #: Serial #:

---

1. Find the directional derivative of $f(x, y, z) = 4x^2 + xy^2 - z$ at $(-1,3,1)$ in the direction of $-\mathbf{i} + 3\mathbf{j}$. Find the maximum rate of change of the function at the same point.

2. Let C be the boundary of the region determined by the graphs of $x = 0$, $x^2 + y^2 = 4$, $x \geq 0$. Verify Green's theorem if $\mathbf{F} = yx\mathbf{i} + y^2\mathbf{j}$
