

Quiz 3

Name: _____

1. Find the rate of change of $f(x, y) = x^2yz - xyz^3$ at point $P(2, -1, 1)$ in the direction of $\mathbf{u} = \langle 0, \frac{4}{5}, -\frac{3}{5} \rangle$. Show your work.

2. For $f(x, y) = xy - 2x - 2y - x^2 - y^2$, find all local max, local min, and saddle points. Show your work.