Math 233 - Quiz 8

Name _____

March 30, 2023

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Find the linearization of $f(x, y) = \dfrac{1}{1 + x - y}$ at the point where $(x, y) = (2, 1)$,

2. (3 points) The volume of a right circular cylinder of radius r and height h is given by $V = \pi r^2 h$. Use differentials to approximate ΔV when r changes from 1 to 0.98 and h changes from 5 to 5.04.

3. (4 points) Use the definition of differentiability to show that $f(x, y) = xy - x$ is differentiable everywhere.