

WRITE YOUR NAME:

MAC 2313 B51 Spring 2024

Written homework #7

Due Tuesday March 5th, in Canvas

Question 1. Find an equation of the tangent plane to the surface

$$x^4 + y^5 + z^7 = 2$$

at the point $(-1, 0, 1)$.

Question 2. Find an equation of the tangent plane to the surface

$$xy \sin z = 1$$

at the point $(1, 2, \pi/6)$.

Question 3. Find the linear approximation to the function

$$f(x, y) = xy + x - y$$

at the point $(2, 3)$, and use it to estimate $f(2.03, 2.99)$.

Question 4. Find all critical points of the function $f(x, y) = x^4 + 2y^2 - 4xy$.