# Math 2513 – Summer 2024

# Quiz 3

Name: Student ID:

1 – For the equation f(x,y) = x2 +y3, find a constant approximation at (1.1, -3.2). Find a linear approximation at the same point. (2)

2 – Find the gradient of the equation f(x,y,z) = 2x2 + exyz. (1)

3 – Find the directional derivative of ex+y+z in the direction of the z-axis, at the point (1,0,1). (1)

4 – Find the critical points of the equation f(x,y) = 2x2 + y3 + 4xy. Which are minimums, maximums, or unknown? (2)