

MATH 261 Quiz 10

Name: .

Student number:

Show all work. 5 points each.

1). Set up a system of equations needed for a Lagrange multiplier solution to finding a max and min of $f(x, y, z) = x^2 + y^2 + z^2$ subject to the constraint $x^4 + y^4 + z^4 = 1$.

2) Calculate the double integral $\int_0^1 \int_{-3}^3 \frac{xy^2}{x^2 + 1} dy dx$. Hint I used a u -substitution when integrating with respect to x .