10 minutes
5 points for each question
No calculators allowed

Math 285.002
Quiz 7
November 3, 2000

Name

Do all of your work directly on this sheet, using the back for scratch if necessary. Circle your answers.

1. Find the maximum rate of change of $f(x, y, z) = \ln(x^2 + y^2 - z^2)$ at $(4, 0, -3)$ and the unit vector representing the direction in which this occurs. Simplify your solutions as much as possible.

1. Use the method of Lagrange multipliers to find the minimum value of $f(x, y) = 2x + 6y$ subject to $x^2 + y^2 = 2.5$.