

Quiz 6

Time: 15 minutes

1. Find the maximum and minimum values of the function $f(x, y) = x^2 + 4y^2 + x - 2y$ over the region enclosed by the ellipse $\frac{1}{4}x^2 + y^2 = 1$.
2. Find the dimensions of a right circular cylinder which has the largest volume for a given amount of surface area.

Each problem is worth 6pts.