Math 53 Discussion

Practice Problems: Section 14.8: Lagrange multipliers, + review

1) Use Lagrange multipliers to find the maximum and minimum values of $f(x, y) = y^2 - x^2$ subject to $\frac{1}{4}x^2 + y^2 = 1$.

2) Find the points on the surface $z^2 = xy + 1$ closest to the origin using Lagrange multipliers.

3) Find the largest possible volume of a rectangular box, subject to its main diagonal having length L.