

Math 3298 Worksheet 9: Maxima and minima

Group members (1 to 4): \_\_\_\_\_

- (1) Find the global maximum and minimum of the function  $f(x, y) = 2y^2 - 4y + x^2$  on the region defined by  $x^2 + y^2 \leq 9$  and  $y \geq 0$ .

- (2) Minimize the distance from the origin to the intersection of the cone  $z^2 = x^2 + y^2$  and the plane  $z = 1 + x + y$  using Lagrange multipliers.