

## LAGRANGE MULTIPLIERS II HANDOUT

MAY 24, 2019

**Exercise 1.** Find the extrema of  $f(x, y, z) = xy + yz$  subject to the constraints  $xy = 1$  and  $y^2 + z^2 = 1$ .

**Exercise 2.** The plane  $x + y + 2z = 2$  intersects the paraboloid  $z = x^2 + y^2$  in an ellipse. Find the points on this ellipse that are nearest to and farthest from the origin.