MATH 231: Calculus of Several Variables
Section 1, 107 Ag Sc & Ind Bldg,
TR 9:05 AM - 9:55 AM

Homework 23: Due Thursday, December 5

1. Find the maximum(s) and/or minimum(s) of the following functions subject to the constraint. If you are unsure, it helps to graph the level curves and the constraint.

   (a) $f(x, y) = y^2 + x^2$ subject to $xy = 1$
   Hint: The points you will find have the same value when plugged into f. Determine if they are a max or a min by considering another point that satisfies the constraint.

   (b) $f(x, y) = e^{xy}$ subject to $x^3 + y^3 = 16$.
   Hint: You will only get one critical point. Consider another point on the constraint to determine if this point is a max or a min.