Name: _____ Math 234 Quiz 5

Section: 328 ☐ 329 ☐ Oct 16, 2014

1. (10 pts) Assuming that the function

$$f(x, y) = x^2 + xy + y^2 - 3x - 3y - 3$$

has a global minimum. Find the value of the minimum.

2. (10 pts) Find the critical points of the function

$$f(x, y, z) = x^3 + y^3 + z^3 - 3x^2 - 3y - 3.$$

Bonus. (5 pts) Justify that the function $f(x, y)$ in Problem 1 has a global minimum.