Quiz 09/12/2012 Name_____

1. Find and classify (max/min/saddle) the critical points of $f(x, y) = x^3 + x^2 - y^2$.*

2. Use Lagrange multipliers to find the maximum and minimum of $f(x) = xy$ subject to the constraint $1 = x^2 + y^2$

* If $f_{xx}f_{yy} - f_{xy}^2 > 0$ & $f_{xx} > 0$ at a c.p,, then the c.p. is a local min.