

Math 201 Quiz 3

Name \_\_\_\_\_ Section \_\_\_\_\_ id# \_\_\_\_\_ Serial number \_\_\_\_\_

Q1) Classify all critical points of the function  $f(x, y) = x^2y - y^2 - 2y - x^2$  as points of local maximum, minimum or saddle points.

Q2 ) Solve the equation  $\text{grad}F = k \text{grad} G$  , on the level surface  $G(x, y, z) = 1$  where

$$F(x, y, z) = 2x + y + z, G(x, y, z) = x^2 + y^2 + z^2$$