Student Name:_____ Student Number: _____ Serial No.:_____

Instructor: M. Z. Abu-Sbeih Math - 132.1 Quiz No. 6 Date: 22-12-2013.

Problem 1: (10 points) If $Z = r^2 \cos\theta + r^2 \sin\theta$ find $r^2 Z_{rr} + 2Z_{\theta\theta} =$

Problem 2: (14 points) Find the extrema, if any exists, of the function f defined by

$f(x, y) = 3x^3 + y^2 - 9x + 4y$