Math 53 DIS 108/109
Quiz: March 4, 2015   Name: _____

Show your work fully for all questions. Quiz has **front** and **back** sides.

Problem 1: Find the absolute maximum and minimum of $f(x, y) = 2x + 3y - x^2 - y^2$ in the region $x^2 + 2y^2 \leq 9$.

Problem 2: Find the extreme values of $f(x, y, z) = y - 2x$ subject to the constraints $x + y + z = 3$ and $x^2 + z^2 = 4$