

Math 53 DIS 108/109  
Quiz: March 18, 2015

Name: \_\_\_\_\_

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

**Problem 1:** Find the mass and center of mass of the lamina bounded by  $y = x^2$  and  $x = y^2$  with density  $\rho(x, y) = \sqrt{y}$ .

**Problem 2:** Find the area of the part of the surface  $z = 1 + 3x + 2y^2$  that lies above the triangle with vertices  $(0, 0)$ ,  $(0, 1)$ , and  $(2, 1)$ .

**Problem 3:** Evaluate the integral  $\iiint_R e^{z/y}$ , for  $R = \{(x, y, z) | y \leq x \leq 1, 0 \leq y \leq 1, 0 \leq z \leq xy\}$