

Math 53 DIS 108/109  
Quiz: March 11, 2015

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

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

**Problem 1:** Find the volume of the solid bounded by the paraboloids  $z = 3x^2 + 3y^2$  and  $z = 4 - x^2 - y^2$

**Problem 2:** Evaluate the integral  $\iint_D (x^2 + 2y) dA$ , for  $D$  bounded by  $y = x$ ,  $y = x^3$ ,  $x \geq 0$ .

**Problem 3:** Evaluate the integral  $\iint_R \frac{2x}{1+xy} dA$ , for  $R = \{(x, y) | 0 \leq x \leq 1, 0 \leq y \leq 1\}$