

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

Semester (111)

November 23, 2011

Math 302

Quiz 4

Name:

ID:

Exercise 1. Let $F(x, y, z) = (2xz, 2yz, x^2 + y^2)$.

(1) Show that F is conservative and find a potential of F .

(2) Evaluate the line integral $\int_{(-2,3,1)}^{(0,0,0)} F \cdot dR$.

Exercise 2. Let D be the region bounded by the ellipse $\frac{x^2}{9} + \frac{y^2}{4} = 1$. Using Green's Theorem, evaluate the double integral $\int_D x^2 dA$.