

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 201 Quiz 5
First Semester 2009–2010(092)

Name: _____

ID #: _____

Sec#: _____

1. Write the integral

$$I = \int_0^1 \int_0^{\sqrt{1-x^2}} \int_0^{\sqrt{1-x^2-y^2}} x \, dz \, dy \, dx$$

in spherical coordinates.

(Hint: The given integral $I = \iiint_E x \, dV$. What is E).

2. Write down the integral

$$\int_{-2}^2 \int_{-\sqrt{4-x^2}}^{\sqrt{4-x^2}} \int_{\sqrt{x^2+y^2}}^2 (x^2 + y^2) \, dz \, dy \, dx$$

in cylindrical coordinates.