ESP Quiz 5 (Kouba)
Please PRINT your name here : _____
This quiz is due next Tuesday at the beginning of ESP class.

1.) (10 pts. each) Consider the solid region R bounded by the surfaces $z = \sqrt{x^2 + y^2}$ and $z = 2$. Describe this region using

a.) rectangular coordinates.

b.) cylindrical coordinates.

c.) spherical coordinates.

2.) (15 pts. each) Convert each of the following triple integrals to rectangular coordinates. DO NOT EVALUATE the integrals.

a.) $\int_{\pi/4}^{\pi/2} \int_{0}^{\csc\theta} \int_{r^2}^{9} r^3 \cos\theta \; dz \, dr \, d\theta$

b.) $\int_{0}^{\pi/2} \int_{0}^{\pi/4} \int_{0}^{\sqrt{8}} \rho^3 \cos\theta \sin^2\phi \; d\rho \; d\phi \; d\theta$