MAC 3313 Cal3 **Quiz 5v** 27 Mar 1996 **Name:** _____

Show **ALL** work for credit; be neat; and use only **ONE** side of each page of paper.

1. Evaluate $\int\int\int_E \sqrt{x^2+y^2+z^2}dV$, where E is bounded below by the cone $\phi = \pi/6$ and above by the sphere $\rho = 2$.

2. Find both the Jacobian of the transformation and the image of the given set S under the transformation. $S = \{(u,v)|0 \leq u \leq 2, 0 \leq v \leq 1\}, x = u - 2v, y = 2u - v$.