

Math 225: Calculus III
Quiz 8 Mar. 29/31, 1994

Name: _____
Section: _____

1. Let D be the portion of the solid sphere $x^2 + y^2 + z^2 \leq 4$ below the upper nappe of the cone $z^2 = x^2 + y^2$ and above the xy -plane. Use spherical coordinates to evaluate the integral $\int_D (x^2 + y^2 + z^2)^{3/2} dV$ over D .

2. Let R be the region defined by $(1/2)x \leq y \leq 2x$, and $1 \leq xy \leq 7$. Using the change of coordinates $u = xy$, and $v = y/x$, transform the integral $\int_R xy dA$ into an iterated integral in the uv -plane.