**Math 33A Fall 2005 Homework Assignments Eberlein**

HW # 11 due Wednesday November 30

12.4 # 19
12.5 # 5, 9
12.6 # 7, 11
12.7 # 7, 9, 13, 19
12.8 # 9, 11, 19, 21, 27

**Extra Problems**

Write each of the following surface integrals as a double integral over a region D in the plane. Write each double integral as an iterated integral with the limits of integration clearly specified. **Do not evaluate the integral.**

1) $\iint_S xyz\, dS$ , where S is the part of the sphere $x^2 + y^2 + z^2 = 1$ that lies in the first octant

(Hint : Use spherical coordinates with $\rho = 1$ to define a parametrization $r(\theta,\varphi)$, where $\theta$ and $\varphi$ lie between suitable limts)

2) $\iint_S (x^2 + y^2)\, dS$ , where S is parametrized by $r(u,v) = (u^2 + v^2, u^2 - v^2, uv)$ for $-1 \le u \le 1$, $0 \le v \le 2$.