Bonus Homework 1   Calculus 3   10/11/05

Each problem is worth zero points... this time.

1. Set up an iterated integral for the volume of the region beneath the surface $z = 9 - x^2 - y^2$ and above the rectangle in the xy-plane with vertices at the origin, (2,0), (2,1), and (0,1).

2. Set up an iterated integral for the volume of the region beneath the surface $z = 9 - x^2 - y^2$ and above the triangle in the xy-plane with vertices at the origin, (2,0), and (0,1).

3. Set up an iterated integral for the volume of the first-octant portion of a sphere with radius 5.

4. Set up an iterated integral for the volume of the region bounded by the surface $z = 4 - x^2$, the xy-plane, the xz-plane, and the plane $x + y = 4$.

5. Set up an iterated integral for the volume of the region bounded below by the surface $z = x^2$ and above by the surface $z = 9 - y^2$.

6. Set up an iterated integral for the volume of the region bounded by the hyperboloid of two sheets $z^2 - x^2 - y^2 = 1$ and the plane $z = 2$.