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Score:	

Name: _____

Worksheet 5 - Section 14.8, 15.2, 15.3 (Due Tues, Oct 28)

${\bf Math~2110Q-Fall~2014} \\ {\bf Professor~Hohn}$

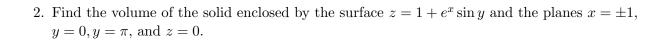
You must show all of your work to receive full credit!

1. Use Lagrange multipliers to find the maximum and minimum values of

$$f(x, y, z) = xyz$$

subject to the constraint

$$x^2 + y^2 + z^2 = 3.$$



3. Find the volume of the solid bounded by the planes z = x, y = x, x + y = 2, x = 0, and z = 0.

4. Evaluate the integral

$$\int_0^4 \int_{\sqrt{x}}^2 \frac{1}{y^3 + 1} \, dy \, dx$$

by reversing the order of integration.