Math 53: Quiz #6

March 28

GSI: M. Lindsey

$\boxed{\text{20 points, 20 minutes}}$

Name: _____

Please give neat and organized answers. Whenever applicable (especially for computational questions), make it clear what strategy you are using. Points may be deducted for poor exposition.

Problem 1

(15 points.) Let $f(x, y, z) = x + z$. Compute the integral

$$\iiint_D f(x, y, z)\, dV,$$

where $D = \{(x, y, z) \,|\, 0 \le z \le 1,\ \sqrt{x^2 + y^2} \le z,\ x \ge 0\}$. Set up the integral in cylindrical coordinates and evaluate. (10 points for correctly setting up the integral, 5 points for correct answer (given correct setup). Box both the integral that you set up and your answer.)

Hint: D is half of a cone.

(See back for next problem!)

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Problem 2

(5 points.) How was your spring break?