Math 53 (Multivariable Calculus), Section 102 & 108
Week 10, Wednesday
Oct 26, 2022
For the other materials: seewoo5.github.io/teaching/2022Fall

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1. Compute
$$\iiint_E xy dV$$
where E lies under the plane $z = x + y$ and above the region in the xy-plane bounded by the curves $y = \sqrt{x}$, $y = 0$, and $x = 1$.

2. Find the volume of the solid that is enclosed by the cone $z = \sqrt{x^2 + y^2}$ and the sphere $x^2 + y^2 + z^2 = 2$.

3. Compute
$$\iiint_B x^3 + \sin(yz) + 3 dV$$
where B is the unit ball $x^2 + y^2 + z^2 \leq 1$.