Multivar Quiz #5 Saaif Ahmed

Wednesday, October 14, 2020 1:36 PM

Problem 2

Honor Pledge:

"I have neither given nor received any illegal aid on this exam"

-Saaif Ahmed 10/14/20

Compute the volume of the region contained inside the sphere $x^2+y^2+z^2=1$, the cylinder $x^2+y^2=x$, and the first octant $x,y,z>0$.

HINT: Use the fact that $(1-\cos^2\theta)^{3/2}=(1-\cos^2\theta)\sin\theta$ for $0\le\theta\le\frac{\pi}{2}$.

$\rho^2 = 1 \rightarrow \rho = 1$
$\rho\ bounds\ are\ 0 \rightarrow x$
$\int\int\int p^2 - (x^2+y^2-x)$

ran out of time I'm just gonna guess

Answer: $\frac{\pi}{6}$