

+1 on in study

H.W.

- ① Evaluate $\iiint_w \exp(x^2 + y^2 + z^2)^{3/2} dx dy dz$, where w is a spherical ball of radius 1. Ans. $\frac{4}{3}\pi(e-1)$
- ② Evaluate $\iiint \frac{dx dy dz}{x^2 + y^2 + z^2}$ taken throughout the volume of the sphere $x^2 + y^2 + z^2 = a^2$. Ans. $4\pi a$
- ③ Evaluate $\iiint (x^2 + y^2 + z^2)^m dx dy dz$, $m > 0$ over the volume of the sphere $x^2 + y^2 + z^2 = 1$. Ans. $\frac{4\pi}{2m+3}$