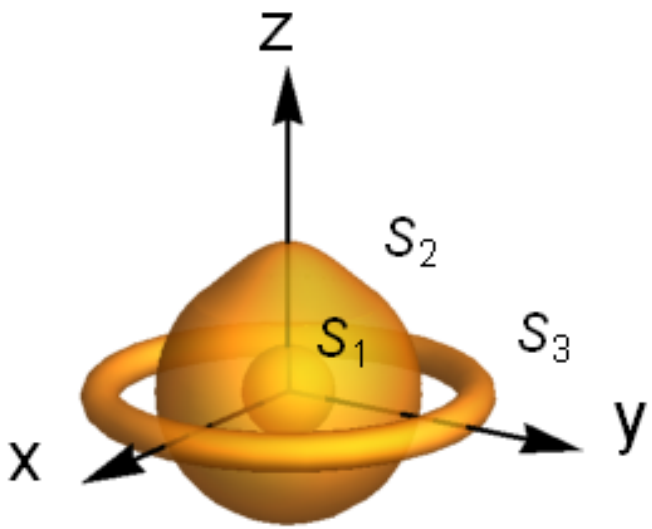
# The Divergence Theorem

## Question

The field $\vec{F} = \dfrac{x\vec{i} + y\vec{j} + z\vec{k}}{(x^2+y^2+z^2)^{3/2}}$ has $\operatorname{div}(\vec{F}) = 0$ everywhere it is defined. Rank the integrals $I_j = \iint_{S_j} \vec{F} \cdot d\vec{S}$ if $S_1$ and $S_2$ are oriented outward while $S_3$ is oriented inward.




A. $I_3 < I_2 < I_1$

B. $I_2 < I_1 = I_3$

C. $I_1 = I_2 = I_3$

D. $I_3 < I_1 = I_2$