

The region of integration is the solid sphere $x^2 + y^2 + z^2 \leq 36$, so $0 \leq \theta \leq 2\pi$, $0 \leq \phi \leq \pi$, and $0 \leq \rho \leq 6$.

Also $x^2z + y^2z + z^3 = (x^2 + y^2 + z^2)z = \rho^2z = \rho^3 \cos(\phi)$, so the integral becomes

$$\begin{aligned} \int_0^\pi \int_0^{2\pi} \int_0^6 (\rho^3 \cos(\phi)) \rho^2 \sin(\phi) d\rho d\theta d\phi &= \int_0^\pi \sin(\phi) \cos(\phi) d\phi \int_0^{2\pi} d\theta \int_0^6 \rho^5 d\rho \\ &= \left[\frac{1}{2} \sin^2(\phi) \right]_0^\pi [\theta]_0^{2\pi} \left[\frac{1}{6} \rho^6 \right]_0^6 = 0 \end{aligned}$$