

$$\begin{aligned}
\iiint_E x^2 dV &= \int_0^\pi \int_0^\pi \int_5^7 (\rho \sin(\phi) \cos(\theta))^2 \rho^2 \sin(\phi) d\rho d\phi d\theta \\
&= \int_0^\pi \cos^2(\theta) d\theta \int_0^\pi \sin^3(\phi) d\phi \int_5^7 \rho^4 d\rho \\
&= \left[\frac{1}{2}\theta + \frac{1}{4}\sin(2\theta) \right]_0^\pi \left[-\frac{1}{3}(2 + \sin^2(\phi)) \cos(\phi) \right]_0^\pi \left[\frac{1}{5}\rho^5 \right]_5^7 \\
&= \left(\frac{\pi}{2} \right) \left(\frac{2}{3} + \frac{2}{3} \right) \frac{1}{5} (7^5 - 5^5) = (27364/15)\pi
\end{aligned}$$