In spherical coordinates, E is represented by
$\left\{(\rho, \theta, \phi) \,\middle|\, 4 \le \rho \le 7, 0 \le \theta \le \frac{\pi}{2}, 0 \le \phi \le \frac{\pi}{2}\right\}$. Thus

$$\iiint_E z \, dV \quad = \int_0^{\pi/2} \int_0^{\pi/2} \int_4^7 (\rho \cos(\phi)) \, \rho^2 \sin(\phi) \, d\rho \, d\theta \, d\phi$$

$$= \int_0^{\pi/2} \cos(\phi) \sin(\phi) \, d\phi \int_0^{\pi/2} d\theta \int_4^7 \rho^3 \, d\rho$$

$$= \left[\tfrac{1}{2} \sin^2(\phi)\right]_0^{\pi/2} \left[\theta\right]_0^{\pi/2} \left[\tfrac{1}{4}\rho^4\right]_4^7 = \left(\tfrac{1}{2}\right)\left(\tfrac{\pi}{2}\right)\left(\tfrac{2145}{4}\right)$$

$$= (2145/16)\pi$$