

928.a.

$$K = \left\{ (x, y, z) : \frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1 \right\}$$

$$\frac{x}{a} = r \sin \theta \cos \phi$$

$$\frac{y}{b} = r \sin \theta \sin \phi$$

$$\frac{z}{c} = r \cos \theta$$

$$K_{r, \theta, \phi} = \left\{ (r, \theta, \phi) : 0 \leq r \leq 1, 0 \leq \theta \leq \pi, 0 \leq \phi < 2\pi \right\}$$

$$V = \int_K dx dy dz$$

$$dx dy dz = \left| \det \left( \frac{d(x, y, z)}{d(r, \theta, \phi)} \right) \right| dr d\theta d\phi = |abc| r^2 \sin \theta dr d\theta d\phi$$

$$V = \int_{K_{r\theta\phi}} |abc| r^2 \sin \theta dr d\theta d\phi = |abc| \int_{K_{r\theta\phi}} r^2 \sin \theta dr d\theta d\phi$$

$$V = |abc| \frac{4\pi}{3} 1^3 = \frac{4\pi}{3} |abc|$$