

Volume of a Spheroid

Session 58

$$\text{Volume} = \pi \int_{-2}^2 \pi (4 - y^2) dy = \pi \int_{-2}^2 4\pi - \pi y^2 dy = \pi [4y - \frac{\pi}{3}y^3] \Big|_{-2}^2 = \pi [8 - \frac{8}{3}] = \frac{16\pi}{3}$$

$$\int_{-1}^1 \pi (2\sqrt{1-y^2})^2 dy = 16\frac{\pi}{3}$$