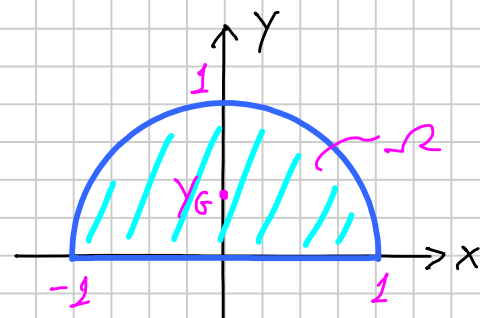


$$\partial\Omega: \{(\cos\theta, \sin\theta), \theta \in (0, \pi)\} \cup \{y=0\}$$

$$f(x, y) = y$$



$$\int_{\Omega} y \, dx \, dy = \int_0^{\pi} \int_0^1 \rho \sin\theta \cdot \rho \, d\rho \, d\theta =$$

$$= \int_0^{\pi} \int_0^1 \rho^2 \sin\theta \, d\rho \, d\theta = \int_0^{\pi} \sin\theta \left[\rho^3/3 \right]_0^1 d\theta =$$

$$= \frac{1}{3} \int_0^{\pi} \sin\theta \, d\theta = \frac{1}{3} [-\cos\theta]_0^{\pi} = \frac{2}{3}$$

$$\underline{\underline{\text{oss}}} \quad y_G = \frac{2}{3} \cdot \frac{1}{A} = \frac{2}{3} \cdot \frac{2}{\pi} = \frac{4}{3\pi}$$