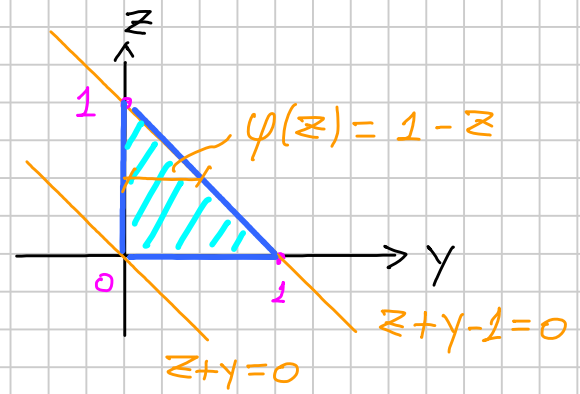


SOLIDO DI ROTAZIONE:

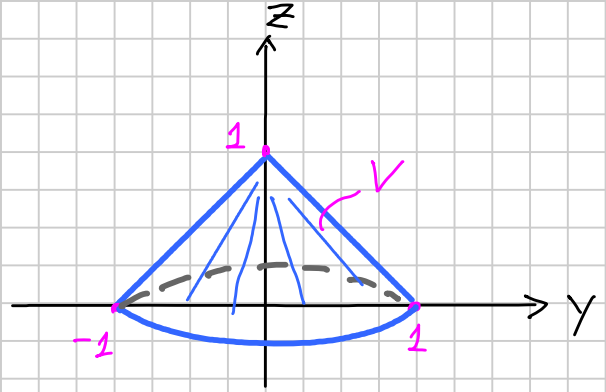
$$0 \leq y \leq 1 \quad 0 \leq z+y \leq 1 \quad \begin{cases} z+y \geq 0 \\ z+y-1 \leq 0 \end{cases}$$

ROTAZIONE ATTORNO ASSE Z

$$V = \int_0^1 \pi \varphi(z)^2 dz$$

$$\varphi(z) = 1 - z$$

$$V = \int_0^1 \pi (1-z)^2 dz = \pi \left[ -\frac{1}{3} (1-z)^3 \right]_0^1 = \frac{\pi}{3} \quad \left( = \pi \cdot 1^2 \cdot 1 \cdot \frac{1}{3} \right)$$



VOLUME CONO

$$z_G = \frac{1}{V} \int_0^1 \pi \varphi(z)^2 \cdot z dz = \frac{\pi}{V} \int_0^1 (z^3 - 2z^2 + z) dz =$$

$$= 3 \left[ \frac{z^4}{4} - \frac{2}{3} z^3 + \frac{z^2}{2} \right]_0^1 = 3 \left( \frac{1}{4} - \frac{2}{3} + \frac{1}{2} \right) = \frac{3-8+6}{4} =$$

$$= \frac{1}{4}$$