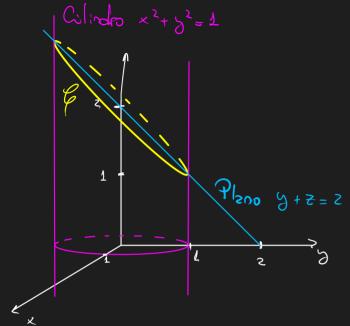
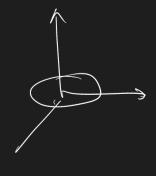
Re-resolución de Percial 1 - E; 1.

1. Consideramos la curva C determinada por la intersección entre la superficie dada por la ecuación $x^2+y^2-1=0$ y la superficie dada por y+z-2=0. Calcular $\int_C f \, ds$ donde $f(x,y,z)=\sqrt{1+x^2}$.



$$\int_{\mathcal{E}} f \, ds = \int_{\mathcal{E}} f(\sigma(\theta)) \| \sigma'(\theta) \| \, ds$$



 $\mathbb{R}^3 \to \mathbb{R}$

$$O(\theta) = (-\sin\theta, \cos\theta, -\cos\theta)$$

$$O(\theta) = (\cos\theta, \sin\theta, -\cos\theta)$$

$$\|O'(\theta)\| = \sqrt{1 + \cos^2 \theta}$$

$$f\left(\mathcal{O}\left(\theta\right)\right) = \sqrt{f\left(\cos^2\theta\right)}$$

Resúel la integral

$$\int_{\mathcal{E}} f ds = \int_{\mathcal{E}} f(\sigma(\theta)) \| \sigma'(\theta) \| d\theta$$

$$= \int_{\theta=0}^{2\pi} \sqrt{1 + \cos^2 \theta} \cdot \sqrt{1 + \cos^2 \theta} \, d\theta$$

$$= \int_{0=0}^{2\pi} 1 d\theta + \int_{0=0}^{2\pi} \cos^2 \theta d\theta$$

$$= ZT + \int_{\theta=0}^{2\pi} \cos(2x) + 1 d\theta$$

$$= 27 + \frac{1}{2} \left(\frac{\sin(2x)}{2} \right)^{2\pi} + 2\pi$$

$$= 37$$







