

05

$$Y=1$$

$$n_1 = \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix}, \quad p_{u1} = \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix}$$



P_0 Point plane $(x_0, y_0, z_0) = p$

$$\left(\begin{pmatrix} p_0 - p_{u1} \end{pmatrix} \cdot \vec{n} \right) = |\vec{n}| \cdot \underbrace{|p_0 - p_{u1}|}_{\text{dist.}} \cos(\theta)$$

$$\frac{(p_0 - p_{u1} \cdot p_1) \cdot \vec{n}}{|\vec{n}|} = \text{dist.}$$

$$\frac{\begin{pmatrix} x-0 \\ y-1 \\ z-0 \end{pmatrix} \cdot \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix}}{1} = \text{dist.}$$

$$|y-1| = 2 \sqrt{x^2 + (y+1)^2 + z^2} / ()^2$$

$$(y-1)^2 = x^2 + (y+1)^2 + z^2$$

$$\sqrt{\quad} = x^2 + \frac{3}{4}(y-1)^2 + z^2$$

$$\frac{y^2 - 2y + 1}{4} = x^2 + y^2 + 2y + 1 + z^2$$

$$\frac{-3}{4} = x^2 + \frac{3}{4}y^2 + \frac{5}{2}y + z^2 \quad \text{ellipse}$$

$$-3 = 4x^2 + 3y^2 + 10y + 4z^2$$

pb

$$e) f(x,y) = \ln(9 - x^2 - y^2)$$


$$9 - x^2 - y^2 \geq 0$$

$$9 > x^2 + y^2 \quad / : 9$$

$$1 > \left(\frac{x}{3}\right)^2 + y^2 \rightarrow \text{elips}$$

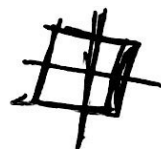


máximo en $\ln(9)$

1) 

$$f(x,y) = \sqrt{1-x^2} - \sqrt{1-y^2}$$

$$1-x^2 \geq 0 \wedge 1-y^2 \geq 0 \Leftrightarrow 1 \geq x^2 \wedge 1 \geq y^2$$



Sí //
de monito

$$3) f = \sqrt{1-x^2-y^2-z^2}$$

$$1-x^2-y^2-z^2 \geq 0$$

$$1 \geq x^2+y^2+z^2 \rightarrow \text{Inferior}$$

función decrece a lo lejos del centro