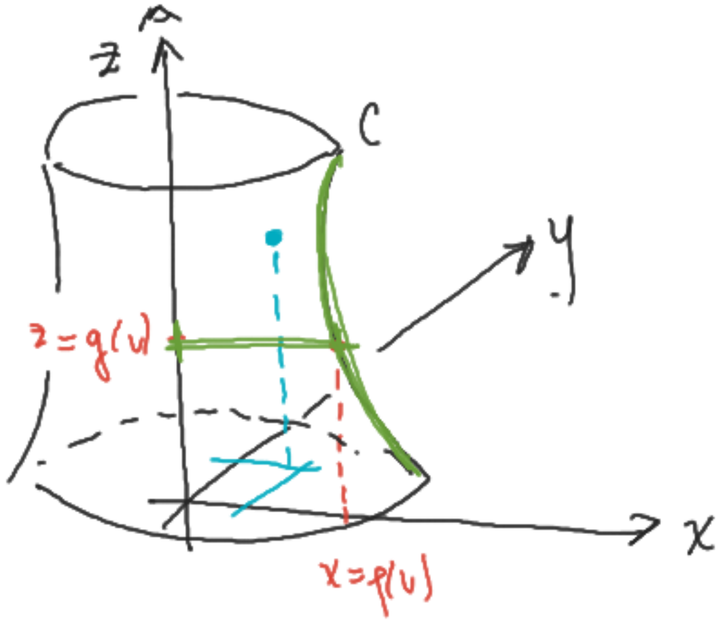
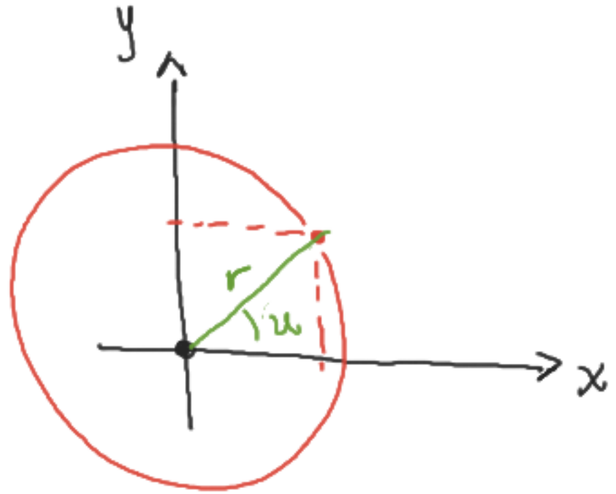


$x = f(v)$, $z = g(v)$

$$C(v) = (f(v), g(v))$$

$$x(u,v) = (x(u,v), y(u,v), z(u,v))$$

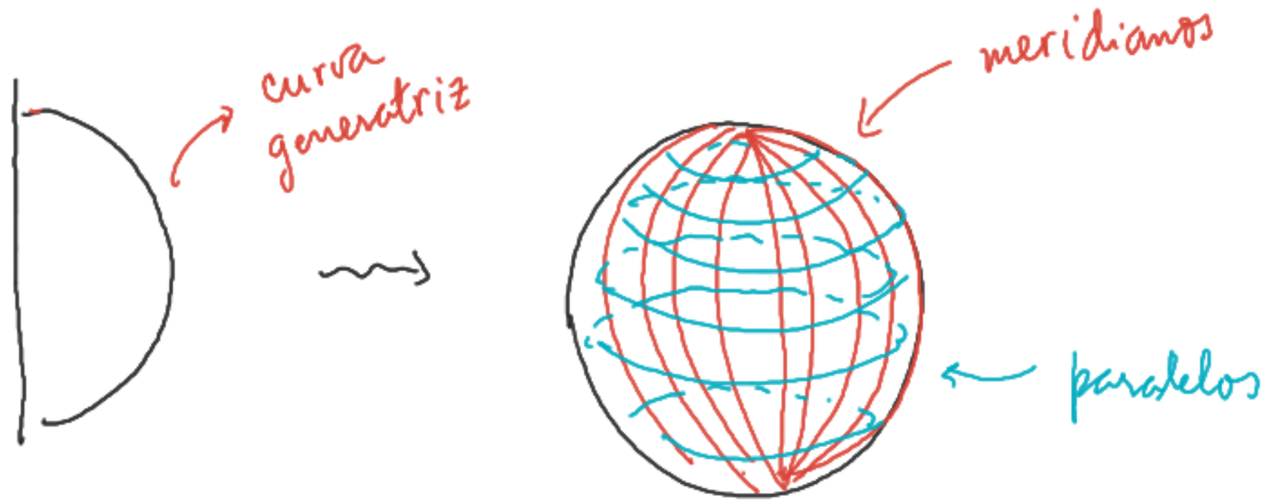


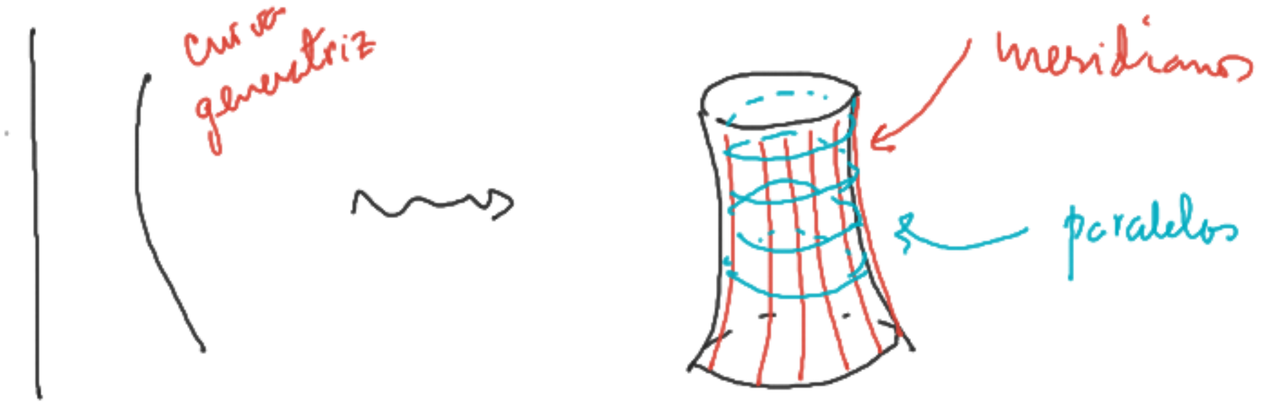
$r = f(v)$ $\quad u = \text{ángulo}$

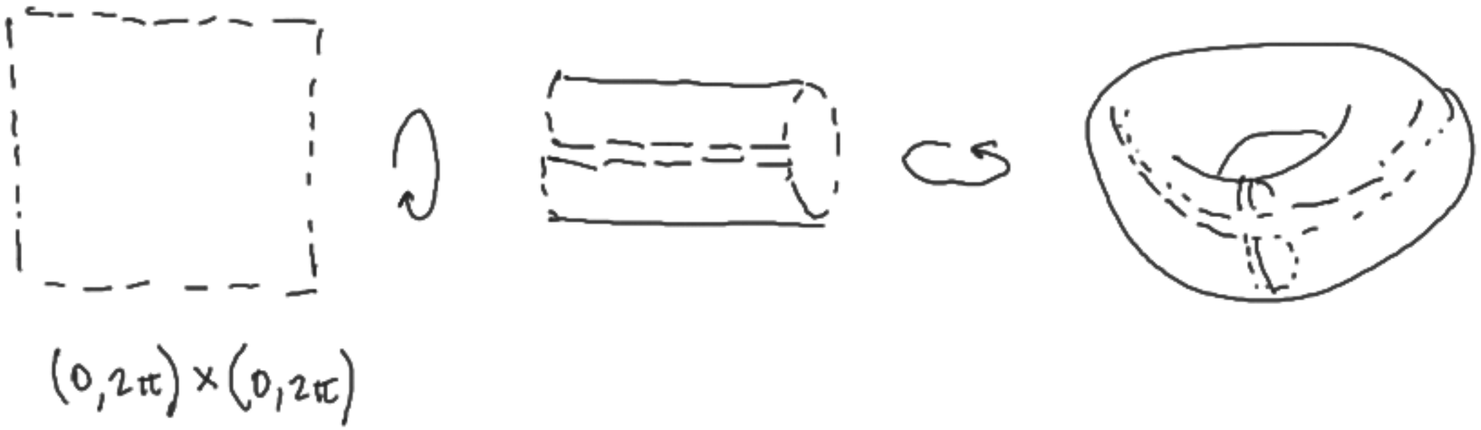
$$x(u,v) = f(v)\cos u$$
$$y(u,v) = f(v)\operatorname{sen} u$$
$$z(u,v) = g(v)$$

$$x(u,v) = (f(v)\cos u, f(v)\operatorname{sen} u, g(v)),$$

donde $u \in (0, 2\pi)$, $v \in (a,b)$.


curva
generatriz
meridianos
paralelos


Curva
generatriz
meridianos
paralelos


$(0,2\pi)\times(0,2\pi)$

Puntos Críticos:

$f: U \subseteq \mathbb{R} \longrightarrow \mathbb{R}$, f diferenciable

p es punto crítico $\iff$ $f'(p) = 0$ $\qquad Df(p): \mathbb{R} \longrightarrow \mathbb{R}$

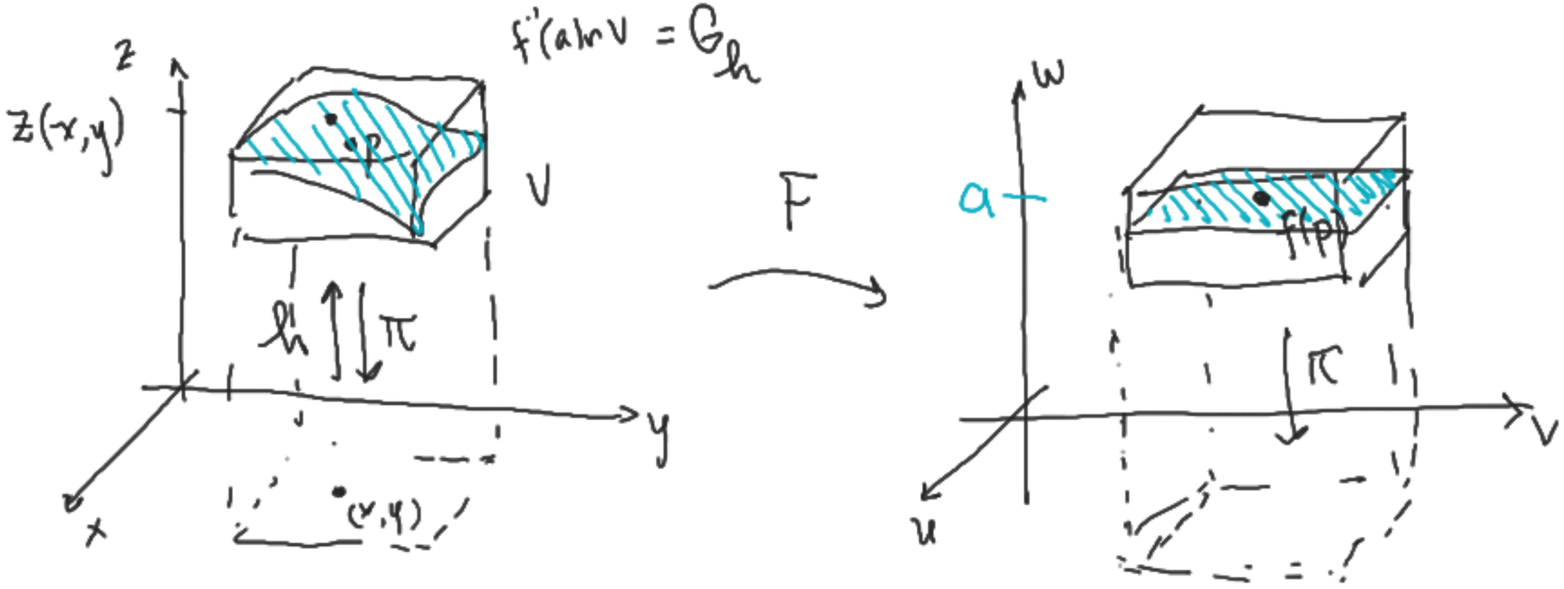
$\iff$ $Df(p)$ no es sobreyectiva $\qquad x \longmapsto f'(p) \cdot x$

$x \longrightarrow cx$

$f: U \subseteq \mathbb{R}^n \longrightarrow \mathbb{R}$, f diferenciable

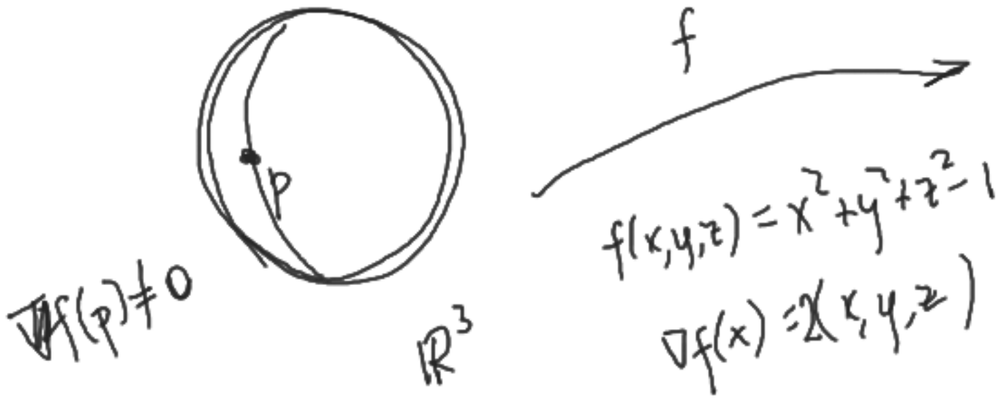
$p \in U$ es crítico $\iff$ $\nabla f(p) = 0$ $\qquad Df(p): \mathbb{R}^n \longrightarrow \mathbb{R}$

$\iff$ $Df(p)$ no es sobreyectiva $\qquad v \longrightarrow \nabla f(p) \cdot v$



$f^{-1}(a) \cap V = G_h$

$S^2 = f^{-1}(0)$



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

$\nabla f(p) \neq 0$

$\nabla f(x) = 2(x,y,z)$