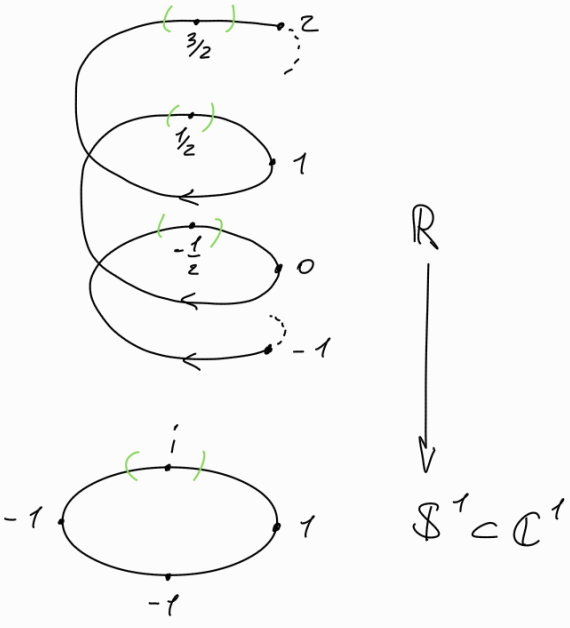
③ costruire $p: \mathbb{R}^2 \to \mathbb{T}^2 = \mathbb{S}^1 \times \mathbb{S}^1$ rivestimento

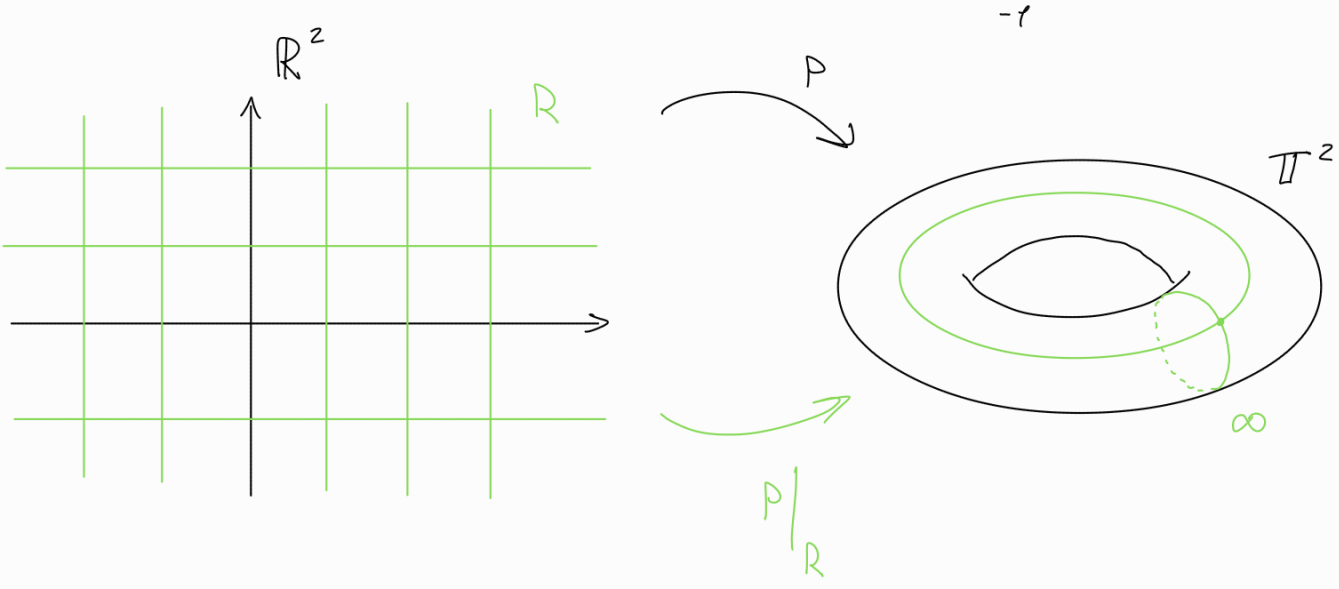
rivestimento tra reticolo unario standard $\mathbb{R}^2$ e figura $\infty \subset \mathbb{T}^2$

$q: \mathbb{R} \to \mathbb{S}^1$ rivestimento $\Rightarrow$ $p := q \times q$ rivestimento (Esercizio 3.1)

$q: \mathbb{R} \to \mathbb{S}^1 \subset \mathbb{C}^1$ rivestimento
$t \mapsto e^{2\pi i t}$



$p: \mathbb{R}^2 \to \mathbb{T}^2 \subset \mathbb{C}^2$
$(s,t) \mapsto (e^{2\pi i s}, e^{2\pi i t})$



$$R = \{(m,n) \in \mathbb{R}^2 \mid m,n \in \mathbb{N}^*\} \subset \mathbb{R}^2$$

$$\infty = \{(w,1) \in \mathbb{T}^2 \subset \mathbb{C}^2 \mid w \in \mathbb{C}\} \cup \{(1,z) \in \mathbb{T}^2 \subset \mathbb{C}^2 \mid z \in \mathbb{C}\} \subset \mathbb{T}^2$$

$p|_R : R \to \infty \subset \mathbb{T}^2$ rivestimento $\because$ Esercizio 3.2
$(s,t) \mapsto (e^{2\pi i s}, e^{2\pi i t})$

$\infty \subset \mathbb{T}^2 \wedge R = p^{-1}(\infty)$

$$P^{-1} : \mathbb{T}^2 \longrightarrow \mathbb{R}^2$$

$$(w,z) = \left(e^{2\pi i s}, e^{2\pi i t}\right) \longmapsto (s+j, t+k), \qquad j,k \in \mathbb{Z}$$