⑤ $\pi_1(\mathbb{S}^1) \neq \{e\}$

Suggerimento: Teorema 3.3.6

$\left.\begin{array}{l} p: \tilde{X} \to X \text{ rivestimento} \\ \tilde{X} \text{ cpa} \\ X \text{ sempl conn} \end{array}\right\} \Rightarrow p \text{ omeomorfismo}$

Supponiamo per ASSURDO: $\left.\begin{array}{l} \pi_1(\mathbb{S}^1) = \{e\} \\ \mathbb{S}^1 \text{ cpa} \end{array}\right\} \Rightarrow \mathbb{S}^1$ sempl conn

Esercizio 3.4

$\left.\begin{array}{l} p: \mathbb{S}^1 \to \mathbb{S}^1 \quad \text{rivestimento} \\ \quad z \mapsto z^n \\ \mathbb{S}^1 \text{ cpa} \\ \mathbb{S}^1 \text{ sempl conn} \end{array}\right\} \Rightarrow p \text{ omeomorfismo} \Rightarrow p \text{ iniettiva}$

$p$ iniettiva $\to$ ASSURDO $\because$ $p(z_1) = p(z_2) \not\Rightarrow z_1 = z_2$, $\forall n \in \mathbb{N}^*$

(e.g. $n=2$ : $p(-1) = p(1)$ ma $-1 \neq 1$)