1 Covering Spaces

Definition 1.1

A **covering space** of a space X is a space $\tilde{X}$ together with a map $\tilde{p}\tilde{X} \to X$ satisfying the following condition: Each point $x \in X$ has an open neighborhood U in X such that $p^{-1}(U)$ is a union of disjoint open sets in $\tilde{X}$, each of which is mapped homeomorphically onto U by p.

All this is saying is that