Abstract

In this thesis, we will present two theorems with similar structures from the fields of algebra and topology. These theorems are commonly referred to as the Galois correspondence and focus on field extensions and covering spaces. Both field extensions and covering spaces can be assigned a group of automorphisms. The Galois correspondence then means that there is a 1-1 correspondence between subgroups of the automorphism group, and intermediate field extensions/covering spaces. The objective of this thesis is to highlight the similar background of both of these topics.
In the last section, the inverse Galois problem for $\mathbb{C}(t)$ will be solved as an application where the Galois correspondence of topology is used for results in the algebric counterpart.