

Abstract

In this B.Sc. thesis we will show that for a group G and a G -module A there is a bijection between the second cohomology group $H^2(G; A)$ and the equivalence classes of extensions $\pi_0(\mathcal{E}xt(G, A))$. This will be done by showing that there is an equivalence of categories from the category of 2-cocycles $\mathcal{Z}^2(G; A)$ to the category of extensions $\mathcal{E}xt(G, A)$. We will also, by examples, illustrate and show some computational use of some of the theory developed in the proof.