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## Applications of Galois Theory

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## 1 Introduction



## 1. Field Extension

A field  $E$  is said to be an extension field of a field  $F$  denoted by  $E/F$ , if  $F$  can be embedded in  $E$ .

## 2. Galois Field Extension

The field  $E$  of  $F$  is said to be the Galois extension if  $E$  is normal extension of  $F$ .

## 3. Galois Group

Let  $E/F$ . Then the set of all automorphisms of  $E$  that fixes  $F$ , denoted by  $\text{Aut}(E/F)$  forms a group under the function composition. This group is called the Galois Group.