

Section 48: Automorphisms of Fields

Def: Let E be an algebraic extension of a field F . Two elements $\alpha, \beta \in E$ are *conjugate* over F if $\text{irr}(\alpha, F) = \text{irr}(\beta, F)$, that is, if α and β are zeros of the same irreducible polynomial over F .

Example: Conjugate complex numbers $a + bi$ and $a - bi$ are roots of the same polynomial.