

- **Theorem 4.6.** For an extension $L : K$, equivalent conditions:
 - (i) $[L : K] < \infty$.
 - (ii) $L : K$ algebraic and finitely generated.
 - (iii) there exist finitely many elements $\alpha_1, \dots, \alpha_n$ in L algebraic over K such that $L = K(\alpha_1, \dots, \alpha_n)$.
- **Theorem 4.7.** Transitivity of algebraic extensions.
- **Definition:** K -monomorphisme. Examples. Complex conjugation.
 - Conjugates in \mathbb{C} of an element which is algebraic over \mathbb{Q} .
 - There are d monomorphisms of $\mathbb{Q}(\alpha)$ into \mathbb{C} when α is algebraic of degree d over \mathbb{Q} .
- **Theorem 4.8.** When $L : K$ is an algebraic extension, a K -monomorphism $L \rightarrow L$ is onto.