

# Download Field Extensions And Galois Theory Pdf

These notes give a concise exposition of the theory of fields, including the Galois theory of finite and infinite extensions and the theory of transcendental extensions. They are an expansion of those handed out during a course taught to first-year graduate students.

CHAPTER 1. PRELIMINARIES 5

Luckily, we don't need to solve the extension problem for Galois theory. But suppose we completely understood this problem.

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1.2 Simple extensions A simple extension is an extension  $L:K$  having the property that  $L = K(\alpha)$  for some  $\alpha \in L$ . Polynomials are known to all. It is important to know about the specific group of polynomials and properties which