CHAPTER 1

Introduction

Let p be a fixed prime number. Let $\mathbb{Q}_p$ denote the field of p-adic rational numbers and fix an algebraic closure $\mathbb{Q}_p^{alg}$. For K a finite extension of $\mathbb{Q}_p$ (called *p-adic field*) we know that there exists only finite number of extensions of given degree (See [**4**, p.54], Proposition 14). Krasner has told us this fact. In chapter 2, we give some notations and preliminary results about $\mathbb{Q}_p$ and introduce unramified and totally ramified extensions of $\mathbb{Q}_p$. In chapter 3, we find polynomials generating all totally ramified extensions and calculate the number. In chapter 4 and 5, we discuss extensions of $\mathbb{Q}_p$ of degree 2 and 3, respectively.