

Topics for a paper

- (1) Classification of finite-dimensional central division rings over local fields (Jacobson *Basic Algebra II*, Pierce *Associative Algebras*)
- (2) Formal groups (Hazewinkel *Formal Groups and Their Applications*, Iwasawa *Local Class Field Theory*, Lang *Cyclotomic Fields I & II*, Silverman *Introduction to the Arithmetic of Elliptic Curves*)
- (3) Hilbert reciprocity law and Hasse-Minkowski theorem (Borevich-Shafarevich *Number Theory*, Cassels *Rational Quadratic Forms*, Serre *Course in Arithmetic*)
- (4) Kronecker-Weber theorem over the p -adic numbers (Washington *Introduction to Cyclotomic Fields*)
- (5) Mahler expansions (Schikhof *Ultrametric Calculus*, Lang *Cyclotomic Fields I & II*, Robert *A Course in p -adic Analysis*)
- (6) Newton Polygons (Gouvêa *p -adic Numbers*, Koblitz *p -adic Numbers, p -adic Analysis, and Zeta-functions*, Weiss *Algebraic Number Theory*)
- (7) Profinite groups and infinite Galois theory (Bastida *Field Extensions and Galois Theory*, Dixon *et al. Analytic pro- p groups*, Karpilovsky *Field Theory: Classical Foundations and Multiplication Groups*, appendix to Washington *Introduction to Cyclotomic Fields*)
- (8) Witt vectors (Fesenko and Vostokov *Local Fields and Their Extensions*, Hasse *Number Theory*, Jacobson *Basic Algebra II*, Karpilovsky *Field Theory: Classical Foundations and Multiplication Groups*, Serre *Local Fields*)