

Topics for the Second Midterm Exam

- Basic properties of rings.
- Subrings and ideals.
- Quotient rings.
- Maximal and prime ideals.
- Integral domains.
- Fields (as integral domains).
- Polynomial rings.
- Factorization of polynomials, including irreducibility criteria.
- Irreducible and prime elements of an integral domain.
- Unique Factorization Domains, Principal Ideal Domains, and Euclidean Domains.
- Construction of Finite Fields.

These topics are covered in chapters 12, 13, 14, 16, 17, and 18 of your textbook.