

Basic Mathematics

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Abstract Algebra

The main text we will be following for this material is [3]. However, proofs and examples will be lifted from [1] and [2] when possible.

We will split this chapter into four sections: group theory, ring theory, module theory, and field and Galois theory.

1.1 Group Theory

We begin with the definition of a group. A *group*

CHAPTER 2

Real Analysis

Topology

CHAPTER 4

Measure Theory

Commutative Algebra

CHAPTER 6

Algebraic Topology

Differential Geometry

Bibliography

- [1] D.S. Dummit and R.M. Foote. *Abstract Algebra*. Wiley, 2004.
- [2] I.N. Herstein. *Topics in algebra*. Xerox College Pub., 1975.
- [3] T.W. Hungerford. *Algebra*. Graduate Texts in Mathematics. Springer New York, 2003.