

Study Guide for Exam 1

This study guide is not guaranteed to be comprehensive.

Definitions you should know

- Binary Operation
- Associative Operation
- Commutative Operation
- Symmetric Difference
- Identity Element
- Inverse of an Element
- Group
- Abelian Group
- GCD
- Remainder
- \mathbb{Z}_n
- \oplus
- Cyclic Group
- Order of an Element

Theorems You Should Know How to Prove and Use

Theorems 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.4 (i,ii) from the book

Theorems You Should Know How to Use

Theorems 0.2, 0.3, 2.1, 4.2, 4.3, 4.4 (iii), and the Euclidean Algorithm

Methods of Proof You Should Know

Proving:

- one set is a subset of another
- 2 sets are equal
- a particular statement is true for all positive integers
- a group with particular properties is abelian
- a certain property holds for all elements of a group
- the order of two elements is the same