Algebraic Structures

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Groups

cyclic, symmetric, matrix direct sum, direct product free, presentation, generators

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Subgroups

subgroups homomorphisms, image, kernel, inverse images normality, quotient, coset counting

Chapter 3

Group actions

3.1 Orbits and stabilizers

3.2 Action by conjugation

3.3 Action by left multiplication

Exercises

3.1. Let G be a finite group. If $G/Z(G)$ is cylic, then G is abelian.

3.2. Let G be a finite group. If $x \mapsto x^3$ is a surjective endomorhpism, then G is abelian.

Part II

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