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## BOOK REVIEW

**Žikica Perović**

### Ljubiša Kočinac and Alija Mandak: ALGEBRA II, University of Priština textbooks, Priština, 1996, pp. x+356 (in Serbian)

The text is divided into five chapters.

The first chapter covers the algebras with one binary operation. At the beginning, as much as it is necessary for the further reading, groupoids, semigroups and quazigroups are presented. The main part of this chapter contains the facts about groups. Three main constructions are presented (subgroups, homomorphisms and direct products). The Lagrange theorem is proved. Further on the cyclic groups are analyzed. In the full detail it is explained the notion of a normal group and the theorems on isomorphisms. It was mentioned, without proof, the fact that the group $A_n$, $n > 4$, is simple. I think that this theorem should be presented together with the proof, because of its importance. The Sylow theorems are followed by the standard corollaries and the illustrative examples. Chapter ends with the facts about solvable groups, with the important result on (un)solvability of the group $S_n$.

In the second chapter the basics on Ring theory, up to the isomorphism theorems and the theorem about factoring by a maximal ideal, are covered. The second part of this chapter the authors devoted to Field theory. The results on polynomials are covered as a preparation for the further presentation of algebraic extensions. Without proof it is mentioned the result that the field of complex numbers is algebraically closed.

The third chapter treats the universal algebras. It covers the standard material up to the Birkhoff theorem on characterization of varieties. The authors have chosen to present this part after the specific structures (groups, rings, ... ). We agree with their choice. The other approach would result with the more elegant proofs but they would be less intuitive.

In the fourth chapter we find the Module Theory and Homological Algebra. The second part contains the material on linear algebras, composition algebras and nonassociative algebras (Lee algebras, Jordan and Maljcev algebras).

In the fifth chapter lattices, basic notions on lattices and the basic types of lattices are considered. In the section on modular lattices it is proved the

Jordan-Hölder theorem that gives us, as a direct consequence, the appropriate theorem for universal algebras. The facts on distributive lattices and the famous characterization theorem are also presented here. The section 5.8 is very nicely written, and covers the representation of lattices ending with the Stone duality theorem.

The text is presented with the clear mathematical style. The authors nevertheless avoided the trap of the "theorem-proof" exposition, with the plenty of illustrative examples and comments. The historical and supplementary comments at the end of each chapter add to the quality of the text. It could be selectively used, e.g. the first two chapters, as a textbook for the senior years undergraduate students, or for the special courses at the lower graduate level.

Žikica Perović, Faculty of Philosophy, University of Niš, 18000 Niš, Yugoslavia