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Bewersdorff, Jörg

★ **Algebra für Einsteiger. (German. German summary)**

[**Algebra for beginners**]

Von der Gleichungsauflösung zur Galois-Theorie. [From the solution of equations to Galois theory]

Friedr. Vieweg & Sohn, Braunschweig, 2002. xviii+193 pp. €19.90.

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This volume presents a gentle introduction into algebra based on historical and concrete classical aspects concerning the solvability by radicals of algebraic equations. The main emphasis is placed on equations of degree 3 and 4, i.e., on the developments during the period from the 16th to the 19th century. Then, the author presents the efforts to solve the equations of degree ≥ 5 , which have led to such basic mathematical concepts as ‘group’ and ‘field’, and finally to the marvelous Galois Theory. The geometric constructions with the ruler and the compass, including the three ancient problems (squaring the circle, duplication of the cube, and trisection of angles), as well as the construction of the regular n -gons are also discussed. The Fundamental Theorem of Galois Theory and the Galois Criterion for solvability by radicals of algebraic equations are also presented. Proofs of the quoted results are provided, but the material has been organized in such a way that the most technical details can be skipped by readers who are interested primarily in a broad survey of the theory.

This book is addressed to both undergraduate and graduate students, and also to teachers and mathematicians who want to get a historical and well-motivated perspective of the field. I think an English translation of this nice volume will be welcomed.

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