A high school algebra

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TWENTIETH CENTURY TEXT-BOOKS
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A HIGH SCHOOL ALGEBRA

BY

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PREFACE

This volume presents a full high-school course in elementary algebra and contains all the topics given in the standard year-and-a-half courses. It is adapted to the prevailing practice of teaching elementary algebra in two courses—a full-year course followed by a half-year course. The first twenty-three chapters contain all the work required in any standard one-year course, and the remaining ten chapters comprise a subsequent half-year course, reviewing and extending the elementary processes, fractions, factoring, exponents, and methods of solving equations, before any new topics are given. The result is a single volume adapted to a continuous one-and-a-half-year course, or to a course in which geometry intervenes between first-year and second-year algebra. It is especially suited to the latter plan, because Chapters XXIV and XXV furnish the review necessary for those pupils who take the divided course. Moreover, the treatment of quadratic equations, radicals, exponents, ratio, proportion, variation, and graphs in the second as well as in the first year's work, gives the greatest flexibility to the use of the book. For example, if, for the purposes of a short course, one or more of the later chapters were omitted from the first year's work, the chapters in the second year's work would supply material on the subjects omitted.

In whatever manner the study of geometry and algebra is alternated, the student acquires little knowledge of the metrical properties of geometry during the first year. For this reason, the authors have used in their problems only the most obvious of these properties, and have given in a carefully prepared supplement the more difficult properties to which algebra may be applied.

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Each important process of algebra is immediately applied to the solving of equations. This plan serves not only to secure the pupil’s interest, but reveals to him the utility of algebra.

Great pains have been taken to supply ample practice work, and the authors have given under the more important topics, such as equations, factoring, highest common factor, fractions and exponents, a greater number of exercises than will be required by any one class. In fact, there have been included as many exercises and problems as a text-book of reasonable size will admit.

Particular attention has been given to the grading of the exercises and problems, and, for convenience in checking the results, the exercises have been so constructed that the answers are not more complex than the purpose of the exercises actually requires. The authors have followed the criterion that every principle should be exemplified with the minimum of calculation.

Among the features that contribute to the teachableness of the book are the Historical Notes. These brief sketches, describing the origin of some of the more important topics of algebra, tend to stimulate the pupil’s interest, and the accompanying biographical notes and portraits of famous mathematicians serve further to humanize the subject. No attempt has been made to give a connected account of the development of algebra even in outline; these notes will serve their purpose if they create a desire to read some standard work on the history of mathematics.

Other aids which teachers will appreciate are the inductive developments, the cross references, illustrative problems, methods of testing results, careful statement of rules, topical and logical arrangement, definite classification, the frequent reviews, and the summaries of the theoretic chapters.

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THE AUTHORS.
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