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FOR SCHOOLS
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FIRST COURSE IN ALGEBRA

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PREFACE

In this revision of their "First Course in Algebra" the authors have in general followed the plan of that text in the order of topics treated and in the method of their presentation.

The most important modification of the order of topics is found in the transference of the work on Ratio and Proportion to the last chapter in the book and the omission of the chapter on the Highest Common Factor and Lowest Common Multiple. The latter topic is treated in connection with the related material on fractions, while the former is placed among the Supplementary Topics at the end of the book.

Material for which there is no strong demand from teachers has been omitted, and the entire work has been rewritten in the interest of greater simplicity and directness of appeal. The collections of exercises and problems are for the most part new and contain a larger proportion of easy exercises with simple results than the first edition.

A striking feature of the revision is the inclusion of a large number of oral exercises in connection with the introduction of each new idea or operation. It is the object of these exercises to present the new concept in complete isolation from any complication of notation or technique so that the student becomes familiar with its content and bearing before he is asked to make use of it in written work. These oral exercises may well be taken up when the advance lesson is assigned, so that the pupil may be certain that he understands the idea involved in the new work before he leaves his instructor.

Another feature scarcely less important is the character and position of the examples and hints. The aim has been to

help the student at the exact point where he needs it and to avoid the insertion of lengthy and difficult solutions before they can be completely understood.

The definitions and axioms have been expressed in the simplest language which is consistent with scientific accuracy. Many definitions which are usually found in elementary texts but which do not contribute to the clearness of the subject are omitted.

The first presentation of the subject of graphs has been limited to the study of the straight line and a few exercises of a commercial or scientific character. These exercises not only have a very definite human interest apart from their mathematical value but also serve to familiarize the student with the kind of graphs he will meet in his ordinary reading.

The first consideration in the treatment of radicals has been the needs of the student for his later study of the quadratic equation and for his work in geometry.

Frequently a student's knowledge of algebra is limited to a greater or less facility in the use of the rules of operation — to mere technique. To obviate this result the development of the problem work in this text has received full and careful attention.

The authors have received suggestions of great value from many teachers in all parts of the country, for which they extend their thanks. They are under especial obligation to Mr. E. L. Brown, of Denver, Colorado, Professor H. E. Cobb, of Chicago, Illinois, and to Mr. L. A. Pultz, of Rochester, New York, for helpful criticism.

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