

**INTRODUCTION TO ALGEBRA. DESIGNED FOR  
USE IN OUR PUBLIC SCHOOLS, BY PUPILS  
NOT HAVING SUFFICIENT MATURITY  
TO ENTER AT ONCE UPON THE AUTHOR'S  
"COMPLETE SCHOOL ALGEBRA," AND FOR  
PREPARATORY DEPARTMENTS OF COLLEGES**

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Introduction to Algebra. Designed for Use in Our Public Schools, By Pupils Not Having Sufficient Maturity to Enter at Once Upon the Author's "Complete School Algebra," and for Preparatory Departments of Colleges by Edward Olney

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**EDWARD OLNEY**

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# ° INTRODUCTION

TO

## ALGEBRA.

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HAVING SUFFICIENT MATURITY TO ENTER AT ONCE UPON  
THE AUTHOR'S "COMPLETE SCHOOL ALGÈBRA,"  
AND FOR PREPARATORY DEPARTMENTS OF  
COLLEGES, WHERE THIS BOOK CAN BE  
FOLLOWED IMMEDIATELY BY THE  
AUTHOR'S "UNIVERSITY  
ALGEBRA."

BY

EDWARD OLNEY,

PROFESSOR OF MATHEMATICS IN THE UNIVERSITY OF MICHIGAN, AND AUTHOR  
OF A SERIES OF MATHEMATICAL TEXT BOOKS.

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## PREFACE.

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THIS little book is, as its title imports, a mere Introduction to Algebra. It is its purpose to make the transition from the Arabic Notation and Common Arithmetic, to the Literal Notation and Algebra, as simple and attractive as the nature of the subjects will allow. It can be studied by quite young pupils who have but a very elementary knowledge of Arithmetic. It will be found adapted to such of our public schools as wish to introduce the subject of Algebra before the pupil has sufficient maturity to enter upon the COMPLETE SCHOOL ALGEBRA, and for Colleges having a Preparatory Department and desiring some simple introduction to the Author's UNIVERSITY ALGEBRA.

In order to economize space and time, as well as to lead the pupil to feel that he is not entering an entirely new field, some of the more elementary definitions, common to arithmetic and algebra, have been omitted. Nevertheless, great care has been taken not to omit any which could by any possibility be unfamiliar, or which need a more accurate or comprehensive statement than is commonly given.

The order of arrangement is rather that which the pupil can pursue with the greatest ease, than that which a rigid scientific analysis of the subject demands.

In the first sections the topics are approached by the simplest inductions, the rules are preceded by illustrative examples, and followed by explanations and statements of reasons in a free and somewhat colloquial style. But, as the subject proceeds,



a gradual transition is made to a more condensed and formally scientific treatment. In a few instances, *processes* have been given and the formal demonstration withheld, though never without apprising the pupil of the fact. It is the purpose of the book to lead the young to comprehend and appreciate mathematical reasoning, as well as to solve problems.

Formal statements of principles, definitions, and rules, when repeated in different members of the series of which this book forms a part, are given in exactly the same language.

A glance at the Table of Contents will inform the reader as to the scope of the book. The elements of Literal Arithmetic, Simple Equations with one, two, and three unknown quantities, Quadratic Equations with a few cases of Simultaneous Quadratics, and Ratio and Proportion, are the principal subjects treated.

Trusting that the book may be a means of interesting the young at the threshold of this great department of mathematical science, and may prove serviceable to the teacher in his efforts to lead his pupils to *think*, as well as "cipher," the author submits it to the judgment of his fellow laborers.

EDWARD OLNEY.

UNIVERSITY OF MICHIGAN,  
Ann Arbor, August, 1874.

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