

**GRAMMAR SCHOOL ALGEBRA:
A COURSE FOR GRAMMAR
SCHOOLS AND BEGINNERS IN
PUBLIC AND PRIVATE SCHOOLS**

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Grammar School Algebra: A Course for Grammar Schools and Beginners in Public and Private Schools by William J. Milne

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WILLIAM J. MILNE

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GRAMMAR SCHOOL ALGEBRA

*A COURSE FOR GRAMMAR SCHOOLS
AND BEGINNERS IN PUBLIC
AND PRIVATE SCHOOLS*

BY

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MILN'S GRAM. SCH. ALG.
E-P 26

PREFACE.

THIS book is designed to present the elementary facts of the science of algebra in such a manner that a deep interest will be awakened in the processes.

The author has in several instances departed from the order of classification commonly followed in text-books on this subject because he deems it better to introduce the student to the attractive features of the science at an early stage rather than to wait until he has mastered all the processes employed with most forms of algebraic quantities.

The ideas of number which the pupil has gained in arithmetic have been associated with those involved in algebra in such a way that no difficulty is experienced in passing from reasoning upon definite numbers to reasoning upon general numbers.

The treatment of equations is introduced at the beginning, and it is presented throughout the book, wherever it is possible to do so advantageously.

The method of presentation exemplified in the other books of the series has been followed here, because it is recognized as pedagogically correct and because it has met with general approval.

The work presents the merest elements of the science, and yet it is believed that the method of presentation, the illustration and application of mathematical principles, and the knowledge gained from the solution of problems, will familiarize the student with the fundamental principles of the science to such a degree that easy and rapid progress in the more abstract phases of the subject will be secured whenever he pursues the subject farther.

The arrangement is such that those who prefer to omit the sections upon Simultaneous Equations and Equations solved by Factoring may do so without encountering any difficulty in the subsequent work.

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WILLIAM J. MILNE.

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GRAMMAR SCHOOL ALGEBRA.

ALGEBRAIC PROCESSES.

1. **PROBLEM.** A farmer had 444 sheep in two fields, one of which contained three times as many sheep as the other. How many sheep had he in each field?

ARITHMETICAL SOLUTION.

A certain number = the number in one field.
Then 3 times that number = the number in the other field.
And 4 times that number = the number in both fields.
Therefore 4 times that number = 444.

The number = 111, the number in one field.

3 times 111 = 333, the number in the other field.

The solution given above may be abbreviated by using the letter n for the expressions *a certain number* and *that number*. In algebra, however, it is customary to represent a number whose value is to be found by x or by some other one of the last letters of the alphabet.

ALGEBRAIC SOLUTION.

Let x = the number in one field.
Then $3x$ = the number in the other field.
And $4x$ = the number in both fields.
Therefore $4x = 444$.
 $x = 111$, the number in one field.
 $3x = 333$, the number in the other field.