

**ORTON'S LIGHTNING  
CALCULATOR: AND  
ACCOUNTANT'S  
ASSISTANT**

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Orton's lightning calculator: and accountant's assistant by Hoy D. Orton

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**HOY D. ORTON**

**ORTON'S LIGHTNING  
CALCULATOR: AND  
ACCOUNTANT'S  
ASSISTANT**





Very Truly Yours  
Hoy D. Weston

ORTON'S  
LIGHTNING CALCULATOR,  
AND  
*Accountant's Assistant.*

THE SHORTEST, SIMPLEST, AND MOST RAPID METHOD OF COMPUTING  
NUMBERS, ADAPTED TO EVERY KIND OF BUSINESS, AND  
WITHIN THE COMPREHENSION OF EVERY ONE HAVING  
THE SLIGHTEST KNOWLEDGE OF FIGURES.

BY  
HOY D. ORTON.

ENTIRELY NEW EDITION,

WITH EXTENSIVE MODIFICATIONS AND IMPROVEMENTS.

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COLLINS, PRINTER.

## INTRODUCTION.

QUANTITY is that which can be increased or diminished by augments or abatements of homogeneous parts. Quantities are of two essential kinds, *Geometrical* and *Physical*.

1. *Geometrical* quantities are those which occupy space; as *lines, surfaces, solids, liquids, gases, etc.*

2. *Physical* quantities are those which exist in the time, but occupy no space; they are known by their character and action upon geometrical quantities, as *attraction, light, heat, electricity and magnetism, colors, force, power, etc.*

To obtain the magnitude of a quantity we compare it with a part of the same; this part is imprinted in our mind as a *unit*, by which the whole is measured and conceived. No quantity can be measured by a quantity of another kind, but any quantity can be compared with any other quantity, and by such comparison arises what we call *calculation* or *Mathematics*.



## MATHEMATICS.

MATHEMATICS is a science by which the comparative value of quantities are investigated; it is divided into :

1. ARITHMETIC, that branch of Mathematics which treats of the nature and property of numbers; it is subdivided into *Addition, Subtraction, Multiplication, Division, Involution, Evolution and Logarithms.*

2. ALGEBRA, that branch of Mathematics which employs letters to represent quantities, and by that means performs solutions without knowing or noticing the *value* of the quantities. The subdivisions of Algebra are the same as in Arithmetic.

3. GEOMETRY, that branch of Mathematics which investigates the relative property of quantities that occupies space; its subdivisions are *Longemetry, Planemetry, Stereometry, Trigonometry and Conic Sections.*

4. DIFFERENTIAL-CALCULS, that branch of Mathematics which ascertains the mean effect produced by group of continued variable causes.

5. INTEGRAL-CALCULS, the contrary of Differential, or that branch of Mathematics which investigates the nature of a continued variable cause that has produced a known effect.

## P R E F A C E.

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MATHEMATICAL LAWS are the acknowledged basis of all science. Ever since the streets of Athens resounded with that historical cry of "Eureka," emanating from one of antiquity's greatest mathematicians, the science has been steadily progressing.

It is not our purpose, in this small work, to introduce any of the higher branches of mathematics, viz.: Algebra, Conic Sections, Calculus, etc. Our object is merely to present to the public a system of calculation that is practical to every business man. It consists of the addition of numbers on a principle entirely different from the one ordinarily used. In the practical application of this new principle of addition, scarcely any mental labor is required, compared with the principle of addition set forth in standard works. The superiority we claim for this principle above all others, is this, that it requires no great mental exertion, affording the

greatest facilities to the calculator in the addition of numbers, enabling him to add a whole day without any mental fatigue; whereas, by the ordinary way, it is very laborious and fatiguing.

Our system of calculation also embraces a concise, rapid, and at the same time practical method of Multiplication, by which one is enabled to arrive at the product of any number of figures, multiplied by any number, immediately, without the use of partial products.

This small work also embraces the shortest and most concise method for the computation of Interest ever introduced to the public. Our system for computing interest is entirely different from any rule ever introduced, for the computation of either Simple or Compound Interest. A student having gone no further than Long Division in Arithmetic, can, by our rule, calculate Simple or Compound Interest at any given rate per cent., for any given time, in one-tenth of the time that the best calculators will compute it by the rules laid down in other books. By using our rules, you can entirely avoid the use of fractions, and save the calculation of 75 to 100 figures, where years, months and days are given on a note.