"ONE THE MOST POWERFUL NUMBER" - WHY DID I WRITE THIS TEXTBOOK?

The book is written with the goal of being the main textbook in a 3-credit college course for students who are preparing to become elementary arithmetic teachers and/or secondary mathematics teachers. This textbook focuses on how to teach students the rules and procedures which should be learned in elementary arithmetic classes and then use the same rules and procedures to solve problems in higher level mathematics classes. I never took a course in college which helped me learn how to teach rules and procedures. **I did take a course in college which helped me present concepts for arithmetic and mathematics topics, but I repeat, I never took a course which helped me teach students how to "Learn and Remember" rules and procedures.** Obviously, there are several colleges and universities which prepare students to become elementary arithmetic teachers and secondary math teachers. One would assume that some of these colleges and universities would require their students to take a course which focuses on how to teach students so they "Learn and Remember" the rules and procedures which they will need to become more successful in future math classes.

If your college preparation curriculum, does not offer a course which focuses on how future teachers can better influence their students to "Learn" arithmetic rules which need to be mastered in elementary school and in addition, develop methods so the students "Remember" what they have learned to solve higher level math problems, then this textbook maybe what you are searching for. I frequently tell educators that I never got paid to teach. I got paid to have students "Learn and Remember" what was taught in the classroom. If the students never **learned** what was taught, then I did not deserve to collect a paycheck. Also, if the students did not **remember** what was taught, then what I thought I had taught was all for naught.

I believe that math is the most dependent course students take starting in 4^{th} or 5^{th} grade through their entire education career. What I mean when I use the word dependent is this: What a student remembers from previous years when they enter a math class in September greatly influences what they will learn and remember in their math class at the end of the school year.

I am 99.9% confident that every college student who reads, studies, and takes the time to solve all the problems indicated in this textbook, will be knowledgeable about solving the problems indicated in the book and they will also have ideas how to teach the rules and procedures required to solve all the arithmetic problems and many elementary teachers will understand how to use the same rules and procedures to solve more advanced problems in Algebra and higher-level math courses. Secondary math teachers will understand how students should solve arithmetic problems and then use the same rules to solve the most advanced mathematics problems involved in an algebra class and beyond.

The rules and procedures for solving problems in higher-level math courses are based on the concepts, rules and procedures which need to be learned in arithmetic classes. Without arithmetic concepts, rules, and procedures there cannot be any higher-level math courses.

Websites: www.onethemostpowerfulnumber.com & www.timyoungbooks.com .

Purchase Book: On Amazon – Book title: "One The Most Powerful Number" by Timothy W. Young

The following pages indicate highlights of the book which you may want to focus on to begin your review and not read and study every page and every problem.

1. Five important teaching principles/procedures to help students "Learn and Remember" rules and procedures to solve arithmetic and math problems, and the Two major objectives in the Textbook – Reference page 3.
2. Two newly named Theorems to help students work and with simple fraction problems and rational expressions, plus multiple conversion problems. Reference Chapter 9 first, pages 495-499 to understand why I named the two theorems. The actual two theorems are stated on the following pages: Young's Conversion Theorem Pages 17-18, 25, 238, 321-322, & 389-390 and Young's Equation/Ratio Theorem Pages 165-167, 246, & 390. Also reference the Pink Rectangle on page 376.
3. Examples of short two-four-minute mini lessons to introduce and review the most important topics involved in any arithmetic or math course. The examples focus on introducing students to the rules and procedures required to solve fractions since this is one of the main objectives of the book, but the same techniques should be used when students are supposed to learn and remember the rules for all challenging math problems. Reference pages 73-82**. I used this technique in Algebra 2 to introduce the Quadratic Formula and found that the first day I wanted students to work with the Quadratic Formula they already knew how to apply the formula to solve quadratic equations, plus they could derive the formula from the general form of the polynomial equation, "$ax^2 + bx + c = 0$"**.
4. Understanding the infinite ways to write the number ONE – Pages 239-243, & 246-247.
5. Using the two theorems to find equivalent fractions in Arithmetic, equivalent expressions in mathematics, and equivalent units of measurement – Pages 36, 38-39, 87, 139 (Examples 1 &2), 300-302, 309-312, 328-330, 331-332, & 411-413. The rules never change.
6. Finding LCDs for arithmetic fraction problems and algebra rational expressions. Reference pages 101, 149, 152, 158, 179, 190, & 411-413. The Fundamental Theorem of Arithmetic is important.
7. Use the two theorems to add and subtract arithmetic fractions then use the same procedures to solve or simplify difficult rational expressions in Algebra – Arithmetic examples: Pages 109-115, & 148-167 and Rational Expressions Examples: 411-417 & 419-424.
8. Use the Fundamental Theorem of Arithmetic to emphasize the power of the number ONE when reducing, multiplying, and dividing arithmetic fractions and rational expressions in Algebra using the same rules and procedures – Pages 102-104, 212-214, Special Theorem pages regarding prime numbers 216-218, reducing fractions pages 257-259, 278-279, 284-286, & 400-405.
9. One should obviously look at the questions contained in the nine assignments at the end of several chapters. We Continually interleave problems in many of our assignment problems.

There are applications and illustrations of ways to use the two theorems to convert a percent into a rational number or rational number into a percent, to convert a terminating decimal to a fraction, to simplify algebraic fractions with a radical in the denominator and a fraction with the number "*I*" in the denominator, radians to degrees, degrees to radians, if the divisor in a long division problem contains a decimal – Why do you move the decimal in both the divisor and dividend, why do you invert and multiply the fraction to the right of the division operation symbol when dividing two fractions, and more. In the process of illustrating and discussing how to simplify and work with fractions (rational expressions) the discussion leads to working with many other arithmetic and mathematics topics to include ratios, slope of a line, graphing lines, solving linear algebraic equations, etc. It is frequently difficult to discuss a specific math topic without mentioning other previously learned topics and future topics in other higher-level courses. Everything you learn and remember now regarding math rules and procedures will be beneficial in your future understanding and learning in more challenging math courses.