The test will cover the class notes, homework, quizzes, and the material from the class textbook EMT regarding Chapter 1 (excluding 1.7), all of Chapter 2, and Chapter 3 sections 1, 2, 3, and 4. In the work done so far, we have focused on whole numbers and the operations of addition, subtraction, multiplication, and division. Below is a list of the major ideas that will be assessed on Exam I – sometimes, next to some of the topics are some suggested problems or pages that you may refer to for examples.

1. Definitions and Vocabulary
   (a) Set model & Measurement model
   (b) Addend, Summand, Sum
   (c) Minuend, Subtrahend, Difference
   (d) Factor & Product
   (e) Dividend, Divisor, Quotient
   (f) Addition
   (g) Subtraction
   (h) Multiplication
   (i) Division
   (j) Arithmetic Properties (for addition and multiplication)

2. Chapter 1: Place Value and Models for Arithmetic
   (a) Be familiar with Egyptian Numerals, Roman Numerals, and Decimal Numerals: pages 4-6 EMT; HW Set 1 Problems 1, 2, 5, & 6
   (b) Know the Place Value Process and expanded form of decimal numerals: pg 8-9 EMT
   (c) Be able to work with base 5 numbers (adding and converting): HW Set 2 Problem 6
   (d) Know the Arithmetic Properties for Addition and Multiplication AND how to illustrate them: pg 26-27 EMT; HW Set 3 Problems 1 & 2; HW Set 5 Problems 1, 2, 3, & 4
   (e) Know the different interpretations of subtraction AND how to illustrate them: pg 20 EMT; HW Set 4 Problems 1, 2, & 6
   (f) Know the different interpretations of division, their interpretive questions, and their diagrams: pg 32 EMT; HW Set 6 Problems 1, 2, & 3 (a) - (e)
   (g) Quotient Remainder Theorem: pg 35 EMT; HW Set 6 Problems 3(f) & 5
(h) Be able to write simple word problems for each of these operations (addition, subtraction, multiplication, and division): HW Set 4 Problem 7; HW Set 6 Problem 4

3. Chapter 2: Mental Math and Word Problems

(a) Use mental math strategies for addition, subtraction, multiplication, and division: HW Set 3 Problems 3 & 5; HW Set 4 Problems 3, 4, & 5; HW Set 5 Problems 5, 6, 7, & 8; HW Set 7 Problems 1, 2, 3, 4, & 5

(b) Give Teacher’s Solutions to one-step, two-step, and multi-step word problems: HW Set 8 Problem 2, 3, & 4; HW Set 9 Problem 2, 3, 4, & 5; HW Set 10 Problem 3; HW Set 11 Problem 7; HW Set 12 Problems 2 & 6; HW Set 13 Problem 7

4. Chapter 3: Algorithms

(a) Be able to use and know at least two different addition algorithms AND at least two different subtraction algorithms AND at least three different multiplication algorithms
   i. Explain similarities and differences between the algorithms (that is, address similarities and differences in the rebundling processes, in how the algorithms keep track of place value, and in their use of the distributive property)

(b) Put addition or subtraction problems in order of difficulty: HW Set 10 Problem 2; HW Set 11 Problem 4

(c) Analyze students’ work and find mistakes in students’ algorithms: HW Set 10 Problem 5; HW Set 11 Problems 8 & 9; HW Set 12 Problem 8

(d) Use Chip Models to:
   i. develop the addition algorithm: HW Set 10 Problem 4
   ii. develop the subtraction algorithm: HW Set 11 Problems 5 & 6
   iii. illustrate the multiplication algorithm: HW Set 12 Problem 3
   iv. illustrate division: HW Set 13 Problems 2 & 4

(e) Compute long division with 1-digit divisors: Example 4.2 pg 73 EMT; example 4.7 pg 75 EMT: HW Set 13 Problem 6

(f) Solve and write word problems for 1-digit division: HW Set 13 Problems 1 & 5

REMINDER: during the examination please remember that notes, cheat-sheets, calculators, cell phones, and electronic devices are NOT allowed!