Homework 3

Part I: Place Value

1. **Textbook Problems**
   a. Section 1.1 (p. 11): #3, 7, 8
      Note: when the textbook refers to the "decimal system" it just means our number system.
   b. Section 1.3 (p. 31): #1
2. **Additional Problems**
   a. Write problems…
      i. Write an Equal Groups, Product Unknown problem that emphasizes place value.
      ii. Write an Equal Groups, # of Groups Unknown problem that emphasizes place value.
   b. Name 532 **using only** the units *hundreds*, *tens*, and *ones*…
      i. Give the "standard" name for 532 that fits with the structure of our number system and represent this name with a picture of base-ten blocks.
      ii. Give a second name for 532 and represent this name with a picture of base-ten blocks.
      iii. Explain how you could get from the first name/representation to the second one.
   c. Large numbers…
      i. **Provide a citation** and identify a large number (a million or higher) that is involved with a social or political issue (that we have not discussed in class so far). **Write the number and provide units.**
      ii. Explain how you might think about the size of that number either by visualizing it in some way like in *Lesson 03* or by comparing it to other smaller numbers (e.g., "The government spends *x* dollars on this program. With that same amount of money it could build *n* houses.")

Part II: Additive Computation

3. **IMAP Video 3: Gretchen**
   a. Solve the problem "70 – 23" in two ways (explain **why** each strategy makes sense).
      i. First using the standard U.S. Algorithm.
      ii. Second using a different method.
   b. Thinking ***mathematically***, are the three problems below equally difficult (i.e., do they all involve equally complex mathematics or do some involve more complex mathematics)? Explain your thinking.

a)	b)	c)
287 – 176	82 – 71	102 – 98

   c. Watch "Video Clip 3: Gretchen" on the IMAP CD. Then read "Gretchen's Story" (can be found on D2L or on the CD at: "Resource Files\PDF Documents\Gretchen's_Story.pdf").
   d. In this video, Gretchen puts more faith in procedures than in her own conceptual knowledge. Describe a time(s) in this class or previous math learning when you placed more faith in a procedure that you learned than in trying to understand the underlying concepts.
4. **Textbook Problems**
   Section 3.2 (p. 109): #4, 7, 8, 9, 10a, 11a, 11c
   - **NOTE:** Any problem that mentions writing correct equations can be done in three ways:
     - Arrow language
       (e.g., for "136 + 57", child writes "136 + 50 => 186 + 7 => 193")
     - Writing a series of separate equations
     - The way the book prefers (examples starting on p. 105)