Math 5370   **ALGEBRAIC STRUCTURES**   Fall 2016
Dr. Duval   **Homework**
Thursday, August 25

Warmup exercises. To present in class

     Tuesday, August 30. 1.9, 1.10, 1.23, 1.27.

     Thursday, September 1. 1.57, 1.61, 1.62.

Reading assignment. Read the rest of section 1.3 and read section 1.4, and be ready to answer the following reading questions. (Most of these will be discussed on Thursday, September 1, but the Euclidean algorithm question I hope will be on Tuesday, August 30.)

1. Use Theorems 1.29 and 1.30 on the pair (1266,469) to compute their gcd, and to find the corresponding linear combination of the two numbers that equals the gcd. (You can check your work with factorization or other techniques, but the point of this question is to get you to run through the Euclidean Algorithm.)

2. Compare the rules for addition in the Nine Properties to the rules for multiplication in the Nine Properties. How are the similar, and how are they different?

3. Where in the "Nine Properties" do we disallow dividing by 0? Why? (Your answer to "why?" should rely *only* on the Nine Properties.)

4. What properties of the real numbers are *not* captured by the Nine Properties? (The textbook suggests some, but try to be just a little more detailed, or think of properties the textbook does not mention.)