

## MATH 221 - STUDY GUIDE FOR TEST 2

**General Guidelines for Studying:** The test will be 25 multiple choice questions, of which 10 will be based on the 10 quiz questions you had for this material. These 10 questions may not be identical to the quiz questions, but they will be very similar. If you understand not only what the answer was on a quiz problem but also why the answer was what it was, then you should have no problem on the corresponding test question. The remaining 15 questions on the test were obtained by the instructor by going through the class presentations available directly at:

<http://www.math.sc.edu/~filaseta/courses/Math221/the221password.html>

It would be wise to review the material, especially any questions posed, that appear in these presentations. This includes all of the homework problems that we went over in class.

### Specific Items to Know:

- base problems similar to Quiz 7 and homework from Section 3-2
- algorithms for addition (know them)
- lattice multiplication
- repeated subtraction method for division
- compatible numbers for addition and multiplication
- estimating
- chip model for integer arithmetic (addition, subtraction and multiplication)
- number-line model for integer arithmetic (addition and subtraction)
- be able to recognize in black-and-white which way the witch is looking
- divisors (definition, properties and equivalent statements)
- divisibility tests (for 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, etc.)
- primes (definition and properties)
- The Fundamental Theorem of Arithmetic
- factor trees
- greatest common divisor
- least common multiple
- different methods for obtaining GCD's and LCM's

### Some specific items that you do not need to review even if they are fun to look at:

- terminology for mental arithmetic (other than "compatible")
- mail-time model for addition and subtraction
- specific statements of the divisibility tests (be able to use them not state them)
- the sieve of Eratosthenes
- modular arithmetic