Review for Math 290 Midterm 3

The midterm covers the material covered in sections 10.1-10.5, 11.1-11.6 of the textbook.

Definitions to know:

1. Denumerable (p. 223)
2. Countable (p. 223)
3. Uncountable (p. 224)
4. Smaller Cardinality (p. 236)
5. Quotient (p. 247)
6. Remainder (p. 247)
7. Division algorithm (p. 247)
8. Linear combination (p. 250)
9. Relatively prime (p. 255)
10. Canonical factorization (p. 257)

You should be able to:

1. Know how to prove that a set is denumerable.
2. Know how to prove that a set is uncountable.
3. Know examples of finite, denumerable, and uncountable sets.
4. Be able to show that one set has larger cardinality than another.
5. Be able to prove two sets are numerically equivalent by using the Schroder-Bernstein Theorem.
6. Apply the division algorithm.
7. Apply the Euclidean algorithm.
8. Know the relation between the greatest common divisor and linear combinations.
9. Be able to show that two numbers are relatively prime and be able to use this fact to prove results on linear combinations and divisibility.
10. Find a prime factorization.