Announcements

- Exam on Tuesday
  - Study homeworks
  - Study quizzes
  - Study worksheets
  - Study proofs from lecture (one will be similar)

Topics to Study

- What is a statement?
- Logical connectives (and, or, not, arrow, double-arrow)
- Truth Tables
- Translating English into language of logic
- Logical Equivalence
  - With truth table
  - Using Laws of equivalence
- Converse, inverse, contrapositive
- Checking validity of argument with truth table
- Proving an argument with Laws of Equivalence and Rules of Inference

Topics to Study

- Number base conversions
- Logic gates
- What are predicates?
- Universal and Existential quantifiers
- Negating statements with quantifiers
- Translating English into quantified statements
- Free vs. bound variables
- Interpretations

Topics to Study

- Notation for sets (reals, integers, natural numbers, etc.)
- Closure
- Even/odd (definitions and proofs)
- Constructive proofs of existence
- Proofs by exhaustive cases
- Universal generalization

Topics to Study

- Proving implications
  - Directly
  - By contrapositive
- Divisibility (definition and proofs)
- Proofs of equivalence (if and only if)
  - Sequence of equivalent statements
  - Dividing into two parts
- Fundamental theorem of arithmetic (definition and proofs)

What is NOT on the exam

(Actually, these things are “off limits”)

- Modular congruence
- Modular Arithmetic Theorem
- Quotient-Remainder Theorem
- Floor/Ceiling
- Sequences/Summations/Products
- Induction

Practice Problems