

Chap 1

MATH 143
EXAM 1 INFO
9-23-13

1. The sum + product principles.
2. The pigeonhole principle — specify how the pigeonholes are labeled, what the pigeons represent, and the rule for assigning pigeons to pigeonholes.
3. Proof technique #1:
 - Direct proof of an implication
4. Know all definitions — be able to state precisely & create relevant examples.

Chap 2

1. Sets — operations, relations, representations, cardinality
2. Logic — boolean connectives, truth tables, logical equivalence
3. Quantifiers
4. Rules for negation of logical expressions ; De Morgan's Laws
5. converse, inverse, contrapositive
6. More proof techniques:
 - Contradiction
 - Contraposition
 - (for sets) $A \subseteq B$ by element-wise argument
 - (for sets) $A = B$ by double inclusion
 - $P \text{ iff } Q$ by translation to : $P \rightarrow Q \wedge Q \rightarrow P$
7. Know all definitions

Please do
your assigned
reading for R!

EXAM 1 WILL ASK YOU TO

- (a) Provide precise definitions ;
- (b) Prove / disprove statements ;
- (c) Work examples as done in class / reading / homework.