This is a list of topics that may be included in Exam 3 (Final). This list is not exhaustive and is only intended to help you review.

Instructions for the upcoming exam:
1. You are allowed to bring one sheet of notes (8.5 x 11 both sides)
2. This is a closed book exam. Do not confer with any other person.
3. You are allowed to use a calculator
4. No computer is allowed
5. Show your work. Partial credit will be given. Grading will be based on correctness, clarity and neatness.
6. I suggest that you read the whole exam before beginning to work any problem. Budget your time wisely.
7. The duration of this exam is 2 hours.

Topics:
1. Section 6.1: The basics of counting
   • Product, sum, subtraction, division rules
2. Section 6.2: The Pigeonhole Principle
3. Section 6.3: Permutations and Combinations
   • Permutations, combinations
4. Section 6.4: Binomial Coefficients and Identities
   • Binomial expansions, Pascal triangle
5. Section 8.1: Applications of Recurrence Relations
6. Section 8.2: Solving Recurrence Relations
   • Linear Homogeneous Recurrence Relations, solving recurrence relations of degree k
7. Section 9.1: Relations and their properties
   • Reflexive, Symmetric, Antisymmetric, Transitive relations
   • Composing Relations
8. Section 9.3: Representing relations
   • Representing relations using Directed Graphs
9. Section 9.5: Equivalence relations