

## Lessons for Intermediate Counting and Probability

1	Review of Counting and Probability Basics
2	Principle of Inclusion & Exclusion
3	Advanced Inclusion & Exclusion
4	Constructive Counting
5	One-to-one Correspondences
6	The Pigeonhole Principle
7	Constructive Expectation
8	Distributions
9	Mathematical Induction and Fibonacci Numbers
10	Recursion and Catalan Numbers
11	Conditional Probability
12	Combinatorial Identities
13	Events with States
14	Generating Functions (Part 1)
15	Generating Functions (Part 2)
16	Graph Theory (Part 1)
17	Graph Theory (Part 2)
18	Bonus Topics and Challenging Problems