

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Electrical Engineering & Computer Science
6.041/6.431: Probabilistic Systems Analysis
(Spring 2006)

Week 8
April 2-6, 2006

Topics: Iterated Expectations, Sum of a random number of RVs

1. Recitation 11: Tuesday, April 3

- (a) Iterated Expectations
- (b) Sum of a random number of RVs

2. Recitation 12: Thursday, April 5

3. Tutorial 7:

- (a) Iterated expectation to analyze Kelly strategy for gambling
- (b) Covariance/Independence with Gaussians
- (c) Random Sum of Random Variables

4. Problem Set 7:

- (a) Short discrete iterated expectation problem
 - (b) Continuous expectation problem (not really iterated expectation, but uses a similar idea)
 - (c) Discrete iterated expectation problem with Poisson r.v.
 - (d) Short proof on iterated expectation properties
 - (e) Short proof about iterated expectation/correlation
 - (f) Problems 6-9 deal with random sums of random variables
 - (g) Practice with correlation
 - (h) Random sums plus linear least squares estimation
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