

Week 5-6 Study Guide

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Random Variables

1. Discrete random variables: 3.5, 2.38
2. Continuous random variables: 3.7, 3.25

Distributions for Discrete Random Variables

1. Binomial distribution: 2.21, 2.62
2. Geometric distribution: 2.20, 2.22
3. Negative binomial distribution: Example 7.7
4. Hyper-geometric distribution: 2.24, 2.28
5. Poisson distribution: 4.10, 4.33, 4.34

Remark. The mean of Poisson random variable is the parameter λ .

Distributions for Continuous Random Variables

1. Uniform distribution: 1.9, 1.11, 3.4, 3.20, 3.41
2. Exponential distribution: 4.13, 4.14

Hint for exercise 4.14: Expected lifetime is 1000 days implies that the lifetime is exponential distributed with parameter $\lambda = 1000$.

3. Normal distribution: 3.17, 3.18a, 3.18b

Note: This study guide is used for Botao Jin's sections only. Comments, bug reports: b_jin@ucsb.edu