3342 Review: Chapters 4 - 5.3

Terms and Representative Problems

Chapter 4

random variable
probability distribution 2-5
\[ f(x) \geq 0 \]
\[ \sum_{all \ x} f(x) = 1 \]
discrete random variable
continuous random variable
probability histogram
cumulative distribution function

binomial distribution 13-20
two outcomes per trial
p(success) same for all trials
fixed number, n, of trials
trials are independent
binomial distribution function
\[ b(x;n,p) \]
cumulative binomial distribution function
\[ B(x;n,p) \]
symmetric
positively skewed
negatively skewed

hypergeometric distribution 22-27
sampling without replacement
hypergeometric distribution function
\[ h(x;n,a,N) \]
mean 30, 32
binomial 38-39
hypergeometric
variance and standard deviation 30, 32
binomial
hypergeometric
kth moment about the origin
alternate formula for variance 31, 33

Chebyschev’s Theorem 44-45
law of large numbers

Chapter 5

Poisson distribution 54-57
mean and variance
approximation to binomial 52-53
Poisson process 63-65

general distribution 60, 62
mean and variance
binomial 70, 72
mean and variance

normal distribution 24, 27, 29, 31, 33
mean and variance
standard normal distribution 19-21
Table 3
standardized random variable

normal approximation to binomial 35-39
continuity correction