

Index

Bayes estimate, 18.1
Bernoulli trials, 3.4, 7.3
beta distribution, 5.4
bivariate normal distribution, 22.1
Cauchy density, Lecture 1, Problem 5
Cauchy-Schwarz inequality, 20.3
central limit theorem, 8.2
Chebyshev's inequality, 7.1
chi-square distribution, 3.8, 4.2
chi-square tests, 13.1
complete sufficient statistic, 16.1, 17.1
confidence intervals, Lectures 10, 11, 24.3
consistent estimate, 7.6, 9.3
convergence in distribution, 7.4, 8.3
convergence in probability, 7.4, 8.3
convolution, 3.11
correlation coefficient, 20.1
covariance, 20.1
covariance matrix, 21.4, 22.1
Cramér-Rao inequality, 23.4
critical region, 12.3
density function method, Lecture 1
distribution function method, Lecture 1
eigenvalues and eigenvectors, 19.1
equality of distributions, 13.3
estimation, 9.1
exponential class (exponential family), 16.3, 17.1
exponential distribution, 3.8
F distribution, 5.3
factorization theorem, 14.3
Fisher information, 23.6
gamma distribution, 3.7
goodness of fit, 13.2
hypothesis testing, 12.1, 24.4
inner product (dot product), 19.1
Jacobian, 2.1
jointly Gaussian random variables, 21.1
least squares, 20.5
Lehmann-Scheffé theorem, 16.2
Liapounov condition, 25.2
likelihood ratio tests, 12.2
limiting distribution, Lecture 7, Problems 3,4
maximum likelihood estimate, 9.2
method of moments, 9.6

moment-generating functions, 3.1, 21.1
multivariate normal distribution, 21.1
negative binomial distribution, 16.5
Neyman-Pearson lemma, 12.6
nonnegative definite, 19.5
nonparametric statistics, Lectures 24, 25
normal approximation to the binomial, 8.4
normal distribution, 3.4
normal sampling, 4.2
order statistics, 6.1
orthogonal decomposition, 19.4
p-value, Lecture 12, Problem 3
percentiles, 24.1
point estimates, 9.1, 24.2
Poisson distribution, 3.4
Poisson process, 3.12
positive definite, 19.5
power function, 12.3
quadratic form, 19.5
quadratic loss function, 18.2
Rao-Blackwell theorem, 15.7
regression line, 22.2
sample mean, 4.1
sample variance, 4.1
sampling without replacement, 10.3
sign test, 24.4
significance level, 12.3
simulation, 8.5
sufficient statistics, 14.1
symmetric matrices, Lecture 19
T distribution, 4.2, 5.1
testing for independence, 13.4
transformation of random variables, Lecture 1
type 1 and type 2 errors, 12.1
unbiased estimate, 4.1, 17.3
uniformly minimum variance unbiased estimate (UMVUE), 16.2
weak law of large numbers, 7.2
Wilcoxon test, 25.1