Overview of Unit #3

1. Important Topics in Testing: Refs. B&D 4.4, 5, 7, 9 B&C: 8.2.1, 2, 9.2, 9.3.1

Background: Material from earlier unit.

Major Results:

   A) Definition of likelihood ratio tests
   B) Wilks Theorem: Use of Chi-square for thresholds
   C) Near equivalence of classes of tests and interval estimators
   D) Bayesian testing: Generalized Zero-One loss optimality

2. Asymptotics Refs: B&D 5.2, 5.3.3, 5.4.3, 5.5 B&C: 10.1.1, 10.1.2, 10.3.1

   Background: convergence in distribution

   Major Results:

   A) Wald's theorem on consistency of the MLE, and its technique of proof
   B) Cramer's proof of asymptotic normality of the MLE
   C) Wilks theorem redux: convergence of likelihood ratios to Chi-squares
   D) Bahadur's theorem on efficiency of the MLE
   E) Walker's Theorem on posterior normality (includes consistency)