MAIN TOPICS FOR EXAM 2

(1) Order statistics
   (a) pdfs and joint pdfs
   (b) distribution quantiles vs (sample) order statistics
   (c) unbiased estimation of $F(\xi_p)$
   (d) confidence intervals and tests for ξ_p (nonparametric)
(2) Chi-squared
   (a) statistics and proof ideas
(3) Maximum likelihood estimators
   (a) definition and idea of likelihood function
   (b) maximum likelihood estimator
   (c) regularity conditions
   (d) asymptotic maximum of likelihood function; existence of good mles
   (e) preservation under 1-1 transformations
(4) Rao-Cramér
   (a) Score functions, Fisher information, and necessary regularity
   (b) Rao-Cramér
   (c) efficient estimators; efficiency

Expect several True/False questions, followed by 2 other questions (possibly with multiple parts).

You may use your notes, the textbook (Hogg-McKean-Craig), the textbook from Math 493 (Grinstead-Snell), and Wikipedia, but not other textbooks or internet sources.

You may not discuss problems on the exam with anyone other than Russ.

Computational tools such as calculators or R are permitted.