Stats for Clinical Trials, Math 150
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Homework # 10
Due: Tues 11/23/10

1. Chapter 9 of Kuiper text: # 24 & 25 (page 18)

2. Complete the problems in chapter 9 of the Kuiper text for the age of first drink example (Problems 43, 44, 45, page 26). [Age=age at first drink; censor=1 means time is complete; Gender 1=male, 2=female.] With the following additions:

   - Describe the event of interest, the time-to-event random variable T, the beginning of time, and a meaningful scale for measuring time.
   - Note that to do the logrank and the Wilcoxon test, you'll have to change the survdiff parameter from rho=0 (the default) to rho=1.
   - What is the median age at which each group took their first drink?
   - Re-plot the K-M curve using the log-log option to create a CI for the survival of the women in your study. By looking at your original K-M plot, does it look like the curve for the men is contained in the CI?

3. You are given a small data set on survival times in two groups:
   group 1: 1, 1+, 2, 2+
   group 2: 2, 3, 3+, 4
   where + indicates a censored observation.

   (a) By hand, calculate and plot the Kaplan-Meier survival curves for each of these groups (plot on the same graph).

   (b) By hand, conduct the log-rank test to compare the difference in survival distribution. Which group has better survival? Is it significant?