

**Homework 5**

Due 3/19/2009

Work the following problems in Christensen:

1. Exercises 4.1, 4.2, 4.3, 4.6, 4.3.2, 6.1, 6.8.3, 6.8.9
2. Refer to the Meadowfoam data from class.
  - (a) Show that model that allows a different mean for every combination of Time and Intensity is equivalent to the Two-way AOV with interaction model of Sec 7.2.
  - (b) Fit the two-way AOV model (with interactions) in R and obtain an ANOVA table. Do there appear to be significant interactions between Tims and Intensity?
  - (c) Show that the mean vector for the regression model discussed in class with Intensity now as a numeric variable and allowing for different intercepts and slopes for the two Time periods is contained in the space spanned by the columns of the design matrix for the 2-way ANOVA model with interaction (see Page 163).
  - (d) Carry out the Extra-Sum of Squares F-test for Lack of Fit of the regression model above. What do you conclude?