

## Assignment #3

(Due: Monday, February 25, 2008)

**Reading:** Oehlert, Chapters 8, 9, and 10.1-10.3

### Written Assignment:

1. P8.6

**Additionally:** b) The factor levels for height, interval and fertilizer are real numbers – values in  $\mathbf{R}^1$ . Are the effects of these factors linear? Note that for a factor with 4 levels, any combination of marginal means could be fitted perfectly by a cubic polynomial. What order polynomials would be sufficient to describe the effects of height, interval and fertilizer (and their significant interactions, if any)?

**Remark:** Use Tukey's 1 df test to test for 3-way interaction effects. Irrespective of the outcome, pool the 3-way interactions into the error (after all, this is only a homework problem).

2. P9.5

**Additionally:** b) Would you recommend the use of a power transformation? If yes, why? If no, why not?

3. E10.1

4. E10.3

5. P10.5

**Remark:** Use the  $Y^{-1}$  transformation. (Justify.)

6. P10.6