Experimental Statistics for Biological Sciences I

Homework #8 – due Tuesday, 15 November 2016

*** turn in only starred * exercises *** (three this time)

Text: 8.6, 8.7, 8.37, 8.39*, 9.19, 9.22

(checking editions, 8.6, 8.37, 8.39, 9.22 (7th) are the same as (6th); 8.7 and 9.19 are not in the 6th edition)

*0)(extend 8.39) Construct simultaneous confidence intervals for two differences (A-C and B-C) differences among the diets using Bonferroni and an experimentwise level \( \alpha=.05 \).

*1) (extension of previous homeworks) Below are the weight gains (g) of female rats under high protein, low protein, and control diets

High: 134, 146, 104, 119, 124, 161, 107, 83, 113, 129, 97, 123

Low: 70, 118, 101, 85, 107, 132, 94

Control: 105, 118, 108, 103

a) Assuming that the variances in the three groups are the SAME, test whether the mean weight gain was the same for all three diets against the alternative that the mean weight gain differs among the groups. Use level \( \alpha=0.05 \).

b) Construct simultaneous confidence intervals for the three (H-C, C-L, L-H) differences among the diets using Bonferroni and an experimentwise level \( \alpha=.05 \).