

ST 512 HW 3

Typed Problems: Due Tuesday/Wednesday, February 9th/10th in your lab session at the beginning of class.

SAS Code Problem: Due Tuesday, February 9th by 5:00 PM.

14.8 Only do parts (a) and (b)

- (a) (3 pts) “Identify the design” means you should identify the number of factors, levels for each factor, and whether or not it is a factorial design or not. E.g. This is a 3x5x2 factorial experiment.
- (b) (9 pts) Identify all parameters as well as the values of the subscripts and their meaning, if necessary. (E.g. 1 = Low)

14.11 (a) (3 pts) “Identify the design” means you should identify the number of factors, levels for each factor, and whether or not it is a factorial design or not. E.g. This is a 3x5x2 factorial experiment.

- (b) (12 pts) Identify all parameters as well as the values of the subscripts and their meaning, if necessary. (E.g. 1 = Low)
- (c) (10 pts) Do this part by hand or in SAS, however you prefer. Regardless of your choice these plots should be included in the assignment when you turn it in.
- (d) (3 pts) Use your best judgement to answer this question and justify your answer. The goal here is to produce a reasonable justification for your answer based on the graphs.

14.12 (a) (18 pts) You’ve already stated the model, but include the remaining parts of the inference process: Null/Alternative Hypotheses; list and check assumptions; test statistic(s); p-value(s); decision; conclusion in context

- (b) (2 pts) Again, use your best judgement given your answers above.
- (c) (5 pts) **Also answer the following:** In light of your conclusion to part a, give an example of an effect (simple or main) that you would investigate further (state levels being compared and/or held constant for each factor).

The following problem is to be uploaded in a single file to Moodle under the HW 3 file upload link. You do not need to do anything by hand for this question, just answer the questions by referencing the output you’ve created.

- 14.9 (a) (6 pts) You can use the default plot produced by GLM or use a plot you create yourself.
- (b) (14 pts) Inspect the interaction/main effect p-values as appropriate. Investigate the appropriate contrasts (either simple or main) using an appropriate MCP. Report 95% CIs for any significant main or simple effects in your comments section.