Unit 4 Pre-Live

## Question 1

(Optional) This would be a good time to just practice a full-blown analysis of a two-way ANOVA model before midterm/project time. Research the data a little, come up with some key questions, and try it out.

## Question 2

*Compare the type-3 sums of square ANOVA table (from the GLM model) with that from the type3 table for fixed effects using the other model (repeated measures using PROC MIXED). What if anything has changed in terms of testing and the actual F-values and p-values?*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | GLM | | Mixed | |
|  | F Value | Pr > F | F Value | Pr > F |
| Treatment | 9.03 | 0.0035 | 8.08 | 0.0118 |
| Week | 0.34 | 0.8478 | 0.98 | 0.4227 |
| Treatment \* Week | 5.68 | 0.0004 | 5.85 | 0.0004 |

**F- and P-values have changed for two of the**

**predictors of interest:**

1. **Treatment is now non-significant at the alpha = .05 level in the mixed model.**
2. **Although still statistically non-significant, week exerts a greater influence.**
3. **The interaction of the two effects remains almost identical.**

## Question 3

*Based on what you know about two-way ANOVA, is there an interaction? Also, to get at one of the researcher’s questions, figure out the contrast that would test for the* *difference in mean percentage between Treated and Control groups specifically for Week2.*

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

**Yes, it does appear that there is an interaction between treatment and week.**

## Question 4

*Can you also write a contrast to test for Week 12 vs Week2 for the Treated group? Include the contrast in both of the procs and compare the result. Are they the same, if not what is different?*

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

## Question 5

*I have added an additional contrast already in the code. Can you tell me what it is testing for? Hint: It is related to the key question discussed about this data set from the videos and the text.*

**The additional contrast is “memory.”**

I have also attached a very handy paper that discusses longitudinal repeated measures analysis and shows the differences between using GLM compared to MIXED (which I like more and is easier and more flexible). I’ll give you my reasons during live session.