Name Jerry

Student Number _____

STA 441s 2016 Quiz 10

1. (2 Points) In the distraction study, you tested for the interaction between Loudness and Distraction Type.

   (a) What is the value of the test statistic? The answer is a number from your printout.

   $F = 57.5$

   (b) Is the difference statistically significant at the $\alpha = 0.05$ significance level? Answer Yes or No.

   Yes

   (c) State your conclusion in plain, non-statistical language.

   Speech is more destracting than music on average

2. (2 Points) In the CO_2 study, you tested for difference in mean carbon dioxide uptake between plants that were chilled and plants that were not, averaging over Type of plant (Quebec versus Mississippi) and ambient CO_2 concentration.

   (a) What is the value of the test statistic? The answer is a number from your printout.

   $F = 27.95$

   (b) Is the difference statistically significant at the $\alpha = 0.05$ significance level? Answer Yes or No.

   Yes

   (c) State your conclusion in plain, non-statistical language.

   On average, plants that are chilled absorb less carbon dioxide

3. (1 point) For the Berkeley graduate admissions data, you tested for whether the relationship between sex and admission depends on department. Give the value of the chi-squared test statistic. The answer is a number from your printout.

$\chi^2 = 17.9$

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4. (3 Points) For the Cartoon data, you tested for difference in mean recall score between cartoon and realistic testing materials, correcting for IQ score and averaging over both time and colour of training materials.

   (a) What is the value of the test statistic? The answer is a number from your printout.

   $F = 11.67$

   (b) Is the difference statistically significant at the $\alpha = 0.05$ significance level? Answer Yes or No.

   Yes

   (c) State your conclusion in plain, non-statistical language. You have a lot more room than you need.

   On average, recall scores are higher when testing uses cartoon materials.

5. (2 Points) For the Raptors data, you fit a first-order autoregressive model with `proc mixed`. For the "Null model Likelihood Ratio test," give the null hypothesis in terms of symbols from one of the matrices above.

   $H_0: \rho = 0$

Do not attach any printouts this time.