Regression
### HW #4 and #5

Directions: *Please complete all of the sections. You get half of your points for finishing/turning it in on time and the other half for correctness. For the Jamovi section, please print the output from Jamovi and staple the two documents together. Have fun!*

Section I: Correlation and Regression

1. Which of the following are correlations designed to accomplish?
    a. Quantify the distance that a score is above or below the mean score
    b. Quantify the degree or strength of the association between two variables
    c. Quantify the line of best fit to the data
    d. Quantify the difference in means across groups
2. What is NOT an assumption of Pearson correlation?
    a. Interval/ratio variables
    b. Independence of data
    c. No omitted influences
    d. Multivariate normality
    e. Homoscedasticity
3. If both variables being analyzed are measured on an interval or ratio scale, a _____ correlation should be used.
    a. Pearson's
    b. Spearman's
    c. Jonathan's
    d. Rachel's
4. Is the following graph showing homoscedasticity or heteroscedasticity? (feel free to circle two correct answers...)
    a. Homoscedasticity
    b. Heteroscedasticity
    c. Honestly, it is just a bunch of dots.
    d. I circled the right answer but wanted to also thank Tyson for his hard work on this homework.
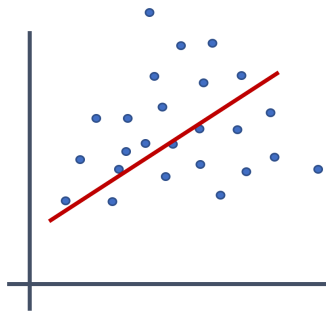
5. What are the two parameters you obtain from a simple regression?
    a. Intercept; range
    b. Intercept; slope
    c. Observed; slope
    d. Observed; range
6. What is the interpretation of the slope of a multiple regression when the predictor is continuous?
    a. A [slope] unit change in the predictor is associated with one-unit change in the outcome
   b. A one-unit change in the predictor is associated with a [slope] change in the outcome

      c. A [slope] unit change in the predictor is associated with one-unit change in the outcome, controlling for the other covariates.

      d. A one-unit change in the predictor is associated with a [slope] change in the outcome, controlling for the other covariates.

7. What is NOT an assumption of regression?
   a. Interval/ratio outcome
   b. Linear relationships
   c. No omitted influences
   d. Homoscedasticity
   e. These all are assumptions of regression

8. What does this output tell us (what analysis is it, what are the statistics of interest, is it significant)?

		Pretest	Posttest
Pretest	Pearson's r	—	0.529
	p-value	—	0.016
Posttest	Pearson's r		—
	p-value		—

9. What does this output tell us (what analysis is it, what are the statistics of interest, is it significant)?

Dependent: Posttest

Predictor	Estimate	SE	t	p
Intercept	6.95	0.263	26.43	<.001
Group:				
2 – 1	-1.90	0.526	-3.61	0.002
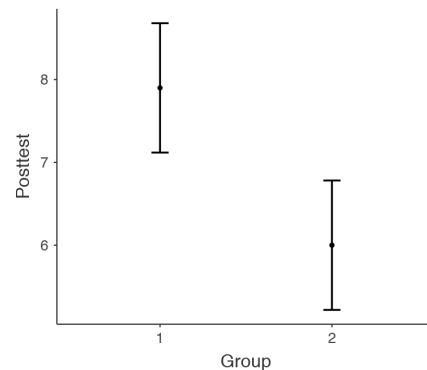
Section II: Jamovi

Using your data (either that you collected, have access to, or the OfficeParks data set), run a multiple regression that you think is interesting (can be anything but you need at least 2 predictor variables in the model).

1. Import and get your data ready for the regression analysis.
2. After checking the assumptions, define the critical region for this test.
3. Compute the test statistic, the effect size, and confidence intervals.
4. Check assumptions of the regression model.
5. Interpret the results in the context of the study.
6. Paste or print out the Jamovi output from this study and write the interpretation of the results below.