

Lab 8 – ANOVA, Correlation & Regression

Sakai Question/Answer key

1. According to a Shapiro-Wil test, maternal adaptation score is normally distributed in each of the populations. **True**
2. The maternal role adaptation data support the researcher's hypothesis that mothers of low birth weight infants will adapt to their maternal role better with experimental intervention than without intervention (control). **True**
3. Which of the following is true about the effect of light treatment on circadian rhythm? **B. The group that had light applied to their eyes is significantly different from both the group that had light applied to their knees and the control group.**
4. A 3-hour exposure of the eyes to light during sleeping delayed melatonin production two days later. **True**
5. The memory recall data meet the assumptions of a one-way ANOVA test. **True**
6. Which of the following groups had a mean recall of less than 10 words? **A. Counting, B. Rhyming**
7. Which of the following statements about memory recall is true? **C. The rhyming and counting methods are significantly less effective than the adjective, intentional, and imagery methods.**
8. The P-value for the difference between the rhyming method and the intentional method is **0.001**.
9. Which of the following statements about cuckoo egg size is true? **D. Eggs laid in the nests of Wrens are significantly smaller than the other species.**
10. Which of the following statements about the incidence of malaria in different regions of Ethiopia is true? **C. There is a significant difference in malaria incidence between regions with low maize production and regions with high maize production only.**
11. According to the Kruskal-Wallis test, the distribution of nematode lifespan is significantly different between the water treatment (control) and which of the following groups? **B. Adult treatment, C. Treatment at both the larval and adult stages.**
12. A) The overall correlation coefficient for height and weight is **0.785**.
B) The correlation coefficient for height and weight in males is **0.604**.
C) The correlation coefficient for height and weight in females is **0.494**.
D) The R-Square statistic from the scatterplot is **0.616**.
13. The correlation coefficient between chocolate consumption and Nobel prizes is **0.900**.
14. Which of the following is true about the correlations in the appendix D file? Check all that apply. **A. All of the correlations in the table are statistically significant., B. The strongest positive correlation is between SPA in 9th grade and GPA in 9th grade English class., E. IQ score and GPA are positively correlated.**
15. A) The slope of the regression line between proportion black on a lion's nose and the lion's age is **10.65**.

B) According to the linear regression, a lion with a nose containing 0.13 proportion black would be predicted to be 2.26 years old.

16. A normality test on the residuals from the lion data suggests that the distribution of the residuals is: A. Normal
17. The R Square value for the linear relationship between log body mass and log brain mass is 0.920. According to the P-value, the slope of the regression line is significantly different from zero.
18. In case 11 in the telomere file, the father has a telomere length of 0.506 and the offspring has a telomere length of 0.657. According to the linear regression equation, offspring of a father with a telomere length of 0.506 would be predicted to have a telomere length of 0.688.
19. The slope of a linear regression line predicting offspring telomere length from father telomere length is significantly different from zero. True
20. The linear regression equation predicting mental health symptoms from stress levels is:
A. Mental health symptoms = $0.688 \times \text{stress} + 74.365$