Assignment 8

1. A new chemical fertilizer which is active on a wide range of crops, is proposed to be tested in a randomized block design experiment with 4 blocks. If the block effect is significant, what would be the appropriate treatment of the block effect in the analysis of variance?

2. A study was conducted on the effectiveness of two different teaching methods in improving students' performance in mathematics. The data was analyzed using a two-way ANOVA with treatment and gender as the factors. What are the possible outcomes of this analysis?

3. In a survey of 1000 adults, the proportion of people who prefer tea over coffee was recorded. The data was found to be normally distributed. What statistical test should be used to determine if there is a significant difference in the preference for tea and coffee among different age groups?

4. A researcher is interested in studying the relationship between the amount of study time and the exam scores of students. If the exam scores were found to be normally distributed, what type of regression model should be used to analyze the data?

5. A company is evaluating the effectiveness of a new marketing campaign. The campaign was implemented in 5 different regions of the country, and the sales data was collected before and after the campaign. What statistical test should be used to determine if the campaign had a significant impact on sales?

6. A study was conducted to determine the effect of a new drug on blood pressure. The data was collected from 100 patients, with 50 patients receiving the drug and 50 patients receiving a placebo. What is the appropriate statistical test to be used in this case?

7. In a clinical trial, the effectiveness of a new medication was compared to the standard treatment. The data was found to be normally distributed, with equal variances. What is the appropriate statistical test to be used in this case?

8. A company is interested in determining if there is a significant difference in the satisfaction levels of customers from different regions. The data was collected from 200 customers, with 50 customers from each region. What is the appropriate statistical test to be used in this case?