mod10_precheck

1. What does ANOVA stand for?

   - ☑ Analysis of Variance
   - ☐ Analysis of Verification
   - ☐ Analysis of Variability
   - ☐ Analysis of Variation

2. What is the primary test statistic used in ANOVA?

   - ☑ F-statistic
   - ☐ T-statistic
   - ☐ Chi-square statistic
   - ☐ z-score

3. Which condition ensures that data points do not influence each other?

   - ☐ Variability
   - ☐ Normality
   - ☐ Randomness
   - ☑ Independence

4. Mean Square Error (MSE) in ANOVA measures:

   - ☐ Variance between groups
   - ☐ Total variance in the data
   - ☑ Variance within groups
   - ☐ The mean difference between groups

5. Degrees of freedom in ANOVA are related to:

   - ☐ The number of groups compared
   - ☑ Both the number of groups and the sample size
   - ☐ The sample size in each group
   - ☐ The total number of observations

6. A higher degrees of freedom in ANOVA typically leads to:

   - ☑ A less skewed F-distribution
   - ☐ No change in the F-distribution
   - ☐ A more skewed F-distribution
   - ☐ A narrower F-distribution

7. After a significant ANOVA, multiple comparisons are used to:

   - ☐ Calculate a new F-statistic
   - ☐ Confirm the significance of the ANOVA test
   - ☐ Increase the overall significance level
   - ☑ Identify which specific groups differ in means

mod10_review

1. What is a key difference between ANOVA and pairwise comparisons?

   - ☑ ANOVA can compare more than two group means simultaneously
   - ☐ It specifies the number of categories in the data
   - ☐ Pairwise comparisons use the F-statistic
   - ☐ ANOVA compares only two means at a time

2. What does the null hypothesis in ANOVA state?

   - ☑ All group means are equal
   - ☐ All group means are different
   - ☐ No group means are equal
   - ☐ At least one group mean is different

3. What does the normality condition imply in ANOVA?

   - ☐ The overall data set should be normal
   - ☐ The means of all groups should be normal
   - ☑ Data within each group should be nearly normal
   - ☐ All groups have the same number of observations

4. The F-statistic in ANOVA is calculated based on:

   - ☐ The sum of squared differences within each group
   - ☑ The ratio of between-group variance to within-group variance
   - ☐ The ratio of within-group variance to between-group variance
   - ☐ The difference between the largest and smallest group means

5. The Bonferroni correction in ANOVA is used to:

   - ☐ Recalculate the F-statistic
   - ☐ Adjust the degrees of freedom
   - ☑ Decrease the risk of Type I errors
   - ☐ Increase the power of the test

6. Failing to reject the null hypothesis in ANOVA indicates:

   - ☑ No significant difference between the group means
   - ☐ At least one group mean is different from the others
   - ☐ The test was inconclusive
   - ☐ There is a significant difference between group means