

1. Consider a one-way ANOVA with a J level factor. How many pairwise comparisons are possible (i.e., hypotheses of the form $H_0 : \mu_i = \mu_j$ for $i \neq j$)?

$J!$

$\binom{J}{2} = \frac{J!}{(J-2)!2!}$

J^2

2^J

2. Pairwise comparisons can still be conducted when the one-way ANOVA model assumptions are violated.

True

False

3. The test statistic for the Tukey Method:

$$q_{j,k} = \frac{\bar{Y}_j - \bar{Y}_k}{\sqrt{\hat{\sigma}^2 / r}},$$

Is always positive.

True

False

4. Tukey's method always compares the mean of each group to the mean of every other group (i.e., makes all pairwise comparisons).

True

False

5. The Bonferroni method always compares the mean of each group to the mean of every other group (i.e., makes all pairwise comparisons).

True

False

6. Consider performing $m > 1$ post hoc comparisons. Using Bonferroni's method, the type I error rate for each individual test will always be larger than the familywise type I error rate.

True

False