## ANOVA Comparisons

An experimenter is testing the effects of drugs on chicks. Some chicks are given depressants, while others are given stimulants. Chicks are very social; they do not like to be alone – so this study examines which drugs help calm chicks anxiety to being alone. In the control condition, they are injected with saline, and then put by themselves. The dependent variable is the number of distress vocalizations (peeps) they make while alone.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control | Depressant low dose | Depressant high dose | Stimulant low dose | Stimulant high dose |
| 10  13  17  20 | 8  16  12  19 | 12  10  7  3 | 18  11  15  22 | 21  17  26  28 |

Show if there is a significant difference in means using a one-way AVOVA. Report the F value in APA style.

Complete independent t-tests to analyze the following post hoc comparisons:

|  |  |  |  |
| --- | --- | --- | --- |
| Comparison | T-value | Sig-value | Reject? |
| Control versus combined experimental groups |  |  |  |
| Depressant versus Stimulant |  |  |  |
| Low versus High Depressant |  |  |  |
| Low versus High Stimulant |  |  |  |

Are these comparisons mutually orthogonal?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Control | Low Depressant | High Depressant | Low Stimulant | High Stimulant |
| Control versus combined experimental groups |  |  |  |  |  |
| Depressant versus Stimulant |  |  |  |  |  |
| Low versus High Depressant |  |  |  |  |  |
| Low versus High Stimulant |  |  |  |  |  |
| Total |  |  |  |  |  |