# Single Factor ANOVAs

An experimenter tested if the color of advertisement backgrounds had an effect on memory for the product being advertised. They have sent you the following data (each box is a different person):

|  |  |  |  |
| --- | --- | --- | --- |
| Green | Red | Blue | Purple |
| 3 | 8 | 23 | 3 |
| 3 | 13 | 19 | 7 |
| 4 | 5 | 23 | 9 |
| 5 | 11 | 20 | 10 |
| 6 | 17 | 18 | 11 |
| 7 | 5 | 17 | 8 |

Paste the histograms for each group.

Data screening: Obviously there is no missing data for this data set. Are there any problems with the following assumptions?

1. Outliers
2. Normality
   1. Skew/Kurtosis
3. Linearity
4. Homogeneity

Calculate SS with the deviational and computational tables (see Quiz 6) and paste below:

Calculate the ANOVA table using those values A, Y, T and enter below. Make sure you know how to do this…there will be question on the test where you have to fill in the ANOVA table when given only part of the table (Quiz 7)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | Term | SS | Df | MS | F |
| Treatment (A) |  |  |  |  |  |
| Error (S/A) |  |  |  |  |  |
| Total (T) |  |  |  |  |  |

What is the critical F-value for this test at alpha = .05?

Run this ANOVA in SPSS. Paste the ANOVA box below (make sure your numbers match).

Paste the mean values for each group, and make sure the confidence interval for those means is included.

Follow up and answer the following comparison hypotheses (Quiz 8):

1. Red is different from all other colors.
2. Blue is different from purple.
3. Green is different than red.

Paste the t-test boxes here:

Make a table showing an orthogonal set of contrasts for this data.

IN A SEPARATE WORD DOCUMENT:

Write up a results style section for this experiment.

1. Include a brief description of the experiment and variables.
2. Include a brief section on the data screening/assumptions.
3. Include the overall omnibus test results.
4. Include the t-test results for the post hoc follow up tests.
5. Include a figure of all the means (be sure to make sure you go back and check what is required for the figure).

Please make these separate files – Nikki will check this document; Erin will check the write up for feedback. You want to make it easy on us! ☺