P1. Stroop Effect Project

1) What is our independent variable? What is our dependent variable?

Our independent variable is the congruent and incongruent words condition.

Our dependent variable is the time it takes to name the ink colors.\

2) What is an appropriate set of hypotheses for this task? What kind of statistical test do you expect to perform? Justify your choices.

The appropriate set of hypotheses would be the null hypotheses as there will not be a huge different between the sample and the population.

I would perform the controlled statistical test for this kind of data and result.

3) Report some descriptive statistics regarding this dataset. Include at least one measure of central tendency and at least one measure of variability.

By looking at the numbers, we can clearly say that the results of incongruent numbers are higher than the result of congruent. The following table should proof and justify the answer:

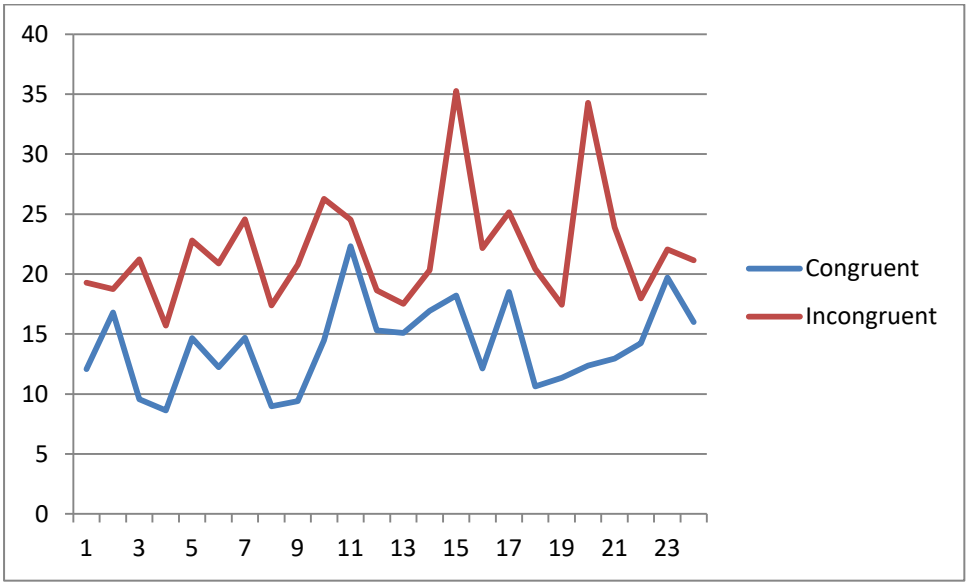
Result / Measurements	Congruent	Incongruent
Mode	22.328	35.255
Mean	14.05113	22.01592
Median	15.185	14.356
Standard Deviation	3.484416	4.696059

IQR = Q3 – Q1

IQR(congruent)= 12.079 – 16.004 = -3.925

IQR(incongruent)= 18.741 – 23.894 = -5.153

4) Provide one or two visualizations that show the distribution of the sample data. Write one or two sentences noting what you observe about the plot or plots.



This line graph shows the number of Congruent and Incongruent stroop effect of each participant. The blue line refers to the congruent result and the red line refers to the incongruent result.

From the graph, we can observe the trend of incongruent result over the congruent line. This means that the number of Incongruent answers higher than the number of congruent answers.

5) Now, perform the statistical test and report your results. What is your confidence level and your critical statistic value? Do you reject the null hypothesis or fail to reject it? Come to a conclusion in terms of the experiment task. Did the results match up with your expectations?

Confidence level is 0.9.
Critical value is 1.81.
Reject the null hypotheses.
In conclusion, most of the results matched my expectations.