1. ***What is our independent variable? What is our dependent variable?***

Independent variable is words conditions of the stroop test carrying the values congruent words and incongurent words

Dependent variable is the time in sec it takes to complete the tasks

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

Hypothesis:

Null Hypothesis : There is no significant difference between the avg time taken under same circumstances to read congruent words and incongruent words.
Ho = μcongruent – μincongruent = 0

Alternative hypothesis : There is a significant difference between the avg time taken under the same circumstances to read congruent and incongruent words.
HA = μcongruent – μincongruent != 0

Statistical test:

T-tests are appropriate for this data set. T-tests are used to compare the two groups and see if there is a significant difference between their means.

Since the sample data has two different groups on the same variable of interest, T test would be appropriate.

We will determine the t value and check the correspondingly p vaule with the critical value to test our hypothesis.

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

Central Tendency

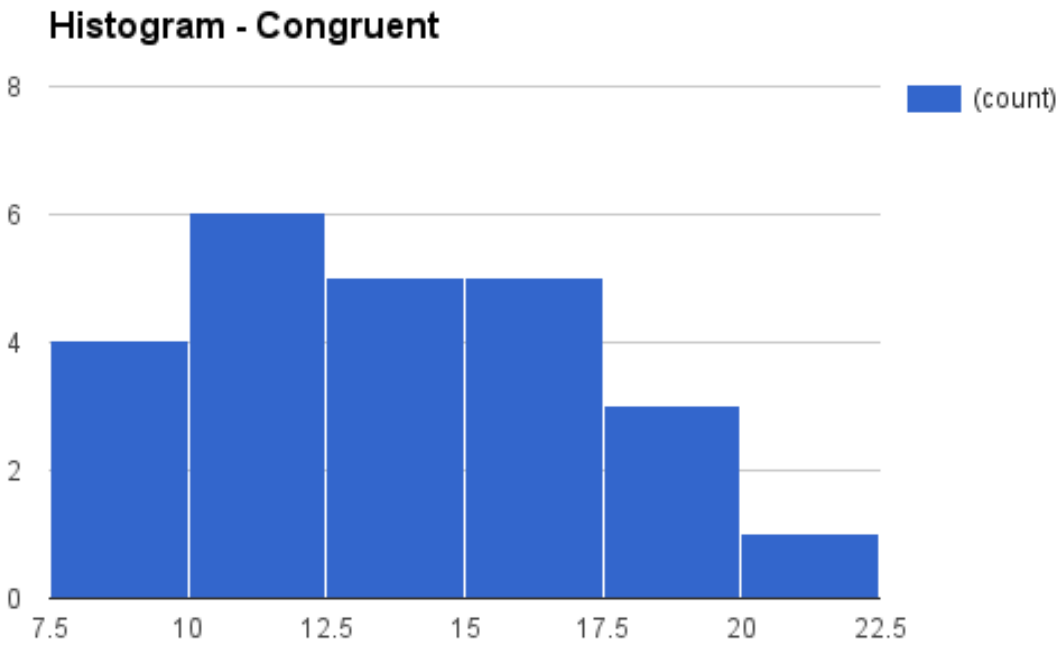
	Congruent	InCongruent
Median:	14.357	21.018
Mean:	14.051	22.016

Variability

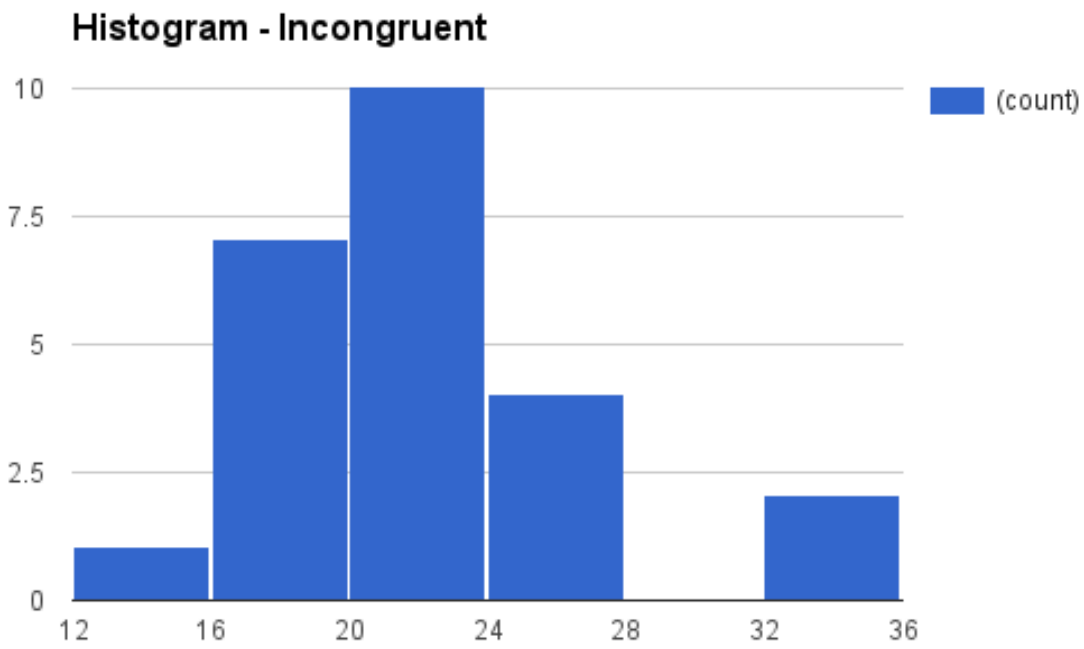
Variance:	12.669	23.012
Std deviation:	3.559	4.797

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.***

Positively skewed distribution



Normally distributed.



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?***

95% confidence interval of this difference: From -10.41912 to -5.51046
alpha = 0.05
df = 46
SED = 1.219
Calculated t value is t = 6.5323
From t table, t cricitcal value for alpha = 0.05 for a two tailed test with df = 46 is -0.021,+2.021

Based on the following results, since t calculated falls well outside the t critical range, the result is statistically significant.
Hence we reject the null hypothesis.