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

Independent variable: ink colors

Dependent variable: time it takes to name the ink colors

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

H0:

H1:

I’m expecting to perform a t-test. Because here we don’t know the parameters from population but two samples.

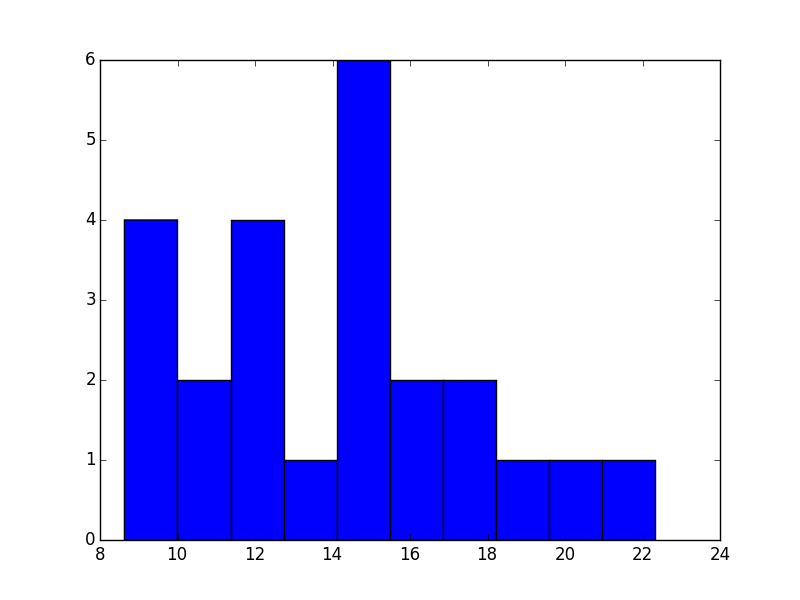
1. Descriptive statistics:

Congruent:

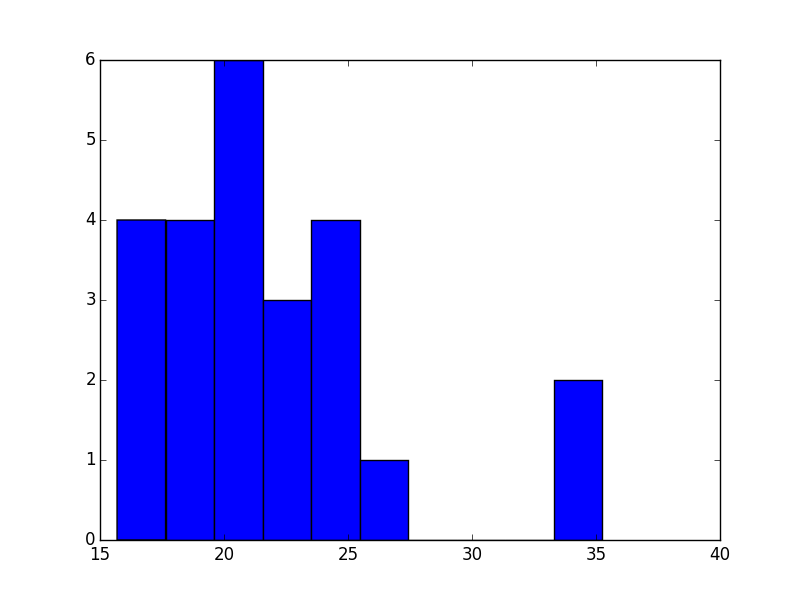
* Mean: 14.05
* Median: 14.357
* Mode: N/A
* Std: 3.56

Incongruent:

* Mean: 22.016
* Median: 21.018
* Mode: N/A
* Std: 4.797



This is the histogram of the distribution of the time to name the color from the congruent set. The data from this set is more wide-spread and symmetrical compared to another.



This is the histogram of the distribution of the time to name the color from the incongruent set. This set of data is right skewed, leaving an outlier at around 33-35 interval. And the data is more consistent or narrowed compared to another without considering the outlier.

1. T-test:

SSc= 291.388

SSinc = 529.270

SP2 = 17.840

SE = 1.219

Tc-inc = -6.532

Meanc – Meaninc = -7.965

When , df = 46, tcritical = -2.403

99% confidence interval:

Conclusion: since the t statistic is less than the t-critical, it is significant that the time spent on congruent set is less then the time spent on incongruent set. We reject H0.