**ENS 495**

**Week 5 Prelab**

**Introduction to hypothesis testing w/ t-tests in R**

1)Using the internet, determine which command is used for **t-tests** in R: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2)The code **boxplot(response.variable ~ categories, data = my.data)** would make a boxplot from the data in the dataframe “my.data.”

How do you think you’d do a **t-tes**t on these data using the command you found on the internet (question 1)? Assume that are 2 categories and that the **response.variable** is numeric.

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3)The following is **t-test output** from R.

3a)Circle the **t-statistic** and the **p-value**.

3b)What conclusion about the null hypothesis would you make based on this p-value?

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data: harem.size by age.class

t = 1.4802, df = 8.6407, p-value = 0.1743

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-0.3984944 1.8798045

sample estimates:

mean in group age.10 mean in group age.13

5.641549 4.900894

4)The R readout tells you what the alternative hypothesis is (**Ha**). State the **null hypothesis (Ho)**.

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5)How does this null hypothesis (Ho) relate to the **95 percent confidence intervals** that R gives you? What is the relationship between the null hypothesis and the numbers the confidence intervals span?

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