PROBLEM SET ONE

Antonio Pacifico

Federica Romei

<u>Deadline</u> : 15/03/2012

Use the dataset *bwght.dta*. You can download the dataset from Prof. Ragusa Luiss page on Didactic Material.

1. Test the null hypothesis that birth weight in ounces is equal if the babies are white and non white against the alternative hypothesis that white babies weight more using a significance level of 5% and 10%. Comment.

2. Compute the mean of the birth weight in pounds if the mother has less than 12 years of education and test the hypothesis

$$H0 : birth\ weight=7$$
$$H1 : birth\ weight>7$$

at 5% and 10% significant level. Compute the p-value (you should be able to do it without table). Comment on your findings.

Use the dataset Affairs.dta. You can download the dataset from prof. Ragusa Luiss page on Didactic Material.
This dataset contains observations for the following variables:

AFFAIRS **: how often engaged in extramarital sexual intercourse during the past year.**
EDUCATION **: numeric variable coding level of education. To be more precise: 9 = grade school, 12 = high school graduate, 14 = some college, 16 = college graduate, 17 = some graduate work, 18 = master's degree, 20 = Ph. D. and other advanced degree.**
GENDER **: byte variable = 1 if female and = 2 if male.**

You will not use other variables hence you don't need the description.

3. Test at 5% and 10% significant level if male betrays on average as female against the alternative hypothesis that male betrays more. Comment.

4. Test at 5% and 10% if people with high level of education (above the mean) betrays as people with low level of education (below the mean) against the hypothesis that high education people betrays differently. Comment.

Use the dataset Cig.dta. You can download the dataset from prof. Ragusa Luiss page on Didactic Material.
This dataset contains observations for the 46 U.S. States on:

PRICE **: average price of cigarette packs per state**
PACKS **: cigarette consumption (in packs) per person of smoking age**

5.

    a. Regress *packs variable* on *price variable* and explain the coefficients. Does the regression provide a statistically significant evidence that *price* affects *packs*? Do you think there is a correlation? Can you see if there is correlation? Comment.

    b. Suppose you are working in an Health Department and you are interested in the consumption of cigarettes. Your boss want to know if the price have some effect in the reduction of smoked cigarettes. By previous point, do you advice to your boss to increase the price of packs? Comment.

    c. Make a plot of *packs* against *price*. Can you prove there is correlation? Comment.