Lab: 09/23/09 **SPSS Lab 6 Assumptions Tests**

Tonight we will illustrate how to

1. plot residuals/errors
2. test homogeneity for ANOVA analysis in SPSS using the same data set as last week, and
    a. Levene's test
    b. Brown-Forsythe test
3. do a monte carlo simulation for HW this week

1. Draw plots for residuals.

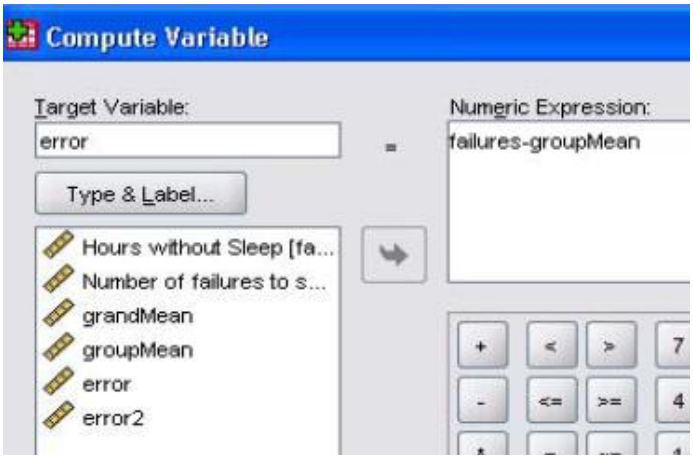
    What assumptions can you make about the data based on these visual representations?

2. Homogeneity test:
    a. Conduct Levene's test
        i. What is p-value?
        ii. What does it mean in terms of homogeneity?
3. Robust ANOVA (omnibus test of means when variance homogeneity does not hold):
    a. Do Brown-Forsythe test
        i. What is p-value?
        ii. What does it mean in terms of the ANOVA omnibus null hypothesis?
4. Monte Carlo simulation
    a. Number of simulated samples: 10
    b. Population values:

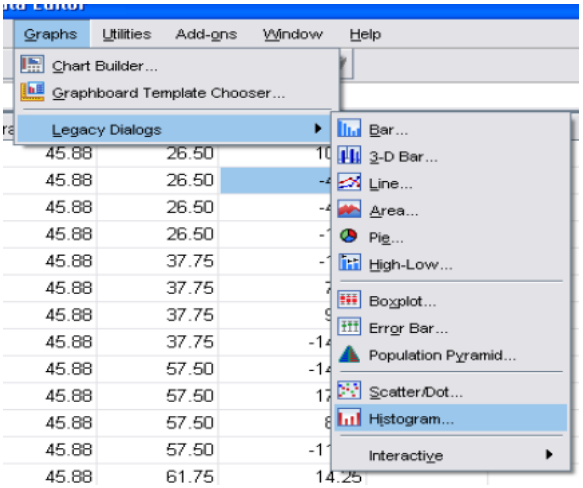
Group	Pop Mean	Pop SD	N
1	10	5	10
2	10	3	20
3	10	1	25

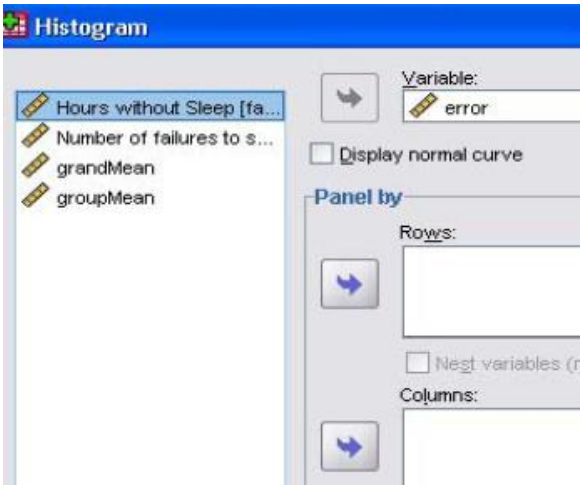
HELP

1. Plot
    a. Compute errors [transform-compute]: error=failures-groupmean

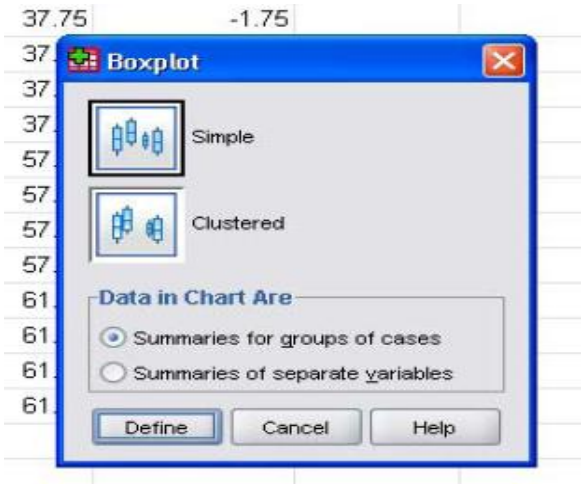


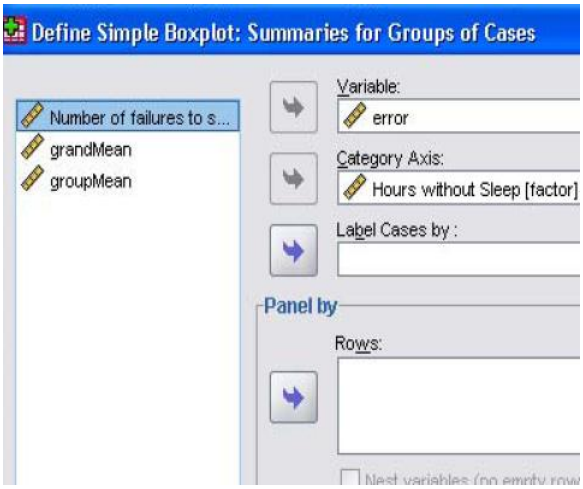
    b. [graphs-legacy builder-histogram] - variable=error



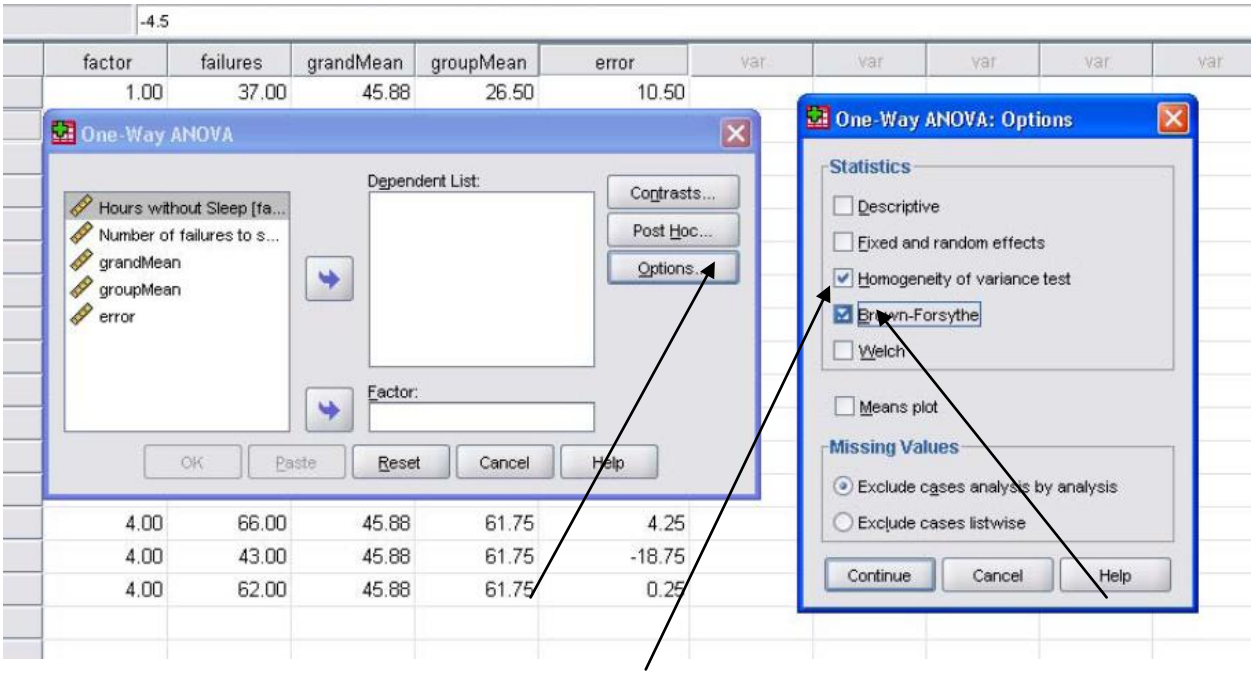


    c. [graphs-legacy builder-box plot]: variable=error; category axis=factor

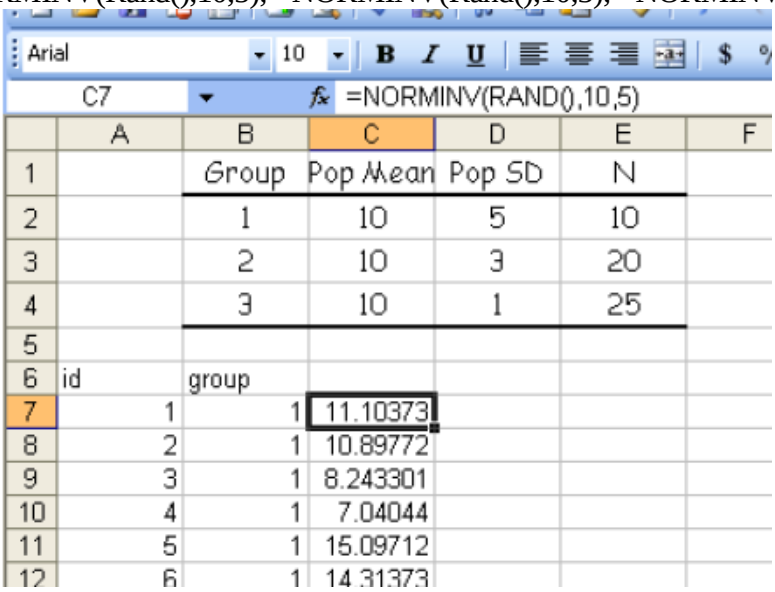




2. Using the one-way ANOVA test, include tests for Levene's and Brown-Forsythe specified in the options section. What do the results of these tests indicate?



3. Open excel to generate data sets
   a. Using NORMINV function, let's generate data set.
   b. =NORMINV(Rand(),10,5); =NORMINV(Rand(),10,3); =NORMINV(Rand(),10,1)



   c. With your data set you generate, do ANOVA with SPSS. What are your F and p-values? Also, let's compare them with others.