MATH 140 WORKSHEET VIII FALL 2011

1. Consider we have a researcher who is interested in studying the average weight of Pennsylvania cats as opposed to the general cat population. He sets $\alpha = .05$. He finds that the National Institute of Standards and Technology (NIST) reports the average weight of cats in the USA is 14 lbs. with a standard deviation of 4 ounces. Assume the sample is from a normal population, the observations are independent, and there was no error of measurement of the quantity.
The researcher hires an outside firm to create a programme to pseudo-random sample Pennsylvania households and the data is in the file:
140-cats.mpj

A. State the null and alternate hypothesis.
B. Compleat the study and determine if the null is rejected or not (include the graph for illustrative purposes).

2. Consider we have a researcher who is interested in studying the something. He sets $\alpha = .05$. The researcher hires an outside firm to create a programme to pseudo-random sample the population and get n = 10. Assume the sample is from a normal population, the observations are independent, and there was no error of measurement of the quantity. He wishes to determine if there is evidence to suggest the population mean is 23. . Consider the data set
140-question2.mpj

A. State the null and alternate hypothesis.
B. Compleat the study and determine if the null is rejected or not (include the graph for illustrative purposes).

Assume the sample is from a normal population, the observations are dependent (paired), and there was no error of

3. Consider we have a researcher who is interested in studying the average weight of Spanish cats. He sets $\alpha = .05$. He has no a priori information on the weight of Spanish cats. He thinks the average weight of the Spanish cats is is 14 lbs. Assume the sample is from a normal population, the observations are independent, and there was no error of measurement of the quantity.
The researcher hires an outside firm to create a programme to pseudo-random sample Spanish households and the data is in the file:
140-gatos.mpj

A. State the null and alternate hypothesis.
B. Compleat the study and determine if the null is rejected or not (include the graph for illustrative purposes).

4. A statistician is interested in the number of dates per week that women at KU report to have is somewhat similar to the number of dates on average of 'typical' female students at universities in the USA ($\mu = 4$)..
The statistician set $\alpha = .05$ prior to collection of the data. Random numbers were generated to get ID numbers for female students at KU, then the subjects were asked to the number of dates for the past week they had. Thus, the researcher collected for a 'random' sample of women (20 students) at KU in the spring of 2011. The raw data is presented in the table below.

Sample Number of Dates	5 6 3 4 3 4 4 8 3 2 7 0 6 1 5 1 3 3 5 6

Assume the sample is from a normal population, the observations are independent, and there was no error of measurement of the quantity.

A. State the null and alternate hypothesis.
B. Compleat the study and determine if the null is rejected or not (include the graph for illustrative purposes).