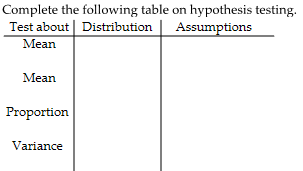
**MATH 135 Chapter 7-8 take home exam**

1. SHORT ANSWER: Write the word or phrase that best completes each statement or answers the question. Provide an appropriate response.
2. A radio show host asked people to call in and say whether they support new legislation to promote cleaner sources of energy. Based on this sample, she constructed a confidence interval to estimate the proportion of all listeners to her show who support the legislation. Is the confidence interval likely to give a good estimate of the proportion of her listeners who support the legislation?
3. When determining sample size we need to know p for the sample. If we have no prior information, what are two methods that can be used?
4. List three phrases which are associated with one-tailed claims.
5. Complete the following table on hypothesis testing.



1. What assumption about the parent population is needed to use the t distribution to compute the margin of error?
2. Based on a simple random sample of students from her school, Sally obtained a point estimate of the mean weight of students at her school. What additional information would be provided by a confidence interval estimate of the mean weight?
3. Chapters 7 & 8 Analysis: Use the Bears.xls data for the following analysis (an explanation of the fields used can be found on page 601 in your text). Answer all questions completely showing all appropriate intermediate statistics used in the analysis. You need to also include the summaries from StatCrunch or Excel. Make sure answers are complete and statistically accurate. Extra points are given also including summary statements that would be easy for the layperson to understand. Although you may use StatCrunch also include the t, Z, or *X2* that would be needed for the problem with the appropriate hand calculations for the test statistic (you may use Statcrunch for calculating any standard deviation or means). Use 95% CI and .05 alpha levels for consistency sake.
   1. It looks like there female bears are older than the male bears. Test the claim that the female bears are older than the males. Use the appropriate null and alternate hypothesis and statistical test. Include an appropriate graph to highlight your conclusion.
   2. Find the average (mean) head length of the female and male bears. Use confidence intervals around the means to help determine if the average weights are significantly different from one another? Include an appropriate graph to highlight your conclusion.
   3. Find the standard deviation for the weights for the female and male bears. Use confidence intervals or the appropriate hypothesis test to determine if the standard deviations are significantly different.
   4. Take a look at the data. For parts b and c what are we not accounting for that we probably should be accounting for and what effect might it have on the responses to

parts b and c?