Psy 216
Introdutory Statistics
Dr. Crutcher's Class

Midterm 2 Review Sheet (Chpts 7-10)

Know what a sample (or sampling) distribution is. Know how you can derive a sample distribution without actually having to obtain all possible sample means.

What is the mean of the sample distribution? What is this mean called? What is the 'standard deviation' of the sample distribution? What special name does it have and how do you compute it without taking all possible sample means?

What is the shape of the sampling distribution? What determines whether the sampling distribution is normal or not?

Given a population with a known mean and standard deviation, be able to determine the mean and standard error of the sampling distribution and be able to draw this distribution.

Know what things affect the size of the standard error of the sample distribution (e.g. what happens to the standard error as the sample size increases?)

What does the standard error measure? In every day terms, what is the standard error really?

You should be able to answer questions about probabilities of a range of sample means (e.g. If I have a population whose mean is 30 and whose standard deviation is 3 and I select a random sample of size n= 12 from this population, what is the probability that my sample mean will be greater than 28? What is the range of sample means I should get 80% of the time? Less than 10% of the time? etc.)

Know the 5 steps of hypothesis testing and what is required in each of the 5 steps.

Know how to carry out for these 5 steps of hypothesis testing for a **z** test or **t** test (single sample or independent measures). Be sure to label each step and to specify clearly what you are doing (e.g. Step 1 state the null and alternative hypotheses and be sure these are stated in terms of population parameters as well as verbally and in step 2 be sure to clearly specify the critical region and what values of **z** or **t** would constitute sufficient evidence to reject the null hypothesis).

Know the two types of errors (i.e. Type I and Type II; false alarms and misses) you can make in doing a hypothesis test and how they are related. Know what factors determine Type I error and Type II error. Know what power is and what factors influence power. Know what happens, for example, if we change the value of α from .05 to .01.

Know the difference between a one-tailed and a two-tailed test and know how to carry out either type of test using a **z** or a **t** statistic.

What are assumptions necessary to carry out a **z** test?

What are the assumptions necessary to carry out a single sample **t** test or an independent measures **t** test.?

Finally, you should know how to read and interpret SPSS data output that we've covered. For example, if given the results of a t-test you should be able to write a conclusion reporting the t-test results, including appropriate descriptive statistics (e.g. Means and Standard Deviations).