Problem Set 5 for Math 17

Date Due: March 11, 2011

January 21, 2011

Problems:

Chapter 19 - 6, 8, 14abc, 26, 32bcd, 40

Chapter 20 - 2, 4, 12 (write out a corrected test yourself), 16, 22

Chapter 21 - 2bd, 8, 14, 36 (use the given $\hat{p}$ and margin of error and assume 98 percent confidence)

Be sure to follow all steps when performing hypothesis tests and to check your assumptions for tests and CIs, unless it is specified that you don't need to or if the check was done as a previous part of the problem.

Additional Questions:

All additional questions are True/False. You do not need to explain your answer (but should be able to if asked).

1. The p-value is the probability the null hypothesis is true.

2. A p-value is a conditional probability.

3. Power can be increased by increasing the sample size, n.

4. A large p-value would mean you do not reject the null hypothesis.

5. A statistically significant result means the p-value was large.

6. A practically significant result is always statistically significant.

7. A p-value is always statistically significant if it is less than .05.

8. If your null hypothesis was p=.5 and alternative was that $p > .5$, and your sample proportion was .45, then your p-value would be greater than .5.

9. An increase in probability of Type I error results in a decrease in the probability of Type II error.

10. If a 2-sided test at $\alpha = .1$ rejected the null hypothesis, then a 90 percent CI for the parameter would contain the null value of interest.

Note: This assignment is LONG because it is 2 assignments combined so as to allow you time to complete Chapter 19 material after the first exam. Do NOT wait too long to start on this assignment.