AP Statistics Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mini-Test: Hypothesis Test

1.) Some people are concerned that new tougher standards and high-stakes tests adopted in many states may drive up the high school dropout rate. The National Center for Education Statistics reported that the high school dropout rate for the year 2000 was 10.9%. A random sample of 1782 high students found 210 that dropped out last year. In this evidence that the dropout rate may be increasing? Show all work.

Now find a 95% confidence interval based entirely on your sample (don’t worry about conditions, you should have shown them above). Explain how your interval coincides with your conclusion above.

2.) Determine if the below statements are TRUE or FALSE:

\_\_\_\_\_\_\_a.) Tests of significance (hypothesis tests) are designed to measure the strength of evidence against the null hypothesis.

\_\_\_\_\_\_\_b.) A well-planned test of significance should result in a statement either that the null hypothesis is true or that it is false.

\_\_\_\_\_\_\_c.) The alternative hypothesis is one-sided if there is interest in deviations from the null hypothesis in only one direction.

\_\_\_\_\_\_\_d.) The alternative hypothesis is stated in terms of the sample statistic (sample proportion).

\_\_\_\_\_\_\_e.) If a sample is large enough, the necessity for it to be a simple random sample is diminished.

\_\_\_\_\_\_\_f.) A large p-value indicates strong evidence against the null hypothesis.

\_\_\_\_\_\_\_g.) The p-value of a test is the probability of obtaining a result as extreme (or more extreme) as the one obtained, assuming the null hypothesis is true.

\_\_\_\_\_\_\_h.) If the p-value is 0.015, the probability that the null hypothesis is true is 0.015.

**Question 3 is Multiple Choice**

3.) In an effort to curb certain diseases, especially AIDS, San Francisco has a program whereby drug users can exchange used needles for fresh ones. As reported in the Journal of the American Medical Association, 35% of a sample of 5644 intravenous drug users in San Francisco admitted to sharing needles. Is this sufficient evidence to say that the rate of sharing needles has dropped from the pre-needle exchange rate of 66%?

1. P-value < 0.001, so this is strong evidence that the rate has dropped.
2. P-value = 0.0063, so this is strong evidence of a drop in rate.
3. P-value is between 0.01 and 0.05, so there is moderate evidence of a drop in rate.
4. P-value is between 0.05 and 0.10, so there is some evidence of a drop in rate.
5. P-value = 0.31, so there is no real evidence of a drop in rate.

4.) A significance test resulted in a p-value of 0.014. Read the following interpretation of the p-value and identify what is wrong with statement.

“The p-value of 0.014 means that there is a 1.4% chance of seeing the observed statistic or more extreme occur.”