Name: **Statistics**

Date: **Practice Quiz 7-E**

1. Logan compares phone average screen time for middle school students versus high school students. The average daily times over a week (in minutes) for the middle school students were 105, 119, 201, 222, 139, 144, and 155. For high school students, the times were 149, 139, 199, 206, 165, 220, 184, and 168.

a) Calculate $\bar{x}$ and s for each sample.
You can do one-variable statistics on L1 and then on L2.

b) If he does end up rejecting the null hypothesis, what will he claim?
Which sample mean is higher?

c) Calculate the pooled standard deviation by using the formula.
Since the sample sizes are almost the same, the pooled standard deviation should be almost exactly the average of the two.

d) Calculate t by using the formula.
Use the formula for a two-sample t test.

e) Use the calculator to find t and p for a two-tailed test.
Choose 2-sampttest, and select two-tailed. If the answer is different from t above, check your values and calculations.

f) Are the data statistically significant?
Is $p < .05$.

g) State the conclusion in a sentence, followed by $t(df)$ and a p value range.
He either can or cannot make a claim about the population. If he makes a claim, the direction of the claim must be clearly stated and must match his alternate hypothesis. Either way, follow with the calculated value of t(with df) and one of the following: $p > .05$, $p < .05$, $p < .01$, or $p < .001$.

2. Miles is testing if there is a difference in phone choice between Californians and Texans. In his samples, 66 of the Californians and 58 of the Texans have iPhones, and 49 of the Californians and 60 of the Texans have Androids.

a) Calculate z by using the formula.
Use the formula for a two-proportion z test. If the answer is different from z below, check your values and calculations.

b) Using probability notation, calculate the p value by hand for a two-tailed test.
Use the methods from chapter five to calculate the probability of a z score being past the z score above, and double it for a two-tailed test. If the answer is different from z below, check your values and calculations.

c) Use the calculator to find z and p. Round each value to five decimal places to show that it was done on the calculator.
Choose 2-propztest, and select two-tailed.

d) Are the data statistically significant?
Is $p < .05$?

e) State the conclusion in a sentence, followed by z and p or a p value range.
Make sure to address the actual question being asked.