**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Math 201 Final**

**Please work out each of the given problems.  Credit will be based on the steps that you show towards the final answer.  Show your work.**

**Problem 1 (**2 Points Each)

Match the following hypotheses and estimates with the appropriate test statistic or confidence interval.

1. A confidence interval for a population mean.
2. A confidence interval for a population proportion.
3. A confidence interval for the difference between two population means.
4. A confidence interval for the difference between two population proportions.
5. A confidence interval for paired data (dependent samples).
6. A prediction based on the regression line.
7. Hypothesis test for a population mean.
8. Hypothesis test for a population proportion.
9. Hypothesis test for the difference between population means.
10. Hypothesis test for paired data (dependent samples).
11. Hypothesis test for the difference between population proportions.
12. Chi squared test for goodness of fit.
13. Chi squared test for independence.
14. Chi squared test for homogeneity.
15. 1-Way ANOVA

A Through I

**Problem 2**  (2 Points Each)  Circle either true or false.

A Through I

**Problem 3** (15 Points) Paragraph

1. State the null and alternative hypotheses.
2. Find the test statistic and the P-Value
3. State your conclusion in the context of the study.
4. Either a Type 1 error or a Type 2 error is relevant here.  Determine which one and state the repercussions (damage done) if this error were to happen.
5. Was the sample size large enough to use the Normal distribution?  Explain numerically.

**Problem 4** (15 Points) For each, write down the distribution, sketch the diagram, answer the question, and determine if the normality assumption was needed.

 A And B

**Problem 5** (15 Points) Questions from Chapter 3, 4, or 5

**Problem 6**  (15 Points) Confidence Interval Question

**Problem 7 (**15 Points)

1. State the null and alternative hypotheses and determine the test statistic and the p-value.
2. State your conclusion using a complete sentence in the context of the study.
3. Interpret the p-value in the context of the study.
4. Was the normality assumption necessary?  Explain numerically.

**Problem 8** (15 Points) Questions from Chapters 2, 3, or 4.

**Problem 9** (15 Points)

1. Find r2 and give its interpretation in the context of the survey.
2. Find the equation of the regression line and use it to make a prediction of …
3. Interpret the slope in the context of the problem.
4. Interpret the y-intercept in the context of the problem or state why it is not applicable.
5. Conduct a hypothesis test for the correlation.  Be sure to state the null and alternative hypotheses and the p-value and state your conclusion in the context of the study.

**Problem 10 (15 Points)**

Show all steps in conducting the hypothesis test and then state your conclusion in the context of the study using a level of significance of 0.05.

Null Hypothesis:
Alternative Hypothesis:
Name of Test Used:
Test Statistic:

P-Value:
Interpretation:

**Problem 11**  (15 Points)

Null Hypothesis:
Alternative Hypothesis:
Name of Test Used:

Test Statistic:

P-Value:
Interpretation: