**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 for a single value of y for a fixed x.
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 J**

**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. Use a complete sentence to interpret the P-Value in the context of the study.
5. Explain with calculations why it is or is not appropriate to use the normal distribution for this hypothesis test?

**Problem 4** (15 Points) For each part, write down the sampling distribution, sketch the chart, answer the question and then determine if the normality assumption was necessary.

A Through C

**Problem 5** (15 Points) Question from Chapter 3

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

**Problem 7 (**15 Points)

1. State the null and alternative hypotheses.
2. State your conclusion using a complete sentence in the context of the study.
(Use  = 0.05)
3. The level of significance, 0.05, represents a probability. Interpret this probability in the context of the study.

**Problem 8** (15 Points) Question from Chapter 1 and 2, 4 or 5.

**Problem 9** (15 Points)

1. Find the equation of the regression line. Then use it
2. Interpret the slope and y-intercept if relevant in the context of the problem or state why there is no relevance.
3. Use a complete sentence in the context of the study to interpret r2.
4. Using a level of significance of 0.05, determine if the regression line is useful. Plus more.

**Problem 10 (15 Points)** What can be concluded at the 0.10 level of significance?

Null Hypothesis:
Alternative Hypothesis:
Test Statistic:

P-Value:
Interpretation:

**Problem 11** (15 Points)

What can be concluded at the 0.05 level of significance?

Null Hypothesis:
Alternative Hypothesis:
Test Statistic:

P-Value:
Interpretation: