Final Test Sample Name:

1. Construct the stem-and-leaf plot for the data 80, 68, 84, 86, 86, 77, 64, 81, 93, 94, 97, 93, 89, 82, 76, 75, 83, 90, 83, 84, 92, 94, 90, 92, 91, 84, 81, 84, 79, 80.

2. Assume that IQ scores are normally distributed with a mean of 100 and a standard deviation of 15. An IQ score is randomly selected from this population. Find the indicated probability or IQ score.
   a) P(115 < IQ < 130) =
   c) P(IQ > ?) = 0.05

   b) P(IQ < ?) = 0.9876
   d) P(85 < IQ) =

3. The federal government recently granted funds for a special program designed to reduce crime in high-crime areas. A study of the results of the program in eight high-crime areas of Miami, Florida yielded the following results.

Number of crimes by area

	A	B	C	D	E	F	G	H
Before	14	7	4	5	17	12	8	9
After	12	7	3	9	15	13	13	5

Has there been a decrease in the number of crimes since the inauguration of the program? Use the 0.01 significant levels.

4. A communications industry spokesperson claims that over 40% of Americans either own a cellular phone or have a family member who does. In a random survey of 1036 Americans, 456 said they or a family member owned a cellular phone. Construct a 95% confidence interval and check if you can support spokesperson's claim.

5. The Carolina Tobacco Company advertised that its best-sailing no filtered cigarettes contain at most 40 mg of nicotine, but Consumer Advocate magazine ran tests of 10 randomly selected cigarettes and found the amounts (in mg) shown in the following, 47.3, 39.3, 40.3, 38.3, 46.3, 43.3, 42.3, 49.3, 40.3, 46.3
   6. Use a 0.05 significance level test the editor's belief that the mean is great than 40 mg.

7. The Mill Valley Brewery distributes beer in bottles label 32 ozs. The Bureau of Weight and Measures randomly selects 25 of these bottles, measures their contents, and obtains a sample mean of 31.4 oz and a standard deviation of 0.5 ozs. Use 0.01 significant level, test the Bureau's claim that the brewery is cheating consumers.

8. In a Gallup survey, 1087 randomly select adults, 62% said thy used alcoholic beverages. Consider a hypothesis test that uses a 5% significance level to test the claim that more than 50% of adults use alcoholic beverages.
   a) What is Ho? b) what is H1
   c) What is the test statistics? d) What is(are) the critical value(s)?
   e) What is the conclusion?

9. A random sample of male college baseball players and a random sample of male college soccer players were obtained independently and weighted. The table shows the weights. The distributions of both data sets suggested that the population distributions are roughly normal. Determine whether the difference in means is significant, using alpha = 5%.

Baseball	186	210	197	190	182	192	200	195	182	193	190	186
Soccer	156	168	173	158	150	172	180	184	174	190	156	163

10. Construct a 95% confidence interval for the population means if the sample mean is 70.4 and the sample size is 36. Assume the population standard deviation is 5.