**Problem 5: Giving Data the Boot**

Assigned: 3 November
Due: 18 November
Maximum Mark: 10 Points
Maximum Submission Length: 4 pages

You run an experiment and collect the following measurements:

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207,202,169,211,191,212,108,92,186,203,126,184,206,177,164,53,190
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1. Measure the sample mean, the sample median, the sample standard deviation, the sample first quartile, the sample geometric mean, the sample harmonic mean, and the sample median absolute deviation.

2. Produce a histogram of the data and a normal quantile-quantile plot (with line) using the data and plot them side-by-side.

3. Use an appropriate statistical test to assess if the data are sampled from a normal distribution (be sure to include a p-value). If the data are not normal, use one sentence to describe in what manner the distribution deviates from normal.

4. Calculate 95% confidence intervals on the population mean, population median, population standard deviation, population first quartile, population geometric mean, population harmonic mean, and population median absolute deviation using a Studentized bootstrap in R. (For partial credit, use a percentile bootstrap or basic bootstrap.) Summarize your results together in a table.