STAR 511 HW #5

Questions 1 through 4 (Baseballs): The data from O&L problem 7.9 (exp07-9.txt) concerns mean rebound coefficients of baseballs. A random sample of $n = 40$ balls is selected from a large batch and tested.

1. Provide a histogram of the data.
2. Calculate the mean and standard deviation.
3. Test $H_0: \mu \geq 85$ vs $H_A: \mu < 85$. Report the p-value. Do our data suggest that population mean rebound coefficient is less than 85?
4. Test $H_0: \sigma \leq 2$ vs $H_A: \sigma > 2$. This is equivalent to testing $H_0: \sigma^2 \leq 4$ vs $H_A: \sigma^2 > 4$. You can do these "by hand", or you can use var.test() in R.
   A. Report the test statistic.
   B. Report the p-value.
   C. State the statistical decision (reject or fail to reject H_0), and write a sentence or two giving an English interpretation of this decision.

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5. Refer back to the "Potency" data from HW4. In this question, you used visual inspection and a general "rule" to decide between the pooled and unpooled variance approaches. Use var.test() to test the null that the population variances are equal. Does the statistical result make sense in light of your analysis from HW4?