Practice Set 13 Large Sample Hypothesis Testing

I. Darin Jones is very concerned that parts designed to weigh less than or equal to 30 mg may be too heavy and not pass inspection. From page 68, we know that a sample of 36 parts resulted in a sample mean of 30.025 mg and a sample standard deviation of .065 mg. Darin wants to control type I error (the probability of deciding the parts that are too heavy when they are not) to the .01 level of significance. Solve this problem using the 5-step approach to hypothesis testing. **Special Note: We know the population mean can be less than or equal to 30 mg at the .011 level of significance because the 98% confidence interval calculated for this population mean on page 68 had a lower limit of 29.999 mg.**

II. Using problem I data and a .01 level of significance, determine whether the population mean has changed from 30 milligrams.

III. Redo problem II using a .05 level of significance.