

Name: _____ Math 130 Day 18 In Class Worksheet

Date: _____ Section 10.4: Hypothesis Tests for a Population Standard Deviation

1. **Birth Weights** An obstetrician maintains that preterm babies (gestation period less than 37 weeks) have a higher variability in birth weight than do full-term babies (gestation period 37 to 41 weeks). According to the *National Vital Statistics Report*, the birth weight of full-term babies are normally distributed, with a mean of 3,389 grams and a standard deviation of 505.6 grams. A random sample of 41 preterm babies results in a mean weight of 3291 grams and a standard deviation of 840 grams. Test the researcher's hypothesis that the variability in the birth weight of preterm babies is more than the variability in birth weight of full-term babies, at the $\alpha = 0.01$ level of significance?