Ch 6.6 Finding confidence intervals for population variances and standard deviations.

1.) Find the critical values, X_R^2 and X_L^2, for c = 0.95 and n = 12.

2.) Find the critical values, X_R^2 and X_L^2, for c = 0.90 and n = 15.

3) Find the critical values, X_R^2 and X_L^2, for c = 0.98 and n = 20.

4) Find the critical values, X_R^2 and X_L^2, for c = 0.99 and n = 10.

5) Construct a 95% confidence interval for the population standard deviation σ of a random sample of 15 men who have a mean weight of 165.2 pounds with a standard deviation of 12.8 pounds. Assume the population is normally distributed.

6) Assume that the heights of men are normally distributed. A random sample of 16 men have a mean height of 67.5 inches and a standard deviation of 2.8 inches. Construct a 99% confidence interval for the population standard deviation, σ.

7) Assume that the heights of women are normally distributed. A random sample of 20 women have a mean height of 62.5 inches and a standard deviation of 2.3 inches. Construct a 98% confidence interval for the population variance, σ^2.

8. The mean replacement time for a random sample of 12 microwave ovens is 8.6 years with a standard deviation of 3.6 years. Construct the 98% confidence interval for the population variance, σ^2. Assume the data are normally distributed

9. A student randomly selects 10 CDs at a store. The mean is \$8.75 with a standard deviation of \$1.50. Construct a 95% confidence interval for the population standard deviation, σ. Assume the data are normally distributed.

10. A container of car oil is supposed to contain 1000 milliliters of oil. A quality control manager wants to be sure that the standard deviation of the oil containers is less than 20 milliliters. He randomly selects 10 cans of oil with a mean of 997 milliliters and a standard deviation of 32 milliliters. Use these sample results to construct a 95% confidence interval for the true value of σ. Does this confidence interval suggest that the variation in the oil containers is at an acceptable level?