Problem 1: Construct a 95% confidence interval for the standard deviation, σ, of a population when a SRS of size $n = 25$ is taken from a normal distribution if the sample standard deviation is 13.1.

Problem 2: In a weight loss program, 27 adults used a new drug that supposedly increases short term weight loss gains with exercise. After 6 weeks, their average weight loss was found to be 7.3 lb with a standard deviation of 0.8 lb. Construct a 90% confidence interval to estimate the standard deviation of weight loss for any person taking the drug with exercise.

Problem 3: Assume the following data values constitute a SRS from a normal distribution:

$$7, \ 9, \ 7, \ 2, \ 10, \ 6, \ 5, \ 5, \ 8, \ 8, \ 11$$

Compute a 99% confidence interval to estimate the population standard deviation, σ.