Unit 6 – Estimation
Self Evaluation
QUIZ

Note: This quiz is shorter than those for previous units because the week #10 practice problems are extensive. Be sure to review these, too!

Some studies of Alzheimer's disease (AD) have shown an increase in $_{14}CO^2$ production in patients with the disease. In one such study, the following $_{14}CO^2$ values were obtained from 16 neocortical biopsy samples from AD patients.

1009	1280	1180	1255	1547	2352	1956	1080
1776	1767	1680	2050	1452	2857	3100	1621

Assume that the population of such values is normally distributed with a known standard deviation of $\sigma = 350$.

1. Construct a 95 percent confidence interval for μ.

2. If the true population mean is $\mu = 1800$ with $\sigma = 350$, what proportion of patient values would be greater than 1900?

3. If the true population mean is $\mu = 1800$ with $\sigma = 350$, what proportion of means of size 16 would be greater than 1900? What proportion of means from samples of size 25 would be greater than 1900?

4. Considering the derivation of confidence interval estimates, comment on the role of sample size in the estimation of the unknown population mean parameter.

5. Now, assume that the population of such values is normally distributed with unknown mean and ***unknown*** variance. Construct a 95% confidence interval for the population mean. Compare this interval to the interval you got for question #1.