

ST 432

Homework Set 3 Due Feb 3, 2009.

This is a short homework set as we need to discuss the hunter survey in Thursday's class and I want you to spend time reading for that class.

Q1. In an agricultural survey of the US the population size is $N= 3078$ counties and a simple random sample without replacement of $n=300$ is taken. Of these 39 are in the western states of the US.

The subpopn sample mean and standard deviation for the number of acres under farming in the western states US are $598,680.6 (\bar{y}_k)$ and $516,157.7 (s_k)$ respectively based on the subsample of $n_k=39$.

- a) What is the standard error of the subpopulation mean first when we know the subpopulation size is $N_k = 391$ and also when we don't know the subpopulation size?
- b) What is the estimate of the subpopulation total first when we know the subpopulation size is $N_k = 391$ and also when we don't know it?
- c) What is the estimate of the subpopulation total standard error when we know the subpopulation size is $N_k = 391$? I will not expect you to calculate the other standard error when we don't know the subpopulation size.