1. We wish to estimate the proportion of adults in the 25 – 30 year old age group that have not graduated from high school with a 4% margin of error and 99% confidence.
   1. Assuming that we have the resources available to take a random sample from this population, what sample size is necessary?

* 1. What if we wanted the ***width*** of this interval to be 4%?

1. A state’s environmental agency worries that many cars may be violating clean air emissions standards. The agency hopes to check a sample of vehicles in order to estimate that percentage with a margin of error of 3% and 90% confidence.   
   1. Determine the sample size necessary to meet these goals.

* 1. Suppose the agency performed a ***pilot study*** in which they randomly selected 60 cars and found 9 with faulty emissions systems. Now they have a guess about what   might be. Use the information from this pilot study to determine the sample size necessary for the full investigation.