Evan Krause ECO 602 Prof. Michael Nelson 10/19/22

- 1. The population mean does not have an effect on the width of confidence intervals in a normally distributed population. The population mean is just the measure of center and does not define the bounds of the CI.
- 2. The population standard deviation does have an effect on the width of confidence intervals. The standard deviation, along with the critical value and population/sample size define the bounds of the interval.
- 3. The population size does have an effect on the width of the confidence interval because the sample size is drawn from it.
- 4. The sample size does have an effect on the width of the confidence interval because it determines the boundaries of the interval. The bounds are defined by the mean +/- the product of the critical value (or alpha level) multiplied by the standard deviation divided by the root of the sample size
- 5. Assume that you're watching a garden plot of a certain size and trying to find out how likely it is that you find an amount of a certain bug within the area of the plot. You create a 95% CI for the likelihood of finding that many bugs in your sampled area. That means that if you look for that many bugs within that area (infinitely) many times, then 95% of the times that you look, you would be likely to find what you're looking for.