

Table Number: _____

Group Name: _____

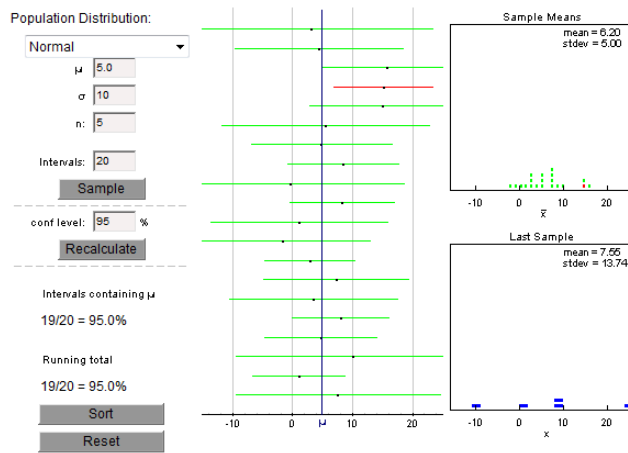
Group Members: _____

Confidence Intervals for a Mean

Go to <http://statweb.calpoly.edu/chance/applets/Robust/Robust.html>. The applet allows one to visually investigate confidence intervals for a mean. This link is in the Chapter 9 folder in the Course Materials folder on Blackboard.

Rossman/Chance Applet Collection

Simulating t -Confidence Intervals (Click [here](#) for a javascript version of this applet.)



Specify the sample size n , the true mean μ , and the population standard deviation. Then specify the number of intervals you want to view (20 is a good number with which to start). When you click the **Sample** button, 20 separate samples of size n will be selected from a population with a proportion of successes equal to μ . For each of the 20 samples, a **95% confidence interval** is displayed in the plot to the right. Each of these intervals is computed based using the standard normal approximation. If an interval **does not contain** the true mean, it is displayed in red. Additional simulations can be carried out by clicking the **Sample** button multiple times. The cumulative number of times that each type of interval contains the true proportion is also tabled. Press the **Reset** button to clear existing results and start a new simulation. Things to try with the applet:

1. Simulate at least 25 intervals with $n = 30$ and $\mu = 5$ and $\sigma = 1$. What proportion of the 95% confidence intervals contain 5?
2. Repeat #1 except simulate at least 1000 intervals. What proportion of the 95% confidence intervals contain 5?

