

## 10.1 Estimating with Confidence

We want to estimate the average hours of homework done last week by all Camosun students, by sampling 50 students.

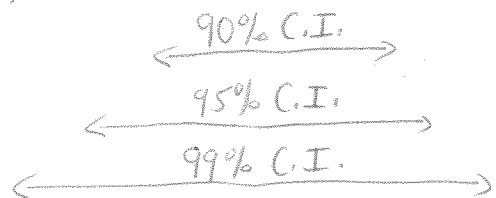
We want to say something like:

"We are 95% confident that the average hours of homework done last week by all Camosun students was between 19.34 and 22.66 hours."


This is called a 95% confidence interval for  $\mu$ .

A 90% confidence interval for  $\mu$  would be narrower.


A 99% confidence interval for  $\mu$  would be wider.



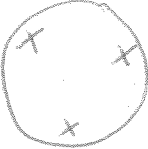
# Precision versus Accuracy




Precise and Accurate



Precise. Not Accurate.



Accurate. Not Precise.



Neither Precise nor Accurate.

We get good accuracy by making sure the sample is representative of the population.

We get good precision by using a large sample size (sample size = # of measurements in a sample).