Starting Distribution: “ ”

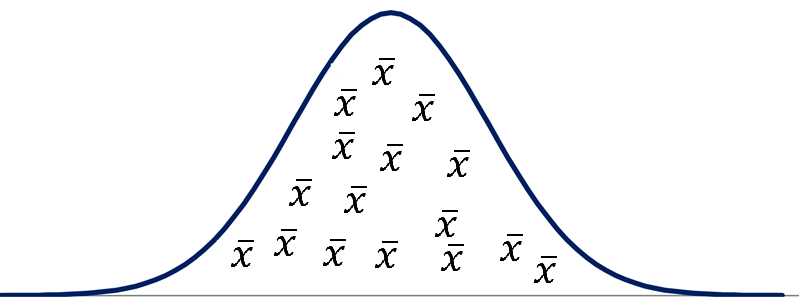
with Mean and St. Dev

**Why Do We Need ?**

Work to get to the end, and YOU will be able to EXPLAIN it.

Consider means from all possible samples of size .

If conditions are satisfied, then the CLT says…



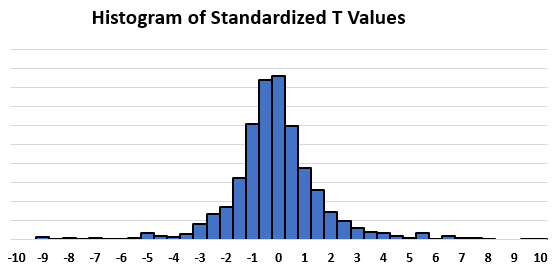
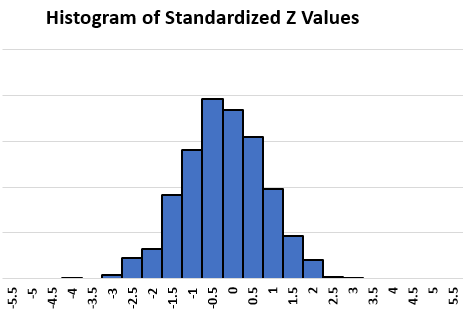
Approximately **Normal**!

Don’t need when discussing sampling distribution of . ☺

You already did this in Ch 18!

This normality is something you must establish in the 1-Samp -test conditions.

But when we try to ***standardize*** these means…



Don’t know ?

Know ?

Summary:   
Don’t know when standardizing? Use from the sample. (It’s the best you’ve got.)   
But just won’t be distributed the same way as . And that is why we use…

* different distributions.
* a different variable name.
* a different button on our calculator. (“tcdf”)

Advanced Pondering:   
Why doesn’t have this problem?  
Come tell me if you figure it out! ☺

But in some samples…

… could be ludicrously small   
...so could be ludicrously big