A Summary of Confidence Interval Formulas for One Sample

Name	Formula	Conditions or Assumptions
One-proportion z interval	$\hat{p} \pm z^* \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$	1. SRS 2. $n\hat{p} \geq 10$ and $n\hat{q} \geq 10$ 3. Population is at least 10 times n
One-sample t interval	$\bar{x} \pm t^* \frac{s}{\sqrt{n}}$	1. Normal population OR n > 30 2. σ unknown 3. SRS
One-sample z interval	$\bar{x} \pm z^* \frac{\sigma}{\sqrt{n}}$	1. SRS 2. Normal population OR n > 30 3. σ known

How do we know if a sample is normal?

If n < 10 graph a dotplot and check for outliers and symmetry.

If n $\geq$ 10, the options are:

- Graph a boxplot and look for symmetry and outliers. Make sure the whiskers are not too long.
- Graph a normal probability plot. The more normal a dataset, the straighter the plot.

Next up….Hypothesis Testing for One Sample