9.2: Point Estimation

The example in 9.1 is an example of **Estimation**, a branch of Inferential Statistics in which sample statistics are used to estimate the values of a population parameter. Lupe's realtor was trying to estimate the population mean (μ) based on the sample mean ($\overline{X}$).

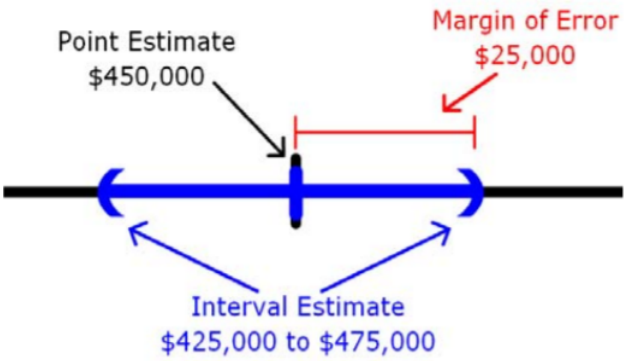
	Sample Statistics		Population Parameters
Mean	$\bar{X}$	$\longrightarrow$	μ
Standard Deviation	s	$\longrightarrow$	σ
Proportion	$\hat{p}$	$\longrightarrow$	p

In the example above, Lupe's realtor estimated the population mean of similar homes in Lupe's neighborhood by using the sample mean of $450,000 from the adjusted price of the sampled homes.

Interval Estimation

A point estimate is our "best" estimate of a population parameter, but will most likely not exactly equal the parameter. Instead, we will choose a range of values called an **Interval Estimate**, which is likely to include the value of the population parameter.

If the Interval Estimate is symmetric, the distance from the Point Estimator to either endpoint of the Interval Estimate is called the **Margin of Error**.



In the example above, Lupe's realtor could instead say the true population mean is probably between $425,000 and $475,000, allowing a $25,000 Margin of Error from the original estimate of $450,000. This Interval estimate could also be reported as $450,000 $\pm$ $25,000.