is a random variable of sample means from all possible samples of the population

represents the standard error of the *sampling distribution of sample means*

is a random variable of sample proportions from all possible samples of the population

represents the standard error of the *sampling distribution of sample proportions*

|  | **Sampling Distribution of Sample Proportions** | **Sampling Distribution of Sample Means** |
| --- | --- | --- |
| Central Limit Theorem | The **Central Limit Theorem** isn’t about the distribution of individual values from the sample. It is about the sample *proportions* or sample *means* of many different random samples drawn from the same population. | |
| For any population proportion , the sampling distribution of is **approximately normal if the sample size n is sufficiently large**. As a general guideline, the normal distribution approximation is justified when and .  ) | For any population mean , the sampling distribution of is **approximately normal if the sample size n is sufficiently large**. Is a population known to be normally distributed?   * Yes. For **any sample size n**, the sampling distribution of the sample mean is normally distributed. * No. For a **sample size n > 30**, the sampling distribution of the sample mean is normally distributed. |
| Expected Value |  |  |
| Standard Error |  |  |
| Z, standard normal value when is known |  |  |