ASSIGNMENT 3

1.WHAT DOES SYMMETRIC DISTRIBUTION MEAN?

* A symmetrical distribution is one where splitting the data down the middle produces mirror images.
* Bell curves are a commonly-cited example of symmetrical distributions.
* Having a symmetrical distribution is useful for analyzing data and making inferences based on statistical techniques.
* In finance, data-generating processes with symmetrical distributions can help inform trading decisions.
* Real-world price data, however, tend to exhibit asymmetrical qualities such as right-skewness.

2.WHAT IS LEFT SKEW DISTRIBUTION AND RIGHT SKEW DISTRIBUTION?

A [**left-skewed distribution**](https://www.statisticshowto.com/probability-and-statistics/skewed-distribution/#SkewLeft) has a long left tail. Left-skewed distributions are also called negatively-skewed distributions. That’s because there is a [long tail](https://www.statisticshowto.com/long-tail-distribution/) in the negative direction on the number line. The mean is also to the left of the [peak](https://www.statisticshowto.com/peak-of-a-distribution/).

A [**right-skewed distribution**](https://www.statisticshowto.com/probability-and-statistics/skewed-distribution/#SkewRight) has a long right tail. Right-skewed distributions are also called positive-skew distributions. That’s because there is a long tail in the positive direction on the number line. The [mean](https://www.statisticshowto.com/probability-and-statistics/statistics-definitions/mean-median-mode/#mean)is also to the right of the peak.

3.WHERE ARE LONG-TAILED DISTRIBUTIONS USED?

The long-tailed distribution, which is used to **model many internet-era phenomena such as the frequency distribution of book titles sold at Amazon.com** or the frequency of internet search terms.

4.WHAT IS CENTRAL LIMIT THEOREM?

The central limit theorem (CLT) states **that the distribution of sample means approximates a normal distribution as the sample size gets larger**, regardless of the population's distribution. Sample sizes equal to or greater than 30 are often considered sufficient for the CLT to hold.

5.WHAT IS OBSERVATION STUDY?

An observational study is **a study in which the researcher simply observes the subjects without interfering**. ... They just observe the subjects and record data based on their observations.The **researcher has no control over the variables** in an observational study.