

There are numerous types of distributions used in statistics to describe the behavior of data. Here are some of the most common ones:

1. **Normal Distribution (Gaussian Distribution)**: Symmetrical bell-shaped curve with mean and standard deviation parameters. Many natural phenomena follow this distribution.
2. **Uniform Distribution**: Every outcome has an equal chance of occurring. It forms a rectangle when graphed.
3. **Binomial Distribution**: Describes the number of successes in a fixed number of independent Bernoulli trials (experiments with two possible outcomes).
4. **Poisson Distribution**: Models the number of events occurring in a fixed interval of time or space, given a constant average rate of occurrence.
5. **Exponential Distribution**: Describes the time between events in a Poisson process, where events occur continuously and independently at a constant average rate.
6. **Gamma Distribution**: Generalizes the exponential distribution to accommodate a variable rate of occurrences.
7. **Beta Distribution**: Often used to model probabilities, particularly in Bayesian statistics.
8. **Lognormal Distribution**: The logarithm of the variable follows a normal distribution, often used for data that are naturally positive and skewed.
9. **Weibull Distribution**: Often used to model time-to-failure data in engineering and reliability studies.
10. **Geometric Distribution**: Models the number of trials needed to achieve the first success in a series of Bernoulli trials.
11. **Cauchy Distribution**: Has heavy tails and no defined mean or variance, often used in physics and finance.
12. **Chi-Square Distribution**: Arises in tests of statistical significance involving the sample variance.