

Vocabulary Sample and Binomial Distribution

Biased estimator	If the mean of its sampling distribution is not equal to the true value of the parameter being estimated
Central limit theorem (CLT)	Says that when n is large, the sampling distribution of the sample mean is approximately Normal
Parameter	A number that describes some characteristic of the population
Population distribution	Gives the values of the variable for all the individuals in the population
Sampling variability	The value of a statistic varies in repeated random sampling
Sampling distribution	The distribution of values taken by the statistic in all possible samples of the same size from the same population
Simple Random Sample	A sample chosen in such a way that every set of n individuals has the same chance of being selected
Statistic	A number that describes some characteristic of a sample
Binomial Coefficient	The number of ways of arranging k successes among n observations
Binomial Distribution	The probability distribution of X with parameters n and p
Binomial Random Variable	The count X of successes in a binomial setting
Binomial Setting	Consists of n independent trials of the same process, each resulting in success or failure, with probability of success p on each trial
Continuous Random Variable	Takes all values in an interval of numbers
Discrete Random Variable	Takes a fixed set of possible values with gaps between
Geometric Distribution	Let Y = the number of trials required to get the first success
Geometric Random Variable	The number of trials Y that it takes to get a success in a geometric setting
Geometric Setting	Perform several independent trials of the same chance process and record number of trials until a particular outcome occurs
Independent Random Variables	There is no association between values of one variable and values of the other
Linear Transformation	Involves adding a constant, multiplying by a constant, or both
Mean of a Discrete Random Variable	Multiply each possible value by its probability, then add all the products
Mean of a Geometric Random Variable	Expected number of trials required to get the first success
Mean of a Random Variable	Balance point of the probability distribution histogram; also known as expected value
Probability Distribution	Gives the possible values of a random variable and their probabilities
Random Variable	Takes numerical values that describe the outcome of some chance process
Standard Deviation of a Random Variable	Measures the variability of the distribution about the mean
Variance	The square of the standard deviation