

The **probability** of an event is the _____ of times the event occurs in _____ of a random phenomenon.

A **probability model** consists of a _____ and an assignment of _____.

The **sample space S** is the set of _____ of the random phenomenon. Sets of _____ are called _____. P assigns a number $P(A)$ to an _____ A as its probability.

When a sample space contains finitely many possible values, a _____ **probability model** assigns each of these values a probability between 0 and 1 such that the sum of all the probabilities is exactly 1. The probability of any event is the sum of the probabilities of all the values that make up the event.

A sample space can contain all values in some interval of numbers. A _____ **probability model** assigns probabilities as areas under a _____ **curve**. The probability of an event is the area under the curve above the values that make up the event.

A **random variable** is a variable taking _____ values determined by the outcome of a random phenomenon. The **probability distribution** of a random variable X tells us what the possible values of X are and how probabilities are assigned to those values.

A **parameter** (in a statistical problem) is a number that describes a _____. A **statistic** is a number that is _____ from a _____.

The _____ states that the actually observed mean outcome $\bar{x}$ must approach the mean μ of the population as the number of observations increases.

The _____ of a statistic describes the values of the statistic in all possible samples of the same size from the same population.

The mean of the sampling distribution of the sample mean $\bar{x}$ is _____

The standard deviation of the sampling distribution of the sample mean $\bar{x}$ is _____. Where _____ is the standard deviation of the population and _____ is the size of the sample.

Choose an SRS of size n from any population with mean μ and finite standard deviation σ . The _____ states that when n is large the sampling distribution of $\bar{x}$ is approximately Normal. We can use the _____ distribution to approximate probabilities involving $\bar{x}$.

Events A and B are _____ if they have no outcomes in common.

Events A and B are _____ if knowing that one event occurred does not change the probability we would assign to the other event.

For the **Binomial Setting** we have the following conditions:

1. There are a _____ number of observations.
2. The observations are _____.
3. Each observation has only one of _____ possibilities, typically called “_____” and “_____”.
4. The probability of “_____” is the same for all observations. This probability is typically called p .

If X has the **binomial distribution** with n observations and probability p of success on each observation, the probability that X takes on any of the values $0, 1, 2, \dots, n$ is

The mean and standard deviation for the binomial count X are

$$\mu = \underline{\hspace{2cm}}$$

$$\sigma = \underline{\hspace{2cm}}$$

The **Normal approximation to the binomial distribution** is

_____.