1. Binomial Distribution  
   **1.** The procedure has a ***fixed number of trials****.***2.** The trials must be ***independent****.* (The outcome of any  
   individual trial doesn’t affect the probabilities in the  
   other trials.)  
   **3.** Each trial must have all outcomes **classified into *two  
   categories*** (commonly referred to as *success* and  
   *failure*).  
   **4.** The probability of a **success remains the same** in all  
   trials.  
     
   𝐛(𝐱; 𝐧, 𝐩) = 𝐧C𝐱 **pxqn-x ,x = 0, 1, 2, …, n**where **n** = the total number of trials  
   **x** = the number of successes (0, 1, 2, 3, . . . , n)  
   **p** = the probability of a success  
   **q** = the probability of a failure  
   **p + q = 1**
2. Hypergeometric Distribution [1]

A hypergeometric experiment has the following

properties:

1. Each trial of an experiment results in an outcome

that can be classified into one of the two categories

success or failure.

2. The successive trials are dependent.

3. The probability of success changes from trial to

trial.

4. The experiment is repeated a fixed number of times.

**h(x; N, n, k)** = (kCx) (N-kCn-x)/NCn **, max{0, n - (N-k)}** ≤ x ≤min{n, k}  
It has **three** parameters i.e., N, n, and k  
**N**: The number of items in the **population  
k**: The number of items in the **population** that are  
classified as **successes**.  
**n**: The number of items in the sample  
**x**: The number of items in the **sample** that are  
**classified as successes**.

