Binomial Distribution:

Let Y be a binomial random variable based on n trials and success probability q:

Geometric probability distribution:

Y is a random variable with a geometric distribution:

Negative binomial probability distribution:

Y is a random variable with a negative binomial distribution:

Hypergeometric probability distribution:

Y is a random variable with a hypergeometric distribution:

Poisson probability distribution:

Y is a random variable possessing a Poisson distribution with parameter λ:

Tchebysheff’s Theorem:

Random variable Y has density function f(y) and a<b, then the probability that Y falls in the interval [a,b] is:

Provided that the integral exists then the expected value of a continuous random variable Y is:

Uniform probability distribution:

Gamma Distribution:

Discrete bi variate distribution: