Formula Sheet

Permutations:

* n is total number of objects
* r is number of objects selected

Combination:

* n is total number of objects
* r is number of objects selected

Conditional: , provided P(B) > 0

* The conditional probability of an event A, given that an event B has occurred.
* Symbol P(A|B) is read “probability of A given B.”

Bayes: , provided P(B) > 0 and P(A) > 0

* Very similar to Conditional.

Binomial: , y = 0, 1, 2, …, n and 0 ≤ p ≤ 1

* p is prob of success, q is always 1-p, or prob of failure
* n is the number of trials
* y is the number of successes

Geometric: y = 0, 1, 2, …, and 0 ≤ p ≤ 1

* Number of trials until 1st success.

Hypergeometric: , y = 0, 1, 2, …, n and n ≤ r and

n-y ≤ N – r

Poisson: , y = 0, 1, 2, …, λ > 0

* λ is mean of Y

Negative binomial: y = r, r+1, r+2, ….

Tchebysheff:

* Let Y be random variable with mean and finite variance
* This is for any constant k > 0