**Formula Sheet – Probability and Applied Statistics**

**By Chris Ricchi**

**Permutations**

**Combinations**

**Conditional Probability**

**Multiplicative Law of Probability**

**Theorem of Total Probability**

**Bayes’ Theorem**

**Probability Mass Function**

**Binomial Variance**

**Binomial Distribution**

**Geometric Distribution**

*Success occurs on or before nth trial:*

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*Success occurs on or after the nth trial:*

*Success occurs after the nth trial:*

**Hypergeometric Distribution**

**Negative Binomial Probability Distribution**

**Negative Binomial Distribution Variance and Standard Dev.**

**and**

**Poisson Distribution**

**Chebyshev’s Theorem Inequality**

**or**