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| --- | --- |
| **Name of Formula:** | **Formula:** |
| **Mean** |  |
| **Variance** |  |
| **Standard Deviation** | or |
| **Multinomial Coefficients** |  |
| **Permutations** |  |
| **Combinations** |  |
| **Conditional Probability** |  |
| **Two events A and B are independent if:**  **Otherwise, dependent** |  |
| **Multiplicative Law of Probability** |  |
| **Additive Law of Probability** |  |
| **Bayes’ Rule** |  |
| **Expected Value of Y** |  |
| **Binomial Distribution** |  |
| **Geometric Probability Distribution** |  |
| **Y is a random variable with geometric distribution** |  |
| **Hypergeometric Probability Distribution** |  |
| **Poisson Probability Distribution** |  |
| **Tchebysheff’s Theorem** |  |
| **Probability Distribution for Continuous Random Variable** |  |
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| **Probability Distribution Functions** |  |
|  |
| **Uniform Distribution** | f(y) = |
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| **Bivariate** | p (y1, y2) = P (Y1 = y1, Y2 = y2),- < y1 < , - < y2 < |
| **Joint Probability Function** | - < y1 < , - < y2 < |
| **Marginal Probability Function** | p1(y1) = and p2(y2) = |
| **Conditional Probability Function** | p(y1 | y2) = P (Y1 = y1 | Y2 = y2) = = , Provided that p2 (y2) > 0 |
|  |  |
| **Independent Random Variables** | p(y1, y2) = p1(y1)p2(y2) |
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