**Chapter 1:**

**Mean:**

**n = some positive number**

**Variance:**

**Standard Deviation: V = variance**

**Chapter 2:**

**Permutation:**

**Combination:**

**Multinomial Coefficient:**

**MN Rule:**

**Conditional Probability:**

**Probability Axiom:**

**Union:**

**Complement:**

**Intersection:**

**Bayes Theorem:**

**Theorem of Total Probability:**

**Independent Event(Dependent when Independent is false):**

**The Multiplicative law of Probability:**

**The Additive law of Probability:**

**When :**

**When 3 events:**

**Axiom 3:**

**Chapter 3:**

**Probability Mass Function:**

**Discrete random variables:**

**Expected:**

**Variance:**

**Standard Deviation:**

**Binomial Distribution:**

**Geometric Distribution:**

**Expected:**

**Variance:**

**Success occurs on or before nth trial:**

**Success occurs before nth trial:**

**Success occurs on or after nth trial:**

**Success occurs after nth trial:**

**======================================PROJECT 2==================================**

**Hypergeometric Distribution:**

**Poisson Distribution:**

**Tchebysheff’s Theorem:**

**Chapter 4:**

**Density Function:**

**Theorem 4.3:**

**Expected and Variance Continuous Random Variable:**

**Uniform Probability Distribution:**

**Uniform Distribution Expected and Variance:**

**Chapter 5:**

**Joint Density Function:**

**Marginal probability function:**

**Conditional distribution function:**

**Conditional density function:**

**Independent Distribution, Joint Probability, and Density**