Ta’Quawn Watts

Formula Sheet

**Chapter 1**

Definition 1.1: Mean

Definition 1.2: Variance

Definition 1.3: Standard Deviation

**Chapter 2**

Definition 2.6: Probability

Definition 2.7: Permutation

Definition 2.8: Combinations

Definition 2.9: Conditional Probability

Definition 2.10: Independent Events

Theorem 2.5: Multiplicative Law of Probability

Theorem 2.6: Additive Law of Probability

Theorem 2.7:

Theorem 2.8:

Theorem 2.9: Bayes’ Rule

**Chapter 3**

Definition 3.3: Probability Mass Function

Definition 3.7: Binomial Distribution

Theorem 3.8: Geometric Distribution

Definition 3.10: Hypergeometric Probability Distribution

Definition 3.11: Poisson Probability Distribution

Theorem 3.11:

Definition 3.14: Moment-generating Function

Theorem 3.15:

Definition 3.16: Kth Factorial Moment

Theorem 3.14 Tchebysheff’s Theorem

**Chapter 4**

Definition 4.1: Distribution Function

Theorem 4.3:

Definition 4.5

Theorem 4.4:

Theorem 4.6:

Definition 4.8: Normal Probability Distribution

Definition 4.9: Gamma Distribution

Definition 4.11: Exponential Distribution

Definition 4.12: Beta Probability Distribution

Definition 4.13: Kth Moment about the Origin

Definition 4.14: Moment-generating Function of Y

**Chapter 5**

Definition 5.1: Joint Probability Function

Definition 5.3: Joint Probability Density Function

Definition 5.4: Marginal Probability Functions

Definition 5.5: Conditional Discrete Probability

Definition 5.6: Conditional Distribution Function

Definition 5.7: Conditional Density

Definition 5.8:

Theorem 5.4:

Theorem 5.5: