**Mean**

**Mode**

**Median**

**Standard Deviation**

**Set Theory**

Given set A and set B

Given set S and subset A

**Distributive Laws**

**DeMorgan’s law**

**Simple Event**

**Sample Space**

**Event**

Given sample space S,

Then Event A,

**Probability Axiom 1**

Given sample space S with Event A (subset of S),

**Probability Axiom 2**

Given sample space S with Event A (subset of S),

**Probability Axiom 3**

Given sample space S with Event A (subset of S),

**Collaries of Axioms**

**MN Rule**

Given m and n with multiple elements,

**Permutation**

**Multinomial Coefficient**

**Combinations**

**Conditional Probability**

**Independent & Dependent**

Dependent if,

Otherwise, dependent

**Multiplicative Law of Probability**

The probability of the intersection of two events A and B is

If A and B are independent,

**General Addition Rule**

If A and B are mutually exclusive,

Then,

**The Theorem of Total Probability**

The formula assumes that for most used as….

**Bayes Theorem**

For two events A and B in sample space S, with and ,

If , we can write the theorem of total probability as,

**Expectations for Discrete Random Variable**

The expectation (or expected) of a discrete random variable Y, denoted ,

Whenever this sum is finite; it is not finite, we say that the expectation does not exist

**Variance**

where

**Standard Deviation**

**Binomial Distribution**