Definition 1.1

Mean

Definition 1.2

Variance

Definition 1.3

Standard deviation

Definition 2.6

Probability

Definition 2.7

Permutation

Definition 2.8

Combinations

Definition 2.9

Conditional Probability

Definition 2.10

Independent

Set Operations

Intersection

Union

Complement

Distributive laws

De morgan’s law

General Addition Rule

Theorem 2.7

Total Probability

Bayes Theorem

Or if 0<P(B)<1:

Probability Mass Function

p(Y) = P(Y=y)

Discrete random variable

Mean of discrete random variable

discrete random variable with probability function

Or

Or

Binomial distribution

Mean and standard deviation

Geometric probability distribution

Mean and standard deviation

Negative binomial probability distribution

Mean and standard deviation

Hypergeometric probability distribution

Mean and standard deviation

Poisson probability distribution(

Mean and standard deviation

Tchebysheff’s Theorem

Definition 4.1

Distribution function

Definition 4.3

Probability density function

Definition 4.5

Expected value of continuous random variables

Definition 4.6

Continuous uniform probability distribution

Mean and standard deviation

Definition 4.8

normal probability distribution

Mean and standard deviation

Definition 4.9

Gamma distribution with parameters

Where

Mean and standard deviation

Definition 4.10

Chi-square distribution with v degrees of freedom

Mean and standard deviation

Definition 4.11

Exponential distribution with parameter

Mean and standard deviation

Definition 4.12

Where

Mean and standard deviation

Definition 5.1

Discrete random variables Joint (or bivariate) probability function

Definition 5.2

Any random variables Joint (or bivariate) probability function

Definition 5.3

Continuous random variables with joint distribution function

Definition 5.4

a marginal probability functions

b marginal density functions

Definition 5.5

Conditional discrete probability

Definition 5.6

Conditional distribution function

Definition 5.7

Conditional density

Definition 5.8

Distribution function: independent

Dependent

If x and y are not independent