Formula sheet include all formulas up to our current topic

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# Definition 1.1

The mean of a sample n

Definition 1.2

The Variance of a sample of measurements

# Definition 1.3

Standard Deviation

# Definition 2.6

The basis of the definition of probability

# Definition 2.7

Permutations. Order of r distinct objects with each object being n

# Definition 2.8

Number of combinations of n objects taken r at a time. Number of subsets at each size r can be formed from n objects

# Definition 2.9

Conditional probability of given event A given that an event B has occurred

# Definition 2.10

Two events A and B are independent if

# Thm 2.5

Multiplicative Law of Probability – The probability of the intersection of two events A and B is

If A and B are independent then

# Thm 2.6

Additive Law of Probability

# Thm 2.7

Probability compliment

# Thm 2.8

Partition

# Thm 2.9

Bayes’ Rule

# Def 3.4

Expected value of a random variable

# Thm 3.2

Expected Value of a function of a random variable

# Def 3.5

Variance of a random variable

# Thm 3.3

Mean of a nonrandom quantity C

# Thm 3.4

Expected value of the product of a constant c times a function of a random variable is equal to the constant times the expected value of the function of the variable

# Thm 3.5

Mean of a sum of functions of a random variable Y equals sum of respective expected values

# Thm 3.6

Variance of a Discrete Random Variable

# Def 3.7

Binomial Distribution

# Thm 3.7

Mean and Variance Associated with a Binomial Random Variable

# Def 3.8

Geometric Probability Distribution

# Thm 3.8

The Mean of a random variable with a geometric distribution is equal to 1/p