Formule PS

|A ∪ B| = |A| + |B| − |A ∩ B|

Repartitia (distributia) Poisson:

Daca L si R sunt disjuncte: P(L ∪ R) = P(L) + P(R)

Daca L si R nu sunt disjuncte: P(L ∪ R) = P(L) + P(R) − P(L ∩ R) (principiul includerii si excluderii)

Probabilitatea conditionata:

Regula multiplicarii: P(A ∩ B) = P(A|B) · P(B)

Legea probabilitatii totale (B1, B2, B3 disjuncte 2 cate 2): P(A) = P(A ∩ B1) + P(A ∩ B2) + P(A ∩ B3)

P(A) = P(A|B1)P(B1) + P(A|B2)P(B2) + P(A|B3)P(B3)

Daca A e independent de B: P(A|B) = P(A)

Formula lui Bayes:

Repartitia binomiala:

Repartitia geometrica:

Media:

Media unei variabile aleatoare Bernoulli(p) este p.

X ~ binomial(n, p):



Media unei repartitii geometrice:

Variatia (dispersia): , unde

Deviatia standard:



Daca X ~ Bernoulli(p):

X si Y sunt v.a. independente ⬄ P(X = a, Y = b) = P(X = a)P(Y = b), ∀a, b

X si Y sunt v.a. independente ⇒ Var(X+Y ) = Var(X)+Var(Y )

Var(aX + b) = a^2Var(X)

Var(X) = E(X^2) − E(X)^2

X ~ binomial(n, p): Var(X) = np(1 − p)

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X v.a. continua: