ESTATISTIKA ENPRESARA APLIKATUA: FORMULARIOA (JOSEMARI SARASOLA)

$B(n,p) : p^x(1-p)^{n-x}\dfrac{n!}{x!(n-x)!}$

$\mu_{B(n,p)} = np, \sigma^2_{B(n,p)} = npq$

$G(p) : (1-p)^x p$

$\mu_{G(p)} = \frac{q}{p}$

$BN(r,p) : (1-p)^x p^{r-1}\frac{[x+(r-1)]!}{x!(r-1)!}p$

$\mu_{BN(r,p)} = \frac{rq}{p}$

p-balioa (zeinuen proba): $p = 2\sum_{i=1}^{x} 0.5^n \dfrac{n!}{i!(n-i)!}$

$$P[X=x; H(k,N,n)] = \frac{\binom{k}{x}\binom{N-k}{n-x}}{\binom{N}{n}}$$

$H(k,N,n) : \mu = \dfrac{nk}{N}; \sigma^2 = \dfrac{nk}{N} \times \dfrac{N-k}{N} \times \dfrac{N-n}{N-1}$

$P[X=x] = \frac{e^{-\lambda}\lambda^x}{x!}$

$B(n,p) \to P(\lambda = np)$

$F(x) = 1 - e^{-\lambda x}$

$\mu_{Exp(\lambda)} = \frac{1}{\lambda}$

$\sigma^2_{Exp(\lambda)} = \frac{1}{\lambda^2}$

Uniforme diskretua

$$P[X_{max} \leq x_i] = \left(\frac{i}{N}\right)^n$$

$$P[X_{max} = x_i] = \left(\frac{i}{N}\right)^n - \left(\frac{i-1}{N}\right)^n$$

$$P[X_{min} = x_i] = P[X_{min} \geq x_i] - P[X_{min} \geq x_{i+1}] = \left(\frac{N-(i-1)}{N}\right)^n - \left(\frac{N-i}{N}\right)^n$$

$$\hat{N} = x_{max} + \frac{x_{max} - n}{n}$$

Uniforme jarraitua

$$X \sim U(a,b) \begin{cases} \mu = \dfrac{a+b}{2} \\ \sigma^2 = \dfrac{(b-a)^2}{12} \end{cases}$$

$F(x) = \frac{x-a}{b-a}$

$$F(M=x) = P[M<x] = \left(\frac{x-a}{b-a}\right)^n$$

$$E[M] = a + \frac{n(b-a)}{n+1}$$

$$F(m=x) = P[m<x] = 1 - \left(\frac{b-x}{b-a}\right)^n$$

$$E[m] = a + \frac{b-a}{n+1}$$

$F(R=x) = P[R<x] = nx^{n-1}(1-x) + x^n$

$$E[R] = (b-a)\frac{n-1}{n+1}$$

$B(n,p) \to N(\mu = np, \sigma = \sqrt{npq})$

$P(\lambda) \to N(\mu = \lambda, \sigma = \sqrt{\lambda})$