DISTRIBUCIONES DE PROBABILIDAD

Bernoulli	$X \sim B(1,p)$	$P(X=x)=p^x(1-p)^{1-x} \quad x=0,1$	$E(X)=p$	$V(X)=p(1-p)$
Binomial	$X \sim B(n,p)$	$P(X=x)=C_x^n p^x(1-p)^{n-x} \quad x=0,1,\dots,n$	$E(X)=np$	$V(X)=np(1-p)$
Hipergeométrica	$X \sim H(N,r,n)$	$P(X=x)=\dfrac{C_x^r C_{n-x}^{N-r}}{C_n^N} \quad x=0,1,\dots,\min(r,n)$	$E(X)=n\left(\dfrac{r}{N}\right)$	$V(X)=n\left(\dfrac{r}{N}\right)\left(1-\dfrac{r}{N}\right)\left(\dfrac{N-n}{N-1}\right)$
Poisson	$X \sim P(\lambda)$	$P(X=x)=\dfrac{e^{-\lambda}.\lambda^x}{x!} \quad x=0,1,2,\dots$	$E(X)=\lambda$	$V(X)=\lambda$
Geométrica	$X \sim G(p)$	$P(X=x)=p(1-p)^{x-1} \quad x=1,2,3,\dots$	$E(X)=\dfrac{1}{p}$	$V(X)=\dfrac{1-p}{p^2}$
Pascal	$X \sim BN(k,p)$	$P(X=x)=C_{k-1}^{x-1}p^k(1-p)^{x-k} \quad x=k,k+1,k+2,\dots$	$E(X)=\dfrac{k}{p}$	$V(X)=\dfrac{k(1-p)}{p^2}$
Normal	$X \sim N(\mu,\sigma^2)$	$f(x)=\dfrac{1}{\sqrt{2\pi}\,\sigma}e^{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2}, \quad -\infty<x<\infty$	$E(X)=\mu$	$V(X)=\sigma^2$
Uniforme	$X \sim U[a,b]$	$f(x)=\dfrac{1}{b-a}, \quad a\le x\le b$	$E(X)=\dfrac{(a+b)}{2}$	$V(X)=\dfrac{(b-a)^2}{12}$
Gamma	$X \sim Ga(\alpha,1/\beta)$	$f(x)=\dfrac{1}{\beta^\alpha\Gamma(\alpha)}x^{\alpha-1}e^{-\frac{x}{\beta}} \quad , \quad x>0$, cuando $\alpha>0$,$\beta>0$ $\Gamma(\alpha)=\int_0^\infty x^{\alpha-1}e^{-x}dx \quad , \ \alpha>0 \qquad \Gamma(n)=(n-1)!$	$E(X)=\alpha\beta$	$V(X)=\alpha\beta^2$
Exponencial	$X \sim E(1/\beta)$	$f(x)=\dfrac{1}{\beta}e^{-\frac{x}{\beta}} \quad , \quad x>0$, donde $\beta>0$ Función acumulada: $F(x)=P(X\le x)=1-e^{-\frac{x}{\beta}}$	$E(X)=\beta$	$V(X)=\beta^2$