Distribuciones notables

Distribución	FDP/FDM y soporte	Esperanza	Varianza	R
Bernoulli Bern(p)	$P(X=1)=p$ $P(X=0)=q=1-p$	p	pq	dbinom(x, size=1, prob=p)
Binomial Bin(n,p) o $\mathcal{B}(n,p)$	$P(X=x)=\binom{n}{k}p^x q^{n-k}$ $x \in \{0,1,2,\dots n\}$	np	npq	dbinom(x, size=n, prob=p)
Geométrica Geom(p)	$P(X=x)=q^x p$ $x \in \{0,\ 1,\ 2,\ \dots\}$	q/p	q/p^2	dgeom(x, prob=p)
Binomial Negativa NegBin(r,p)	$P(X=x)=\binom{r+x-1}{r-1}p^r q^x$ $x \in \{0,\ 1,\ 2,\ \dots\}$	rq/p	rq/p^2	dnbinom(x, size=r, prob=p)
Hipergeométrica HGeom(m,n,k)	$P(X=x)=\binom{m}{x}\binom{n}{k-x}/\binom{m+n}{k}$ $x \in \{0,1,2,\dots,k\}$	$\mu=\frac{km}{n+m}$	$\left(\frac{m+n-k}{m+n-1}\right)k\frac{\mu}{k}(1-\frac{\mu}{k})$	dhyper(x, m=m, n=n, k=k)
Multinomial Multinom($n,p_1,\dots,p_k$)	$P(X_1=x_1,X_2=x_2,\dots,X_k=x_k)=\frac{n!}{x_1!x_2!\cdots x_k!}p_1^{x_1}p_2^{x_2}\dots p_k^{x_k}$ $x_i \in \{0,1,\dots,n\}:\sum_i x_i=n$	$\mathbb{E}[X_i]=np_i$	$\mathrm{Var}[X_i]=np_i(1-p_i)$	dmultinom(c($x_1,\dots,x_k$), size=n, prob=c($p_1,\dots,p_k$))
Poisson Pois(λ) o $\mathcal{P}(\lambda)$	$P(X=k)=\frac{e^{-\lambda}\lambda^k}{k!}$ $k \in \{0,\ 1,\ 2,\ \dots\}$	λ	λ	dpois(k, lambda=λ)
Uniforme Unif(a,b) o $\mathcal{U}(a,b)$	$f(x)=\frac{1}{b-a}$ $x \in (a,b)$	$\frac{a+b}{2}$	$\frac{(b-a)^2}{12}$	dunif(x, min=a, max=b)
Normal/Gaussiana $\mathcal{N}(\mu,\sigma^2)$ (var) o $\mathcal{N}(\mu,\sigma)$ (sd)	$f(x)=\frac{1}{\sigma\sqrt{2\pi}}e^{-(x\,-\,\mu)^2/(2\sigma^2)}$ $x \in (-\infty,\infty)$	μ	σ^2	dnorm(x, mean=μ,sd=σ)
Exponencial Expo(λ)	$f(x)=\lambda e^{-\lambda x}$ $x \in (0,\infty)$	$\frac{1}{\lambda}$	$\frac{1}{\lambda^2}$	dexp(x, rate=λ)
Chi-Cuadrado χ^2_n	$f(x)=\frac{1}{2^{n/2}\Gamma(n/2)}x^{n/2-1}e^{-x/2}$ $x \in (0,\infty)$	n	$2n$	dchisq(x, df=n)
t de Student t_n	$\frac{\Gamma((n+1)/2)}{\sqrt{n\pi}\Gamma(n/2)}(1+x^2/n)^{-(n+1)/2}$ $x \in (-\infty,\infty)$	0 if $n>1$	$\frac{n}{n-2}$ if $n>2$	dt(x, df=n)
Distribución F $F_{n,m}$	$f(x)=\frac{1}{\mathrm{Beta}(n,m)}\left(\frac{n}{m}\right)^{n/2}x^{\frac{n}{2}-1}\left(1+\frac{n}{m}x\right)^{-\frac{n+m}{2}}$ $x>0$	$\frac{m}{m-2}$ if $m>2$	$\frac{2m^2(n+m-2)}{n(m-2)^2(m-4)}$ if $m>4$	df(x, df1=n, df2=m)