

Nombre	Notación	Distribución de probabilidades (discr)	Esperanza	Varianza	FGM
Binomial	$B(n, p)$	$\binom{n}{k} p^k (1-p)^{n-k} \quad k = 0, 1, \dots, n$	np	$np(1-p)$	$(pe^t + 1 - p)^n$
Bernoulli	$B(p)$	$p^k (1-p)^{1-k} \quad k = 0, 1$	p	$p(1-p)$	$(pe^t + 1 - p)$
Binomial Negativa	$BN(r, p)$	$\binom{k-1}{r-1} p^r (1-p)^{k-r} \quad k = r, \dots, \infty$	$\frac{r}{p}$	$\frac{r(1-p)}{p^2}$	$(\frac{pe^t}{1-(1-p)e^t})^r$
Poisson	$P(\lambda)$	$\frac{\lambda^k e^{-\lambda}}{k!} \quad k = 0, \dots, \infty$	λ	λ	$e^{\lambda(e^t-1)}$
Nombre	Notación	Densidad de probabilidades (continuo)	Esperanza	Varianza	FGM
Uniforme	$U(a, b)$	$\frac{1}{b-a} \quad a \leq x \leq b$	$\frac{(a+b)}{2}$	$\frac{(b-a)^2}{12}$	$\frac{e^{bt}-e^{at}}{(b-a)t}$
Beta	$\beta_{\alpha, \beta}$	$\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1} \quad 0 \leq x \leq 1$	$\frac{\alpha}{\alpha+\beta}$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$	
Gamma	$G(r, \lambda)$	$\frac{x^{r-1} e^{-\frac{x}{\lambda}}}{\lambda^r \Gamma(r)} \quad x \geq 0$	$r\lambda$	$r\lambda^2$	$\frac{1}{(1-\lambda t)^r}$
Exponencial	$e(\lambda)$	$\frac{1}{\lambda} e^{-\frac{x}{\lambda}} \quad x \geq 0$	λ	λ^2	$\frac{1}{1-\lambda t}$
Ji-Cuadrado	χ_n^2	$\frac{x^{\frac{n}{2}-1} e^{-\frac{x}{2}}}{2^{\frac{n}{2}} \Gamma(\frac{n}{2})} \quad x \geq 0$	n	$2n$	$\frac{1}{(1-2t)^{\frac{n}{2}}}$
Normal	$N(\mu, \sigma^2)$	$\frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-\mu)^2}{2\sigma^2}} \quad -\infty \leq x \leq \infty$	μ	σ^2	$e^{t\mu + \frac{\sigma^2 t^2}{2}}$
t-Student	t_n	$\frac{\Gamma(\frac{n+1}{2}) \Gamma(\frac{n}{2})^{-1}}{\sqrt{n\pi} \Gamma(\frac{n}{2})} \frac{1}{(1+\frac{x^2}{n})^{\frac{n+1}{2}}} \quad -\infty \leq x \leq \infty$	$0 \quad n > 1$	$\frac{n}{n-2} \quad n > 2$	
F-Fisher	$F_{r,s}$	$\frac{\Gamma(\frac{r+s}{2}) r^{r/2} s^{s/2} x^{(r/2)-1}}{\Gamma(r/2) \Gamma(s/2) (r+s)^{(r+s)/2}} \quad x \geq 0$	$\frac{s}{s-2} \quad s > 2$	$\frac{2s(r+s-2)}{r(s-2)^2(s-4)} \quad s > 4$	

BS:

$$\Gamma(p) = \int_0^\infty x^{p-1} e^{-x} dx$$

$$\Gamma(p) = (p-1)\Gamma(p-1) \quad p \in \mathbb{N}$$