

Funciones Generadoras de Probabilidad (Fgp) y Transformadas de Laplace (TL)

VARIABLE	RANGO	Media	Varianza	fdp	fgp o TL
Bernoulli (p)	$x = 0 \text{ ó } 1$	p	pq	$p^x q^{1-x}$	$q + pz$
Binomial (n,p)	$x = 0, 1, \dots, n$	np	npq	$\binom{n}{x} p^x q^{n-x}$	$(q + pz)^n$
Geométrica (p)	$x = 1, 2, \dots$	1/p	$q/p^2$	$pq^{x-1}$	$\frac{pz}{1-qz}$
Geométrica (p)	$x = 0, 1, \dots$	q/p	$q/p^2$	$pq^x$	$\frac{p}{1-qz}$
Bin. Negativa (r,p)	$x = r, r+1, \dots$	r/p	$rq/p^2$	$\binom{x-1}{r-1} p^r q^{x-r}$	$\left(\frac{pz}{1-qz}\right)^r$
Bin. Negativa (r,p)	$x = 0, 1, \dots$	rq/p	$rq/p^2$	$\binom{x+r-1}{r-1} p^r q^x$	$\left(\frac{p}{1-qz}\right)^r$
Poisson ( $\lambda$ )	$x = 0, 1, \dots$	$\lambda$	$\lambda$	$\lambda^x e^{-\lambda} / x!$	$\exp[\lambda(z-1)]$
Exponencial ( $\lambda$ )	$x > 0$	1/ $\lambda$	1 / $\lambda^2$	$\lambda e^{-\lambda x}$	$\lambda / (\lambda + \theta)$
Gamma (r, $\lambda$ )	$x > 0$	r / $\lambda$	r / $\lambda^2$	$\lambda(\lambda x)^{r-1} e^{-\lambda x} / \Gamma(r)$	$[\lambda / (\lambda + \theta)]^r$