

Useful facts about some useful densities

Distribution	Parameters	R-suffix	Density fn.	Mean	Variance
binomial	n, π	binom	$\frac{n!}{x!(n-x)!} \pi^x (1-\pi)^{n-x}, \quad x = 0, 1, \dots, n$	$n\pi$	$n\pi(1-\pi)$
poisson	λ	pois	$\frac{e^{-\lambda} \lambda^x}{x!}, \quad x = 0, 1, 2, \dots$	λ	λ
normal	μ, σ	norm	$\frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2}$	μ	σ^2
lognormal	μ, σ	lnorm	$\frac{1}{x\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{\ln x - \mu}{\sigma}\right)^2}$	$e^{\mu+\sigma^2/2}$	$e^{2\mu+\sigma^2} (e^{\sigma^2} - 1)$
exponential	λ	exp	$\lambda e^{-\lambda x}, \quad x \geq 0$	$\frac{1}{\lambda}$	$\frac{1}{\lambda^2}$