Distributions

Name	pmf/pdf	μ	σ^2	mgf
Uniform discrete	$1/n, x = 1, \ldots, n$	$(n+1)/2$	$(n^2-1)/12$	$(e^{(n+1)t} - e^t)/(n(e^t-1))$
Binomial	$\binom{n}{x} p^x (1-p)^{n-x}, x = 0, \ldots, n$	np	$np(1-p)$	$(1-p+pe^t)^n$
Poisson	$e^{-\lambda}\lambda^x/x!, x = 0, 1, \ldots$	λ	λ	$e^{\lambda(e^t-1)}$
Negative binomial	$\binom{x-1}{r-1} q^{x-r} p^r, x = r, r+1, \ldots$	r/p	rq/p^2	$(pe^t/(1-qe^t))^r$
Uniform continuous	$1/(b-a), a < x < b$	$(a+b)/2$	$(b-a)^2/12$	$(e^{tb} - e^{ta})/(t(b-a))$
Gamma	$\lambda^k/\Gamma(k) x^{k-1} e^{-\lambda x}, x > 0$	k/λ	k/λ^2	$(\lambda/(\lambda - t))^k$
Normal	$1/(\sqrt{2\pi}\sigma) e^{-(x-\mu)^2/(2\sigma^2)}$	μ	σ^2	$e^{t\mu + t^2\sigma^2/2}$
Beta	$\frac{\Gamma(a+b)}{\Gamma(a)\Gamma(b)} x^{a-1}(1-x)^{b-1} I_{(0,1)}(x)$	$a/(a+b)$	$ab/((a+b)^2(a+b+1))$	Not requested
Cauchy	$1/(\pi(1+x^2))$			

Bivariate normal

$1/(2\pi\sigma_X\sigma_Y\sqrt{1-\rho^2}) e^{-((x-\mu_X)^2/\sigma_X^2) - 2\rho(x-\mu_X)(y-\mu_Y)/(\sigma_X\sigma_Y) + (y-\mu_Y)^2/\sigma_Y^2)/(2(1-\rho^2))}$

$\mu_Y + \rho\sigma_Y(x-\mu_X)/\sigma_X$

$\sigma_Y^2(1-\rho^2)$.

Multivariate normal

$(2\pi)^{-k/2}|\Sigma|^{-1/2} e^{-(\mathbf{x}-\mu)^T\Sigma^{-1}(\mathbf{x}-\mu)/2}$

$\mu_Y + \Sigma_{YX}\Sigma_{XX}^{-1}(\mathbf{x} - \mu_X), \Sigma_{YY} - \Sigma_{YX}\Sigma_{XX}^{-1}\Sigma_{XY}$