

Name	Notation	pdf/pmf	Range	Mean μ	Variance σ^2
Beta	$\text{Be}(\alpha, \beta)$	$f(x) = \frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1}$	$x \in (0, 1)$	$\frac{\alpha+\beta}{\alpha}$	$\frac{(\alpha+\beta)(\alpha+\beta+1)}{\alpha^2}$
Binomial	$\text{Bi}(n, p)$	$f(x) = \binom{n}{x} p^x (1-p)^{n-x}$	$x \in 0, \dots, n$	np	$np(1-p)$
Exponential	$\text{Ex}(\lambda)$	$f(x) = \lambda e^{-\lambda x}$	$x \in \mathbb{R}_+$	$1/\lambda$	$1/\lambda^2$
Gamma	$\text{Ga}(\alpha, \lambda)$	$f(x) = \frac{\Gamma(\alpha)}{\lambda^\alpha} x^{\alpha-1} e^{-\lambda x}$	$x \in \mathbb{R}_+$	α/λ	α/λ^2
Geometric	$\text{Ge}(p)$	$f(x) = p q^x$	$x \in \mathbb{Z}_+$	p/q	p/d^2
HyperGeometric	$\text{HG}(n, A, B)$	$f(x) = \frac{\binom{n}{A+B} \binom{A}{x} \binom{B}{n-x}}{\binom{n}{x}}$	$x \in 0, \dots, n$	$n P$	$n P Q \frac{N-1}{N-n}$
Logistic	$\text{Lo}(\mu, \beta)$	$f(x) = \frac{e^{-\beta} / (\beta - x)}{e^{-\beta} / (\beta - x) + 1}$	$x \in \mathbb{R}$	μ	$\pi^2 \beta^2 / 3$
Log Normal	$\text{LN}(\mu, \sigma^2)$	$f(x) = \frac{1}{x} \frac{e^{-\frac{(\log x - \mu)^2}{2\sigma^2}}}{\sqrt{2\pi\sigma^2}}$	$x \in \mathbb{R}_+$	$e^{\mu + \sigma^2/2}$	$e^{2\mu + \sigma^2} (1 - e^{\sigma^2})$
Negative Binomial	$\text{NB}(\alpha, p)$	$f(x) = \binom{x}{\alpha} p^\alpha (1-p)^{x-\alpha}$	$x \in \mathbb{Z}_+$	α/p	$\alpha q/d^2$
Normal	$\text{No}(\mu, \sigma^2)$	$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-x^2/(2\sigma^2)}$	$x \in \mathbb{R}$	μ	σ^2
Pareto	$\text{Pa}(\alpha, \beta)$	$f(x) = \beta \alpha^\beta / x^{\beta+1}$	$x \in (0, \infty)$	$\frac{\beta-1}{\alpha}$	$\frac{(\beta-1)(\beta-2)}{\alpha^2}$
Poisson	$\text{Po}(\lambda)$	$f(x) = \frac{\lambda^x e^{-\lambda}}{x!}$	$x \in \mathbb{Z}_+$	λ	λ
Snedecor F	$F(\nu_1, \nu_2)$	$f(x) = \frac{\Gamma(\frac{\nu_1+\nu_2}{2}) \Gamma(\frac{\nu_1}{2}) \Gamma(\frac{\nu_2}{2})}{\Gamma(\frac{\nu_1}{2}) \Gamma(\frac{\nu_2}{2})} \times \frac{x^{\frac{\nu_1}{2}-1}}{[1 + x \frac{\nu_1}{\nu_2}]^{\frac{\nu_1+\nu_2}{2}}}$	$x \in \mathbb{R}_+$	$\frac{\nu_2}{\nu_2+2}$	$\frac{2}{\nu_2} \left(\frac{\nu_2-2}{\nu_2+2} \right)$
Student t	$t(\nu)$	$f(x) = \frac{\Gamma(\frac{\nu+1}{2}) \Gamma(\frac{\nu}{2})^{\frac{\nu}{2}}}{\sqrt{\nu} \Gamma(\frac{\nu}{2})} [1 + x^2/\nu]^{-(\nu+1)/2}$	$x \in \mathbb{R}$	0	$\nu/(\nu-2)$
Uniform	$\text{Un}(\alpha, \beta)$	$f(x) = \frac{1}{\beta-\alpha}$	$x \in (\alpha, \beta)$	$\frac{\alpha+\beta}{2}$	$\frac{(\beta-\alpha)^2}{12}$