

Name	Notation	pdf/pmf	Range	Mean $\mu$	Variance $\sigma^2$
Beta	$\text{Be}(\alpha, \beta)$	$f(x) = \frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1}$	$x \in (0, 1)$	$\frac{\alpha}{\alpha+\beta}$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$
Binomial	$\text{Bi}(n, p)$	$f(x) = \binom{n}{x} p^x q^{(n-x)}$	$x \in 0, \dots, n$	$np$	$npq \quad (q = 1 - p)$
Exponential	$\text{Ex}(\lambda)$	$f(x) = \lambda e^{-\lambda x}$	$x \in \mathbb{R}_+$	$1/\lambda$	$1/\lambda^2$
Gamma	$\text{Ga}(\alpha, \lambda)$	$f(x) = \frac{\lambda^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\lambda x}$	$x \in \mathbb{R}_+$	$\alpha/\lambda$	$\alpha/\lambda^2$
Geometric	$\text{Ge}(p)$	$f(x) = pq^x$ $f(y) = pq^{y-1}$	$x \in \mathbb{Z}_+$ $y \in \{1, \dots\}$	$q/p$ $1/p$	$q/p^2 \quad (q = 1 - p)$ $q/p^2 \quad (y = x + 1)$
HyperGeo.	$\text{HG}(n, A, B)$	$f(x) = \frac{\binom{A}{x} \binom{B}{n-x}}{\binom{A+B}{n}}$	$x \in 0, \dots, n$	$nP$	$nP(1-P) \frac{N-n}{N-1} \quad (P = \frac{A}{A+B})$
Logistic	$\text{Lo}(\mu, \beta)$	$f(x) = \frac{e^{-(x-\mu)/\beta}}{\beta[1+e^{-(x-\mu)/\beta}]^2}$	$x \in \mathbb{R}$	$\mu$	$\pi^2\beta^2/3$
Log Normal	$\text{LN}(\mu, \sigma^2)$	$f(x) = \frac{1}{x\sqrt{2\pi\sigma^2}} e^{-(\log x - \mu)^2/2\sigma^2}$	$x \in \mathbb{R}_+$	$e^{\mu+\sigma^2/2}$	$e^{2\mu+\sigma^2} (e^{\sigma^2}-1)$
Neg. Binom.	$\text{NB}(\alpha, p)$	$f(x) = \binom{x+\alpha-1}{x} p^\alpha q^x$ $f(y) = \binom{y-1}{y-\alpha} p^\alpha q^{y-\alpha}$	$x \in \mathbb{Z}_+$ $y \in \{\alpha, \dots\}$	$\alpha q/p$ $\alpha/p$	$\alpha q/p^2 \quad (q = 1 - p)$ $\alpha q/p^2 \quad (y = x + \alpha)$
Normal	$\text{No}(\mu, \sigma^2)$	$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-(x-\mu)^2/2\sigma^2}$	$x \in \mathbb{R}$	$\mu$	$\sigma^2$
Pareto	$\text{Pa}(\alpha, \epsilon)$	$f(x) = \alpha \epsilon^\alpha / x^{\alpha+1}$	$x \in (\epsilon, \infty)$	$\frac{\epsilon\alpha}{\alpha-1}$	$\frac{\epsilon^2\alpha}{(\alpha-1)^2(\alpha-2)}$
Poisson	$\text{Po}(\lambda)$	$f(x) = \frac{\lambda^x}{x!} e^{-\lambda}$	$x \in \mathbb{Z}_+$	$\lambda$	$\lambda$
Snedecor $F$	$F(\nu_1, \nu_2)$	$f(x) = \frac{\Gamma(\frac{\nu_1+\nu_2}{2}) (\nu_1/\nu_2)^{\nu_1/2}}{\Gamma(\frac{\nu_1}{2})\Gamma(\frac{\nu_2}{2})} \times$ $x^{\frac{\nu_1-2}{2}} \left[1 + \frac{\nu_1}{\nu_2} x\right]^{-\frac{\nu_1+\nu_2}{2}}$	$x \in \mathbb{R}_+$	$\frac{\nu_2}{\nu_2-2}$	$\left(\frac{\nu_2}{\nu_2-2}\right)^2 \frac{2(\nu_1+\nu_2-2)}{\nu_1(\nu_2-4)}$
Student $t$	$t_\nu$	$f(x) = \frac{\Gamma(\frac{\nu+1}{2})}{\Gamma(\frac{\nu}{2})\sqrt{\pi\nu}} [1 + x^2/\nu]^{-(\nu+1)/2}$	$x \in \mathbb{R}$	$0$	$\nu/(\nu-2)$
Uniform	$\text{Un}(a, b)$	$f(x) = \frac{1}{b-a}$	$x \in (a, b)$	$\frac{a+b}{2}$	$\frac{(b-a)^2}{12}$
Weibull	$\text{We}(\alpha, \beta)$	$f(x) = \alpha\beta x^{\alpha-1} e^{-\beta x^\alpha}$	$x \in \mathbb{R}_+$	$\frac{\Gamma(1+\alpha^{-1})}{\beta^{1/\alpha}}$	$\frac{\Gamma(1+2/\alpha)-\Gamma^2(1+1/\alpha)}{\beta^{2/\alpha}}$