Distribution	Parameters	CDF	PMF/PDF	Support	Mean	Median	Mode	Variance	MGF
Bernoulli	$0 < p < 1, p \in \mathbb{R}$	$\begin{cases} 0 & \text{for } k < 0 \\ 1-p & \text{for } 0 \leq k < 1 \\ 1 & \text{for } k \geq 1 \end{cases}$	$\begin{cases} q = (1-p) & \text{for } k = 0 \\ p & \text{for } k = 1 \end{cases}$	$k \in \{0, 1\}$	p	$\begin{cases} 0 & \text{if } q > p \\ 0.5 & \text{if } q = p \\ 1 & \text{if } q < p \end{cases}$	$\begin{cases} 0 & \text{if } q > p \\ 0, 1 & \text{if } q = p \\ 1 & \text{if } q < p \end{cases}$	$p(1-p)(= pq)$	$q + pe^t$
Binomial	$n \in N_0$; $p \in [o, 1]$	$I_{1-p}(n-k, 1+k)$	$\binom{n}{k} p^k (1-p)^{n-k}$	$k \in \{0, \ldots, n\}$	np	$\lfloor np \rfloor or \lceil np \rceil$	$\lfloor (n+1)p \rfloor or \lceil (n+1)p \rceil - 1$	$np(1-p)$	$(1 - p + pe^t)^n$
Poisson	$\lambda > 0$ (real) - rate	$\frac{\Gamma(\lfloor k+1 \rfloor, \lambda)}{\lfloor k \rfloor !}$, or $e^{-\lambda} \sum_{i=0}^{\lfloor k \rfloor} \frac{\lambda^i}{i!}$	$\frac{\lambda^k e^{-\lambda}}{k!}$	$k \in \mathbb{N} \cup \{0\}$;	λ	$\approx \lfloor \lambda + 1/3 - 0.02/\lambda \rfloor$	$\lceil \lambda \rceil - 1, \lfloor \lambda \rfloor$	λ	$\exp(\lambda(e^t - 1))$
Gamma (rate)	$\alpha > 0$ shape, $\beta > 0$ rate	$\frac{1}{\Gamma(\alpha)} \gamma(\alpha, \beta x)$	$\frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}$	$x \in (0, \infty)$	$\mathrm{E}[X] = \frac{\alpha}{\beta}$	No simple closed form	$\frac{\alpha - 1}{\beta}$ for $\alpha \geq 1$	$\frac{\alpha}{\beta^2}$	$\left(1 - \frac{t}{\beta}\right)^{-\alpha}$ for $t < \beta$
Gamma (scale)	$k > 0$ shape, $\theta > 0$ scale	$\frac{1}{\Gamma(k)} \gamma\left(k, \frac{x}{\theta}\right)$	$\frac{1}{\Gamma(k)\theta^k} x^{k-1} e^{-\frac{x}{\theta}}$	$x \in (0, \infty)$	$\mathrm{E}[X] = k\theta$	No simple closed form	$(k-1)\theta$ for $k \geq 1$	$k\theta^2$	$(1 - \theta t)^{-k}$ for $t < \frac{1}{\theta}$
Beta	$\alpha > 0$ shape, $\beta > 0$ shape	$I_x(\alpha, \beta)$	$\frac{x^{\alpha-1}(1-x)^{\beta-1}}{\mathrm{B}(\alpha,\beta)}$	$x \in [0, 1]$	$\mathrm{E}[X] = \frac{\alpha}{\alpha+\beta}$	$I^{[-1]}_{\frac{1}{2}}(\alpha, \beta)$ (in general) $\approx \frac{\alpha - \frac{1}{3}}{\alpha+\beta-\frac{2}{3}}$ for $\alpha, \beta > 1$	$\frac{\alpha-1}{\alpha+\beta-2} for \alpha, \beta > 1$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$	$1 + \sum_{k=1}^{\infty} \left(\prod_{r=0}^{k-1} \frac{\alpha+r}{\alpha+\beta+r} \right) \frac{t^k}{k!}$
Exponential									