Distribution	p.m.f. or p.d.f.	E(X)	Var(X)	m. g. f.
Uniform $n \in \{1, 2, \dots\}$	$1/n$ $x \in \{1, 2, \dots, n\}$	$(n+1)/2$	$(n^2-1)/12$	$\frac{e^t(1-e^{tn})}{N(1-e^t)}$
Hypergeometric $N \in \{0, 1, 2, \dots\}$ $r \in \{0, 1, \dots, N\}$ $n \in \{0, 1, \dots, N\}$	$\frac{\binom{r}{x}\binom{N-r}{n-x}}{\binom{N}{n}}$ $\max(0, n-N+r) \leq x \leq \min(\text{r,n})$	$\frac{nr}{N}$	$\frac{nr(N-r)(N-n)}{N^2(N-1)}$	
Binomial $0 < p < 1$	$\binom{n}{x}p^x(1-p)^{n-x}$ $x \in \{0, \dots, n\}$	np	$np(1-p)$	$(1-p+pe^t)^n$
Geometric $0 < p < 1$	$p(1-p)^{x-1}$ $x \in \{1, \dots, n\}$	1/p	$(1-p)/p^2$	$\frac{pe^t}{1-(1-p)e^t}$
Negative Binomial $0 < p < 1$ $r \in \{1, 2, \dots\}$	$\binom{x-1}{r-1}p^r(1-p)^{x-r}$ $x \in \{r, r+1, \dots\}$	r/p	$rp/(1-p)^2$	$\left(\frac{e^t p}{1-(1-p)e^t}\right)^r$
Poisson $\lambda > 0$	$\frac{\lambda^x e^{-\lambda}}{x!}$ $x \in \{0, 1, 2, \dots\}$	λ	λ	$e^{\lambda(e^t-1)}$
Exponential $\lambda > 0$	$\lambda e^{-\lambda x}$ $x > 0$	λ^{-1}	λ^{-2}	$\frac{\lambda}{\lambda - t}$ for $t < \lambda$
Gamma $\alpha > 0$, $\lambda > 0$	$\frac{\lambda^\alpha x^{\alpha-1}}{\Gamma(\alpha)}e^{-\lambda x}$ $x > 0$ $\Gamma(\alpha) = \int_0^\infty x^{\alpha-1}e^{-x}dx$	α/λ	α/λ^2	$\left(\frac{\lambda}{\lambda-t}\right)^\alpha$
Normal $-\infty\mu < \infty$, $\sigma^2 > 0$	$\frac{1}{\sqrt{2\pi}\sigma}e^{\frac{-(x-\mu)^2}{2\sigma^2}}$ $x > 0$	μ	σ^2	$e^{(\sigma^2 t^2)/2+\mu t}$
Uniform $a < b$	$\frac{1}{b-a}$ $a < x < b$	$1/2*(a+b)$	$1/12*(b-a)^2$	$\frac{e^{tb}-e^{ta}}{t(b-a)}$