	PDF	Mean	Variance	MGF
Discrete Distributions:				
Binomial ($n = 1$ gives Bernoulli)	$b(x; n, \theta) = \binom{n}{x} \theta^x (1-\theta)^{n-x}$ for $x = 0, 1, \ldots,$ n	$n\theta$	$n\theta(1-\theta)$	$M_X(t) = \left(1 + \theta(e^t - 1)\right)^n$
Negative binomial	$b^*(x; k, \theta) = \binom{x-1}{k-1} \theta^k (1-\theta)^{x-k}$ for $x = k, k+1, \ldots$	$\frac{k}{\theta}$	$\frac{k}{\theta}\left(\frac{1}{\theta} - 1\right)$	
Geometric (negative binomial with $k = 1$)	$g(x; \theta) = \theta(1-\theta)^{x-1}$ for $x = 1, 2, \ldots$	$\frac{1}{\theta}$	$\frac{1}{\theta}\left(\frac{1}{\theta} - 1\right)$	$M_X(t) = \dfrac{\theta t}{1 - e^t(1-\theta)}$
Poisson	$p(x; \lambda) = \dfrac{\lambda^x e^{-\lambda}}{x!}$ for $x = 0, 1, 2, \ldots$	λ	λ	$M_X(t) = e^{\lambda(e^t - 1)}$
Continuous distributions:				
Uniform	$u(x; \alpha, \beta) = \dfrac{1}{\beta - \alpha}$ for $\alpha < x < \beta$	$\frac{\alpha+\beta}{2}$	$\frac{1}{12}(\beta - \alpha)^2$	
Gamma	$g(x; \alpha, \beta) = \dfrac{1}{\beta^\alpha \Gamma(\alpha)} x^{\alpha-1} e^{-\frac{x}{\beta}}$ for $x > 0$	$\alpha\beta$	$\alpha\beta^2$	$M_X(t) = (1 - \beta t)^{-\alpha}$
Exponential (gamma with $\alpha = 1$, $\beta = \theta$)	$g(x; \theta) = \dfrac{1}{\theta} e^{-\frac{x}{\theta}}$ for $x > 0$	θ	θ^2	$M_X(t) = (1 - \theta t)^{-1}$
Chi-square (gamma with $\alpha = \frac{\nu}{2}$, $\beta = 2$)	$f(x; \nu) = \dfrac{1}{2^{\frac{\nu}{2}} \Gamma\left(\frac{\nu}{2}\right)} x^{\frac{\nu-2}{2}} e^{-\frac{x}{2}}$ for $x > 0$	ν	2ν	$M_X(t) = (1 - 2t)^{-\frac{\nu}{2}}$
Normal	$n(x; \mu, \sigma) = \dfrac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2}$	μ	σ^2	$M_X(t) = e^{\mu t + \frac{1}{2}\sigma^2 t^2}$