Discrete Distributions

Distrtibution	PMF	$E[X]$	$\mathrm{Var}(X)$	
Bernoulli(p)	$p(0) = 1 - p$, $p(1) = p$	p	$p(1-p)$	
Binom(n, p)	$p(k) = \binom{n}{k} p^k (1-p)^{n-k}$	np	$np(1-p)$	$(pe^t + 1 - p)^n$
Poisson(λ)	$p(k) = \frac{\lambda^k}{k!} e^{-\lambda}$	λ	λ	$\exp\{\lambda(e^t - 1)\}$
Geometric(p)	$p(k) = (1-p)^{k-1} p$	$1/p$	$\frac{1-p}{p^2}$	

Continuous Distributions

Distrtibution	PDF $f(x)$	CDF $F(x)$	$E[X]$	$\mathrm{Var}(X)$	MGF $M(t)$
Uniform(α, β)	$\frac{1}{\beta - \alpha}$, $\alpha \leq x \leq \beta$		$\frac{\alpha+\beta}{2}$	$\frac{(\beta-\alpha)^2}{12}$	
$N(\mu, \sigma^2)$	$\frac{1}{\sqrt{2\pi}\,\sigma} e^{-(x-\mu)^2/2\sigma^2}$	$\Phi(x)$: see table	μ	σ^2	$\exp(\mu t + \sigma^2 t^2/2)$
Exp(λ)	$\lambda e^{-\lambda x}$, $x \geq 0$	$1 - e^{-\lambda x}$, $x \geq 0$	$1/\lambda$	$1/\lambda^2$	$\frac{\lambda}{\lambda - t}$