Random variable - part 1

	E(X)	D(X)	$\alpha_3(X)$	$\alpha_4(X)$	Mo(X)	x_P	note
definition		$E\{[X-E(X)]^2\}$	$\frac{\mu_3(X)}{\sigma^3(X)}$	$\frac{\mu_4(X)}{\sigma^4(X)}-3$		$F(x_P) = P$	$\mu_r = E\{[X-E(X)]^r\}$
discrete distribution	$\sum_M x\, p(x)$	$\sum_M x^2 p(x) - \mu^2$	according to the definition	according to the definition			$\mu_r = \sum_M (x-\mu)^r\, p(x)$
continuous distribution	$\int_M x\, f(x)dx$	$\int_M x^2 f(x)dx - \mu^2$	according to the definition	according to the definition			$\mu_r = \int_M (x-\mu)^r f(x)dx$
$A(\pi)$	π	$\pi(1-\pi)$	$\frac{1-2\pi}{\sqrt{\pi(1-\pi)}}$	$\frac{1-6\pi(1-\pi)}{\pi(1-\pi)}$	$2\pi - 1 \leq Mo \leq 2\pi$		
$B(n, \pi)$	$n\pi$	$n\pi(1-\pi)$	$\frac{1-2\pi}{\sqrt{n\pi(1-\pi)}}$	$\frac{1-6\pi(1-\pi)}{n\pi(1-\pi)}$	$(n+1)\pi - 1 \leq$ $\leq Mo \leq (n+1)\pi$		
$P(\lambda)$	λ	λ	$\frac{1}{\sqrt{\lambda}}$	$\frac{1}{\lambda}$	$\lambda - 1 \leq Mo \leq \lambda$		
$Hg(N, M, n)$	$n\pi$	$n\pi(1-\pi)\frac{N-n}{N-1}$	$\frac{(1-2\pi)(N-2n)}{(N-2)\cdot\sigma}$	according to the definition	$a - 1 \leq Mo \leq a$		$\pi = M/N,\quad \sigma = \sqrt{D(X)}$ $a = \frac{(M+1)(n+1)}{N+2}$
$R(\alpha, \beta)$	$\frac{\alpha+\beta}{2}$	$\frac{(\beta-\alpha)^2}{12}$	0	-1,2		$\alpha + P(\beta-\alpha)$	$x_{0,5} = \frac{\alpha+\beta}{2}$
$E(\alpha, \delta)$	$\alpha + \delta$	δ^2	2	6		$\alpha - \delta \ln(1-P)$	$x_{0,5} = \alpha + \delta \ln 2$
$N(\mu, \sigma^2)$	μ	σ^2	0	0	μ	$\mu + \sigma u_P$	$x_{0,5} = \mu$
$N(0, 1)$	0	1	0	0	0	u_P tab.	$u_{0,5} = 0$
$LN(\mu, \sigma^2)$	$e^{\mu+\sigma^2/2}$	$e^{2\mu}\omega(\omega-1)$	$\sqrt{\omega-1}\cdot(\omega+2)$	$\omega^4+2\omega^3+3\omega^2-6$	$e^{\mu-\sigma^2}$	$e^{\mu+\sigma\cdot u_P}$	$\omega = e^{\sigma^2}$ $x_{0,5} = e^{\mu}$