BASIC FORMULAS

Name	Formula
Bayes	$P(F\|E) = P(E\|F)P(F)\ /\ [\ P(E\|F)P(F) + P(E\|F^c)P(F^c)\ ]$
Method of Moments	If $\psi(t) = E[e^{tX}]$ then $\psi'(0) = E[X]$ and $\psi''(0) = E[X^2]$
Markov's Inequality	For continuous, nonnegative X, $c > 0:\ \ P(\ X \geq c\ )\ \leq\ E[X]\ /\ c$
Chebyshev's Inequality	$P(\ \|X - \mu\| \geq k\sigma\ )\ \leq\ 1\ /\ k^2$

Name	Probability Mass Function	Domain	Mean	Std. Dev.
Bernoulli	$P(X = 1) = p\ \ ,\ \ P(X = 0) = 1 - p$	$X = 0\ ,\ 1$	p	$\sqrt{p(1-p)}$
Binomial	$P(X = k) = \binom{n}{k} p^k (1-p)^{n-k}$	$0 \leq k \leq n$	np	$\sqrt{np(1-p)}$
Poisson	$P(X = k) = e^{-\lambda}\lambda^k / k!$	$k = 0, 1, 2, \cdots$	λ	$\sqrt{\lambda}$