Table 1: Discrete Distributions

Name	Density function	Mean	Variance
Uniform	$f(x) = \frac{1}{n}$	$\frac{n+1}{2}$	$\frac{n^2-1}{12}$
Geometric	$f(x) = q^x p$	$\frac{q}{p}$	$\frac{q}{p^2}$
Negative Binomial	$f(x) = \binom{x+r-1}{r-1} q^x p^r$	$\frac{rq}{p}$	$\frac{rq}{p^2}$
Binomial	$f(x) = \binom{n}{x} p^x q^{n-x}$	np	npq
Hypergeometric	$f(x) = \frac{\binom{r}{x}\binom{N-r}{n-x}}{\binom{N}{n}}$	$n\frac{r}{N}$	$n\frac{r}{N}\left(\frac{N-r}{N}\right)\left(\frac{N-n}{N-1}\right)$
Poisson	$f(x) = \frac{e^{-\lambda}\lambda^x}{x!}$	λ	λ

Table 2: Continuous Distributions

Name	PDF	CDF	Mean	Variance
Uniform	$f(x) = \frac{1}{b-a}$	$F(x) = \frac{x-a}{b-a}$	$\frac{a+b}{2}$	$\frac{(b-a)^2}{12}$
Exponential	$f(x) = \lambda e^{-\lambda x}$	$F(x) = 1 - e^{-\lambda x}$	$\frac{1}{\lambda}$	$\frac{1}{\lambda^2}$
Normal	$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{\frac{-(x-\mu)^2}{2\sigma^2}}$	$F(x) = \Phi(x)$	μ	σ^2
Gamma	$f(x) = \frac{\lambda^\alpha x^{\alpha-1} e^{-\lambda x}}{\Gamma(\alpha)}$	$F(x) = 1 - \sum_{k=1}^{\alpha-1} Pois\left(\frac{x}{\lambda}\right)$	$\frac{\alpha}{\lambda}$	$\frac{\alpha}{\lambda^2}$