Notation and Parameters	**Probability Function** $f(x)$
Discrete Uniform(a, b) $b \geq a$ a, b integers	$\frac{1}{b-a+1}$ $x = a, a+1, \ldots, b$
Hypergeometric(N, r, n) $N = 1, 2, \ldots$ $n = 0, 1, \ldots, N$ $r = 0, 1, \ldots, N$	$\frac{\binom{r}{x}\binom{N-r}{n-x}}{\binom{N}{n}}$ $x = max(0, n-N+r), \ldots, min(r, n)$
Binomial(n, p) $0 \leq p \leq 1, q = 1-p$ $n = 1,2, \ldots$	$\binom{n}{x} p^x q^{n-x}$ $x = 0,1, \ldots, n$
Bernoulli(p) $0 \leq p \leq 1, q = 1-p$	$p^x q^{1-x}$ $x = 0,1$
Negative Binomial(k, p) $0 < p \leq 1, q = 1-p$ $k = 1,2, \ldots$	$\binom{x+k-1}{x} p^k q^x = \binom{-k}{x} p^k (-q)^x$ $x = 0,1, \ldots$
Geometric(p) $0 < p \leq 1\ , q = 1-p$	pq^x $x = 0,1, \ldots$
Poisson(λ) $\lambda \geq 0$	$\frac{e^{-\lambda}\lambda^x}{x!}$ $x = 0,1, \ldots$