Name	PMF	Mean	Variance	MGF
Ber(p)	$\mathbb{P}(X=1)=p, \mathbb{P}(X=0)=1-p$	p	$p(1-p)$	$e^t p+(1-p)$
Bin(n,p)	$\binom{n}{x}p^x(1-p)^{n-x}$ for $x=0,1,\ldots,n$	np	$np(1-p)$	$(e^t p+(1-p))^n$
Geom(p)	$p(1-p)^{x-1}$ for $x=1,2,\ldots$	$\frac{1}{p}$	$\frac{1-p}{p^2}$	$\frac{e^t p}{1-(1-p)e^t}$ for $t<-\ln(1-p)$
NegBin(r,p)	$\binom{x-1}{r-1}p^r q^{x-r}$ for $x=r,r+1,\ldots$	$\frac{r}{p}$	$\frac{r(1-p)}{p^2}$	$\left(\frac{e^t p}{1-(1-p)e^t}\right)^r$ for $t<-\ln(1-p)$
HG(N_1,N_2,n)	$\frac{\binom{N_1}{x}\binom{N_2}{n-x}}{\binom{N_1+N_2}{n}}$ for $\max\{0,n-N_2\}\leq x\leq\min\{n,N_1\}$	$m\frac{N_1}{N_1+N_2}$	$n\cdot\frac{N_1N_2}{(N_1+N_2)^2}\cdot\cdot\frac{N_1+N_2-n}{N_1+N_2-1}$	
Poisson(λ)	$\frac{e^{-\lambda}\lambda^x}{x!}$ for $x=0,1,\ldots$	λ	λ	$e^{\lambda(e^t-1)}$

Table 1: Table of Important Distributions to be provided in the Exams.

Geometric series	$\sum_{k=0}^{N} ap^k = \frac{a(1-p^{N+1})}{1-p}$ for $p\in(0,1)$
Power series for e^x	$e^x=\sum_{k=0}^{\infty}\frac{x^k}{k!}$

Table 2: Table of formulas to be provided in the Exams.