İST 2225 İSTATİSTİK I DAĞILIMLAR TABLOSU

DAĞILIMLAR	**OLASILIK FONKSİYONU:** $f_X(x)$	**BEKLENEN DEĞER** $E(X)$	**VARYANS** $Var(X)$	**MOMENT ÇIKARAN FONKSİYON** $M_X(t)$
Bernoulli Dağılımı	$p^x q^{1-x},\ x=0,1\ \ q=1-p$	p	pq	$q+pe^t$
Binom Dağılımı	$\binom{n}{x} p^x q^{n-x}, x=0,1,2,\ldots,n;\ \ q=1-p$	np	npq	$(q+pe^t)^n$
Multinomial (Çok Terimli) Dağılım	$f(x_1,x_2,\ldots,x_n)=\frac{n!}{x_1!x_2!\ldots x_k!}p_1^{x_1}p_2^{x_2}\ldots p_k^{x_k}$ $\sum_{i=1}^{k} x_i = n \quad \sum_{i=1}^{k} p_i = 1$			
Geometrik Dağılım	$pq^{x-1},\ x=1,2,3,\ldots\ q=1-p$	$\frac{1}{p}$	$\frac{q}{p^2}$	$\frac{pe^t}{1-qe^t}$
Negatif Binom Dağılımı	$\binom{x-1}{k-1} p^k q^{x-k},\ \ q=1-p;\ \ x=k,k+1,k+2,\ldots$	$\frac{k}{p}$	$\frac{kq}{p^2}$	$\left(\frac{pe^t}{1-qe^t}\right)^k$
Hipergeometrik Dağılım	$\frac{\binom{a}{x}\binom{N-a}{n-x}}{\binom{N}{n}},\ x=0,1,2,\ldots,n$	$\frac{na}{N}$	$\frac{N-n}{N-1}\frac{na}{N}\left(1-\frac{a}{N}\right)$	
Kesikli Düzgün Dağılım	$\frac{1}{N},\ \ x=x_1,x_2,\ldots,x_n$	$\frac{N+1}{2}$	$\frac{N^2-1}{12}$	
Poisson Dağılımı	$\frac{e^{-\lambda}\lambda x}{x!},\ \ x=0,1,2,\ldots$	λ	λ	$e^{\lambda(e^t-1)}$

İST 2225 İSTATİSTİK I DAĞILIMLAR TABLOSU

DAĞILIMLAR	**OLASILIK YOĞUNLUK FONKSİYONU:** $f_X(x)$	**BEKLENEN DEĞER** $E(X)$	**VARYANS** $Var(X)$	**MOMENT ÇIKARAN FONKSİYON** $M_X(t)$
(Sürekli) Düzgün Dağılım	$\frac{1}{b-a},\quad a<x<b$	$\frac{a+b}{2}$	$\frac{(b-a)^2}{12}$	
Gamma Dağılımı	$\frac{1}{\Gamma(\alpha)\beta^{\alpha}}x^{\alpha-1}e^{-x/\beta},\quad x>0$	$\alpha\beta$	$\alpha\beta^2$	$\left(\frac{1}{1-t\beta}\right)^{\alpha}$
Üstel Dağılım	$\frac{1}{\beta}e^{-x/\beta}, x>0$	β	β^2	$(1-t\beta)^{-1}$
Ki-Kare Dağılımı	$\frac{1}{\Gamma(p/2)2^{p/2}}x^{p/2-1}e^{-x/2}, x>0$	p	$2p$	$\left(\frac{1}{1-2t}\right)^{p/2}$
Weibull Dağılımı	$\frac{\gamma}{\beta}x^{\gamma-1}e^{-x^{\gamma}/\beta}, x>0$			
Beta Dağılımı	$\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)}x^{\alpha-1}(1-x)^{\beta-1}, 0<x<1$	$\frac{\alpha}{\alpha+\beta}$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$	
Cauchy Dağılımı	$\frac{1}{\pi\left(1+(x-\theta)^2\right)}, -\infty<x<\infty$			
Log-Normal Dağılım	$\frac{1}{\sqrt{2\pi\sigma^2}}\frac{1}{x}e^{-\frac{1}{2\sigma^2}(\log(x)-\mu)^2}, -\infty<x<\infty$	$e^{\mu+\frac{\sigma^2}{2}}$	$e^{2(\mu+\sigma^2)}-e^{2\mu+\sigma^2}$	
Normal Dağılım	$\frac{1}{\sqrt{2\pi\sigma^2}}e^{-\frac{1}{2\sigma^2}(x-\mu)^2}, -\infty<x<\infty$	μ	σ^2	$e^{\mu t+\frac{t^2\sigma^2}{2}}$
Standart Normal Dağılım	$f(z)=\frac{1}{\sqrt{2\pi}}e^{-\frac{1}{2}z^2}, -\infty<z<\infty$	0	1	$e^{\frac{t^2}{2}}$