

Διωνυμική $f(x) = \frac{n!}{x!(n-x)!} p^x (1-p)^{n-x}, x = 0, 1, \dots, n$	$E(X) = np, Var(X) = np(1-p)$
Γεωμετρική $f(x) = p(1-p)^{x-1}, x = 1, 2, \dots$	$E(X) = \frac{1}{p}, Var(X) = \frac{1-p}{(p)^2}$
Poisson $f(x) = \frac{e^{-\lambda} \lambda^x}{x!}, x = 0, 1, \dots$	$E(X) = \lambda, Var(X) = \lambda$
Κανονική $f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}, x \in R$	$E(X) = \mu, Var(X) = \sigma^2$
Γάμμα $f(x) = \frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}, x > 0$ $\Gamma(\alpha) = (\alpha-1)!$ για $\alpha \in Z$	$E(X) = \frac{\alpha}{\beta}, Var(X) = \frac{\alpha}{\beta^2}$
Εκθετική $f(x) = \lambda e^{-\lambda x}, x > 0$	$E(X) = \frac{1}{\lambda}, Var(X) = \frac{1}{\lambda^2}$

Δίνεται ότι:

$$\Phi(1.96)=0.975, \Phi(2.33)=0.990, \Phi(1.645)=0.95, \Phi(1.285)=0.90$$

$$\Phi(2.5)=0.993, \Phi(0.31)=0.621, \Phi(3.99)=0.999, \Phi(2.055)=0.98$$

$$P(t_{11} > 1.796) = 0.05, P(t_{20} > 1.325) = 0.1, P(t_{10} > 1.328) = 0.1, P(t_{11} > 1.363) = 0.1$$

$$P(t_5 > 3.365) = 0.01, P(t_6 > 3.143) = 0.01, P(t_{12} > 2.681) = 0.01, P(t_{10} > 2.764) = 0.01$$

$$P(t_{10} > 1.812) = 0.05, P(t_{20} > 1.725) = 0.05, P(t_{19} > 1.729) = 0.05$$

$$P(t_5 > 2.015) = 0.05, P(t_6 > 1.943) = 0.05, P(t_{12} > 1.782) = 0.05, P(t_{10} > 1.812) = 0.05$$

$$P(\chi_6^2 > 16.81) = 0.01, P(\chi_{10}^2 > 23.21) = 0.01, P(\chi_5^2 > 15.09) = 0.01, P(\chi_{12}^2 > 26.22) = 0.01$$

$$P(\chi_6^2 > 12.59) = 0.01, P(\chi_{10}^2 > 18.31) = 0.05, P(\chi_5^2 > 11.07) = 0.05, P(\chi_{12}^2 > 21.03) = 0.05$$

$$P(\chi_6^2 > 0.8721) = 0.99, P(\chi_{10}^2 > 2.558) = 0.99, P(\chi_5^2 > 0.5543) = 0.01, P(\chi_{12}^2 > 26.22) = 0.99$$

$$P(\chi_6^2 > 1.635) = 0.95, P(\chi_{10}^2 > 3.940) = 0.95, P(\chi_5^2 > 1.145) = 0.95, P(\chi_{12}^2 > 5.226) = 0.95$$

$$P(\chi_6^2 > 2.204) = 0.90, P(\chi_{10}^2 > 4.865) = 0.90, P(\chi_5^2 > 1.610) = 0.90, P(\chi_{12}^2 > 6.304) = 0.90$$

$$P(\chi_6^2 > 10.64) = 0.10, P(\chi_{10}^2 > 15.99) = 0.10, P(\chi_5^2 > 9.236) = 0.10, P(\chi_{12}^2 > 18.55) = 0.10$$

* Διάρκεια Εξέτασης: 2 ½ ώρες*