— 、	选择题	(本大题共10题,	每题3分,	共30分)

- ▶ 1、甲袋中有3个红球1个白球,乙袋中有1个红球2个白球,从两袋中分别取出一个球,则两个球颜色相同的概率是。

 - (A) $\frac{1}{6}$ (B) $\frac{1}{4}$ (C) $\frac{1}{3}$ (D) $\frac{5}{12}$
- **5**2、若P(A) = 0.5, P(B) = 0.4, P(A B) = 0.3,则 $P(A \cup B) = 0.3$

PLAB)=d.Z

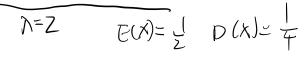
- (A) 0.6
- (B) 0.7
- (C) 0.8
- (D)0.5
- P_{3} 、设随机变量 X 的分布函数为 $F(x) = \begin{cases} x^{2}, 0 \le x < 1, & \text{则} \underline{P(0.2 < X < 0.3)} = 0 \\ 1, x \ge 1 \end{cases}$
 - (A) 0.01
- (B) 0.05(C) 0.1
- (D)0.4
- \bigcirc 4、设随机变量 \underline{X} 与 \underline{Y} 相互独立,且 \underline{X} 与 \underline{Y} 的分布函数分别为 $\underline{F}_{\underline{X}}(\underline{x}),\underline{F}_{\underline{Y}}(\underline{y})$,令
 - $Z = \min(X, Y)$,则Z的分布函数 $F_Z(z)$ 为。

- (A) $F_X(z)F_Y(z)$ (B) $1 F_X(z)F_Y(z)$
- =1-P(272)

- (C) $(1-F_X(z))(1-F_Y(z))$ (D) $1-(1-F_X(z))(1-F_Y(z))$ $= [-]^2 (min(x, y) 7]$
- S 5、设二维随机变量(X,Y)的联合概率密度函数为f(x,y),则P(X>1)=。
 - (A) $\int_{-\infty}^{1} dx \int_{-\infty}^{+\infty} f(x, y) dy$ (B) $\int_{1}^{+\infty} dx \int_{-\infty}^{+\infty} f(x, y) dy$
 - (C) $\int_{-\infty}^{1} f(x,y)dy$ (D) $\int_{1}^{+\infty} f(x,y)dy$
- \bigcirc 6、设随机变量 $X \sim B\left(10, \frac{1}{3}\right)$,则 $\frac{D(X)}{E(X)} = 0$

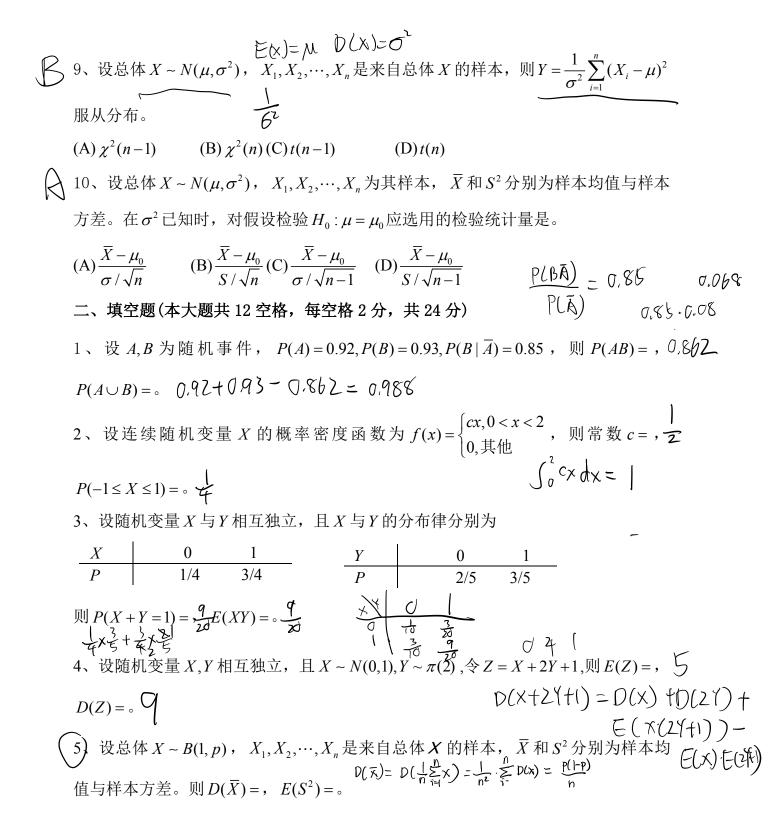
 - (A) $\frac{2}{3}$ (B) $\frac{1}{3}$ (C)1 (D) $\frac{1}{10}$
- (7、设 $X_1, X_2, \cdots X_n$ 为独立同分布的随机变量,且都服从参数为 2 的指数分布,则当n

充分大时,随机变量 $V = \sum_{i=1}^{n} X_i$ 近似服从。



- (A) $N(\frac{1}{2}, \frac{1}{4})$ (B) $N(2,4)(C) N(\frac{n}{2}, \frac{n}{4})$ (D) N(2n,4n)
- 8、若E(X) = E(Y) = 2, $Cov(X,Y) = -\frac{1}{6}$, 则E(XY) = 0

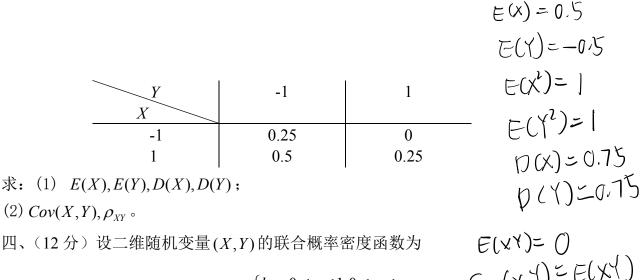
- $(A)\frac{23}{6} \qquad (B)4(C)\frac{25}{6} \qquad (D)-\frac{1}{6} \qquad E(\chi\Upsilon) = (OV(\chi)\Upsilon) + E(\chi)E(\Upsilon)$



6、设总体 X 服从 $[0,\theta]$ 上的均匀分布, $\theta>0$, X_1,X_2,\cdots,X_n 是来自总体 X 的样本, \bar{X} 为样本均值,则 θ 的矩估计量为。 $\frac{x}{2}$

7、设总体 $X \sim N(\mu, \sigma^2)$,其中 μ 未知, X_1, X_2, \cdots, X_n 是来自总体X的样本, S^2 为样本方差,要检验 $H_0: \sigma^2=1$,则应<u>采用的检验统计量</u>为。 $(n-1)S^2$

三、(12 分)设二维随机变量(X,Y)的联合分布律为



四、(12分) 设二维随机变量(
$$X,Y$$
)的联合概率密度函数为 $E(X')=0$ $f(x,y)=\begin{cases} kxy,0\leq x\leq 1,0\leq y\leq x,\\ 0, \pm 0.\end{cases}$ $C_{CV}(X,Y)=E(X')=E($

 X_1, X_2, \dots, X_n 是来自总体 X 的样本。

(1) 验证
$$\theta$$
 的最大似然估计量是 $\hat{\theta} = \frac{-1}{n} \sum_{i=1}^{n} \ln X_{i}$; $L(\theta) = \prod_{i=1}^{n} f(\times_{i} \otimes \theta) = \frac{1}{\theta^{n}} (\times_{i} \times_{i} \times_{i})^{\frac{1}{\theta^{n}} - 1}$ $\ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + (\frac{1}{\theta^{n}} - 1) \sum_{i=1}^{n} \ln X_{i}$ $\frac{1}{\theta^{n}} \ln L(\theta) = -n \ln \theta + ($