

作业纸

课程名称: 概率论

班级:

教学班级:

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3. $P(X_3) = P(X_3|B_2) P(B_2) = \frac{1}{10} + P(X_3|B_1) P(B_1)$

$= \frac{7}{60}$

X	0	1	2	3
P	$\frac{1}{30}$	$\frac{7}{60}$	$\frac{1}{2}$	$\frac{7}{60}$

5. $P(X_5) = \frac{1}{C_5^3} = \frac{1}{10}$

$P(X_5) = \frac{3}{5}$

$P(X_5) = 1 - P(X_5) - P(X_5) = \frac{2}{5}$

X	3	4	5
P	$\frac{1}{10}$	$\frac{3}{10}$	$\frac{2}{5}$

8. $a = \frac{1}{8}$

$b = \frac{1}{8}$

9. (1). $P\{X=i\} = \frac{C}{1+i} = C\left(\frac{1}{1} - \frac{1}{1+i}\right)$

$\sum_{i=2}^{\infty} P = \frac{C}{2} \Rightarrow C = 2$

联系方式: 19883557844

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$$9.12). \sum_{k=1}^{\infty} \frac{1}{k!} = e \therefore C=e.$$

$$(3) \sum_{k=2}^{\infty} \frac{C}{3^k} = \frac{C}{1-\frac{1}{3}} = \frac{C}{\frac{2}{3}} = \frac{3C}{2} = 1 \therefore C = \frac{2}{3}$$

$$10. (1). P = C_5^3 (0.8)^3 (0.2)^2 = 0.1048$$

$$(2). P(X_1) + P(X_2) = 0.7373$$

$$(3). P(X_2) + P(X_1) + P(X_0) = 0.9792$$

$$16. (1) P(Y=k) = (1-p)^{k-1} p \quad C_{k-1}^{n-1}$$

$$(2) P(Y=k) = C_{k-1}^{29} 0.7^{30-k} 0.3^{k-1} \quad k=1, 2, \dots, 30$$

$$17. \pi(\lambda) = \frac{\lambda^k}{k!} e^{-\lambda} \quad X \sim P(\lambda) \\ Y \sim P(\lambda(1-p))$$

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$$18. P = \frac{\frac{3}{4}\pi(5)}{\frac{1}{4}\pi(5) + \frac{3}{4}\pi(5)} =$$

$$\frac{3 \cdot \frac{3^2}{2!} e^{-3}}{\frac{5^2}{2!} e^{-5} + 3 \cdot \frac{3^2}{2!} e^{-3}} = \frac{27}{25e^2 + 27} \approx 0.8886$$

$$20. f(x) = \begin{cases} 0 & x < 3 \\ 0.1 & 3 \leq x < 4 \\ 0.4 & 4 \leq x < 5 \\ 1 & x \geq 5 \end{cases}$$

$$21. P\{X < 2\} = 0.4$$

$$P\{X \leq 2\} = 0.7$$

$$P\{X > 0\} = 0.6$$

$$P\{X \geq 0\} = 0.9$$

$$P\{X \neq 0\} = \frac{6}{7}$$

$$22. (1) \text{ ~~} \beta = 0 \text{ } \beta = 0~~$$

$$\text{On } A - (1+x)e^x = 1 \therefore A = 1$$

$$(2). P\{X \leq 1\} = 1 - 2e^{-1}$$

联系方式: _____