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Unit 7 - Week 6

How does an NPTEL online

Advanced Probability Theory

Advanced Probability Theory

Quiz : Assignment 6

Week 6 Feedback Form

Course outline

course work?

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

(Lec14)

(Lec15)

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

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Assignment Solution

NPTEL » Advanced Probability Theory

If two Random variables have the same moment generating function, then they have identical distributions If two Random variables have the same probability generating function, then they have identical distributions. If two Random variables have the same characteristic function, then they have identical distributions. If two Random variables have the same mean, then they have identical distributions to, the answer is incorrect. If two Random variables have the same moment generating function, then they have identical distributions two Random variables have the same probability generating function, then they have identical distributions two Random variables have the same characteristic function, then they have identical distributions. What are the conditions required to define a Probability Generating Function for the random variable X? X should be continuous type random variable X should be continuous type random variable X should be continuous type random variable X should only take integer values Should only take integer	The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.	Due on 2020-03-11,	, 23:58
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lo, the answer is incorrect. core: 0 ccepted Answers:	$\left.\begin{array}{c} \left.\begin{array}{c} k: & (dt) \\ \left.\begin{array}{c} t \\ \end{array}\right _{t=1} \end{array}\right _{t=0}$		
ccepted Answers:	No, the answer is incorrect.		
$d^kG_r(t)$	Accepted Answers:		
$\left.\frac{1}{t!}\frac{dt}{(dt)^k}\right _{t=0}$	$\frac{1}{k!} \frac{d^k G_x(t)}{(dt)^k} \bigg _{t=0}$		
Find the moment generating function of a exponential distributed random variable with parameter λ .	 Find the moment generating function of a exponential d 	istributed random variable with parameter λ .	
	$\frac{\lambda - t}{\lambda} \ \forall t \in (-\infty, \lambda)$		
	$\bigcirc \frac{\lambda}{t} \ \forall t \in (-\infty, \lambda)$		
	$\frac{\lambda}{\lambda - t} \ \forall t \in (-\infty, \lambda)$		
$\bigcirc \frac{\lambda}{\lambda - t} \ \forall t \in (-\infty, +\infty)$ $\bigcirc \frac{\lambda}{\lambda - t} \ \forall t \in (-\infty, +\infty)$	$\lambda - t$		



6) Find P{X=0} if $M_X(t) = \frac{e^t}{2} + \frac{e^{-t}}{3} + \frac{1}{6}$

No, the answer is incorrect. Score: 0

Accepted Answers:

7) If $X_1, X_2, ..., X_n$ are mutually independent normal random variables with means $\mu_1, \mu_2, ..., \mu_n$ and vari-

ances $\sigma_1, \sigma_2, ..., \sigma_n$ then find the distribution of the linear combination $Y = \sum_{i=1}^n c_i X_i$. Normal distribution Binomial distribution

 Chi Square distribution Exponential distribution

No, the answer is incorrect.

Score: 0 Accepted Answers:

Normal distribution

Which of the following statements is/are true ($\psi_X(t)$ is the characteristic function of the random variable

X)? $|\psi_X(t)| \geq 2$

 $|\psi_X(t)| \leq 1$ $|\psi_x(t)|=2$

 $|\psi_x(t)| > 1$

No, the answer is incorrect. Score: 0

Accepted Answers:

 $|\psi_X(t)| \leq 1$

9) Which of the following statements is/are true?

Characteristic function of a random variable always exists and moment generating function may or may not exist Characteristic function of a random variable always exists and moment generating function also exists always Characteristic function of a random variable may or may not exist and moment generating function may or may not exist

No, the answer is incorrect. Score: 0 Accepted Answers:

Characteristic function of a random variable always exists and moment generating function may or may not exist

10) Let $X_1, X_2, and X_3$ denote a random sample of size 3 from a gamma distribution with $\alpha = 7$ and $\theta = 5$

Let Y be the sum of the three random variables. Find the distribution of Y. Gamma distribution with $\alpha = 7$ and $\theta = 5$

Characteristic function of a random variable may or may not exist and moment generating function always exists

Gamma distribution with $\alpha = 7$ and $\theta = 25$ Gamma distribution with $\alpha = 21$ and $\theta = 5$ Exponential distribution with $\lambda = 7$

No, the answer is incorrect. Score: 0

Gamma distribution with $\alpha = 21$ and $\theta = 5$

Accepted Answers: