Quiz for Week 6

ⓘ This is a preview of the published version of the quiz

Started: 2 Oct at 23:55

Quiz instructions

Quiz time is from 17.15 to 18.00 of September 20, 2023.

Question 1

1 pts

The joint probability function for random vector (X, Y) is given below.

x	y				Row Total
	0	1	2	3	
0	0	$3/84$	$6/84$	$1/84$	$10/84$
1	$4/84$	$24/84$	$12/84$	0	$40/84$
2	$12/84$	$18/84$	0	0	$30/84$
3	$4/84$	0	0	0	$4/84$
Column Total	$20/84$	$45/84$	$18/84$	$1/84$	1

What is $E(X+Y)$?

- ○ 10/3
- ○ 8/3
- ◉ 7/3
- ○ Insufficient information to compute.

Question 2

1 pts

Assume that $f(x,y)$ below is the joint probability function for random vector (X,Y):

$$f(x,y)=\begin{cases} cx & 0\le x\le 2; 0\le y\le 1 \\ 0 & \textbf{elsewhere} \end{cases}.$$

What is the value of the constant c?

- (●) 0.5
- ( ) 1
- ( ) 2
- ( ) 4

Question 3

1 pts

Let X be a random variable with finite variance. Which of the following is **INCORRECT**?

- ( ) Let $Y=-X, Z=X+c$, where c is a given constant, then $V(Y)=V(Z)$.
- ( ) We must have $E(X^2)\ge V(X)$.
- ( ) If $V(X)=0$, then there exists a real number c, such that the c.d.f. of X is given by

$$F(x)=\begin{cases} 0 & x<c \\ 1 & x\ge c \end{cases}$$

- (●) None of the given options.

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