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| Q.01 | X is normally distributed with    find the distribution of AX, where |
| Q.02 | Let X =[X1,X2]’ be multivariate random variable with    Find the normal distribution of Y=X1-4X2. |
| Q.03 | Let X1,X2,X3 and X4 be independent and identically distributed (3x1) random vectors with    Consider the linear combinations:    Find out   1. The covariance between them. 2. Mean Vector 3. Covariance Matrix 4. Joint Density 5. Mean and Variance of Conditional Distribution. |
| Q.04 | Let X1,X2,X3 and X4 be independent and identically distributed (3x1) random vectors with    Consider the linear combinations:    Find out   1. The covariance between them. 2. Mean Vector 3. Covariance Matrix 4. Joint Density 5. Mean and Variance of Conditional Distribution. |
| Q.05 | Let X is normally distributed with     1. Are X1 and X2 independent? 2. Are X1 and X3 independent? 3. Are X2 and X3 independent? 4. What about (X1, X2) and X3? 5. What about X1 and (X2, X3)? 6. Are X1 and Y=X1-2X2+3X3 |
| Q.06 | Let X is normally distributed with     1. Are X1 and X2 independent? 2. Are X1 and X3 independent? 3. Are X2 and X3 independent? 4. What about (X1, X2) and X3? 5. What about X1 and (X2, X3)? 6. Are X1 and Y=2X1-3X2+X3 |
| Q07 | Let X is normally distributed with     1. What is the probability that: X is greater than 5 2. What is the probability that: X is greater than 9 3. Find the distribution of Y=2X1+3X2-X3 4. Find the probability that Y is greater than 56. |
| Q.08 | Let X is normally distributed with     1. What is the probability that: X is greater than 7 2. What is the probability that: X is greater than 11 3. Find the distribution of Y=X1+X2-2X3 4. Find the probability that Y is greater than 49. |