

(1) If x is random variable defined by the data: 2, 2, 4, 5, 5, 5, 6, 6, 7, 7, 7, 9, 9, 9, 9.

(a) Write the table of frequency and the Pdf $f(x)$.

(b) Find \bar{x} , σ (c) Find $P(x < 5)$, $P(x \leq 5)$, $P(x = 5)$, $P(x > 5)$

(2) A box contains 10 balls, 4 red, 6 white. At random, three balls are selected simultaneously. If x is the number of red balls, write the table of x and its Pdf $f(x)$

(3) If x and y are random variables given by: (1, 2), (2, 5), (3, 9), (4, 11), (5, 18).

Find (a) the curves: $y = a + b x$ and $y = a + b \ln x$ that fit the data.

(b) the correlation coefficient r corresponding to each curve.

(c) \bar{x} , \bar{y} , σ_x , σ_y .

(d) the covariance of x , y .

(4) If x is random variable with pdf $f(x) = \frac{3}{2}x^2$, $-1 \leq x \leq 1$.

Find $E(x)$, $P(x < 0)$, $P(x \leq 0.5)$, $P(x > 0.5)$

(5) If x , y are random variables with joint function $f(x, y) = x + \frac{3}{2}y^2$, $0 < x, y < 1$

Find the $cov(x, y)$.

Good Luck

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