

CSE-407

Assignment - 02

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Problem-1:

We are given a CDF where,

$$F_X(x) = \begin{cases} 0 & \text{for } x < 0 \\ \frac{1}{6} & \text{for } 0 \leq x < 1 \\ \frac{1}{2} & \text{for } 1 \leq x < 2 \\ \frac{3}{4} & \text{for } 2 \leq x < 3 \\ 1 & \text{for } x \geq 3 \end{cases}$$

So, we can find the PMF by.

$$P(0) = \frac{1}{6}$$

$$~~P(1)~~ P(1) = \left(\frac{1}{2} - \frac{1}{6}\right) = \frac{1}{3}$$

$$P(2) = \left(\frac{3}{4} - \frac{1}{2}\right) = \frac{1}{4}$$

$$P(3) = \left(1 - \frac{3}{4}\right) = \frac{1}{4}$$

So, we can also say that the range of X will be

between 0 and 3 because $\sum_0^3 P(i) = 1$.

Problem-02

Question: Eight committee members are meeting in a room that has twelve chairs. In how many ways can they sit in the chairs?

Answer:

\therefore 8 chairs out of 12 can be chosen in ${}^{12}C_8$ ways

\therefore Now these 8 members can be arranged in $8!$ ways.

Hence, total number of ways of 8 members seating in 12 chairs = ${}^{12}C_8 \times 8!$

$$= 495 \times 8!$$

$$= 19958400$$

(Ans)