MM 225 2024-1

Problems for Practice: 3 (MLE)

1. Let $X_1, X_2, \dots, X_n$ be a random sample from N(μ, σ^2). Find MLE for the parameters μ and σ^2.

2. Let $X_1, X_2, \dots, X_n$ be a random sample from Uni(0, θ). Determine MLE for θ.

3. Let $X_1, X_2, \dots, X_n$ be a random sample from Poisson(λ). Determine the MLE for λ.

4. Let $X_1, X_2, \dots, X_n$ be a random sample from Exp(λ). Determine the MLE for λ.

5. Let $X_1, X_2, \dots, X_n$ be a random sample from following pdf:

$$f(x) = (1-p)^{x-1}p \;\; for\; 0 \le p \le 1 \; and \; x = 1, 2, 3 \dots$$

   Determine the MLE for the parameter p.

6. Let $X_1, X_2, \dots, X_n$ be a random sample from following pdf:

$$f(x) = \begin{cases} e^{-(x-\theta)} \; for \; x > \theta \\ 0 \quad\quad otherwise \end{cases}$$

   Determine the MLE for parameter θ