① Let $\mathcal{L}(\mathcal{P})$ is the smallest λ-system containing $\mathcal{P}$, $\mathcal{L}(\mathcal{P})$ is a σ-field. Thus $\sigma(\mathcal{P}) \subset \mathcal{L}(\mathcal{P}) \subset \mathcal{L}$

$E(\max S_k^+ \wedge M)^p$ $p-1$ $\frac{1}{p}$

4^p

第 題 (答題不得寫在紅線外) 第 頁

$P(S_n > 0$ ~~for all~~ for all $n \geq 1) > 0$.

No.

Date

c. Test $\theta_1 = \geq \theta_2$, derive test statistic & rejection region with significance level α.

2. prove $\hat{\beta}^{ridge}$ $\exists \lambda$, s.t. $MSE(\hat{\beta}^{ridge}) < MSE(\hat{\beta}^{LS})$.

Inference 4选3

1. $U(0,\theta)$? $U(0,\theta)$.

① $E[X_1/X_{(n)}]^k$ Compute.

②. $\Sigma(X_i - X_{(1)}) \perp\!\!\!\perp X_{(1)}$

2. (X_i, Y_i) from poisson with mean $(e^{\lambda_i}, e^{\lambda_i + \beta W_i})$, W_i covariate. prove MLE of β is consistant and asymptotic normal.

3. ① $X_i \overset{iid}{\sim} U(\theta - v, \theta + v)$. UMVUE for EX_1. if $\exists$

② $X_i \overset{iid}{\sim}$ unknown $F(\cdot)$ UMVUE for EX_1. if $\exists$

③. UMVUE in ① don't ~~suite~~ apply to ②

4. $X_i \sim N(\theta_{i0}, \sigma^2)$, σ^2 known, UMP of level. α [different group

H_0: ~~θ_{10}~~ $\mu_i = \sim = 0$ vs. H_1: $\mu_i = \theta_{i0}, \cdots$

find test statistics. rejection region.