

Survival Analysis Homework5

Zhuodiao Kuang

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Problem1

Construct 95% CI for the hazard ratio from a PH model shown in the follow table for the risk reduction between two treatment groups.

Analysis of Maximum Likelihood Estimates - discrete								
Parameter		DF	Parameter Estimate	Standard Error	Chi-Square	Pr > ChiSq	Hazard Ratio	Label
trt	6-MP	1	-1.62822	0.43313	14.1316	0.0002	0.196	trt 6-MP

Problem2

The observed survival data $(T_i, \Delta_i, Z_i) i = 1, 2, 3, 4, 5, 6$ are $(16, 1, 1)$, $(20, 0, 1)$, $(12, 1, 0)$, $(14, 0, 0)$, $(11, 1, 0)$, $(9, 1, 1)$. Please construct the partial likelihood.

Problem3

Show that PH model score test is the same as the log-rank test for an indicator covariate when there is no ties.