Show that for the Cox proportional hazards model, the martingale residues

$$\hat{M}_i = \delta_i - \exp(X_i'\hat{\beta})\hat{H}_0(t_i)$$

have the following property:

$$\sum_{i=1}^{n} \hat{M}_i = 0,$$

where t_i is the failure time for subject i if $\delta_i = 1$, and censoring time if $\delta_i = 0$, X_i is covaraite, $\hat{\beta}$ and $\hat{H}_0(\cdot)$ are the estimated regression coefficient and baseline cumulative hazard function.