

STAT 701 Homework #6 April 15 - 17, 2008

Let (x'_1, \dots, x'_{n_1}) and $(x''_1, \dots, x''_{n_2})$ be two independent samples from normal populations $N(\mu_1, \sigma_1^2)$ and $N(\mu_2, \sigma_2^2)$, respectively.

(i) Find the MLE of $h(\sigma_1^2, \sigma_2^2) = \sigma_1^2/\sigma_2^2$ and calculate its bias. Is it unbiased for some n_1, n_2 ?

(ii) For $n_1 = \lambda_1 n$, $n_2 = \lambda_2 n$ develop the asymptotic behavior of the MLE when $n \rightarrow \infty$.