

ST552, Homework 6

Due Monday, Nov 4, 2013

1. Show that, under the normal Gauss-Markov model $\mathbf{y} \in N(\mathbf{X}\mathbf{b}, \sigma^2\mathbf{I})$, the least squares estimator $\mathbf{A}\hat{\mathbf{b}}$ of an estimable function $\mathbf{A}\mathbf{b}$ has the smallest variance among all unbiased estimators (MVUE) *directly*. (In class we showed it indirectly by showing that $\mathbf{A}\hat{\mathbf{b}}$ is a function of sufficient statistic.)
2. JM 6.8 (p152)
3. JM 6.9 (p152)
4. JM 6.10 (p152)
5. JM 6.24 (p154)
6. JM 6.25 (p155)