Homework 5 (Due Wednesday, February 10, 2016)

Section 7.8: #10, #12, #16.

Section 7.9: #2, #6.

Supplementary Exercises (Section 7.10): #18

Section 8.7: #4, #11.

Additional Problem:

1. Suppose that the heights of the individuals from a certain population have a normal distribution for which the mean θ is unknown but the variance σ^2 is known. Let θ_1 be the M. L.E. and θ_2 be the Bayes estimator of θ, for which the prior distribution is also a normal distribution with mean 68 inches and standard deviation 2 inches.

(a) Is the Bayes estimator unbiased (conditioning on the value of θ) ? If not, find its bias.

(b) Compare the M. L. E with the Bayes estimator for the squares loss function.