

Homework 5

1. Problem 10.10a-c from the text. When graphing, use a burn-in of 200 iterations and a sequence of length 500.

2. Consider X_1, \dots, X_4 iid $U(0, b)$. Suppose we want to estimate $\theta(F) = b$ using $\hat{\theta} = X_{(4)}$.

- What is $E(\hat{\theta})$? What is the bias of $\hat{\theta}$?
- Find the probability mass function for $\tilde{\theta}_4^*(b)$. What is $E(\tilde{\theta}_4^*(b))$? Comment.
- Compute the bias of the bootstrap estimator $(\tilde{\theta}_4^*(\cdot))$. Compare your result to the bias of $\hat{\theta}$.