

From the book: section 6.4 - 3, 10, 11, 12

In addition, continue with baseball and Bayes:

1. What are your choices of α and β ? What features of the plot of the prior density function made you think these were good choices?
2. Using properties of expectation, find the bias and variance of $\hat{\theta}_f$ and $\hat{\theta}_b$.
3. Based on your comparison of the MSE, do you recommend using $\hat{\theta}_f$ or $\hat{\theta}_b$? Explain.
4. If John Spurrer gets three hits in ten at bats, what is your estimate of θ ?
5. Show that $\hat{\theta}_b$ is a weighted average of $\hat{\theta}_f$ and the prior mean, $\frac{\alpha}{\alpha+\beta}$.