and the first five rows of $y$ are

$$y = \begin{pmatrix} -1.0965 \\ 1.2155 \\ 0.4324 \\ 1.1902 \\ 3.1346 \end{pmatrix}.$$

We ran the program for lasso using ADMM (see Problem 52.7) with various values of $\rho$ and $\tau$, including $\rho = 1$ and $\rho = 10$. We observed that the program converges a lot faster for $\rho = 10$ than for $\rho = 1$. We plotted the values of the five components of $w(\tau)$ for values of $\tau$ from $\tau = 0$ to $\tau = 0.5$ by increment of 0.02, and observed that the first, third, and fifth coordinate drop basically linearly to zero (a value less that $10^{-4}$) around $\tau = 0.2$. See Figures 55.7, 55.8, and 55.9. This behavior is also observed in Hastie, Tibshirani, and Wainwright [89] (Section 2.2).

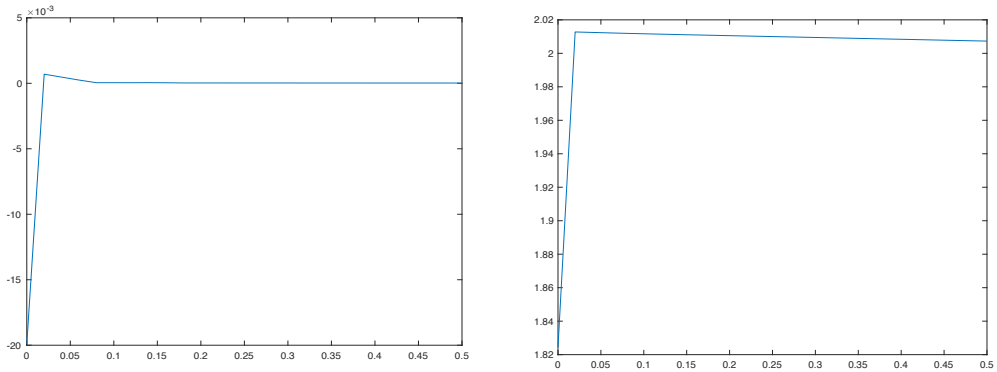


Figure 55.7: First and second component of $w$.

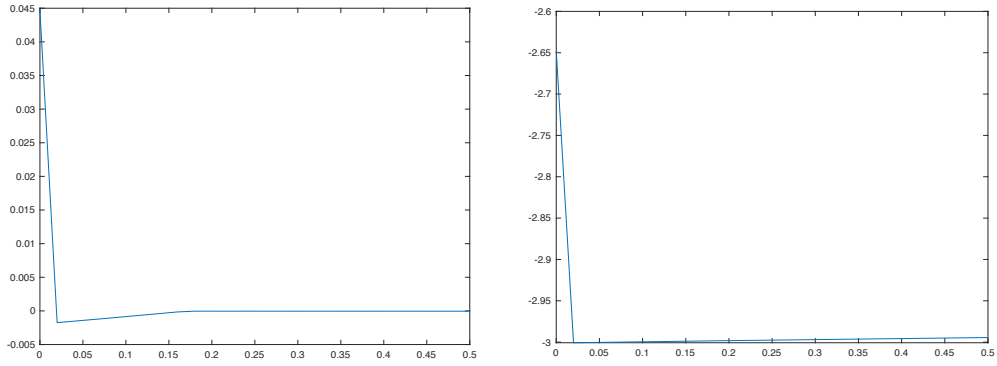


Figure 55.8: Third and fourth component of $w$.