

1. Perform the following analysis on Series A in the text.
  - (a) Plot the raw periodogram of the series.
  - (b) Try various spans to smooth the periodogram, and choose one that you like the best. Briefly explain how you get it and why you like it.
  - (c) An AR(2) model with a constant mean was fitted to the series and one has  $\hat{\phi}_1 = .4245$ ,  $\hat{\phi}_2 = .2531$ , and  $\hat{\sigma}_a^2 = .09994$ . Plot the power spectrum of the estimated AR(2) model.
  - (d) Compare (b) and (c) and discuss whether the AR(2) model appears to yield a good fit.