Stat ST485/685, Project 1
Due: Tuesday, September 28

Analysis of data sets

1. (12 points) Consider data for the average cardiovascular mortality rate in Los Angeles California in **cmort.dat**, *Shumway, R, Applied Statistical Time Series Analysis, Prentice-Hall, New Jersey, 1988.*

   (a) Examine the data, state if there was anything strange about the files, and if you made adjustments.

   (b) Produce a plot of the data versus time. Include either labels on the axes or a legend explaining the axes.

   (c) Make observations about the existence or lack of existence of,

      i. trend
      ii. periodicity and seasonality
      iii. heteroskedasticity
      iv. dependence
      v. outliers, missing data, etc.

2. (12 points) Consider data for the glacial varve (sedimentary deposits) thickness in Maine in **varve.dat**, *R. Shumway and K. Verosub, State space modeling of paleoclimatic timeseries, in Proceedings of the Fifth International Meeting on Statistical Climatology, Toronto, 1992.*

   (a) Examine the data, state if there was anything strange about the files, and if you made adjustments.

   (b) Produce a plot of the data versus time. Include either labels on the axes or a legend explaining the axes.

   (c) Make observations about the existence or lack of existence of,

      i. trend
      ii. periodicity and seasonality
      iii. heteroskedasticity
      iv. dependence
      v. outliers, missing data, etc.

3. (12 points) Consider data for the Australian monthly chocolate-based confectionery production in tonnes in **choc.dat**, *Australian Bureau of Statistics, 1992.*

(a) Examine the data, state if there was anything strange about the files, and if you made adjustments.

(b) Produce a plot of the data versus time. Include either labels on the axes or a legend explaining the axes.

(c) Make observations about the existence or lack of existence of,

   i. trend
   ii. periodicity and seasonality
   iii. heteroskedasticity
   iv. dependence
   v. outliers, missing data, etc.