Instructions: Try to write short, complete answers to the questions. Take a few minutes to plan out what you are going to say before you start writing. Clarity is important.

1. A boxplot is a plot which presents just a few aspects of of the distribution of a set of values.

   a) What information does a boxplot give about a set of values?

   b) Are boxplots good plots? Use what you know about perception to justify your answers.

   c) Sometimes a single plot is produced containing boxplots for several samples plotted against a common scale. Such a plot is sometimes used to investigate whether there is a dependence of the spread of the samples on their location. Name a weakness in this kind of display and suggest a better plot.

2. Histograms and density plots both provide a way of looking at the distribution of a set of values.

   a) What kind of features an be identified in histograms and density plots.

   b) Density plots can usually be considered preferable to histograms. Explain why this is.

   c) Indicate under what circumstances a histogram might be a preferable whay of presenting information about a sample.

3. State Stevens' law and explain its consequences for statistical graphics. Give some examples of graphs which Stevens' law says are not good graphs.

4. There are a number of things which makes the following graphic hard to interpret. List what you see as the problems in this display and recommend changes which could improve it.

U.S. trade with China and Taiwan

(In millions of U.S. dollars).

3,000

U.S. exports to China

2,000

U.S. Imports from China

1,000

1972   1974   1976   1978   1980

(In millions of U.S. dollars).

6,000

U.S. imports from Taiwan

4,000

U.S. exports to Taiwan

2,000

1970 1972   1974   1976   1978 1980