MATH 204 - EXERCISES 1

This is not for assessment.

In an observational study of child and health development, a random sample of 1186 new mothers were recruited in several hospitals in the US, and a collection of variables were recorded for each subject:

- **smoke**: Smoking status of mother
  - 0 never smoked
  - 1 current smoker
  - 2 smoked until current pregnancy
  - 3 smoked previously
- **marital**: Marital status of mother
  - 1 married
  - 2 legally separated
  - 3 divorced
  - 5 never married
- **race**: Race of mother (coded 1,2,3,4)
- **weight**: Birthweight of baby (in grammes)

The data are available at

http://www.math.mcgill.ca/dstephens/204/Data/Babies.txt

(a) Plot histograms and boxplots of the data.

(b) For each of the three factors (**smoke**, **marital**, **race**) in turn, carry out an ANOVA F-test to assess whether any of the factors has an effect on birthweight. In each case, comment on the validity of the assumptions that ANOVA requires to yield reliable conclusions.