

## Multivariate Data Analysis: Tasks for Week 9

(Released 24/11/11, see §8.3)

- 1) Read the solutions to Exercises 2. These contain a detailed guide to the interpretation of principal components and of crimcoords by examining the loadings of the variables in the PCs and Crimcoords and so provide further practice at this important aspect.
- 2) Referring to the data set *dogmandibles*. \* **excluding the Prehistoric Thai dogs (group 5 on  $X_{11}$ )** test the hypotheses that Male and Female dogs have
  - i) equally sized mandibles (i.e. variables  $X_1$  &  $X_2$  together)
    - a) equally long mandibles (variable  $X_1$ )
    - b) equally broad mandibles (variable  $X_2$ )
  - ii) equal overall mandible characteristics (i.e. variables  $X_1$ – $X_9$ )
- 3) Test the hypotheses that Iris Versicolor and Iris Virginica have
  - i) equally sized sepals
  - ii) equally sized petals
  - iii) equally sized sepals & petals.

