Exercises all based on those in Zuur, Leno, Meesters (2009) A beginners guide to R.

1. In Zuur et al. (2009), Tb was modeled as a function of the continuous

explanatory variable, length of the animal, denoted by LengthCT (CT is an

abbreviation of cabeza-tronco, which is Spanish for head-body). Tb and Ecervi

are shown as a vector of zeros and ones representing absence or presence of Tb

and E. cervi larvae. Below, seven rows of the spreadsheet containing the

deer data are given.

Farm Month Year Sex Length Class LengthCT Ecervi Tb

MO 11 00 1 1 75 0 0

MO 07 00 2 1 85 0 0

MO 07 01 2 1 91.6 0 1

MO NA NA 2 1 95 NA NA

LN 09 03 1 1 NA 0 0

SE 09 03 2 1 105.5 0 0

QM 11 02 2 1 106 0 0

Using the c function, create a variable that contains the length values of the

seven animals. Also create a variable that contains the Tb values. Include the

NAs. What is the average length of the seven animals? (We haven’t covered the function used to calculate average in class. It isn’t hard to guess what the function is. If you can’t guess - use R help to discover it).

2. The file BirdFlu.xls contains the annual number of confirmed cases of human

Avian Influenza A/(H5N1) for several countries reported to the World Health

Organization (WHO). The data were taken from the WHO website and reproduced for educational purposes. Reformat the spreadsheet to make it suitable for analysis and import these data into R. Note that you will need to adjust the column names and some of the country names.

Use the names and str command in R to view the data. Print the number of

bird flu cases in 2003. What is the total number of bird flu cases in 2003 and in

2005? Which country has had the most cases? Which country has had the least

bird flu deaths? Using methods taught in class, what is the total number of bird flu cases per country? What is the total number of cases per year?