Quantitative Training Lab 1

**Chapter 4 Introduction to R**

1. Write a couple of sentences to explain each of the commands we have used so far. You may also want to annotate your script you’ve been developing with the commands to save for future reference. Remember to use the # feature to comment.

# Print current working directory

getwd()

# Change working directory

setwd(‘~/Desktop/Intro-to-R’)

# Assignment operator

y <- 3

2. Tell us what the type and length of vector y is.

y is a numeric vector; it has a length of 4.

3. Copy the line of code you used to create a vector with a sequence of numbers from 0-20, increasing by 5.

1. v <- seq(from = 0, to = 20, by = 5) or
2. v <- seq(0, 20, 5)

4. Hand in a copy of the code you used to create the above matrix (a 3 by 3 matrix in which the elements are the numbers from zero to nine). Copy-paste the resulting matrix from the console into the Word document.

1. N <- matrix(c(1, 2, 3, 4, 5, 6, 7, 8, 9), nrow = 3, ncol = 3)
2. Quick learners will use the seq command from item 3, which is preferable because it avoids unnecessary typing: N <- matrix(seq(1, 9), 3, 3)

Output: [,1] [,2] [,3]

[1,] 1 4 7

[2,] 2 5 8

[3,] 3 6 9

5. State the length of the object my\_list

The length of my\_list is 4.

6. Write down what information you can get from the functions nrow(), ncol(), head(), and tail() that describe the data frame df you just created.

The function nrow gives the number of rows of the data frame (or matrix), and ncol gives the number of columns. The function head prints the first 6 rows of the data frame, whereas tail prints the last 6 rows. df is a data frame with 10 rows and 3 columns.

Top students could also explain that the data frame consists of three variables: the first one is called id and contains the letter from a to f, the second one is called x and contains numbers from 1 to 10, and the third one is called y and contains the numbers from 11 to 20.

**Chapter 7 Making graphs in R**

1. Which two vectors below will generate a plot if executed before plot(a,b)?

a = c(1,3,5) and b = c(2,4,6)

1. A friend has written the code below, but it will not run. What do you think the problem could be?

The syntax of the code is correct, but the arguments for the plot command are mistaken. To plot vectors a and b the command should be plot(a, b).

1. Re-create the graph above on your own, but this time, make the symbol for fishA an open square and the symbol for fishB a filled circle (HINT look at the pch cheatsheet in section 7.8). Export this plot and paste it into the Word document that you will hand in for your first lab.

