



Chapter 1: Base R

1-1 WHAT IS R?

R is a computer language with a particular orientation toward statistical uses. In its simplest form, R will operate like a calculator for you. At the next level, R has “functions” that will calculate statistics for you such as the mean and standard deviation. At the next higher level, R has “add-on packages” that are collections of routines for calculating more advanced statistics.

In this bare-bones introduction, we will try to accomplish four goals. First, we’ll see how R works as a calculator. But we won’t spend much time on that because it’s kind of trivial. Next, we’ll check out R’s more common “functions,” especially for elementary statistics—which is R’s most important contribution for our purposes right now. Then, we’ll introduce an especially important package, R Commander, that simplifies your use of R. Finally, we’ll show how to get to other add-on packages and use them.

1-2 R’S UPS AND DOWNS

What are the ups and downs, the pluses and minuses of R? It has both. It has *three main advantages*:

1. First, it is free—completely. Just go to its home page (<http://cran.r-project.org/>) on the Internet and follow the directions for downloading. We’ll walk through the download steps in the next section. You don’t have to remember the home page address. Just Google R, and you’ll easily get it.

Your initial download gives you “base R” and a few extra packages. Most important for our purposes, these include routines to calculate commonly used statistics, such as mean, standard deviation, and correlation, and to prepare commonly used graphs, such as the histogram and scatterplot.