Statistics 302 Spring 2014 Larget Assignment #1 posted January 22, 2014

Due Friday, January 31

Textbook Exercises

1.12, 1.14, 1.20, 1.24, 1.47–1.51, 1.53, 1.56, 1.63, 1.84, 1.87, 1.95

Computer Exercises

Before completing these exercises, you will need to install R onto your computer.

The site `cran.r-project.org` has installation information and directions for both Mac and Windows computers. Also see the R Users Guide from the textbook authors on the course web page.

You can get easy access to all data from the textbook by installing the package `Lock5Data` in R. To do this, after installing and starting R, install the package. You only need to do this step once.

```
> install.packages("Lock5Data")
```

To actually load the this package into your active session, type the following command. You need to do this each session.

```
> library("Lock5Data")
```

To load a data set from the library, use the `data()` command. For example, to load the `AllCountries` data set, do this.

```
> data(AllCountries)
```

Alternatively, without the package you may load this data into R from the file. The following command assumes that the file with the data is in your working directory.

```
> AllCountries = read.csv("AllCountries.csv")
```

R problem 1 Load the data set **AllCountries** from the textbook into R. Write a function that will take a random sample of some of these countries and calculate the mean land area in square kilometers. Use the function to take sample of ten of these countries. For the assignment you turn in on paper, include the ten sampled countries and their mean land area. In addition, send an email message to the instructor and the TA with an attached file named `countries.R` that includes your code. We should be able to source the file into R and run your code successfully (assuming we run R in a directory with the file that contains the data).

R problem 2 The game *Dominion* is a card game that uses cards unique to the game. In the basic game, there are 25 kingdom cards, but only 10 will be used in any given game. The names of the cards are listed below. Write an R function called `dominion()` that will randomly sample ten of the 25 card types and write their names to the screen. Send an email message to the TA and instructor with a file called `dominion.R` that contains your code. We should be able to source the file into R and run your code successfully.

Card names: Adventurer, Bureaucrat, Cellar, Chancellor, Chapel, Council Room, Feast, Festival, Laboratory, Library, Market, Militia, Mine, Moat, Money Lender, Remodel, Smithy, Spy, Thief, Throne Room, Village, Witch, Woodcutter, Workshop, and Gardens.