Homework Assignment

In case the videos are not enough, please see the following:

R help files – use shown in videos.

Books on R (check for new editions):

* Using R for Introductory Statistics, by John Verzani. Chapman-Hall, 2005.
* The R Book, by Michael J. Crawley. John Wiley & Sons, 2007.

Websites:

* An Introduction to R: <http://cran.r-project.org/doc/manuals/R-intro.pdf> - a website offering an introduction to the language and how to use R for doing statistical analysis and graphics.
* Quick-R: http://www.statmethods.net/
  + Nice reference website with basic code for many tasks. Recommended.
  + Associated textbook available at <http://www.manning.com/kabacoff/>.
* Stack Overflow (Google it) – site where users help each other through errors in R Code.
* RBloggers (Google it) – site containing code and case studies in R.

Use R to do each of the following. Use R code instructions that are as general as possible, and also as efficient as possible. Use the Quick-R website for help on finding commands.

1. Enter the following values into a data vector named testdata:

45.4 44.2 36.8 35.1 39.0 60.0 47.4 41.1 45.8 35.6

Calculate the difference between the 2nd and 7th entries of this vector using only reference indices.

1. Calculate the median of testdata.
   1. 42.65
2. Sort the values in this data vector from highest to lowest, and save the sorted version as a vector named sortHL.testdata.
3. What does sortHL.testdata[-4] do? Give the answer from R and write a sentence to explain it.

Removes index 4 value 45.4

1. What does testdata[-c(2,7,9)] do? Give the answer from R and write a sentence to explain it. Why do you think the c() function necessary here?

Removes indices 2 7 and 9 from the vector, c is necessary to pass multiple index items for removal

1. Suppose a random variable X has a normal distribution with a mean of μ = 60 and a standard deviation of σ = 4. Find the following using R functions:
   1. The probability that X is less than or equal to 66.

93%

* 1. The probability that X is between 50 and 60.

49%

* 1. The probability that X is greater than 68.

2%

1. Refer to 7c. There are two ways to find this probability using R. If you did it one way in part 7c, find another way to do it here. Do a bit of detective work by exploring options in the R help file. You should get the same answer either way.