

(Archive) Solution for Math 448 Computing Homework (Fall 2015)

Computing Homework 6 solution

```

####Set the R working directory###
  setwd("C:/")
###read in the data file, make sure your data file is under the working directory##
dat = read.csv('data_6.csv',header=FALSE)
### the "dat" you just read into R is a data frame, need to convert it into a matrix
dat <- as.matrix(dat) ##dat now is a 2x31 matrix
x1 <- dat[1,] ##take the first row of this matrix as your sample from population 1
x2 <- dat[2,] ##take the second row of this matrix as your sample from population 2

---At this point, you have loaded the data into your R program, whose name is "y1" and "y2". You can start
manipulating the data--

===Computing Homework 5 solution===
<code>
####Set the R working directory###
  setwd("C:/")
###read in the data file, make sure your data file is under the working directory##
dat = read.csv('data_5.csv',header=FALSE)
### the "dat" you just read into R is a data frame, need to convert it into a matrix
dat <- as.matrix(dat) ##dat now is a 1x20 matrix
x <- dat[1,] ##take the first row of this matrix as your sample

---At this point, you have loaded the data into your R program, whose name is "x". You can start
manipulating the data--

##### Part 1#####
mean(x)

##### Part 2#####
sqrt(mean(x^2)/2)

##### Part 3#####
mean(x)

##### Part 4#####
(mean(x))^2

##### Part 5#####
mean(x^2)/2

##### Part 6#####
(mean(x))^2*n/(n+1)

```

Computing Homework 4 solution

```

####Set the R working directory###
  setwd("C:/")
###read in the data file, make sure your data file is under the working directory##
dat = read.csv('data_4.csv',header=FALSE)
### the "dat" you just read into R is a data frame, need to convert it into a matrix
dat <- as.matrix(dat) ##dat now is a 1x100 matrix
x <- dat[1,] ##take the first row of this matrix as your sample

```

```

| ---At this point, you have loaded the data into your R program, whose name is "x". You can start
| manipulating the data--
|
| ##### Part 1#####
| var(x[1:10])
|
| ##### Part 2a#####
| mean(x[1:10])-qnorm(0.95)*sd(x[1:10])/sqrt(10)
|
|
| ##### Part 2b#####
| mean(x[1:10])+qnorm(0.95)*sd(x[1:10])/sqrt(10)
|
| ##### Part 3#####
| nsize <- (qnorm(0.995)/0.5*sd(x[1:10]))^2
| nsize <- floor(nsize)+1
| cost <- nsize*12
| cost
|
| ##### Part 4#####
| mean(x[1:nsize])
|
| ##### Part 5a#####
| mean(x[1:nsize])-qnorm(0.95)*sd(x[1:nsize])/sqrt(nsize)
|
| ##### Part 5b#####
| mean(x[1:nsize])+qnorm(0.95)*sd(x[1:nsize])/sqrt(nsize)

```

Computing Homework 3 solution

```

| #####Set the R working directory###
| setwd("C:/")
| #####read in the data file, make sure your data file is under the working directory##
| dat = read.csv('data_3.csv',header=FALSE)
| ### the "dat" you just read into R is a data frame, need to convert it into a matrix
| dat <- as.matrix(dat) ##dat now is a 1000x1 matrix
| x <- dat[1,] ##take the first row of this matrix as your sample
|
| ---At this point, you have loaded the data into your R program, whose name is "x". You can start
| manipulating the data--
|
| ##### Part 1#####
| max(x)
|
| ##### Part 2#####
| n <- length(x)
| max(x)*(n+1)/n
|
| ##### Part 3#####
| mean(x)
|
| ##### Part 4#####
| 2*mean(x)
|
| ##### Part 5(a)#####
| n <- length(x)
| max(x)/(0.975^(1/n))
|
| ##### Part 5(b)#####
| n <- length(x)
| max(x)/(0.025^(1/n))

```

Computing Homework 2 solution

```

####Set the R working directory###
setwd("C:/")
###read in the data file, make sure your data file is under the working directory##
dat = read.csv('data_2.csv',header=FALSE)
### the "dat" you just read into R is a data frame, need to convert it into a matrix
dat <- as.matrix(dat) ##dat now is a 1000x1 matrix
x <- dat[1,] ##take the first row of this matrix as your sample

---At this point, you have loaded the data into your R program, whose name is "x". You can start
manipulating the data--

##### Part 1#####
mean(x^2)

##### Part 2#####
xbar <- mean(x)
mean((x-xbar)^2)

##### Part 3#####
n <- length(x)
mean(x^2)
mean(x^2)-n*xbar^2

##### Part 4#####
(n-1)*var(x)

##### Part 5(a)#####
xbar <- mean(x)

##### Part 5(b)#####
std <- sqrt(var(x)/n)

```

Homework 1 Part (a)

```

####Set the R working directory###
setwd("C:/")

###read in the data file, make sure your data file is under the working directory##
dat = read.csv('data_1a.txt',header=FALSE)

### the "dat" you just read into R is a data frame, need to convert it into a matrix

dat <- as.matrix(dat) ##dat now is a 25x1 matrix

x <- dat[1,] ##take the first row of this matrix as your sample

##compute the average of all elements in the vector "x"
mean(x)

###PS: if you want to know how does your data set look like, you can create a histogram ###

hist(x) #####type in ?hist to learn more about function "hist()"###

```

Homework 1 Part (b)

```

setwd("C:/")
dat = read.csv('data_1b.txt',header=FALSE)

```

```
| dat <- as.matrix(dat)
| x <- dat[1,]
| mean(x)
| hist(x)
```

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