**Problem Set 1**

1. data.frame

class(mtcars)

1. vector

is(precip,“array”) is FALSE

1. as.matrix(trees)
2. Atlanta
3. rmerge<-(trees,precip,mtcars)
4. yes

class(precip)

1. mtcars[2,7]=17.02

mtcars[2,“qsec”]=17.02

mtcars[,“qsec”][2]=17.02

mtcars[“qsec”]

1. precip[“Juneau”]<-23

precip["Phoenix"]<-46

precip["Sacramento"]<-12

1. No

trees[“Girth”]>trees[“Height”]

1. A=2,356

B=392.54

C=242.1

(C/B)+A=2356.62

**Problem Set 2**

1. Since you cannot take a sample larger than the population with replace=FALSE, replace=TRUE makes this possible. Replaces a value of 1 with TRUE.
2. as.number(MatrixElements)

mode(MatrixElements)<-“numeric”

MyMatrix\*1

1. all(MyMatrix)
2. 16
3. sum(MyMatrix[,1])

colSums(MyMatrix)

1. colProds(MyMatrix)
2. MyMatrix[which(MyMatrix==10)]<-12
3. 33
4. as.character(MyMatrix[,12])
5. > MyMatrix

[,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10] [,11] [,12] [,13]

[1,] 8 4 7 9 3 2 8 2 9 2 3 5 FALSE

[2,] 8 6 8 10 5 10 7 9 1 10 8 10 TRUE

[3,] 1 6 1 6 9 5 5 1 8 4 10 1 FALSE

[4,] 7 1 5 10 2 2 3 7 7 2 9 10 FALSE

[5,] 9 6 7 5 9 9 7 1 4 3 10 2 TRUE

[6,] 1 2 9 9 2 10 8 10 10 4 7 3 TRUE

[7,] 9 9 1 2 10 6 6 9 7 10 8 8 TRUE

[8,] 8 3 7 7 7 10 7 7 7 7 4 3 TRUE

**Problem Set #3**

1. subiris<-function(x){df1<-data.frame(subset(x,Species=="setosa"))

+ colnames(df1)<-c("setosa.SL","setosa.SW","setosa.PL","setosa,PW","Species")

+ df2<-data.frame(subset(x,Species=="versicolor"))

+ colnames(df2)<-c("versicolor.SL","versicolor.SW","versicolor.PL","vericolor,PW","Species")

+ df3<-data.frame(subset(x,Species=="virginica"))

+ colnames(df3)<-c(“virginica.SL,"virginica.SW","virginica.PL","virginica.PW","Species")

+ df1$Species<-NULL;df2$Species<-NULL;df3$Species<-NULL

+ d<-data.frame(df1,df2,df3)

+ return(d)

+ }

1. ifelse(Sepal.Width>3.1,Sepal.Length+Petal.Length,ifelse(Sepal.Width<3.1,

+ Sepal.Length-Petal.Length,NA))

[1] 6.5 3.5 6.0 NA 6.4 7.1 6.0 6.5 3.0 NA 6.9 6.4 3.4 3.2 7.0 7.2 6.7

[18] 6.5 7.4 6.6 7.1 6.6 5.6 6.8 6.7 3.4 6.6 6.7 6.6 6.3 NA 6.9 6.7 6.9

[35] NA 6.2 6.8 6.3 3.1 6.6 6.3 3.2 5.7 6.6 7.0 3.4 6.7 6.0 6.8 6.4 11.7

[52] 10.9 NA 1.5 1.9 1.2 11.0 1.6 2.0 1.3 1.5 1.7 2.0 1.4 2.0 NA 1.1 1.7

[69] 1.7 1.7 10.7 2.1 1.4 1.4 2.1 2.2 2.0 1.7 1.5 2.2 1.7 1.8 1.9 0.9 0.9

[86] 10.5 NA 1.9 1.5 1.5 1.1 1.5 1.8 1.7 1.4 1.5 1.5 1.9 2.1 1.6 12.3 0.7

[103] 1.2 0.7 0.7 1.0 0.4 1.0 0.9 13.3 11.6 1.1 1.3 0.7 0.7 11.7 1.0 14.4 0.8

[120] 1.0 12.6 0.7 1.0 1.4 12.4 13.2 1.4 1.2 0.8 1.4 1.3 14.3 0.8 1.2 0.5 1.6

[137] 11.9 NA 1.2 NA NA NA 0.7 12.7 12.4 1.5 1.3 1.3 11.6 0.8

1. library(dplyr)

> library(magrittr)

> avgbycyl<-function(x){

+ car\_data<-mtcars%>%subset(cyl==x)

+ return(mean(car\_data$mpg))

+ }

Problem Set 4

1. mean= 34.88571

median= 36.6

standard deviation= 13.70665

1. Barplot; shows each unique value