STAT 158 HW 4

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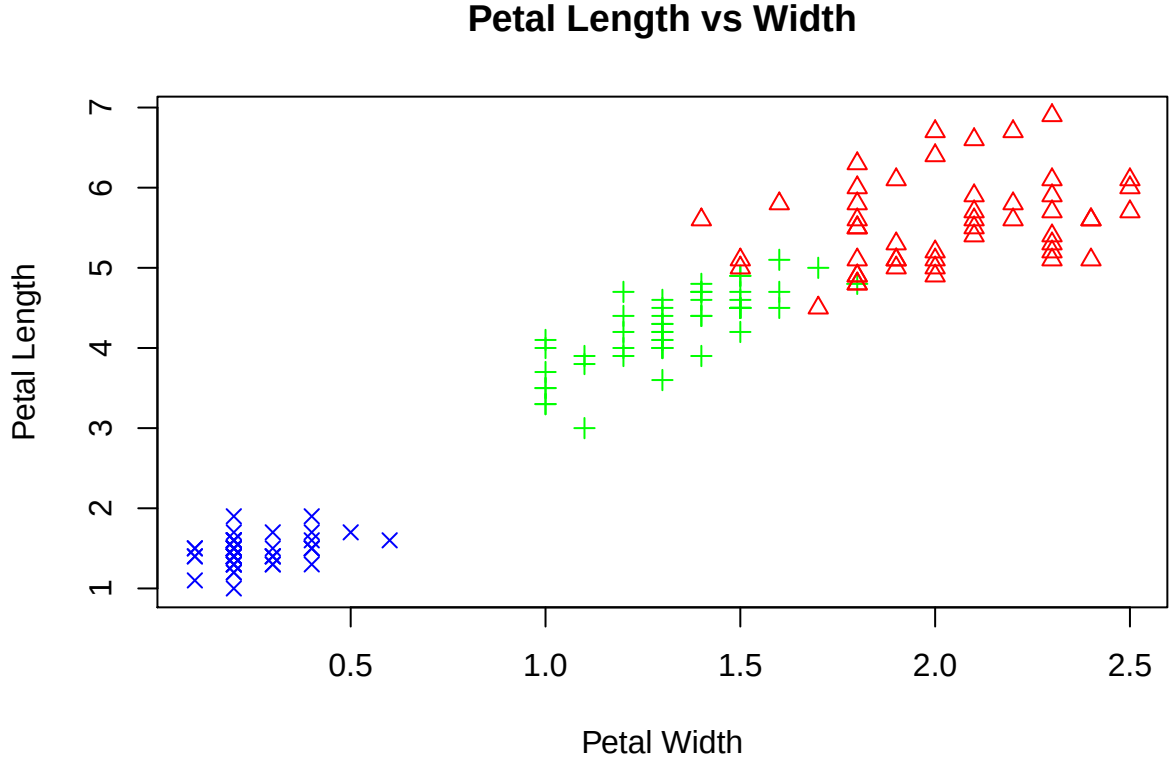
```
library(knitr)
opts_chunk$set(tidy.opts=list(width.cutoff=60),tidy=TRUE)
```

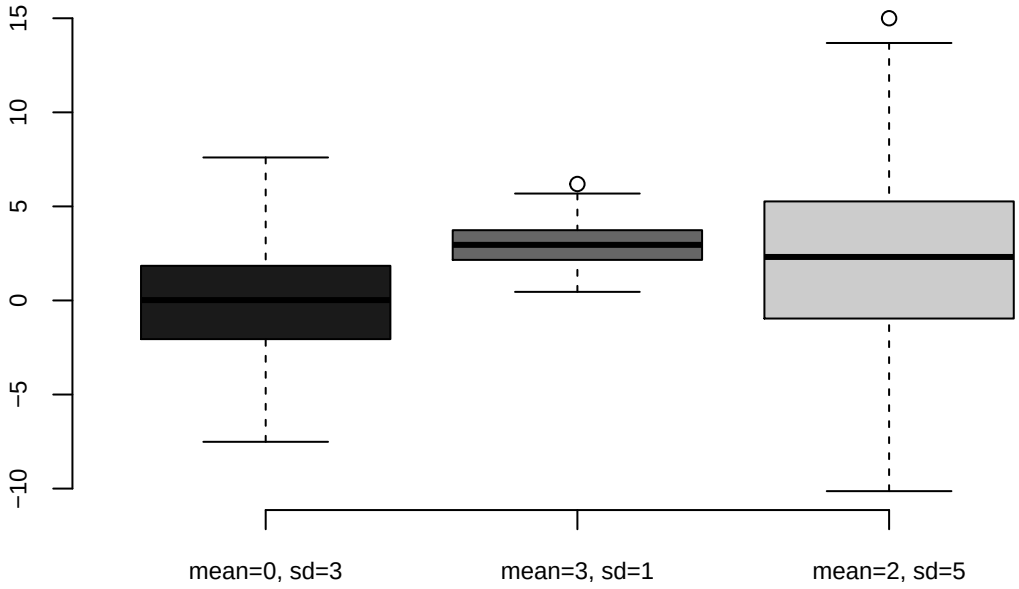
1)

```
attach(iris)

petalwidth <- iris$Petal.Width[Species == "setosa"]
petallength <- iris$Petal.Length[Species == "setosa"]

plot(iris$Petal.Width[Species == "setosa"],iris$Petal.Length[Species == "setosa"], type = "p",xlab="Peta
points(iris$Petal.Width[Species == "versicolor"],iris$Petal.Length[Species == "versicolor"], pch=3, col
points(iris$Petal.Width[Species == "virginica"],iris$Petal.Length[Species == "virginica"], pch=2, col="
title(main = "Petal Length vs Width")
```



2)

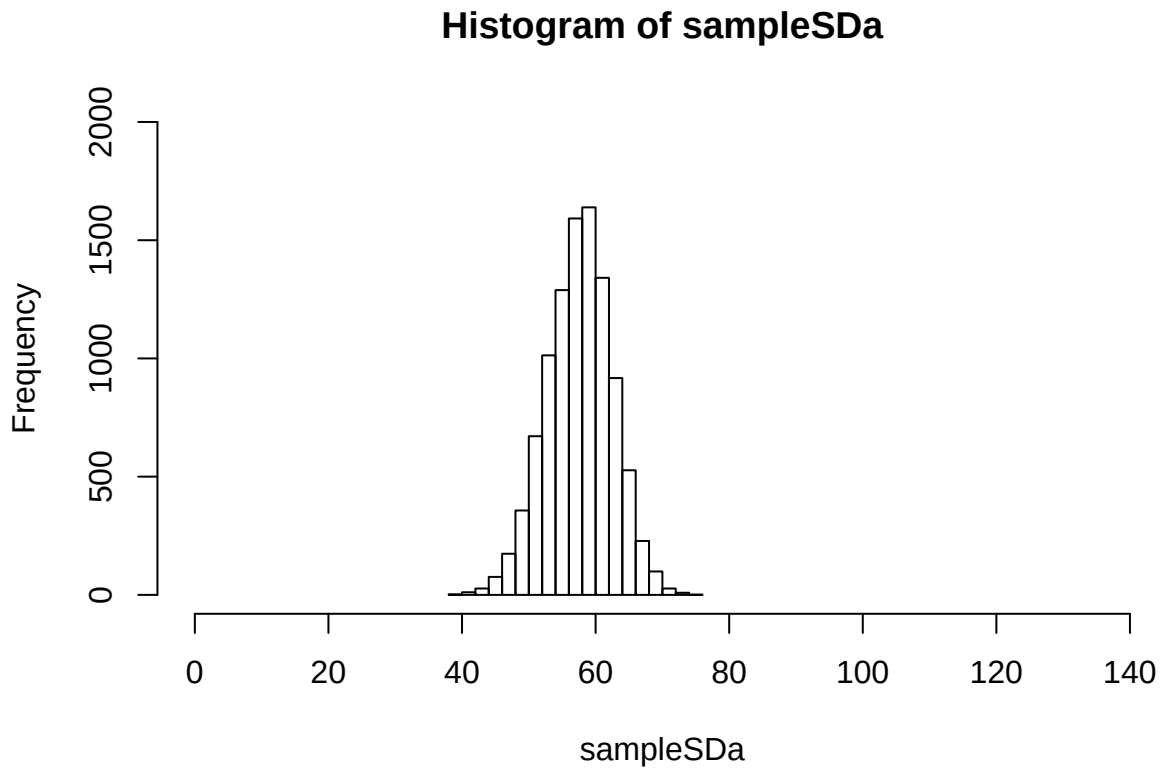
```
norm1 <- rnorm(187, 0, 3)
norm2 <- rnorm(213, 3, 1)
norm3 <- rnorm(150, 2, 5)


boxplot(norm1, norm2, norm3, col = c("grey10","grey40","grey80"), names = c("mean=0, sd=3","mean=3, sd=
```



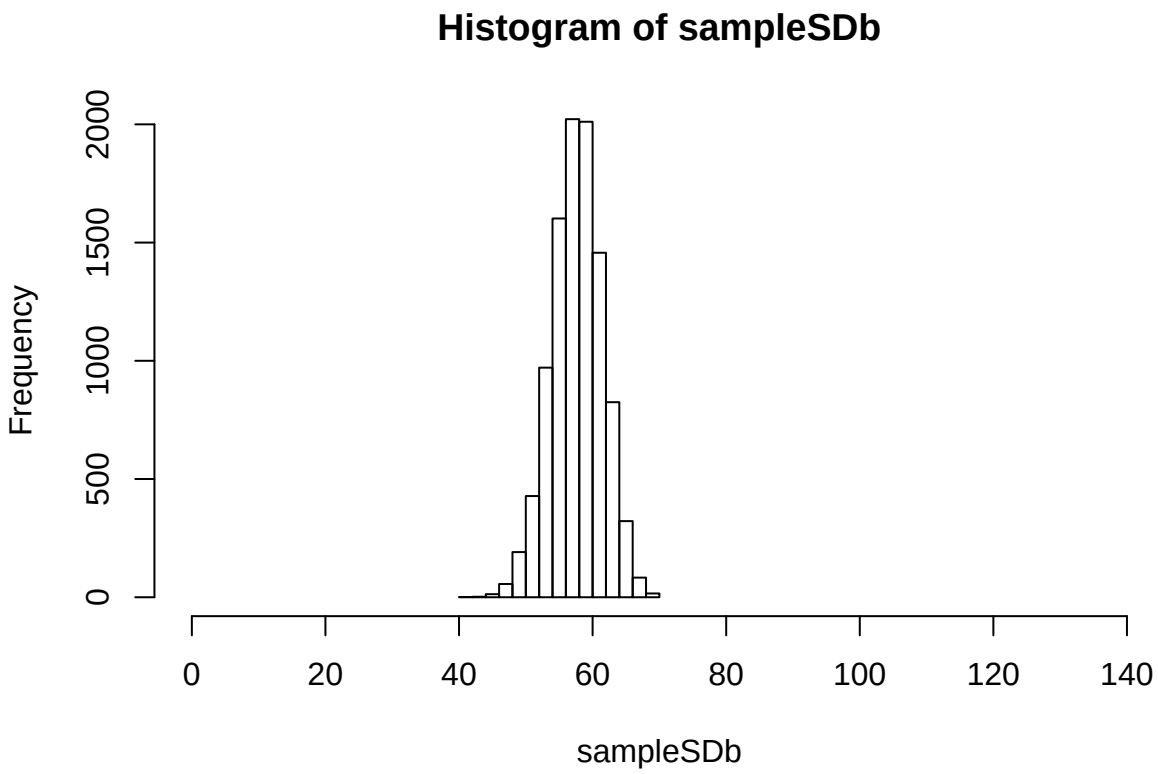
3)

```
sampleSDa <- numeric()

for (i in 1:10000){

  sampleSDa[i] <- sd(runif(n=30, min = 100, max = 300))

}

sampleSDb <- numeric()

for (i in 1:10000){

  sampleSDb[i] <- sd(runif(n=50, min = 100, max = 300))
```

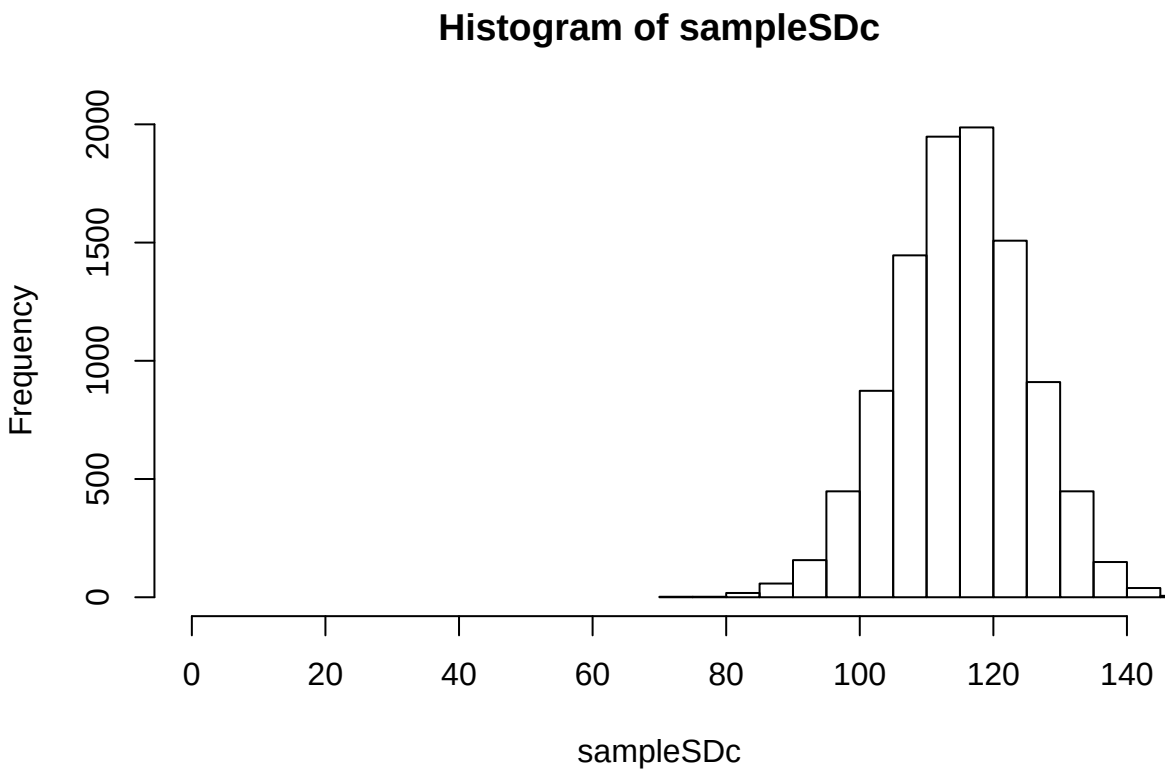
```
}

sampleSDc <- numeric()

for (i in 1:10000){

  sampleSDc[i] <- sd(runif(n=30, min = 100, max = 500))

}


hist(sampleSDa, xlim = c(0,140), ylim = c(0,2000))
```




```
hist(sampleSDb, xlim = c(0,140), ylim = c(0,2000))
```




```
hist(sampleSDc, xlim = c(0,140), ylim = c(0,2000))
```


Histogram of sampleSDc
Frequency
0
500
1000
1500
2000
0
20
40
60
80
100
120
140
sampleSDc

4)