

R Homework 11
Fisher Ankney
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Statistics 5193

*Note: this document was created using R Markdown.

Question 1

```
set.seed(1)

x <- rlnorm(50, meanlog = 0, sdlog = 2)

boxplot(x, col = "red",
        main="Boxplot of Lognormal Data",
        range=3,
        yaxt='n',
        pch=3)

summary <- boxplot.stats(x)

axis(2, at=summary$stats[3])

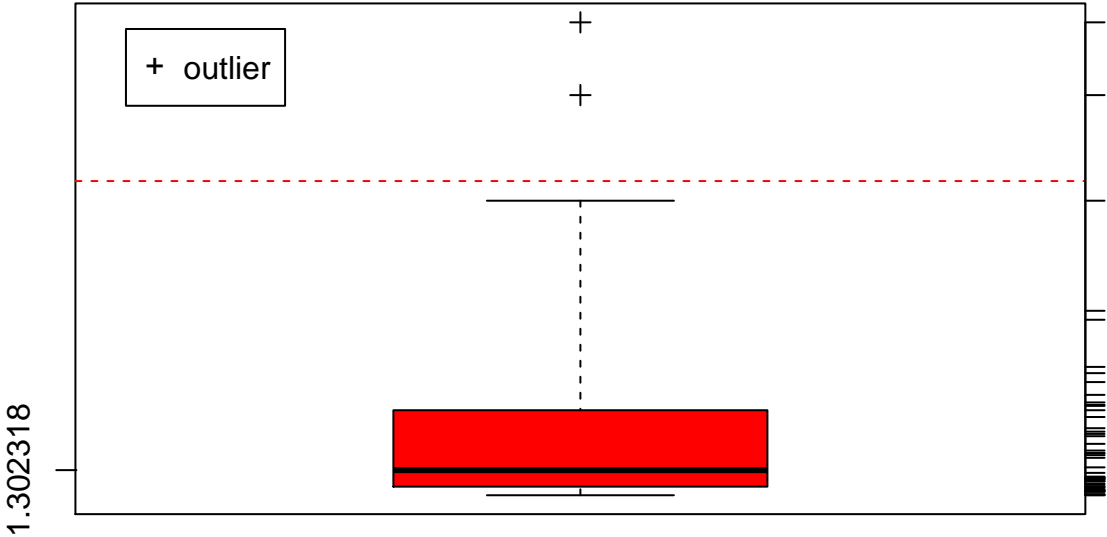
outlier <- summary$stats[4] + 3*(summary$stats[4] - summary$stats[2])

abline(h=outlier, col = "red", lty = 2)

legend("topleft", legend="outlier", pch = "+", inset=0.05 )

axis(4, at=x, label=FALSE)
```

Boxplot of Lognormal Data

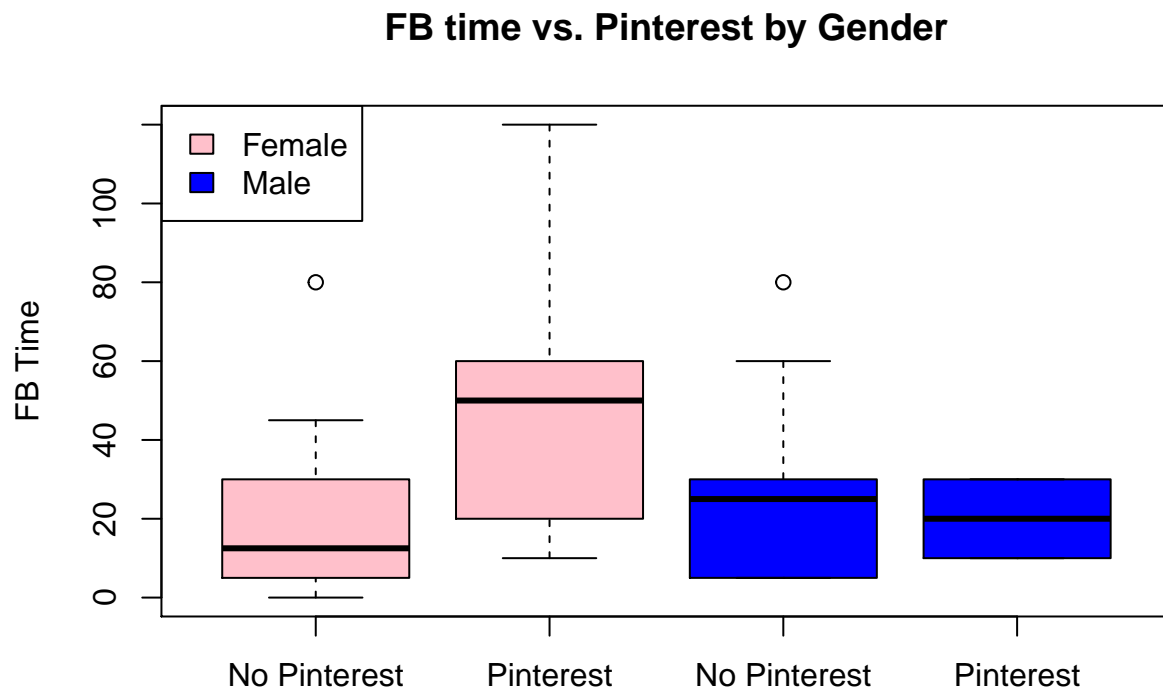


Question 2

```
library(readxl)
StudentData <- read_excel("/Users/fisher/Documents/data_science/r_stat_5193/data/StudentData.xlsx")

boxplot(StudentData$Fbtime ~ StudentData$Pinterest*StudentData$Gender,
        col = c('pink', 'pink', 'blue', 'blue'),
        names = c('No Pinterest', 'Pinterest', 'No Pinterest', 'Pinterest'),
        ylab = 'FB Time',
        main = 'FB time vs. Pinterest by Gender'
)

legend('topleft', legend = c('Female', 'Male'), fill = c('pink', 'blue'))
```



Question 3

```
aggregate(StudentData$Fbtime,  
           by = list(pinterest = StudentData$Pinterest,  
                     gender = StudentData$Gender),  
           FUN = median)
```

```
##  pinterest gender    x  
## 1          N      F 12.5  
## 2          Y      F 50.0  
## 3          N      M 25.0  
## 4          Y      M 20.0
```

```
ag_mean <- function(x) {  
  mean(x, trim = 0.05)  
}
```

```
aggregate(StudentData$Fbtime,  
           by = list(pinterest = StudentData$Pinterest,  
                     gender = StudentData$Gender),  
           FUN = ag_mean)
```

```
##  pinterest gender      x  
## 1          N      F 21.00000  
## 2          Y      F 51.15385  
## 3          N      M 28.50000  
## 4          Y      M 20.00000
```

Question 4

```
ordered <- USArrests[order(USArrests$Murder),]
dotchart(ordered$Murder, labels = row.names(ordered),
         main = "Murder Rate by State")
```

