MATH 3070 Lab Project 6

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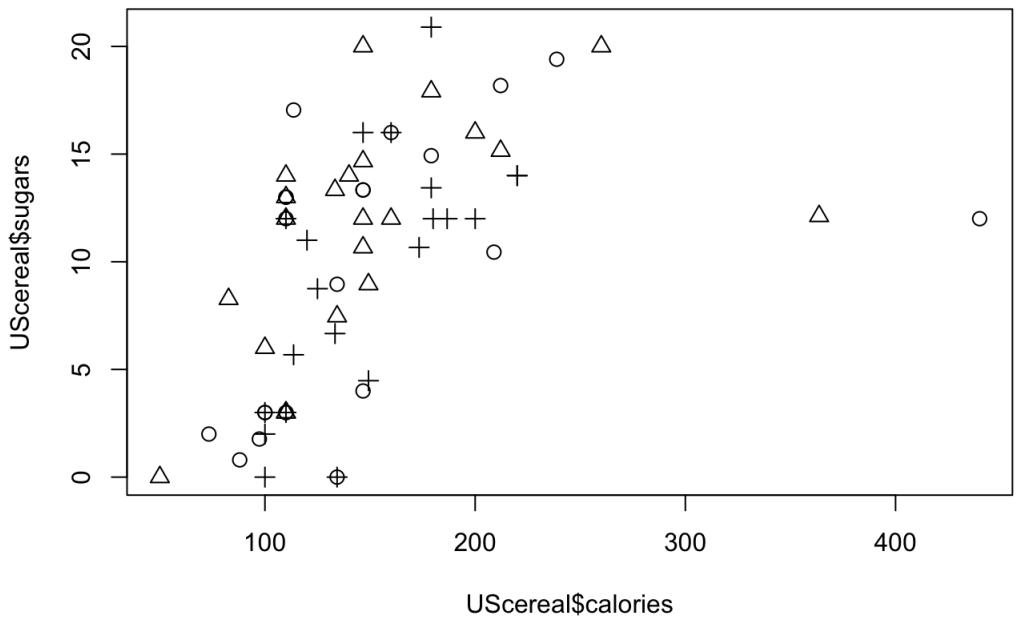
Remember: I expect to see commentary either in the text, in the code with comments created using `#`*, or (preferably) both!* ***Failing to do so may result in lost points!***

Problem 1 (Verzani problem 5.1)

For the `UScereal` *(**MASS**) data set, create a scatter plot of* `calories` *modeled by* `sugars` *using the* `shelf` *variable to create different plot characters. Add a legend to indicate the shelf number. Is there any patterns? (Use base R plotting for this problem.)*

```
# Your code here
library(MASS)
# View(iris)
plot(UScereal$calories, UScereal$sugars, pch = 1:3, cex = 1.2)
```




```
plot(UScereal$calories ~ UScereal$sugars + UScereal$shelf, phc = 1:3, cex = 1.2)
```

```
## Warning in plot.window(...): "phc"不是图形参数
```

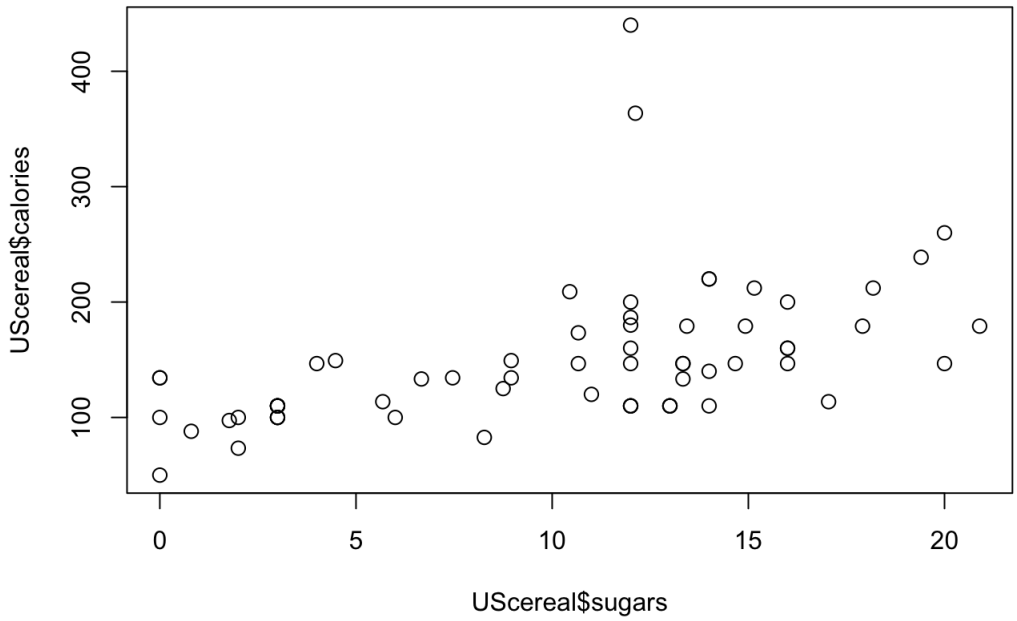
```
## Warning in plot.xy(xy, type, ...): "phc"不是图形参数
```

```
## Warning in axis(side = side, at = at, labels = labels, ...): "phc"不是图形
## 参数

## Warning in axis(side = side, at = at, labels = labels, ...): "phc"不是图形
## 参数
```

```
## Warning in box(...): "phc"不是图形参数
```

```
## Warning in title(...): "phc"不是图形参数
```




```
## Warning in plot.window(...): "phc"不是图形参数
```

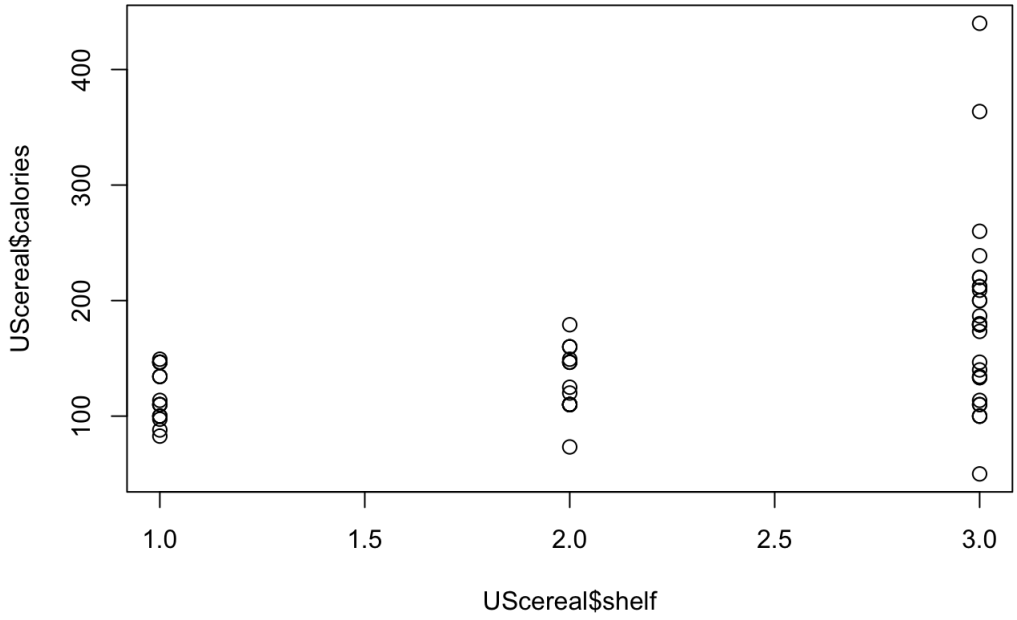
```
## Warning in plot.xy(xy, type, ...): "phc"不是图形参数
```

```
## Warning in axis(side = side, at = at, labels = labels, ...): "phc"不是图形
## 参数

## Warning in axis(side = side, at = at, labels = labels, ...): "phc"不是图形
## 参数
```

```
## Warning in box(...): "phc"不是图形参数
```

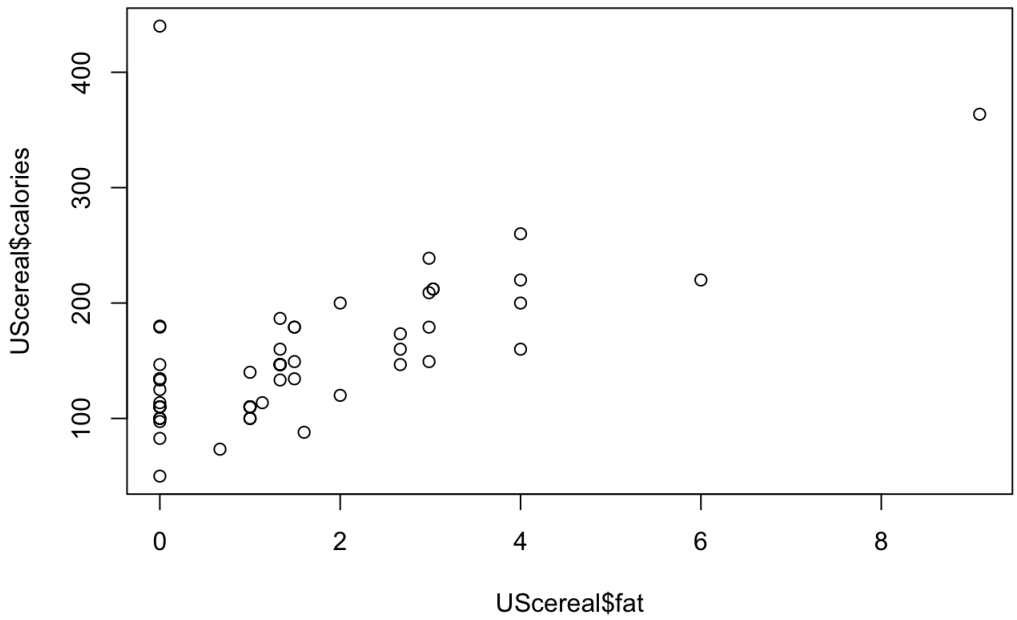
```
## Warning in title(...): "phc"不是图形参数
```



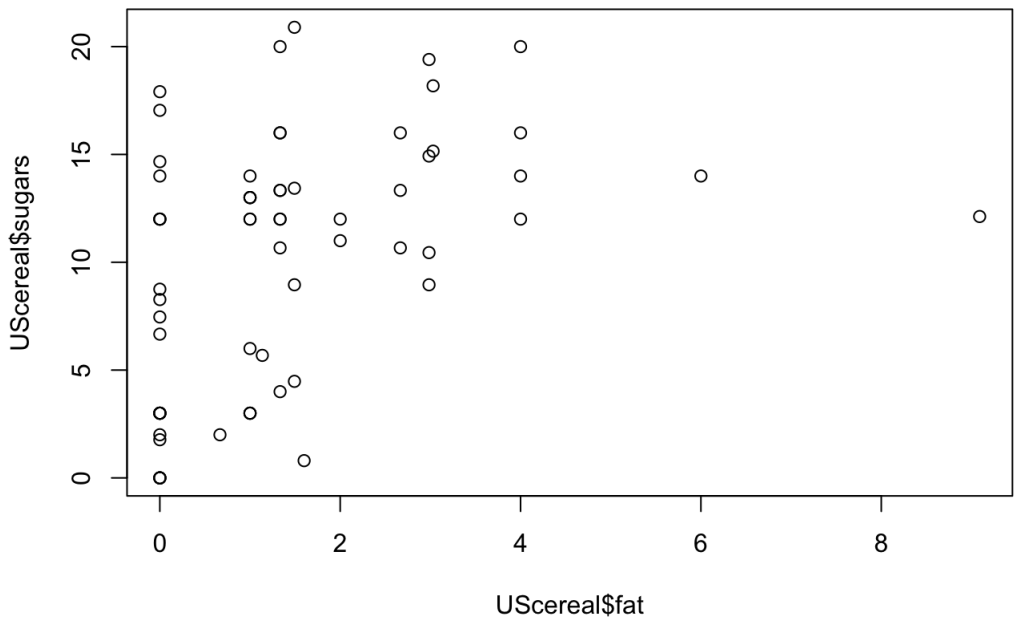
Problem 2 (Verzani problem 5.3)

*For the data set `UScereal` (**MASS**) make a pairs plot of the numeric variables. Which correlation looks larger: fat and calories or fat and sugars?*

```
# Your code here
library(MASS)
# View(UScereal)
plot(UScereal$fat, UScereal$calories)
```




```
plot(UScereal$fat, UScereal$sugars)
```



Problem 3 (Verzani problem 5.4)

*For the data set `batting` (**UsingR**) make a bubble plot of home runs hit (`HR`) modeled by hits (`H`) where the scale factor for each point is given by `sqrt(SO)/10` . Is there any story to be told by the size of the points? (You must use base R plotting for this problem.)*

```
# Your code here
library(UsingR)
```

```
## Loading required package: HistData
```

```
## Loading required package: Hmisc
```

```
## Loading required package: lattice
```

```
## Loading required package: survival
```

```
## Loading required package: Formula
```

```
## Loading required package: ggplot2
```

```
##
## Attaching package: 'Hmisc'
```

```
## The following objects are masked from 'package:base':
##
##     format.pval, round.POSIXt, trunc.POSIXt, units
```

```
##
## Attaching package: 'UsingR'
```

```
## The following object is masked from 'package:survival':
##
##     cancer
```

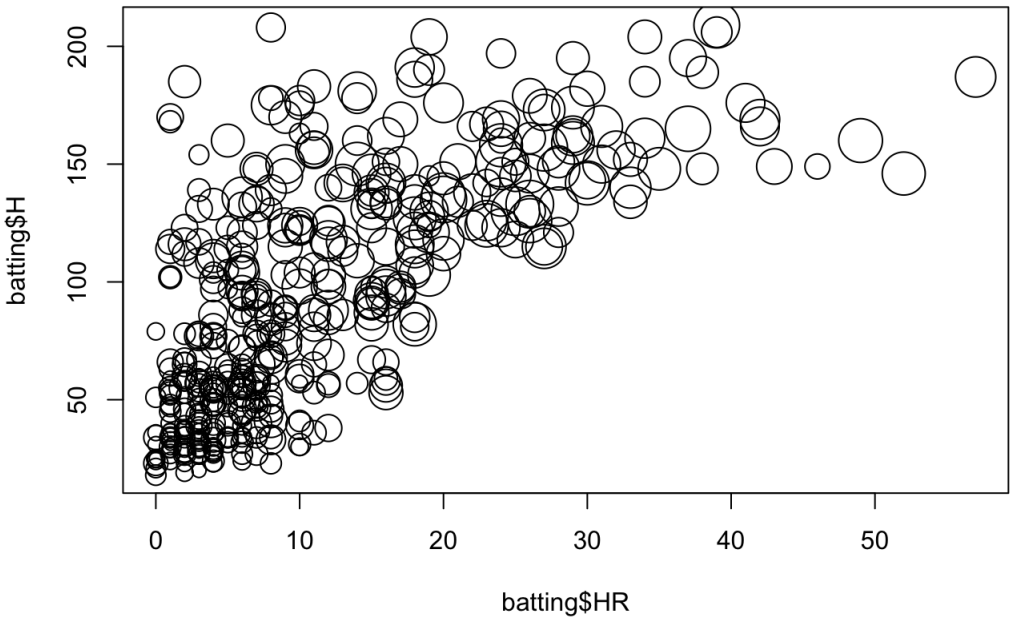
```
View(SAT)
```

```
## Error in check_for_XQuartz(): X11 library is missing: install XQuartz from xquartz.macosforge.org
```

```
View(batting)
```

```
## Error in check_for_XQuartz(): X11 library is missing: install XQuartz from xquartz.macosforge.org
```

```
plot(batting$HR, batting$H, cex = sqrt(batting$SO/10))
```


batting$H
50
100
150
200
0
10
20
30
40
50
batting$HR