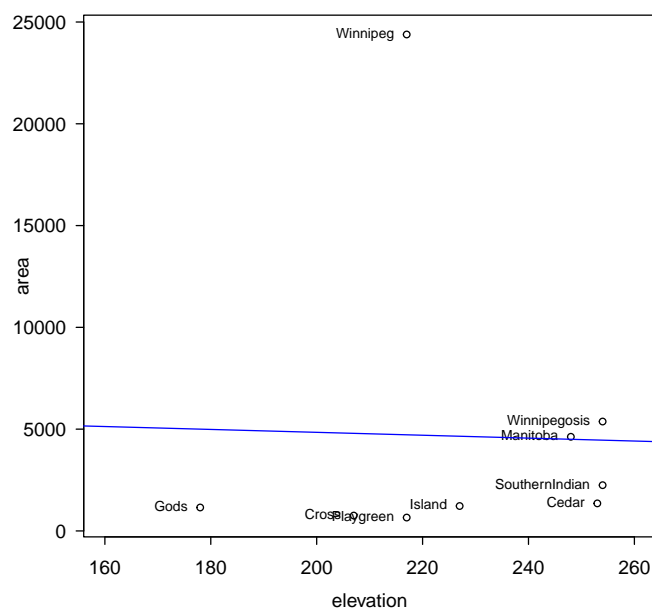The results below are generated from an R script.

```
#Question 1
library(DAAG)
#a.
par(mar = c(5, 5, 4, 2) + 0.1)
plot(Manitoba.lakes, xlim= c(160,260),cex=0.7)
#b.
text(Manitoba.lakes, labels=rownames(Manitoba.lakes), cex=0.7, pos= 2)
#c.
myPlot = lm(area ~ elevation, data=Manitoba.lakes)
abline(myPlot, col="blue")
```



```
#d.
elevationdivided1000 = Manitoba.lakes$elevation/1000
areadivided100 = Manitoba.lakes$area/100
ML.df = data.frame(elevationdivided1000,areadivided100)
plot(ML.df)
```
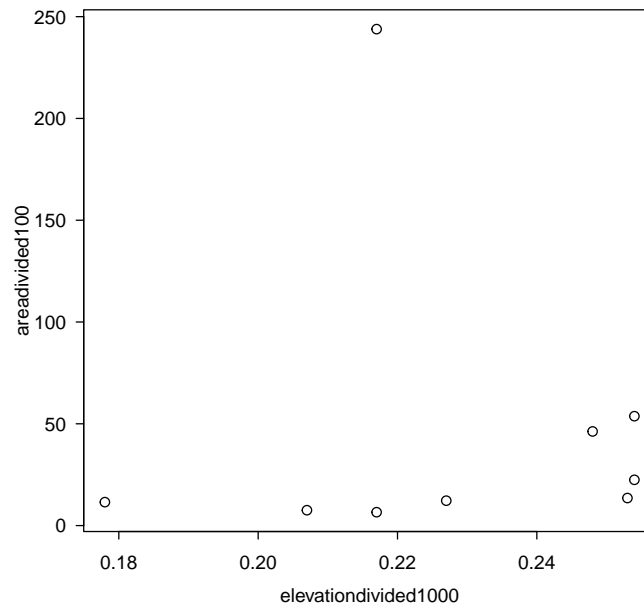
```
# redo for areadivided1000 and elevationdivided100
elevationdivided100 = Manitoba.lakes$elevation/100
areadivided1000 = Manitoba.lakes$area/1000
ML.df = data.frame(elevationdivided100,areadivided1000)
plot(ML.df)
```
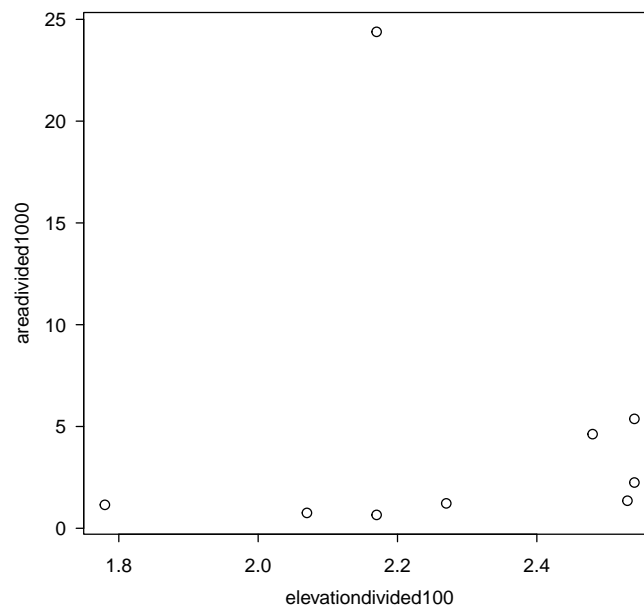
```
#Question 2
help(unique)
myData = c(1,1,1,2,3,4,4,5,5,6,6,6,6,7)
unique(myData)

## [1] 1 2 3 4 5 6 7

#unique takes data that is not repeated and returns it.
unique(myData, incomparables = 1)

## [1] 1 1 1 2 3 4 5 6 7

#incomparables means that it will not compare whatever value is given, for example here,
#this will return all 1's.

#Question 3
plot(Loblolly$age, Loblolly$height, xlab="age", ylab="height", main="height vs age")
abline(lm(height~age, data=Loblolly), col="red")
```
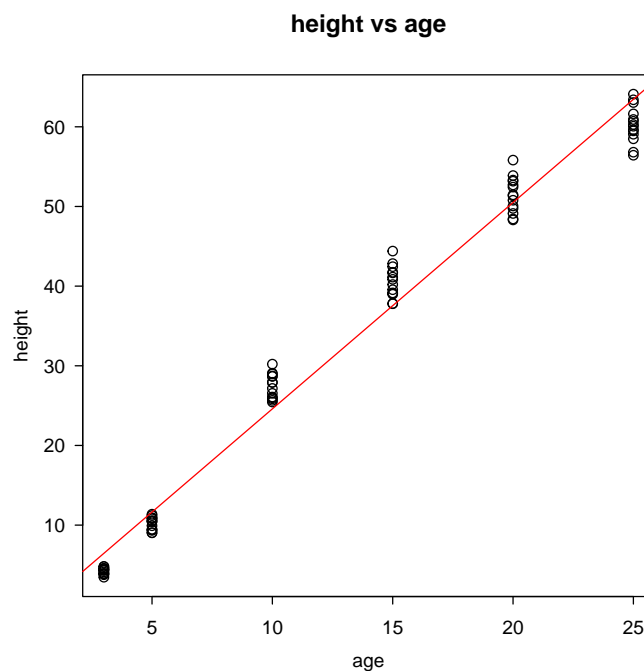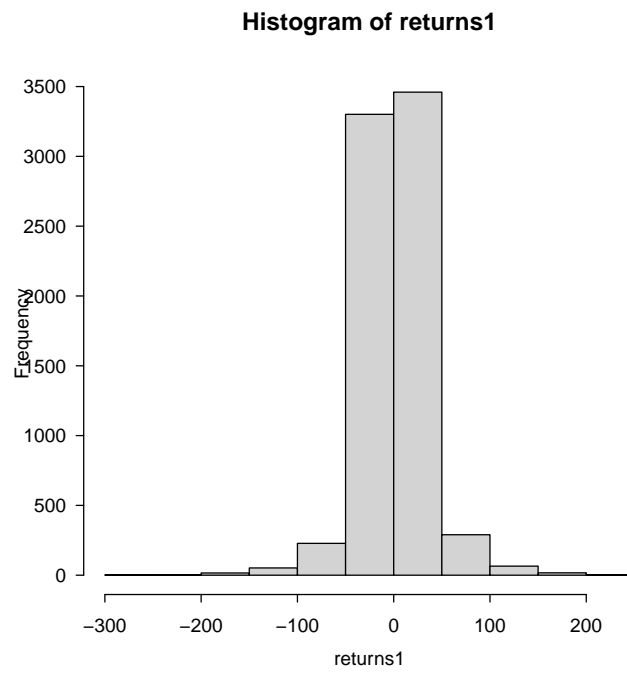
height vs age


```
#Question 4
# I believe this data is believable because if we think about it the older the pine tree
# the higher the tree but loblolly reaches its maximum height in around 150 years, so this
# data is true for now.

#Question 5
returns1 = diff(EuStockMarkets)
hist(returns1)
```

Histogram of returns1


```r
hist(returns1, breaks = "scott")
hist(returns1, breaks = "fd")
```

Histogram of returns1

4
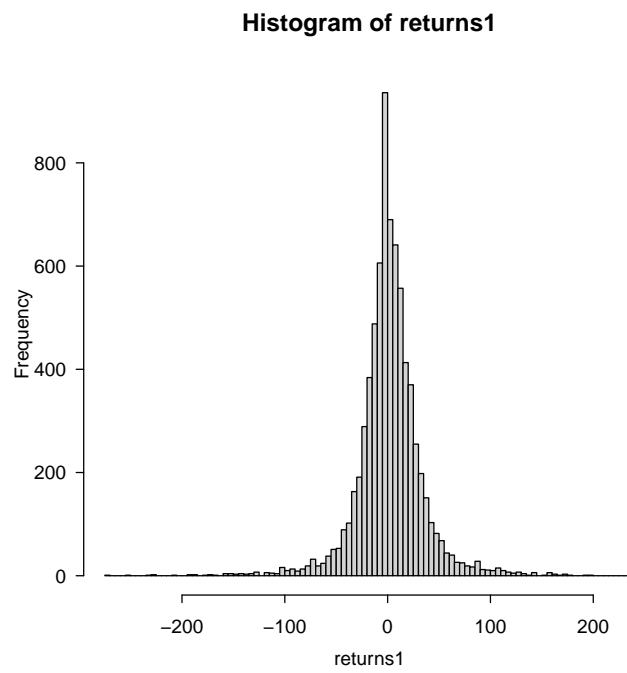
```
# they both look the same

#Question 6

# create points for b.
x <- c(8, 10, 15, 11, 12.5, 8.5, 4, 6, 2, 7, 8)
y <- c(15, 10, 10, 7, 2, 5, 2, 7, 10, 10, 15)
pointNames = c("A","B","C","D","E","F","G","H","I","J")

# c.
par(mar = c(4, 4, 4, 4), pin = c(4, 4),bg="blue")
mystar = plot(x,y, asp = 1, cex = 0.7, xlim =c(2,15), ylim = c(2,15))
text(x,y,labels = pointNames,pos=2,cex = 0.7)
lines(x,y, col = "red",lwd = 3)
```
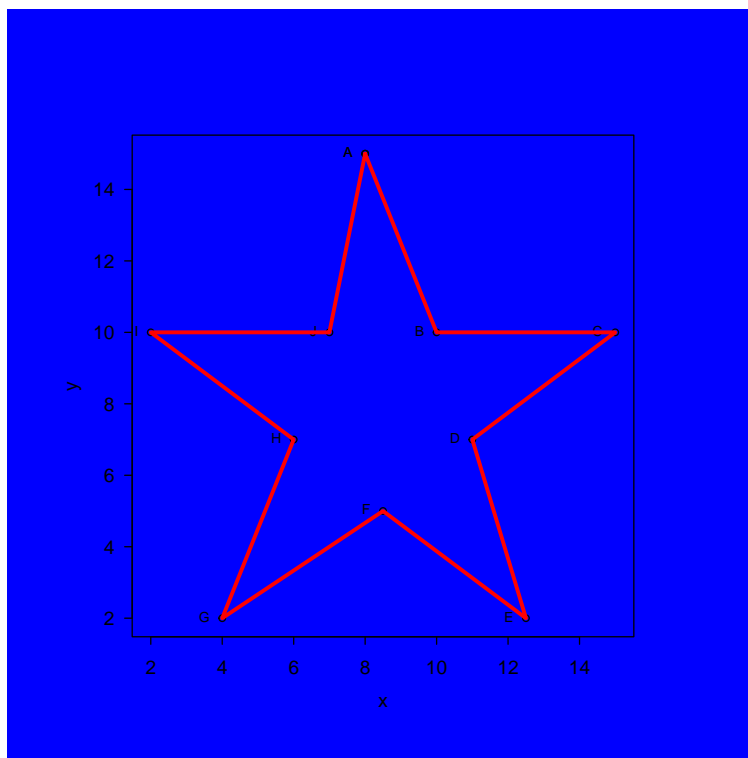
```
#BONUS
mystar = plot(x,y, asp = 1, cex = 0.7, xlim =c(2,15), ylim = c(2,15), type="n")
polygon(x,y,col="yellow")
text(8.5,8,labels = "MY STAR", col= "blue", cex = 1.5)
```
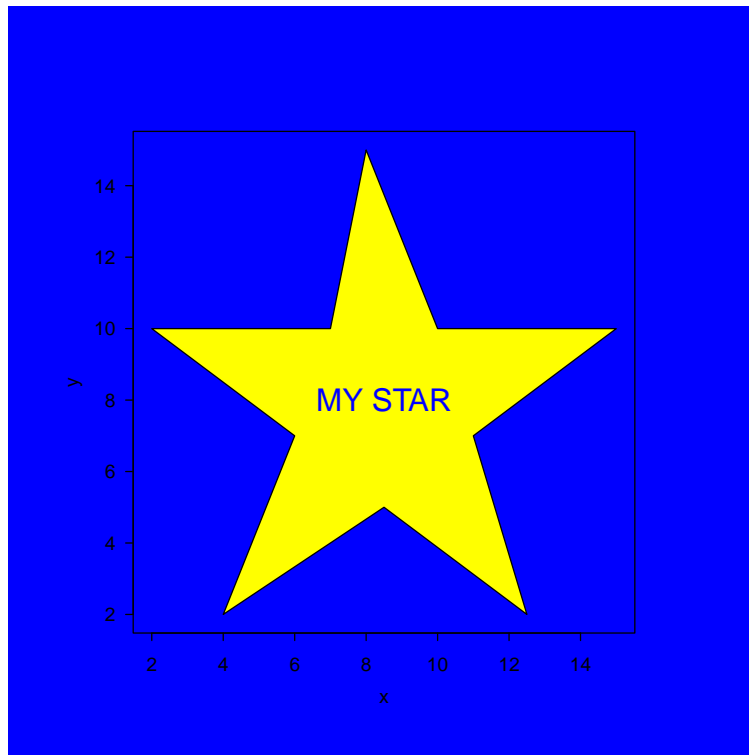
The R session information (including the OS info, R version and all packages used):

```r
sessionInfo()
```

```
## R version 4.2.2 (2022-10-31)
## Platform: x86_64-apple-darwin17.0 (64-bit)
## Running under: macOS Ventura 13.1
##
## Matrix products: default
## LAPACK: /Library/Frameworks/R.framework/Versions/4.2/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
## [1] DAAG_1.25.4
##
## loaded via a namespace (and not attached):
##  [1] Rcpp_1.0.10       lattice_0.20-45    deldir_1.0-6      png_0.1-8
##  [5] rbibutils_2.2.13  grid_4.2.2         evaluate_0.20     highr_0.10
##  [9] Rdpack_2.4        latticeExtra_0.6-30 RColorBrewer_1.1-3 tools_4.2.2
## [13] interp_1.1-3      jpeg_0.1-10        xfun_0.37         compiler_4.2.2
## [17] knitr_1.42
```

```r
Sys.time()
```

```
## [1] "2023-03-28 10:49:42 PDT"
```