```r
library(dplyr)
library(plyr)

data("iris")

rowNum <- nrow(iris)
colNum <- ncol(iris)
rowHead <- head(iris,10)
sepalLen <- iris$Sepal.Length
sepalLenMean <- mean(iris$Sepal.Length)
sepalLenRow <- subset(iris,Sepal.Length > 7.6)
sepalLenRowIndex <- which(iris > 7.6)
setosaRow <- iris[grep("setosa", iris$Species), ]
setosaRowBoth <- filter(iris, Sepal.Length > 7.6 & Species == "setosa")
sepalMaxLength <- ddply(iris, ~Species, summarise, max=max(Sepal.Length))
sepalRowIndex <- which(iris >= 7.8)



print(paste("a. Get number of rows (Hint: nrow):", rowNum))
cat("\n")
print(paste("b. Get number of columns (Hint: ncol):", colNum))
cat("\n")
print("c. Show first 10 rows:")
rowHead
cat("\n")
print("d. Show column Sepal.Length:")
sepalLen
cat("\n")
print(paste("e. Calculate the mean Sepal.Length?:", sepalLenMean))
cat("\n")
print("f. Show all rows where Sepal.Length > 7.6:")
sepalLenRow
cat("\n")
print("fi. What are the row indexes where Sepal.Length > 7.6? (Hint: which):" )
sepalLenRowIndex
cat("\n")
print("g. Show all rows where Species is setosa:")
head(setosaRow)
cat("\n")
print("h. Show all rows where Sepal.Length > 3.0 and Species is setosa:")
setosaRowBoth
cat("\n")
print("i. Get the largest value of Sepal.Length:")
sepalMaxLength
cat("\n")
print(paste("ii. Get the row index that contains this value:", sepalRowIndex))
cat("\n")
print("j. What Species corresponds to this largest Sepal.Length?: virginica")
```

```
[1] "a. Get number of rows (Hint: nrow): 150"

[1] "b. Get number of columns (Hint: ncol): 5"

[1] "c. Show first 10 rows:"
   Sepal.Length Sepal.Width Petal.Length Petal.Width Species
1           5.1         3.5          1.4         0.2  setosa
2           4.9         3.0          1.4         0.2  setosa
3           4.7         3.2          1.3         0.2  setosa
4           4.6         3.1          1.5         0.2  setosa
5           5.0         3.6          1.4         0.2  setosa
6           5.4         3.9          1.7         0.4  setosa
7           4.6         3.4          1.4         0.3  setosa
8           5.0         3.4          1.5         0.2  setosa
9           4.4         2.9          1.4         0.2  setosa
10          4.9         3.1          1.5         0.1  setosa

[1] "d. Show column Sepal.Length:"
  [1] 5.1 4.9 4.7 4.6 5.0 5.4 4.6 5.0 4.4 4.9 5.4 4.8 4.8 4.3 5.8 5.7 5.4 5.1
 [19] 5.7 5.1 5.4 5.1 4.6 5.1 4.8 5.0 5.0 5.2 5.2 4.7 4.8 5.4 5.2 5.5 4.9 5.0
 [37] 5.5 4.9 4.4 5.1 5.0 4.5 4.4 5.0 5.1 4.8 5.1 4.6 5.3 5.0 7.0 6.4 6.9 5.5
 [55] 6.5 5.7 6.3 4.9 6.6 5.2 5.0 5.9 6.0 6.1 5.6 6.7 5.6 5.8 6.2 5.6 5.9 6.1
 [73] 6.3 6.1 6.4 6.6 6.8 6.7 6.0 5.7 5.5 5.5 5.8 6.0 5.4 6.0 6.7 6.3 5.6 5.5
 [91] 5.5 6.1 5.8 5.0 5.6 5.7 5.7 6.2 5.1 5.7 6.3 5.8 7.1 6.3 6.5 7.6 4.9 7.3
[109] 6.7 7.2 6.5 6.4 6.8 5.7 5.8 6.4 6.5 7.7 7.7 6.0 6.9 5.6 7.7 6.3 6.7 7.2
[127] 6.2 6.1 6.4 7.2 7.4 7.9 6.4 6.3 6.1 7.7 6.3 6.4 6.0 6.9 6.7 6.9 5.8 6.8
[145] 6.7 6.7 6.3 6.5 6.2 5.9

[1] "e. Calculate the mean Sepal.Length?: 5.84333333333333"

[1] "f. Show all rows where Sepal.Length > 7.6:"
    Sepal.Length Sepal.Width Petal.Length Petal.Width   Species
118          7.7         3.8          6.7         2.2 virginica
119          7.7         2.6          6.9         2.3 virginica
123          7.7         2.8          6.7         2.0 virginica
132          7.9         3.8          6.4         2.0 virginica
136          7.7         3.0          6.1         2.3 virginica

[1] "fi. What are the row indexes where Sepal.Length > 7.6? (Hint: which):"
[1] 118 119 123 132 136

[1] "g. Show all rows where Species is setosa:"
  Sepal.Length Sepal.Width Petal.Length Petal.Width Species
1          5.1         3.5          1.4         0.2  setosa
2          4.9         3.0          1.4         0.2  setosa
3          4.7         3.2          1.3         0.2  setosa
4          4.6         3.1          1.5         0.2  setosa
5          5.0         3.6          1.4         0.2  setosa
6          5.4         3.9          1.7         0.4  setosa

[1] "h. Show all rows where Sepal.Length > 3.0 and Species is setosa:"
[1] Sepal.Length Sepal.Width  Petal.Length Petal.Width  Species
<0 rows> (or 0-length row.names)

[1] "i. Get the largest value of Sepal.Length:"
     Species max
1     setosa 5.8
```

```
2 versicolor 7.0
3  virginica 7.9

[1] "ii. Get the row index that contains this value: 132"

[1] "j. What Species corresponds to this largest Sepal.Length?: virginica"
```

2. Consider the answer posted to Quora.com to "Why is R great for Data Science?. Answer one of the following questions.

One online community where members discuss R is found at a youtube channel named "freeCodeCamp.org" (https://www.youtube.com/watch?v=_V8eKsto3Ug). This channel specializes in creating online lectures for a wide variety of coding languages, with R being included. All lectures on this channel are made completely free which makes learning extremely friendly to newcomers. To add on to this, all the R tutorial files he goes through in this video are provided via google docs. The age range is various but most community members in this channel are primarily students.