

# quiz\_week3

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## Question 1

In this dataset, what is the mean of 'Sepal.Length' for the species virginica? Please round your answer to the nearest whole number.

```
library(datasets)
data(iris)
?iris

## starting httpd help server ... done
tapply(iris$Sepal.Length, iris$Species, mean)

##      setosa versicolor  virginica
##      5.006      5.936      6.588
```

## Question 2

Continuing with the 'iris' dataset from the previous Question, what R code returns a vector of the means of the variables 'Sepal.Length', 'Sepal.Width', 'Petal.Length', and 'Petal.Width'?

```
apply(iris[,1:4], 2, mean)

## Sepal.Length Sepal.Width Petal.Length Petal.Width
##      5.843333      3.057333      3.758000      1.199333
```

## Question 3

How can one calculate the average miles per gallon (mpg) by number of cylinders in the car (cyl)? Select all that apply.(in the mtcars dataset)

```
data(mtcars)
head(mtcars)

##           mpg  cyl  disp  hp  drat    wt   qsec vs  am  gear  carb
## Mazda RX4      21.0   6  160  110 3.90 2.620 16.46 0   1    4    4
## Mazda RX4 Wag  21.0   6  160  110 3.90 2.875 17.02 0   1    4    4
## Datsun 710      22.8   4  108   93 3.85 2.320 18.61 1   1    4    1
## Hornet 4 Drive  21.4   6  258  110 3.08 3.215 19.44 1   0    3    1
## Hornet Sportabout 18.7   8  360  175 3.15 3.440 17.02 0   0    3    2
## Valiant        18.1   6  225  105 2.76 3.460 20.22 1   0    3    1

tapply(mtcars$mpg, mtcars$cyl, mean)

##      4      6      8
```

```
## 26.66364 19.74286 15.10000
with(mtcars, tapply(mpg, cyl, mean))

##          4          6          8
## 26.66364 19.74286 15.10000
sapply(split(mtcars$mpg, mtcars$cyl), mean)

##          4          6          8
## 26.66364 19.74286 15.10000
```

## Question 4

Continuing with the ‘mtcars’ dataset from the previous Question, what is the absolute difference between the average horsepower of 4-cylinder cars and the average horsepower of 8-cylinder cars?

```
x <- tapply(mtcars$hp, mtcars$cyl, mean)
abs(x[1] - x[3])

##          4
## 126.5779
```