# Week 1 Quiz

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17/02/2020

### Question 6

If I have two vectors x <- c(1,3, 5) and y <- c(3, 2, 10), what is produced by the expression rbind(x, y)

```
x <- c(1, 3, 5)
y <- c(3, 2, 10)
rbind(x, y)
```

```
##   [,1] [,2] [,3]
## x    1    3    5
## y    3    2   10
```

### Question 8

Suppose I have a list defined as x <- list(2, “a”, “b”, TRUE). What does x[[1]] give me? Select all that apply.

```
x <- list(2, "a", "b", TRUE)
x[[1]]
```

```
## [1] 2
```

```
class(x[[1]])
```

```
## [1] "numeric"
```

```
class(x)
```

```
## [1] "list"
```

—

```
hw1_data <- read.csv("hw1_data.csv")
```

### Question 11

In the dataset provided for this Quiz, what are the column names of the dataset?

```
colnames(hw1_data)
```

```
## [1] "Ozone"   "Solar.R" "Wind"    "Temp"    "Month"   "Day"
```

### Question 12

Extract the first 2 rows of the data frame and print them to the console. What does the output look like?

```
hw1_data[1:2,]
```

```
##   Ozone Solar.R Wind Temp Month Day
## 1    41     190  7.4   67     5   1
```

```
## 2    36     118  8.0   72     5   2
```

### Question 13

How many observations (i.e. rows) are in this data frame?

```
nrow(hw1_data)
```

```
## [1] 153
```

### Question 14

Extract the last 2 rows of the data frame and print them to the console. What does the output look like?

```
hw1_data[152:153, ]
```

```
##     Ozone Solar.R Wind Temp Month Day
## 152    18     131  8.0   76     9  29
## 153    20     223 11.5   68     9  30
```

### Question 15

What is the value of Ozone in the 47th row?

```
hw1_data[47, "Ozone"]
```

```
## [1] 21
```

### Question 16

How many missing values are in the Ozone column of this data frame?

```
table(is.na(hw1_data$Ozone))
```

```
##
## FALSE  TRUE
##   116    37
```

### Question 17

What is the mean of the Ozone column in this dataset? Exclude missing values (coded as NA) from this calculation.

```
na_values <- is.na(hw1_data$Ozone)

ozone <- hw1_data$Ozone[!na_values]

mean(ozone)
```

```
## [1] 42.12931
```

### Question 18

Extract the subset of rows of the data frame where Ozone values are above 31 and Temp values are above 90. What is the mean of Solar.R in this subset?

```
q18_data_pre <- hw1_data[complete.cases(hw1_data), ]
q18_data <- q18_data_pre[q18_data_pre$Ozone > 31 & q18_data_pre$Temp > 90, ]

mean(q18_data$Solar.R)
```

```
## [1] 212.8
```

### Question 19

What is the mean of "Temp" when "Month" is equal to 6?

```
q19_data <- hw1_data$Temp[hw1_data$Month == 6]
mean(q19_data)
```

```
## [1] 79.1
```

### Question 20

What was the maximum ozone value in the month of May (i.e. Month is equal to 5)?

```
q20_data_raw <- hw1_data$Ozone[hw1_data$Month == 5]

na_values <- is.na(q20_data_raw)

q20_data <- q20_data_raw[!na_values]

max(q20_data)
```

```
## [1] 115
```