

Quiz1

Q4. If I execute the expression `x <- 4` in R, what is the class of the object 'x' as determined by the 'class()' function?

```
x <- 4
class(x)
```

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

Q5. What is the class of the object defined by the expression `x <- c(4, "a", TRUE)`?

```
x <- c(4, "a", TRUE)
class(x)
```

```
## [1] "character"
```

Q6. If I have two vectors `x <- c(1,3, 5)` and `y <- c(3, 2, 10)`, what is produced by the expression `cbind(x, y)`?

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

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

Q8. Suppose I have a list defined as `x <- list(2, "a", "b", TRUE)`. What does `x[[1]]` give me?

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

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

Q9. Suppose I have a vector `x <- 1:4` and a vector `y <- 2`. What is produced by the expression `x + y`?

```
x <- 1:4
y <- 2
x+y
```

```
## [1] 3 4 5 6
```

Q10. Suppose I have a vector `x <- c(3, 5, 1, 10, 12, 6)` and I want to set all elements of this vector that are less than 6 to be equal to zero. What R code achieves this?

```
x <- c(3, 5, 1, 10, 12, 6)
x[x <= 5] <- 0
x
```

```
## [1] 0 0 0 10 12 6
```

```
# loading data to Q11-Q20
library(RCurl)
z <- getURL("https://raw.githubusercontent.com/offff/Coursera---R-Programming/master/hw1_data.csv")
Q1_dataset <- read.csv(text = z)
```

Q11. In the dataset provided for this Quiz, what are the column names of the dataset?

```
colnames(Q1_dataset)
```

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

Q12. Extract the first 2 rows of the data frame and print them to the console. What does the output look like?

```
Q1_dataset[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
```

Q13. How many observations (i.e. rows) are in this data frame?

```
dim(Q1_dataset)[1]
```

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

Q14. Extract the last 2 rows of the data frame and print them to the console. What does the output look like?

```
n <- dim(Q1_dataset)[1]
m <- n-1
Q1_dataset[m:n,]
```

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

Q15. What is the value of Ozone in the 47th row?

```
Q1_dataset[47,1]
```

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

Q16. How many missing values are in the Ozone column of this data frame?

```
sum(is.na(Q1_dataset$Ozone))
```

```
## [1] 37
```

Q17. What is the mean of the Ozone column in this dataset? Exclude missing values (coded as NA) from this calculation.

```
mean(Q1_dataset$Ozone, na.rm = T)
```

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

Q18. 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?

```
subset1 <- Q1_dataset[Q1_dataset$Ozone > 31,]  
subset2 <- subset1[subset1$Temp > 90,]  
subset3 <- na.omit(subset2)  
mean(subset3$Solar.R)
```

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

Q19. What is the mean of “Temp” when “Month” is equal to 6?

```
subset4 <- Q1_dataset[Q1_dataset$Month == 6,]  
subset5 <- na.omit(subset4)  
mean(subset5$Temp)
```

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

Q20. What was the maximum ozone value in the month of May (i.e. Month = 5)?

```
subset6 <- Q1_dataset[Q1_dataset$Month == 5,]  
max(na.omit(subset6$Ozone))
```

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