Q.1 Create a variable named carName and assign the value Volvo to it.

```
carName <- "Volvo"

# Print the value of carName
print(carName)
```

"Volvo"

Q.2 Use the correct function to combine the text "Hello" with the txt variable, to output
"Hello World!".

```
# Create a variable named txt and assign a value to it
txt <- "World!"

# Combine the text "Hello" with the txt variable
result <- paste("Hello", txt)

# Print the result
print(result)
```

"Hello World!"

Q.3 What data type is myVar and x?
x <- 10.5
myVar <- 30

```
x <- 10.5
myVar <- 30

# Check the data types
class_x <- class(x)
class_myVar <- class(myVar)

# Print the results
cat("Data type of x:", class_x, "\n")
```

Data type of x: numeric

```
cat("Data type of myVar:", class_myVar, "\n")
```

Data type of myVar: numeric

Q.4 Use the correct function to find the square root of the number 100.

```
# Find the square root of 100
result <- sqrt(100)

# Print the result
print(result)
```

10

Q.5 Use the correct function to find the number of characters in the str variable: str<-"Finolex Academy of Management and Technology"

```
# Define the str variable
str <- "Finolex Academy of Management and Technology"

# Find the number of characters in the str variable
num_characters <- nchar(str)

# Print the result
print(num_characters)
```

44

Q.6 Write a R program to create a sequence of numbers from 20 to 50 and find the mean of numbers from 20 to 60 and sum of numbers from 51 to 91.

```
# Create a sequence of numbers from 20 to 50
sequence_20_to_50 <- seq(20, 50)

# Find the mean of numbers from 20 to 60
mean_20_to_60 <- mean(seq(20, 60))

# Calculate the sum of numbers from 51 to 91
sum_51_to_91 <- sum(seq(51, 91))

# Print the results

cat("Sequence from 20 to 50:", sequence_20_to_50, "\n")
```
Sequence from 20 to 50: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

```
cat("Mean of numbers from 20 to 60:", mean_20_to_60, "\n")
```
Mean of numbers from 20 to 60: 40

```
cat("Sum of numbers from 51 to 91:", sum_51_to_91, "\n")
```
Sum of numbers from 51 to 91: 2911

Q.7 Write a R program to create three vectors numeric data, character data and logical data. Display the content of the vectors and their type.

```
# Create vectors with numeric, character, and logical data
numeric_vector <- c(1.5, 2.0, 3.7, 4.2)
character_vector <- c("apple", "banana", "orange", "grape")
logical_vector <- c(TRUE, FALSE, TRUE, FALSE)

# Display the content of the vectors
cat("Numeric Vector:", numeric_vector, "\n")
```
Numeric Vector: 1.5 2 3.7 4.2

```
cat("Character Vector:", character_vector, "\n")
```
Character Vector: apple banana orange grape

```
cat("Logical Vector:", logical_vector, "\n")
```
Logical Vector: TRUE FALSE TRUE FALSE

```
# Display the types of the vectors
cat("Type of Numeric Vector:", class(numeric_vector), "\n")
```
Type of Numeric Vector: numeric

```
cat("Type of Character Vector:", class(character_vector), "\n")
```
Type of Character Vector: character

```
cat("Type of Logical Vector:", class(logical_vector), "\n")
```
Type of Logical Vector: logical

Q.8 Write a R program to create a data frame from four given vectors.

```
name = c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew',
 'Laura',
'Kevin', 'Jonas')
score = c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19)
attempts = c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1)
qualify = c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')
```

```
# Create vectors
name <- c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laur
a', 'Kevin', 'Jonas')
score <- c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19)
attempts <- c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1)
qualify <- c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')

# Create a data frame
data_frame <- data.frame(Name = name, Score = score, Attempts = attempts, Qualify
= qualify)

# Display the data frame
print(data_frame)
```

```
    Name Score Attempts Qualify
1  Anastasia  12.5        1     yes
2       Dima   9.0        3      no
3  Katherine  16.5        2     yes
4      James  12.0        3      no
5      Emily   9.0        2      no
6    Michael  20.0        3     yes
7    Matthew  14.5        1     yes
8      Laura  13.5        1      no
9      Kevin   8.0        2      no
10     Jonas  19.0        1     yes
```

Q.9 Write a R program to extract specific column from a data frame using colu mn name.

```
score_column <- data_frame$Score
print(score_column)
```

12.5 9.0 16.5 12.0 9.0 20.0 14.5 13.5 8.0 19.0

Q.10 Write a R program to create an ordered factor from data consisting of the names of months.

```
# Create a vector of month names
months <- c("January", "February", "March", "April", "May", "June", "July", "August
", "September", "October", "November", "December")

# Create an ordered factor
ordered_months <- factor(months, ordered = TRUE)

# Display the ordered factor
print(ordered_months)
```

January February March April May June July August Septem ber
October November December
12 Levels: April < August < December < February < January < July < June < M arch < ... < September

```
# Display the levels and their order
cat("Levels and their order:", levels(ordered_months), "\n")
```

Levels and their order: April August December February January July June Ma rch May November October September