```
#Question1:
#a)
scores<- c(40, 88, 60, 23, 76, 51, 59, 99, 96, 34)
#b)
n <- length(scores)
n
#c)
first_and_second<-scores[c(1,2)]
first_and_second
#d)
# first and last elements in vector.
first_and_last<- scores[c(1,n)]
first_and_last
#e)
#finding middle two elements in any even number vector.
middle_two <- scores[c(n/2,n/2+1)]
middle_two
```

Answer 1:

```
> #Q1
> #a)
> scores<- c(40, 88, 60, 23, 76, 51, 59, 99, 96, 34)
> #b)
> n <- length(scores)
> n
[1] 10
> #c)
> first_and_second<-scores[c(1,2)]
> first_and_second
[1] 40 88
> #d)
> # first and last elements in vector.
> first_and_last<- scores[c(1,n)]
> first_and_last
[1] 40 34
> #e)
> #finding middle two elements in any even number vector.
> middle_two <- scores[c(n/2,n/2+1)]
> middle_two
[1] 76 51
```

Question2:

```
#Q2
```

```
#a)
avg_score <- mean(scores)
avg_score
#b)
below_avg <- scores <= avg_score
below_avg
#c)
above_avg <- scores > avg_score
above_avg
#d)
count_below_avg <- sum(below_avg)
count_below_avg
#e)
count_above_avg <- sum(above_avg)
count_above_avg
```

Answer 2:

```
> #Q2
>
> #a)
> avg_score <- mean(scores)
> avg_score
[1] 62.6
> #b)
> below_avg <- scores <= avg_score
> below_avg
 [1]  TRUE FALSE  TRUE  TRUE FALSE  TRUE
 [7]  TRUE FALSE FALSE  TRUE
> #c)
> above_avg <- scores > avg_score
> above_avg
 [1] FALSE  TRUE FALSE FALSE  TRUE FALSE
 [7] FALSE  TRUE  TRUE FALSE
> #d)
> count_below_avg <- sum(below_avg)
> count_below_avg
[1] 6
> #e)
> count_above_avg <- sum(above_avg)
> count_above_avg
[1] 4
```

Question3:

```
#Q3
```

```
#a)
scores_below_avg <- scores[scores <= avg_score]
scores_below_avg
#b)
scores_above_avg <- scores[scores > avg_score]
scores_above_avg
```

Answer 3:

```
#Q3
> #a)
> scores_below_avg <- scores[scores <= avg_score]
> scores_below_avg
[1] 40 60 23 51 59 34
> #b)
> scores_above_avg <- scores[scores > avg_score]
> scores_above_avg
[1] 88 76 99 96
```

Question 4:

```
#Q4
#a)
odd_index_values <-scores[c(1:n)%%2 ==1]
odd_index_values
#b)
even_index_values<- scores[c(1:n)%%2 ==0]
even_index_values
```

Answer 4:

```
> #Q4
> #a)
> odd_index_values <-scores[c(1:n)%%2 ==1]
> odd_index_values
[1] 40 60 76 59 96
> #b)
> even_index_values<- scores[c(1:n)%%2 ==0]
> even_index_values
[1] 88 23 51 99 34
```

Code for Question 5:

```
> #Q4
> #a)
> odd_index_values <-scores[c(1:n)%%2 ==1]
> odd_index_values
[1] 40 60 76 59 96
```

```
> #b)
> even_index_values<- scores[c(1:n)%%2 ==0]
> even_index_values
[1] 88 23 51 99 34
>
```
Answer 5:
```
> #Q5
> #a)
> format_scores_version1 <- paste(LETTERS[1:n],scores,sep = "=")
> format_scores_version1
 [1] "A=40" "B=88" "C=60" "D=23" "E=76"
 [6] "F=51" "G=59" "H=99" "I=96" "J=34"
> #b)
> format_scores_version2<- paste(LETTERS[n:1],scores,sep = "=")
> format_scores_version2
 [1] "J=40" "I=88" "H=60" "G=23" "F=76"
 [6] "E=51" "D=59" "C=99" "B=96" "A=34"
>
```
Code for Question 6:
```
> #Q5
> #a)
> format_scores_version1 <- paste(LETTERS[1:n],scores,sep = "=")
> format_scores_version1
 [1] "A=40" "B=88" "C=60" "D=23" "E=76"
 [6] "F=51" "G=59" "H=99" "I=96" "J=34"
> #b)
> format_scores_version2<- paste(LETTERS[n:1],scores,sep = "=")
> format_scores_version2
 [1] "J=40" "I=88" "H=60" "G=23" "F=76"
 [6] "E=51" "D=59" "C=99" "B=96" "A=34"
>
```
Answer 6:
```
> #Q6
> #a)
> score_matrix <- matrix(scores,nrow = 2,ncol = n/2,byrow = TRUE)
> score_matrix
     [,1] [,2] [,3] [,4] [,5]
[1,]   40   88   60   23   76
[2,]   51   59   99   96   34
>
> #b)
> #first and last column will have all rows but first and last column. first
> #column has index 1 and last column has index of total columns number.
> first_and_last_version1 <-score_matrix[,c(1,ncol(score_matrix))]
```

```
> first_and_last_version1
    [,1] [,2]
[1,]   40   76
[2,]   51   34
>
```

Code for question 7:

```
#Q7
#a)
named_matrix <- score_matrix
colnames(named_matrix) <- paste("Student",1:ncol(named_matrix),sep = "_")
rownames(named_matrix)<- paste("Quiz",1:nrow(named_matrix),sep = "_")
named_matrix

#b)
first_and_last_version2 <- named_matrix[,c(1,ncol(named_matrix))]
first_and_last_version2
```

answer 7:

```
> #Q7
> #a)
> named_matrix <- score_matrix
> colnames(named_matrix) <- paste("Student",1:ncol(named_matrix),sep = "_")
> rownames(named_matrix)<- paste("Quiz",1:nrow(named_matrix),sep = "_")
> named_matrix
      Student_1 Student_2 Student_3 Student_4 Student_5
Quiz_1        40        88        60        23        76
Quiz_2        51        59        99        96        34
>
> #b)
> first_and_last_version2 <- named_matrix[,c(1,ncol(named_matrix))]
> first_and_last_version2
      Student_1 Student_5
Quiz_1        40        76
Quiz_2        51        34
>
```