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(a)Create a data list (4,4,4,4,3,3,3,5,5,5) using 'rep' function.

Ans
```
> z<-list(rep(4,3),rep(3,3),rep(5,3))
> z
[[1]]
[1] 4 4 4
[[2]]
[1] 3 3 3
[[3]]
[1] 5 5 5
```

(b)Create a list (4,6,3,4,6,3, . . . ,4,6,3) where there 10 occurrences of 4,6, and 3 in the given order.

Ans
```
> d<-list(rep(4,10),rep(6,10),rep(3,10))
> d
[[1]]
 [1] 4 4 4 4 4 4 4 4 4 41
[[2]]
 [1] 6 6 6 6 6 6 6 6 6 6
[[3]]
 [1] 3 3 3 3 3 3 3 3 3 3
```

(c)Create a list (3,1,5,3,2,3,4,5,7,7,7,7,7,7,6,5,4,3,2,1,34,21,54) using one line command

Ans
```
> f<-list (rep(3,4),rep(1:2,2),rep(5,3),rep(4,2),rep(7,6),6,34,21,54)
> f
[[1]]
[1] 3 3 3 3
[[2]]
[1] 1 2 1 2
[[3]]
[1] 5 5 5
[[4]]
```

[1] 4 4

[[5]]

[1] 7 7 7 7 7 7

[[6]]

[1] 6

[[7]]

[1] 34

[[8]]

[1] 21

[[9]]

[1] 54

(d) First create a list (2; 1; 3; 4). Then append this list at the end with another list (5; 7; 12; 6;8). Check whether the number of elements in the augmented list is 9.

Ans > a<-list(2,1,3,4)

> b<-list(5,7,12,6,8)

> c<-append(a,b)

> c

[[1]]

[1] 2

[[2]]

[1] 1

[[3]]

[1] 3

[[4]]

[1] 4

[[5]]

[1] 5

[[6]]

[1] 7

[[7]]

[1] 12

[[8]]

[1] 6

[[9]]

[1] 8

> length(c)

[1] 9

Q.2) (a) Print all numbers starting with 3 and ending with 7 with an increment of 0 : 0:5. Store these numbers in x.

Ans > x=seq(from=3,by=0.5,length.out=9)

> x

[1] 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0

(b) Print all even numbers between 2 and 14 (both inclusive).

Ans > a=seq(from=2,to=14)

> a

[1] 2 3 4 5 6 7 8 9 10 11 12 13 14

> i=a%%2==0

> a[i]

[1] 2 4 6 8 10 12 14

(c) Type 2 * x and see what you get. Each element of x is multiplied by 2.

Ans > 2*x

[1] 6 7 8 9 10 11 12 13 14

Q.3) Collect at least 75 students list and analyse the data by using descriptive statistics and interpret the results.

a)Mean Median Standard Deviation for Math

```
> mean(A$Math)
```

[1] 20

```
> median(A$Math)
```

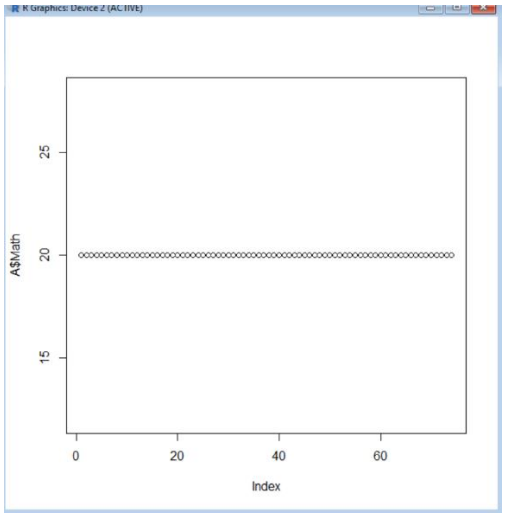
[1] 20

```
> sd(A$Math)
```

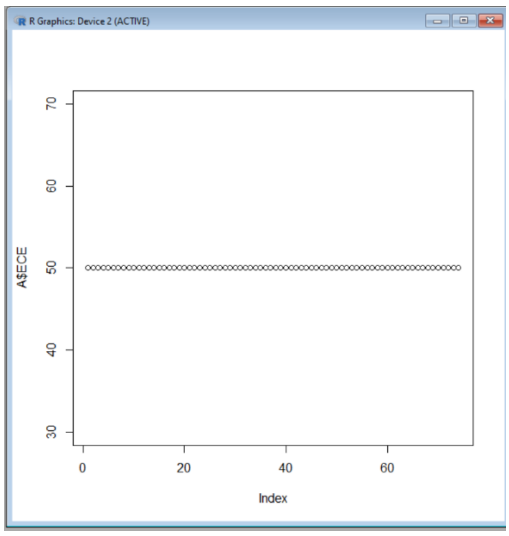
[1] 0

b) Graphs for Math, ECE

Ans > plot(A$Math)

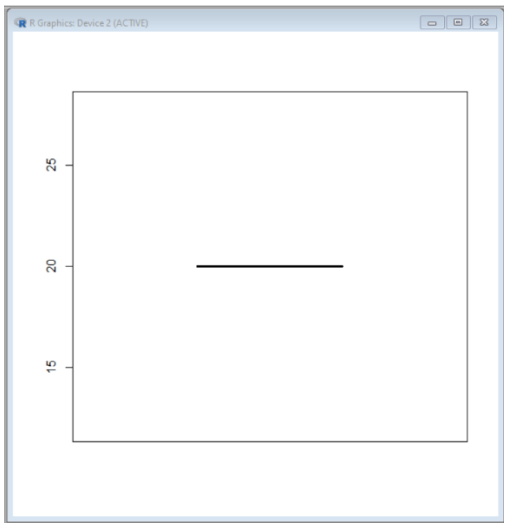


> plot(A$ECE)



c)Box for Math

> boxplot(A$Math)



d)All graphs in one

> hist(c(A$Math,A$Physic,A$ECE))