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Working With R

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AGENDA - DAY 3

R objects

- Lists
- Tables
- Interaction

R objects - Lists

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Indexing Lists

```
>mylist[1]              #Using list element number
$num
 [1]   1
>mylist$num             #Using names
[1]   1
```

Lists inside lists

```
>listA<-list(name='ABC',age='11',Mylist=mylist)
```

```
>listA
$Name
[1] "ABC"
$age
[1] "11"
$Mylist
   $Mylist$num
   [1] 1
   $Mylist$char
   [1] "2"
   $Mylist$matrixA
        [,1]  [,2]  [,3]  [,4]  [,5]
   [1,]    1     3     5     7     9
   [2,]    2     4     6     8    10
```

R objects - Lists

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Merging Lists

```
listB <- c(mylist,listA)
listC <- c(mylist,1,’2’,’three’)
listD <- append(listA,listB,listC)
```

Extending Lists

```
listD$listF<- listE
listD[[“listB”]]<-listE
```

R objects - Tables

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Tables

Frequency tables

Contains only Names(or distinct values) and their respective frequencies

Tabular results of categorical variables

Creating Tables

table() function is used to create tables

```
> freq<-c('a','b','a','b','a','b','c','a','c','b')
> freq<-table(freq)
 freq
   a  b  c
   4  4  2
```

R objects - Tables

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Naming Tables

```
> names(freq)<-c('A','B','C')
> freq
  freq
    A  B  C
    4  4  2
```

Indexing Tables

```
> freq[1]
a
4
>freq['a']
a
4
> freq[c(T,F,T)]
freq
a c
4 2
```

Useful Functions

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seq(from ,to ,by)

sqrt(a)

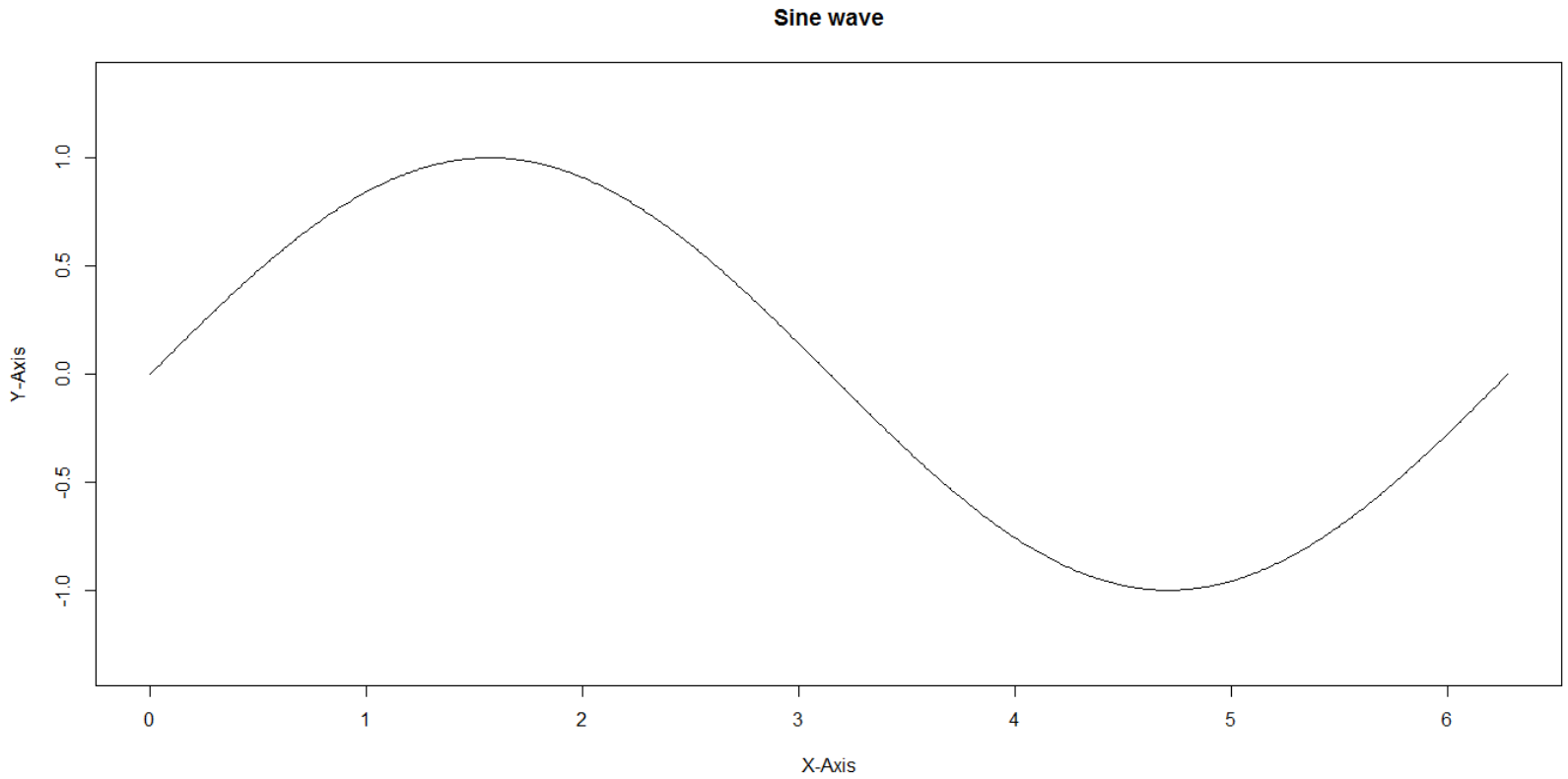
rep(a, times)

plot(x,y,type='l',asp=T,xlab="X->",ylab="Y->",main="Title")

par(new=T, mfrow=c(1,2))

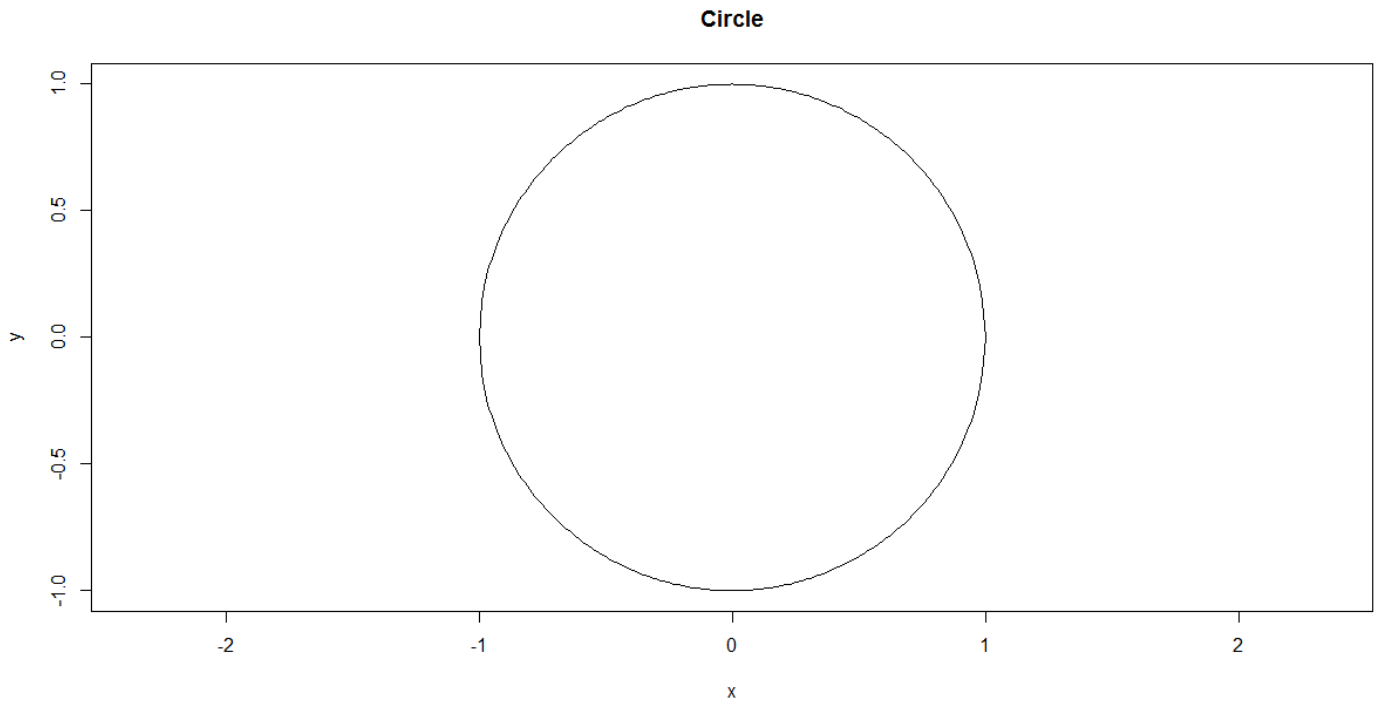
Interaction - 1

Plot the equation y=sin(x).
x ranging from 0 to 2*pi



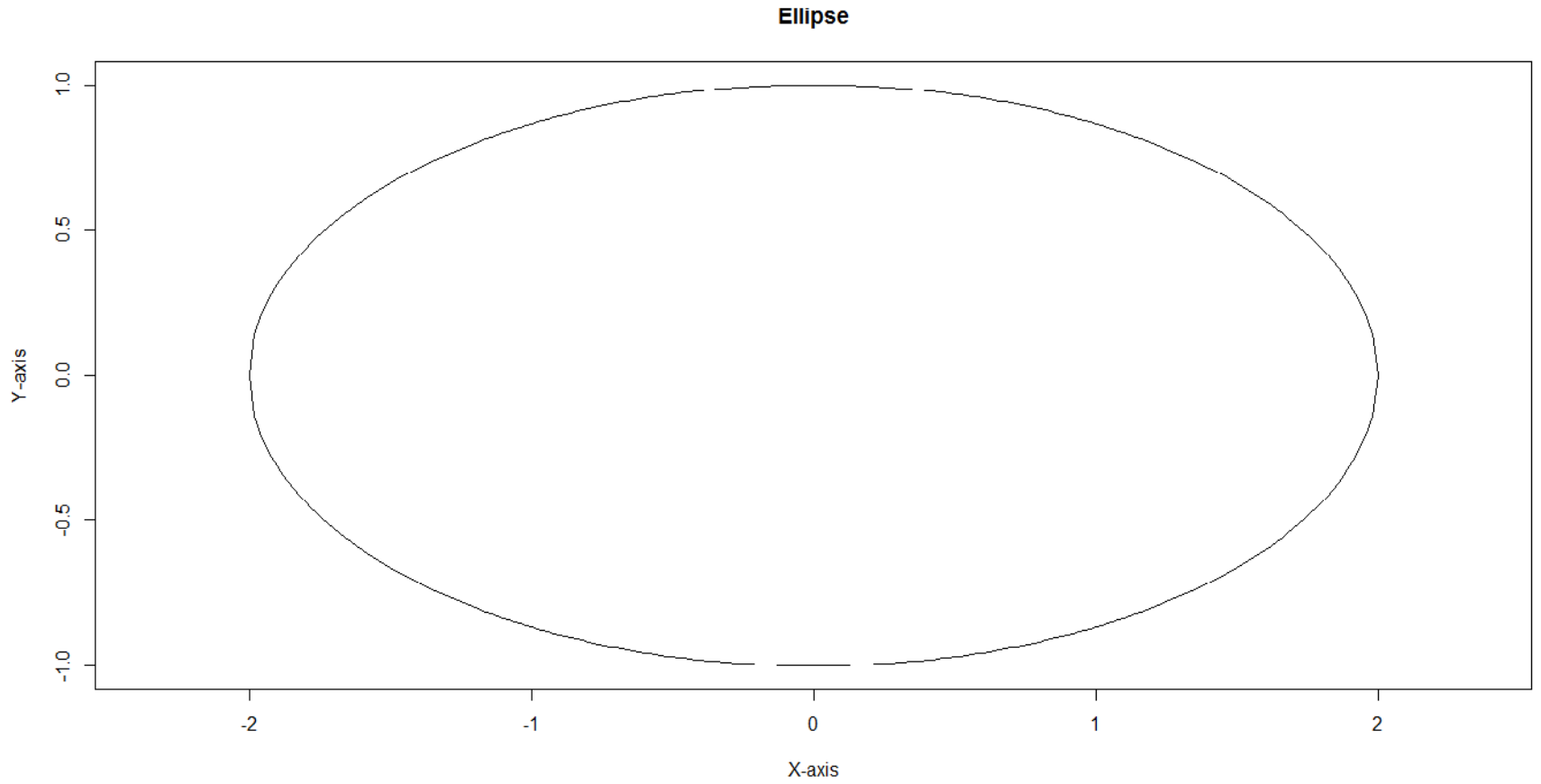
Interaction - 2

Plot a Circle with radius =1.
Equation for the Circle : $x^2+y^2=r^2$



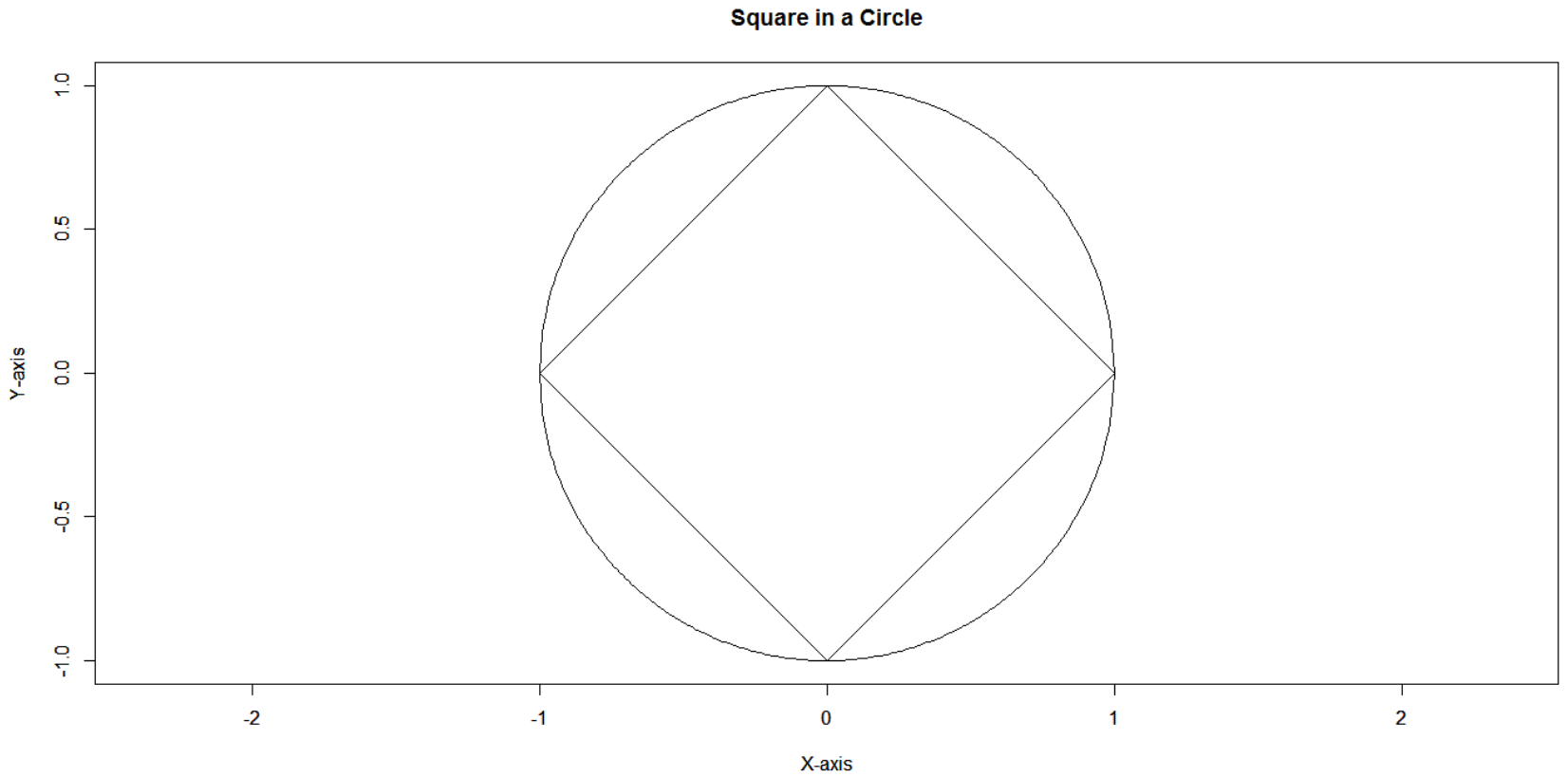
Interaction - 3

Plot an ellipse with a =2 and b=1.
Equation for an Ellipse : $(x^2/a^2)+(y^2/b^2)=1$



Interaction - 4

Plot a Circle with radius =1 and embed a square with in it.
Equation for the Circle : $x^2+y^2=1$



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Q & A

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Thank You

White board

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