# Assignment 0

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## ToDo 1

```
percent = ((2016-2014)/(2014-1998)*100)
percent
```

```
## [1] 12.5
```

## ToDo 2

```
g = 2016
i = 2014
t = 1998
per = ((g-i)/(i-t)*100)
per
```

```
## [1] 12.5
```

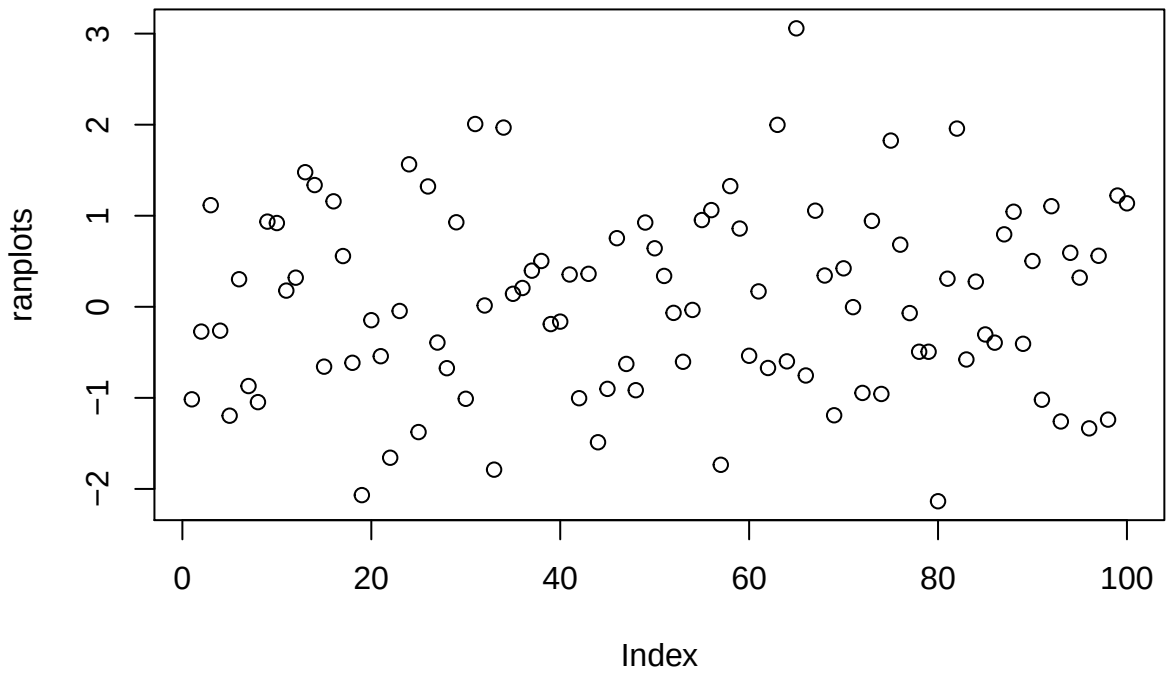
## ToDo 3

```
s = sum(c(4,5,8,11))
s
```

```
## [1] 28
```

## ToDo 4

```
ranplots = rnorm(100)
plot(ranplots)
```



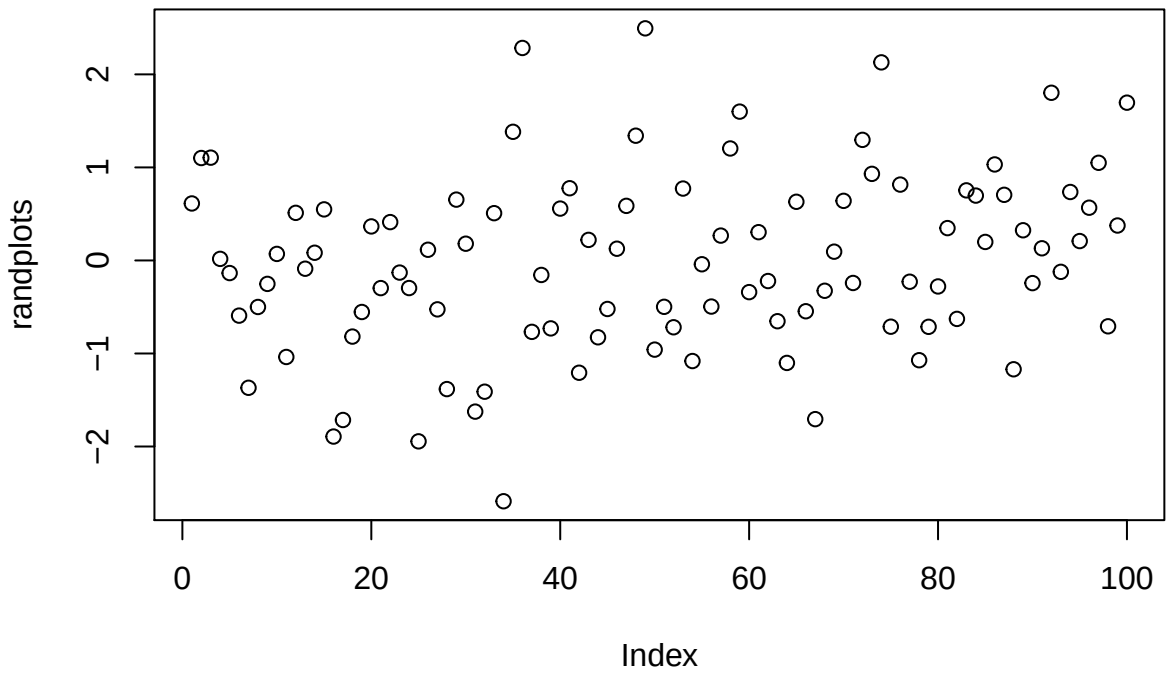

## ToDo 5

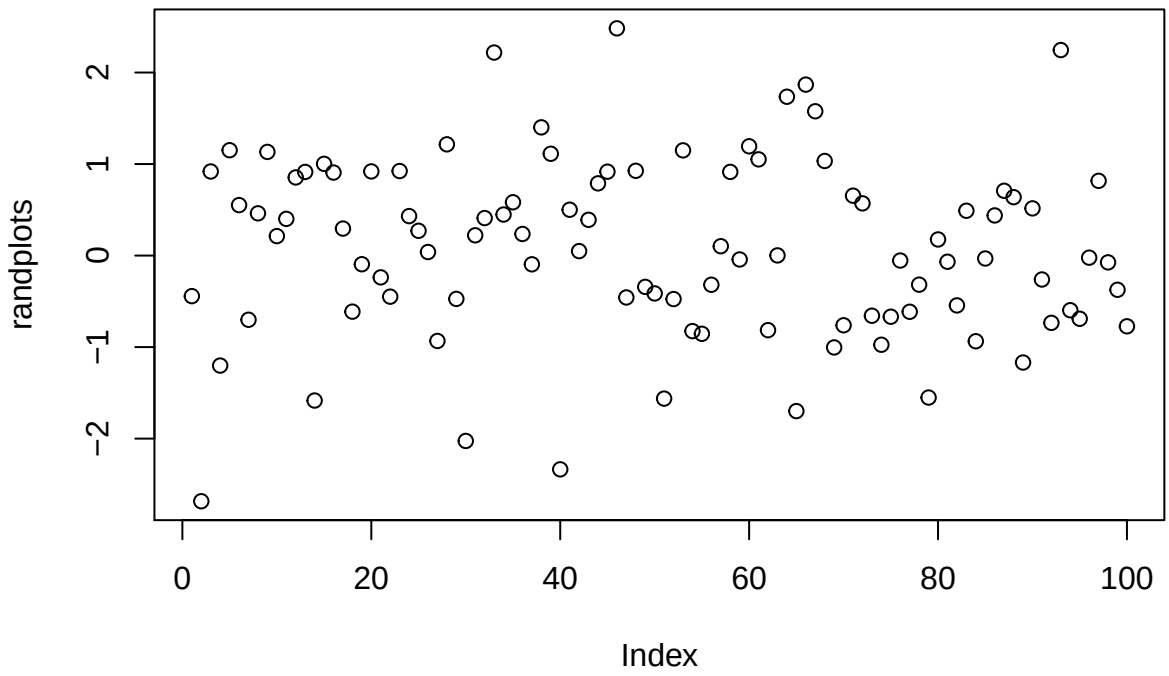
```
?sqrt
```

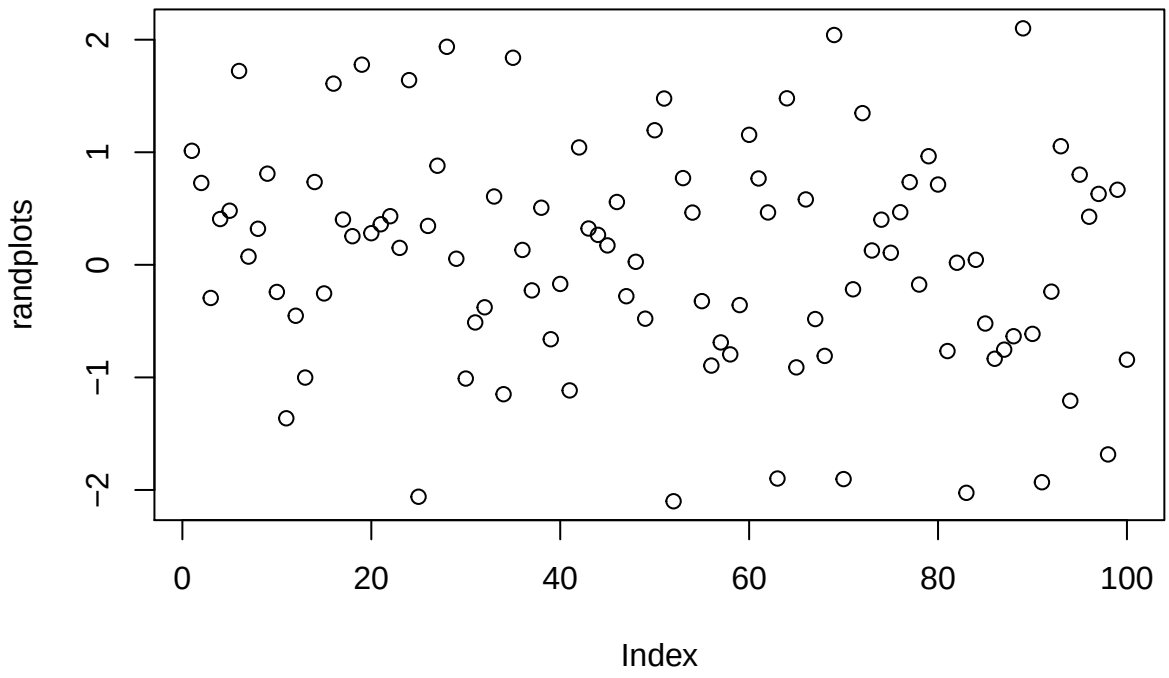
```
## starting httpd help server ... done
```

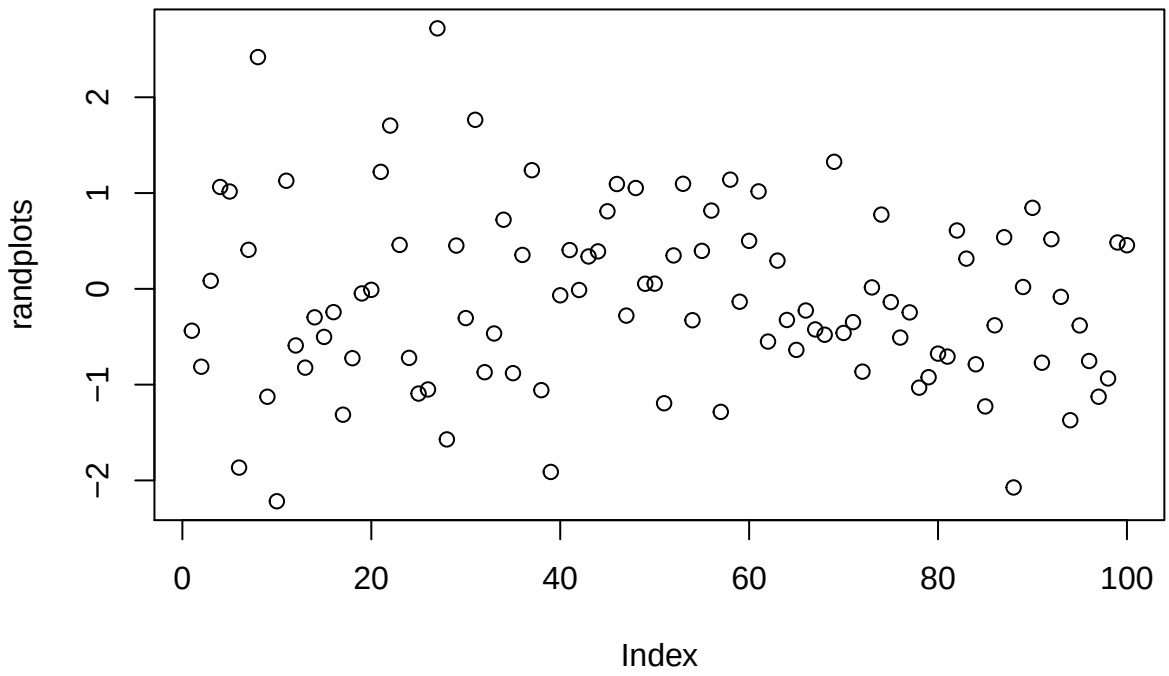
## ToDo 6

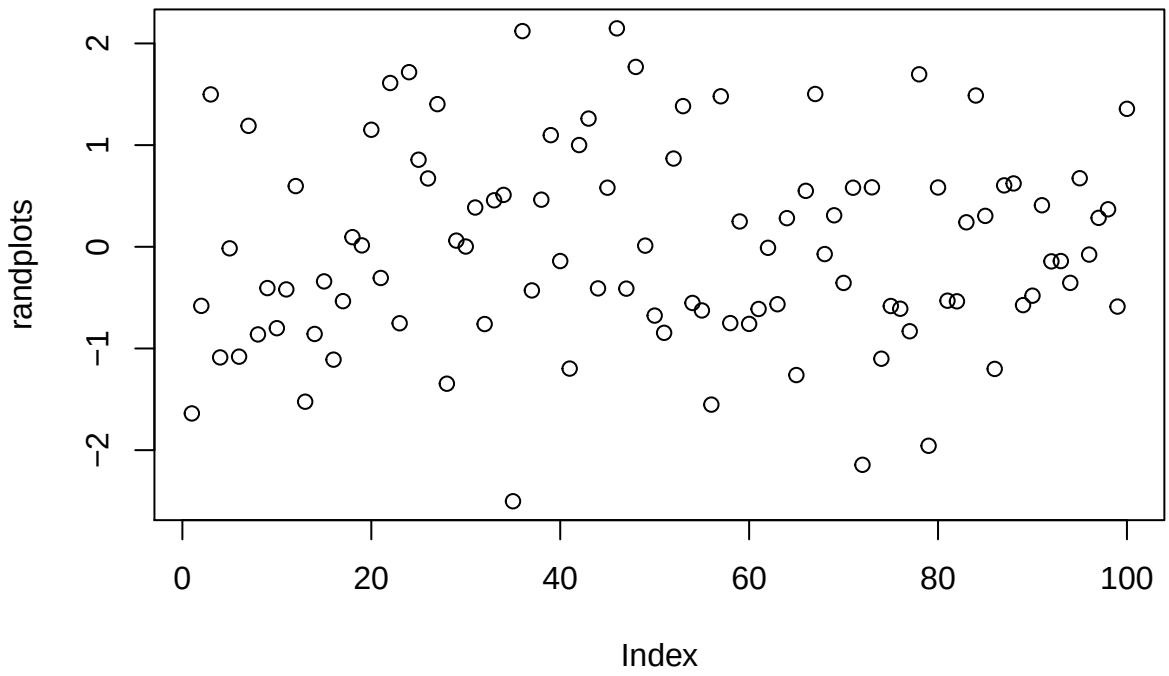
```
multiplots = function() {
  randplots = rnorm(100)
  plot(randplots)
}
for (i in 1:10) {
  multiplots()
}
```

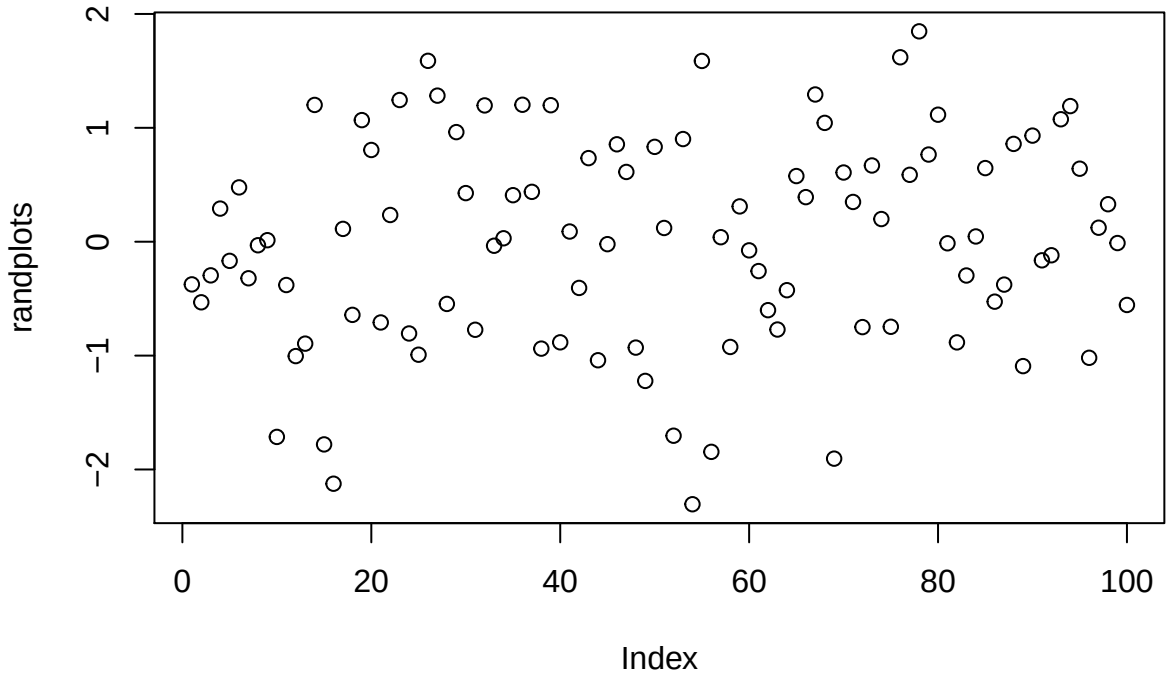

randplots
2
1
0
−1
−2
0
20
40
60
80
100
Index

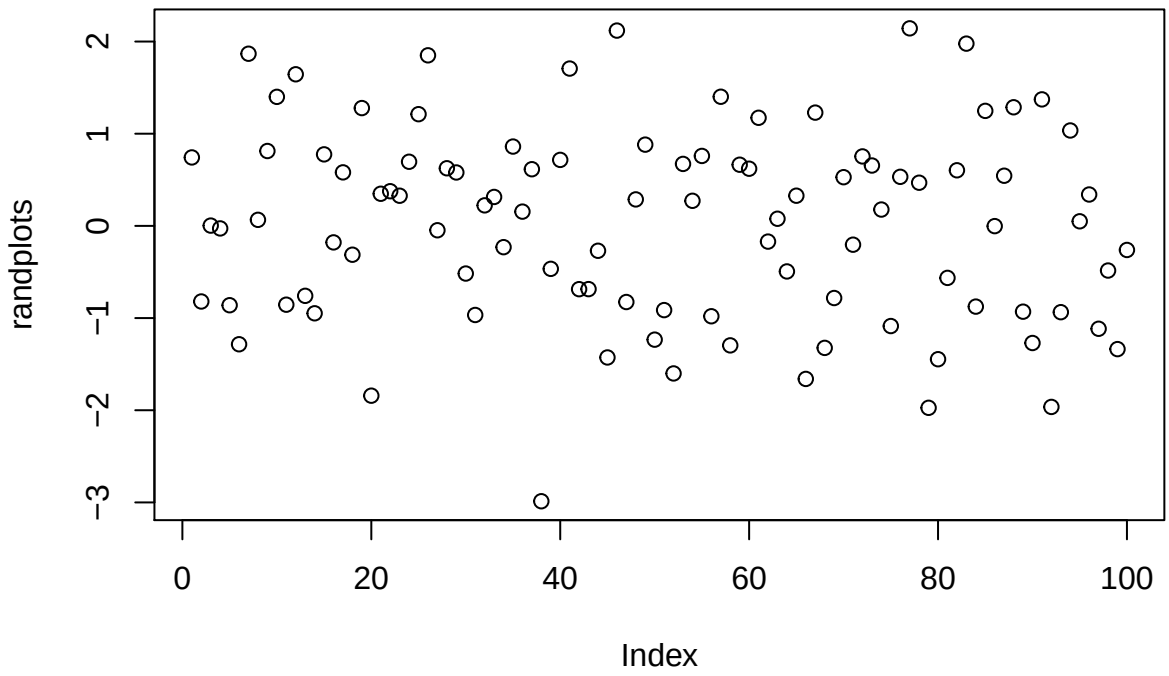

randplots
2
1
0
−1
−2
0
20
40
60
80
100
Index

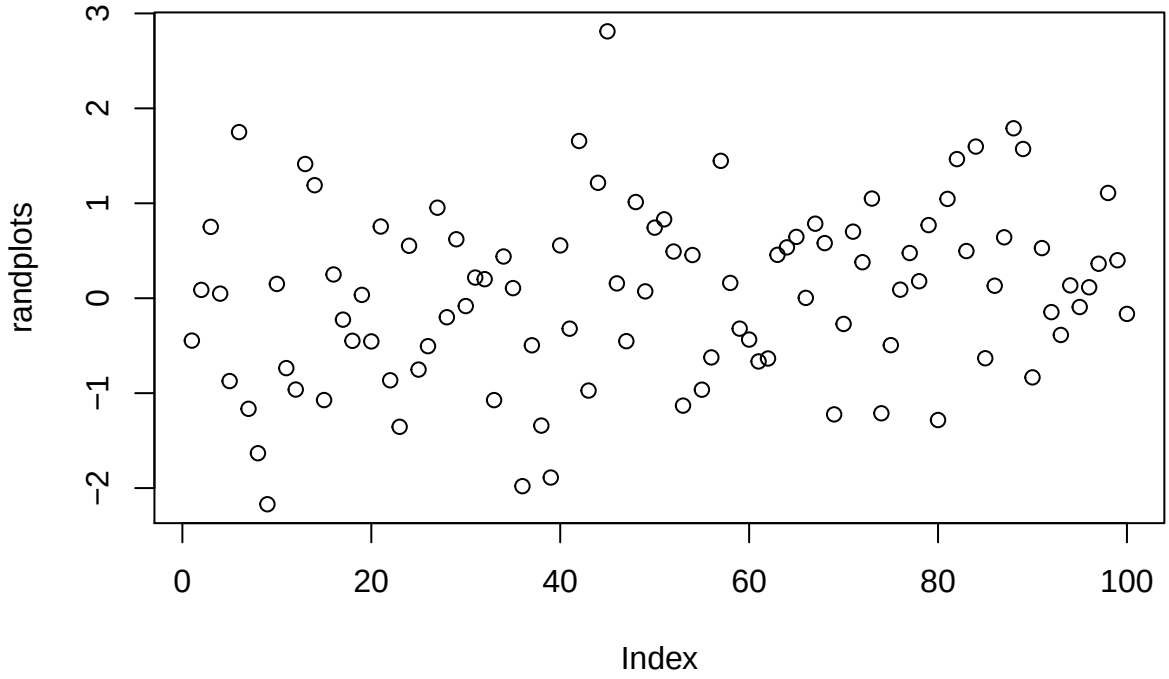

randplots
2
1
0
−1
−2
0
20
40
60
80
100
Index

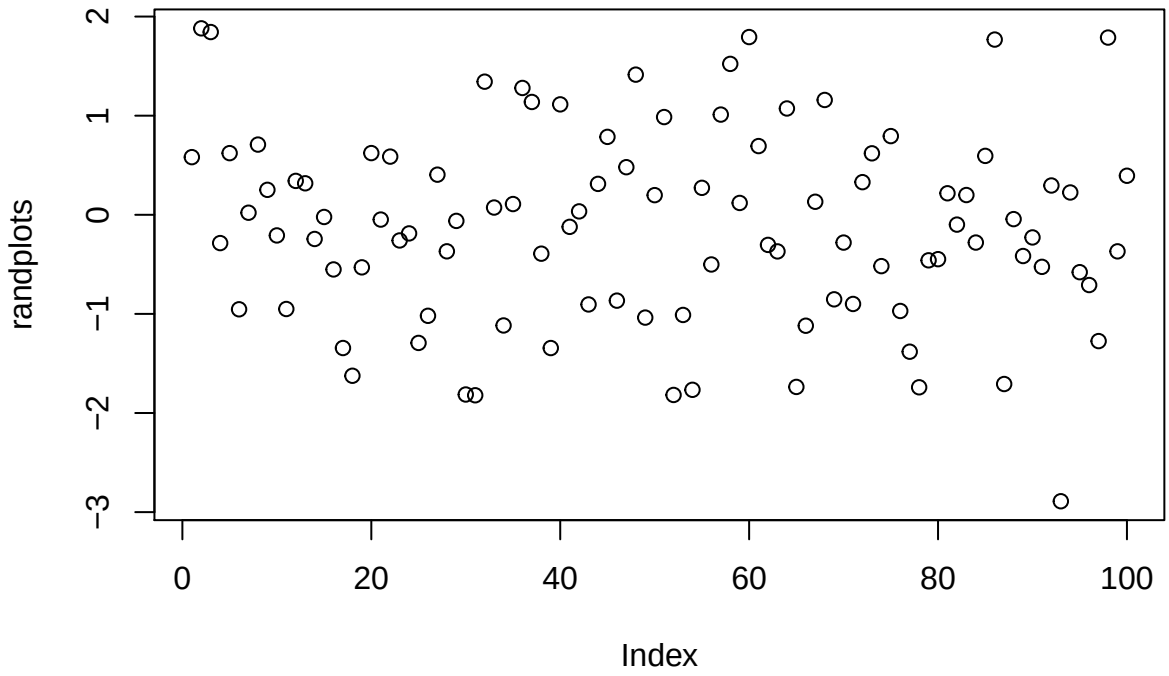

randplots
2
1
0
−1
−2
0
20
40
60
80
100
Index

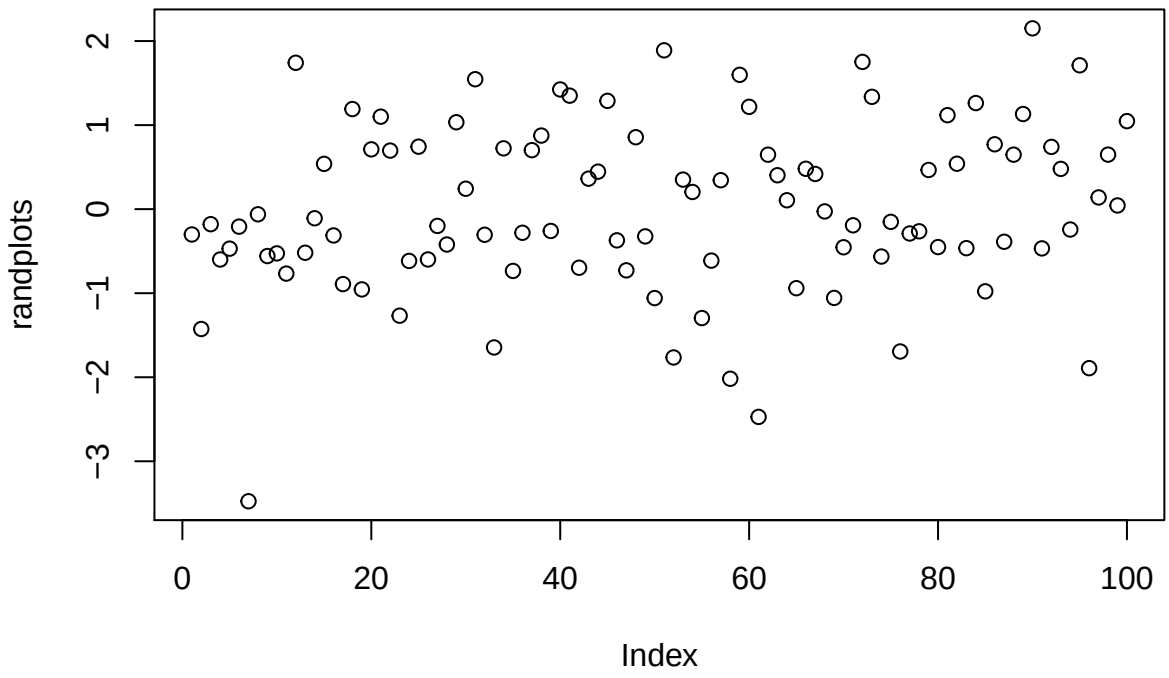

randplots
2
1
0
−1
−2
0
20
40
60
80
100
Index


randplots
2
1
0
−1
−2
0
20
40
60
80
100
Index


randplots
2
1
0
−1
−2
−3
0
20
40
60
80
100
Index


randplots
3
2
1
0
−1
−2
0
20
40
60
80
100
Index


randplots
2
1
0
−1
−2
−3
0
20
40
60
80
100
Index



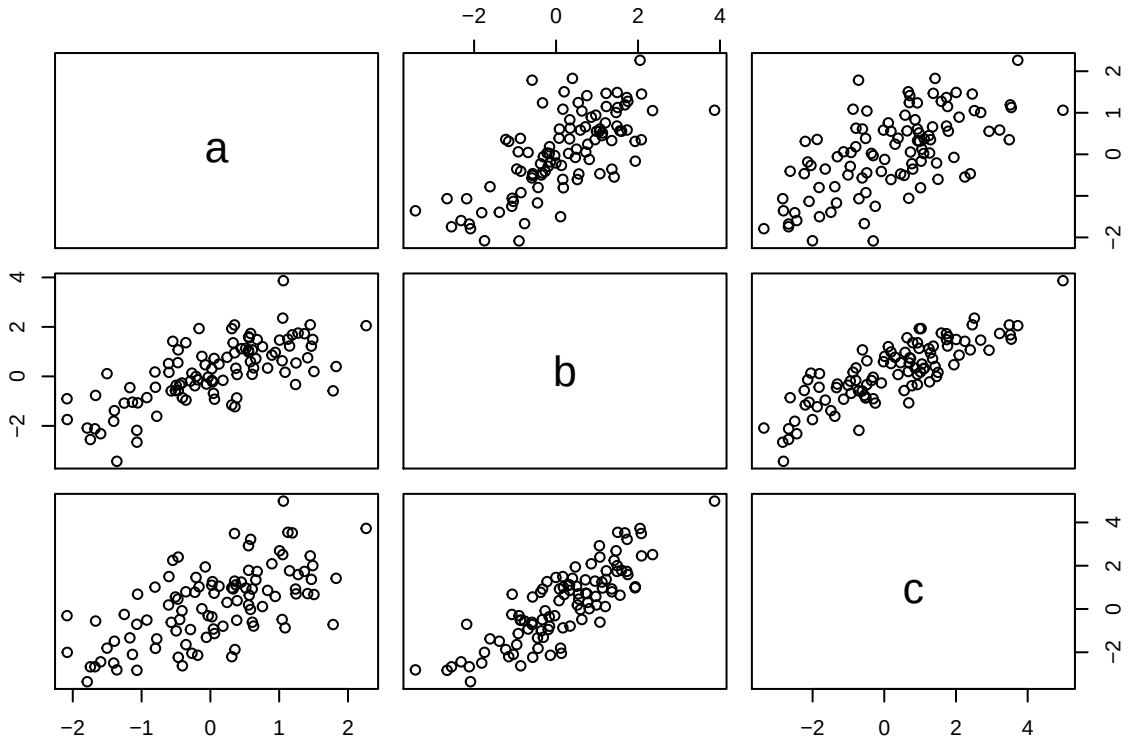

#ToDo 7

```
P = c(seq(31, 60))
Q=matrix(P,ncol = 5,nrow = 6)
Q
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]   31   37   43   49   55
## [2,]   32   38   44   50   56
## [3,]   33   39   45   51   57
## [4,]   34   40   46   52   58
## [5,]   35   41   47   53   59
## [6,]   36   42   48   54   60
```

## ToDo 8

```
x1 = as.numeric(c(rnorm(100)))
x2 = as.numeric(c(rnorm(100)))
x3 = as.numeric(c(rnorm(100)))
t = data.frame(a = x1, b = x1+x2, c = x1+x2+x3)
plot(t)
```

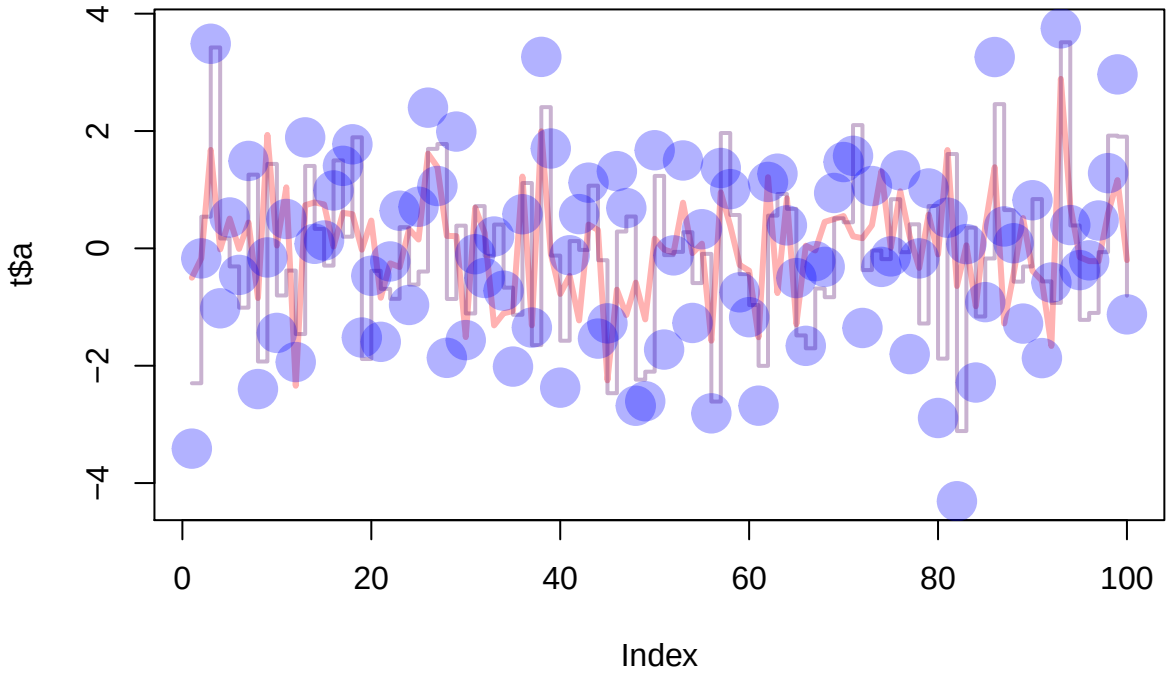



```
sapply(t, sd)
```

```
##         a         b         c
## 0.9636333 1.2665977 1.7281900
```

## ToDo 9

```
x1 = as.numeric(c(rnorm(100)))
x2 = as.numeric(c(rnorm(100)))
x3 = as.numeric(c(rnorm(100)))
t = data.frame(a = x1, b = x1+x2, c = x1+x2+x3)
plot(t$a, type="l", ylim = range(t), lwd=3, col=rgb(1, 0, 0, 0.3))
lines(t$b, type="s", lwd=2, col=rgb(0.3, 0,.4, 0.3, 0.9))
points(t$c, pch=20, cex=4, col=rgb(0, 0, 1, 0.3))
```




#ToDo 10

```
r = read.table(file="C:\\Users\\Michael\\Downloads\\tst1.txt", header = TRUE)
g = r["g"] * 5
write.table(g, file="C:\\Users\\Michael\\Downloads\\tst2.txt", row.names = FALSE)
```

## ToDo 11

```
m = sqrt(c(rnorm(1:100)))
```

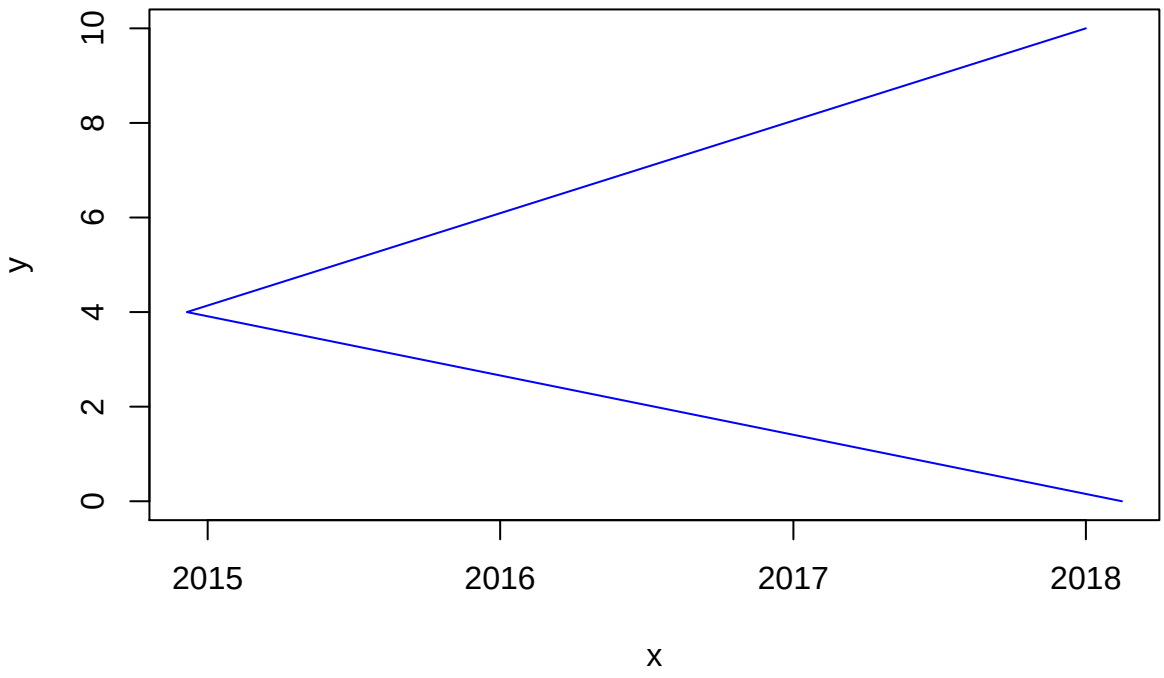
```
## Warning in sqrt(c(rnorm(1:100))): NaNs produced
```

```
sf = na.omit(m)
mean(sf)
```

```
## [1] 0.8312388
```

## ToDo 12

```
x = strptime( c("15022018", "06122014", "01012018"), format="%d%m%Y")
y = c("0", "4", "10")
plot(x, y, type="l", col="blue")
```




#ToDo 13

```
num = c(1:100)
for (i in num) {
  if(i < 5 | i > 90) {
    num[i] = num[i] * 10
  }
  else{
    num[i] = num[i] * 0.1
  }
}
num
```

```
##   [1]   10.0   20.0   30.0   40.0    0.5    0.6    0.7    0.8    0.9    1.0
##  [11]    1.1    1.2    1.3    1.4    1.5    1.6    1.7    1.8    1.9    2.0
##  [21]    2.1    2.2    2.3    2.4    2.5    2.6    2.7    2.8    2.9    3.0
##  [31]    3.1    3.2    3.3    3.4    3.5    3.6    3.7    3.8    3.9    4.0
##  [41]    4.1    4.2    4.3    4.4    4.5    4.6    4.7    4.8    4.9    5.0
##  [51]    5.1    5.2    5.3    5.4    5.5    5.6    5.7    5.8    5.9    6.0
##  [61]    6.1    6.2    6.3    6.4    6.5    6.6    6.7    6.8    6.9    7.0
##  [71]    7.1    7.2    7.3    7.4    7.5    7.6    7.7    7.8    7.9    8.0
##  [81]    8.1    8.2    8.3    8.4    8.5    8.6    8.7    8.8    8.9    9.0
##  [91]  910.0  920.0  930.0  940.0  950.0  960.0  970.0  980.0  990.0 1000.0
```

## ToDo 14

calc = function(a) { for (i in a) { if(i < 5 | i > 90) { a[i] = a[i] * 10 } else{ a[i] = a[i] *0.1 } } a } newvec = readline(prompt = “Enter vector name:”) calc(newvec)