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A link to the document we are using: <https://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf>

This is the code and outputs for all 14 Todos found in “A (very) Short Introduction to R”, done for Assignment 0 in SRT411.

#####ToDo 1) Computing Difference

```
((2019-2013)/22)*100
```

```
## [1] 27.27273
```

#####ToDo 2) Variables

```
a = 2019
```

```
b = 2013
```

```
c = 22
```

```
((a-b)/c)*100
```

```
## [1] 27.27273
```

#####ToDo 3) Matrices

```
m=c(4,5,8,11)
```

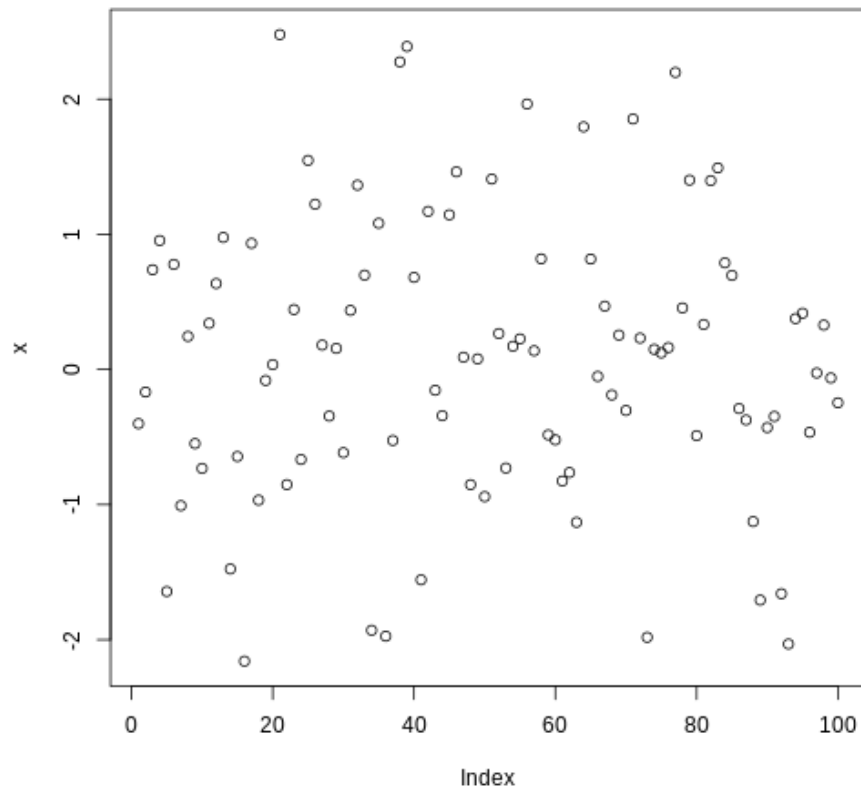
```
sum(m)
```

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

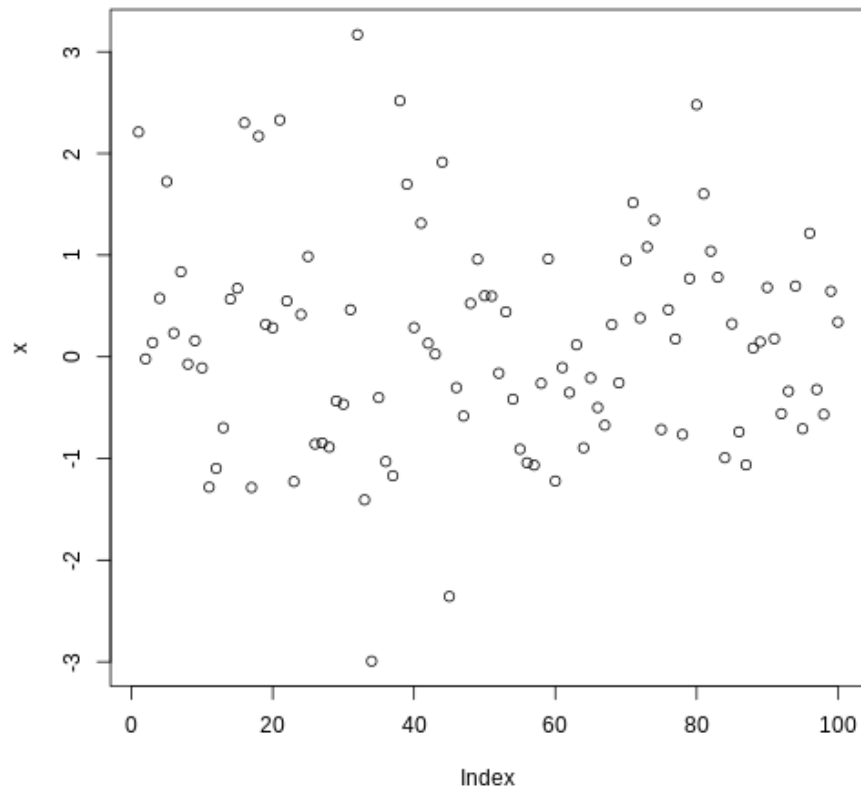
#####ToDo 4) Rnorm

```
x = rnorm(100)
```

```
plot(x)
```



```
#####Todo 5) Sqrt Help  
help(sqrt)  
#####Todo 6) First Script  
x = rnorm(100)  
plot(x)
```



```
#####Todo 7) More Matrices
```

```
P = seq(from=31, to=60, by=1)
```

```
Q=matrix(data=c(P),ncol=5)
```

```
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
```

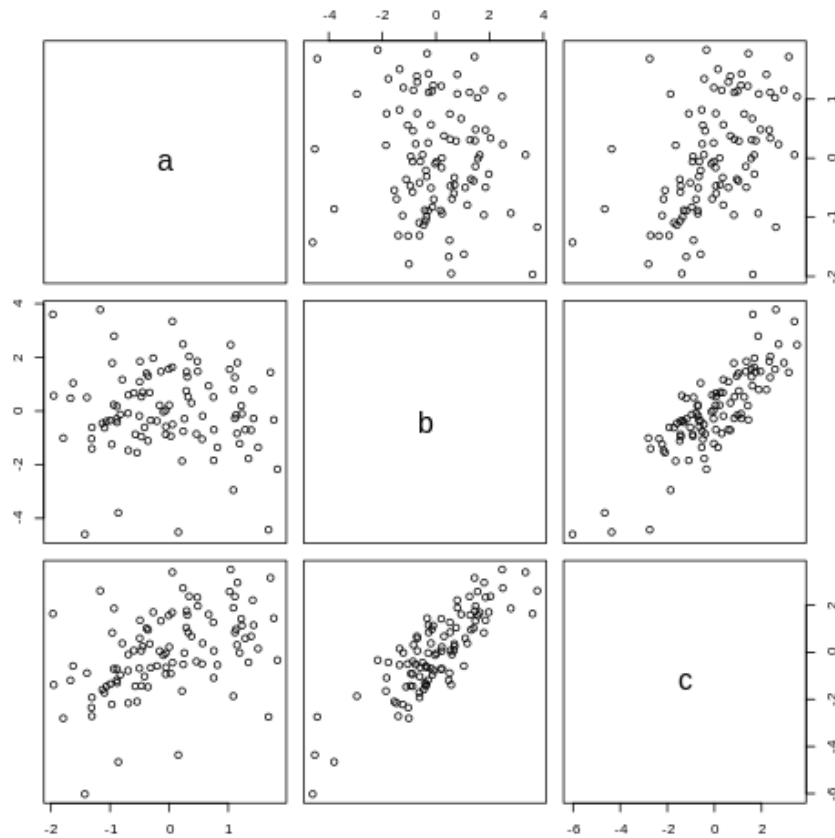
```
#####Todo 8) Data Frames
```

```
x1= rnorm(100)
```

```
x2= rnorm(100)
```

```
x3= rnorm(100)
```

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



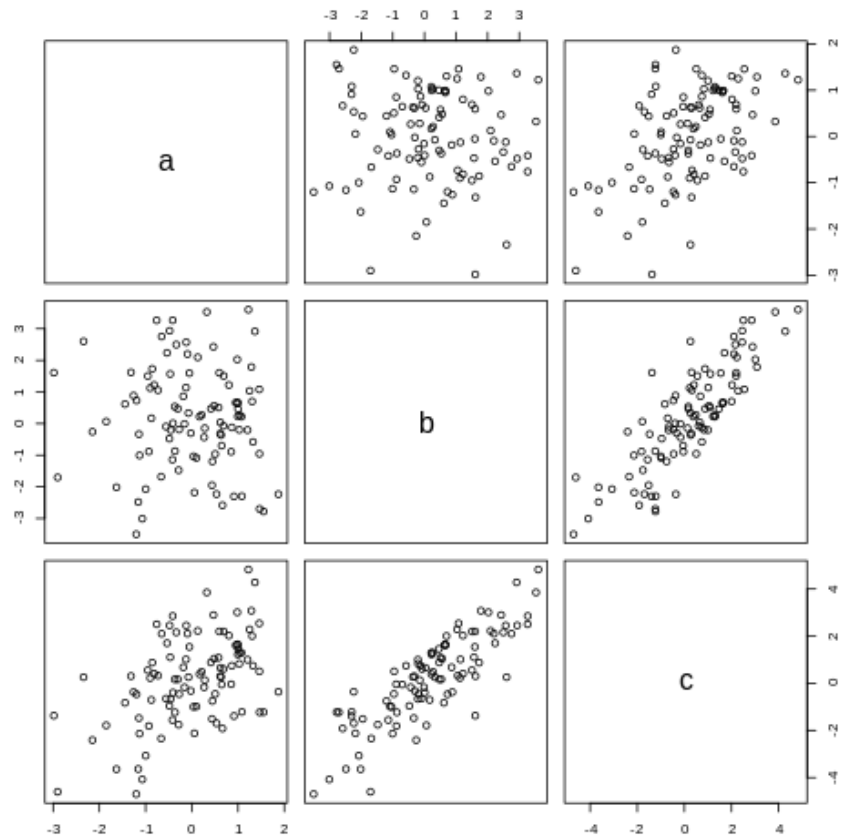
Todo 9) Graphing

```
x1= rnorm(100)
```

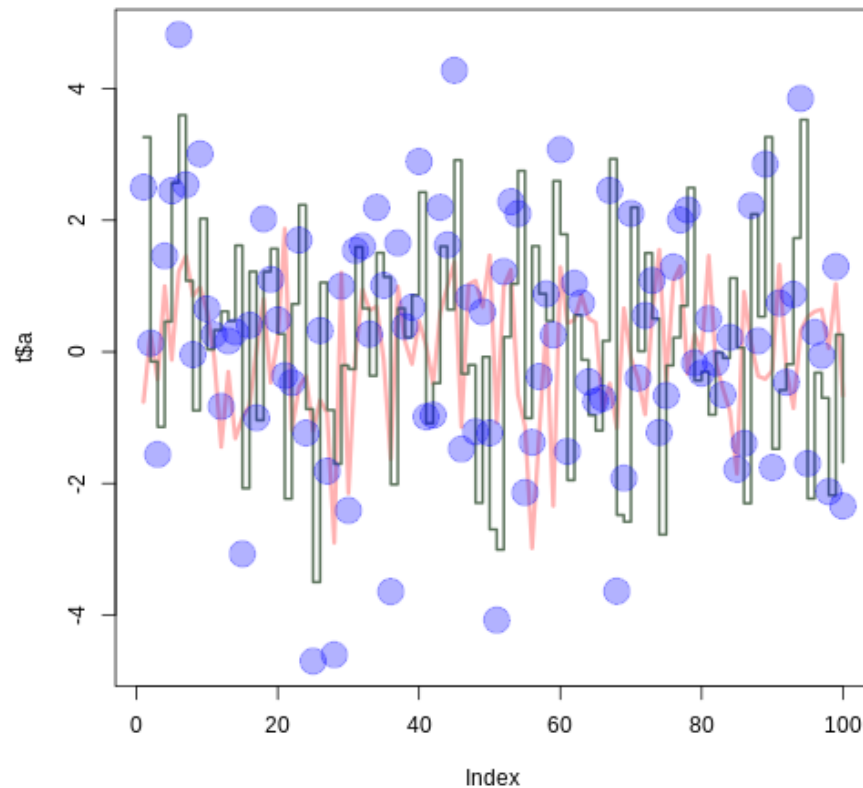
```
x2= rnorm(100)
```

```
x3= rnorm(100)
```

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



```
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) Reading / Writing

```
d = data.frame(a = c(1,2,4,8,16,32), g = c(2,4,8,16,32,64), x = c(3,6,12,24,48,96))
write.table(d, file="tst1.txt", row.names=FALSE)
d2 = read.table(file="tst1.txt", header=TRUE)
d2$g=d2$g*5
write.table(d2, file="tst2.txt", row.names=FALSE)
```

#####Todo 11) Not Available Data

```
vectest = c(rnorm(100))
mean((sqrt(vectest)))

## Warning in sqrt(vectest): NaNs produced
## [1] NaN

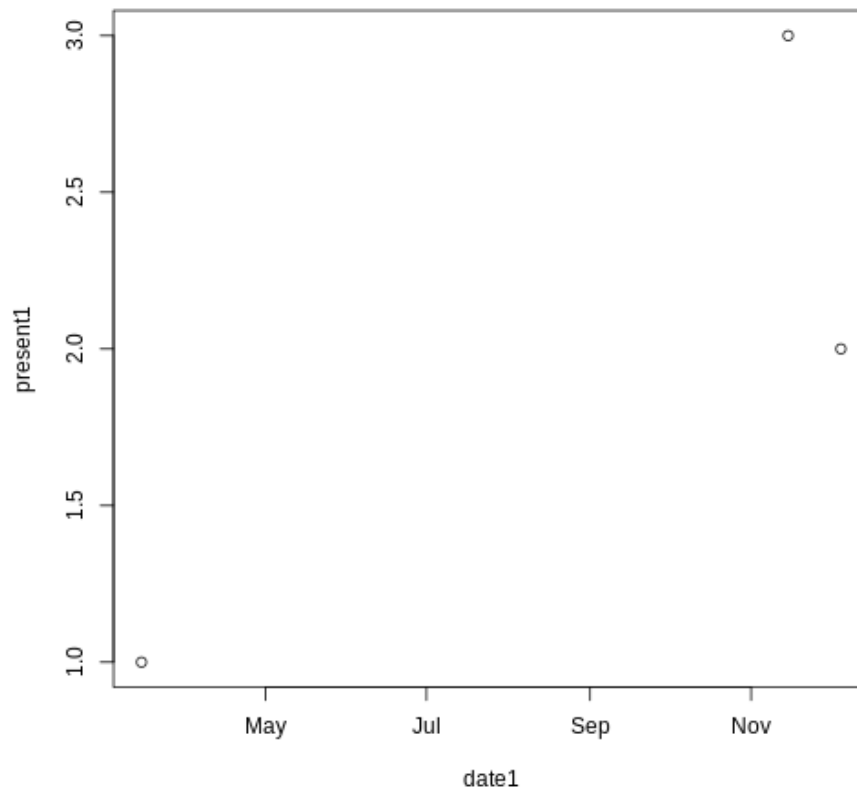
##NaNs produced

#####Todo 12) Dates
```

```

date1=strptime( c("20190315", "20191205", "20191115"), format="%Y%m%d")
present1=c(1,2,3)
plot(date1, present1)

```



```

####Todo 13) For-Loop
sec13 = seq(from=1, to=100)
vec13 = c()
for (i in 1:100)
{
  if( i < 5 )
  {vec13[i] = sec13[i] * 10}
  else if(i > 90)
  {vec13[i] = sec13[i] * 10}
  else
  {vec13[i] = sec13[i] * 0.1}
}

```

```

print(vec13)

##   [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) Function Loop
fun2 = function(arg5)
{
  sec13 = seq(from=1, to=arg5)
  vec13 = c()
  for (i in 1:arg5)
  {
    if( i < 5 )
    {vec13[i] = sec13[i] * 10}
    else if(i > 90)
    {vec13[i] = sec13[i] * 10}
    else
    {vec13[i] = sec13[i] * 0.1}
  }
  print(vec13)
}

```