Εισαγωγή στη γλώσσα προγραμματισμού R

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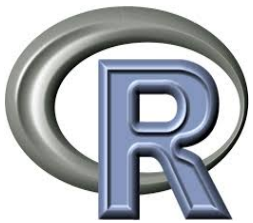
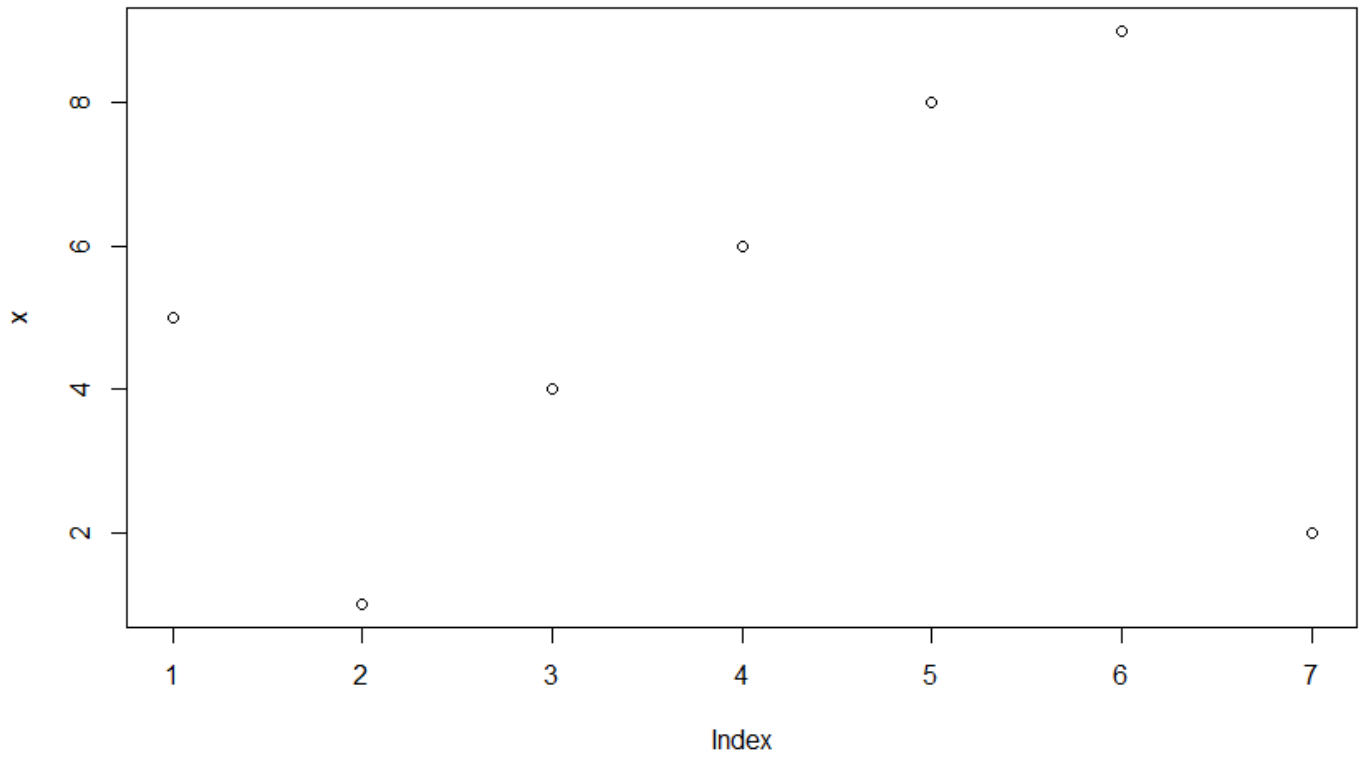
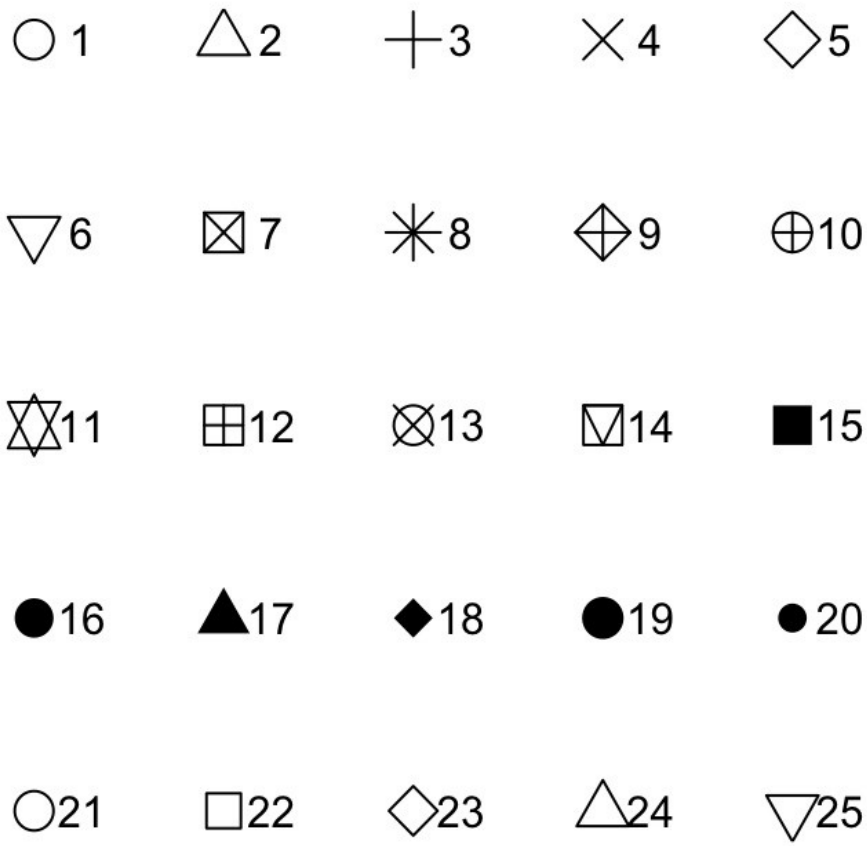


Διαγράμματα στην R

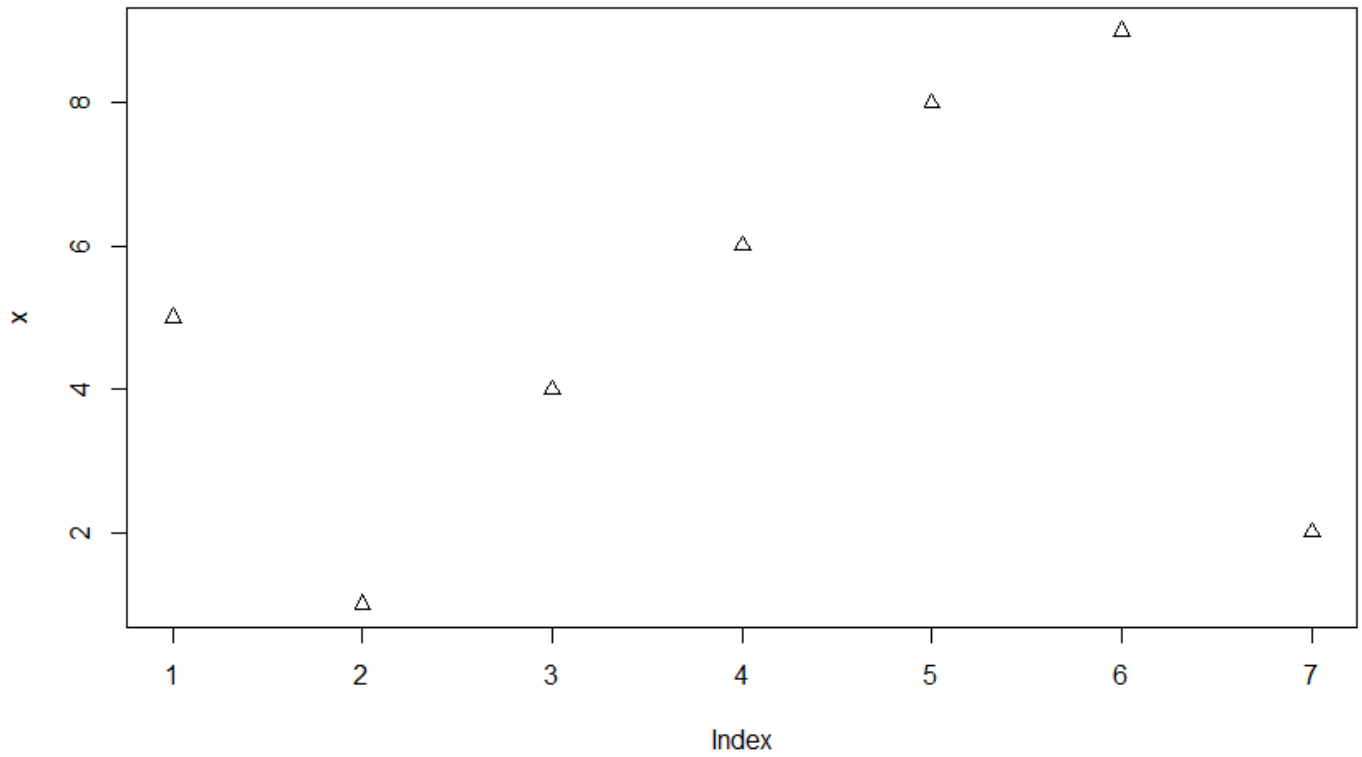
```
> x = c(5, 1, 4, 6 , 8, 9, 2)
> plot(x)
```



```
> help(pch)
```

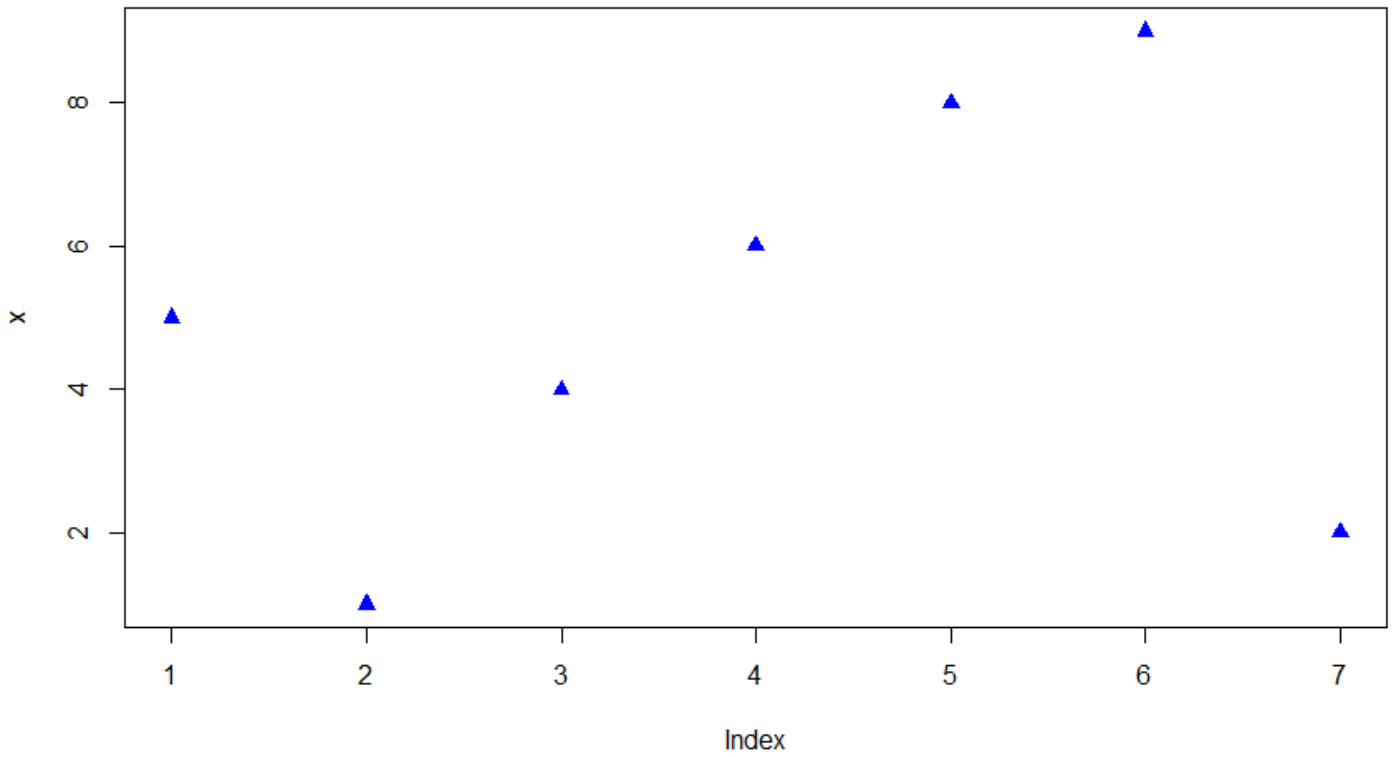


```
> plot(x, pch=2)
```



```
> colors() # ή με νούμερα (col=2)
[1] "white" "aliceblue" "antiquewhite"
[4] "antiquewhite1" "antiquewhite2" "antiquewhite3"
[7] "antiquewhite4" "aquamarine" "aquamarine1"
[10] "aquamarine2" "aquamarine3" "aquamarine4"
[13] "azure" "azure1" "azure2"
[16] "azure3" "azure4" "beige"
```

```
> plot(x, pch=24, col="blue", bg="blue", cex =1)
```



Τύπος εμφάνισης-ένωσης σημείων (type="")

"p" for points,
"l" for lines,
"b" for both,
"c" for the lines part alone of "b",
"o" for both 'overplotted',
"h" for 'histogram' like (or 'high-density') vertical lines,
"s" for stair steps,
"S" for other steps, see 'Details' below,
"n" for no plotting

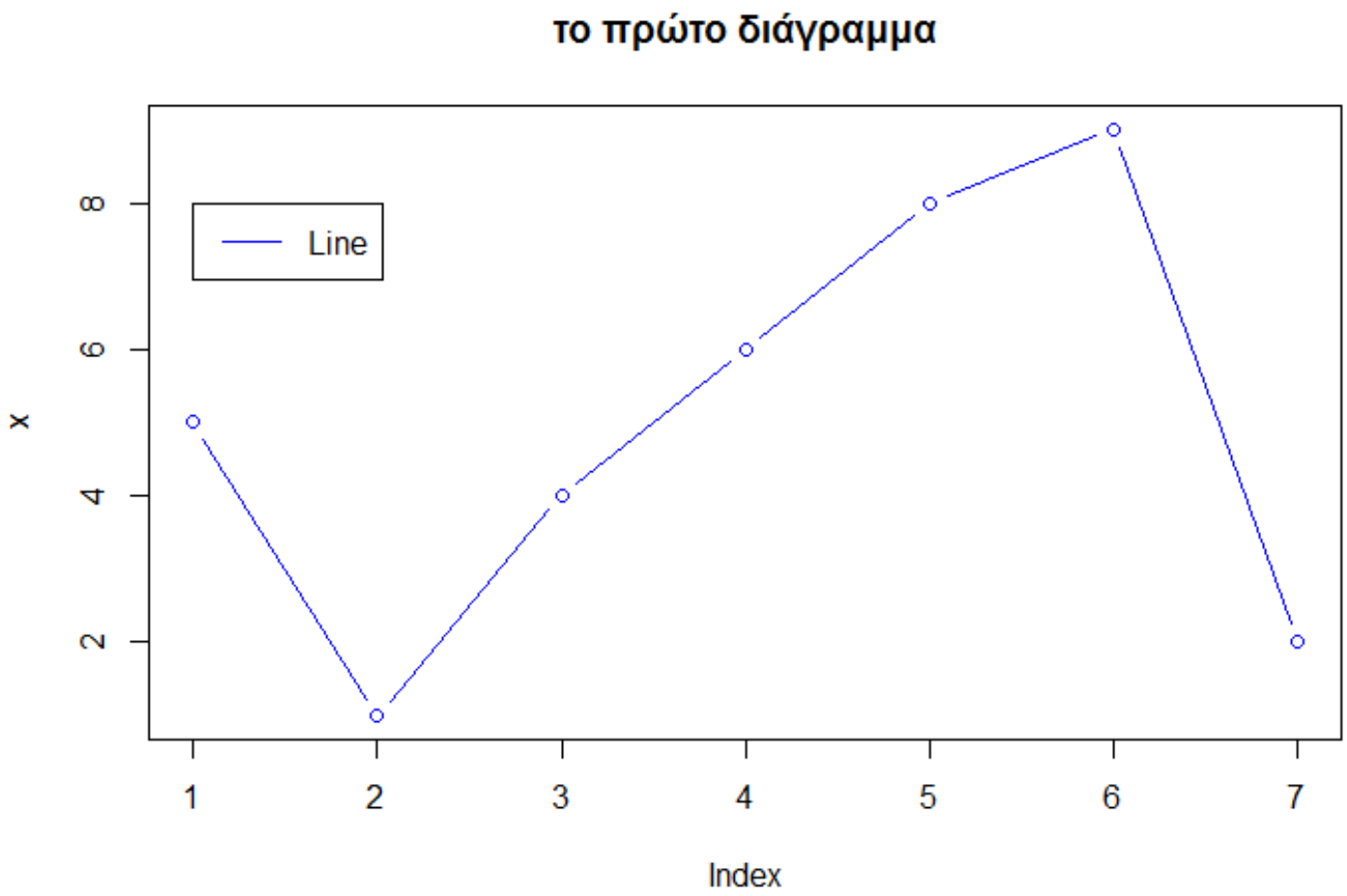
Τύπος γραμμής (lty=)

0=blank,
1=solid (default)
2=dashed
3=dotted
4=dotdash
5=longdash
6=twodash

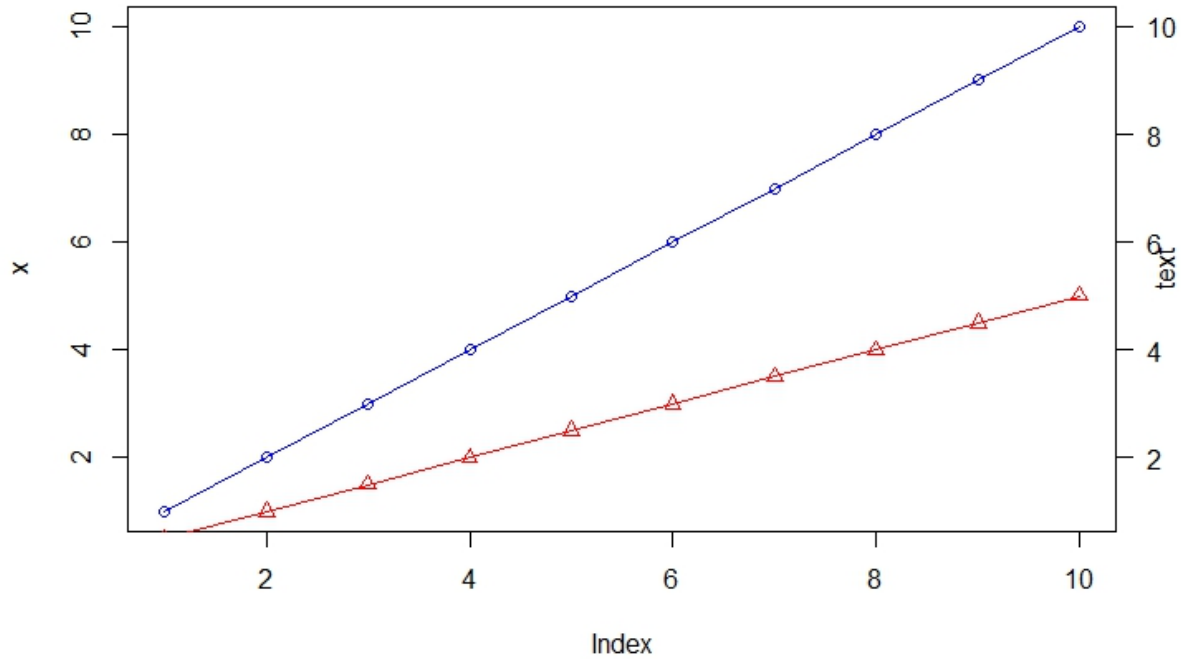
Πλατός γραμμής (lwd=)

Το πλάτος της γραμμής το οποίο είναι ένας θετικός αριθμός (1 default)

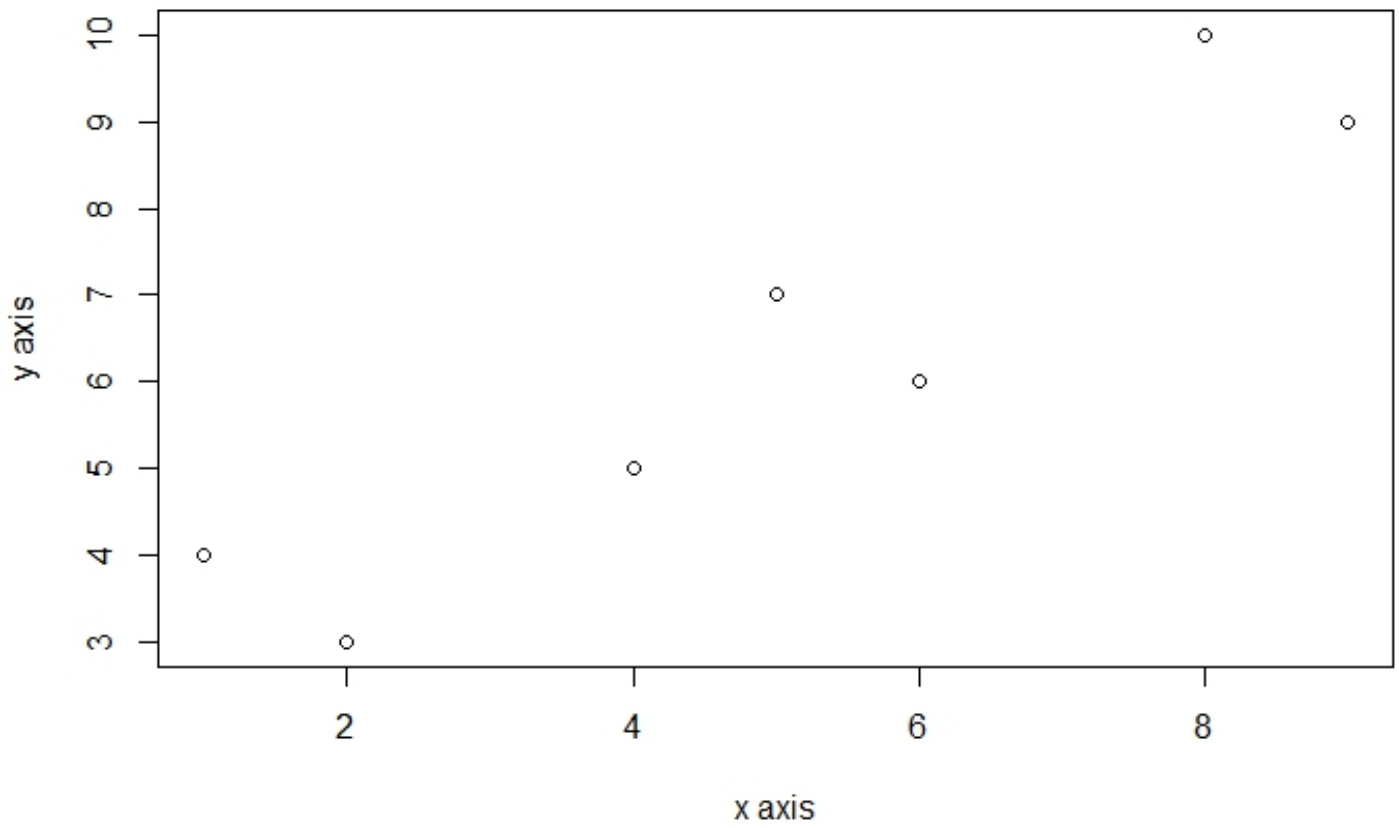
```
> plot(x, col="blue"', type="b", lty=1, main="το πρώτο διάγραμμα") # υπότιτλος (sub="")
> legend(1, 8, lty=1, col="blue"', legend="Line")
```



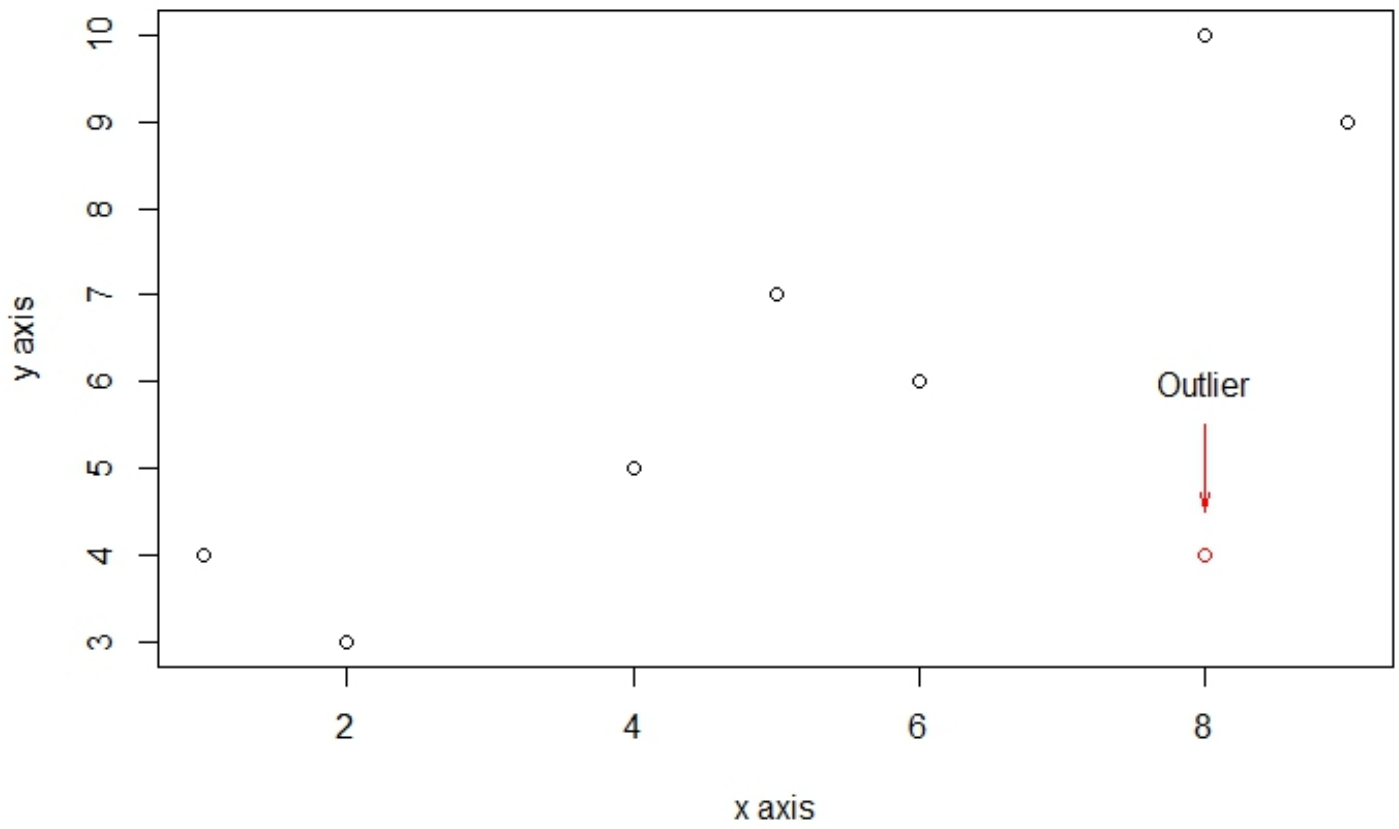
```
> x = c(1:10)
> plot(x, col="blue", type="line")
> points(x, col="blue", pch=1)
> y = x/2
> lines(y, col="red")
> points(y, col="red", pch=2)
```



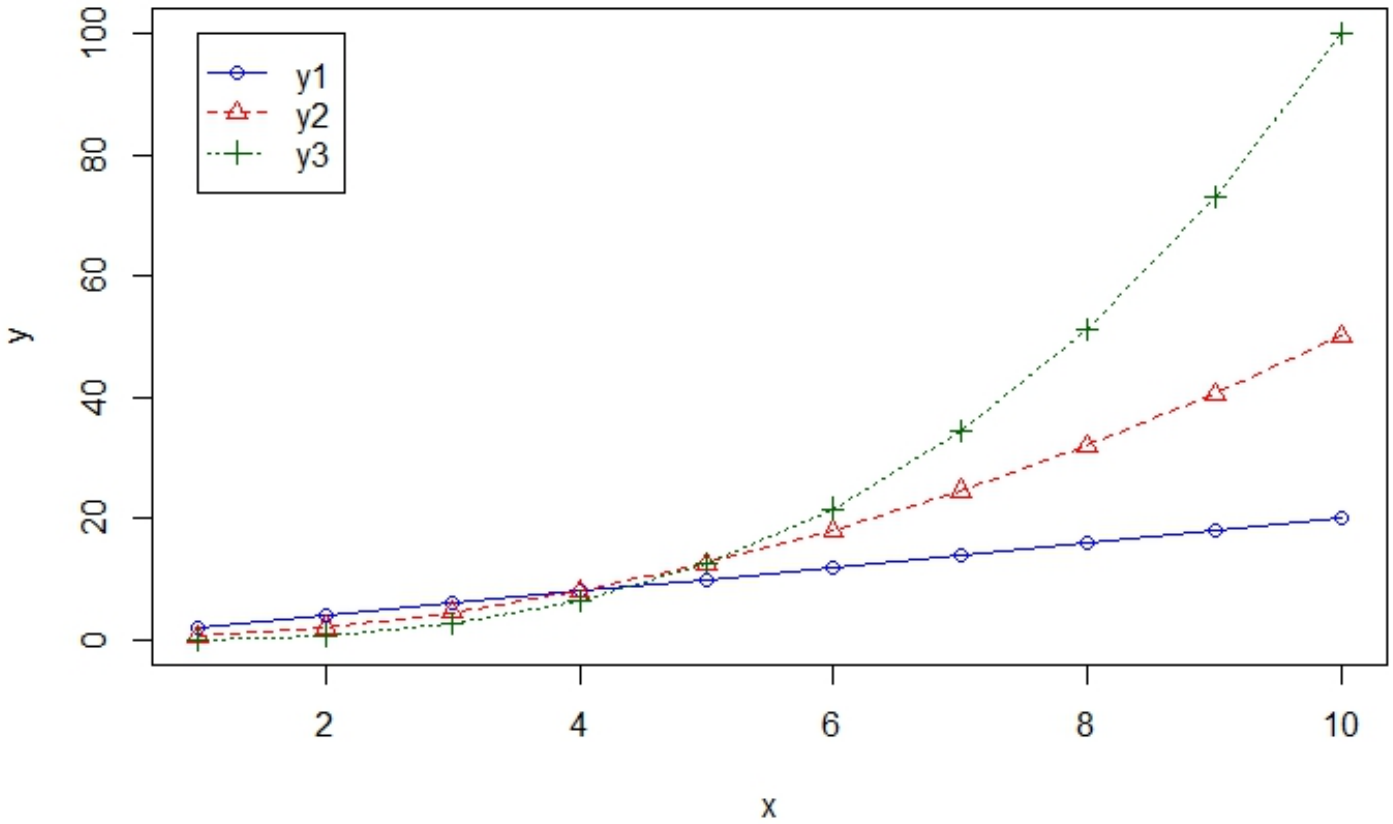
```
> x = c(5, 1, 4, 6 , 8, 9, 2)
> y= c(7, 4, 5, 6, 10, 9, 3)
> plot(x, y, xlab="x axis", ylab="y axis")
```



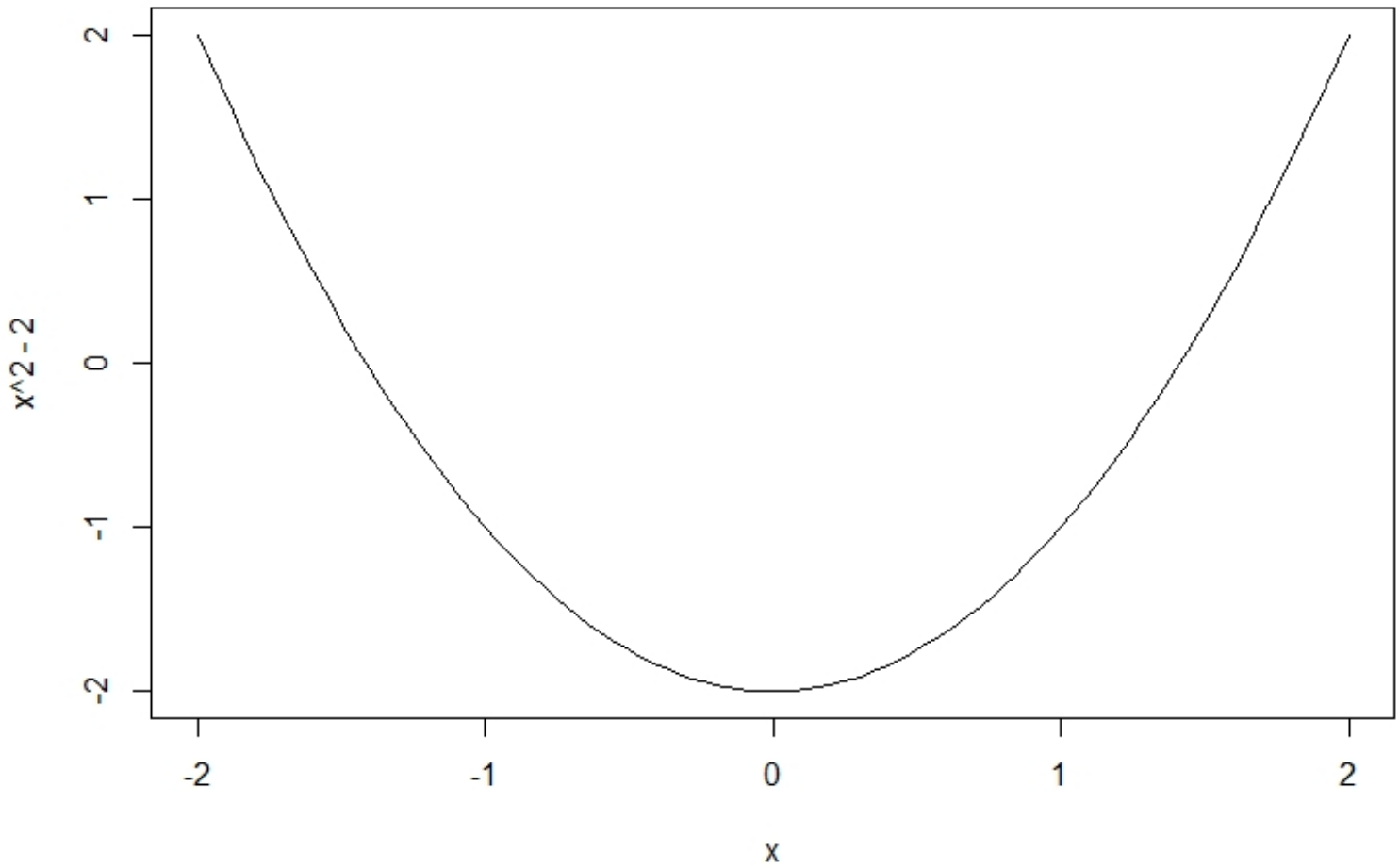
```
> points(8, 4, col="red")
> text(8,6,label="Outlier")
> arrows(8,5.5,8,4.5,col="red", length = 0.1, angle = 10)
```



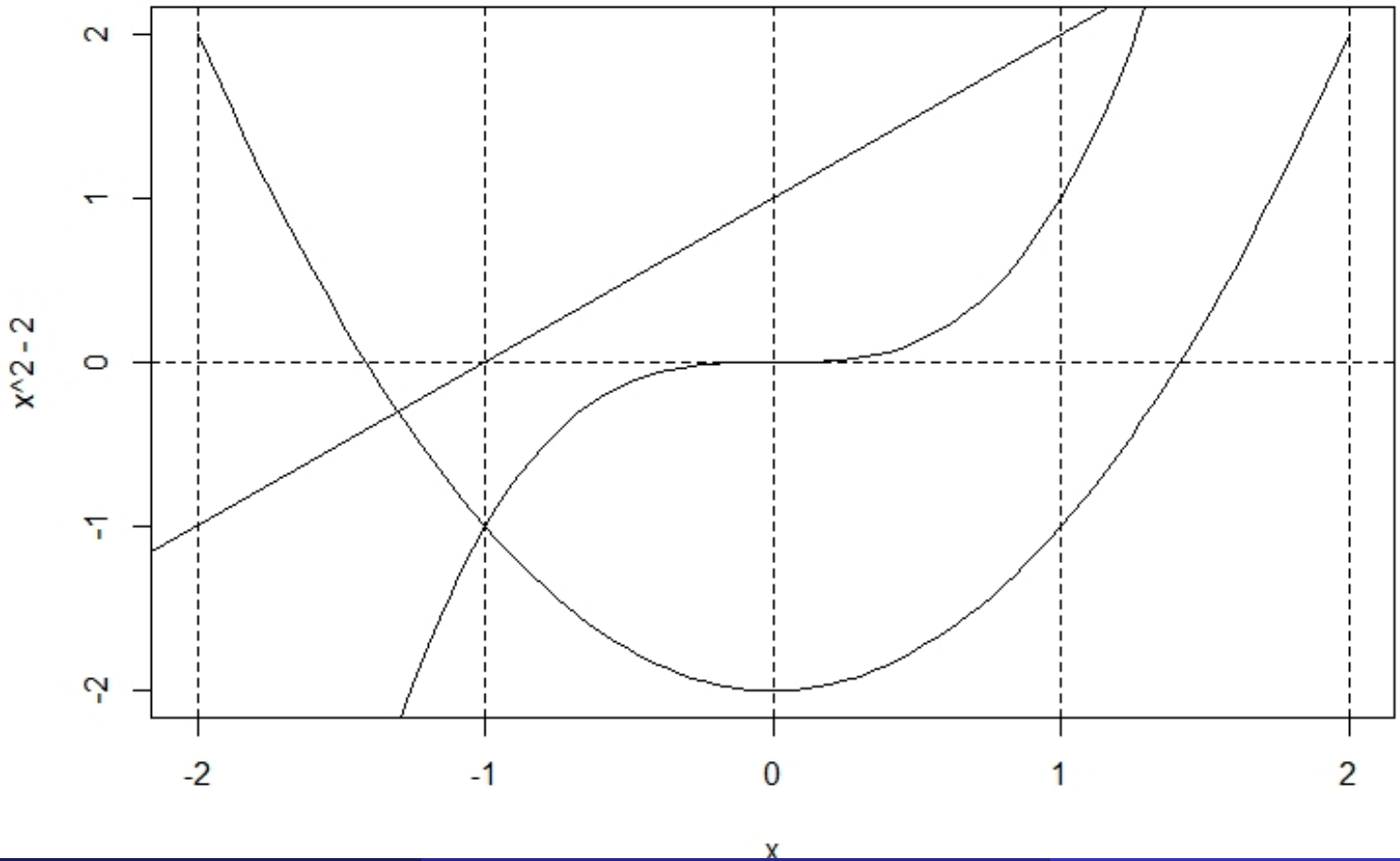
```
> x = c(1:10)
> y1 = 2*x
> y2 = 0.5*x^2
> y3 = 0.1*x^3
> plot(x, y1, type="o", col="blue", pch=1, lty=1,
ylim=c(0,100) )
> points(x, y2, col="red", pch=2)
> lines(x, y2, col="red",lty=2)
> points(x, y3, col="green",pch=3)
> lines(x, y3, col="green", lty=3)
> legend(1,100,legend=c("y1","y2","y3"),
col=c("blue","red","green"),pch=c(1,2,3),lty=c(1,2,3), ncol=1)
```


y1
y2
y3
y
x
0
20
40
60
80
100
2
4
6
8
10

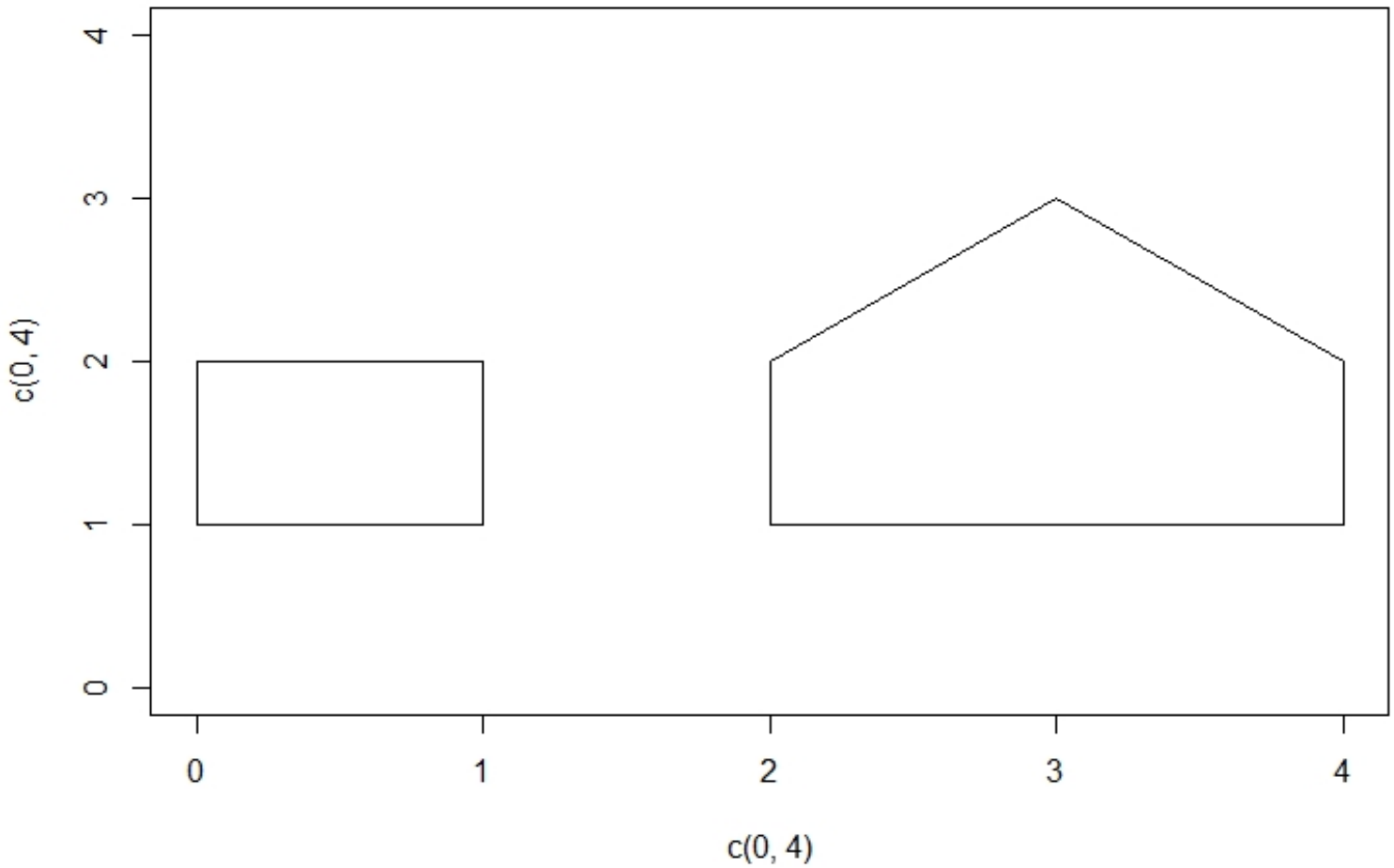
```
> curve(x^2-2)
> curve(x^2-2, xlim =c(-2,2))
```



```
> curve(x^3,xlim =c(-2,2), add=T)
> abline(1,1)
> abline(h=0, lty=2)
> abline(v=-2:2, lty=2)
```



```
> plot(c(0,4),c(0,4),type="n")
> rect(0,1,1,2)
> polygon(c(2,2,3,4,4), c(1,2,3,2,1))
```



https://gist.github.com/jtleek/4369771

```
# Make the canvas
> plot(1:10,1:10,xlim=c(-5,5),ylim=c(0,10),type="n", xlab="",
ylab="", xaxt="n", yaxt="n")
# Make the branches
>rect(-1,0,1,2,col="tan3",border="tan4", lwd=3)
> polygon(c(-5,0,5),c(2,4,2),col="palegreen3",
border="palegreen4", lwd=3)
> polygon(c(-4,0,4),c(3.5,5.5,3.5),col="palegreen4",
border="palegreen3", lwd=3)
> polygon(c(-3,0,3),c(5,6.5,5),col="palegreen3",
border="palegreen4", lwd=3)
> polygon(c(-2,0,2),c(6.25,7.5,6.25),col="palegreen4",
border="palegreen3", lwd=3)
```

```
#Add some ornaments
> points(x=runif(4,-5,5), y=rep(2,4), col=sample(c("blue",
"red"), size=4, replace=T), cex=3, pch=19)
> points(x=runif(4,-4,4),y=rep(3.5,4), col=sample(c("blue",
"red"), size=4, replace=T), cex=3, pch=19)
> points(x=runif(4,-3,3),y=rep(5,4), col=sample(c("blue",
"red"), size=4, replace=T), cex=3, pch=19)
> points(x=runif(4,-2,2),y=rep(6.25,4), col=sample(c("blue",
"red"), size=4, replace=T), cex=3, pch=19)
> points(0,7.5,pch=8,cex=5,col="gold",lwd=3)
```

```
# Add some presents
> xPres = runif(10,-4.5,4.5)
> xWidth = runif(10,0.1,0.5)
> xHeight=runif(10,0,1)
> for(i in 1:10){
    rect(xPres[i]-xWidth[i],0,xPres[i]+xWidth[i], xHeight[i],
    col=sample(c("blue","red"),size=1))
    rect(xPres[i]-0.2*xWidth[i],0, xPres[i]+0.2*xWidth[i],
    xHeight[i],col=sample(c("gold","grey87"),size=1))
}
```