

Plot In R

$\tau\rho$

Plot

Description

- Generic function for plotting of **R** objects.

- General Form

```
plot(x, y, ...)
```

- Possible type to be drawn

1. "p" for points
2. "l" for lines
3. "b" for both
4. "c" for the lines part alone of "b"
5. "o" for overplotted
6. "h" for histogram like
7. "s" for stair steps
8. "S" for other steps
9. "n" for no plotting

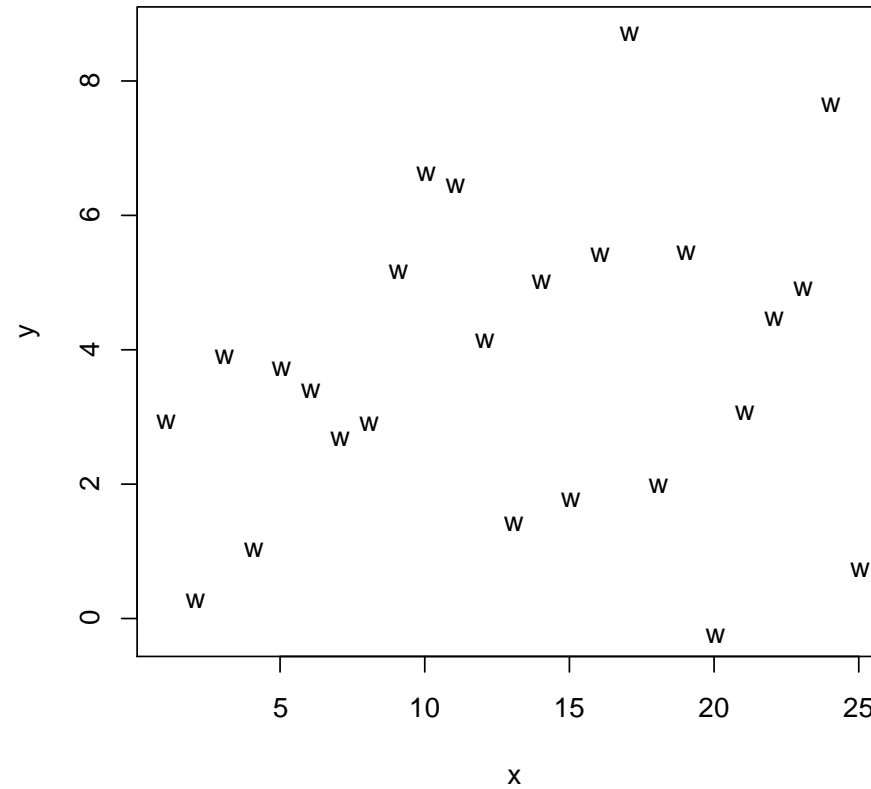
Example 1

Could you explain what are these programs do for ?

- `plot(sin, -pi, 2*pi)`
- `plot(table(rpois(100, 5)), type="h", col="red", lwd=10, main="rpois(100, lambda=5)")`
- `plot(x <- sort(rnorm(47)), type = "s", main = "plot(x, type = \"s\")")`
`points(x, cex = .5, col = "dark red")`

Example 2

Create some programs to make the graph below



Answer 2

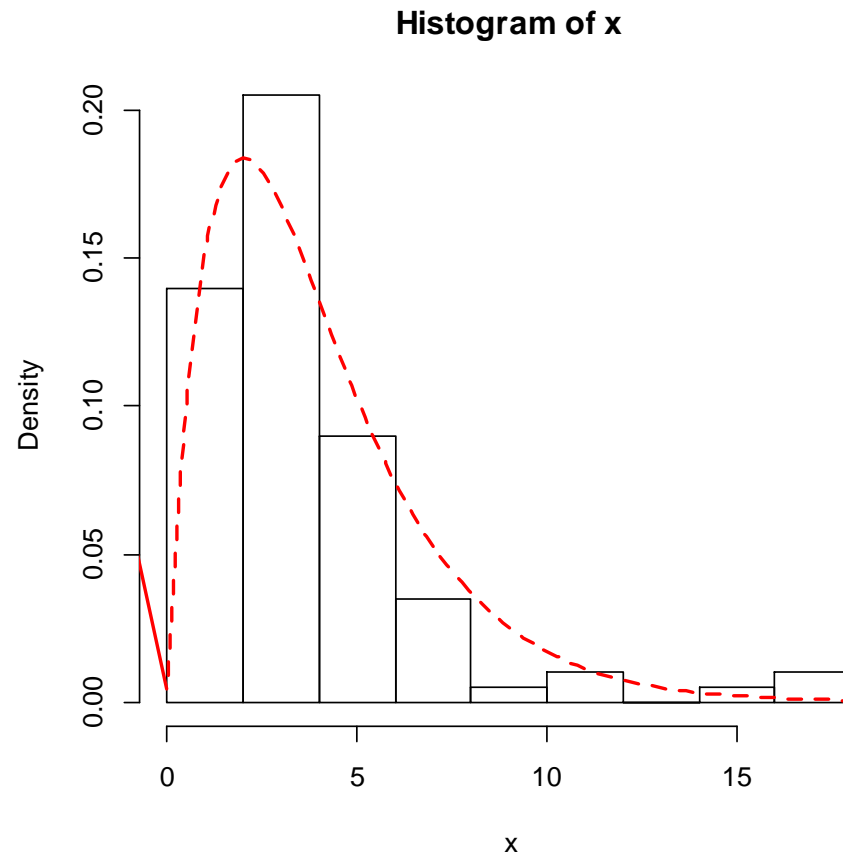
```
x<-1:25
```

```
y<-rnorm(25,4,2)
```

```
plot(x,y,pch="w", main="W")
```

Example 3

Create some programs to make the graph below, using 100 observation of $X \sim \text{poisson}(4)$



Answer 3

```
set.seed(14)
x <- rchisq(100, df = 4)
hist(x, freq = FALSE, ylim = c(0, 0.2))
curve(dchisq(x, df = 4), col = 2, lty = 2, lwd = 2, add = TRUE)
```

Example 4

Create a function for making Normal Q-Q Plot using specify data !

Answer 4

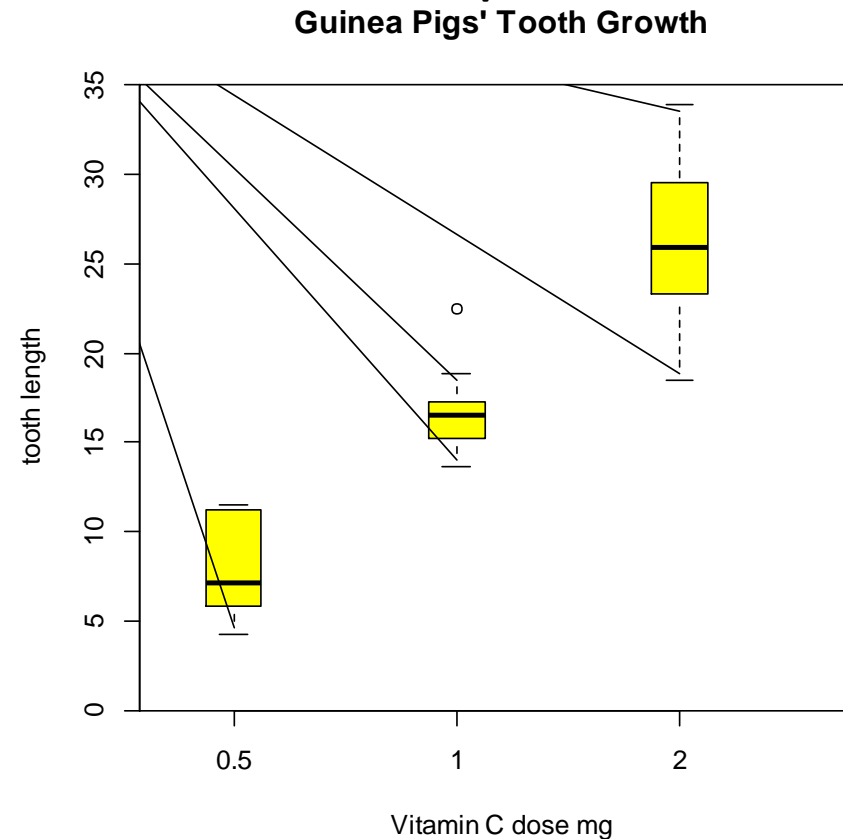
```
qqnormal <- function(data)
{
  qqnorm(data)
  qqline(data, col="red")
}

x <- rnorm(30, 3, 2)
qqnormal(x)

Y <- rchisq(500, 3)
qqnormal(y)
```

Example 5

Using ToothGrowth data, make boxplots from the variable “len” based on the levels of “dose”, with the output below



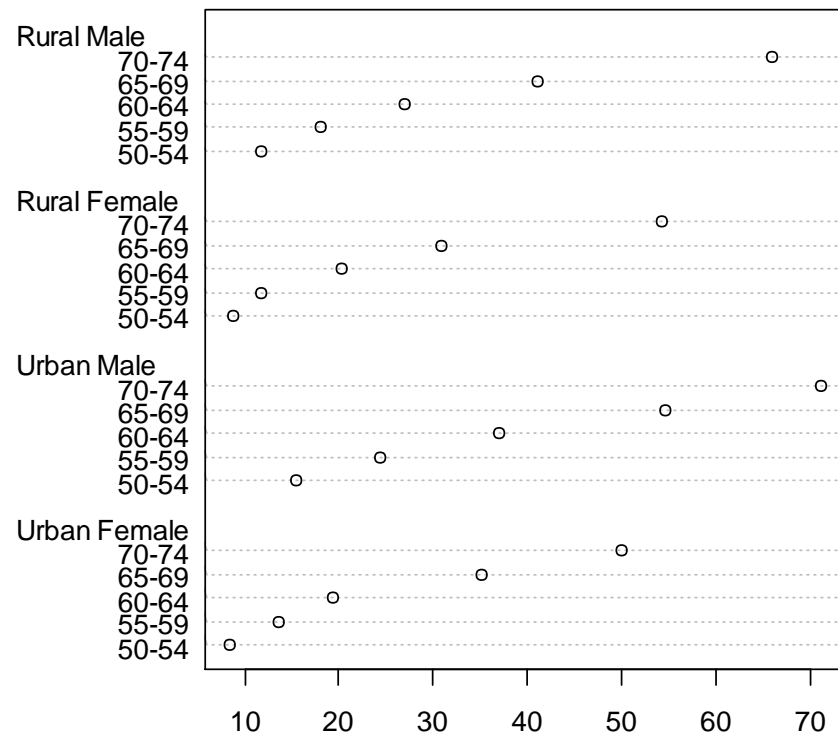
Answer 5

```
boxplot(len ~ dose, data = ToothGrowth, boxwex = 0.25,  
col = "yellow", main = "Guinea Pigs' Tooth Growth", xlab  
= "Vitamin C dose mg", ylab = "tooth length", xlim =  
c(0.5, 3.5), ylim = c(0, 35))
```

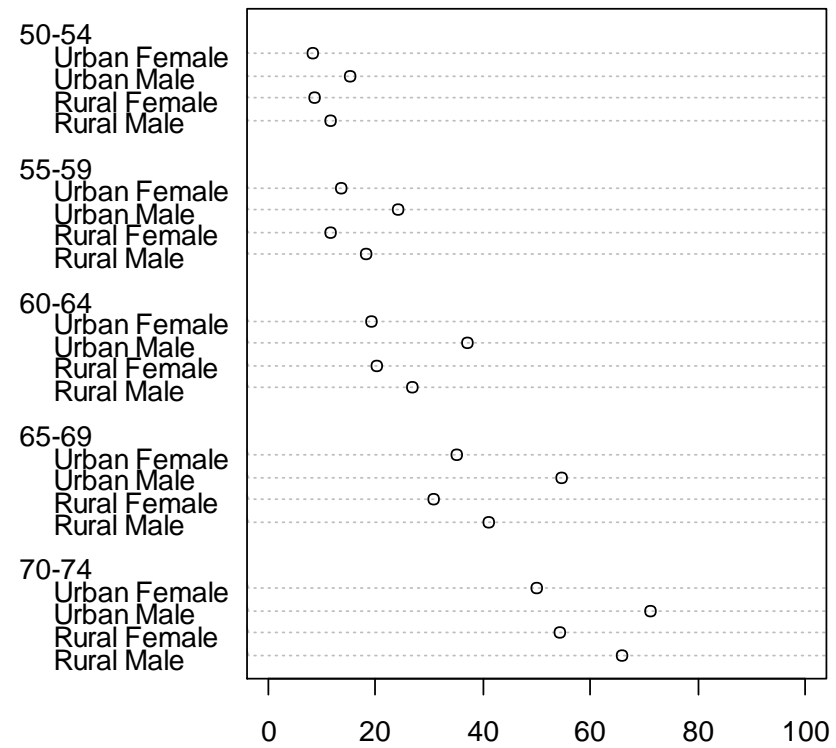
Example 6

Using VADeaths data, create programs to make 2 plots below

Death Rates in Virginia - 1940



Death Rates in Virginia - 1940



Answer 6

```
dotchart(VADeaths, main = "Death Rates in Virginia -  
1940")
```

```
dotchart(t(VADeaths), xlim = c(0,100), main = "Death  
Rates in Virginia - 1940")
```

Example 7

Create a function to make Normal density plot with $n = 10, 25, 50, 75, 100, 150, 200$ in one window

Answer 7

```
a<- function(n)
{
  p<-ceiling(length(n)/2)
  windows()
  split.screen(c(2,p))
  for(i in 1:length(n))
  {
    screen(i)
    x<-rnorm(n[i])
    hist(x,freq=FALSE,main=NULL)
    dd<-function(x) dnorm(x)
    curve(dd(x),col=2,lty=2,lwd=2,add=TRUE)
    title(paste("Normal Plot n=",n[i]))
  }
}
n<-c(10,25,50,75,100,150,200)
a(n)
```

Thank you 😊