

Graficos

Curso de Estadística Descriptiva

22/12/2018

Gráficos con la función plot

```
x = c(2,6,4,9,-1)
y = c(1,8,4,-2,4)
plot(x,y)
```

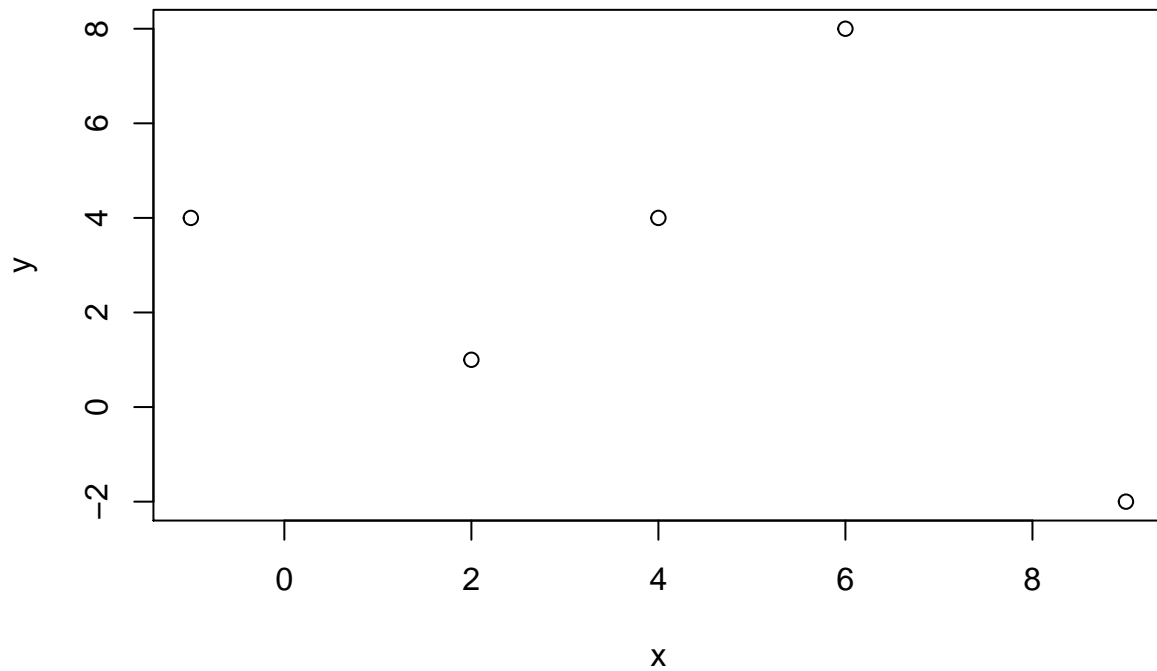
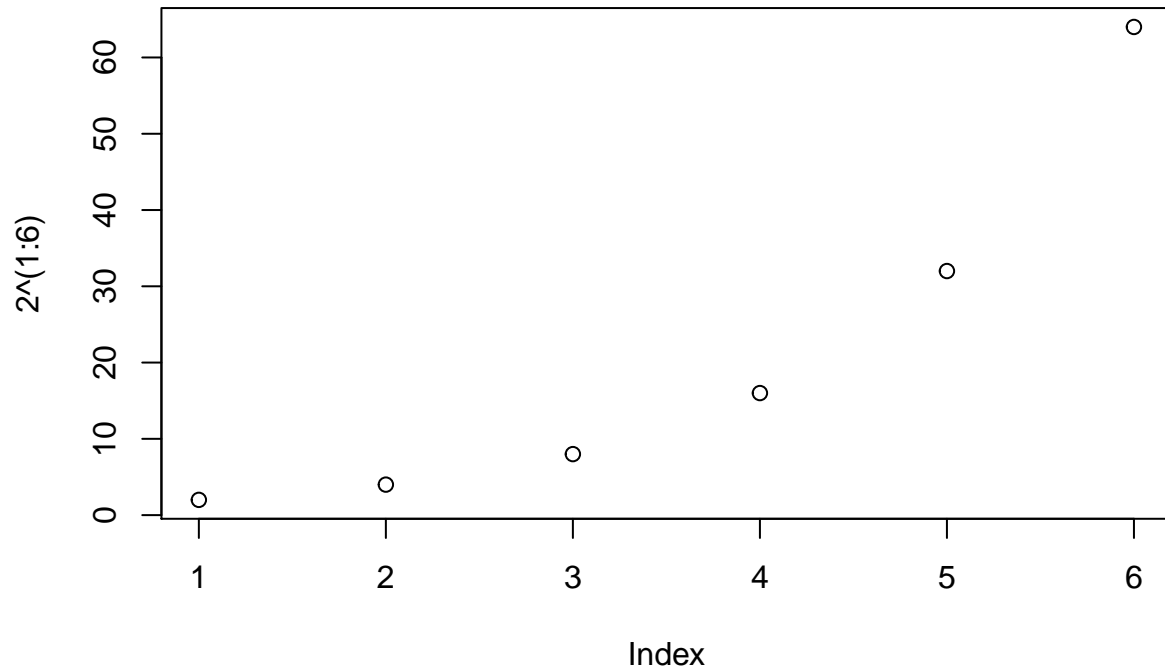


Figure 1: Gráfico básico explicando el uso del plot

Si no incorporamos vector `y`, R nos va a tomar el parámetro `x` como si fuese el vector de datos `y` : `plot(1:n, x)`

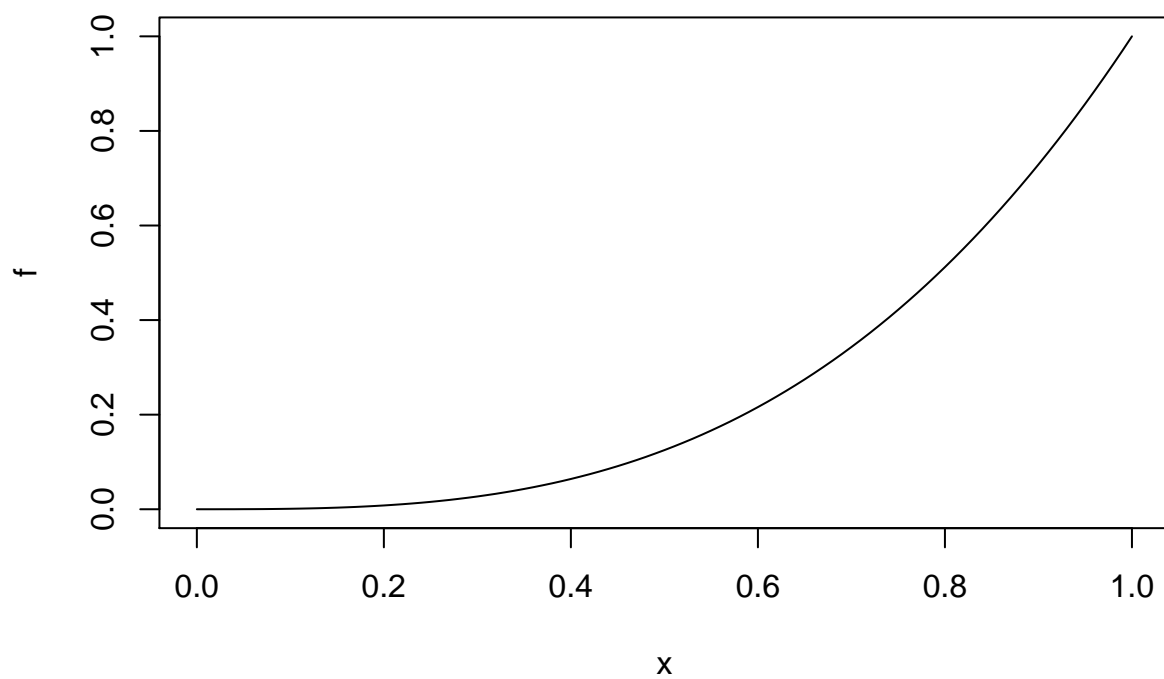
```
plot(2^(1:6))
```



Si queremos representar una función $f(x)$:

Lo que hace en el siguiente comando es tomar un rango de datos por defecto de 0 a 1 para el eje X , y graficar esta función sobre este rango, ya que se puede ver en el comando `plot(f)` que solo se se pasa como parámetro la f sin argumentos

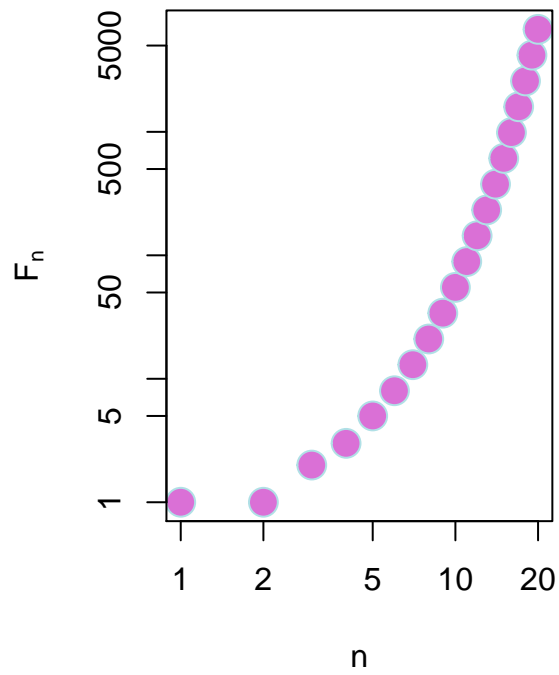
```
f <- function(x){ x^3 }  
plot(f)
```



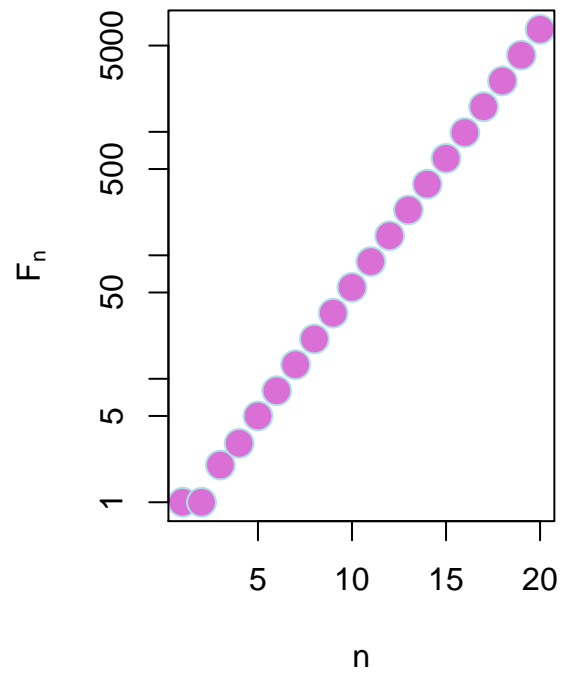
Parámetros

```
## [1] 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610
## [16] 987 1597 2584 4181 6765
```

Sucesión de Fibonacci

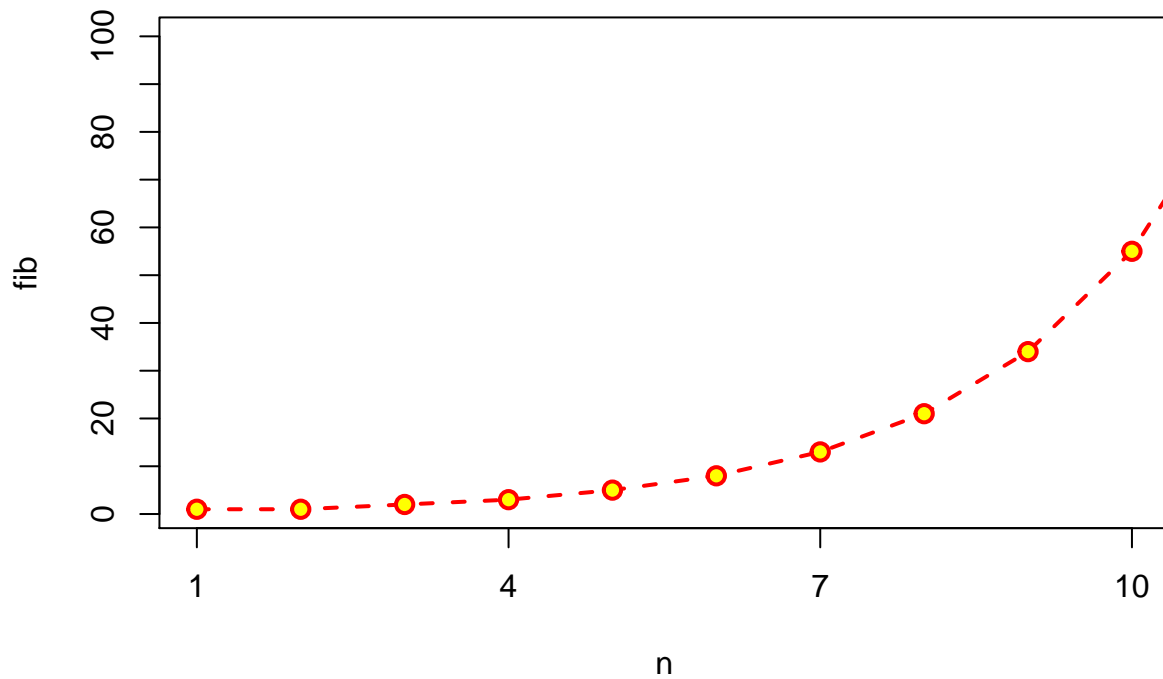


Sucesión de Fibonacci



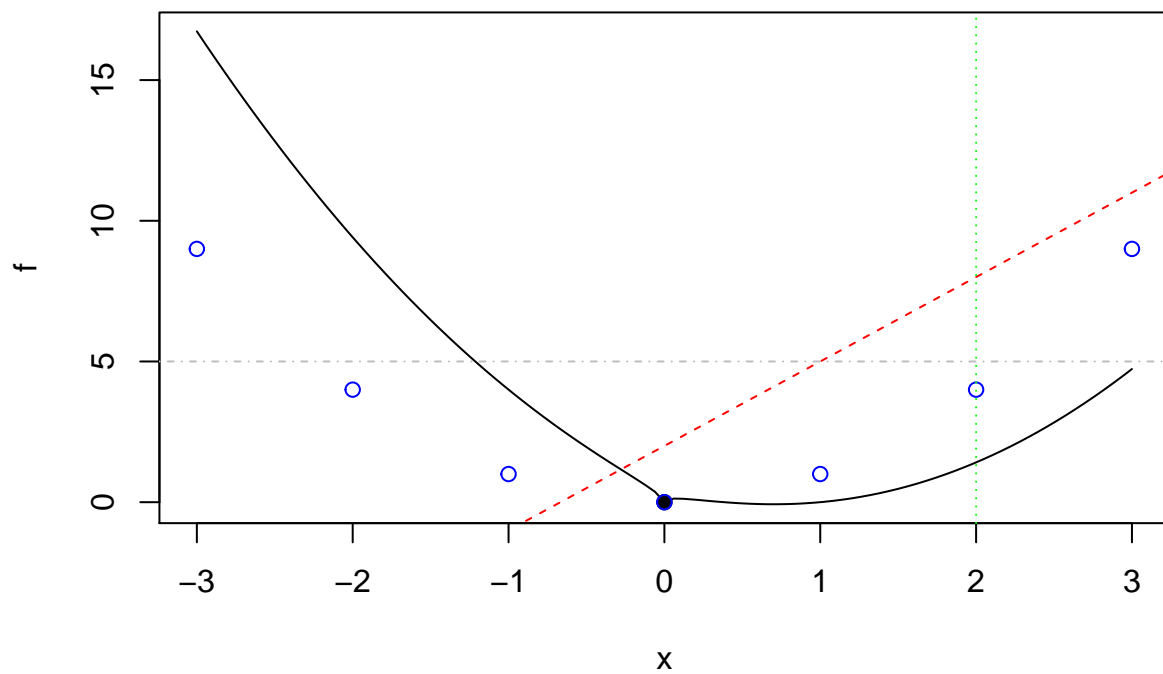
```
plot(n, fib, pch = 21, col = "red", bg = "yellow", cex = 1.2,
     main = "Fibonacci",
     type = "o", lty = "dashed", lwd = 2,
     xlim = c(1,10), ylim = c(1, 100),
     xaxp = c(1,10,3), yaxp = c(0,100, 10))
```

Fibonacci

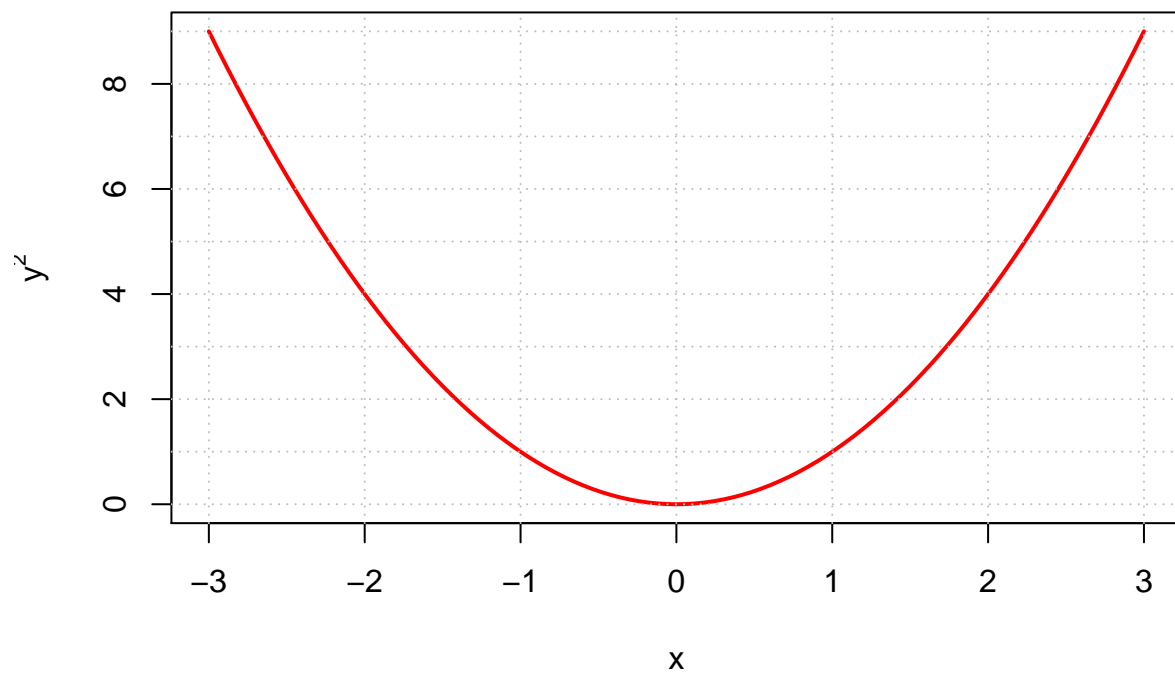


Cómo añadir elementos a un gráfico

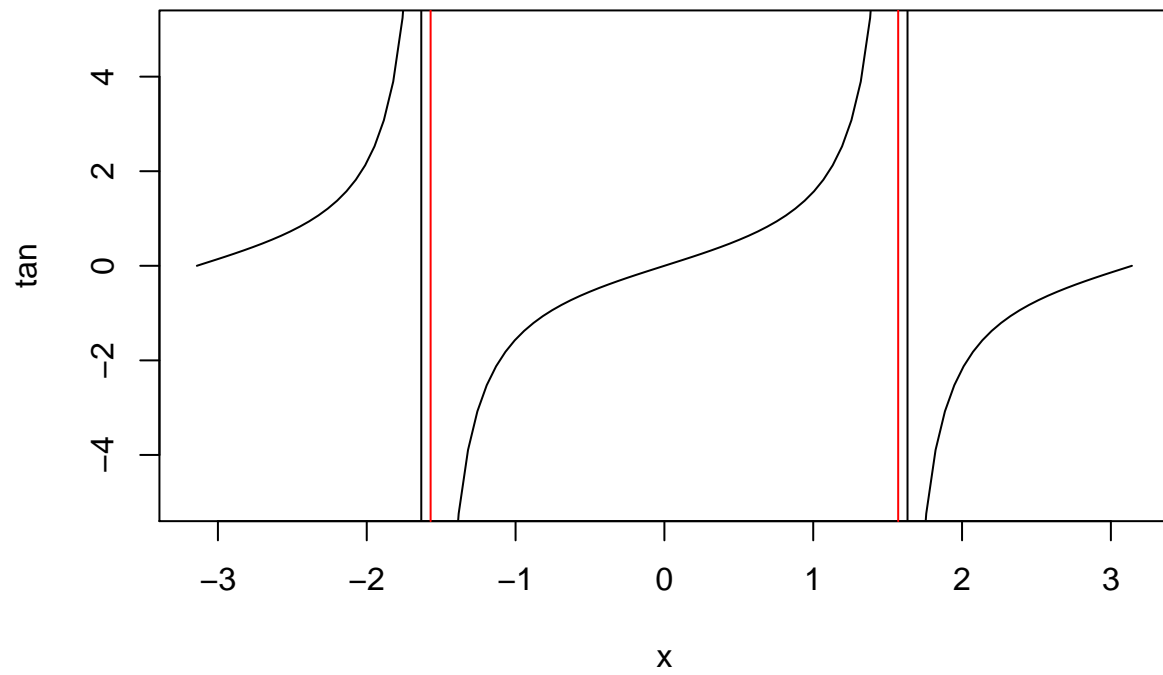
```
f <- function(x){  
  x^2 - 2*x + sqrt(abs(x))  
}  
plot(f, xlim = c(-3,3))  
points(0,0, pch = 19)  
points(-3:3, (-3:3)^2, col = "blue")  
abline(2,3, lty = "dashed", col = "red")  
abline(v = 2, lty = "dotted", col = "green")  
abline(h = 5, lty = "dotdash", col = "gray")
```



```
f <- function(x){x^2}
plot(f, xlim = c(-3,3), col = "red", lwd = 2, ylab = expression(y^2), xlab = "x")
abline(h=0:9, v = -3:3, lty="dotted", col = "grey")
```



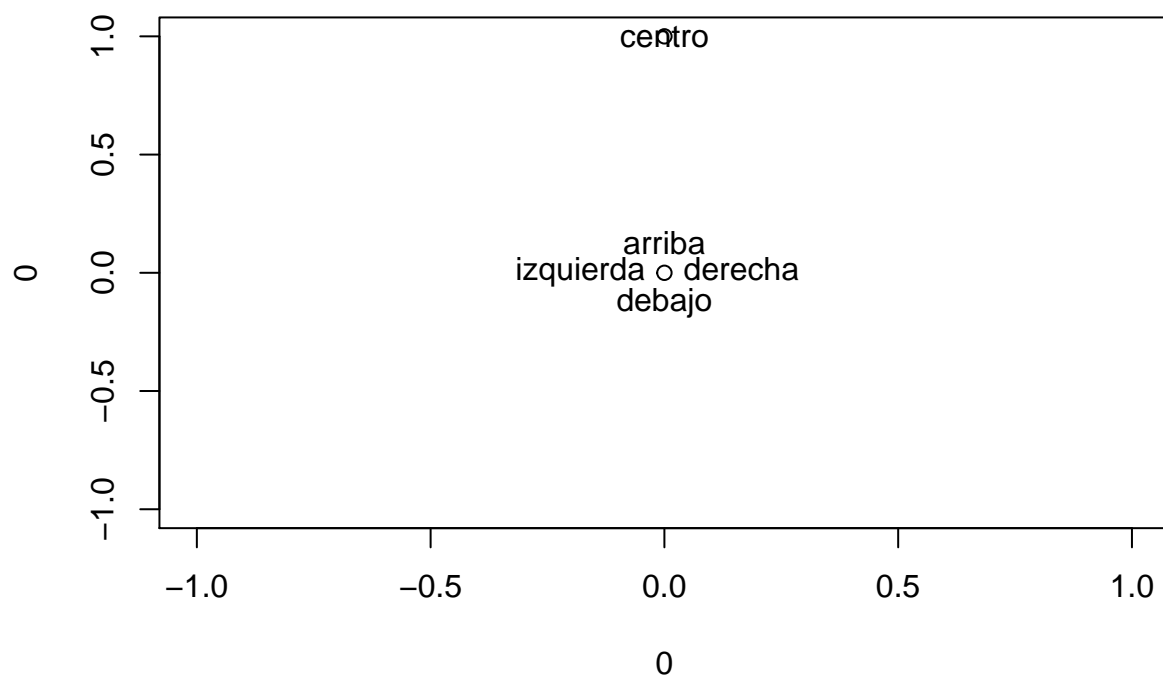
```
plot(tan, xlim = c(-pi, pi), ylim = c(-5,5))  
abline(v = c(-pi/2, pi/2), col = "red")
```



```

plot(0,0)
text(0,0, labels = "debajo", pos = 1)
text(0,0, labels = "izquierda", pos = 2)
text(0,0, labels = "arriba", pos = 3)
text(0,0, labels = "derecha", pos = 4)
points(0,1)
text(0,1, labels = "centro")

```

```
f <- function(x){x^2}
plot(f, xlim = c(-3,3), ylim = c(-10,10))
points(-3:3, f(-3:3), pch = 19)
lines(-3:3, f(-3:3), lwd = 2, lty = "dotted", col = "red")
curve(x^3, lty = "dashed", col = "blue", add = TRUE)
curve(x^4, lty = "dashed", col = "orangered", add=TRUE)
legend("bottomright",
      legend = c(expression(x^2), expression(x^3), expression(x^4)),
      lwd = 2,
      col = c("red", "blue", "orangered"),
      lty = c("dotted", "dashed", "dashed")
)
```

