



Base Graphics Examples

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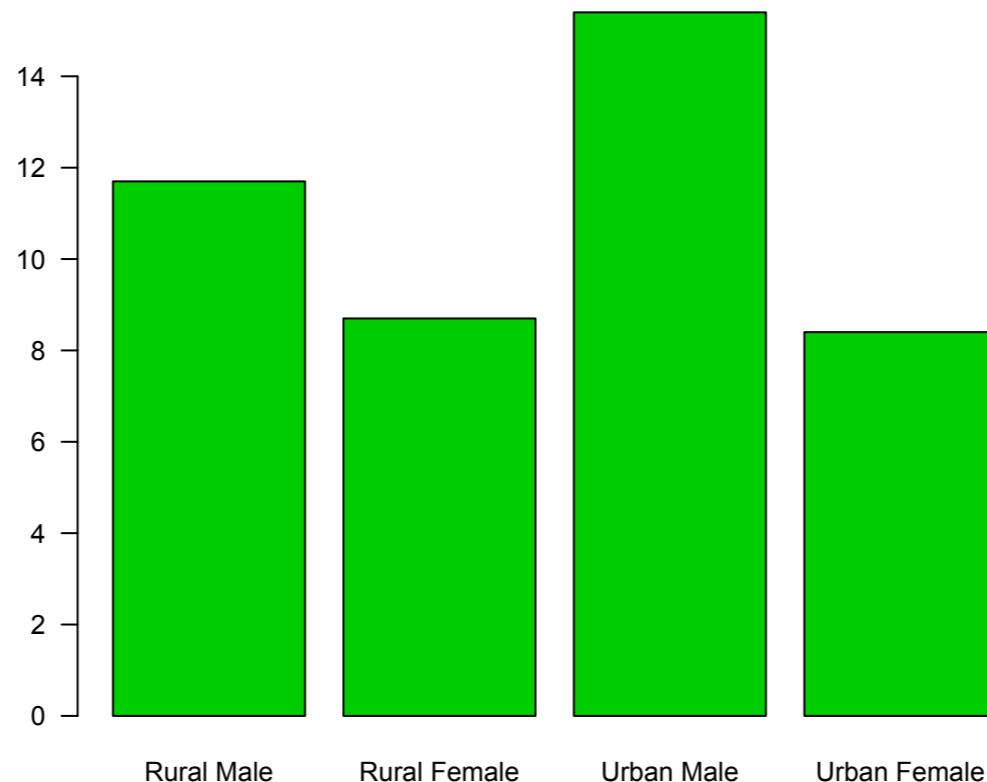
Graphics Functions

Base Graphics	Description	Slide
barplot	Bargraph	3 & 4
biplot	Represents rows and columns of a matrix	5
boxplot	Box and whisker plot	6
contour	Contour plot	7
coplot	Conditional plot	8
dotchart	Cleveland dot chart	9
filled.contour	Contour plot filled with colors	10
hist	Histogram	11
image	High-density image plot	12
interaction.plot	Interactions plot for two-factors	13
matplot	Multiple plots specified by columns of a matrix	14
pairs	All pairwise plots between variables	15
persp	3D perspective plot	16
pie	Pie chart	17
plot	Plot	18 & 19
qqnorm	Normal QQ plot	20
qqplot	Quantile-Quantile plot	20
scatter.smooth	Scatterplot with a smooth curve	21
stars	Star plots for multivariate data	22

barplot()

TOP

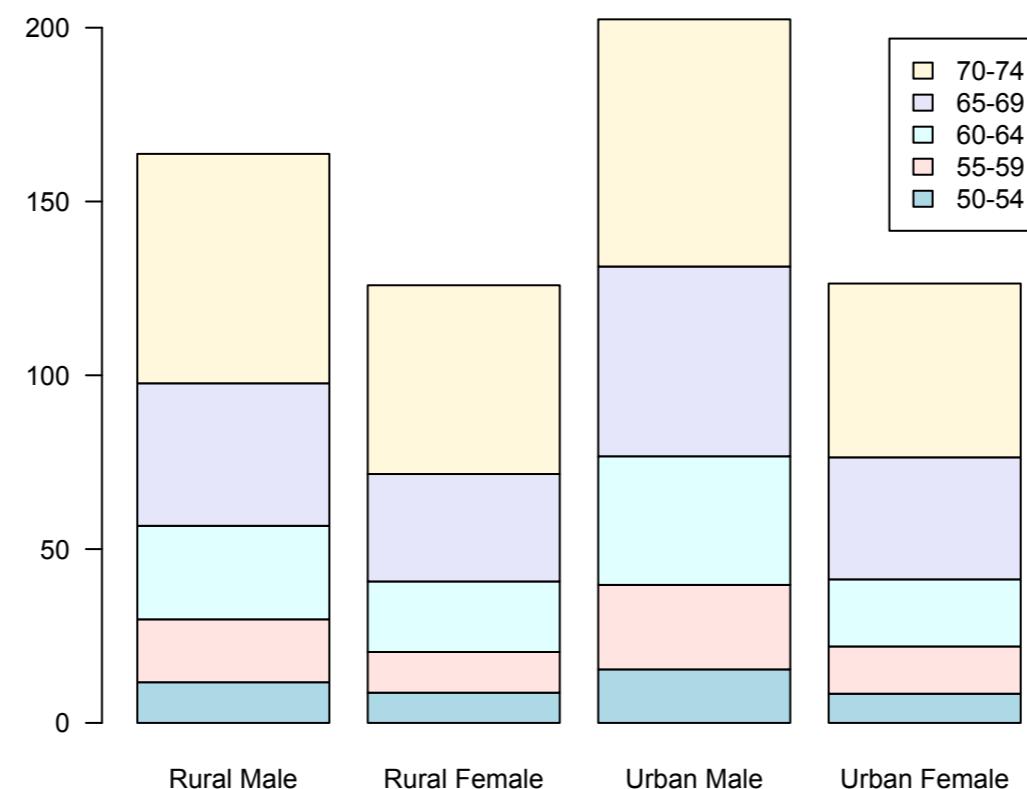
```
# Simple bar graph  
barplot(VADeaths[1, ], col = 3, las = 1)
```



barplot()

TOP

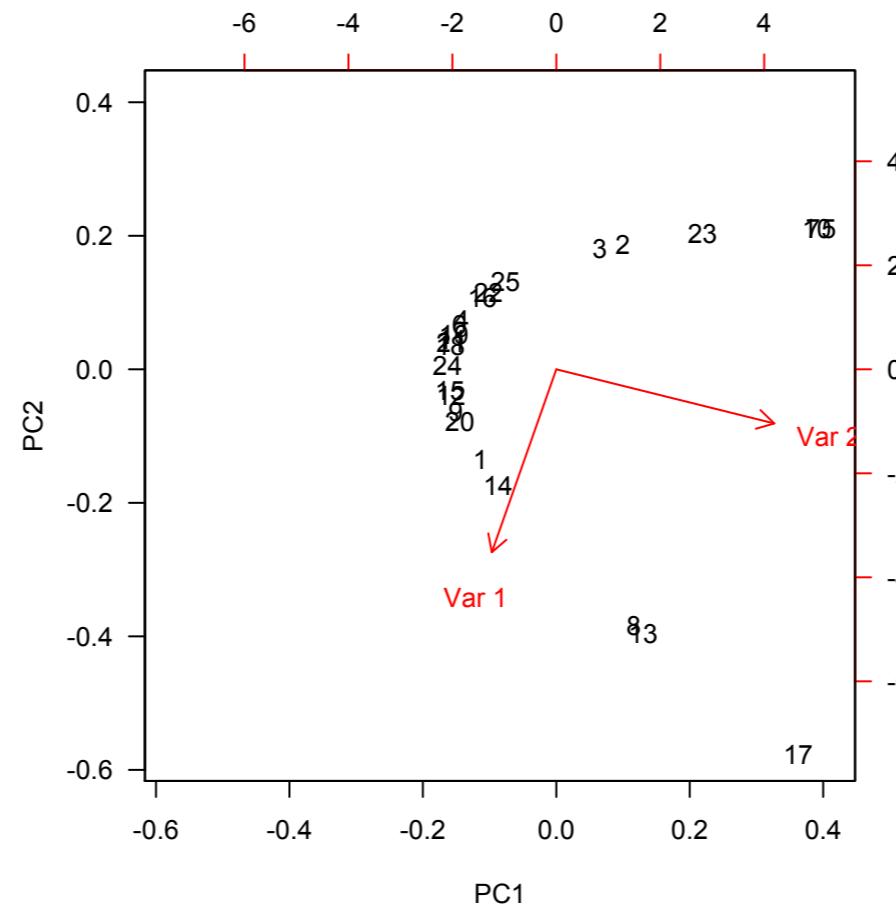
```
# Stacked bar graph  
barplot(VADeaths, col = c("lightblue", "mistyrose",  
  "lightcyan", "lavender", "cornsilk"), las = 1,  
 legend = TRUE)
```



biplot()

TOP

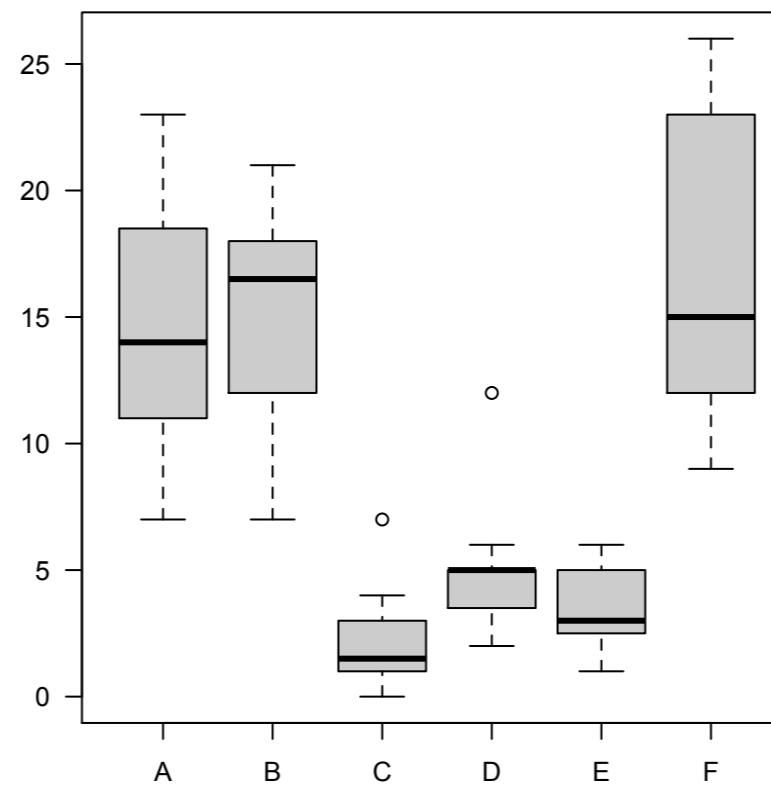
```
x <- rnorm(25)
y <- x*x
mat <- matrix(c(x, y), ncol = 2)
pca <- princomp(mat)
biplot(pca, las = 1, ylab = "PC2", xlab = "PC1")
```



boxplot()

TOP

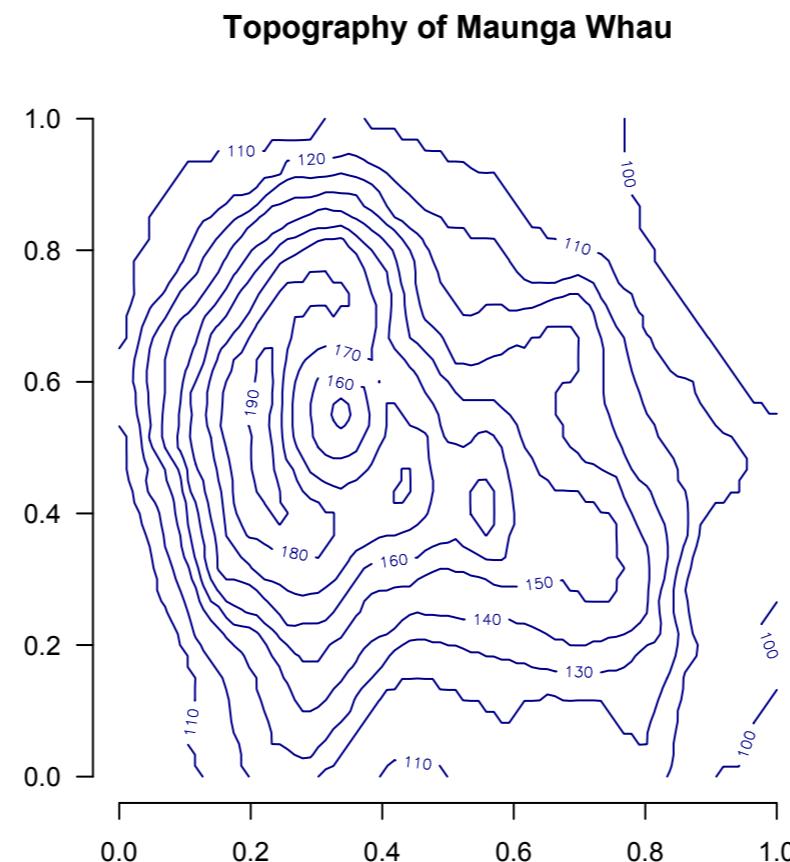
```
boxplot(count ~ spray, data = InsectSprays, las = 1,  
       col = "grey80")
```



contour()

TOP

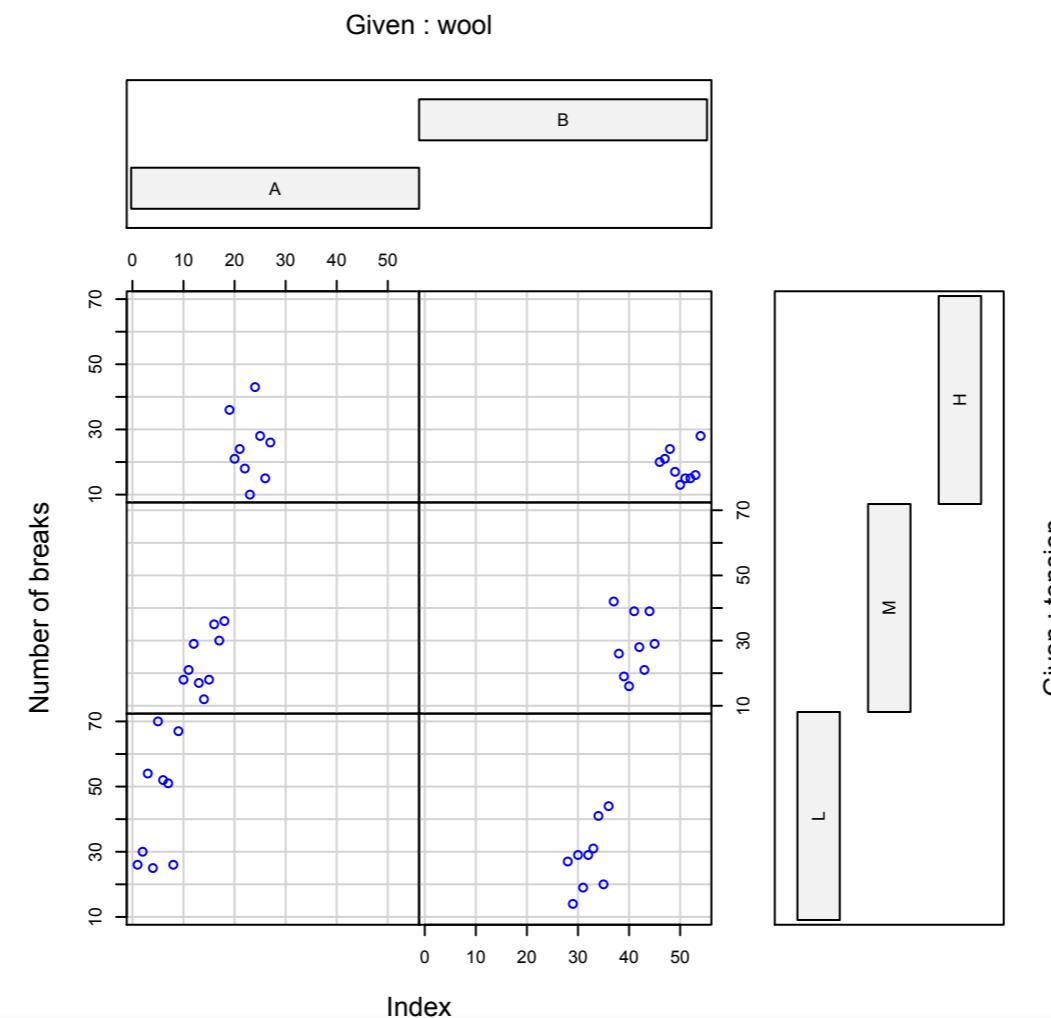
```
contour(volcano, axes = TRUE, col = "darkblue",
main = "Topography of Maunga Whau", bty = "n", las = 1)
```



coplot()

TOP

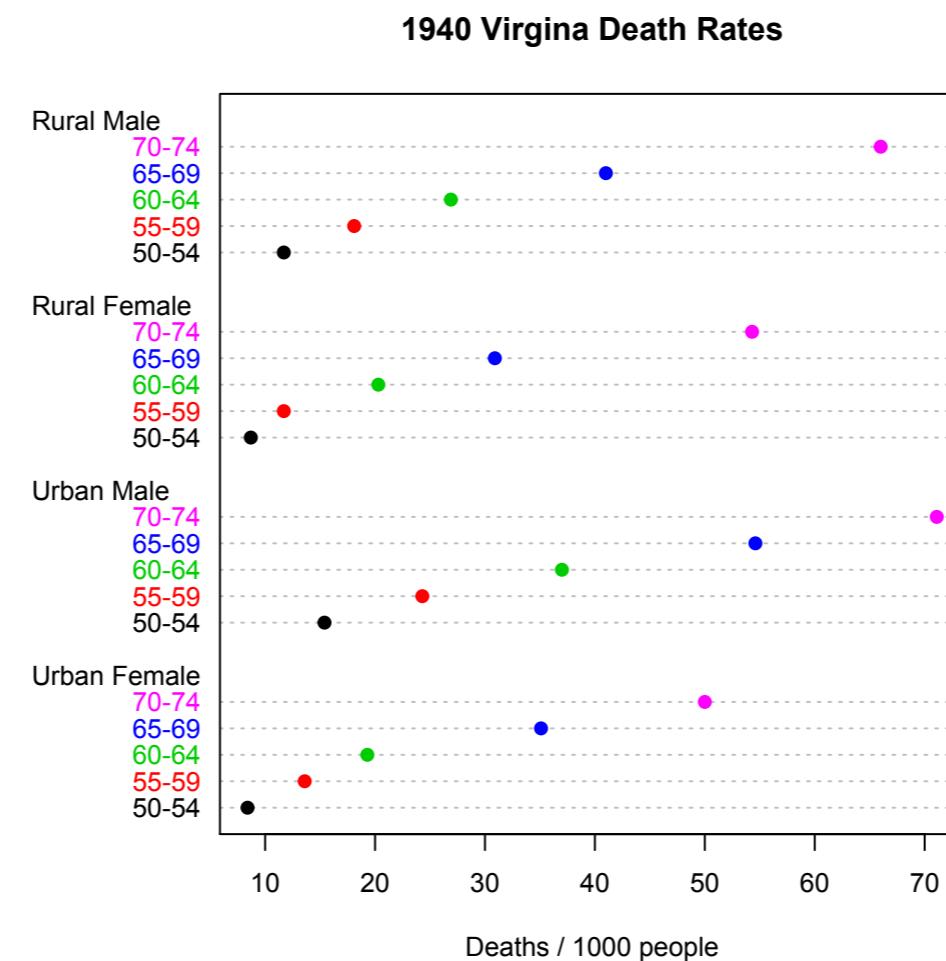
```
coplot(breaks ~ 1:54 | wool * tension, data = warpbreaks, col = 4,  
       ylab = "Number of breaks", xlab = "Index")
```



dotchart()

TOP

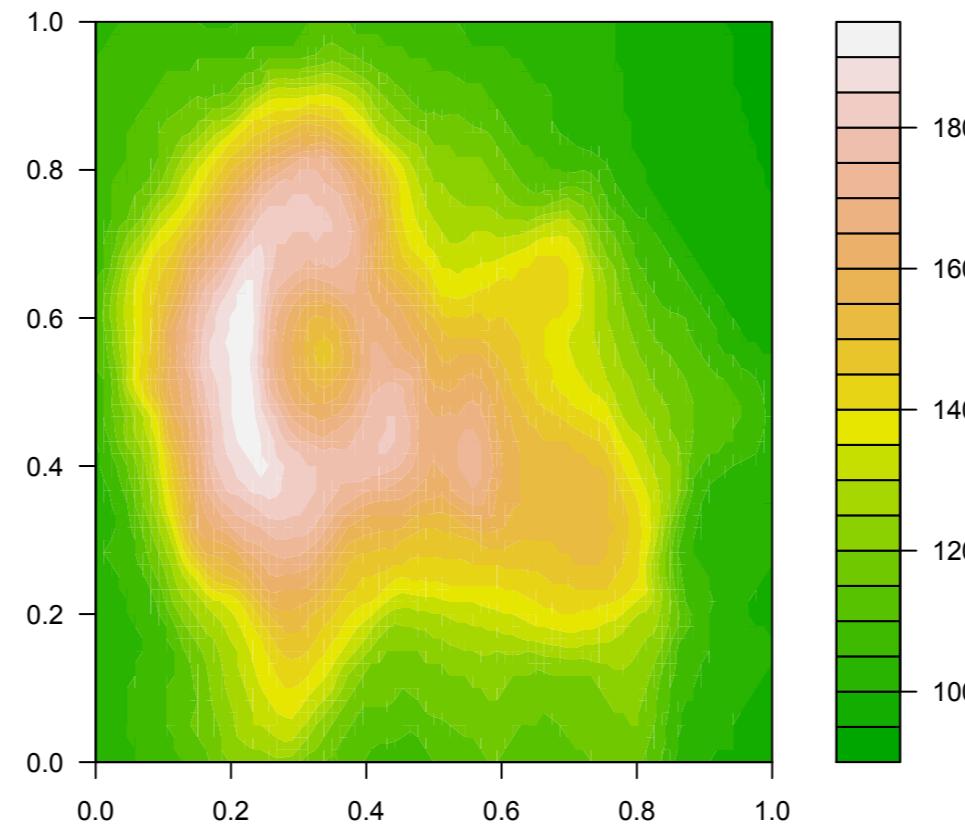
```
dotchart(VADeaths, xlab = "Deaths / 1000 people",
         main = "1940 Virginia Death Rates", col = c(1, 2, 3, 4, 6),
         pch = 19)
```



filled.contour()

TOP

```
filled.contour(volcano, color = terrain.colors)
```



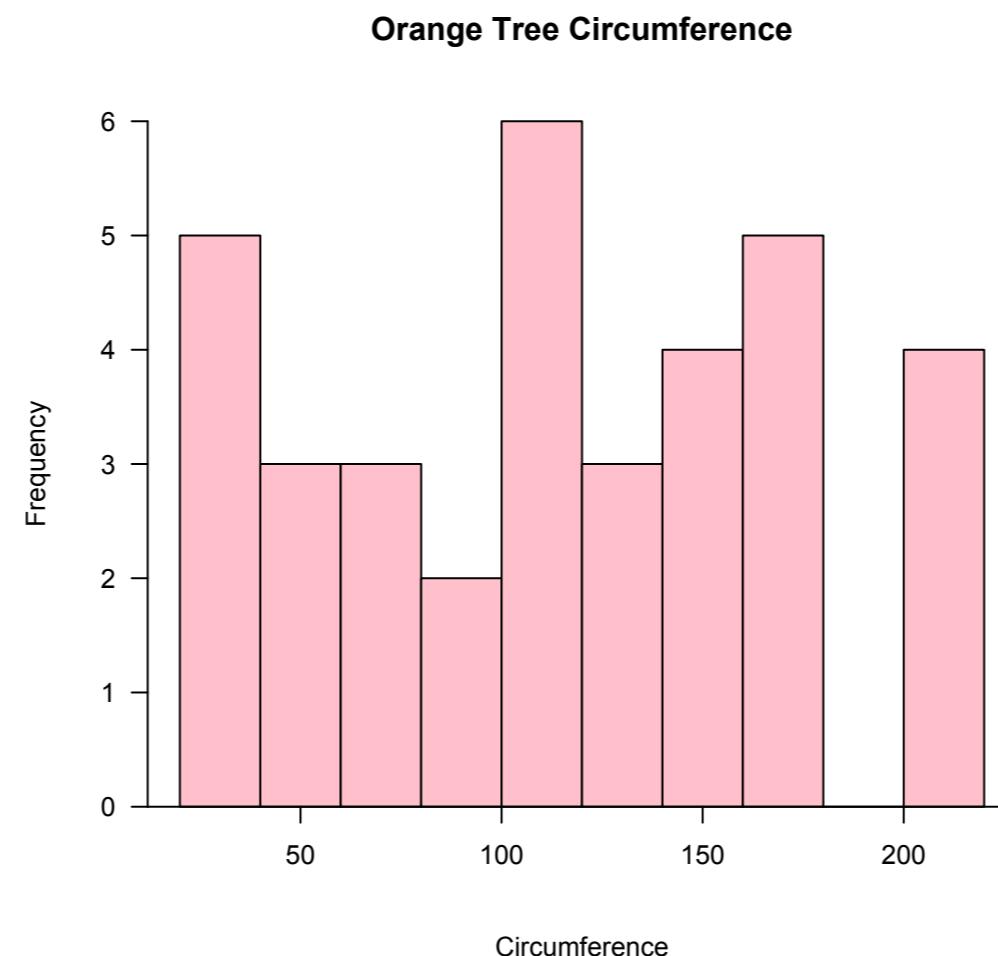
hist()

TOP

```
hist(Orange$circumference, axes = FALSE,  
     main = "Orange Tree Circumference", col = "pink",  
     xlab = "Circumference")
```

```
# Create your own axes
```

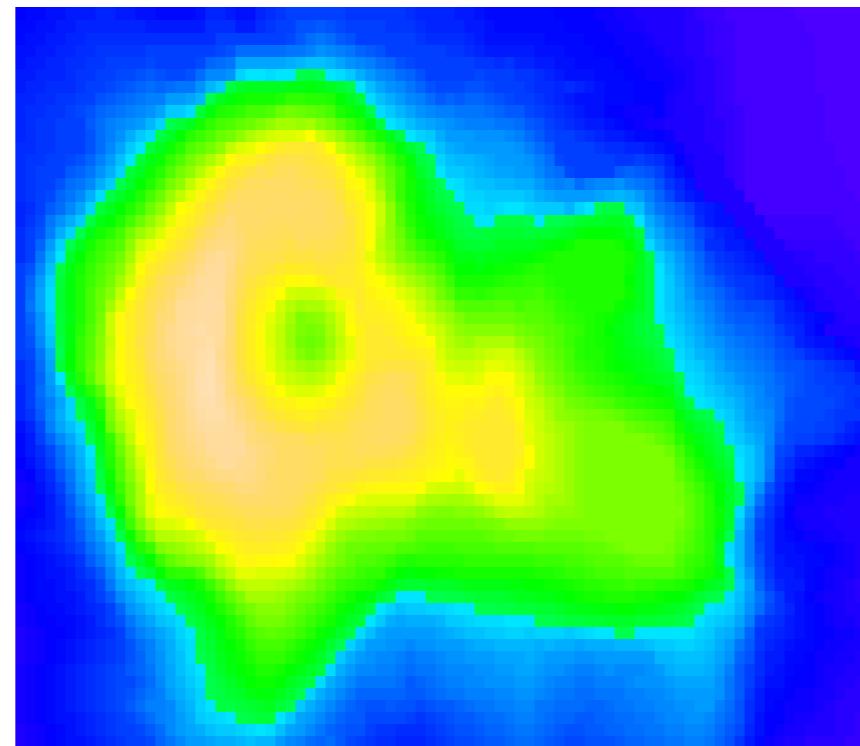
```
axis(side = 1, at = seq(0, 250, 50), pos = 0)  
axis(side = 2, at = seq(0, 6, 1), pos = 12, las = 1)
```



image()

TOP

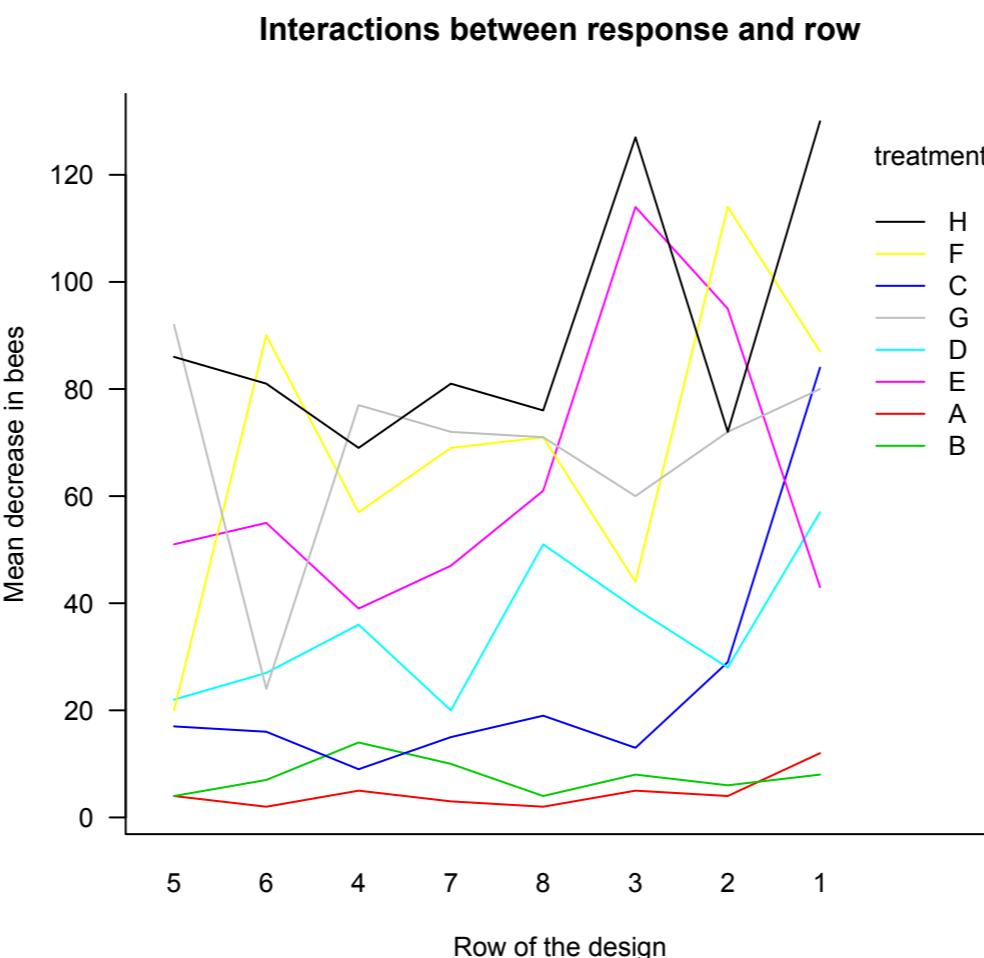
```
image(volcano, col = topo.colors(100), axes = FALSE)
```



interaction.plot()

TOP

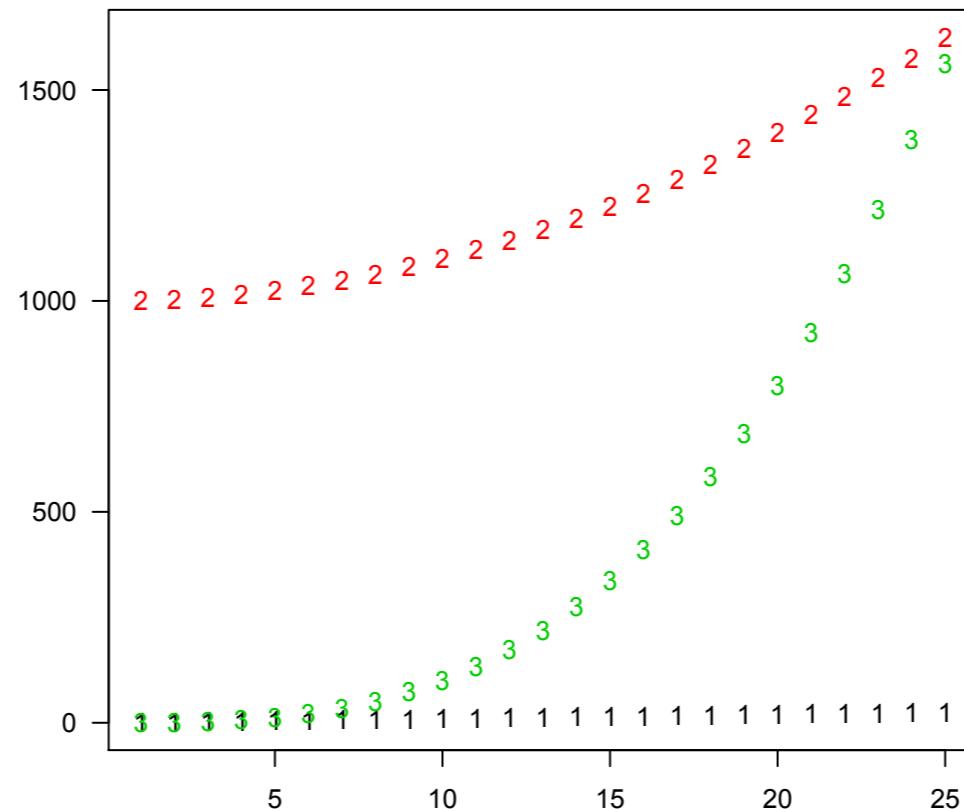
```
with(OrchardSprays, {  
  # order the rows by their mean effect  
  rowpos <- factor(rowpos,  
    levels = sort.list(tapply(decrease, rowpos, mean)))  
  interaction.plot(rowpos, treatment, decrease, col = 2:9,  
    lty = 1, ylab = "Mean decrease in bees", xlab = "Row of the  
    design", las = 1, main = "Interactions between response and  
    row", bty = "l") })
```



matplot()

TOP

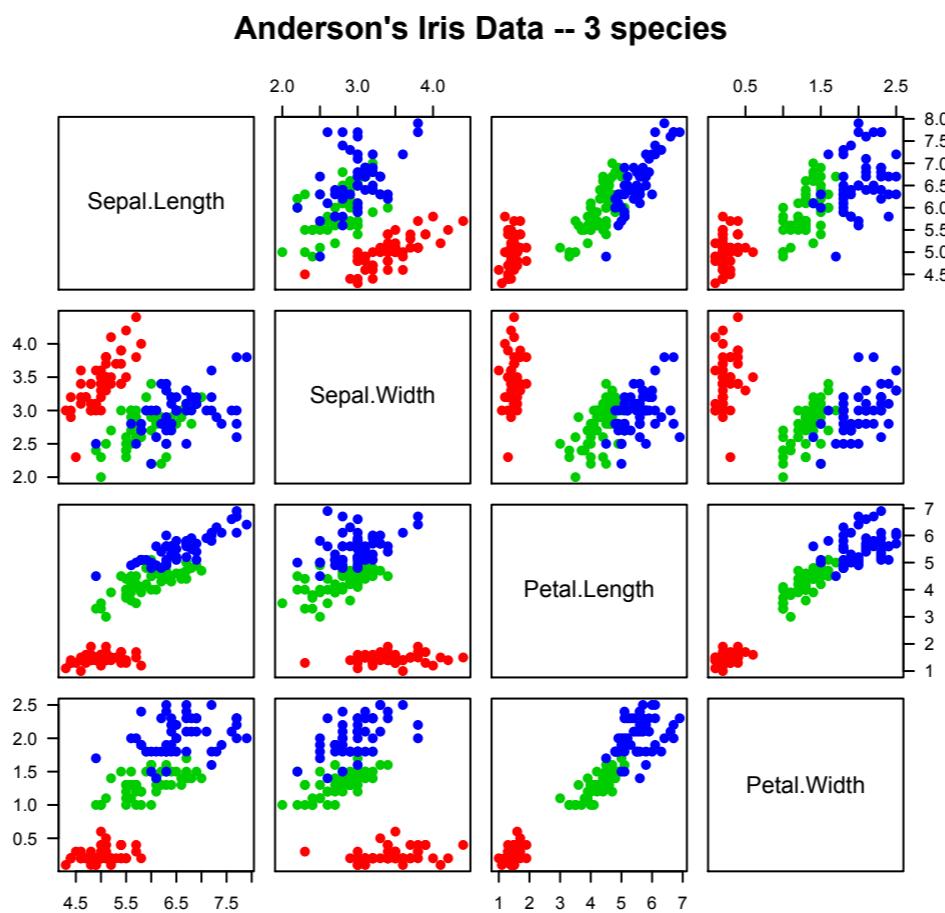
```
x <- 1:25  
y <- x*x+1000  
z <- x*x*x / 10  
mat <- matrix(c(x, y, z), ncol = 3)  
matplot(mat, las = 1, ylab = "")
```



pairs()

TOP

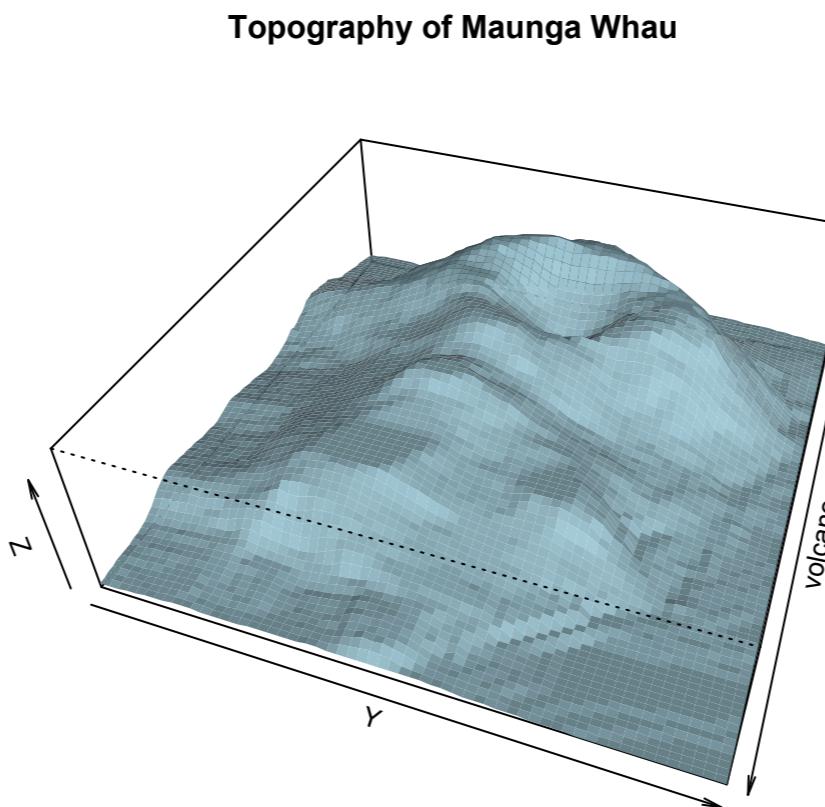
```
pairs(iris[1:4], main = "Anderson's Iris Data -- 3 species",
  pch = 19, col = c("red", "green3", "blue") [unclass(iris
$Species)], las = 1)
```



persp()

TOP

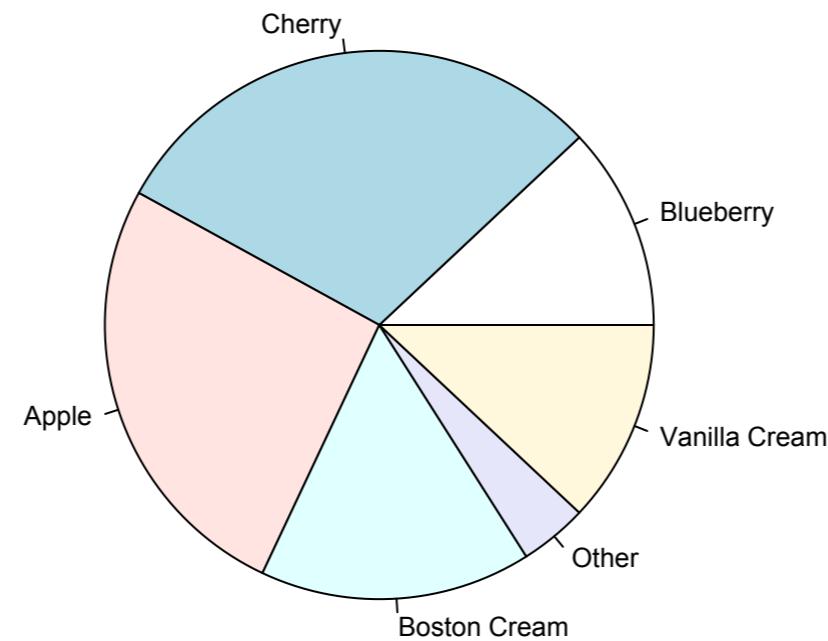
```
persp(volcano, box = TRUE, expand = 0.3, theta = 110, phi = 40,  
      col = "lightblue", ltheta = 120, shade = 0.75, border = NA,  
      main = "Topography of Maunga Whau")
```



pie()

TOP

```
pie.sales <- c(0.12, 0.3, 0.26, 0.16, 0.04, 0.12)
names(pie.sales) <- c("Blueberry", "Cherry", "Apple",
  "Boston Cream", "Other", "Vanilla Cream")
pie(pie.sales) # default colours
```



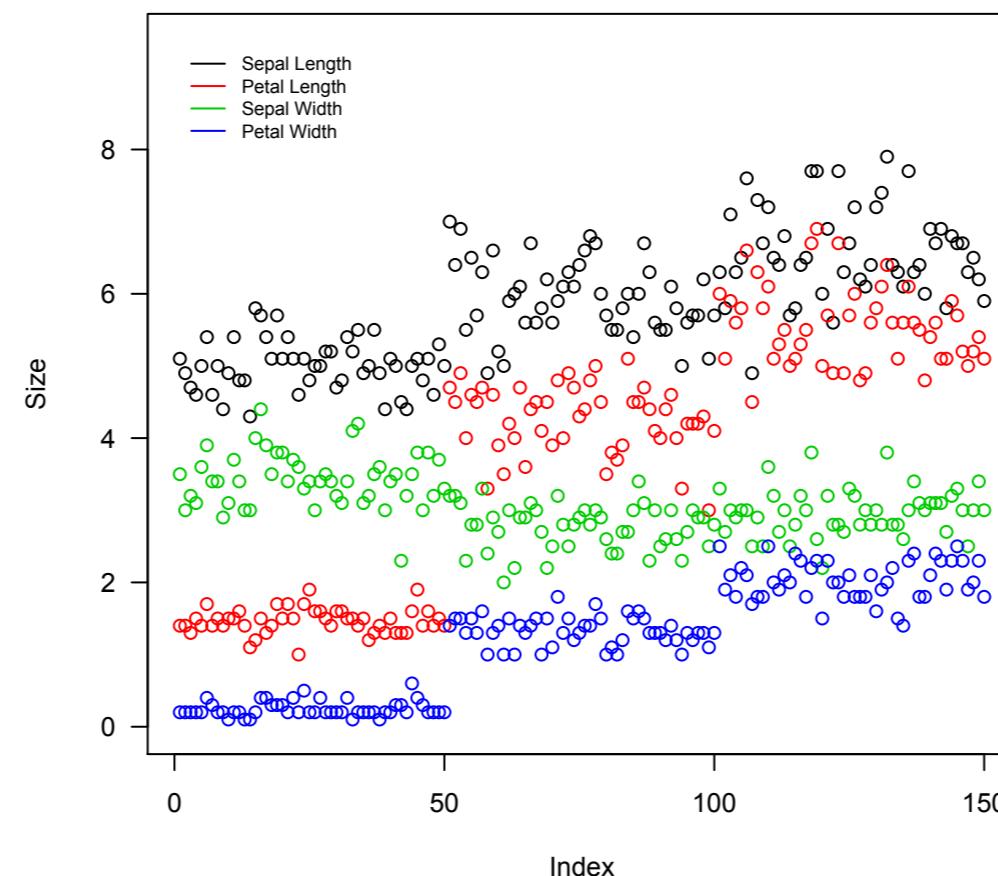
plot()

TOP

```
# Plot with legend
plot(iris$Sepal.Length, ylim = c(0, 9.5), ylab = "Size",
      las = 1, col = 1)

points(iris$Petal.Length, col = 2)
points(iris$Sepal.Width, col = 3)
points(iris$Petal.Width, col = 4)

legend(0, 9.5, legend = c("Sepal Length", "Petal Length",
                           "Sepal Width", "Petal Width"), col = c(1, 2, 3, 4),
       box.lwd = 0, horiz = FALSE, cex = 0.7,
       lty = c(1, 1, 1, 1))
```



plot()

TOP

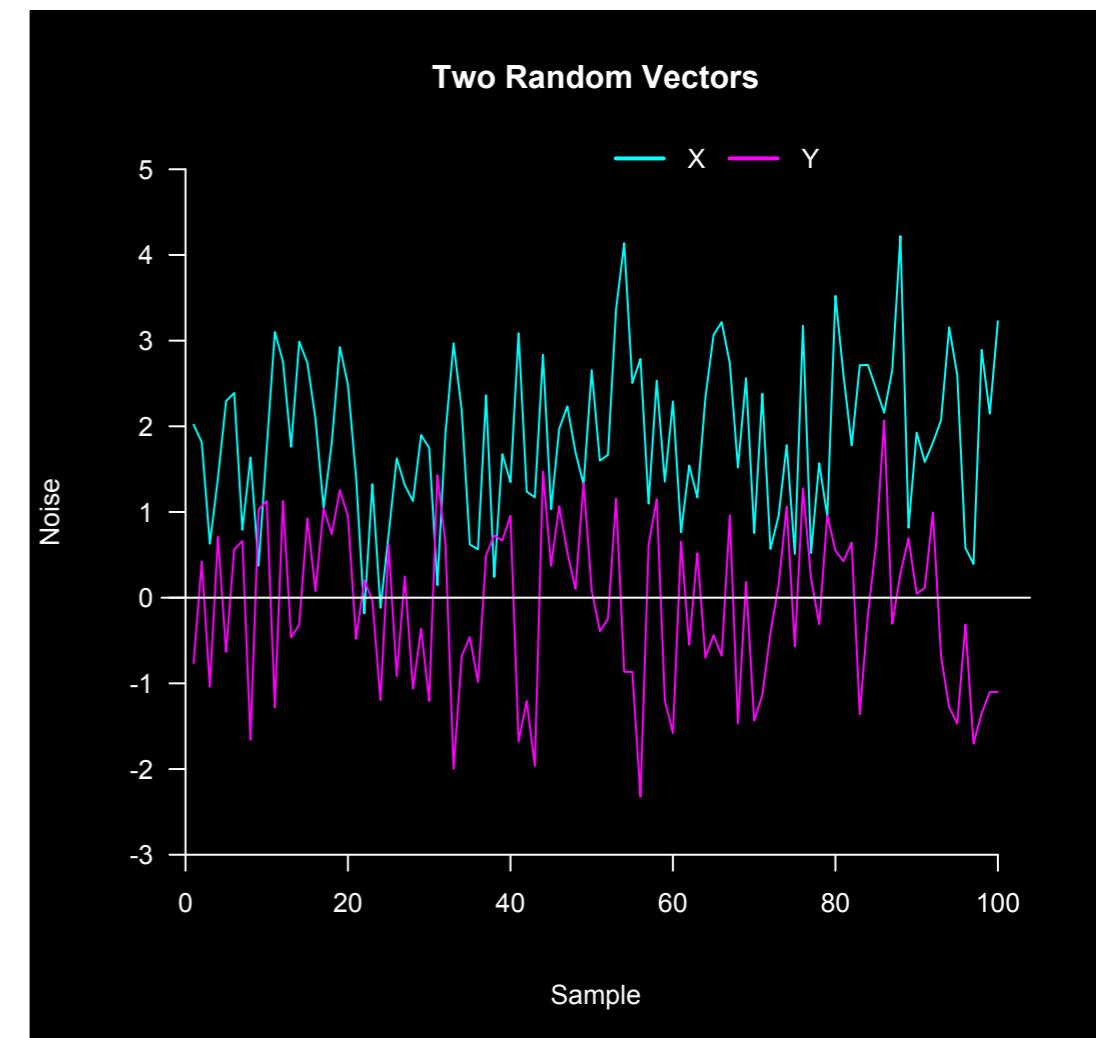
```
# Create some data
set.seed(10)
x <- rnorm(100) + 2
y <- rnorm(100)

# Set parameters
par(bg = "black", fg = "white", col.axis = "white",
     col.lab = "white", col.main = "white")

# Plot data
plot(x, type = "l", col = 5, ylim = c(-3,5), ylab = "", xlab = "",
      axes = FALSE)

lines(y, col = 6)
abline(h = 0)
title("Two Random Vectors")
mtext("Noise", side = 2, line = 3)
mtext("Sample", side = 1, line = 3)
axis(side = 1, at = seq(0, 100, 20), pos = -3)
axis(side = 2, at = seq(-3, 5, 1), pos = 0, las = 1)

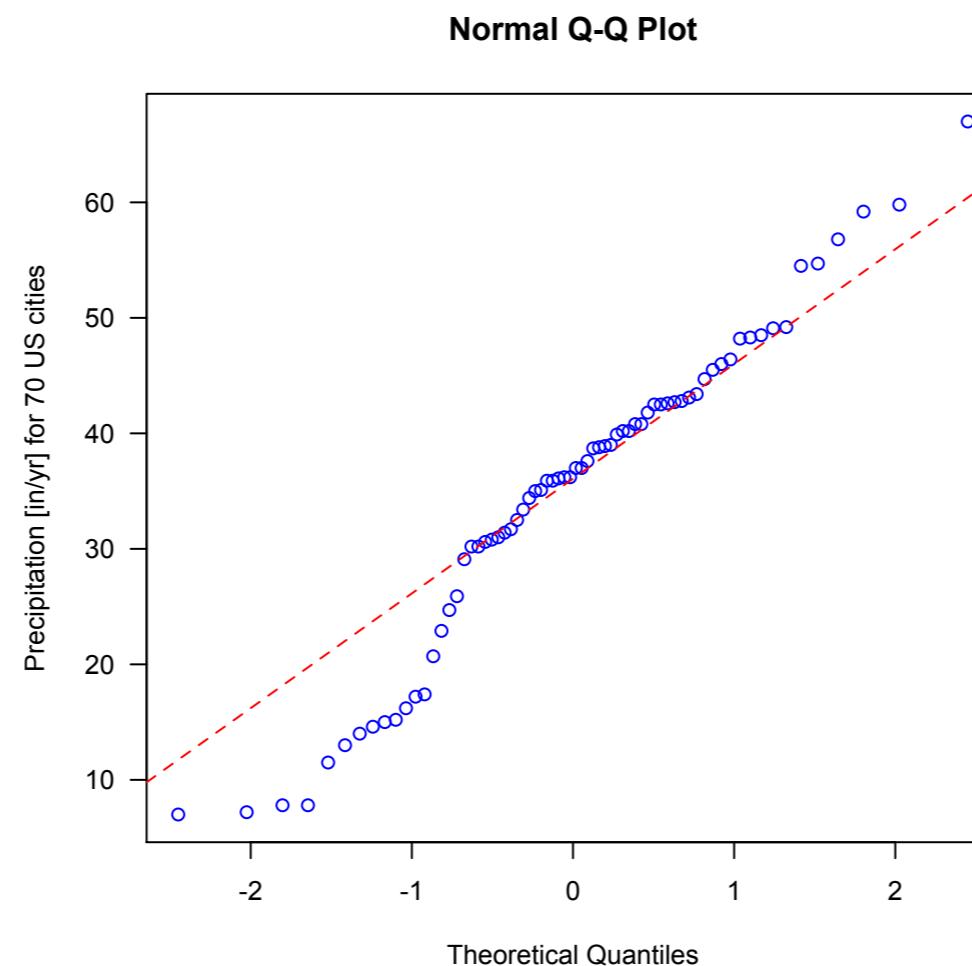
legend(50, 5.5, legend = c("X", "Y"), horiz = TRUE,
       col = c(5, 6), lty = c(1, 1), lwd = 2, box.lwd = 0,
       bty = "n")
```



qqnorm()

TOP

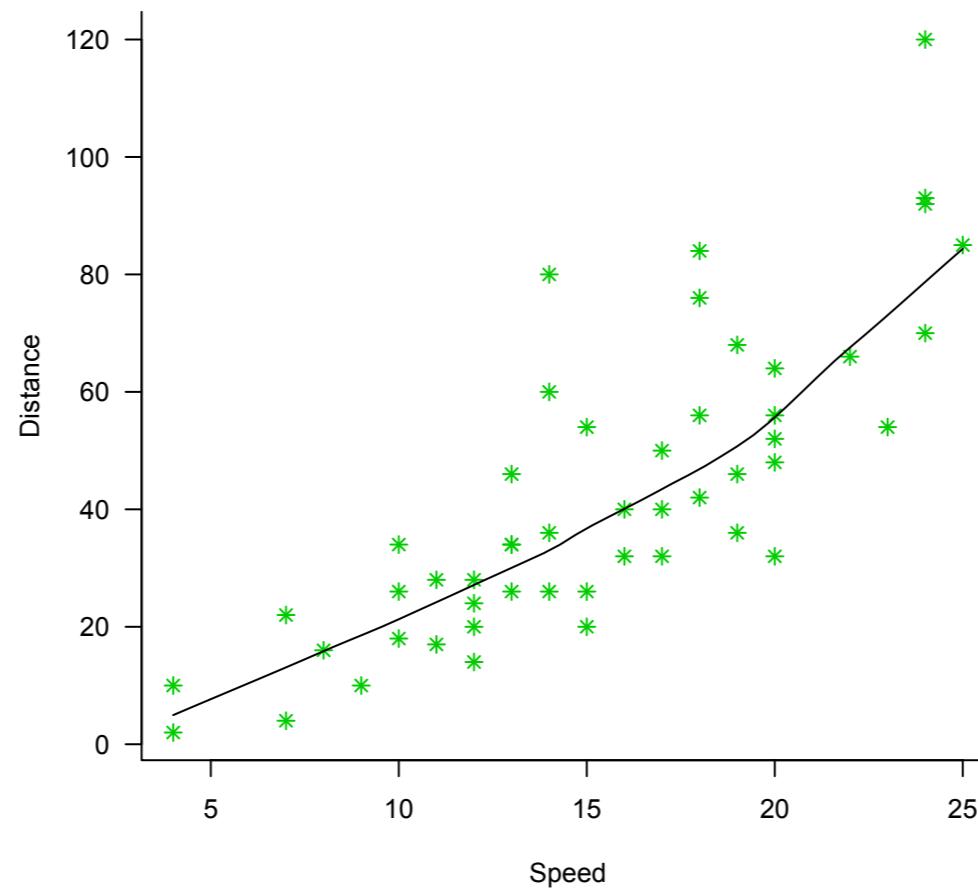
```
qqnorm(precip, ylab = "Precipitation [in/yr] for 70 US cities",
       col = 4, las = 1)
qqline(precip, lty = 2, col = 2)
```



scatter.smooth()

TOP

```
scatter.smooth(cars$speed, cars$dist, col = 3, las = 1,  
ylab = "Distance", xlab = "Speed", bty = "l", pch = 8)
```



stars()

TOP

```
stars(mtcars[1:7, 1:7], len = 0.8, key.loc = c(6, 2),  
main = "Motor Trend Cars", draw.segments = TRUE,  
full = FALSE)
```

