ISLR (2nd Edition)

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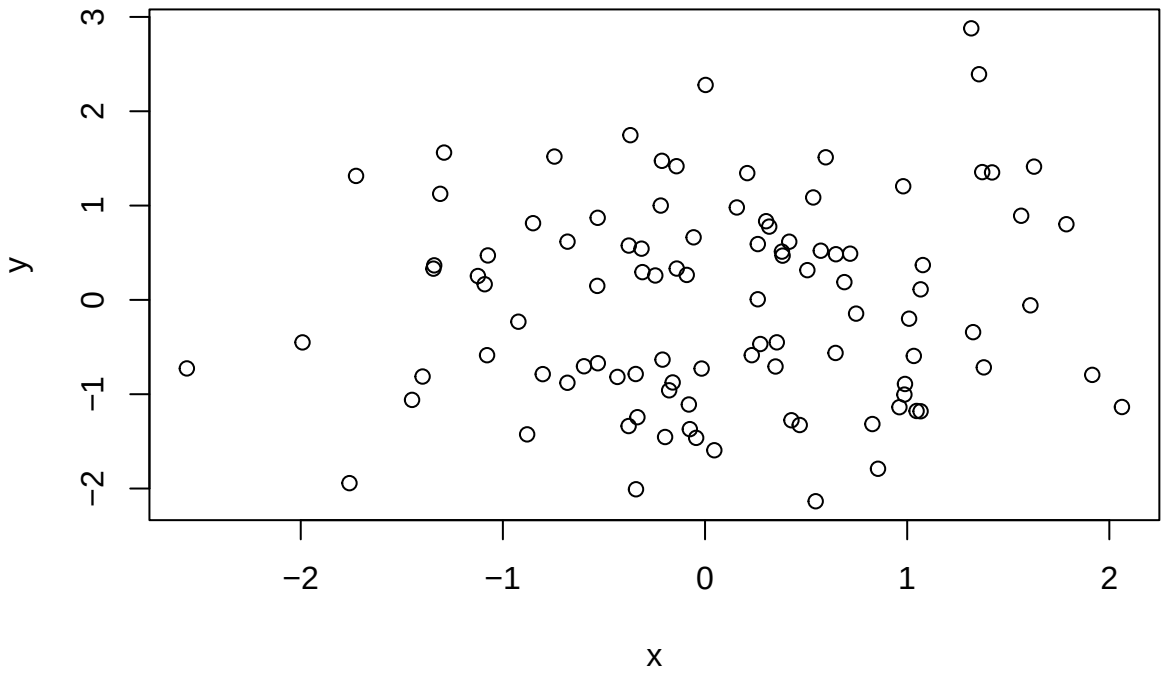
Contents

Graphics

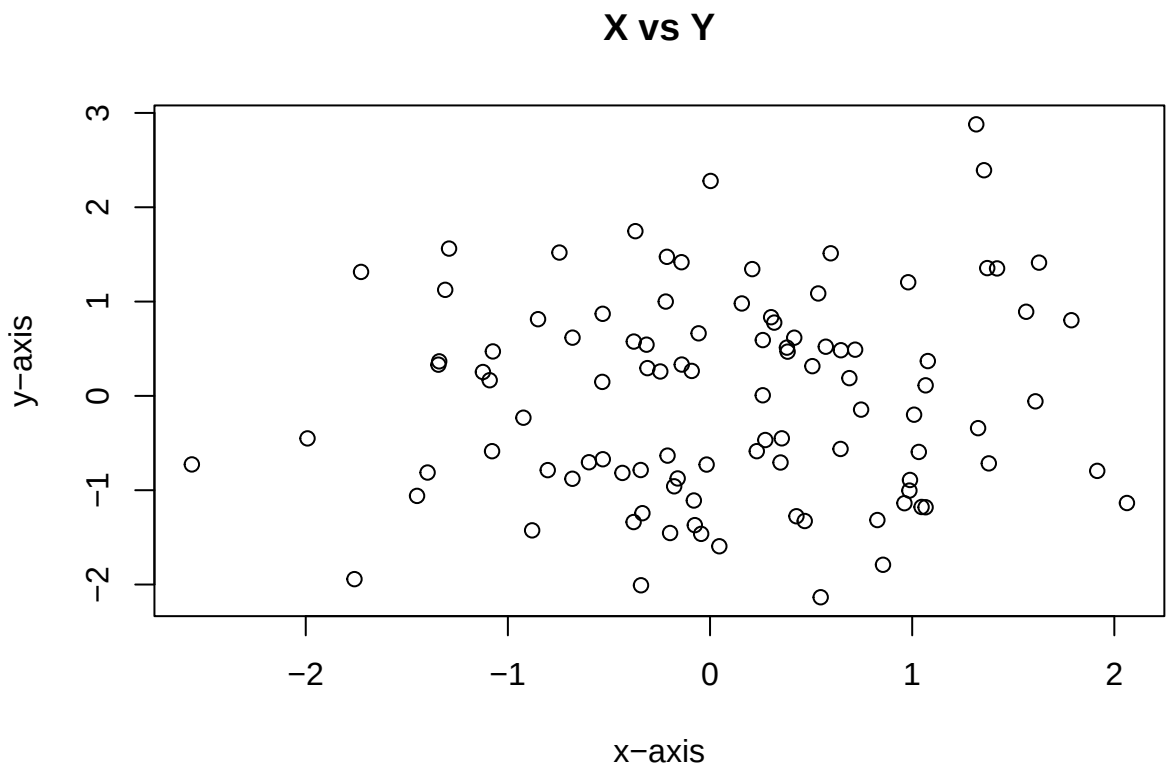
Plotting X vs Y data points

```
x <- rnorm(100)
y <- rnorm(100)

plot(x, y)
```




```
plot(x, y,
     xlab = "x-axis",
     ylab = "y-axis",
     main = "X vs Y"
     )
```



Saving the output of an R plot

```
pdf("figure.pdf")
plot(x, y, col = 'green')
dev.off()
```

```
## pdf
##   2
```

using seq() to create a sequence of numbers

```
x <- seq(1, 10)
print(x)
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```
x <- 1:10
print(x)
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```
x <- seq(-pi, pi, length = 50)
print(x)
```

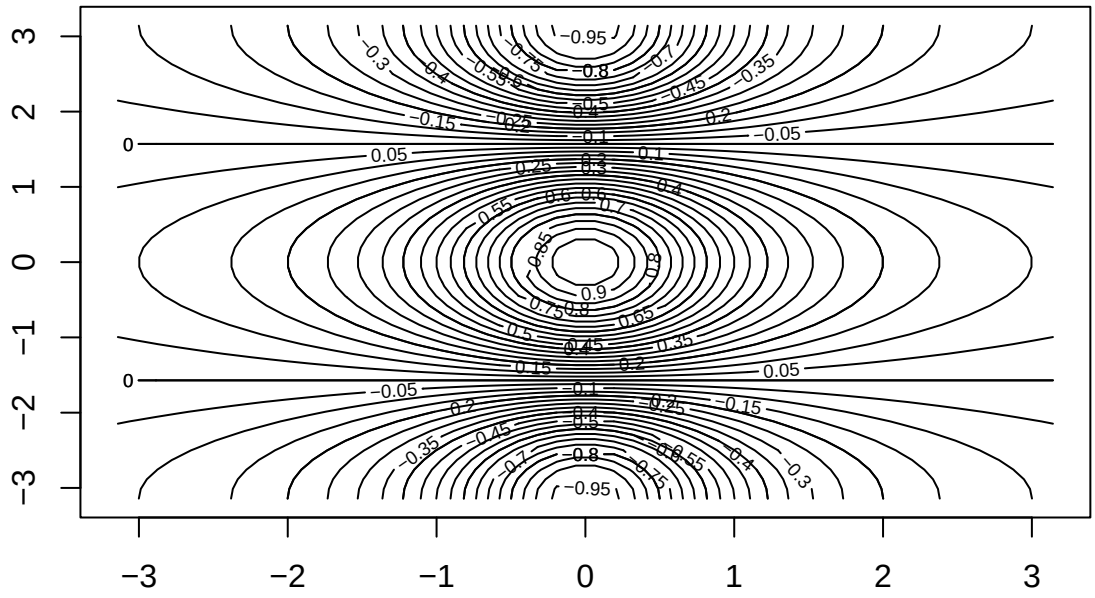
```
##  [1] -3.14159265 -3.01336438 -2.88513611 -2.75690784 -2.62867957 -2.50045130
##  [7] -2.37222302 -2.24399475 -2.11576648 -1.98753821 -1.85930994 -1.73108167
## [13] -1.60285339 -1.47462512 -1.34639685 -1.21816858 -1.08994031 -0.96171204
```

```
## [19] -0.83348377 -0.70525549 -0.57702722 -0.44879895 -0.32057068 -0.19234241
## [25] -0.06411414  0.06411414  0.19234241  0.32057068  0.44879895  0.57702722
## [31]  0.70525549  0.83348377  0.96171204  1.08994031  1.21816858  1.34639685
## [37]  1.47462512  1.60285339  1.73108167  1.85930994  1.98753821  2.11576648
## [43]  2.24399475  2.37222302  2.50045130  2.62867957  2.75690784  2.88513611
## [49]  3.01336438  3.14159265
```

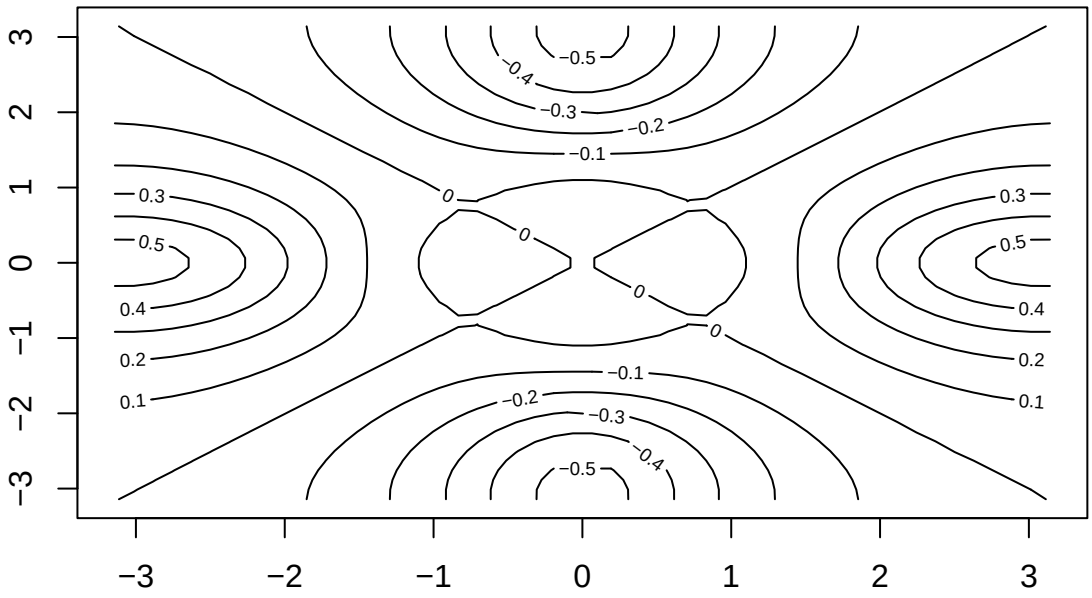
using contour() function to produce three-dimensional graph

```
y <- x
f <- outer(x, y, function(x, y) cos(y) / (1 + x^2))
contour(x,y, f)

contour(x, y, f, nlevels = 45, add = T )
```

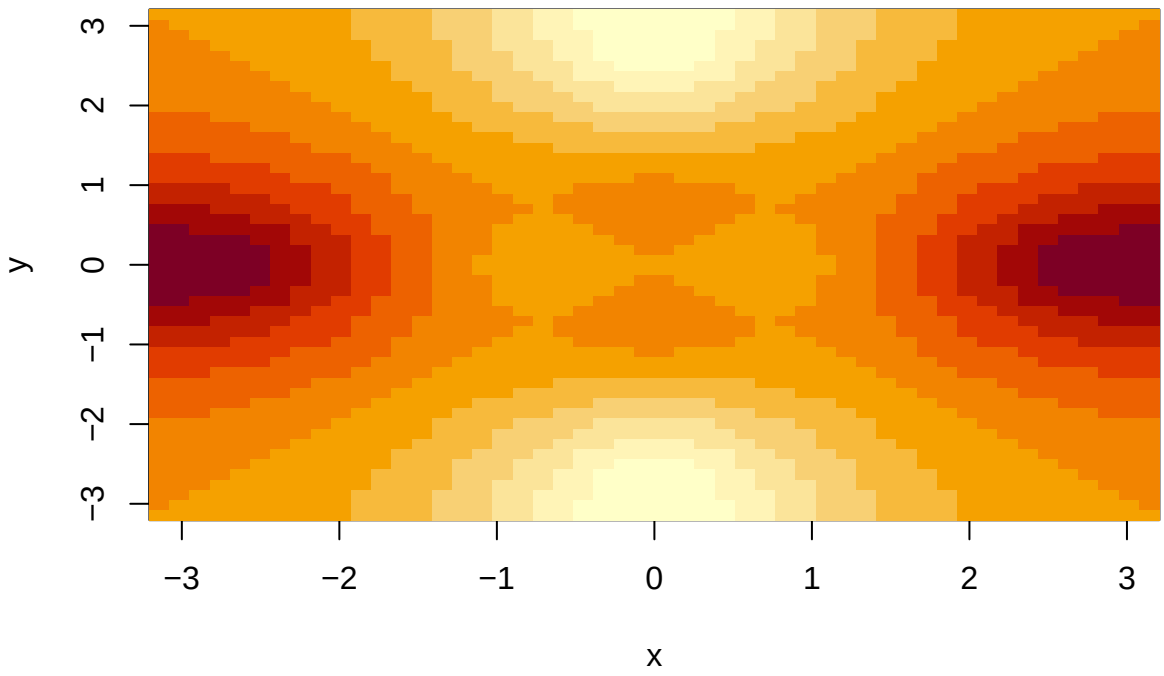



```
fa <- (f-t(f)) / 2
contour(x,y, fa, nlevels = 15)
```

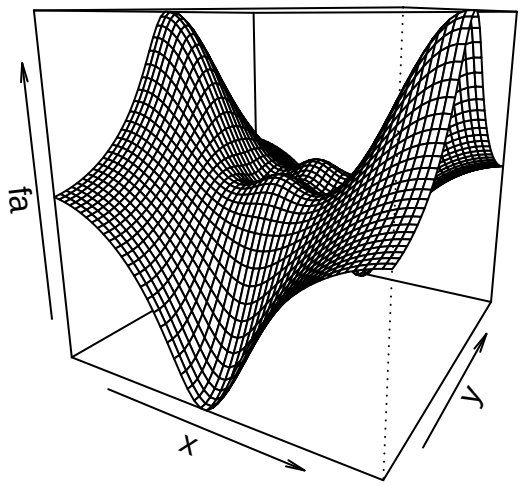


using image() function to produce a color-coded plot

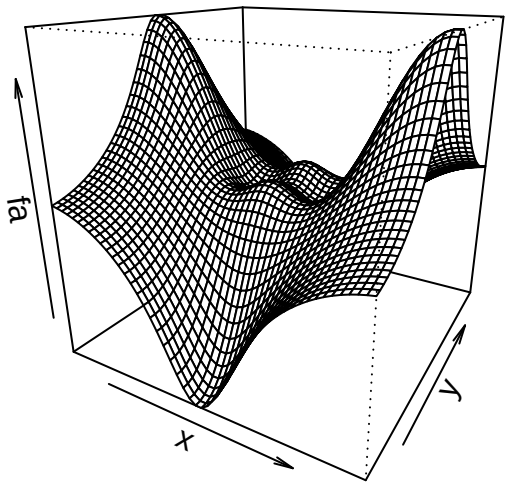
```
image(x, y, fa)
```



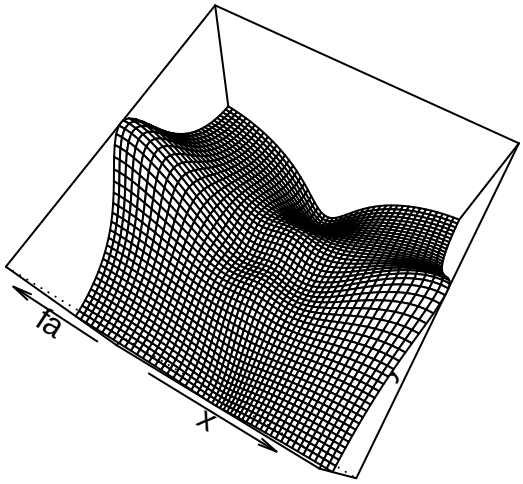

```
persp(x, y, fa, theta = 30)
```



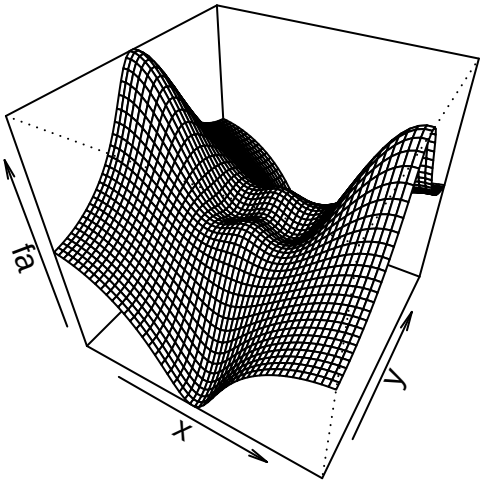

```
persp(x, y, fa, theta = 30, phi = 20)
```




```
persp(x, y, fa, theta = 30, phi = 70)
```




```
persp(x, y, fa, theta = 30, phi = 40)
```



Indexing Data