```
rm(list = ls())
df <- read.table("non_linear_1.txt", header=T)
head(df)
```

```
##          y x
## 1 97.58776 1
## 2 97.76344 2
## 3 96.56705 3
## 4 92.52037 4
## 5 91.15097 5
## 6 95.21728 6
```

```
source("nonlinear.R")
b<-c(96, .009, 103, 106, 1000, 72, 151, 1000)

rm(H);options(scipen= 999)
```

```
## Warning in rm(H): object 'H' not found
```

```
H<-hessian.L(df$x, df$y, b)

#four negative eigenvalues
eigen(H)$values
```

```
## [1] 35885151355.3719864         863.8721834           1.2919324
## [4]          -0.2220951          -0.6335188         -11.2561290
## [7]         -15.5046647        -140.9075875
```

```
 A<-H+ diag(dim(H)[1])*(-min(eigen(H)$values )+1)

#no negative eigenvalues
eigen(A)$values
```

```
## [1] 35885151497.2796        1005.7798         143.1995         141.6855
## [5]         141.2741         130.6515         126.4029           1.0000
```