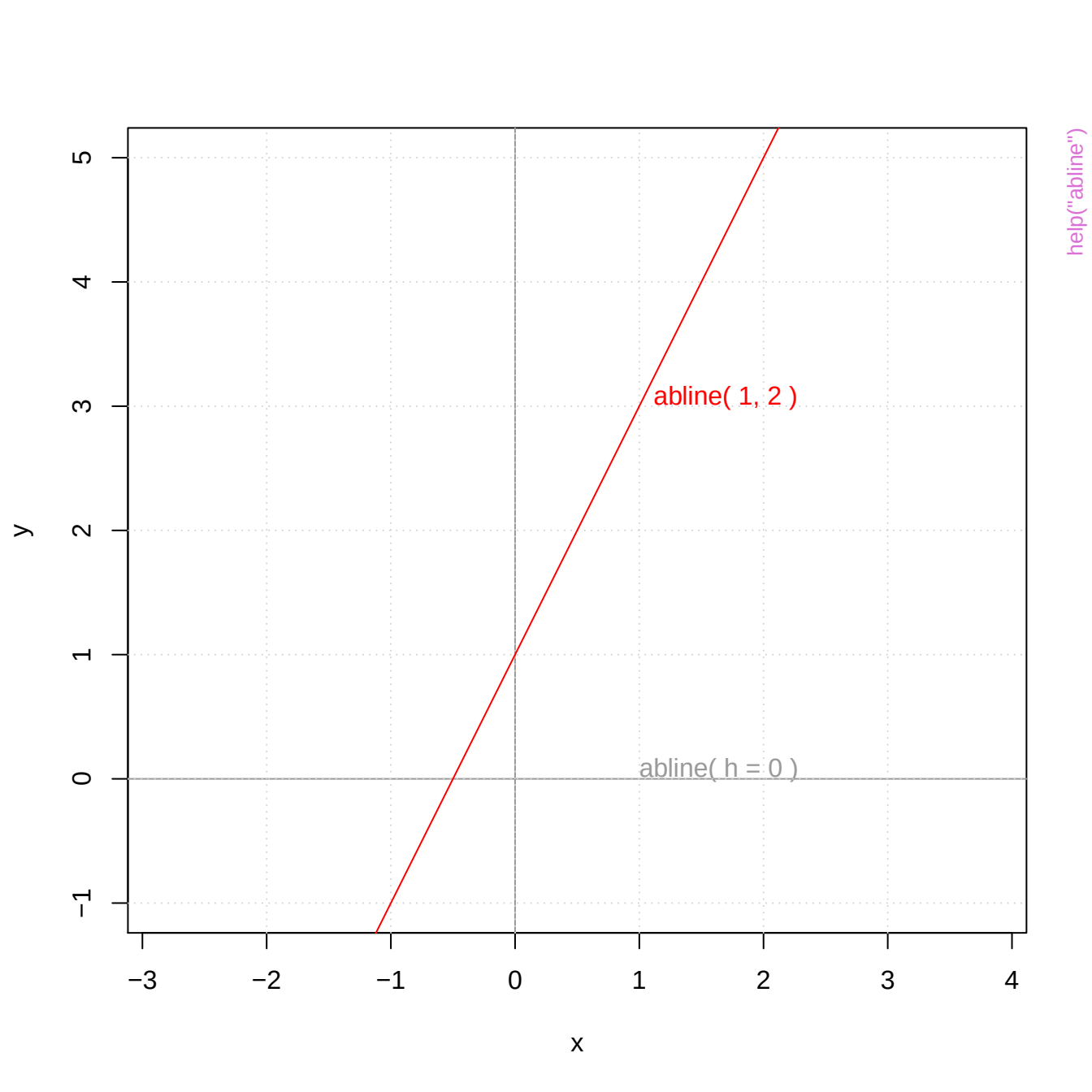
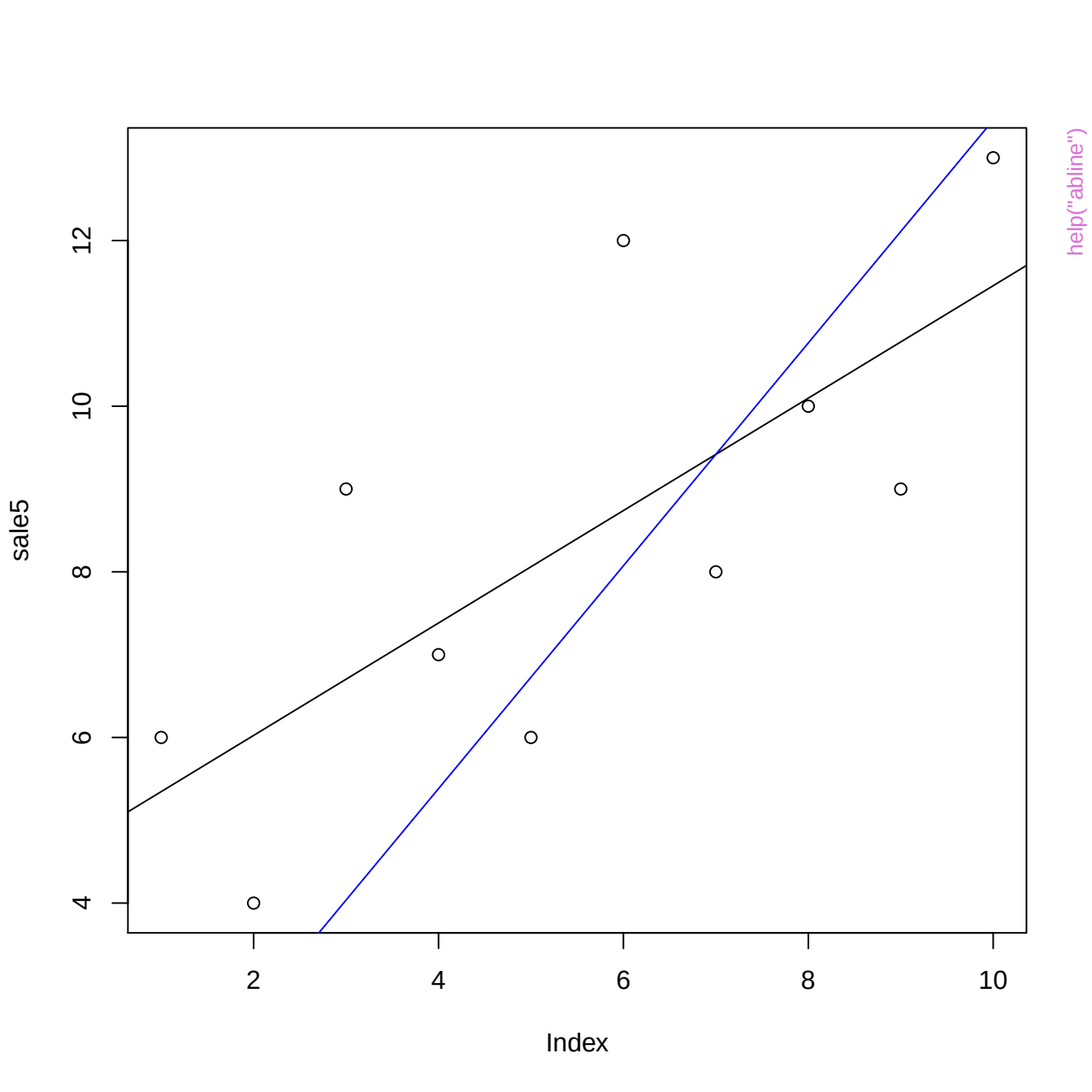
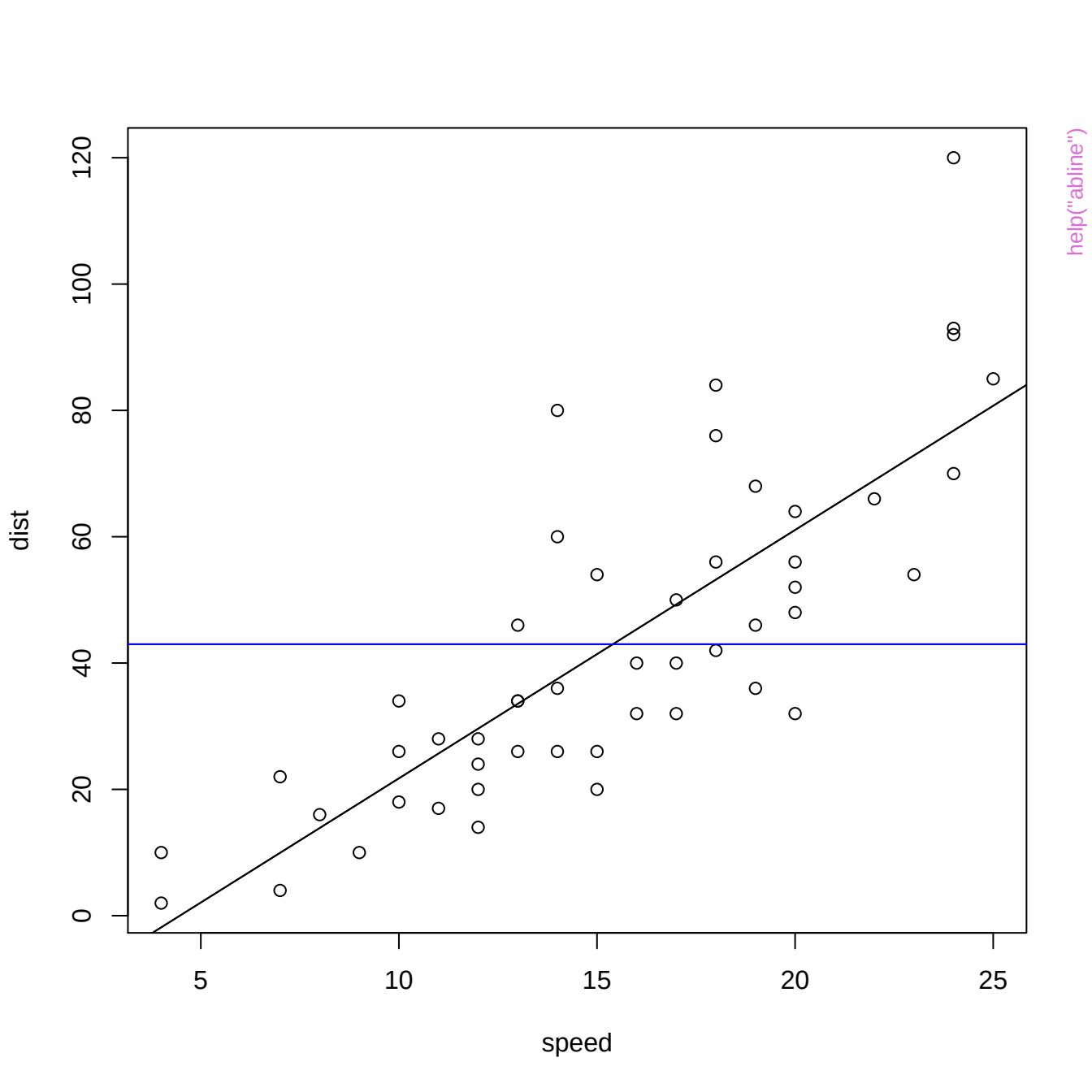
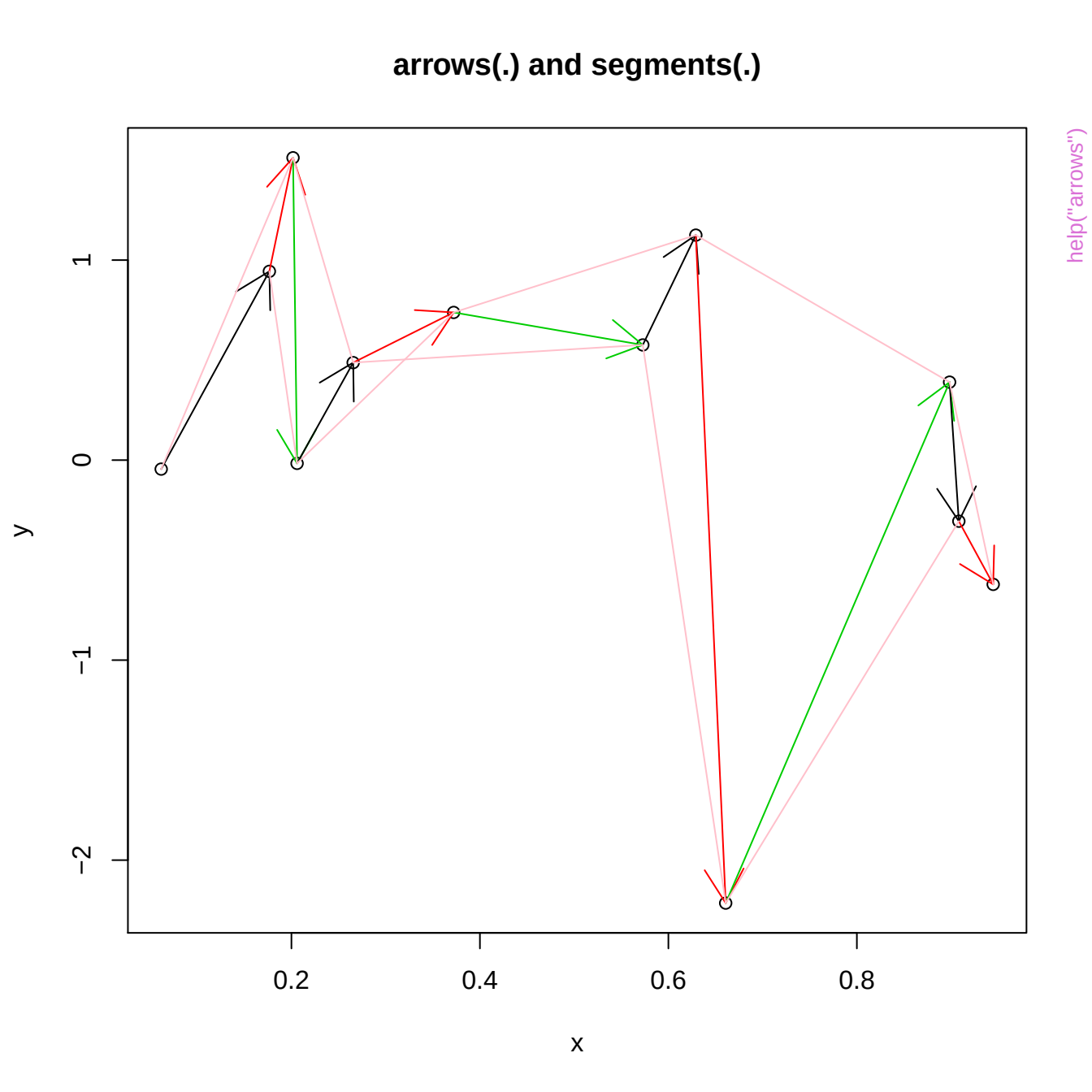
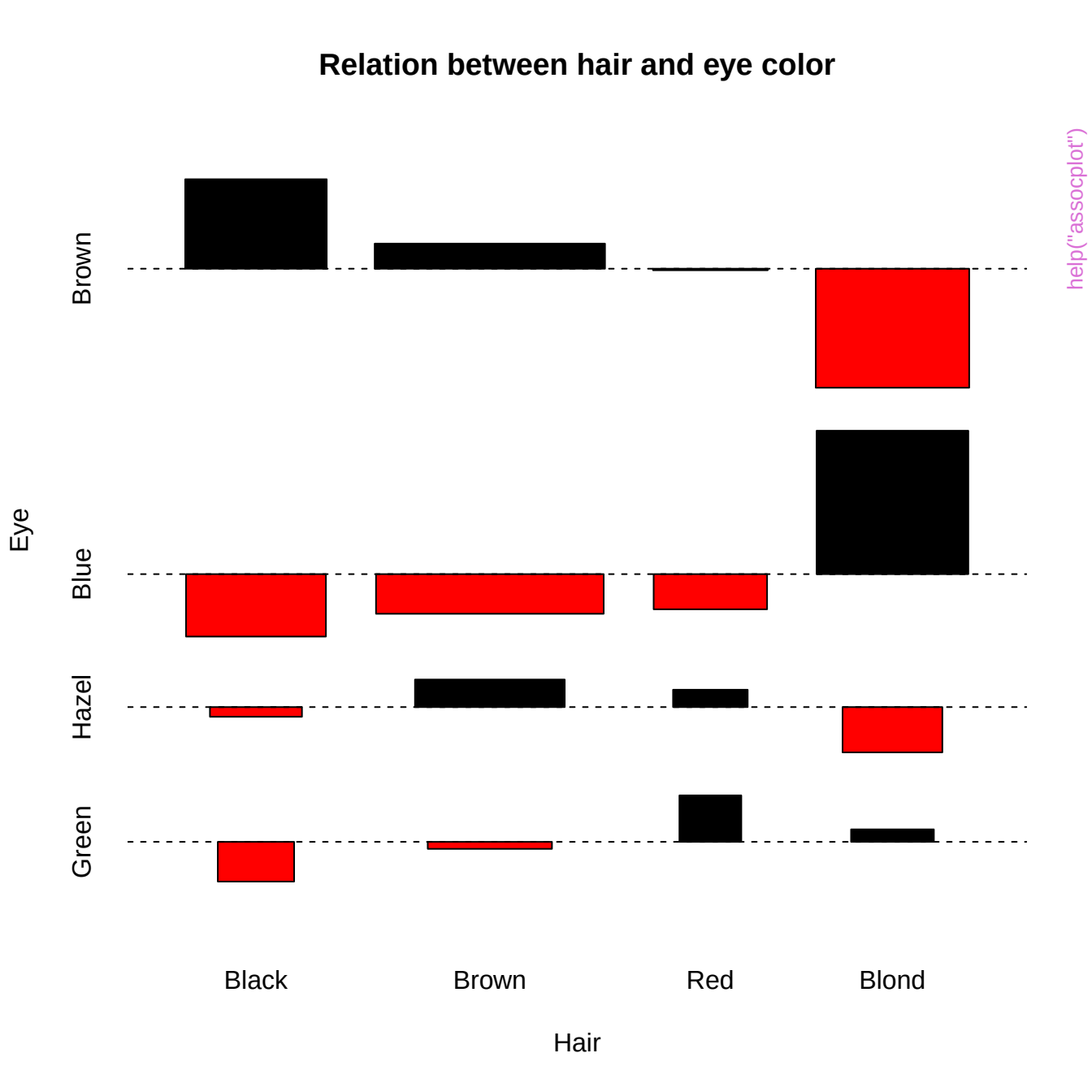
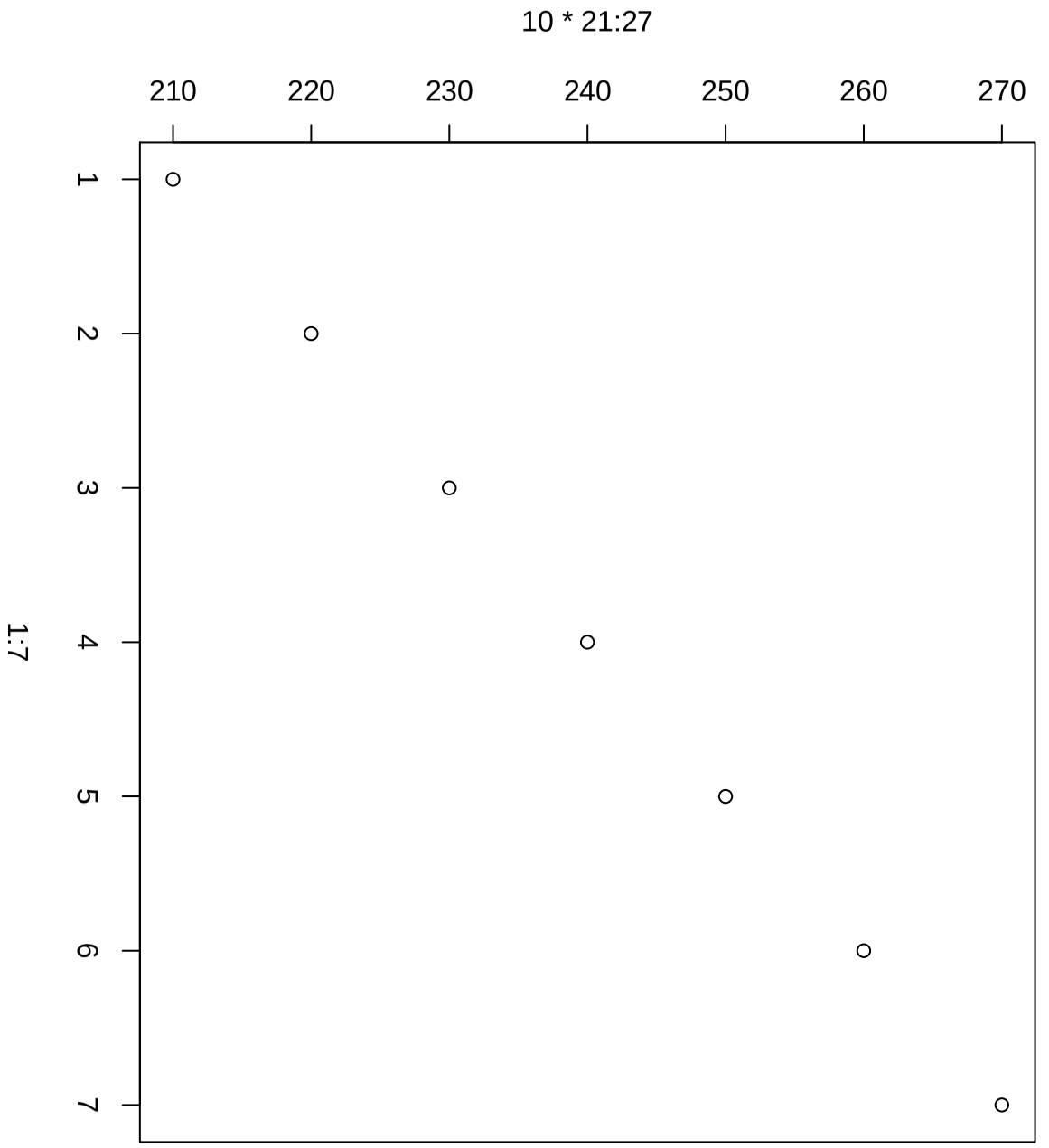

help("abline")
abline(1, 2)
abline(h = 0)
y
x
5
4
3
2
1
0
−1
−3
−2
−1
0
1
2
3
4


sale5
Index
4
6
8
10
12
2
4
6
8
10
help("abline")

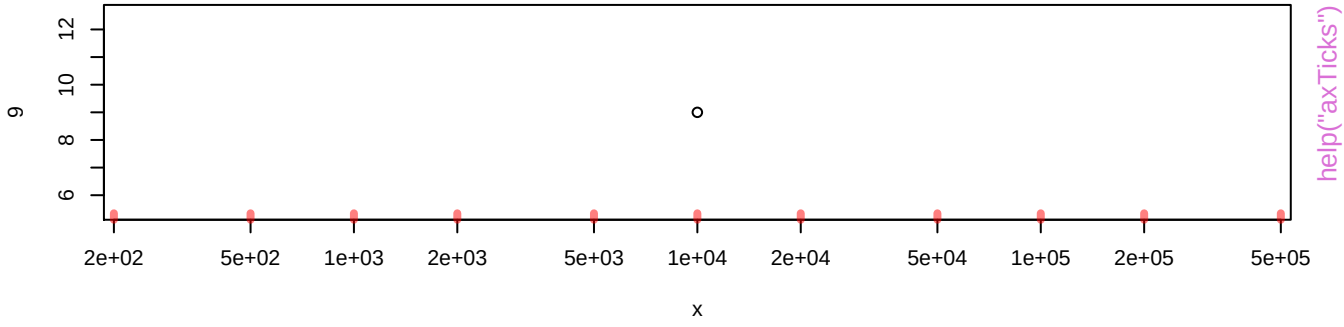

dist
speed
0
20
40
60
80
100
120
5
10
15
20
25
help("abline")


arrows(.) and segments(.)
help("arrows")
y
x
1
0
−1
−2
0.2
0.4
0.6
0.8

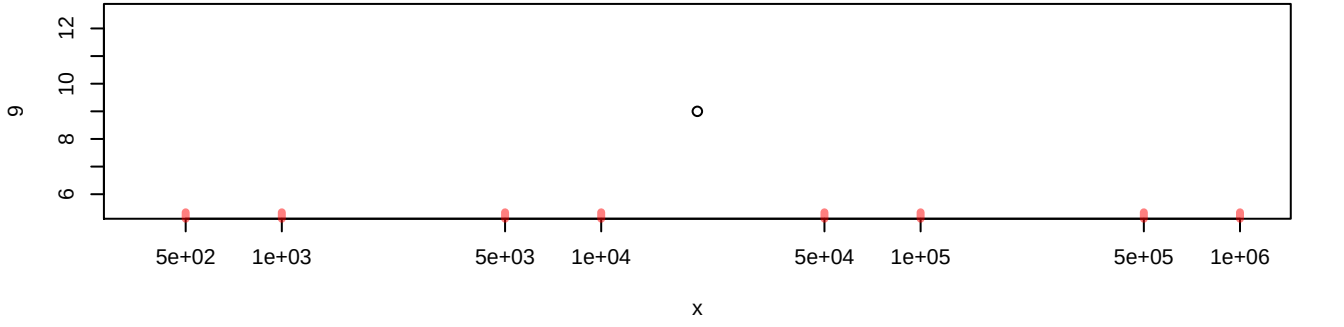

Relation between hair and eye color
help("assocplot")
Eye
Brown
Blue
Hazel
Green
Black
Brown
Red
Blond
Hair

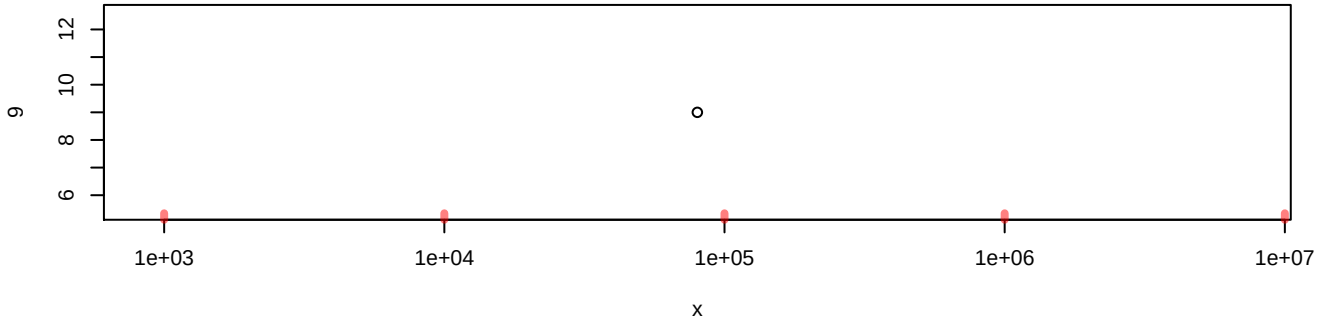


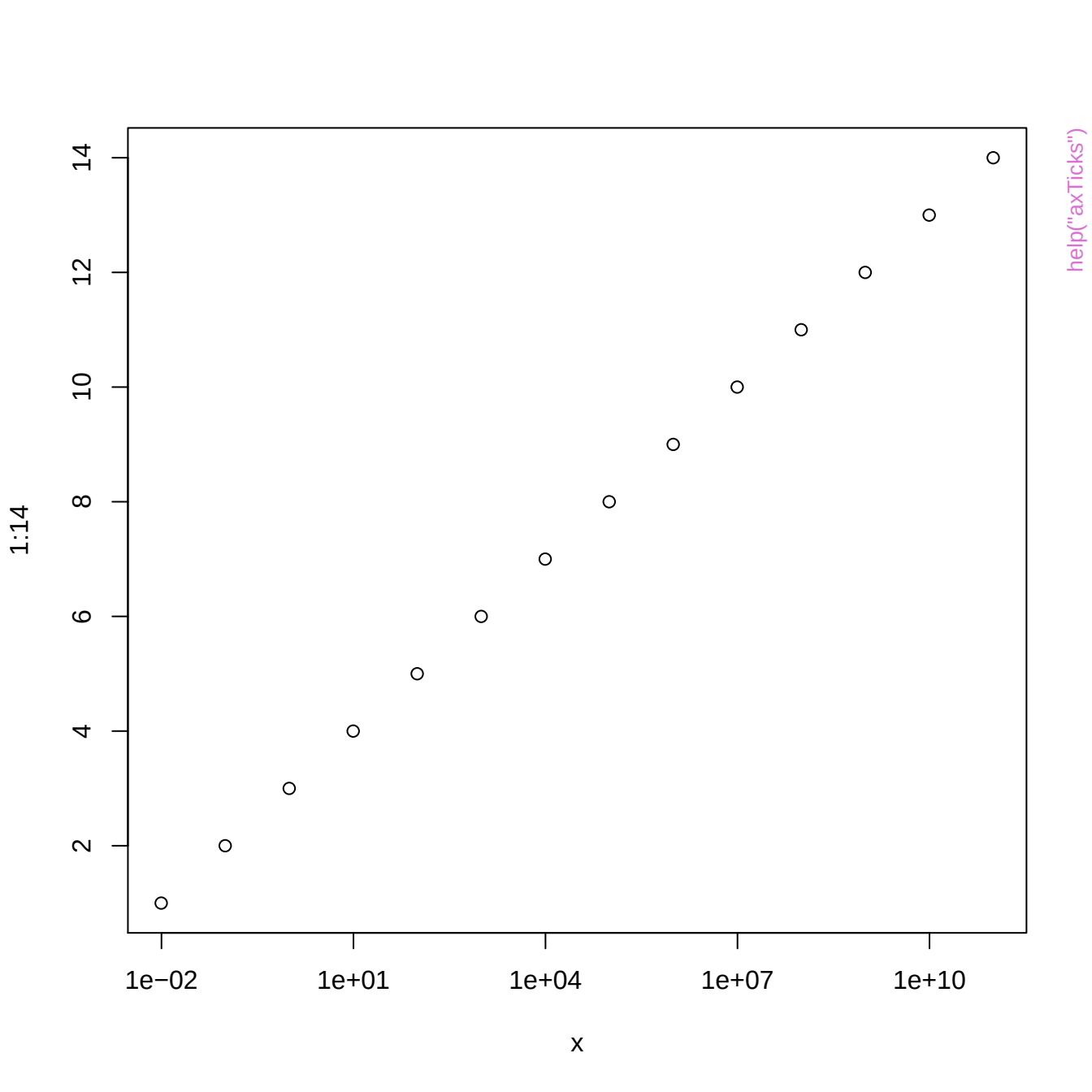
help("axTicks")

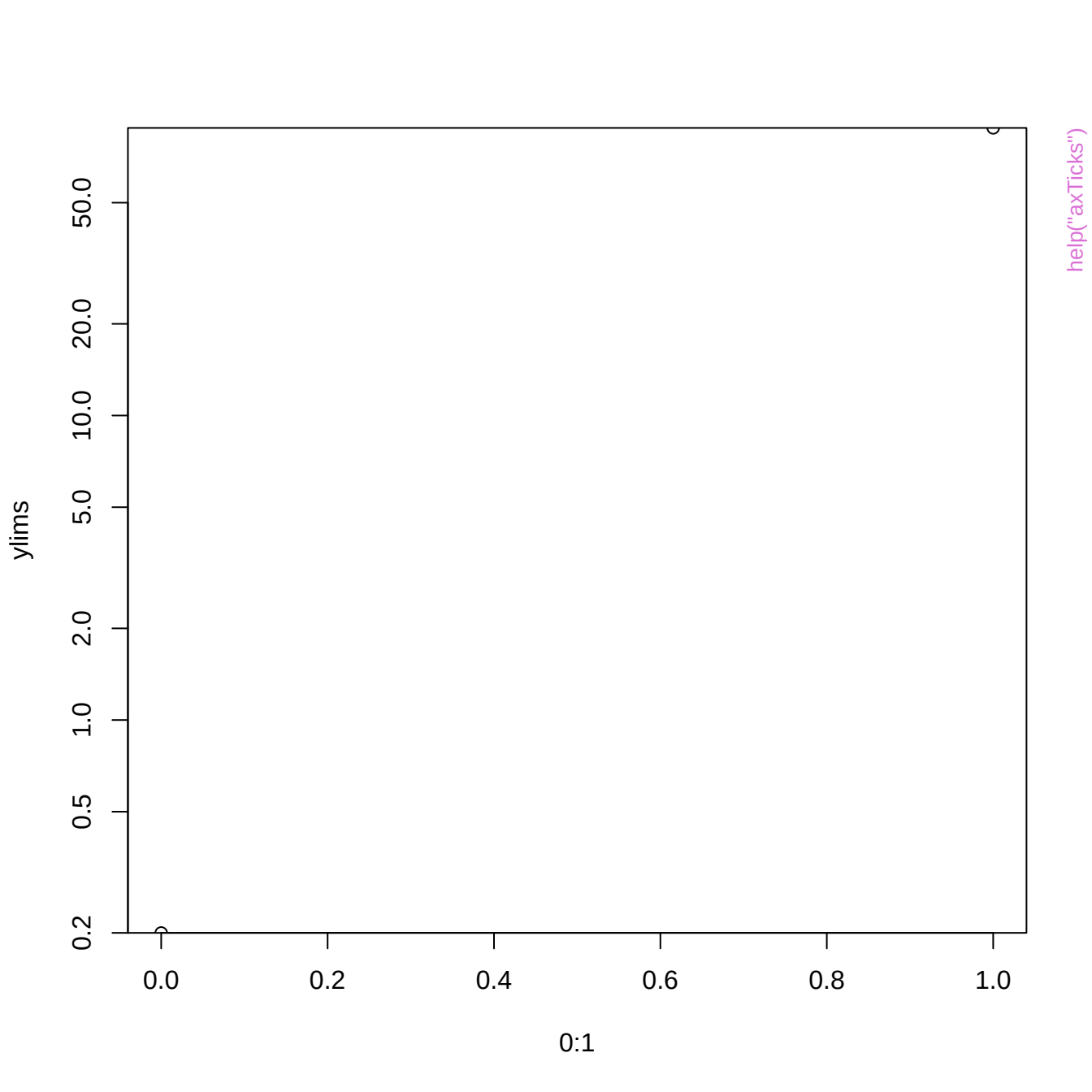


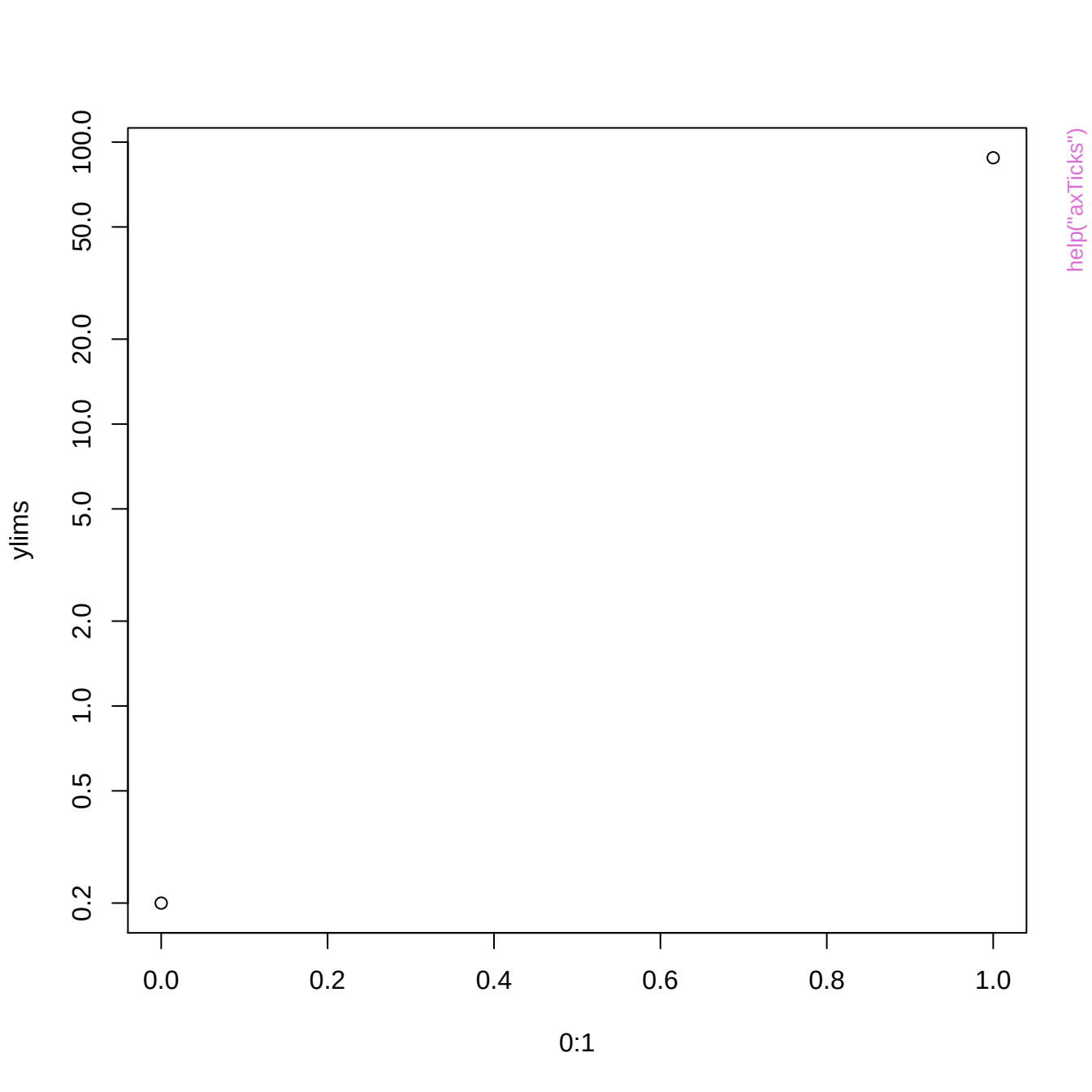
help("axTicks")

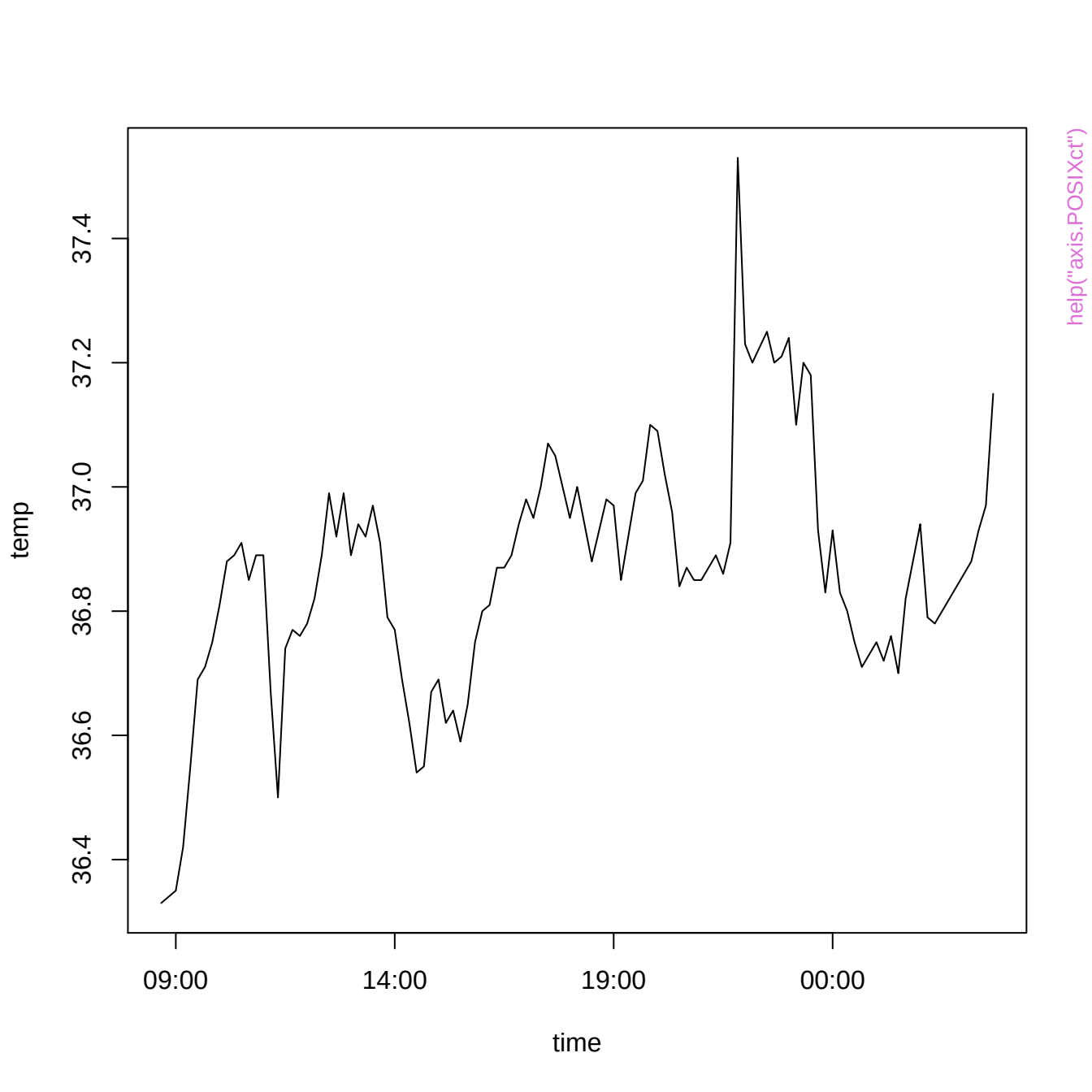


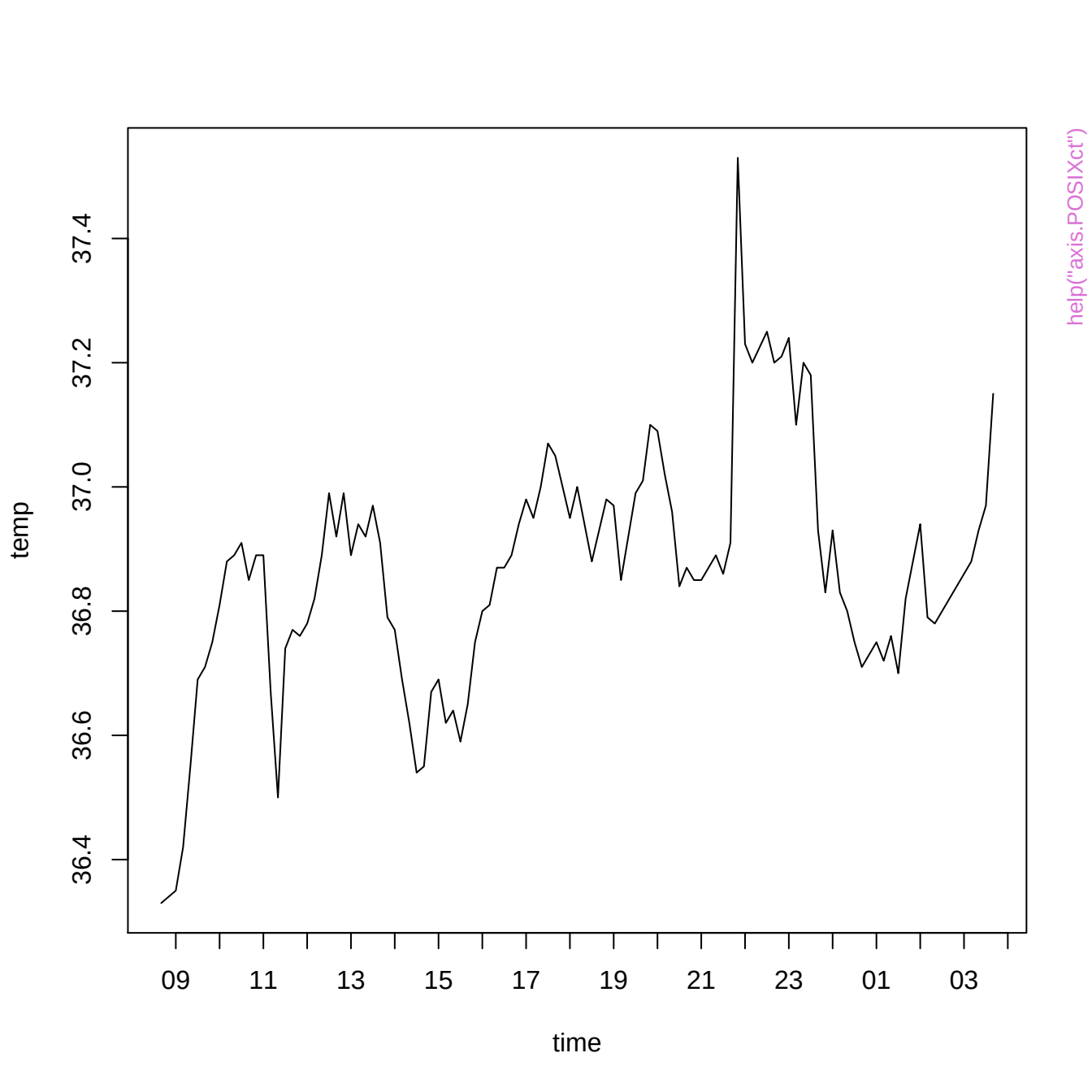



1:14
2
4
6
8
10
12
14
1e−02
1e+01
1e+04
1e+07
1e+10
x
help("axTicks")

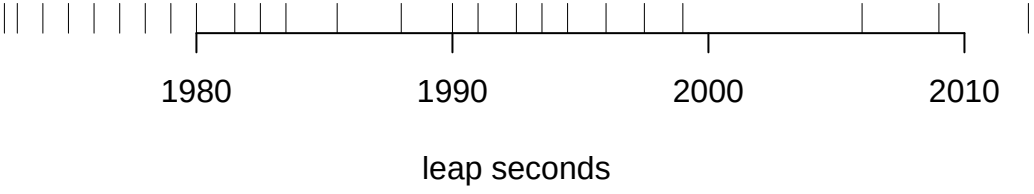

ylims
0.2
0.5
1.0
2.0
5.0
10.0
20.0
50.0
0.0
0.2
0.4
0.6
0.8
1.0
0:1
help("axTicks")


ylims
0.2
0.5
1.0
2.0
5.0
10.0
20.0
50.0
100.0
0.0
0.2
0.4
0.6
0.8
1.0
0:1
help("axTicks")

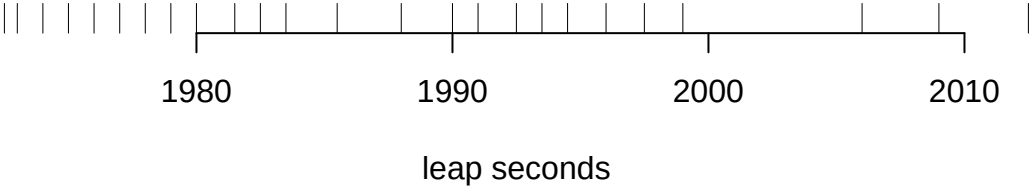

temp
36.4
36.6
36.8
37.0
37.2
37.4
09:00
14:00
19:00
00:00
time
help("axis.POSIXct")

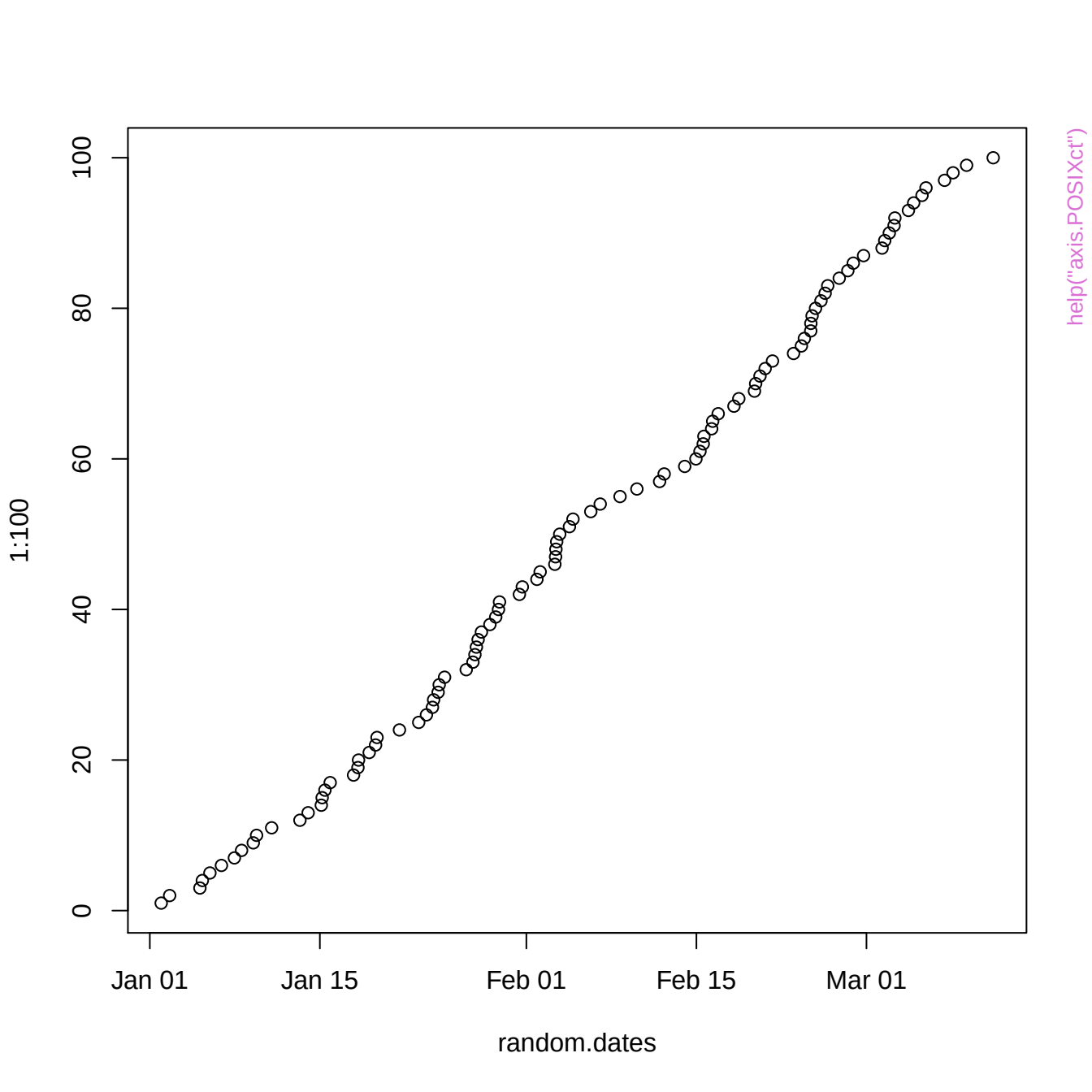

temp
36.4
36.6
36.8
37.0
37.2
37.4
09
11
13
15
17
19
21
23
01
03
time
help("axis.POSIXct")

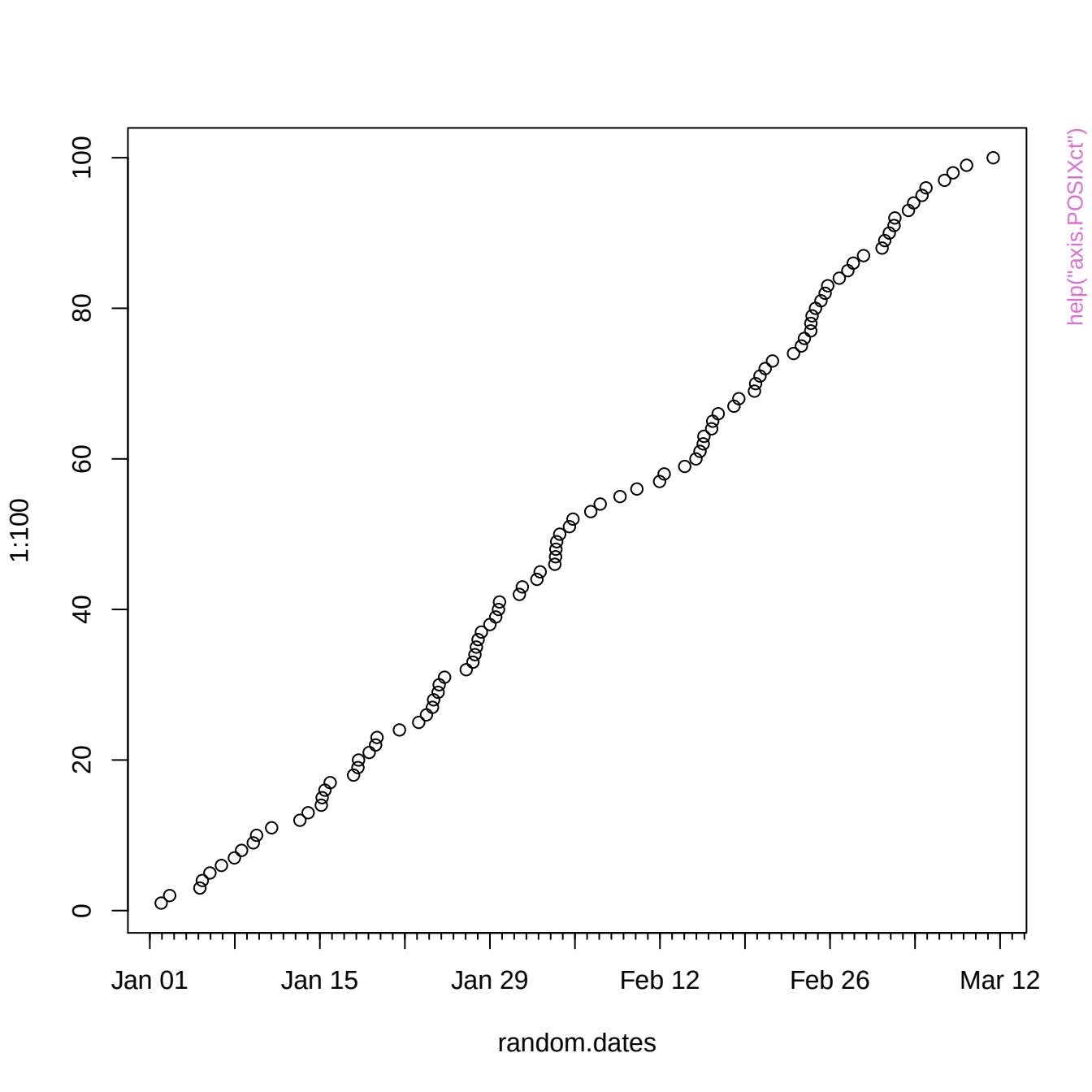
help("axis.POSIXct")

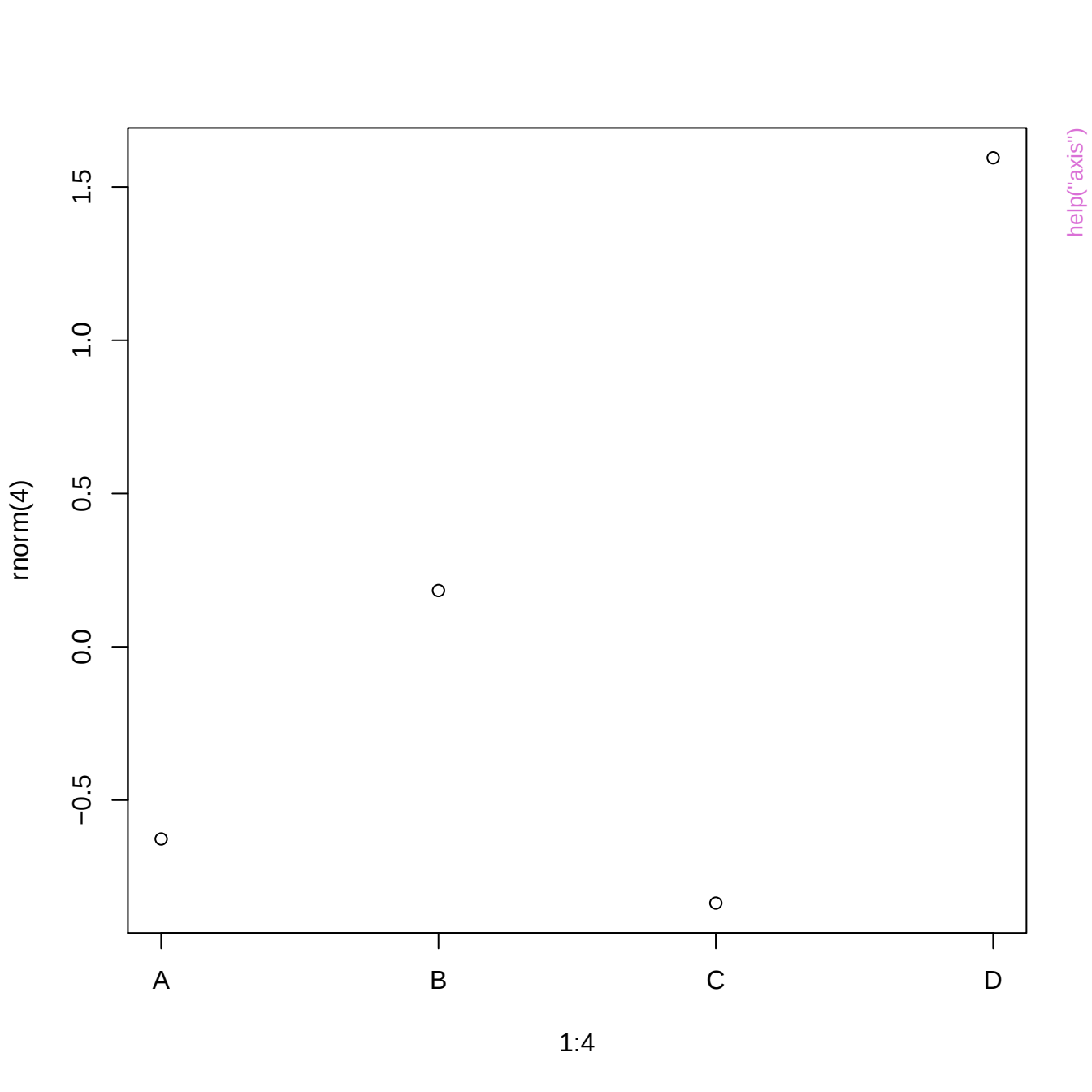


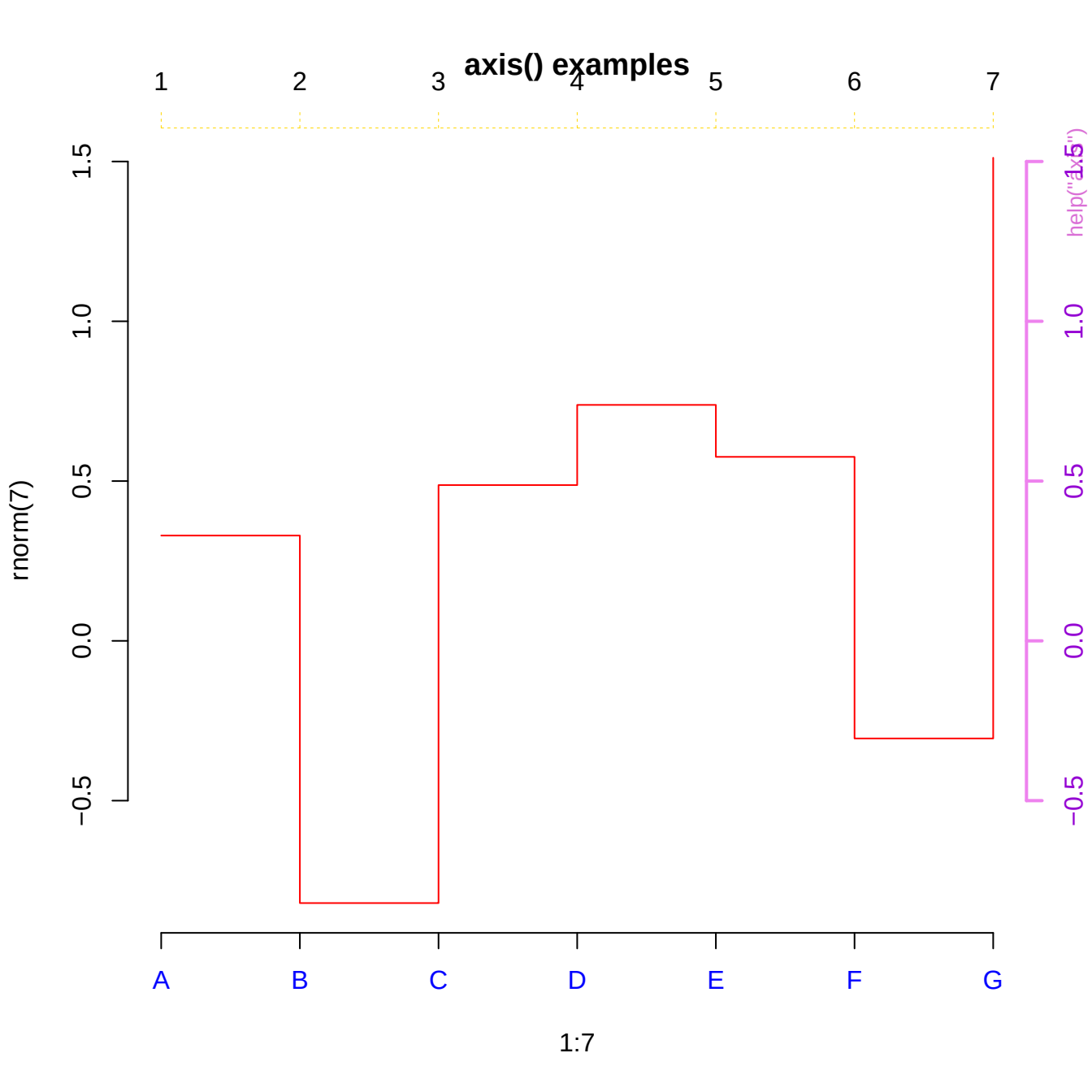
help("axis.POSIXct")



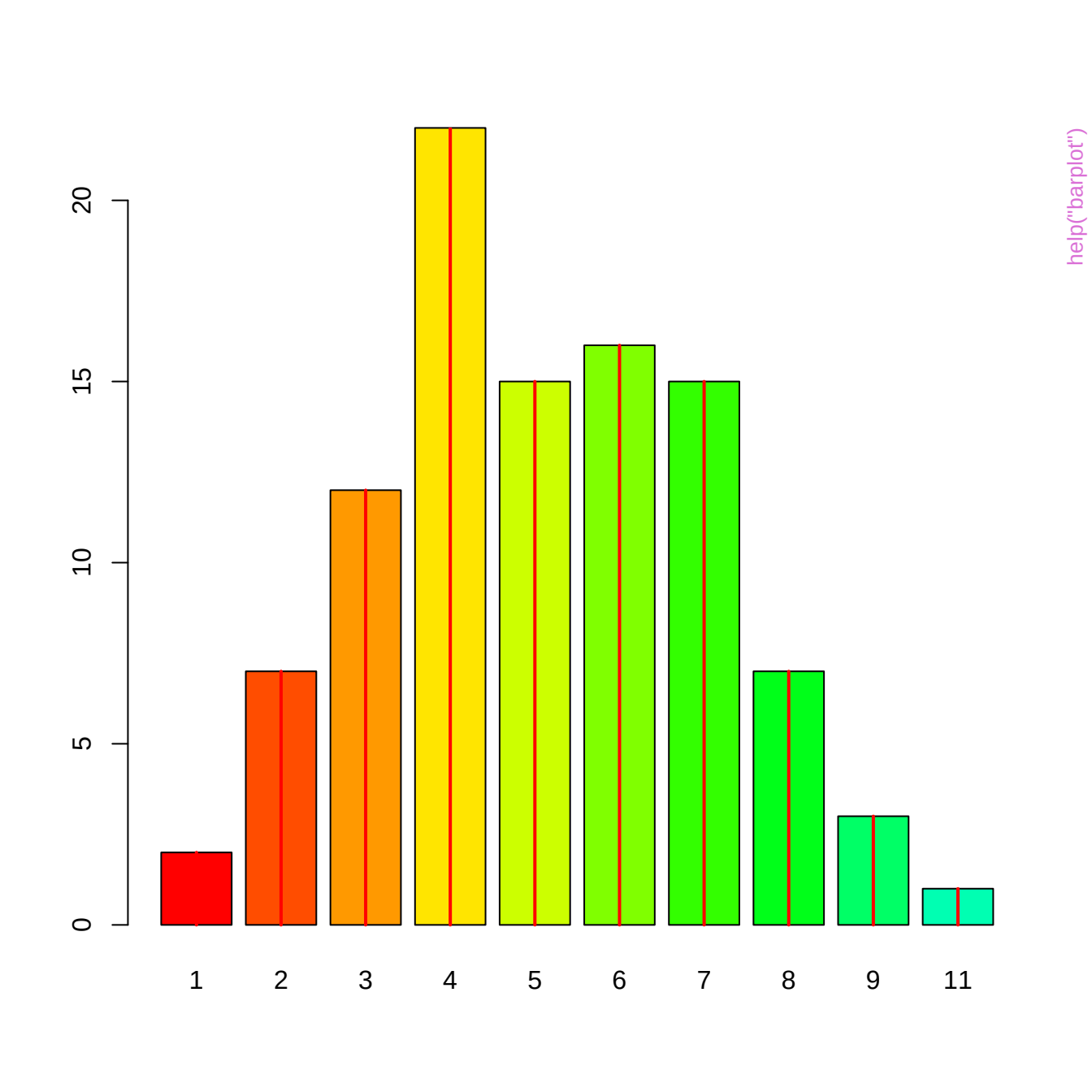

1:100
0
20
40
60
80
100
Jan 01
Jan 15
Feb 01
Feb 15
Mar 01
random.dates
help("axis.POSIXct")

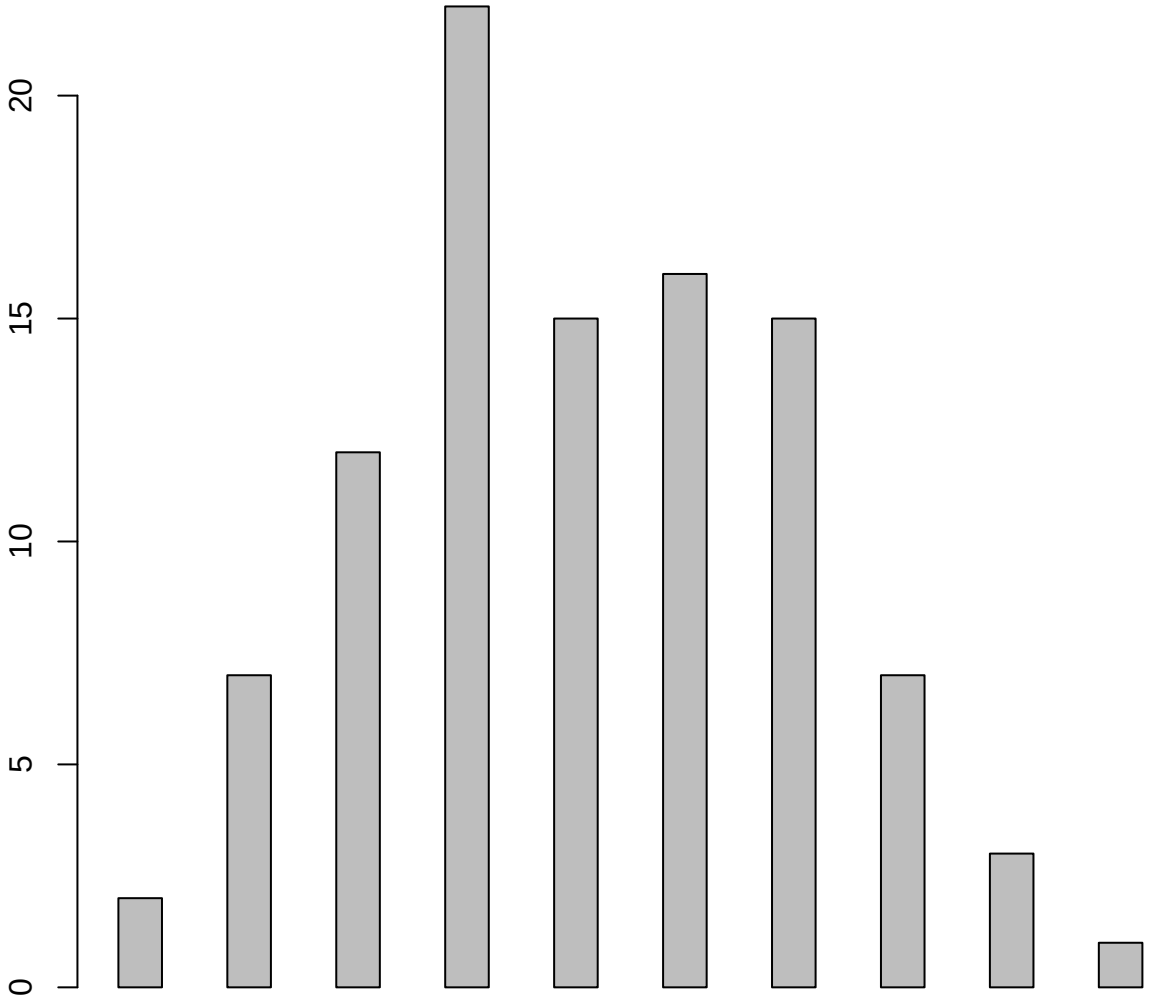

1:100
0
20
40
60
80
100
Jan 01
Jan 15
Jan 29
Feb 12
Feb 26
Mar 12
random.dates
help("axis.POSIXct")


rnorm(4)
1.5
1.0
0.5
0.0
−0.5
A
B
C
D
1:4
help("axis")


axis() examples
1
2
3
4
5
6
7
1.5
1.0
0.5
0.0
−0.5
rnorm(7)
help("axis")
A
B
C
D
E
F
G
1:7

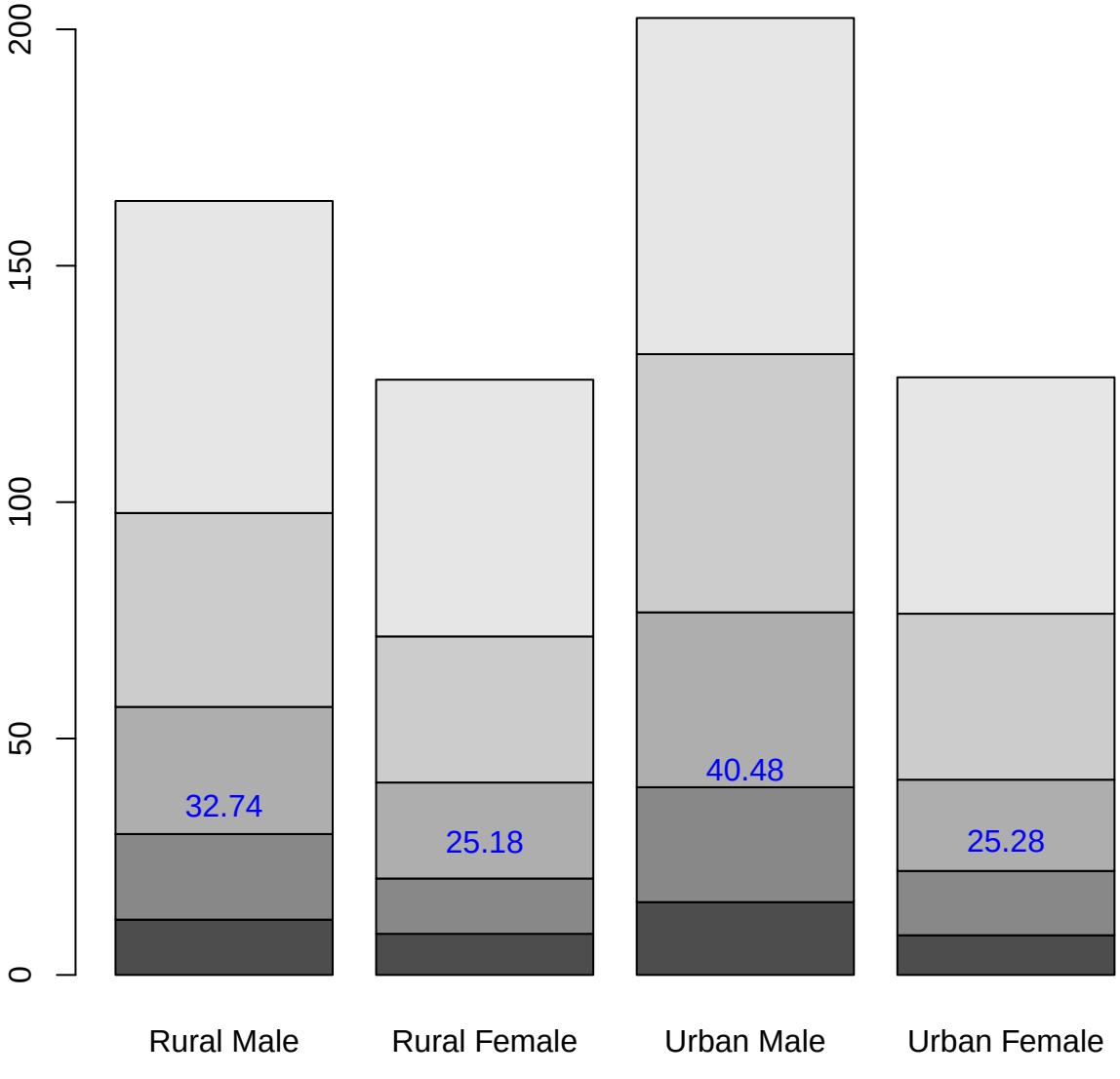
1:10
2
4
6
8
10
2
3
4
5
6
7
8
9
Index
help("axis")

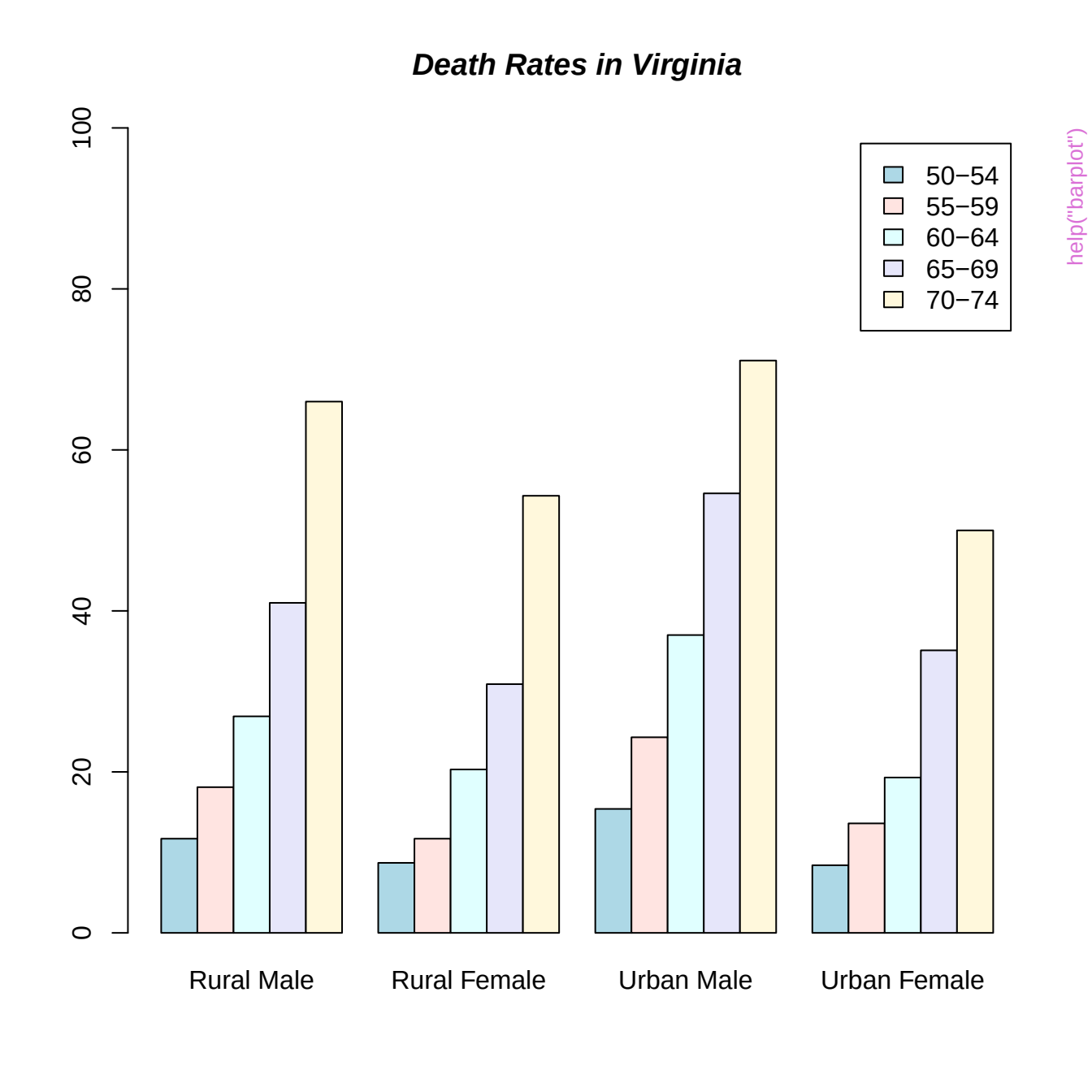

0
5
10
15
20
1
2
3
4
5
6
7
8
9
11
help("barplot")

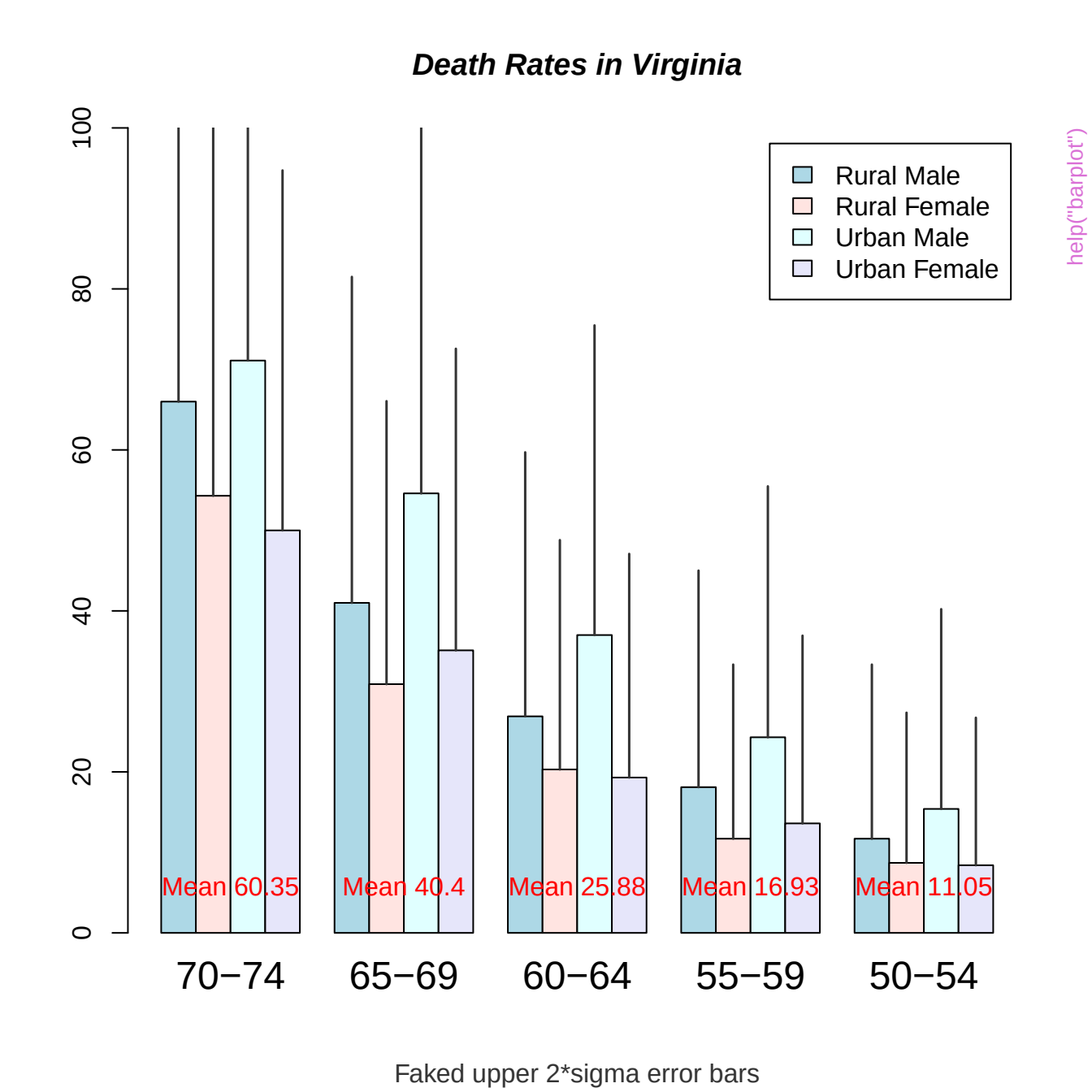


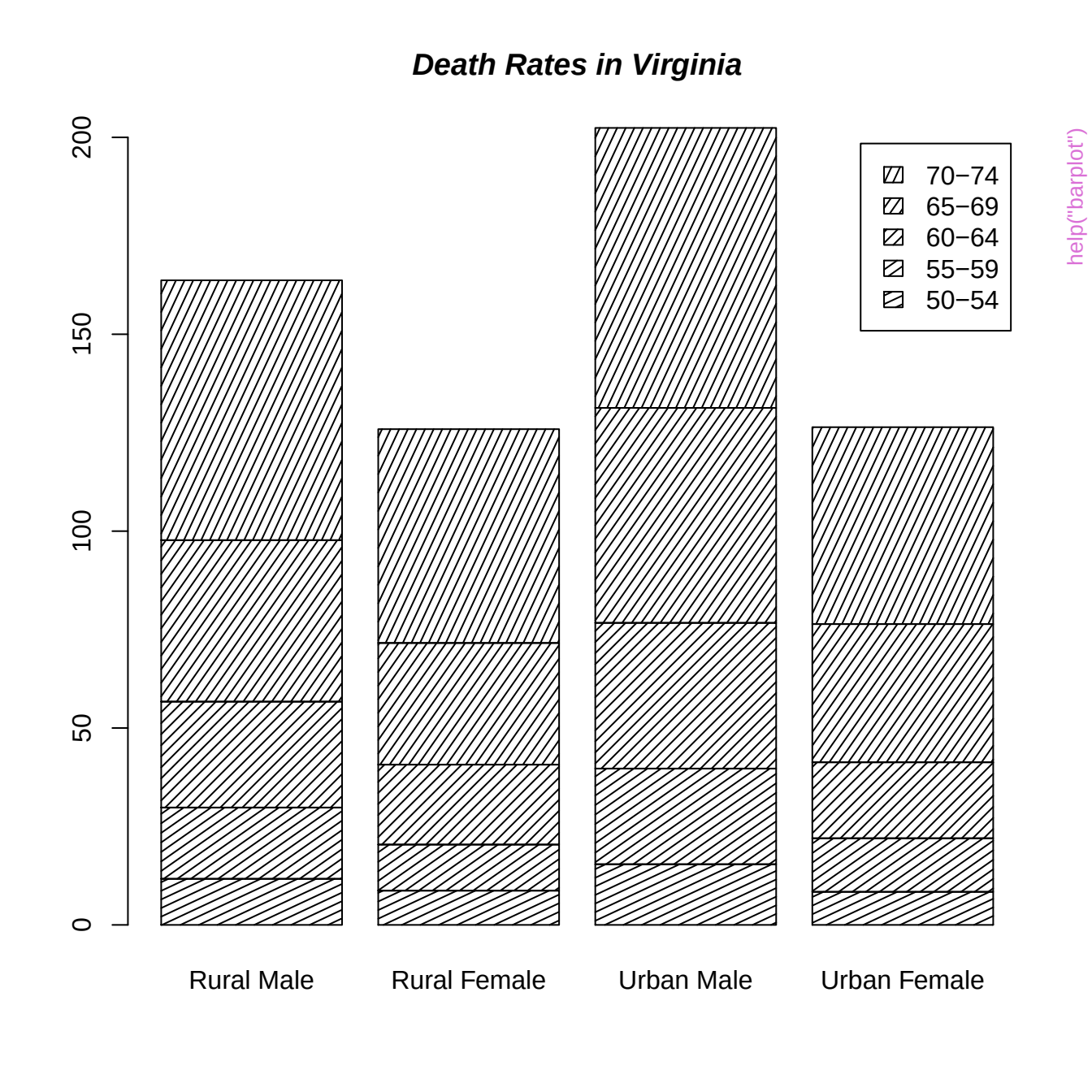
help("barplot")

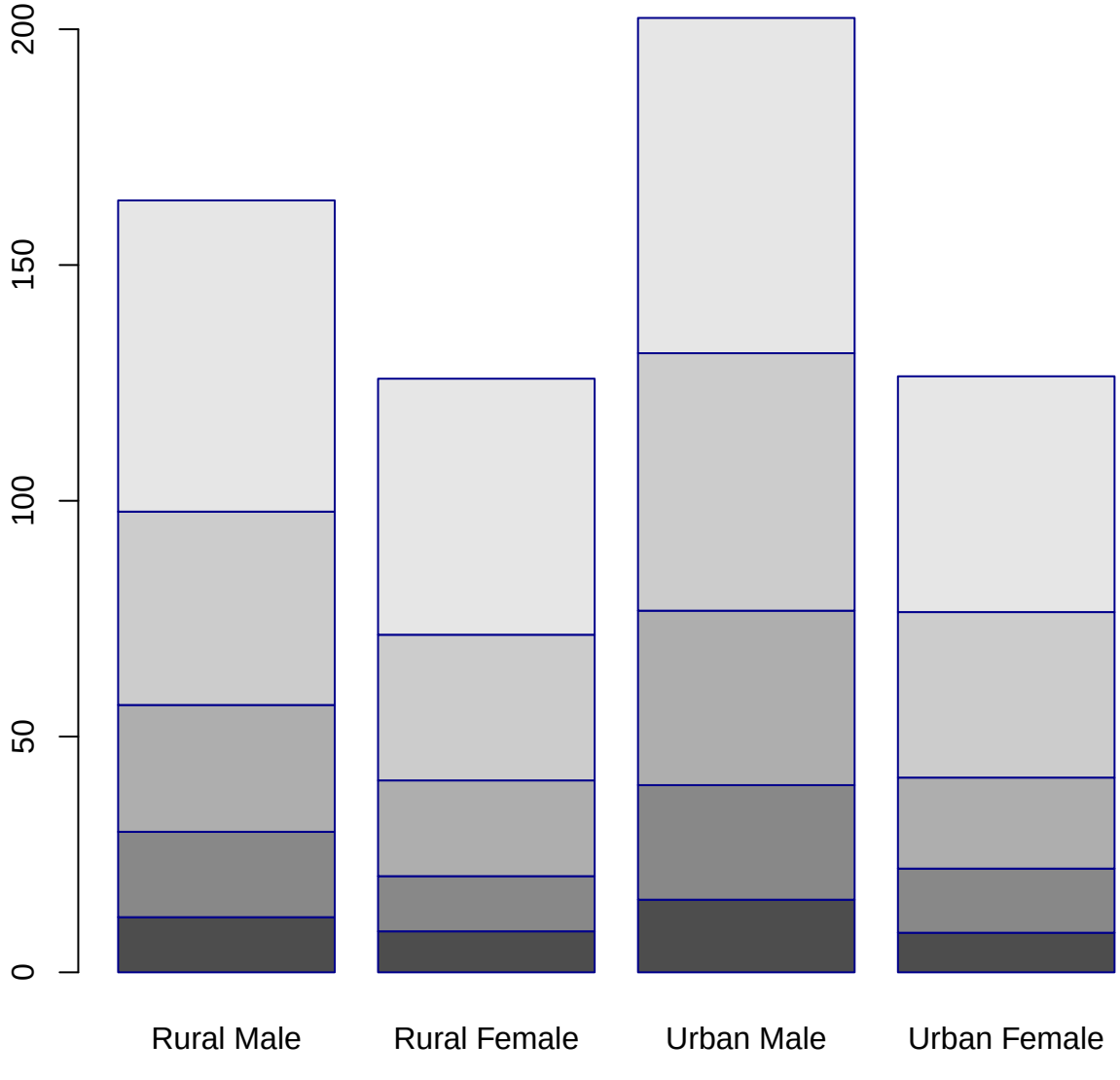
barplot(..., space= 1.5, axisnames = FALSE)

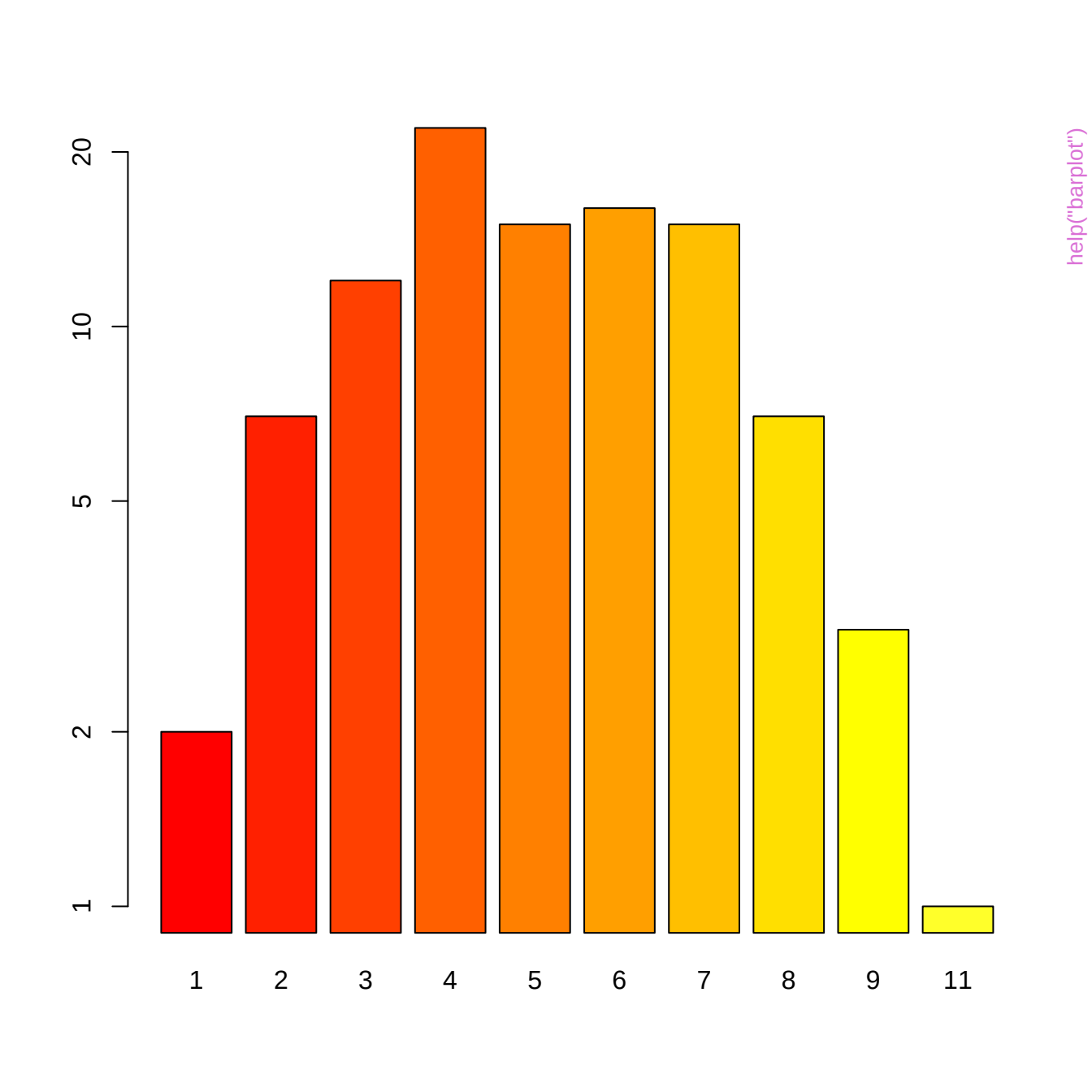

0
50
100
150
200
32.74
25.18
40.48
25.28
Rural Male
Rural Female
Urban Male
Urban Female
help("barplot")

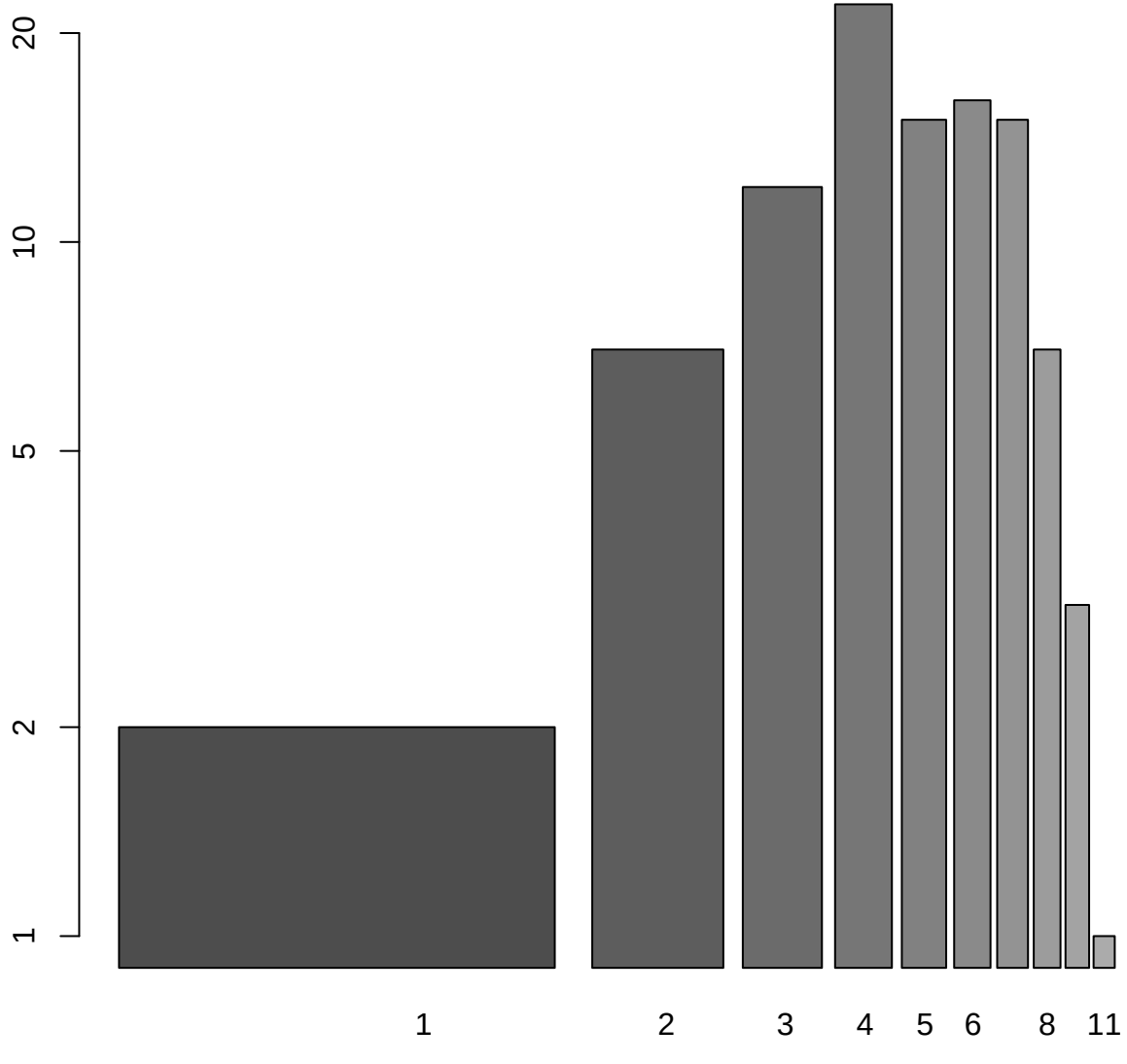

Death Rates in Virginia
100
80
60
40
20
0
50−54
55−59
60−64
65−69
70−74
Rural Male
Rural Female
Urban Male
Urban Female
help("barplot")


Death Rates in Virginia
Rural Male
Rural Female
Urban Male
Urban Female
0
20
40
60
80
100
Mean 60.35
Mean 40.4
Mean 25.88
Mean 16.93
Mean 11.05
70−74
65−69
60−64
55−59
50−54
Faked upper 2*sigma error bars
help("barplot")

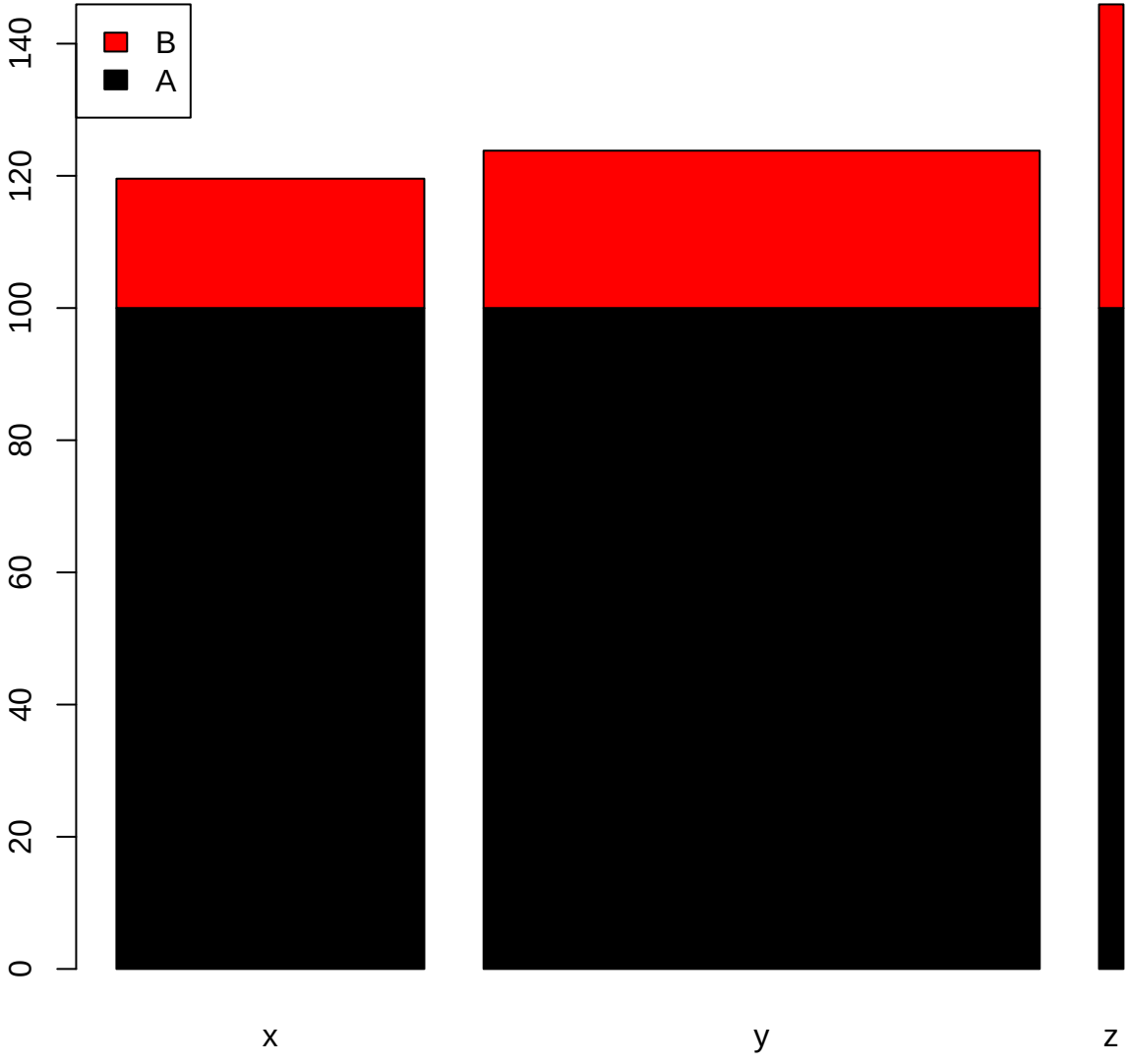

Death Rates in Virginia
200
150
100
50
0
70−74
65−69
60−64
55−59
50−54
Rural Male
Rural Female
Urban Male
Urban Female
help("barplot")


0
50
100
150
200
Rural Male
Rural Female
Urban Male
Urban Female
help("barplot")

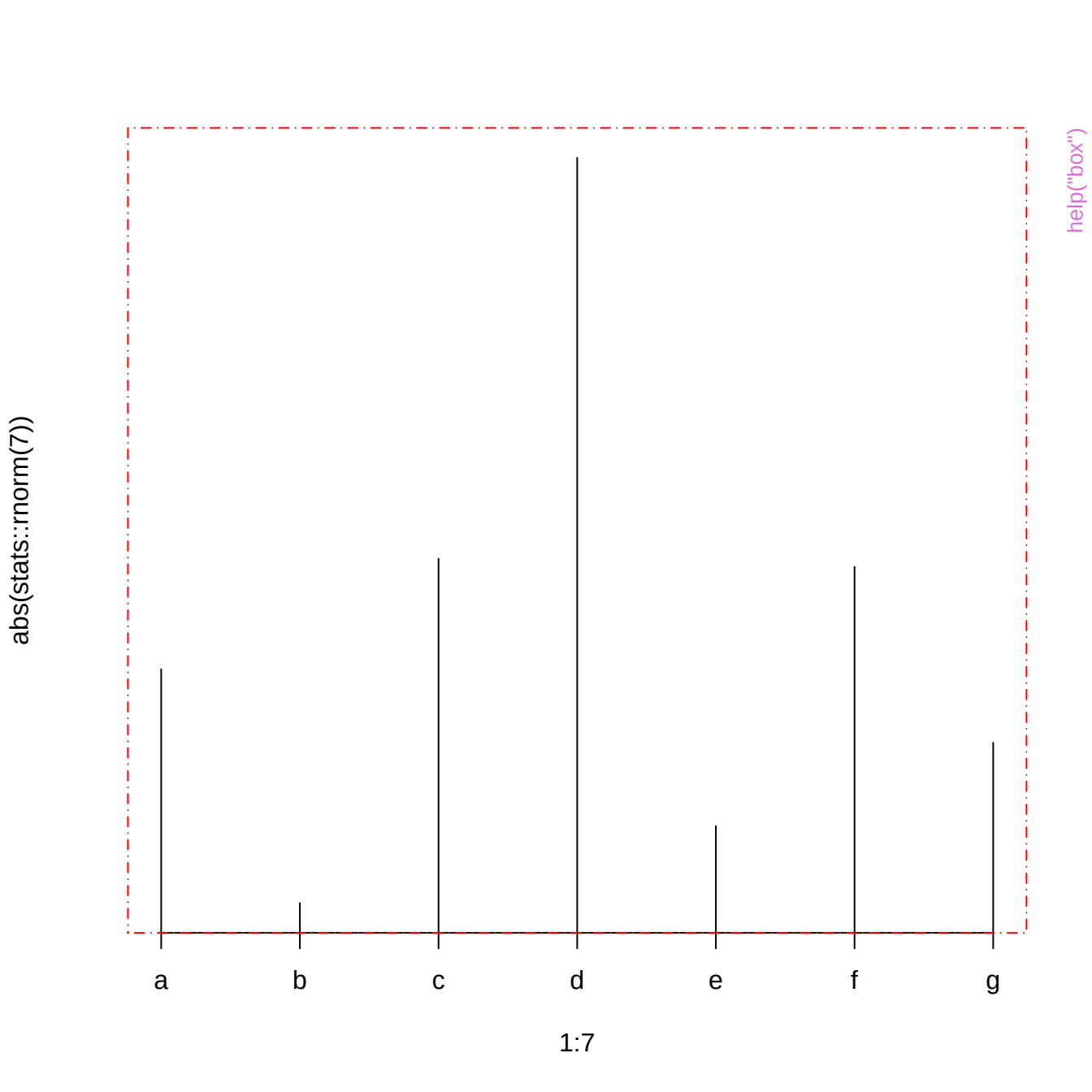

1
2
5
10
20
1
2
3
4
5
6
7
8
9
11
help("barplot")

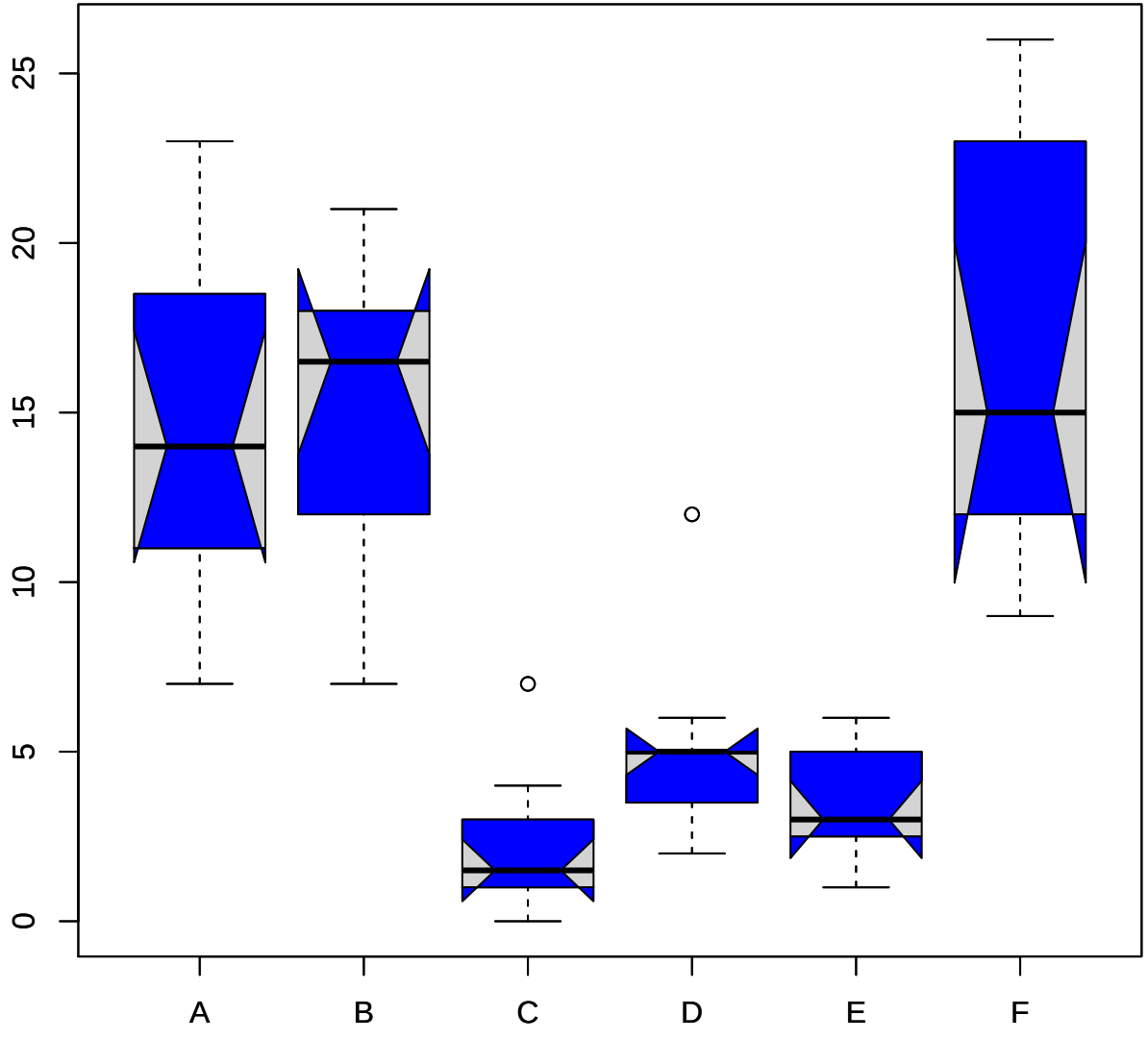


help("barplot")

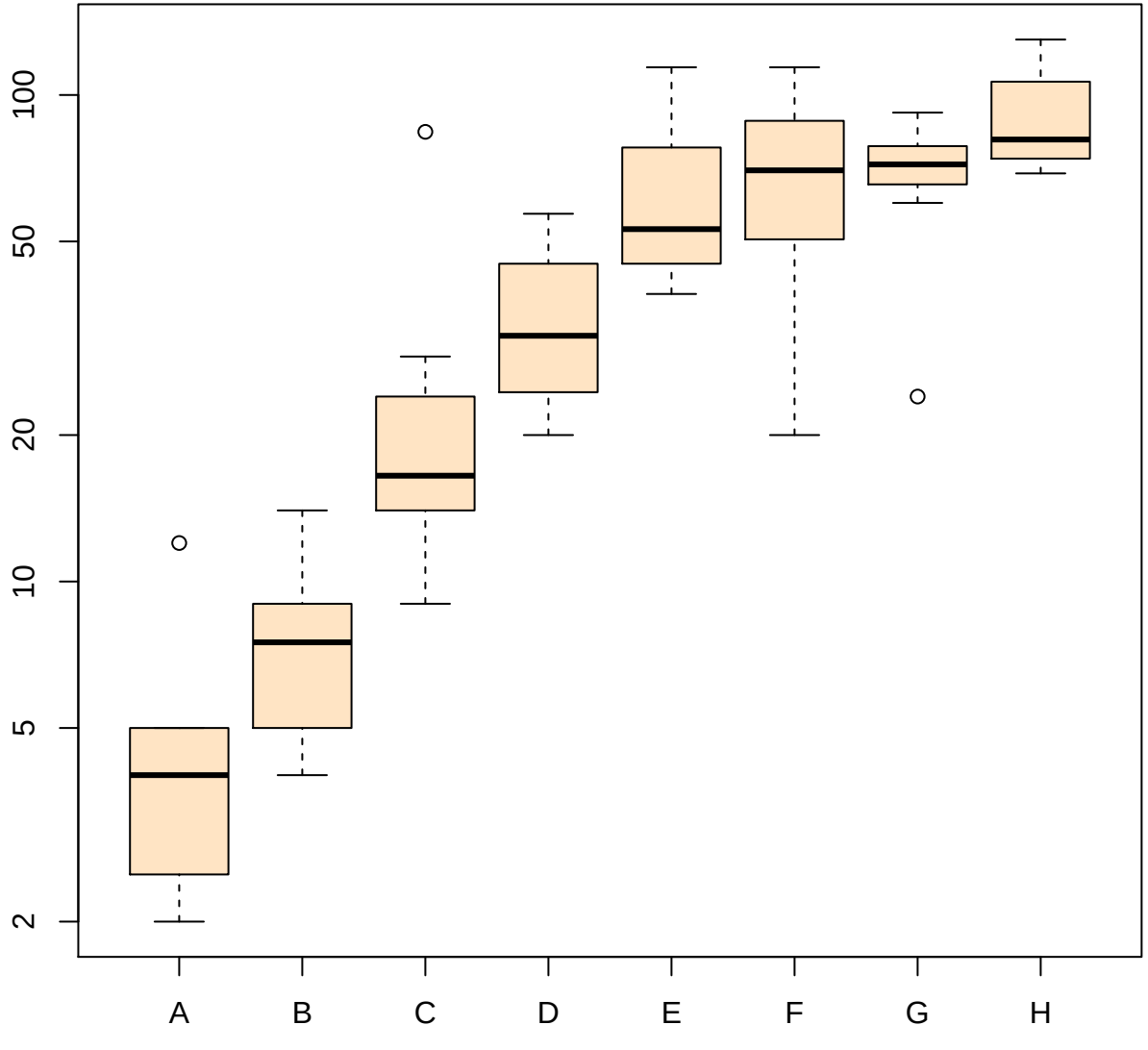


help("barplot")

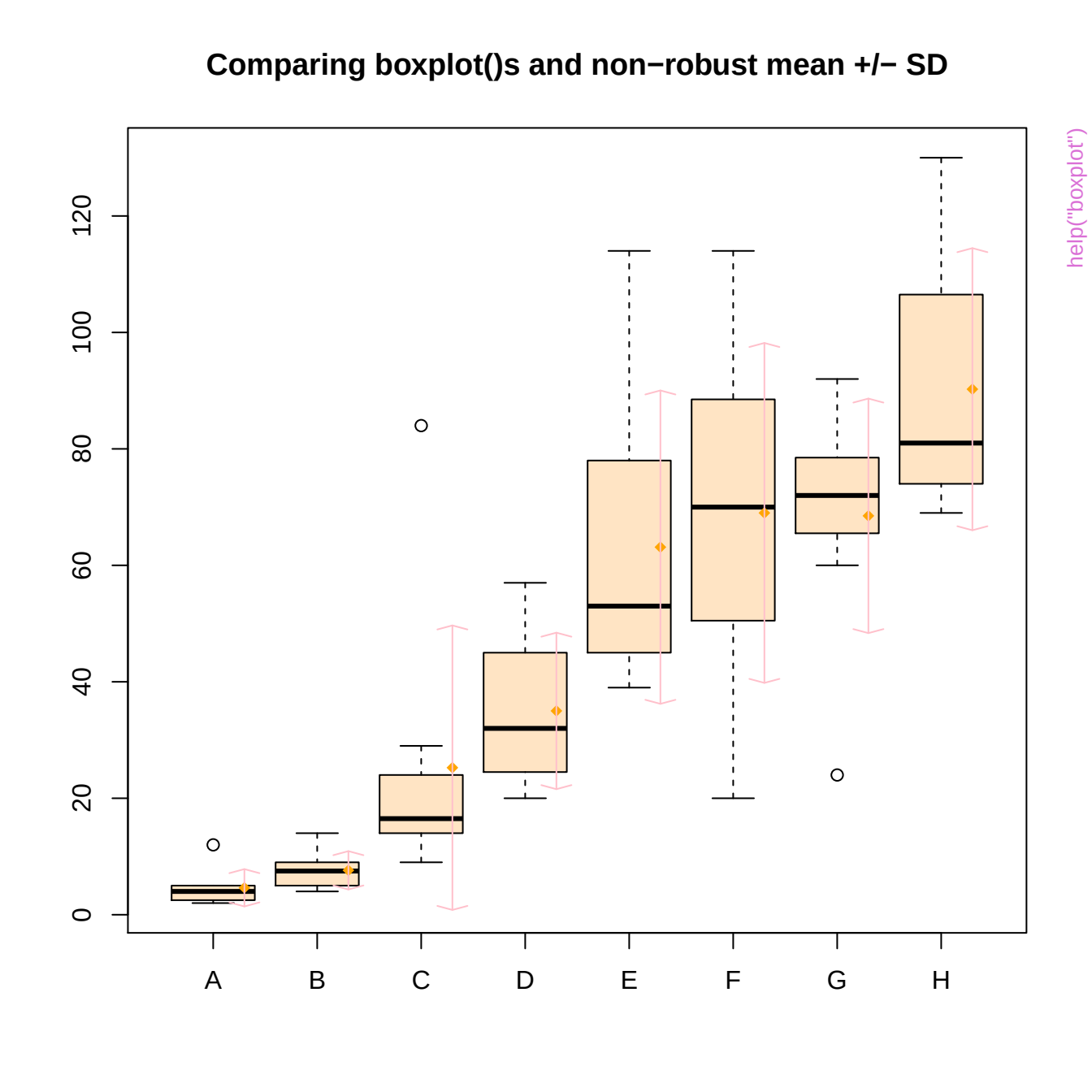

abs(stats::rnorm(7))
a
b
c
d
e
f
g
1:7
help("box")

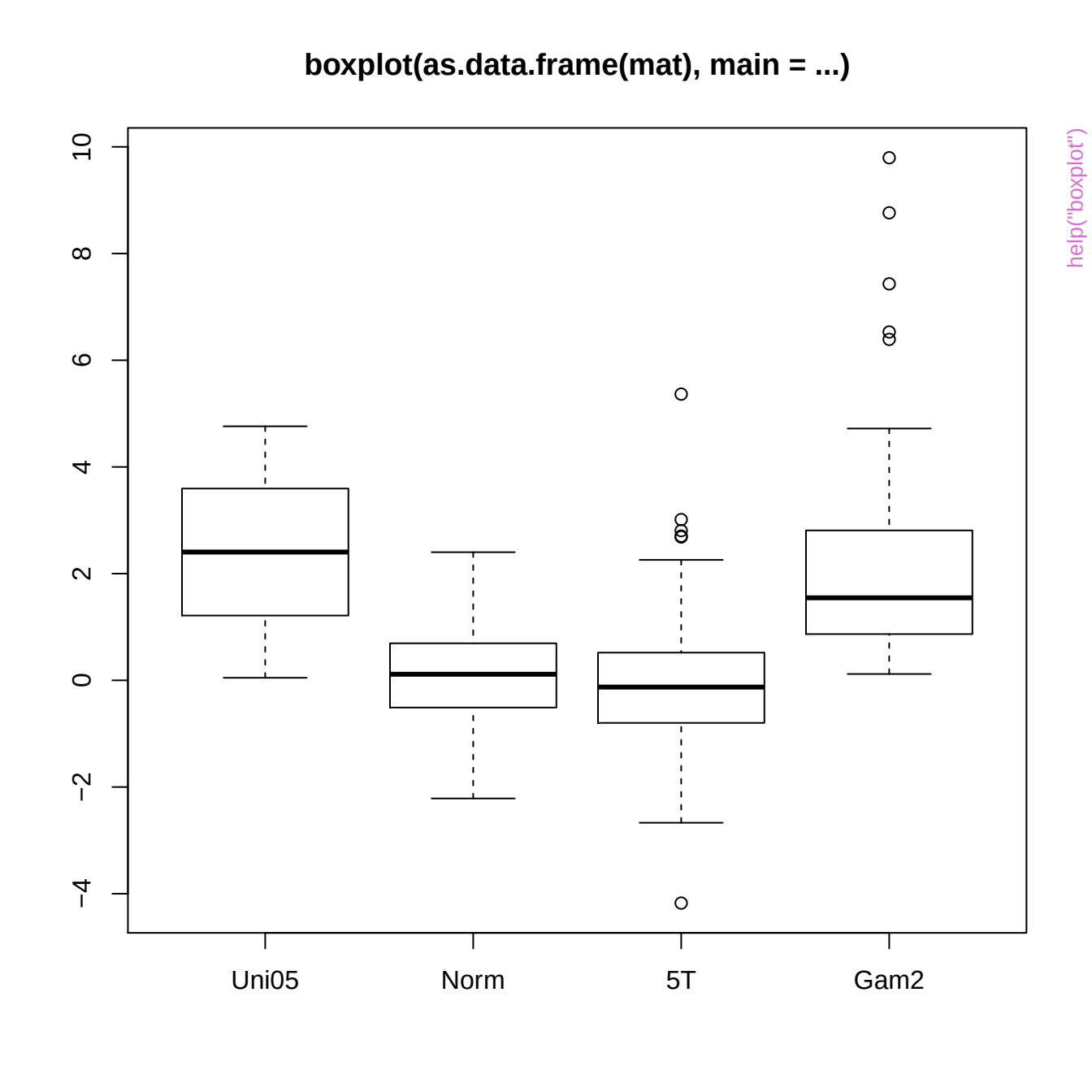


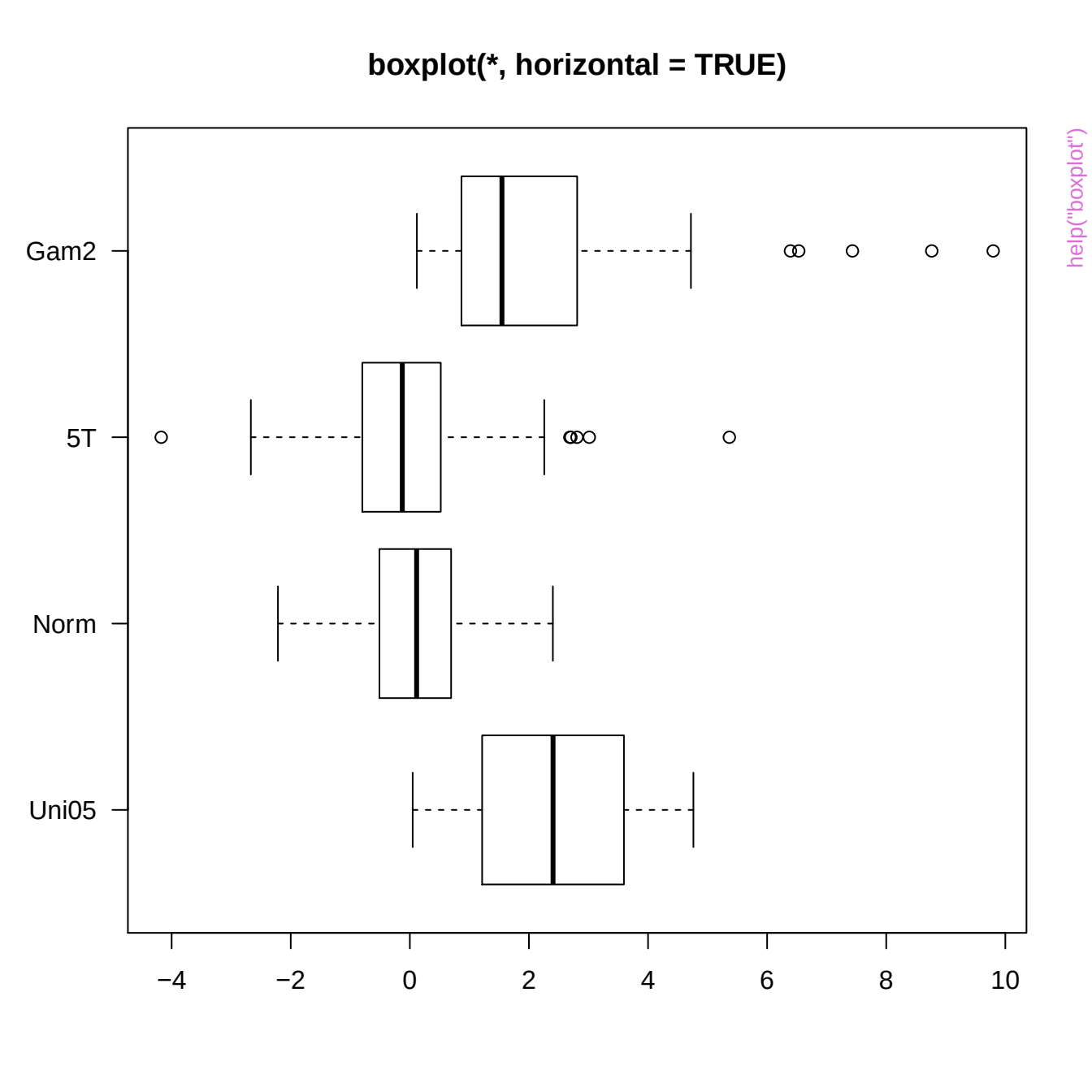
help("boxplot")

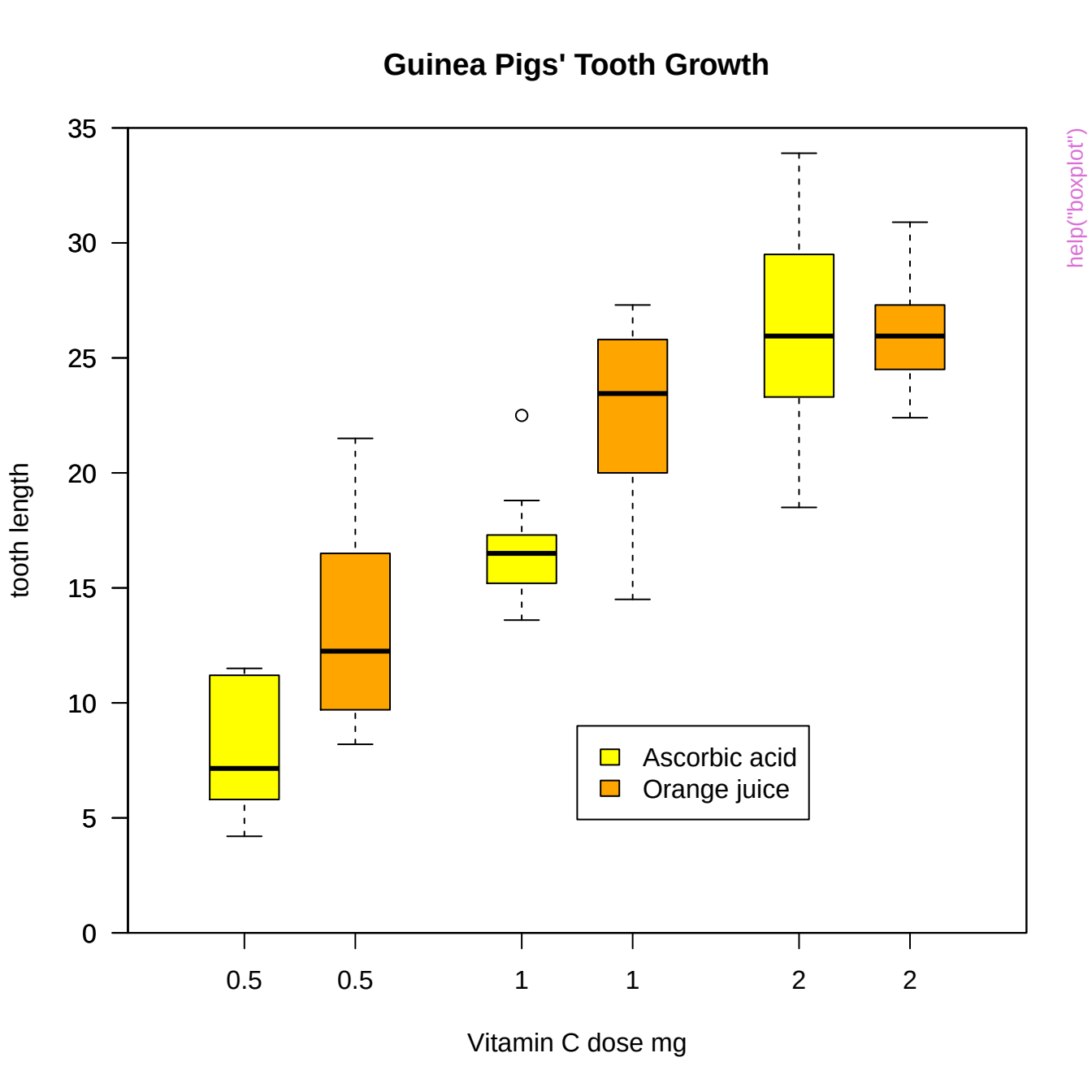


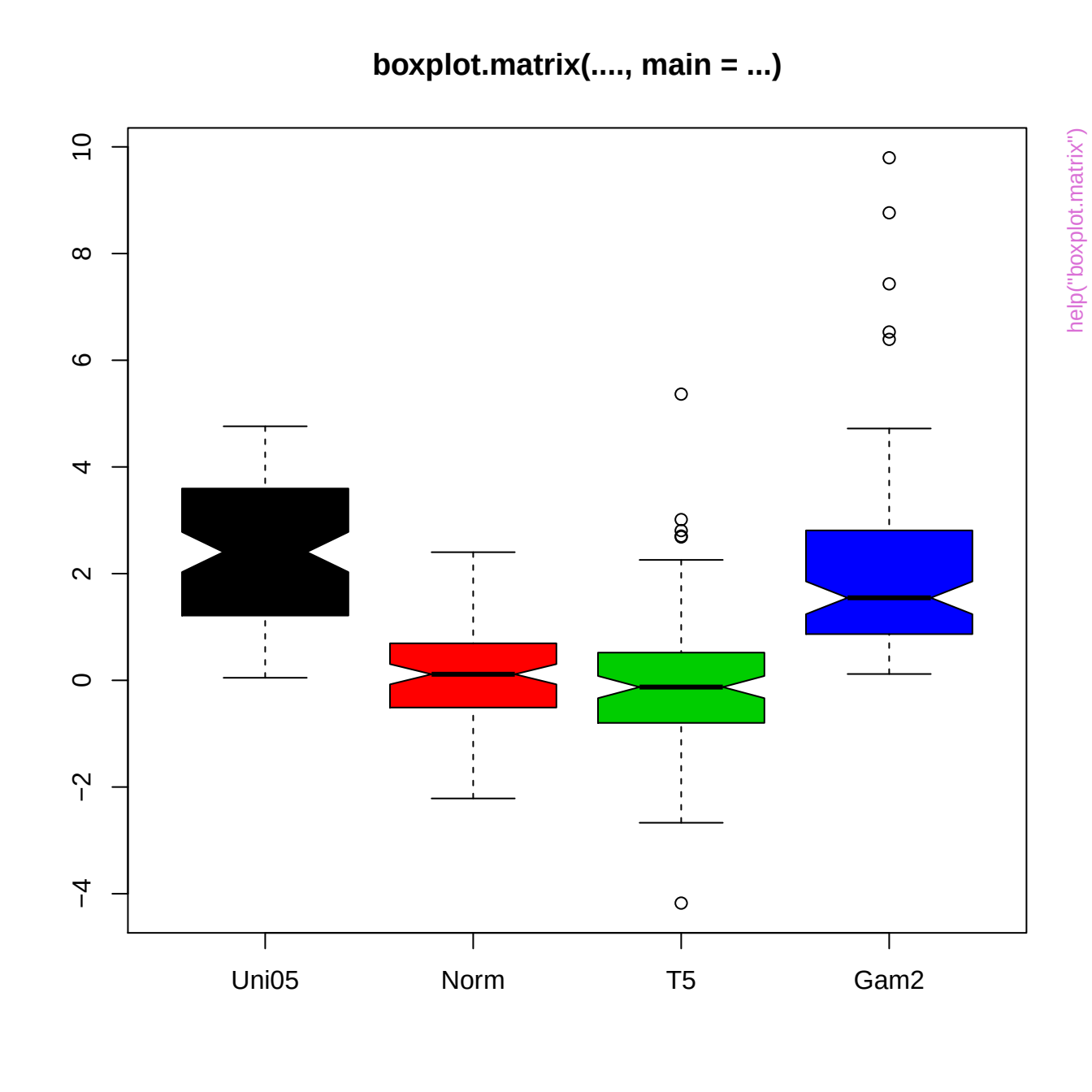
help("boxplot")


Comparing boxplot()s and non−robust mean +/− SD
help("boxplot")
0
20
40
60
80
100
120
A
B
C
D
E
F
G
H

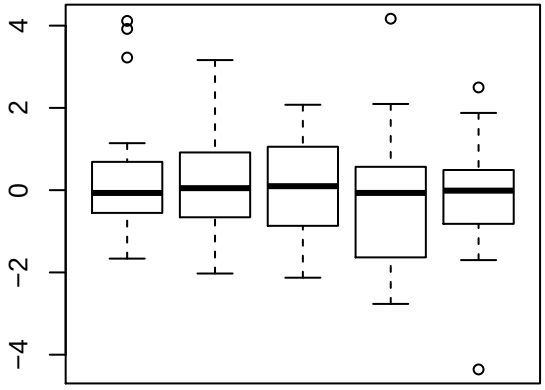

boxplot(as.data.frame(mat), main = ...)
10
8
6
4
2
0
−2
−4
Uni05
Norm
5T
Gam2
help("boxplot")

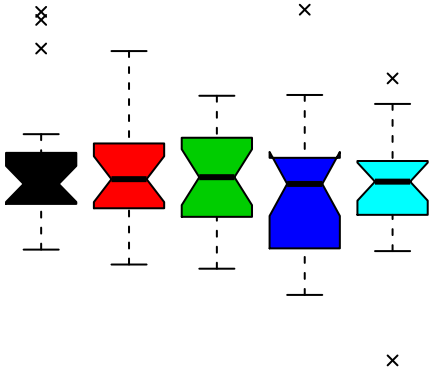

boxplot(*, horizontal = TRUE)
Gam2
5T
Norm
Uni05
−4
−2
0
2
4
6
8
10
help("boxplot")


Guinea Pigs' Tooth Growth
tooth length
35
30
25
20
15
10
5
0
0.5
0.5
1
1
2
2
Vitamin C dose mg
Ascorbic acid
Orange juice
help("boxplot")


boxplot.matrix(...., main = ...)
10
8
6
4
2
0
−2
−4
Uni05
Norm
T5
Gam2
help("boxplot.matrix")

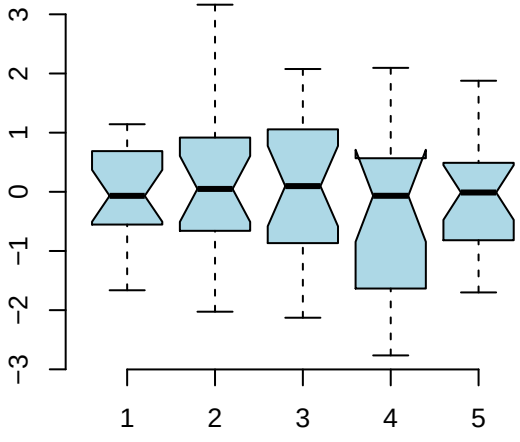
help("bxp")



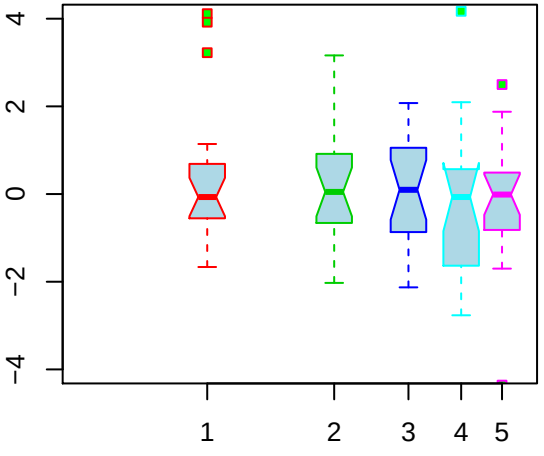


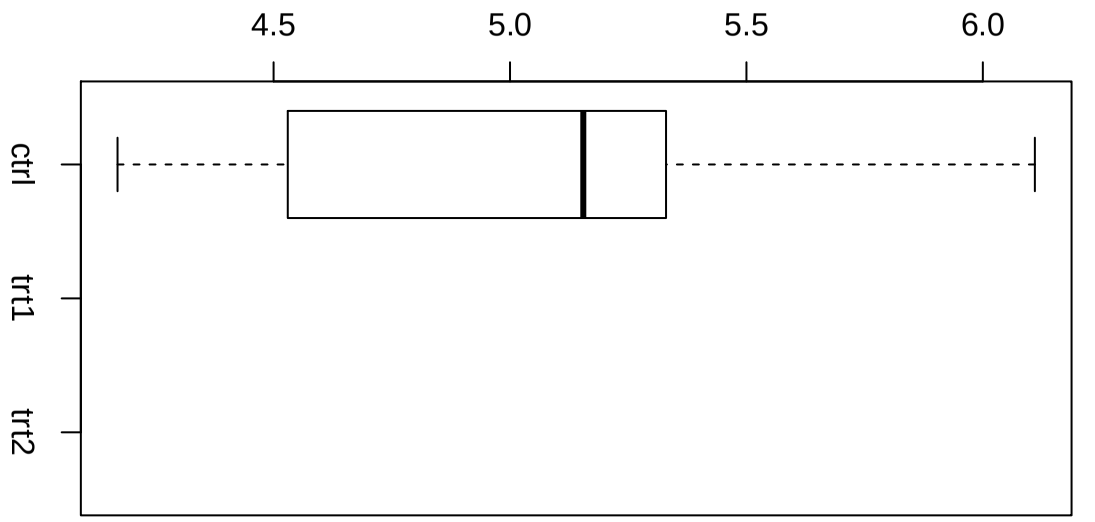
help("bxp")

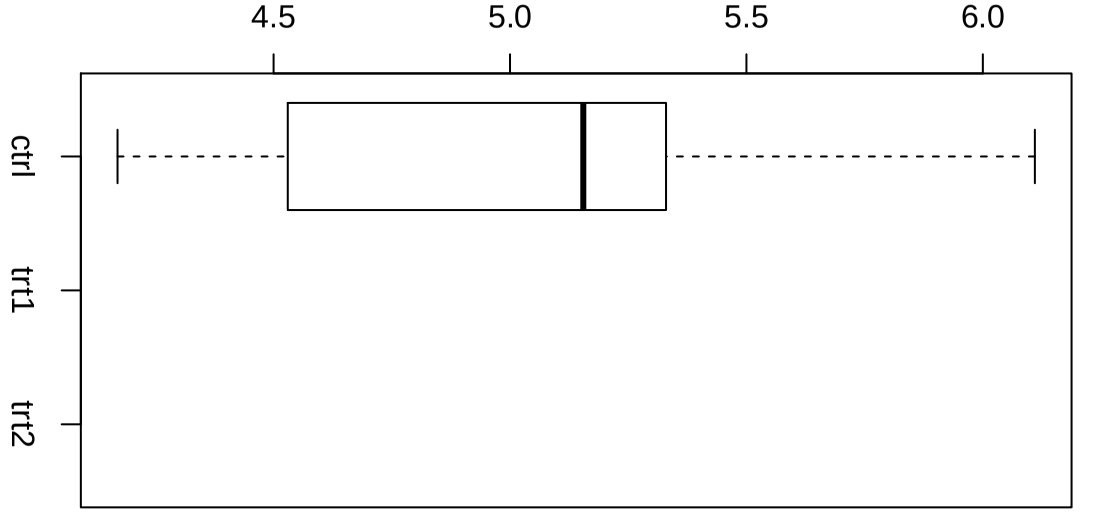
bxp(*, frame= FALSE, outl= FALSE)



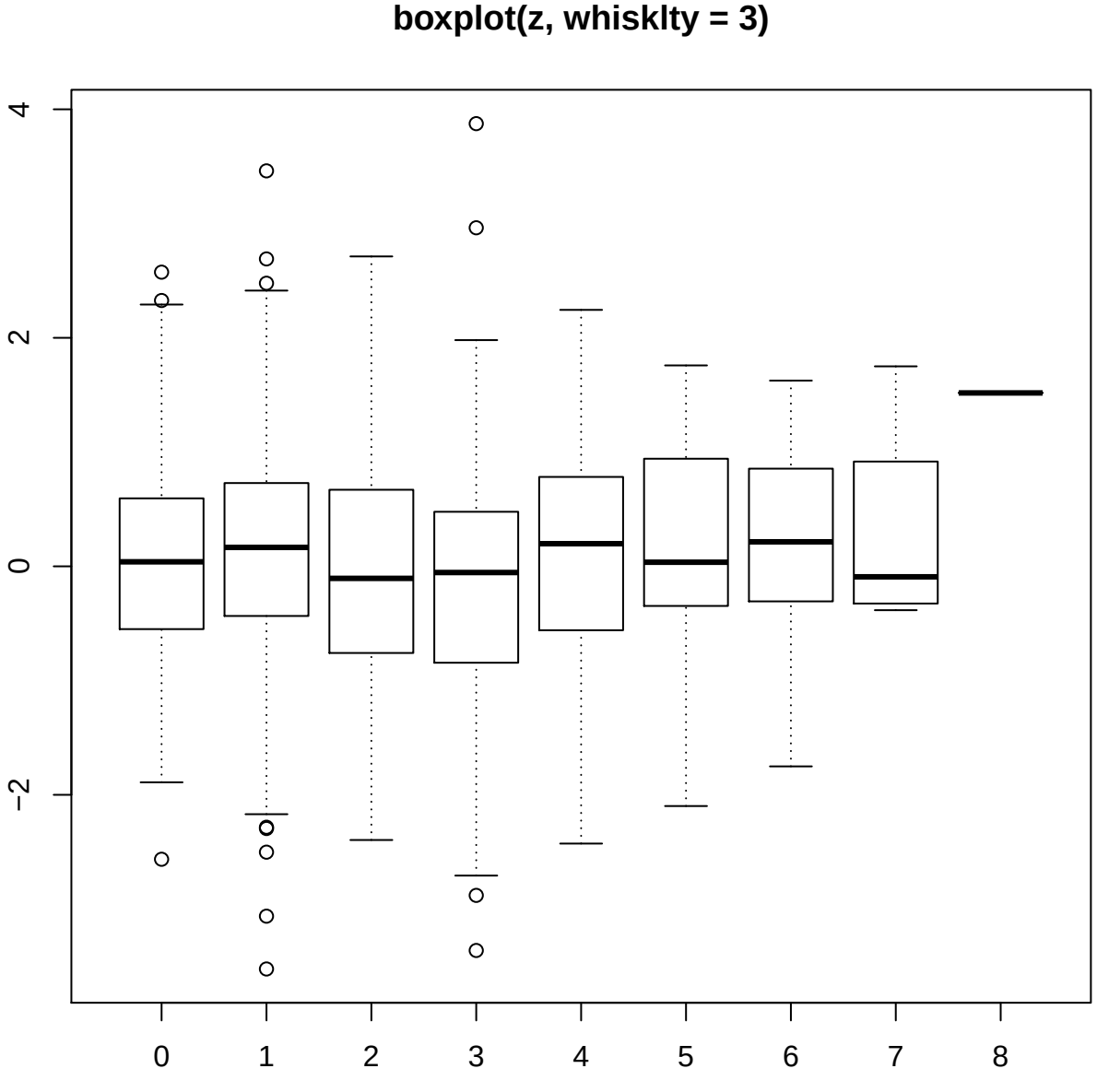
... log = 'x', ylim = **







help("bxp")

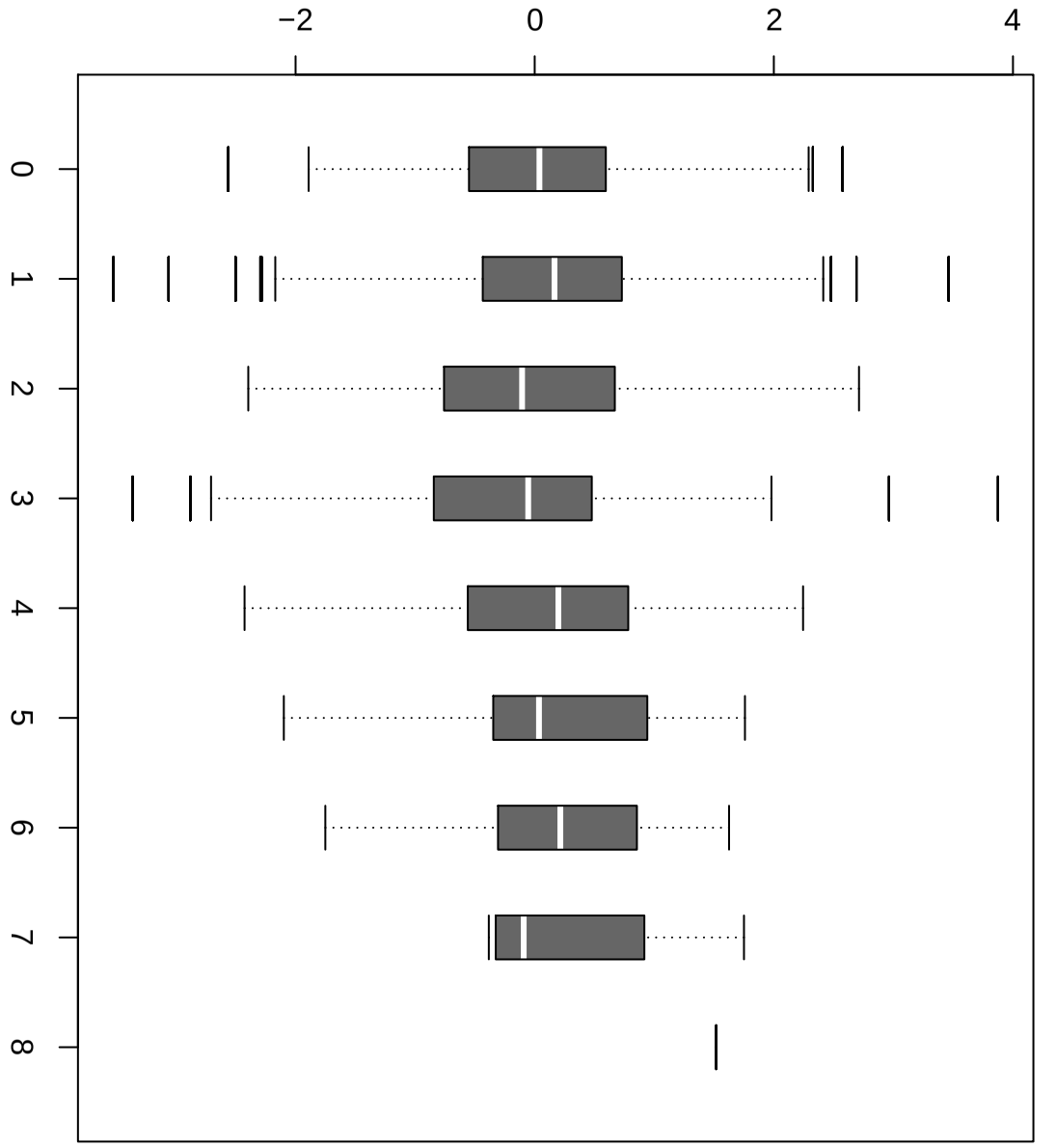

boxplot(z, whisklty = 3)
4
2
0
−2
0
1
2
3
4
5
6
7
8
help("bxp")

par(bg="light gray", fg="midnight blue")

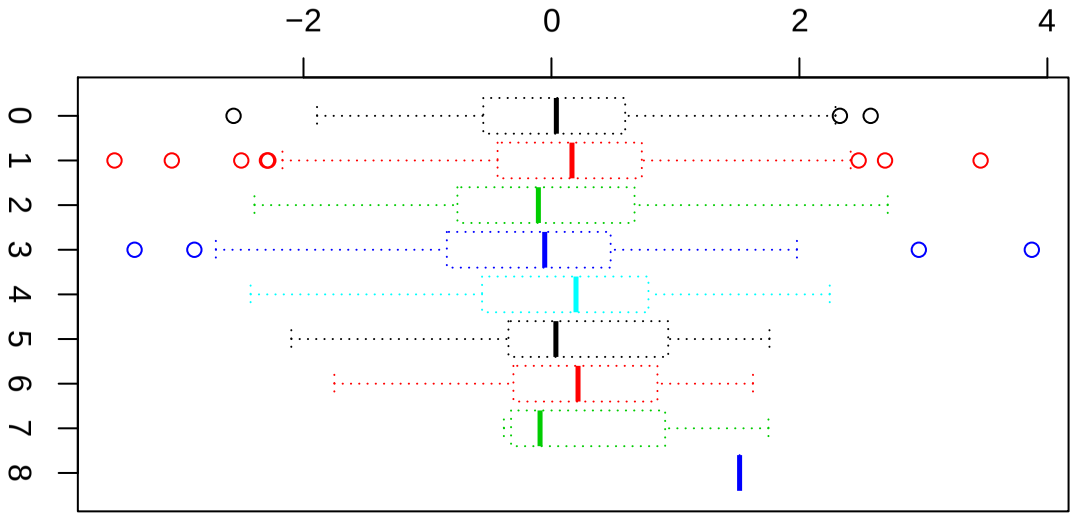
boxplot(*, col.axis=..,main=..)

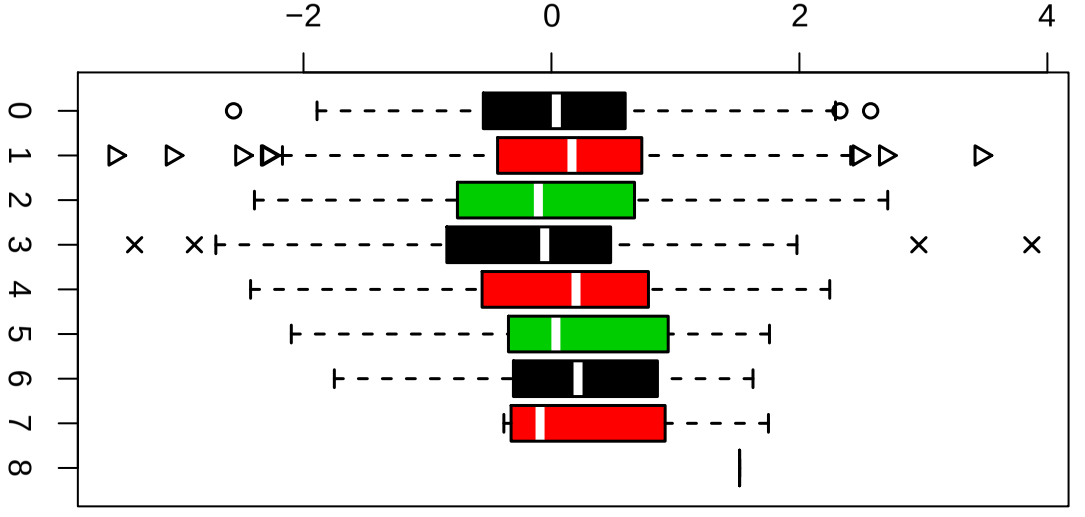
plot(*, col.axis=..,main=..)

help("bxp")

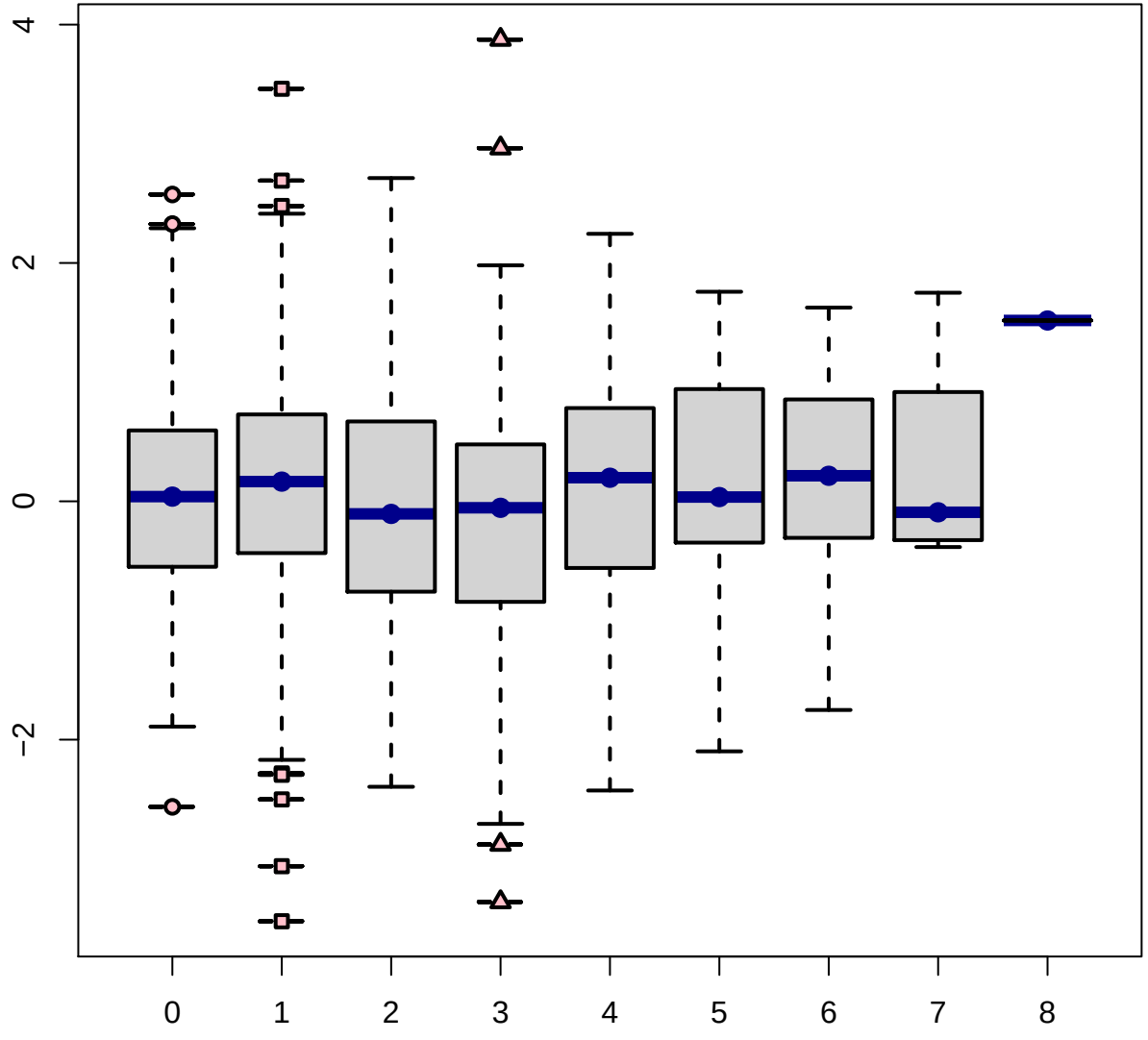


help("bxp")

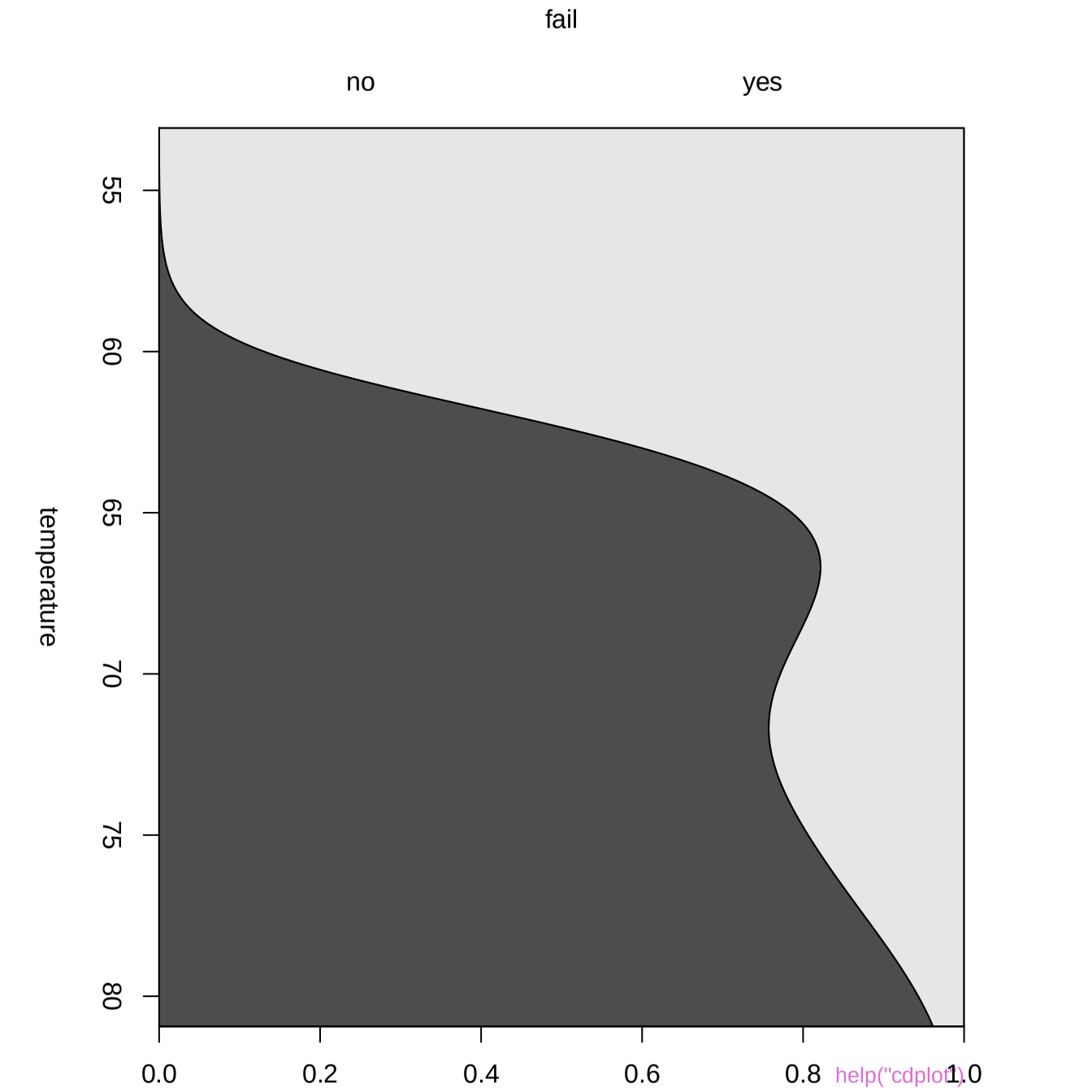


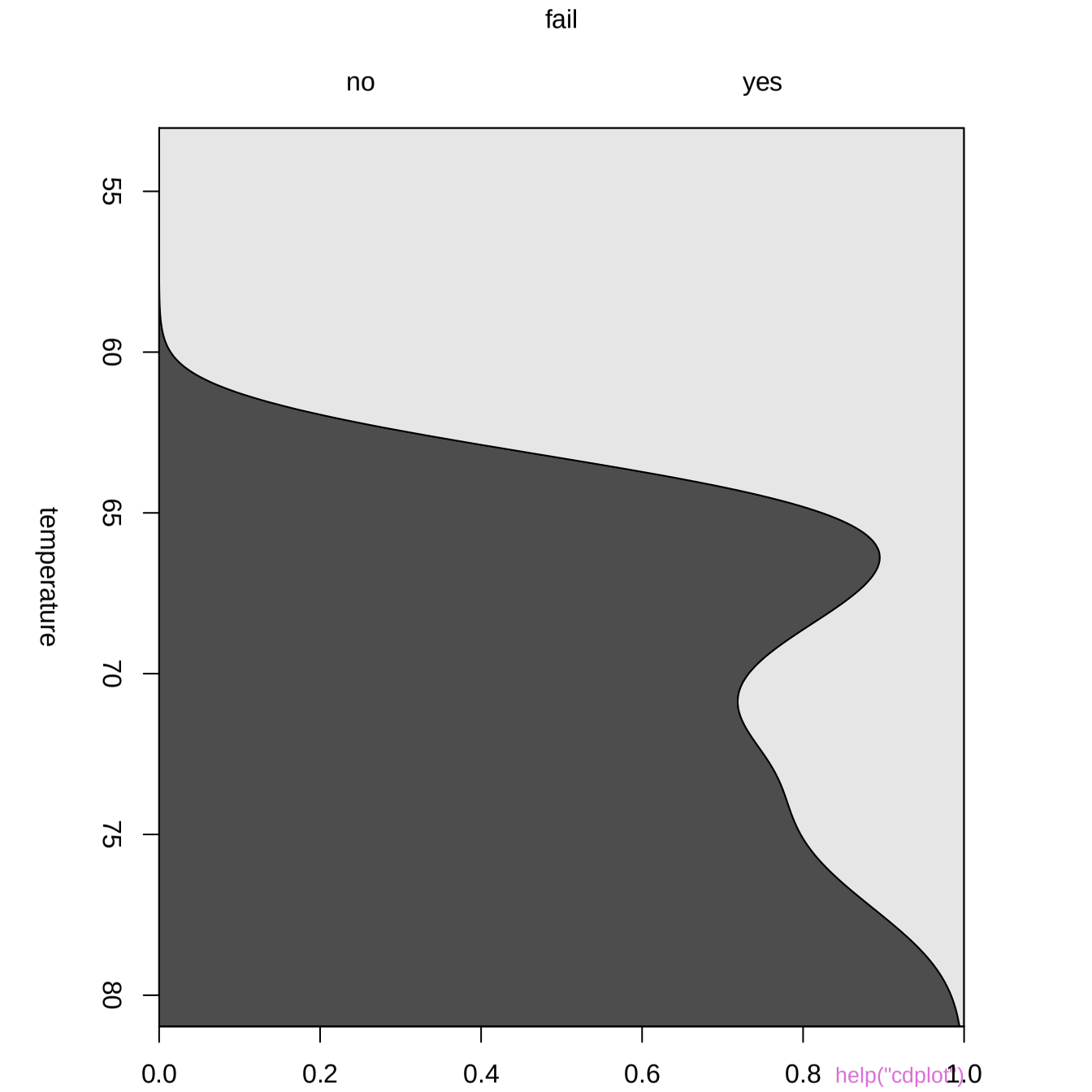


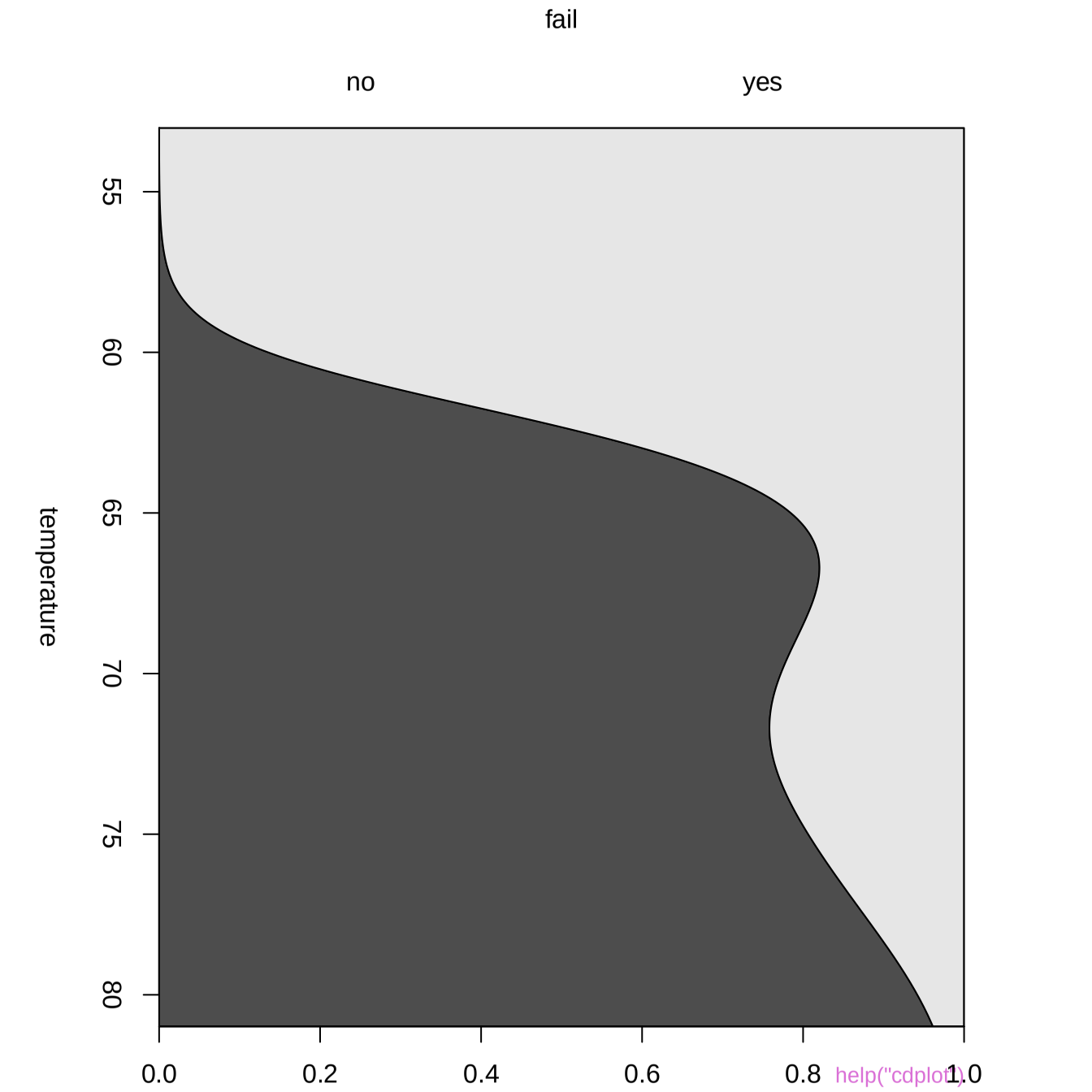
help("bxp")

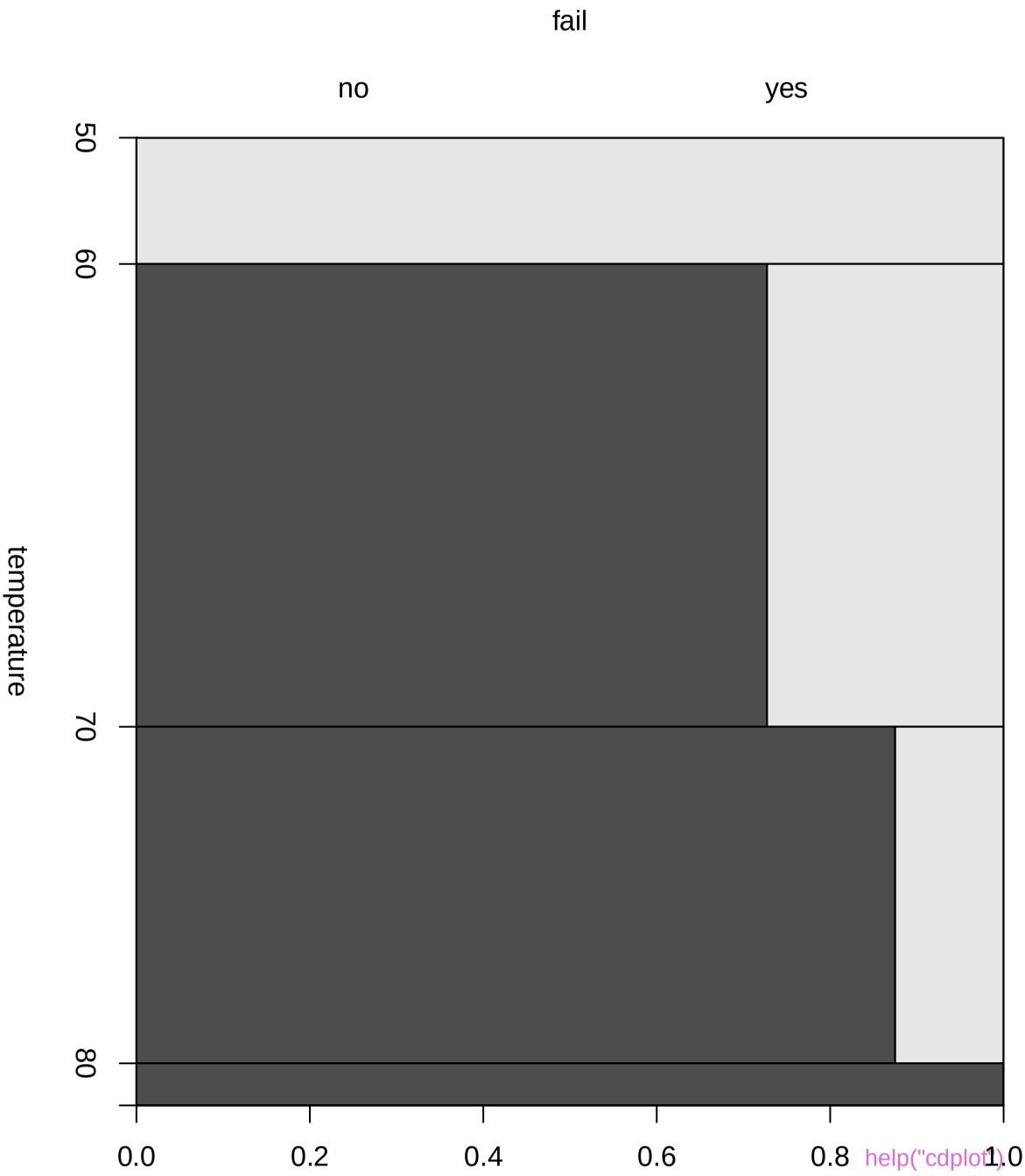


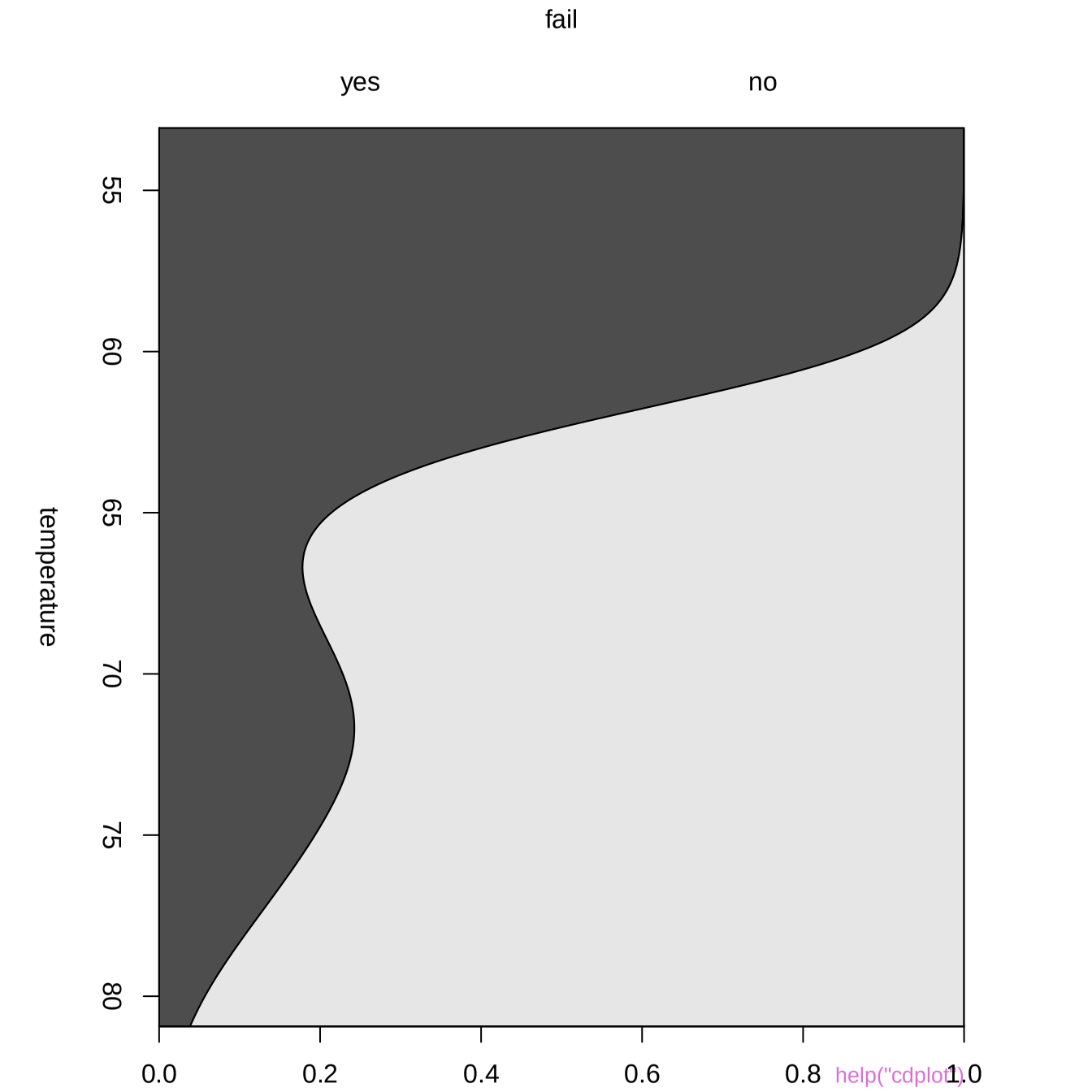
help("bxp")

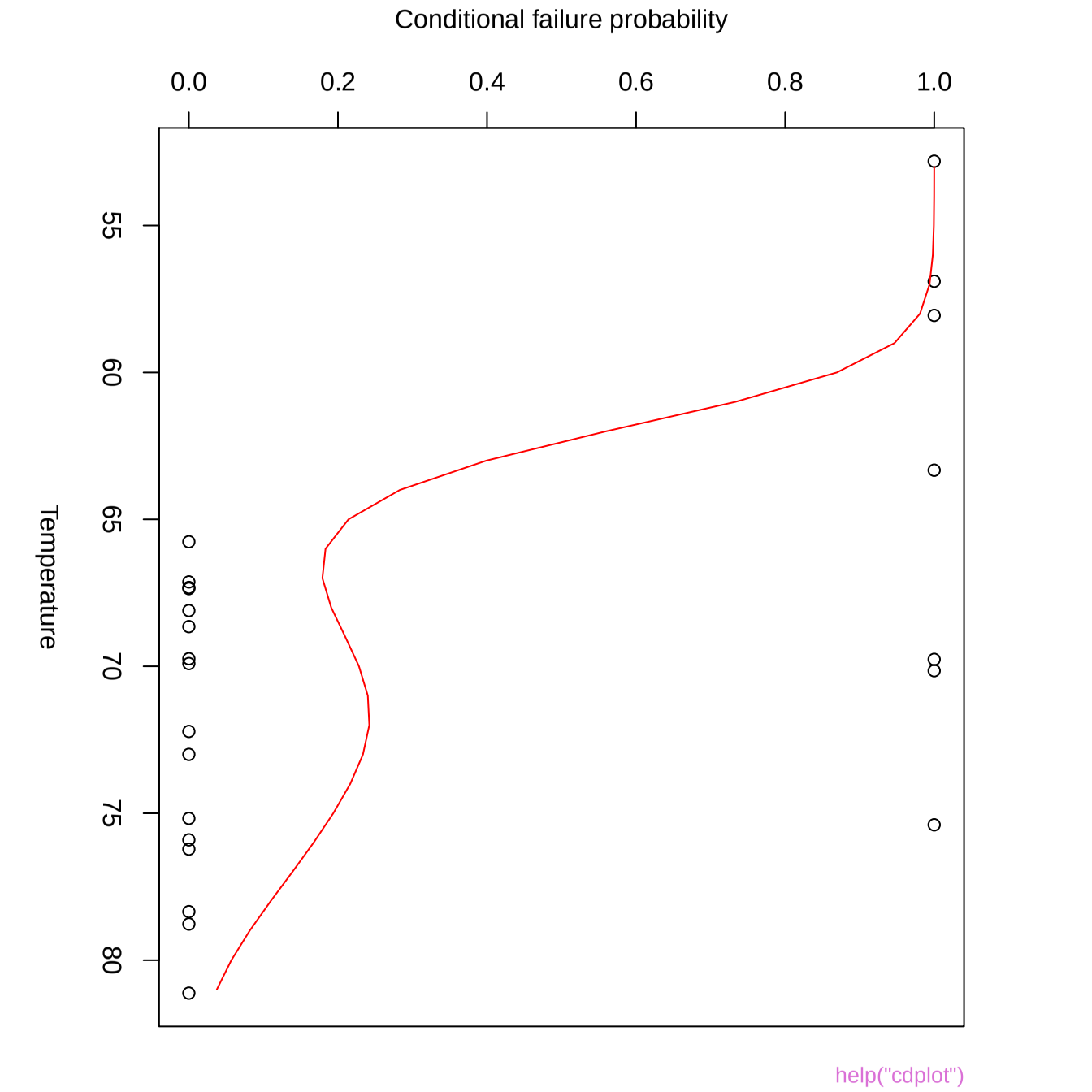

fail
no
yes
temperature
55
60
65
70
75
80
0.0
0.2
0.4
0.6
0.8
1.0
help("cdplot")

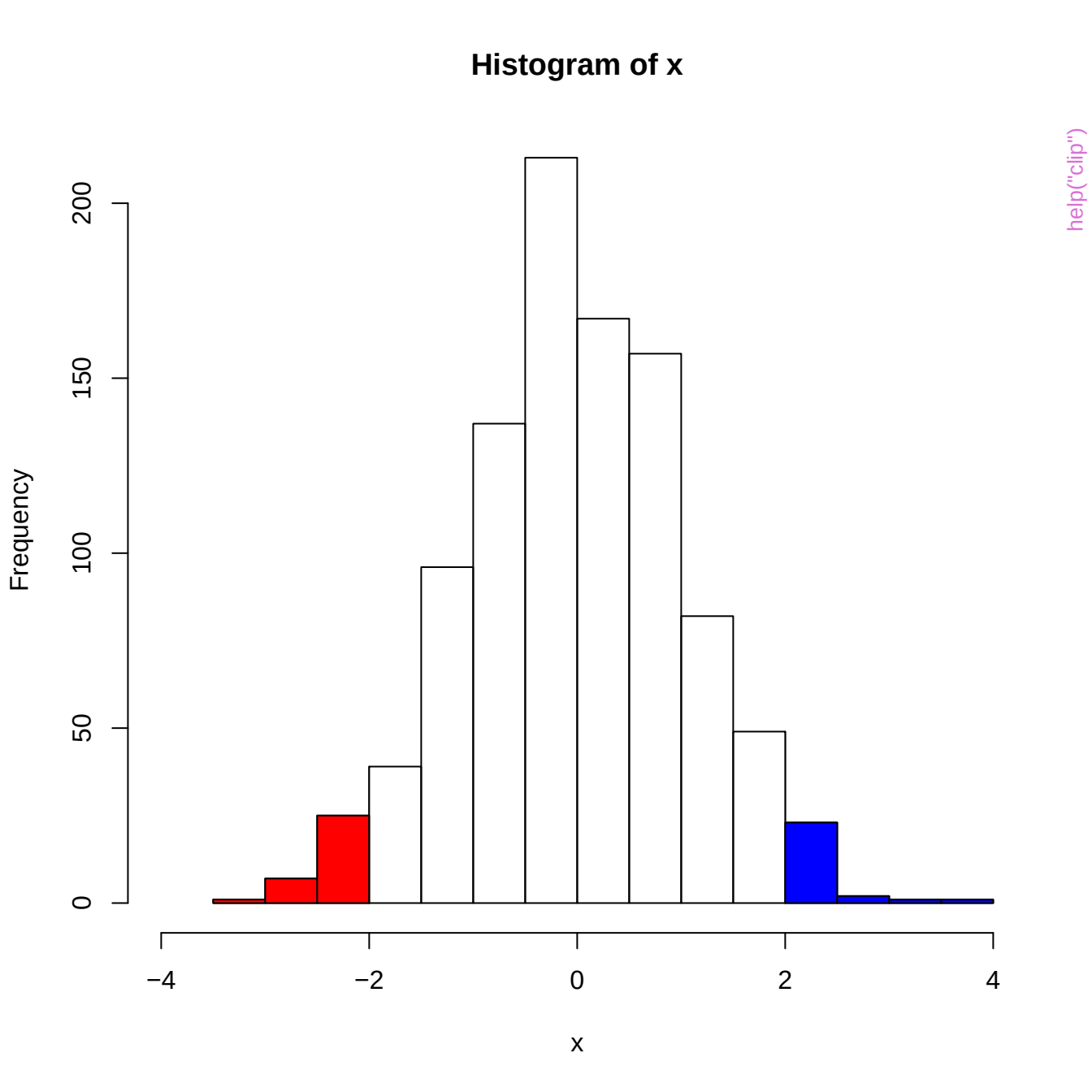

fail
no
yes
temperature
55
60
65
70
75
80
0.0
0.2
0.4
0.6
0.8
1.0
help("cdplot")

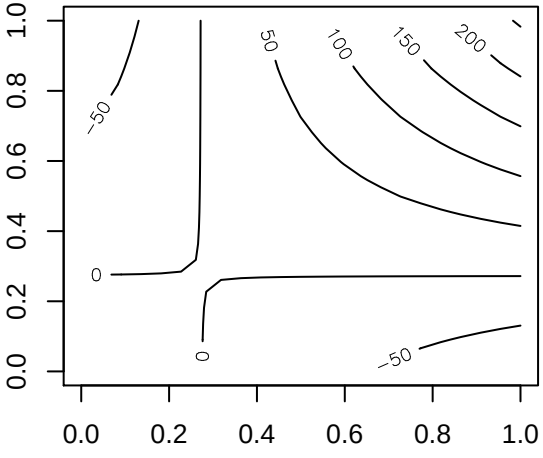

fail
no
yes
temperature
55
60
65
70
75
80
0.0
0.2
0.4
0.6
0.8
1.0
help("cdplot")

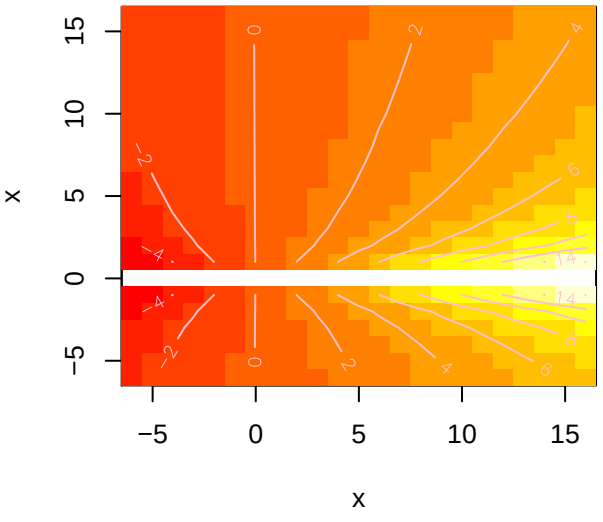

fail
no
yes
temperature
50
60
70
80
0.0
0.2
0.4
0.6
0.8
1.0
help("cdplot")


fail
yes
no
temperature
55
60
65
70
75
80
0.0
0.2
0.4
0.6
0.8
1.0
help("cdplot")

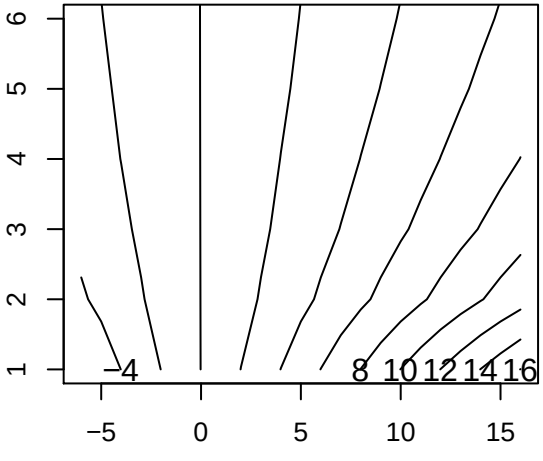

Conditional failure probability
0.0
0.2
0.4
0.6
0.8
1.0
Temperature
55
60
65
70
75
80
help("cdplot")

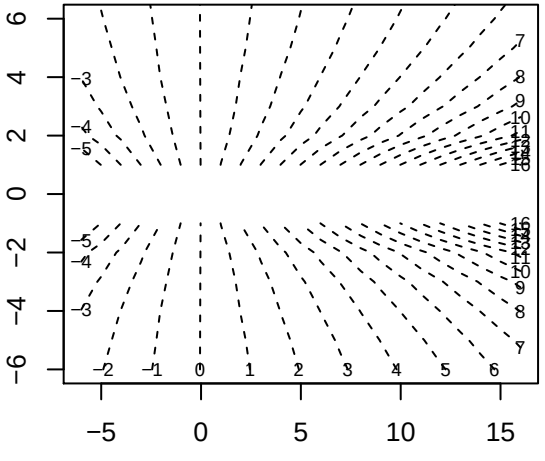

Histogram of x
Frequency
0
50
100
150
200
−4
−2
0
2
4
x
help("clip")

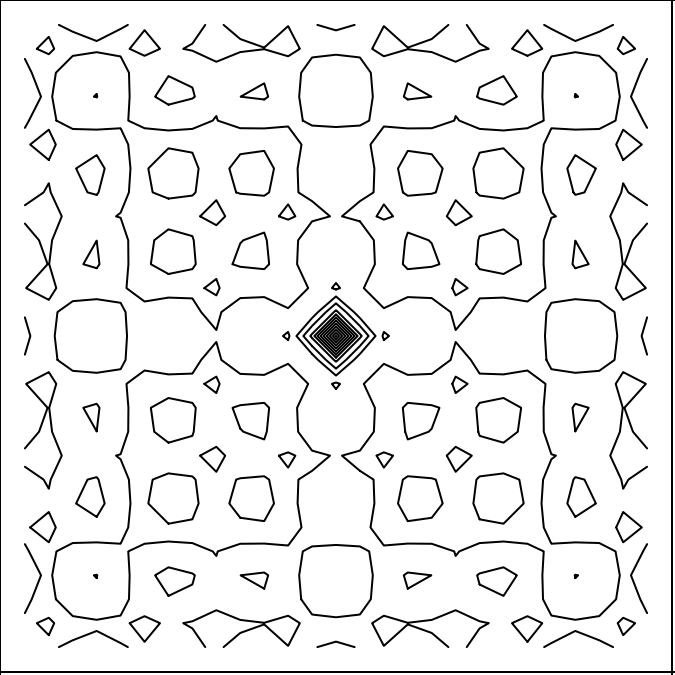


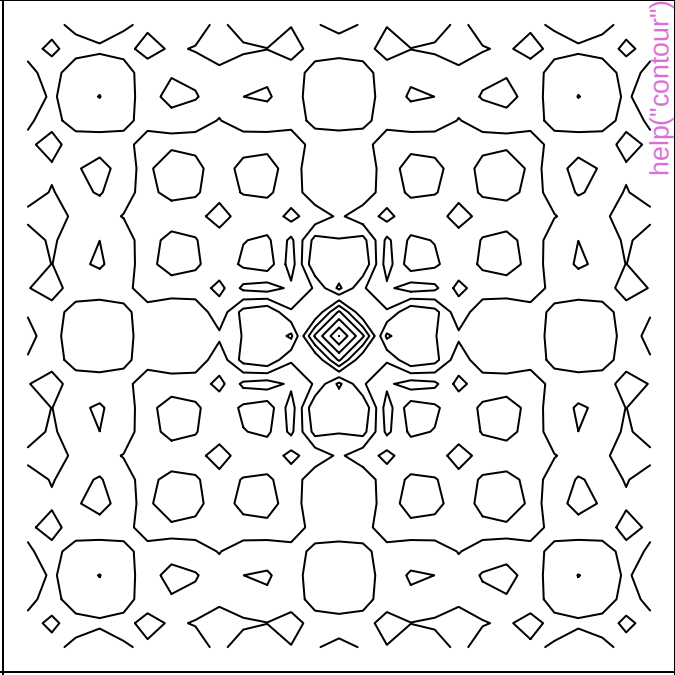


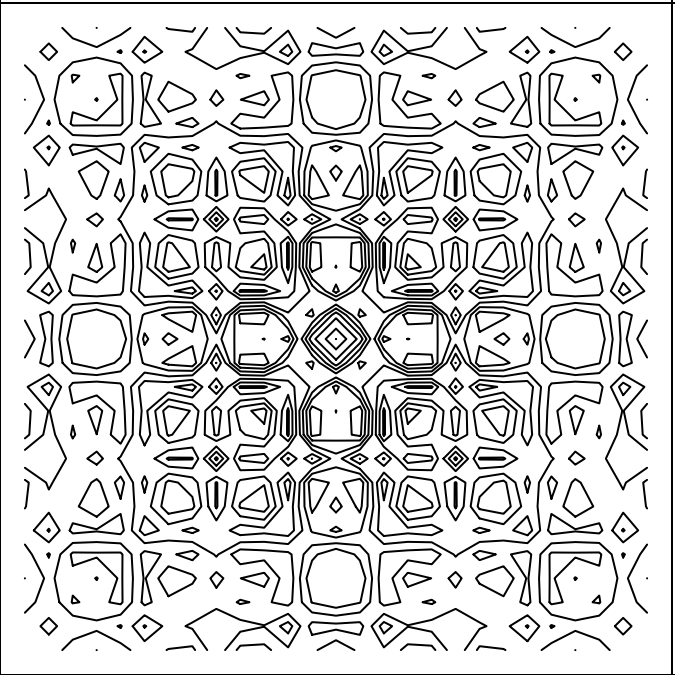
help("contour")

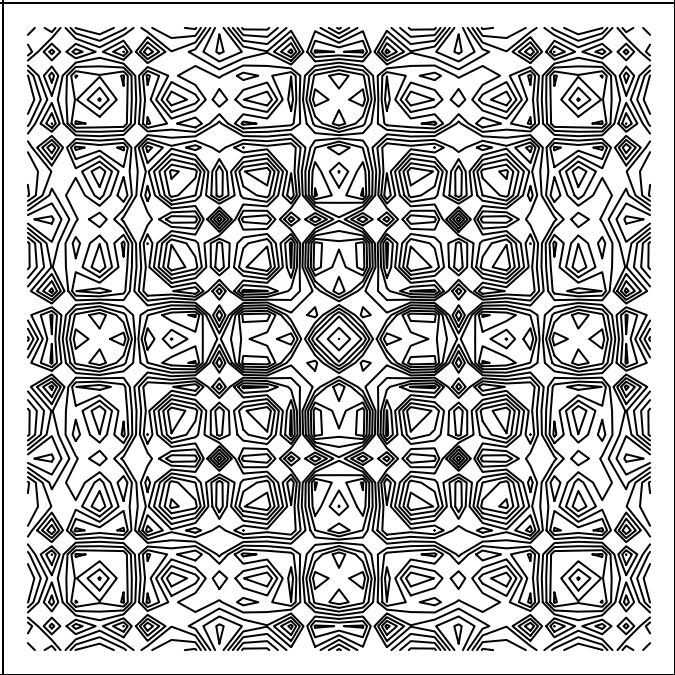




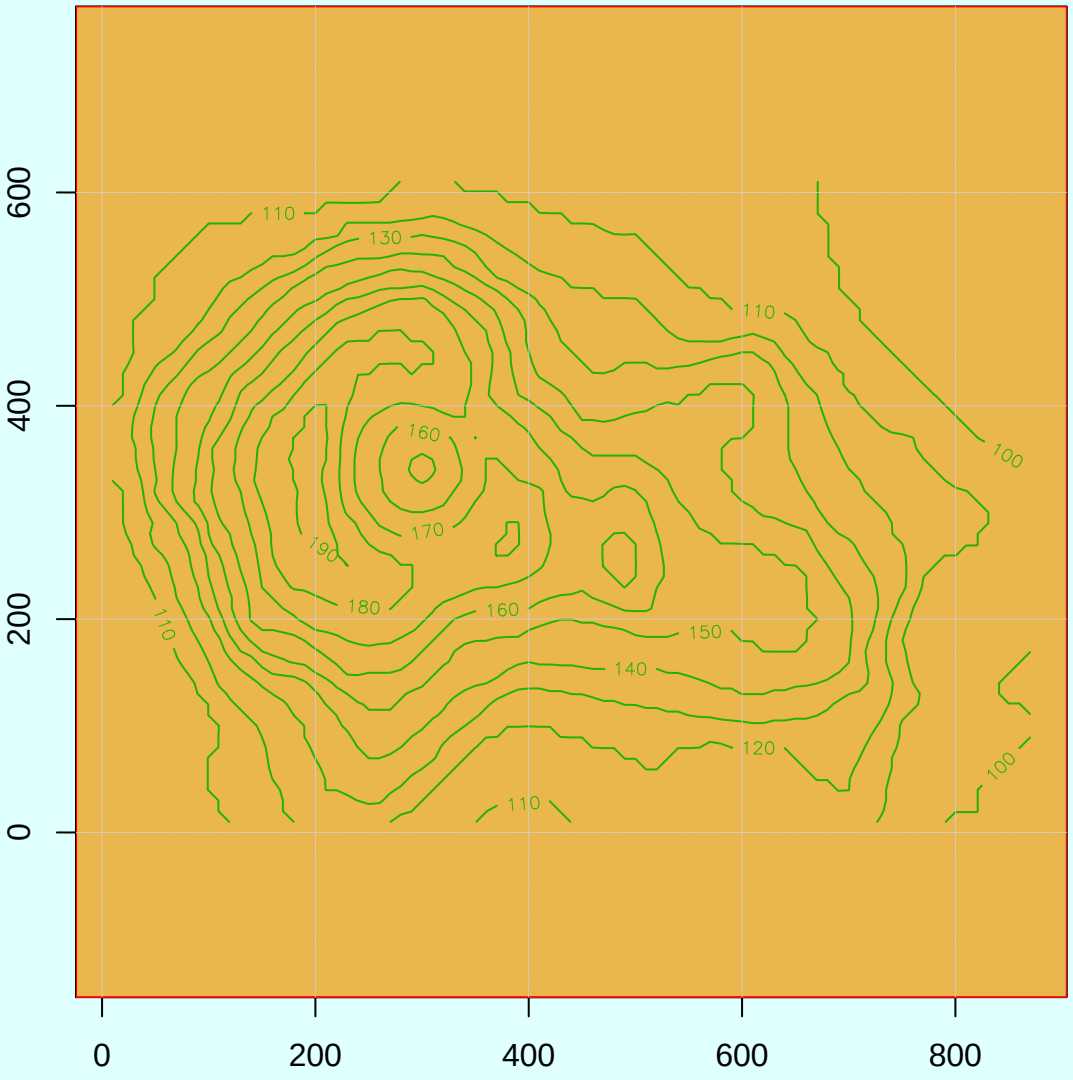


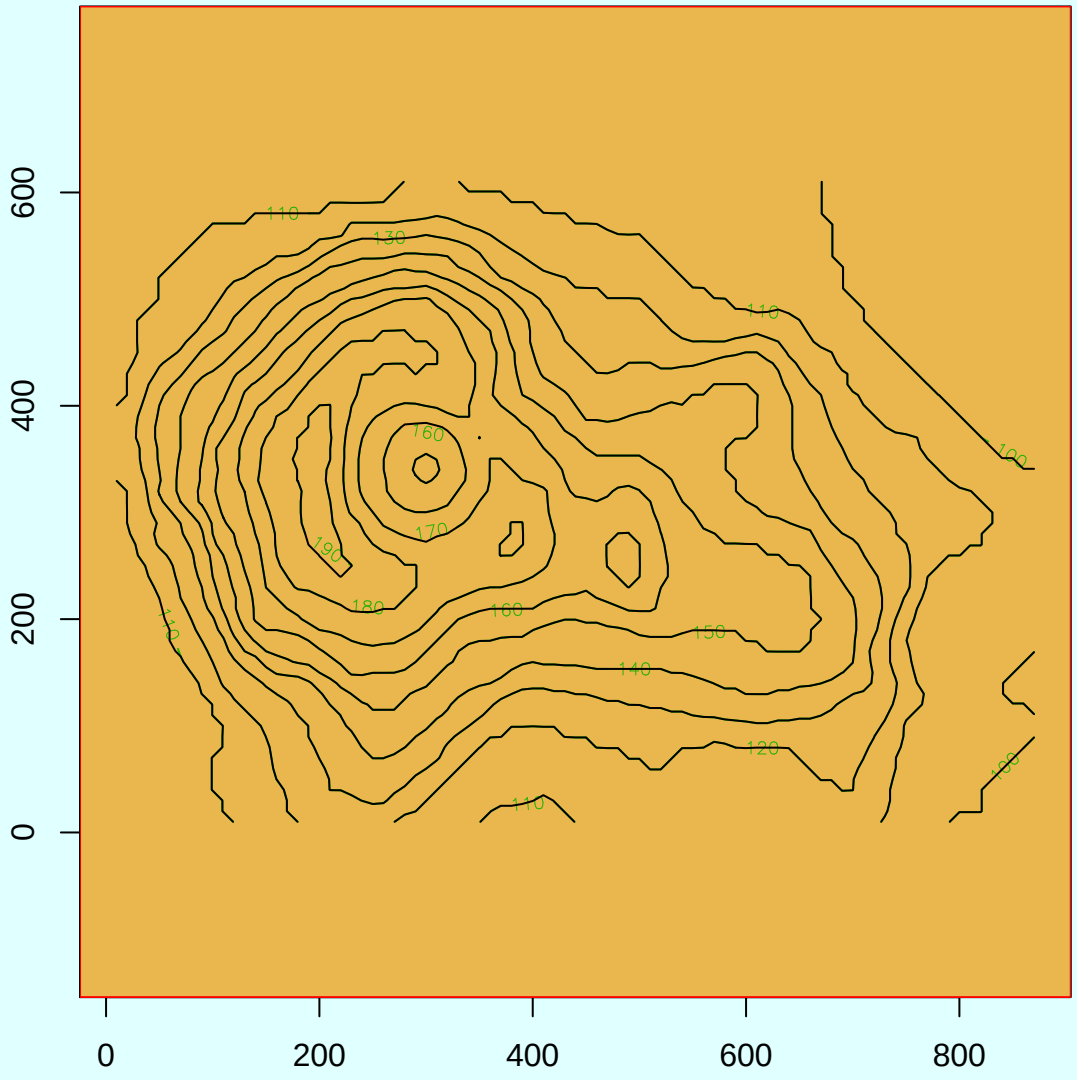

help("contour")



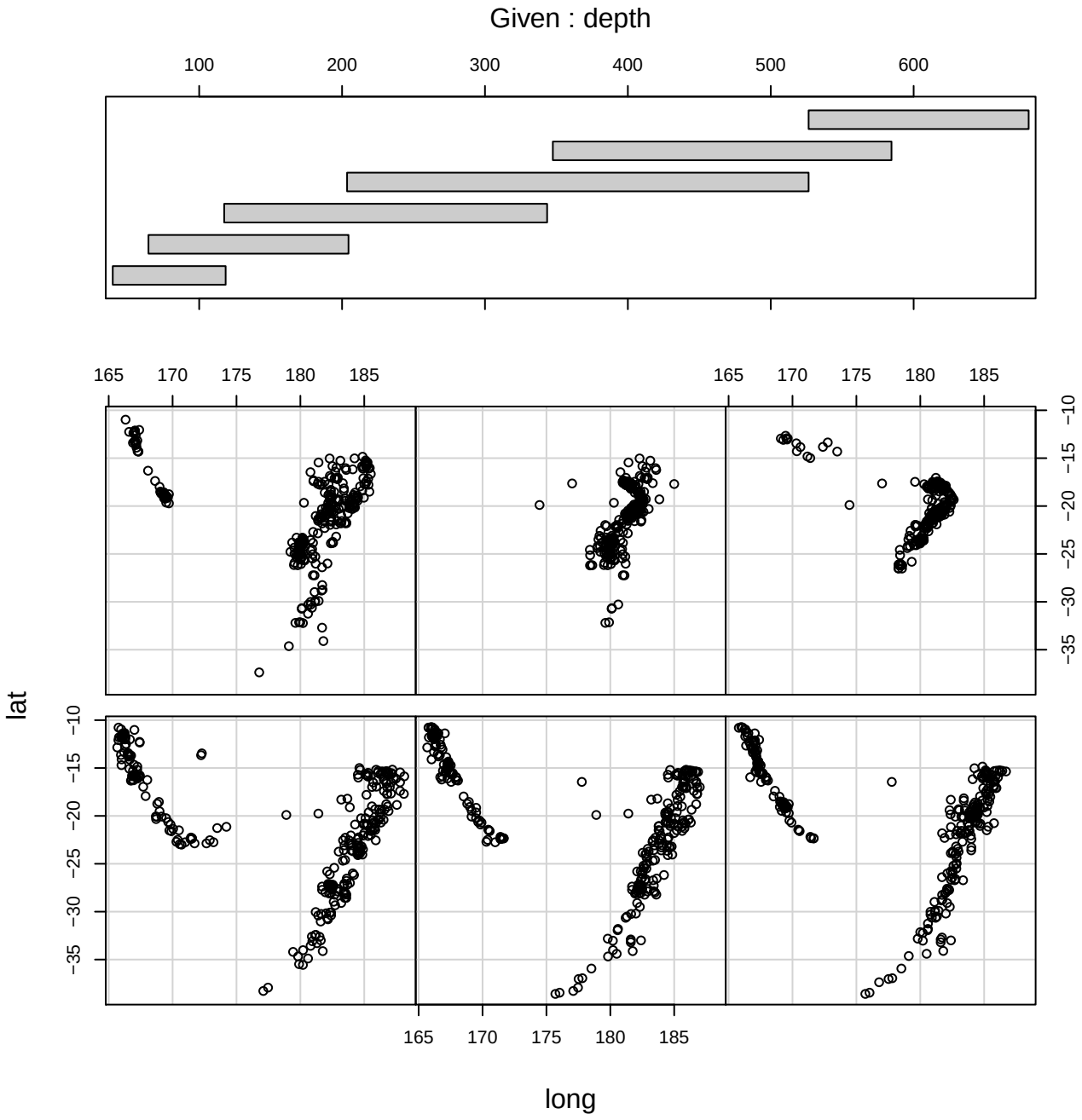


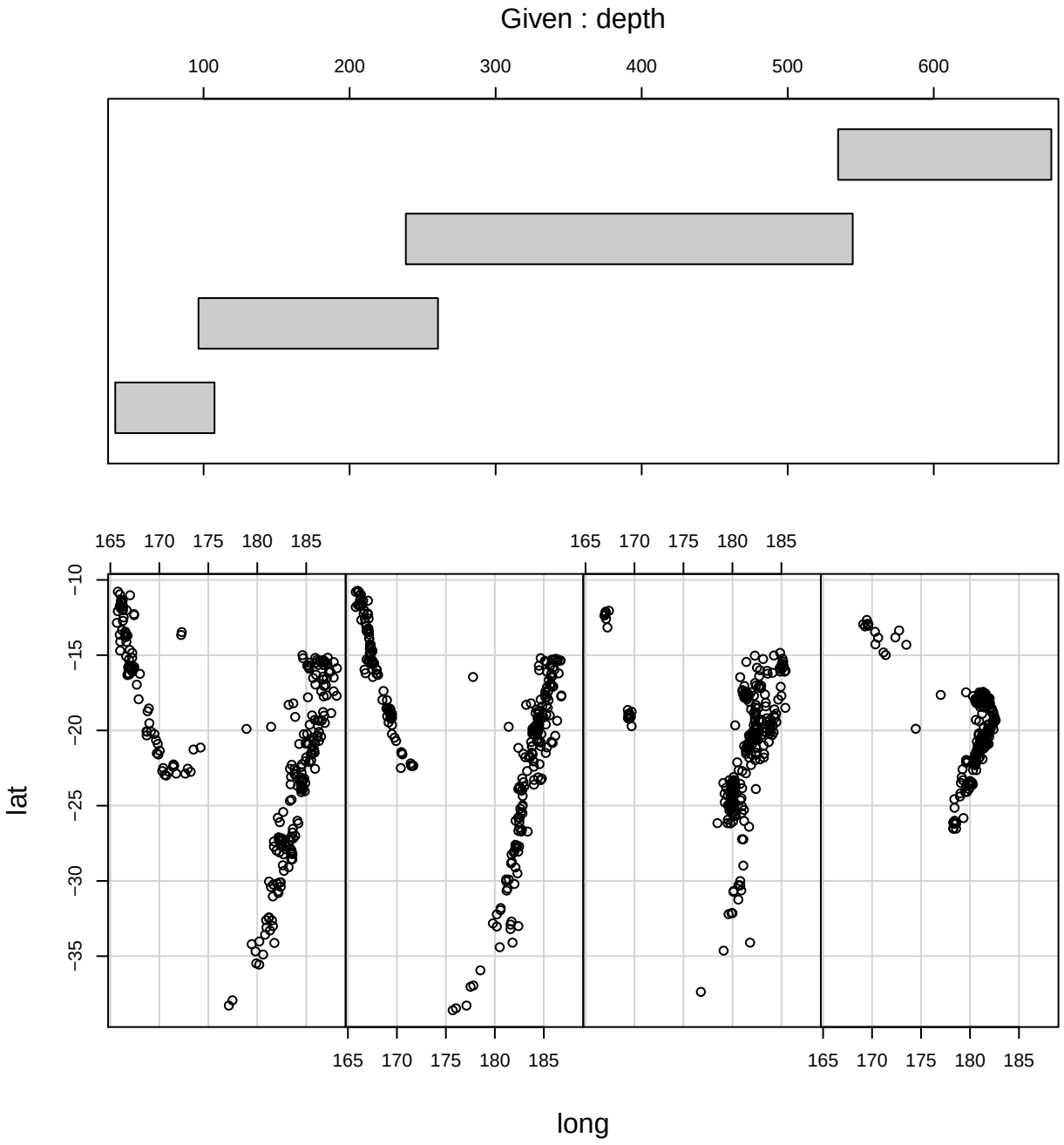
A Topographic Map of Maunga Whau




help("contour")
0
200
400
600
800
0
200
400
600
110
130
110
160
190
170
180
160
150
140
120
110
100

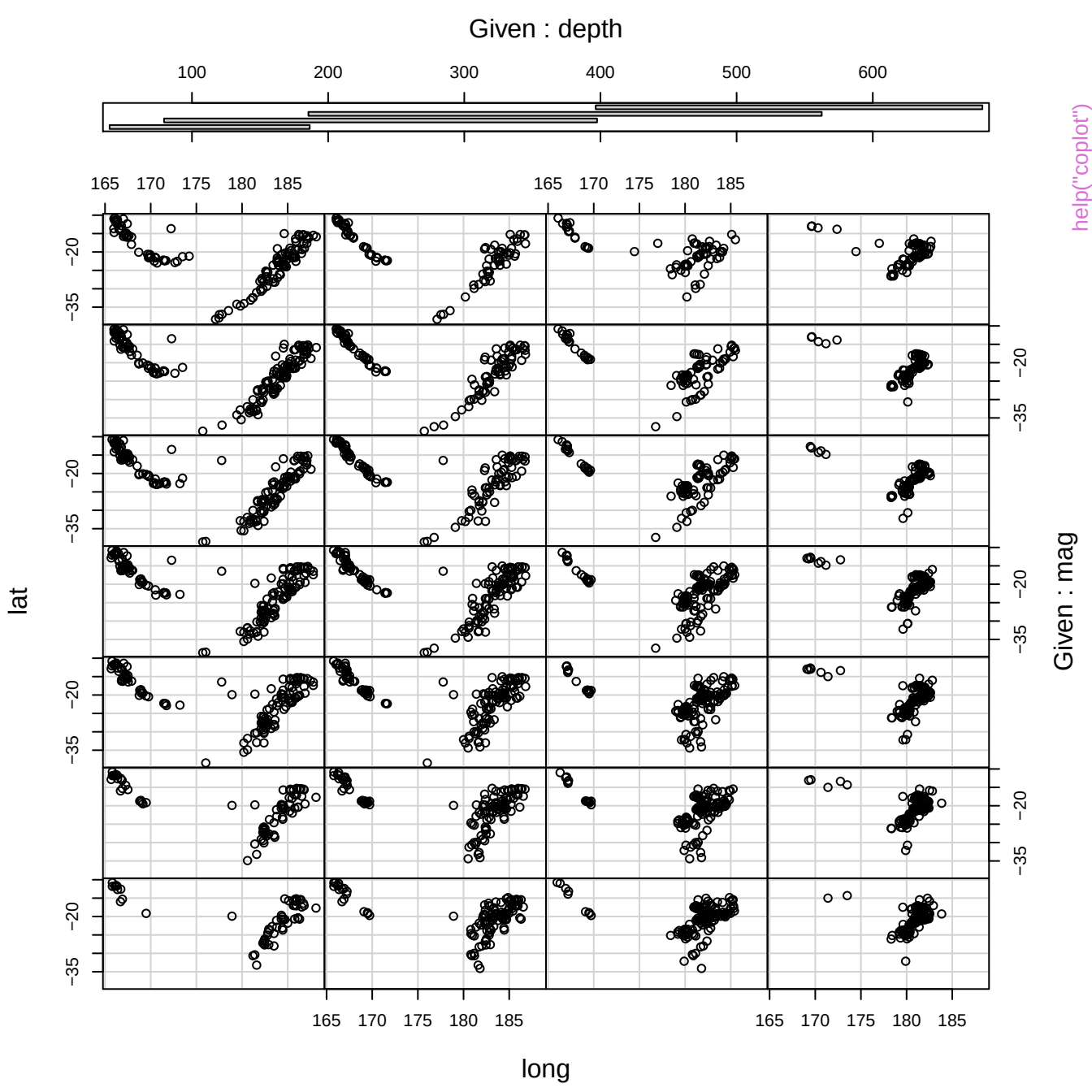
1:4
1.0
1.5
2.0
2.5
3.0
3.5
4.0
1.0
2.0
3.0
4.0
Index


Given : depth
100
200
300
400
500
600
help("coplot")
165
170
175
180
185
−10
−15
−20
−25
−30
−35
lat
long


Given : depth
100
200
300
400
500
600
165
170
175
180
185
−10
−15
−20
−25
−30
−35
lat
long

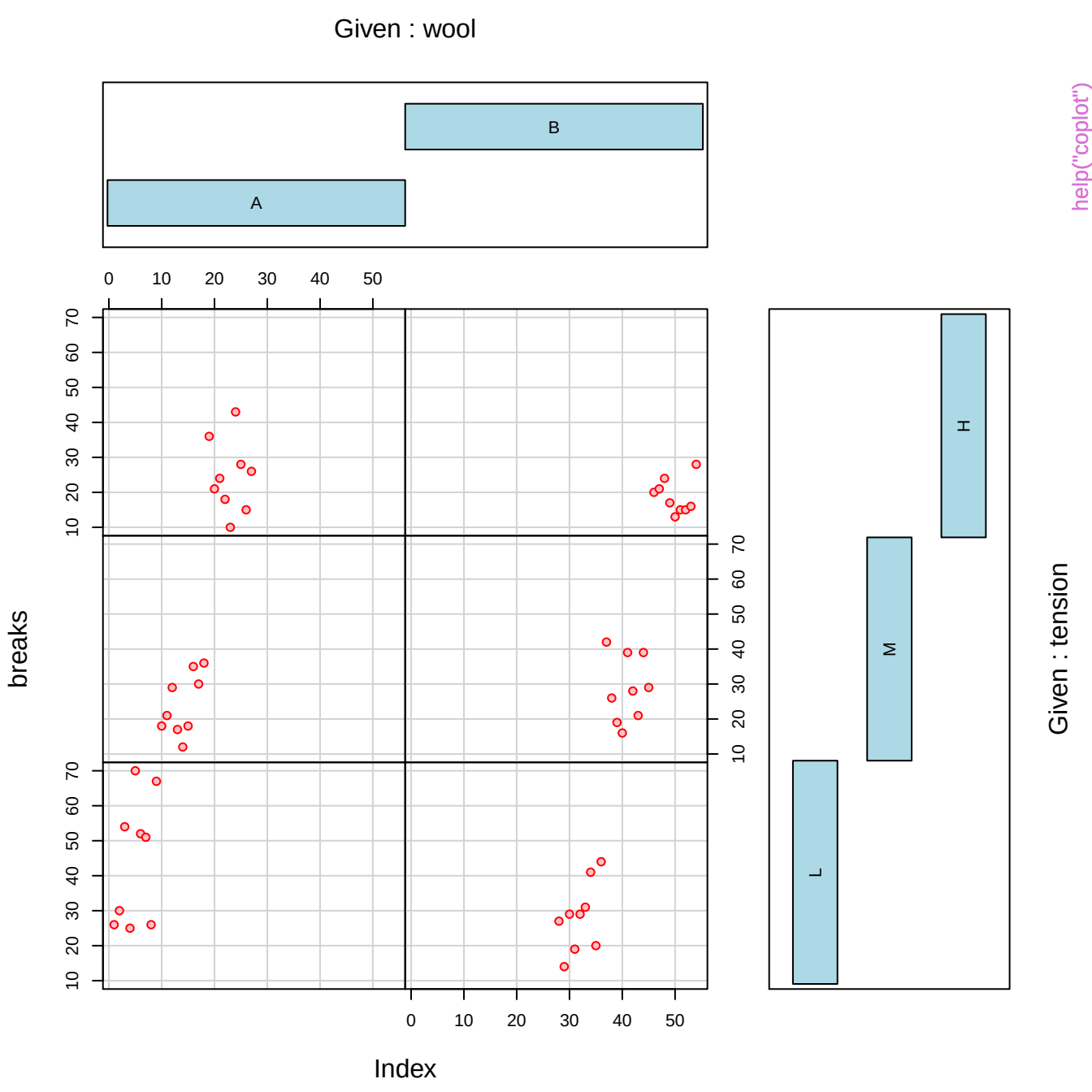
help("coplot")

Given : depth
100
200
300
400
500
600
lat
long
Given : mag
4.0
4.5
5.0
5.5
6.0
165
175
185
−20
−35
help("coplot")

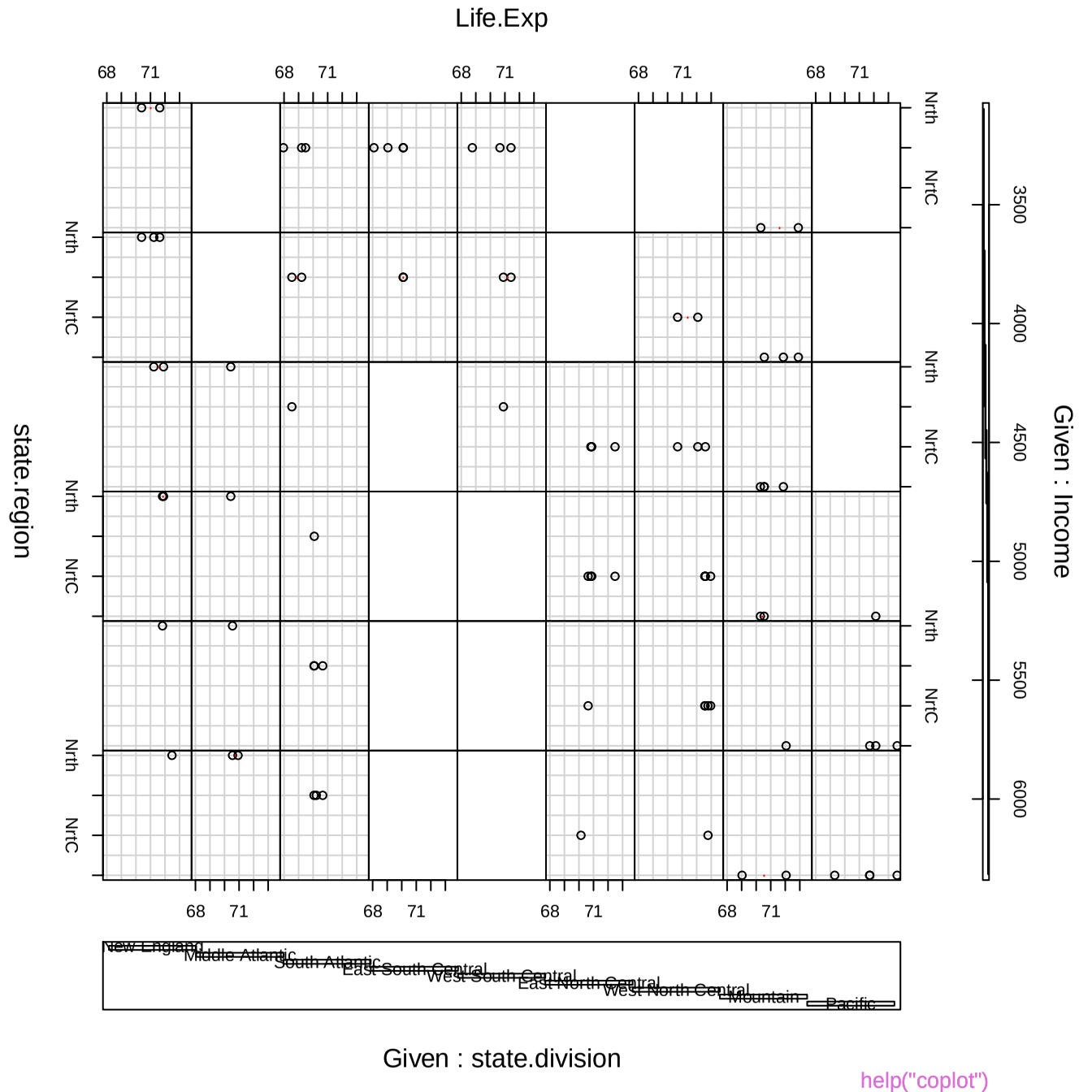

Given : depth
100
200
300
400
500
600
help("coplot")
lat
long
Given : mag
165
170
175
180
185
−20
−35

Given : depth
100
200
300
400
500
600
165
170
175
180
185
−20
−35
lat
long
Given : mag
4.0
4.5
5.0
5.5
6.0
help("coplot")

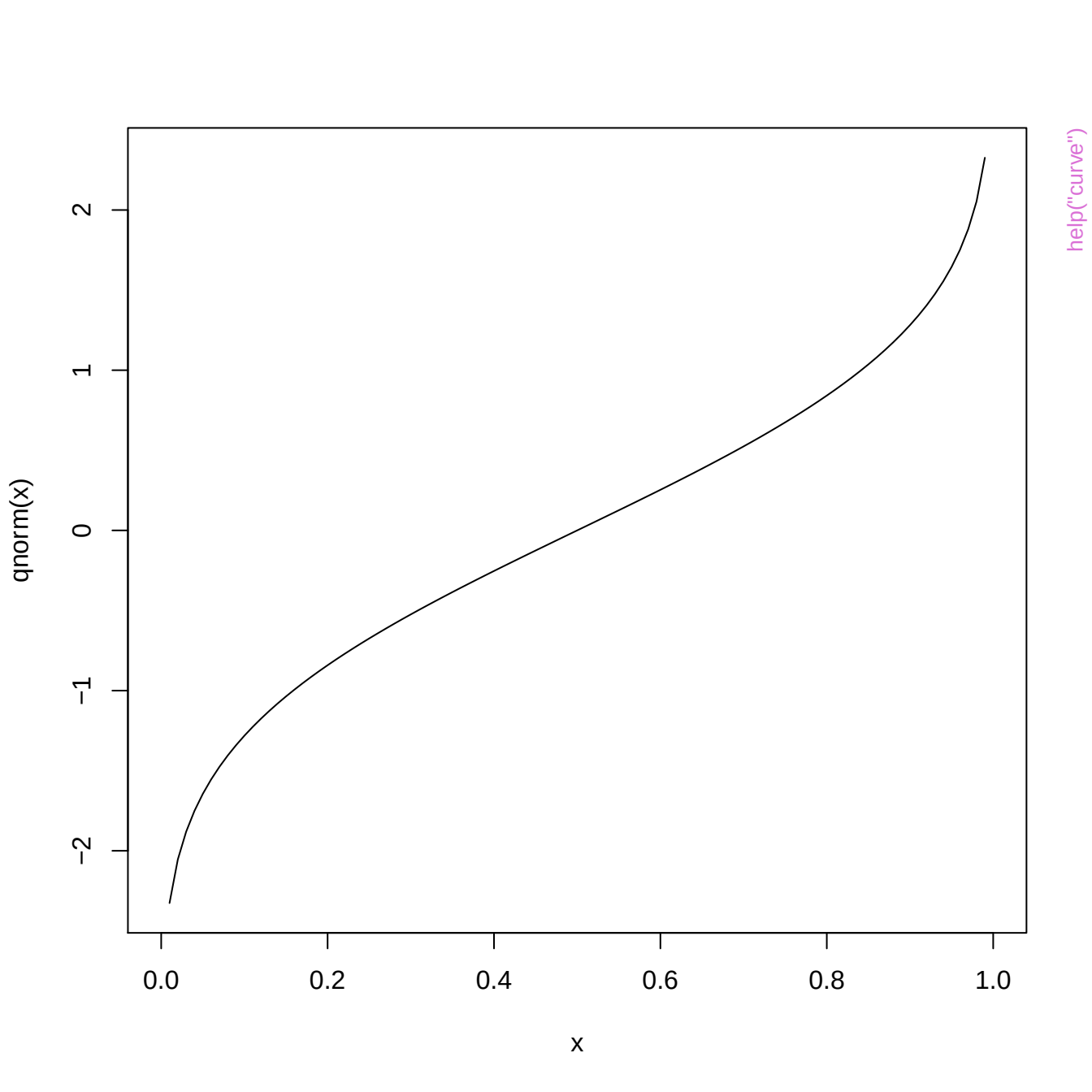
Given : wool
0
10
20
30
40
50
10
20
30
40
50
60
70
breaks
Index
Given : tension
L
M
H
help("coplot")


Given : wool
A
B
0
10
20
30
40
50
10
20
30
40
50
60
70
breaks
Index
Given : tension
L
M
H
help("coplot")

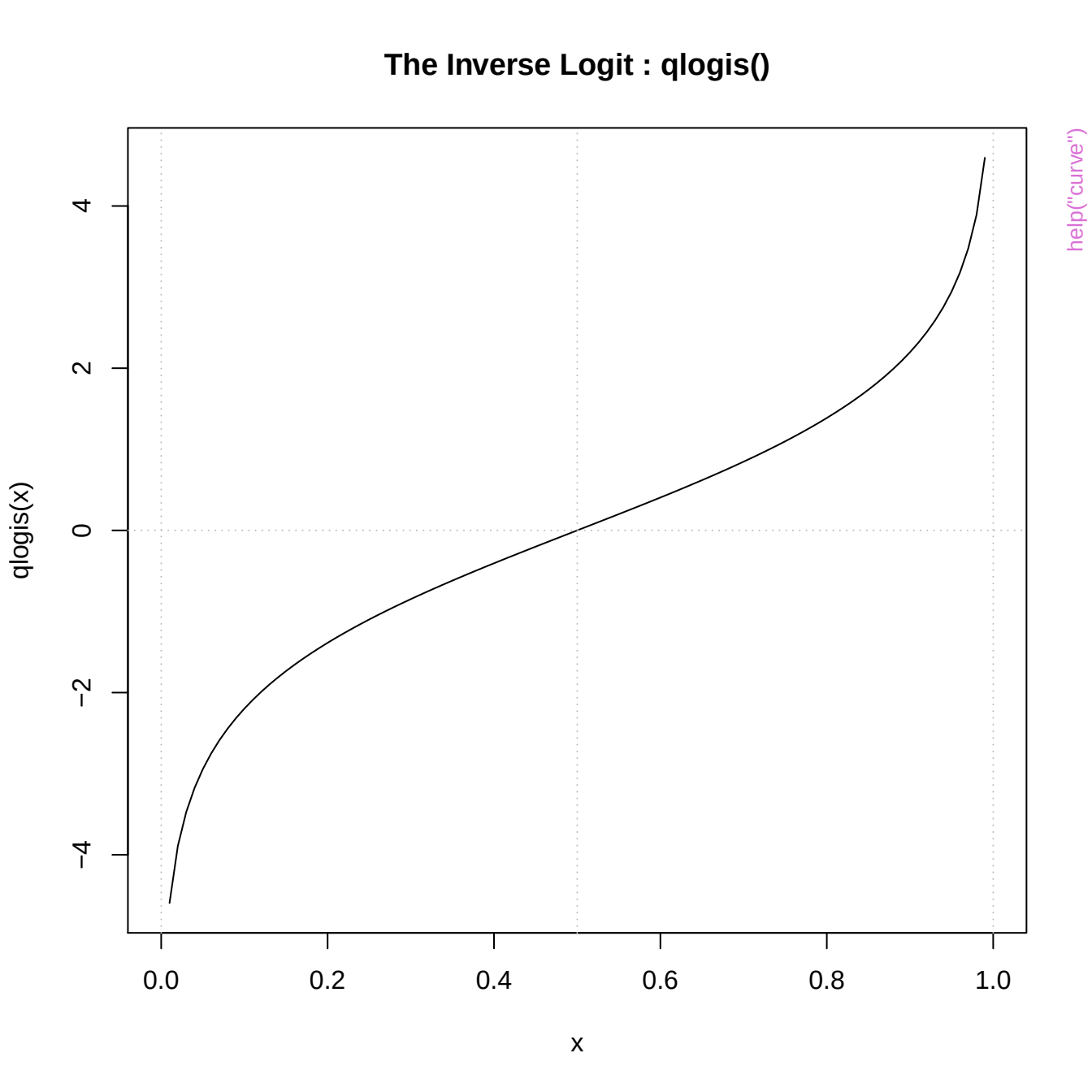
Given : Illiteracy
0.5
1.0
1.5
2.0
2.5
3000
4000
5000
6000
Life.Exp
68
70
72
Income
Given : state.region
Northeast
South
North Central
West
help("coplot")

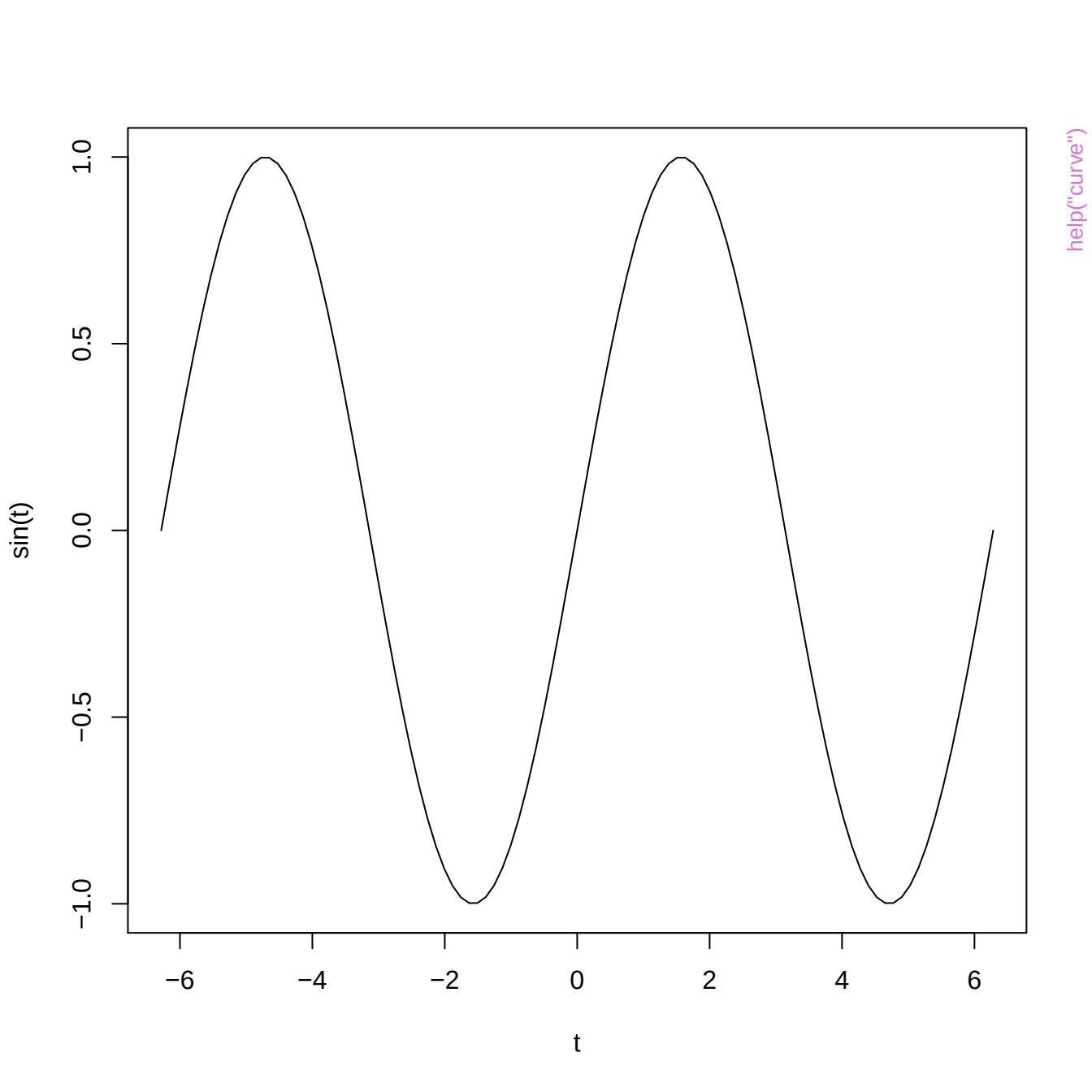

Life.Exp
68
71
Nrth
NrtC
Given : Income
3500
4000
4500
5000
5500
6000
state.region
Given : state.division
New England
Middle Atlantic
South Atlantic
East South Central
West South Central
East North Central
West North Central
Mountain
Pacific

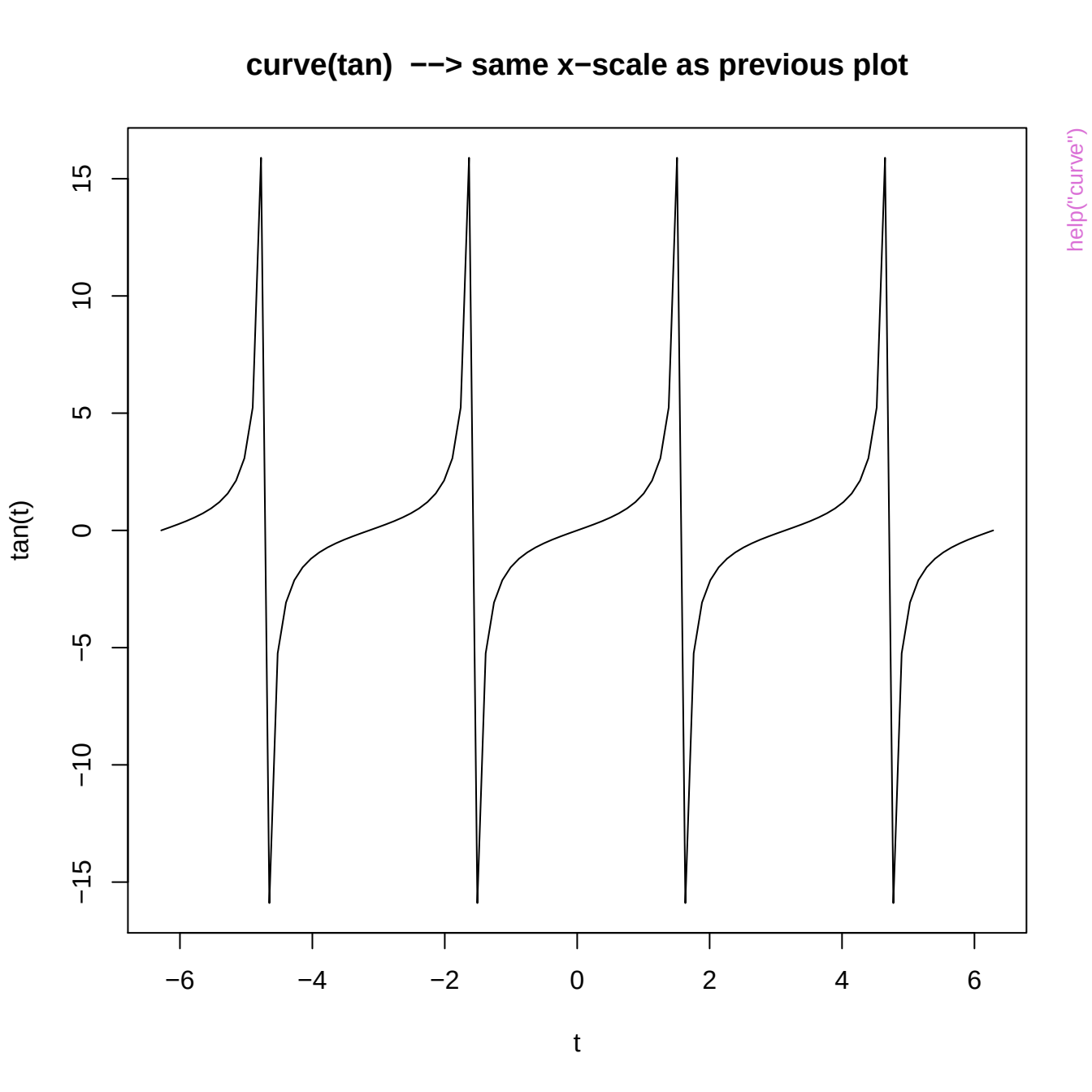
help("coplot")



help("curve")


The Inverse Logit : qlogis()
qlogis(x)
4
2
0
−2
−4
0.0
0.2
0.4
0.6
0.8
1.0
x
help("curve")


sin(t)
1.0
0.5
0.0
−0.5
−1.0
−6
−4
−2
0
2
4
6
t
help("curve")

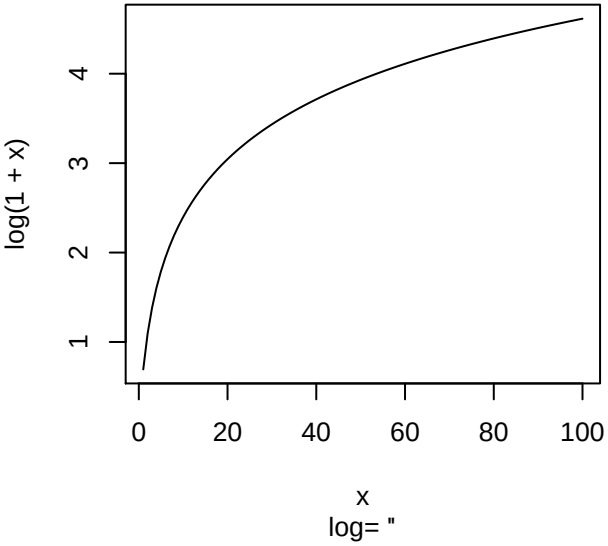

curve(tan) −−> same x−scale as previous plot
tan(t)
15
10
5
0
−5
−10
−15
−6
−4
−2
0
2
4
6
t
help("curve")

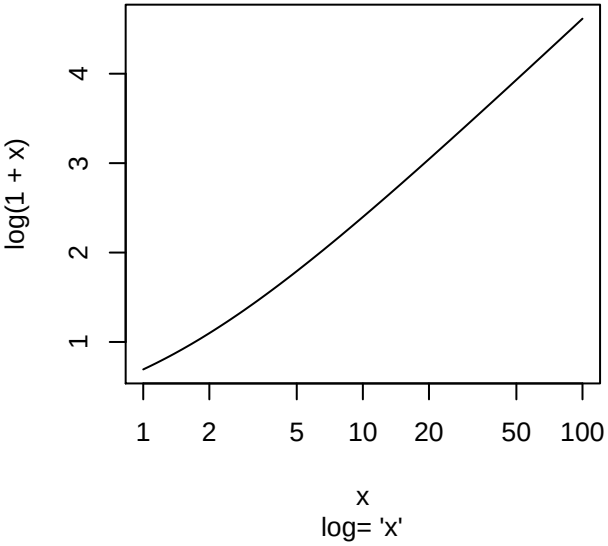
x^3 − 3 * x
2
1
0
−1
−2
−2
−1
0
1
2
x

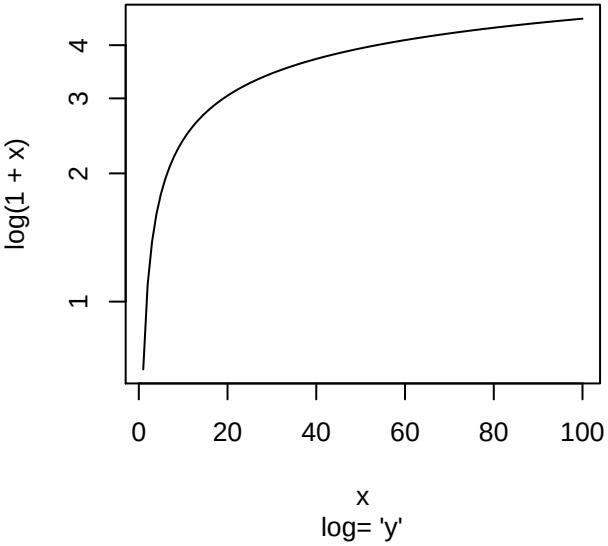
cos(x)
1.0
0.5
0.0
−0.5
−1.0
−2
0
2
4
6
8
x
help("curve")

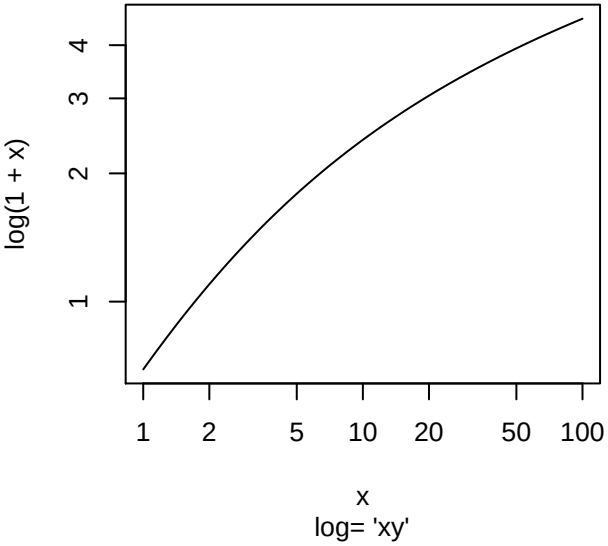
chippy(x)
1.0
0.5
0.0
−0.5
−1.0
−5
0
5
x

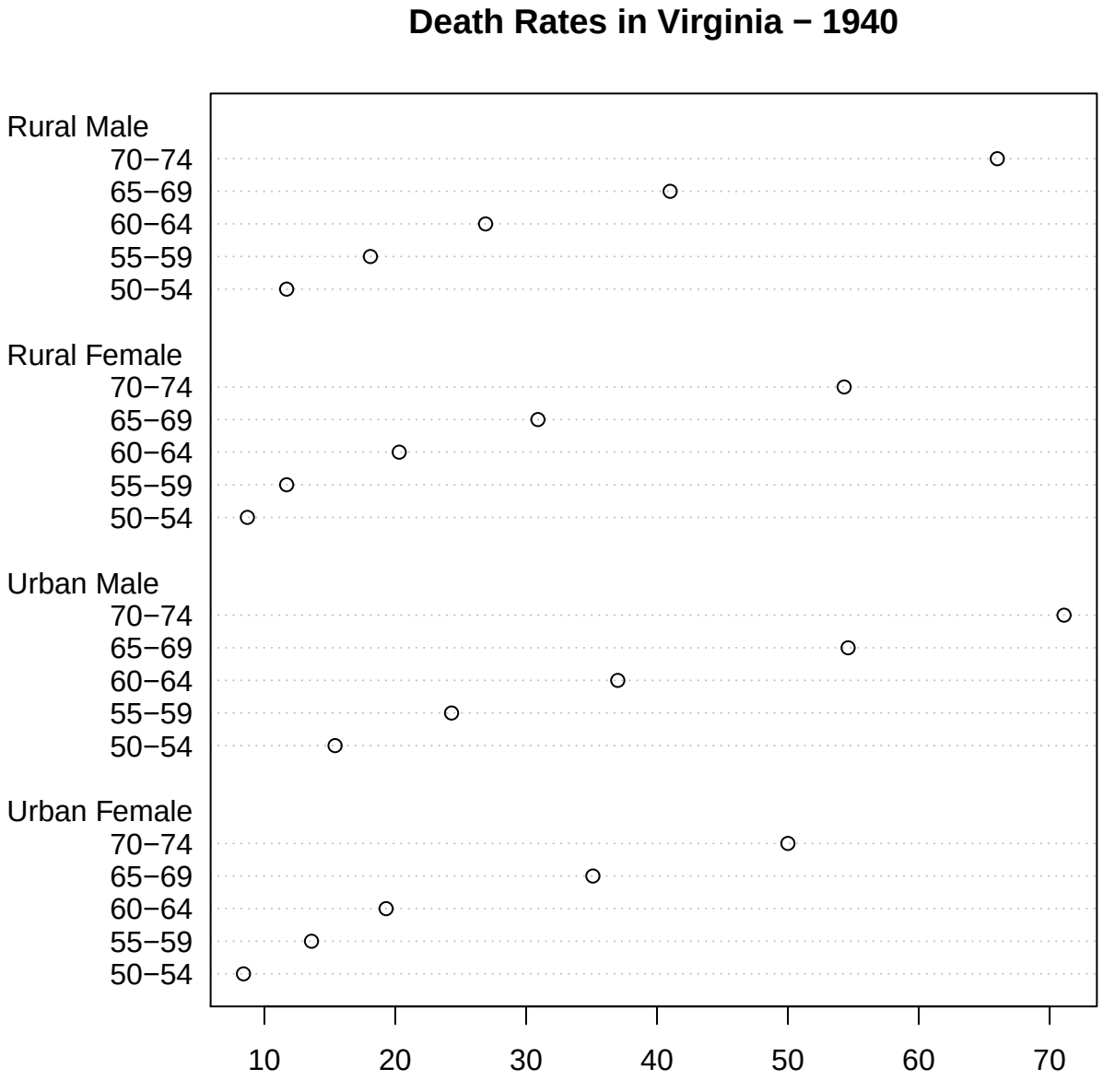
chippy(x)
1.0
0.5
0.0
−0.5
−1.0
−8.0
−7.0
−6.0
−5.0
x

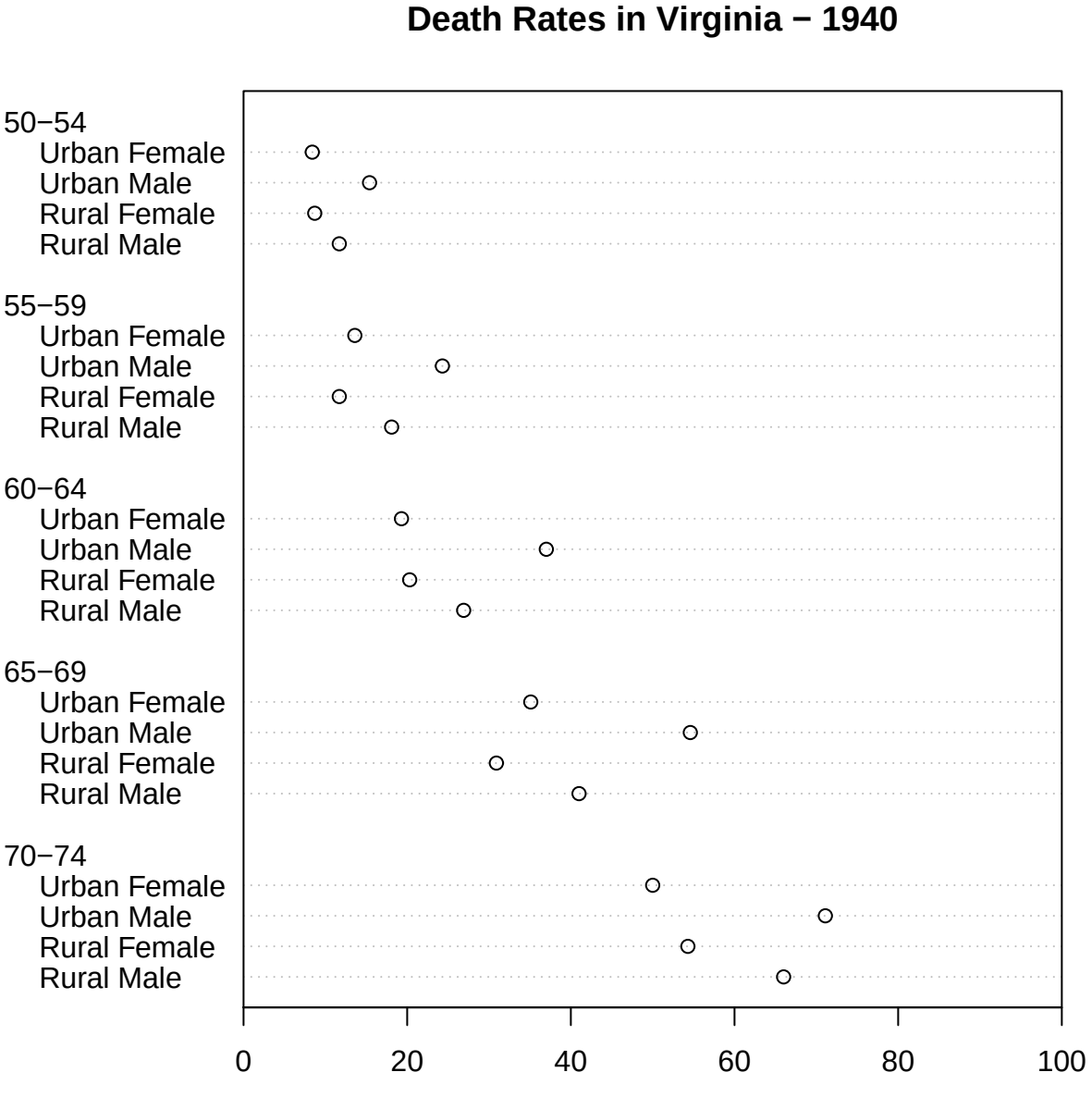

log(1 + x)
1
2
3
4
0
20
40
60
80
100
x
log= ''

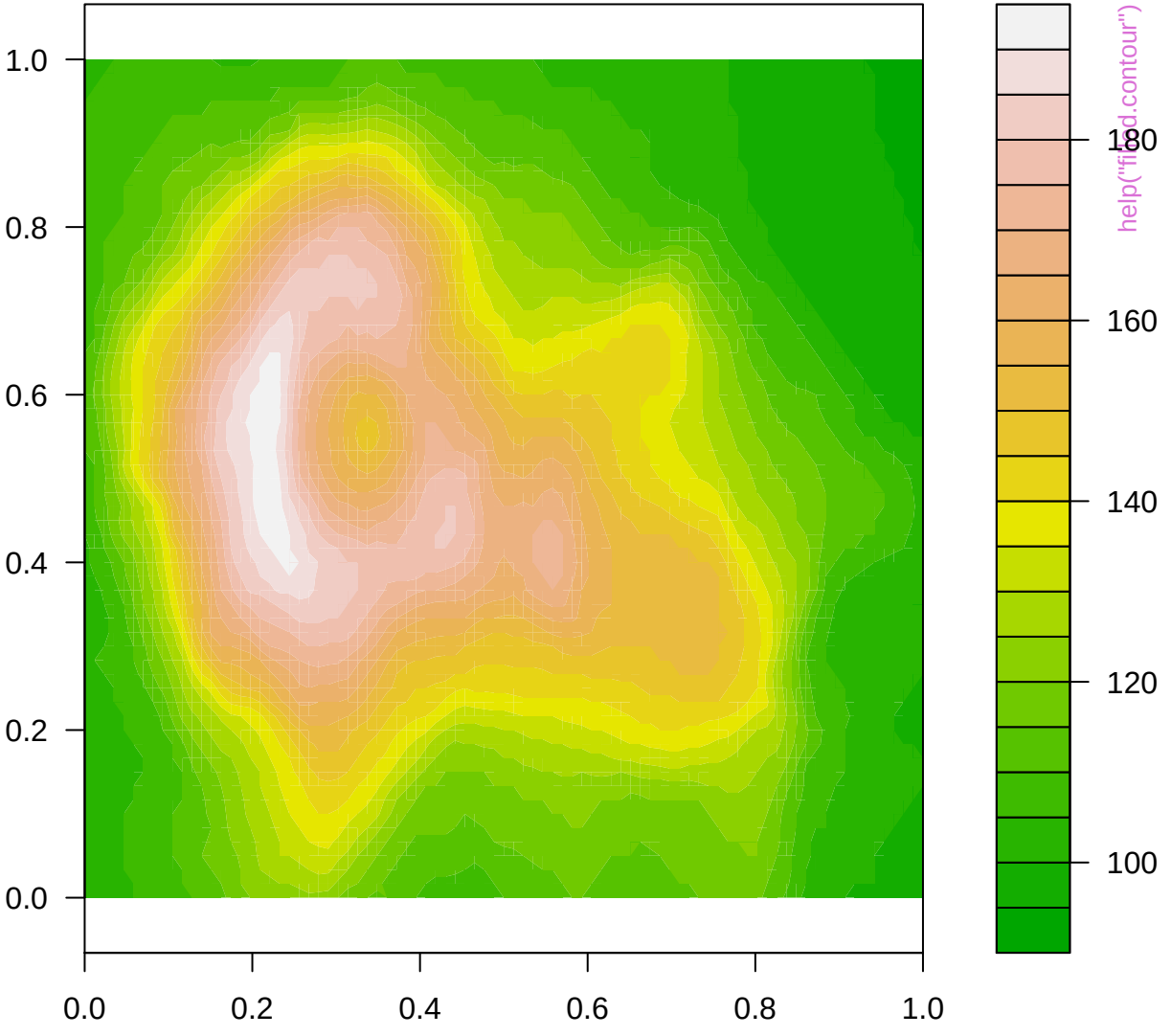

log(1 + x)
1
2
3
4
1
2
5
10
20
50
100
x
log= 'x'

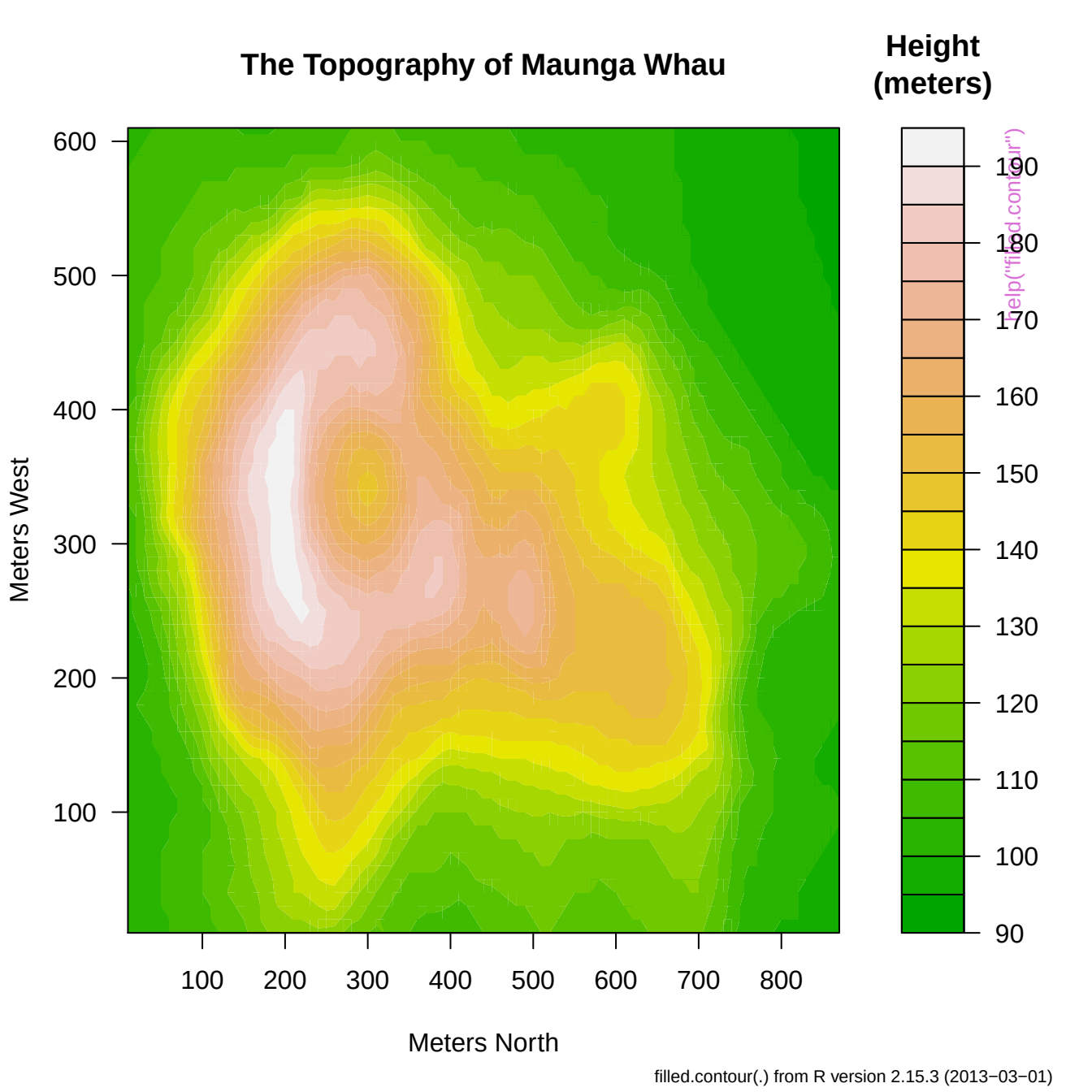

log(1 + x)
1
2
3
4
0
20
40
60
80
100
x
log= 'y'

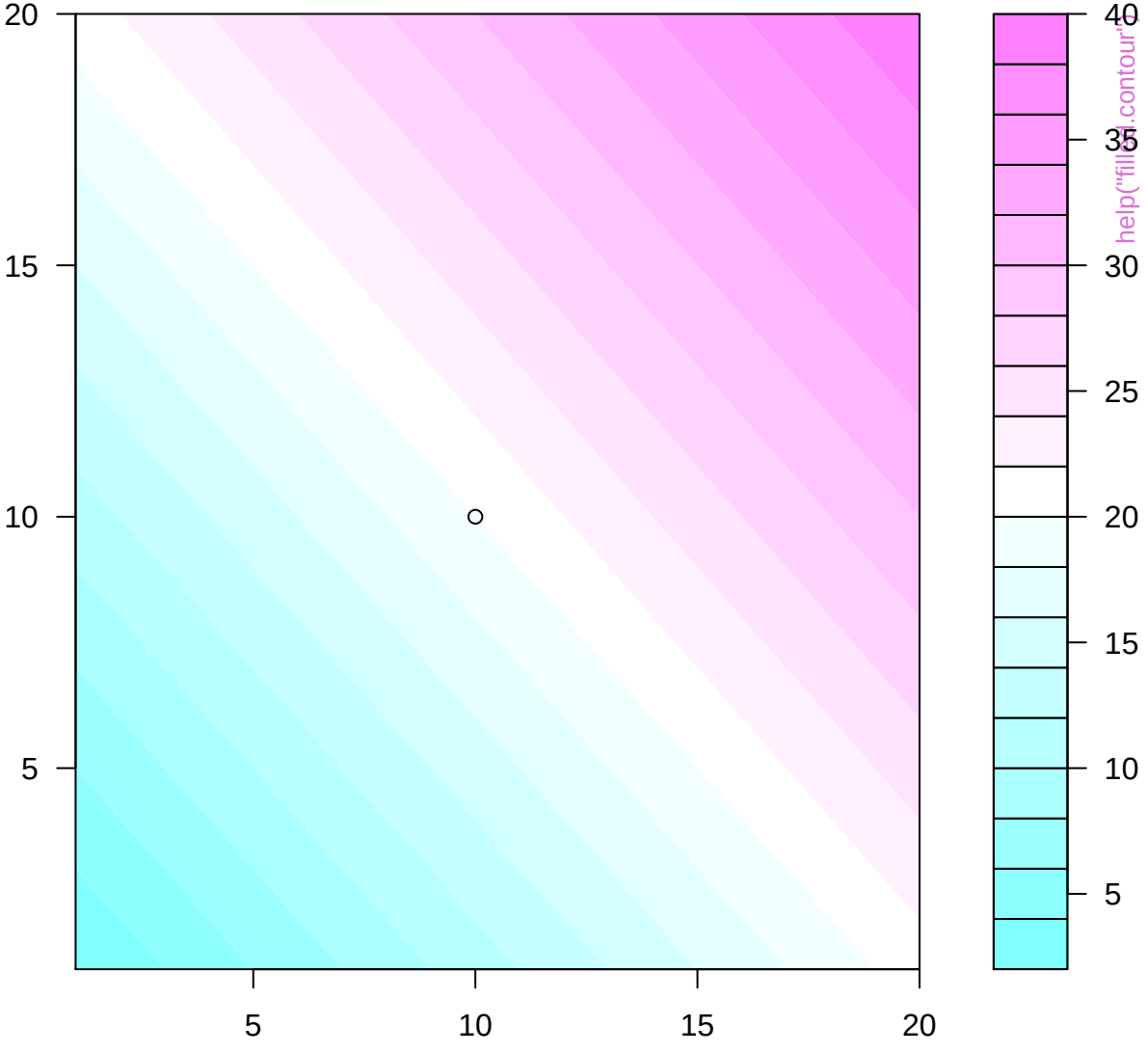

log(1 + x)
1
2
3
4
1
2
5
10
20
50
100
x
log= 'xy'

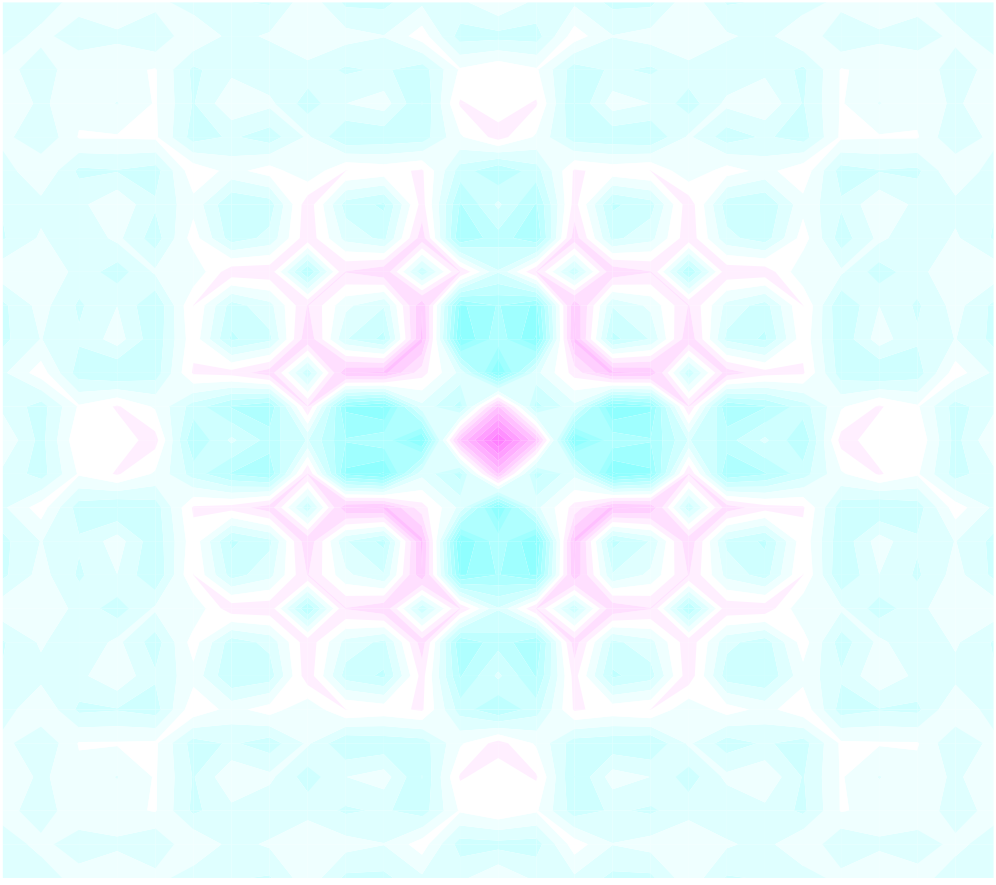

Death Rates in Virginia − 1940
Rural Male
70−74
65−69
60−64
55−59
50−54
Rural Female
70−74
65−69
60−64
55−59
50−54
Urban Male
70−74
65−69
60−64
55−59
50−54
Urban Female
70−74
65−69
60−64
55−59
50−54
10
20
30
40
50
60
70
help("dotchart")


Death Rates in Virginia − 1940
50−54
Urban Female
Urban Male
Rural Female
Rural Male
55−59
Urban Female
Urban Male
Rural Female
Rural Male
60−64
Urban Female
Urban Male
Rural Female
Rural Male
65−69
Urban Female
Urban Male
Rural Female
Rural Male
70−74
Urban Female
Urban Male
Rural Female
Rural Male
0
20
40
60
80
100
help("dotchart")

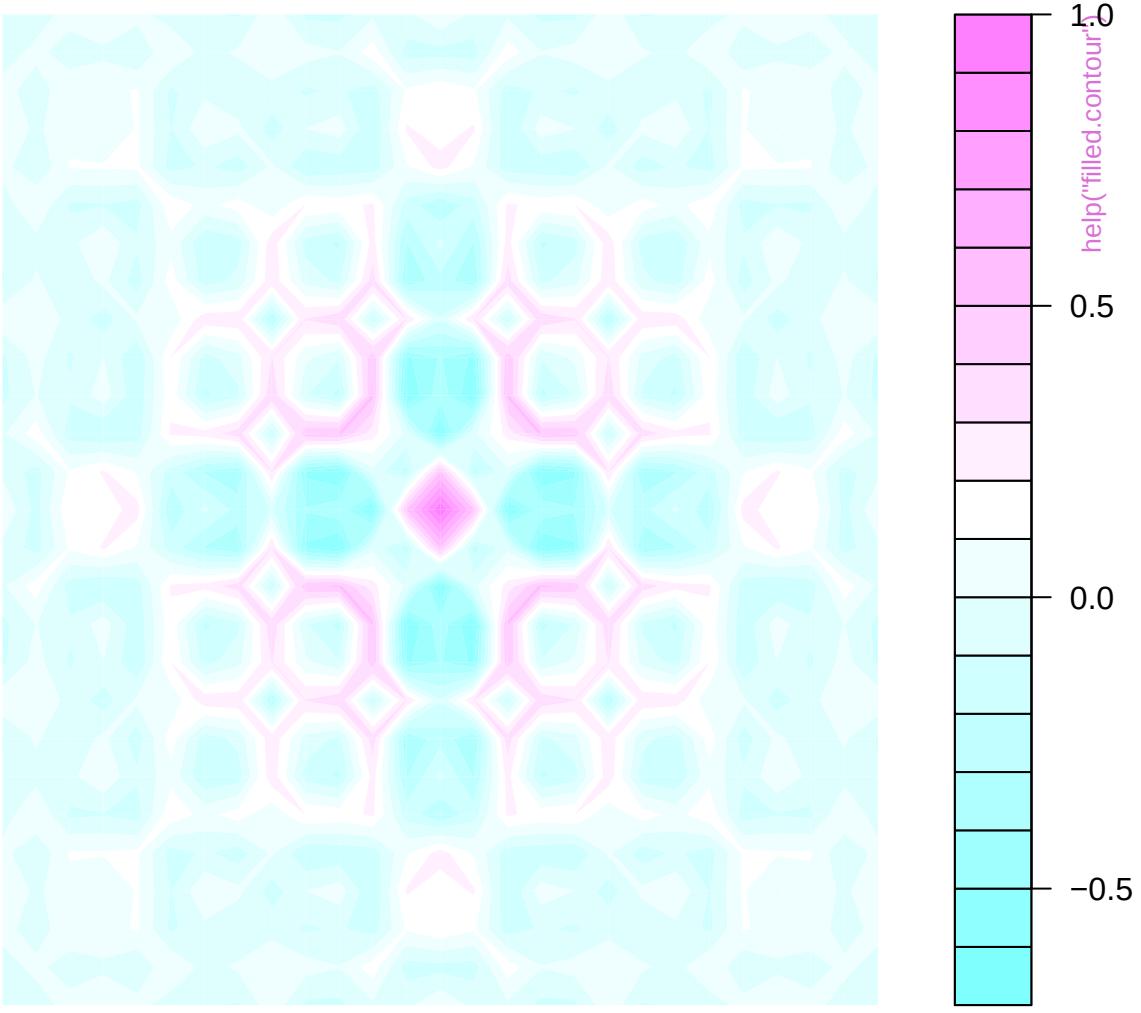

1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
180
160
140
120
100
help("filled.contour")

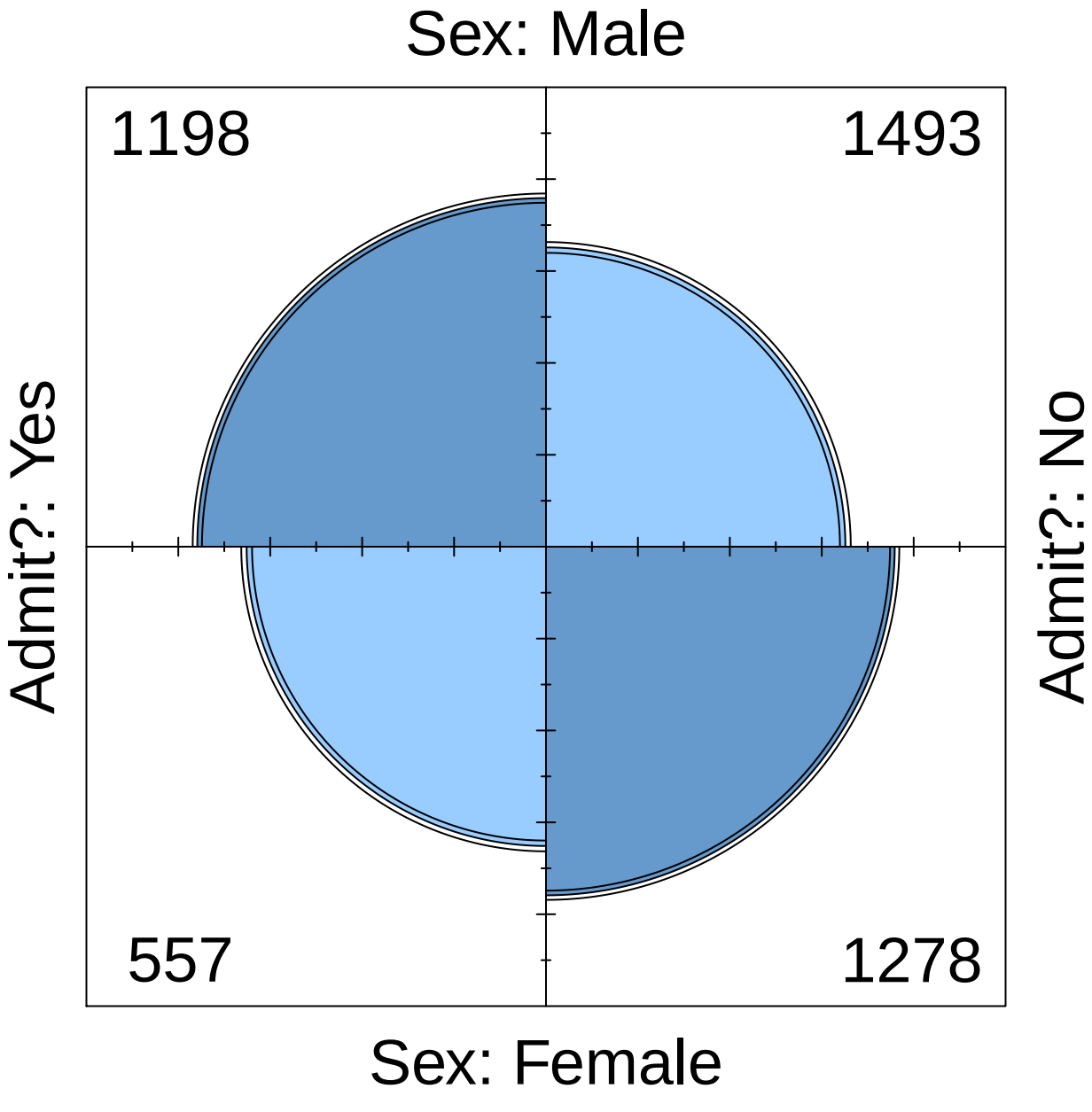

The Topography of Maunga Whau
Height (meters)
Meters West
Meters North
600
500
400
300
200
100
100
200
300
400
500
600
700
800
190
180
170
160
150
140
130
120
110
100
90
help("filled.contour")
filled.contour(.) from R version 2.15.3 (2013−03−01)

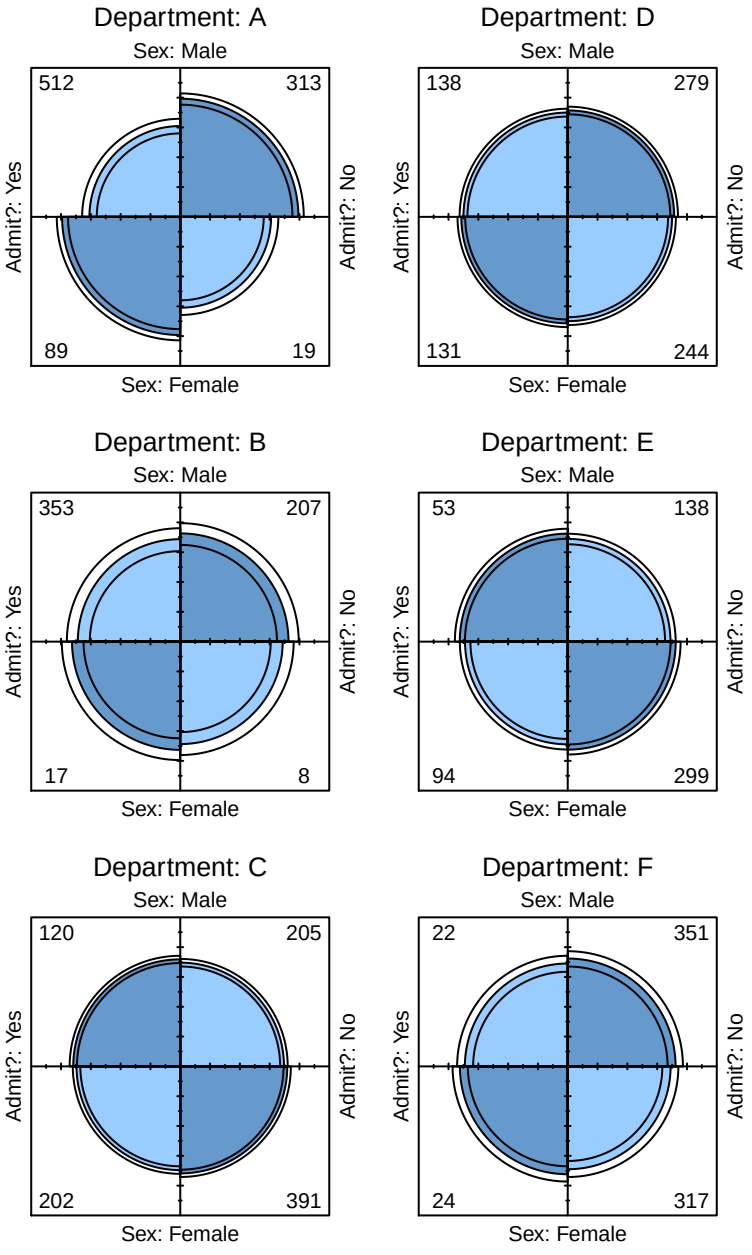

20
15
10
5
5
10
15
20
40
35
30
25
20
15
10
5
help("filled.contour")

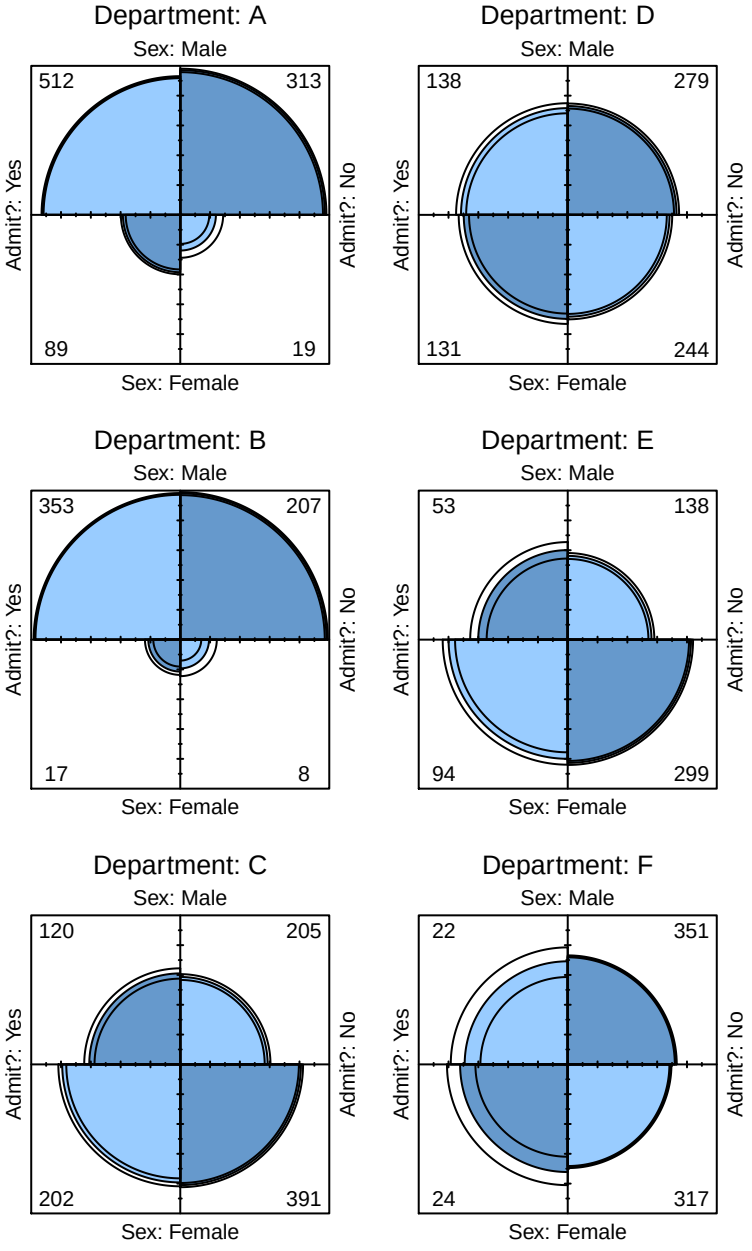


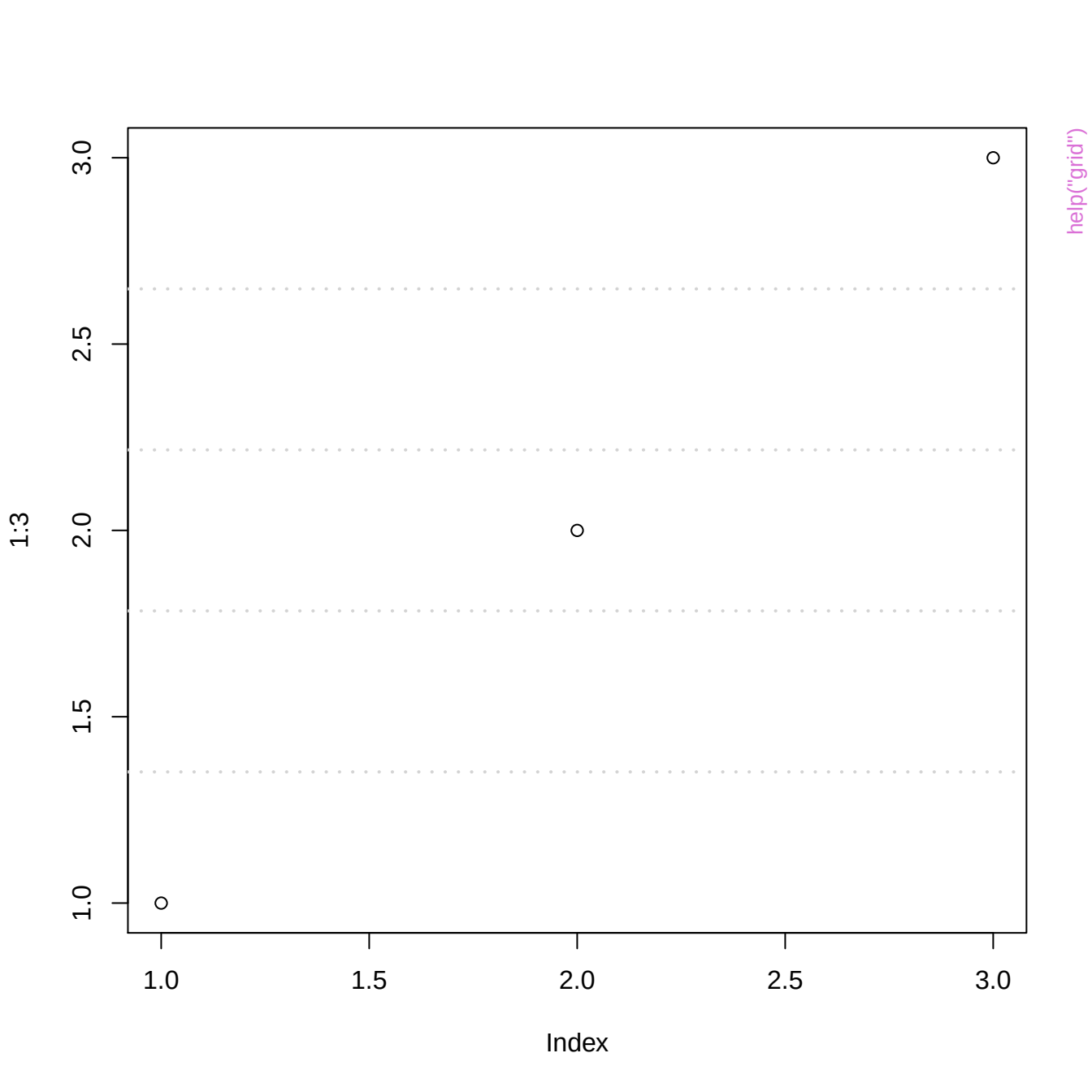
help("filled.contour")


1.0
0.5
0.0
−0.5
help("filled.contour")

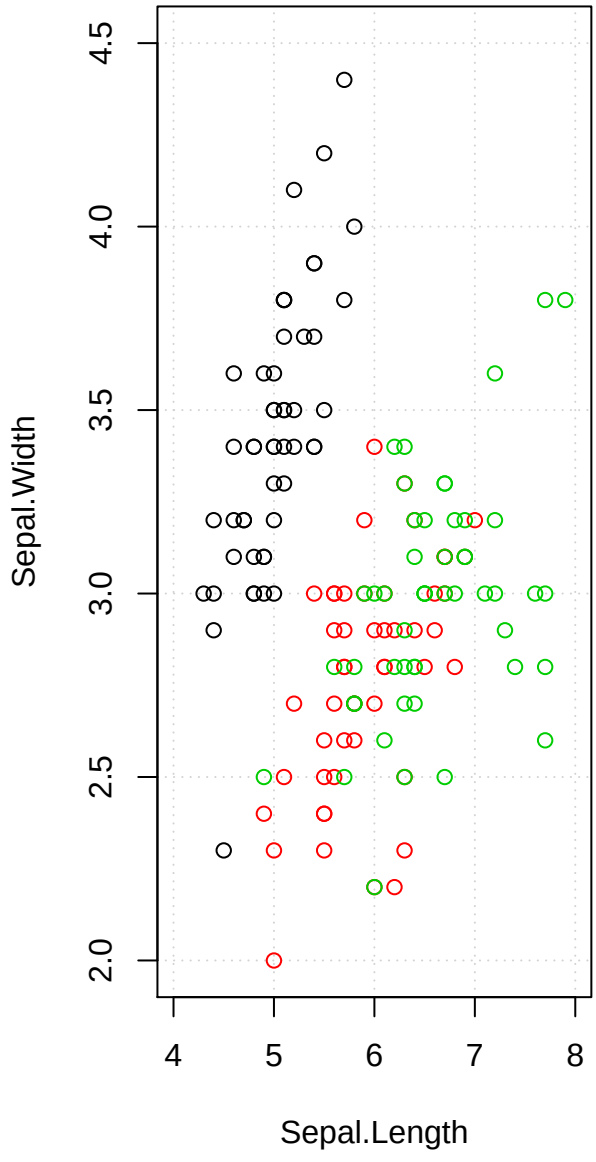


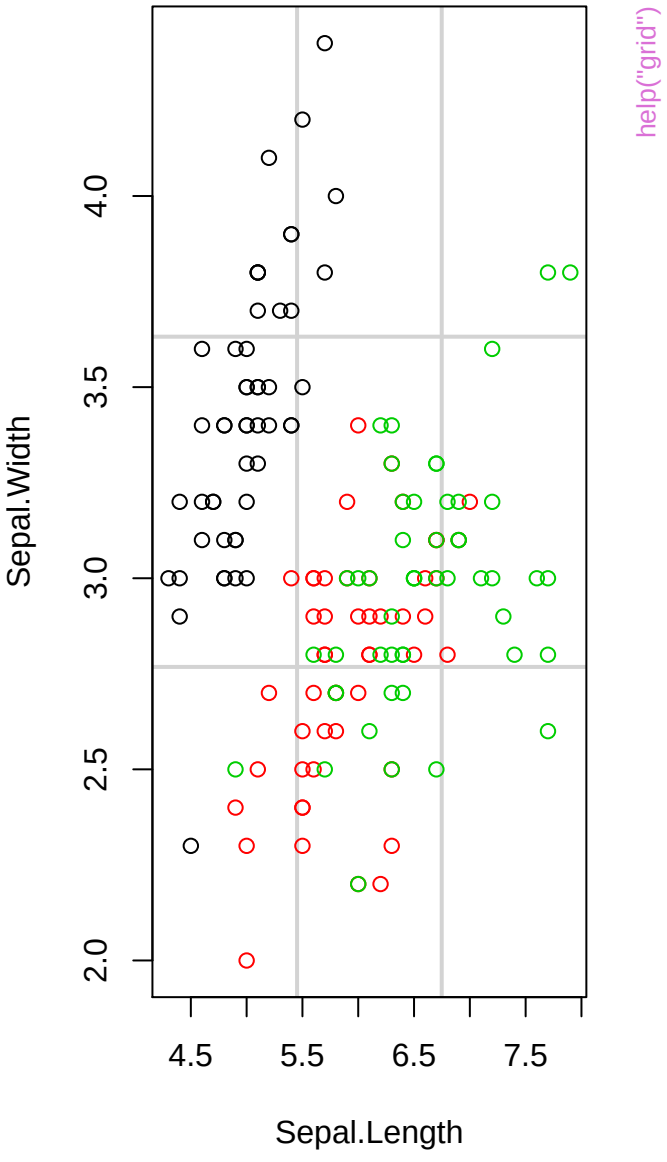


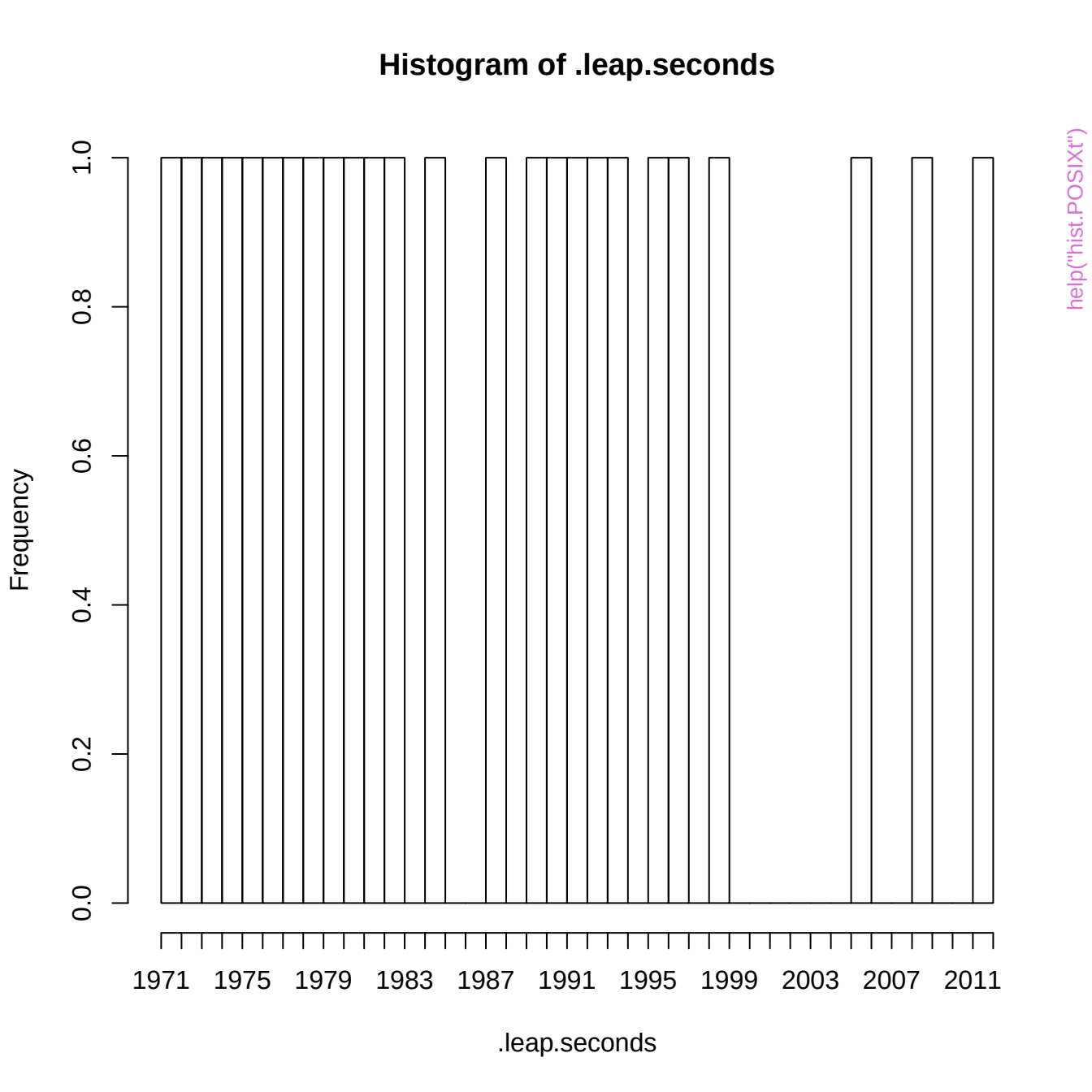


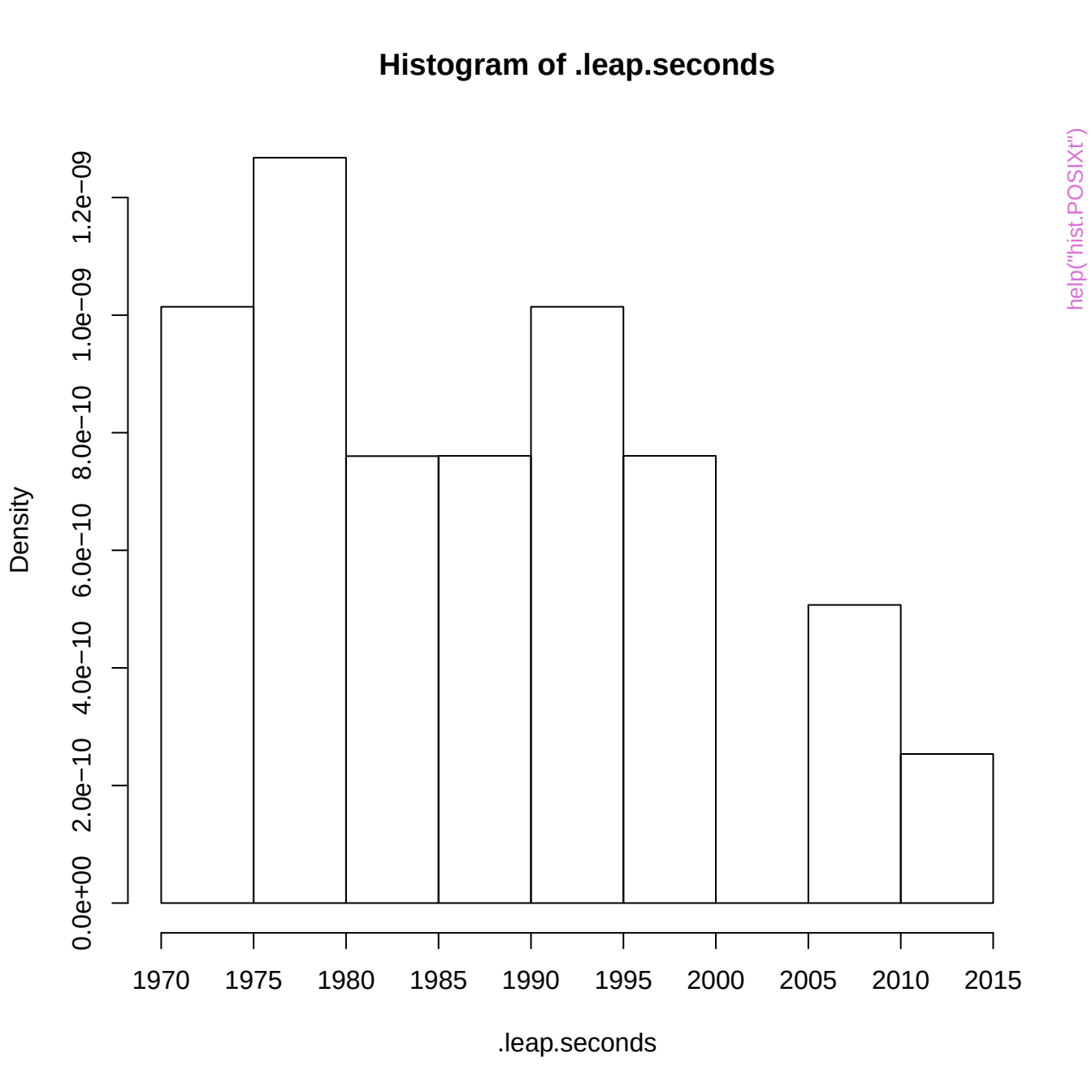

1:3
3.0
2.5
2.0
1.5
1.0
1.0
1.5
2.0
2.5
3.0
Index
help("grid")

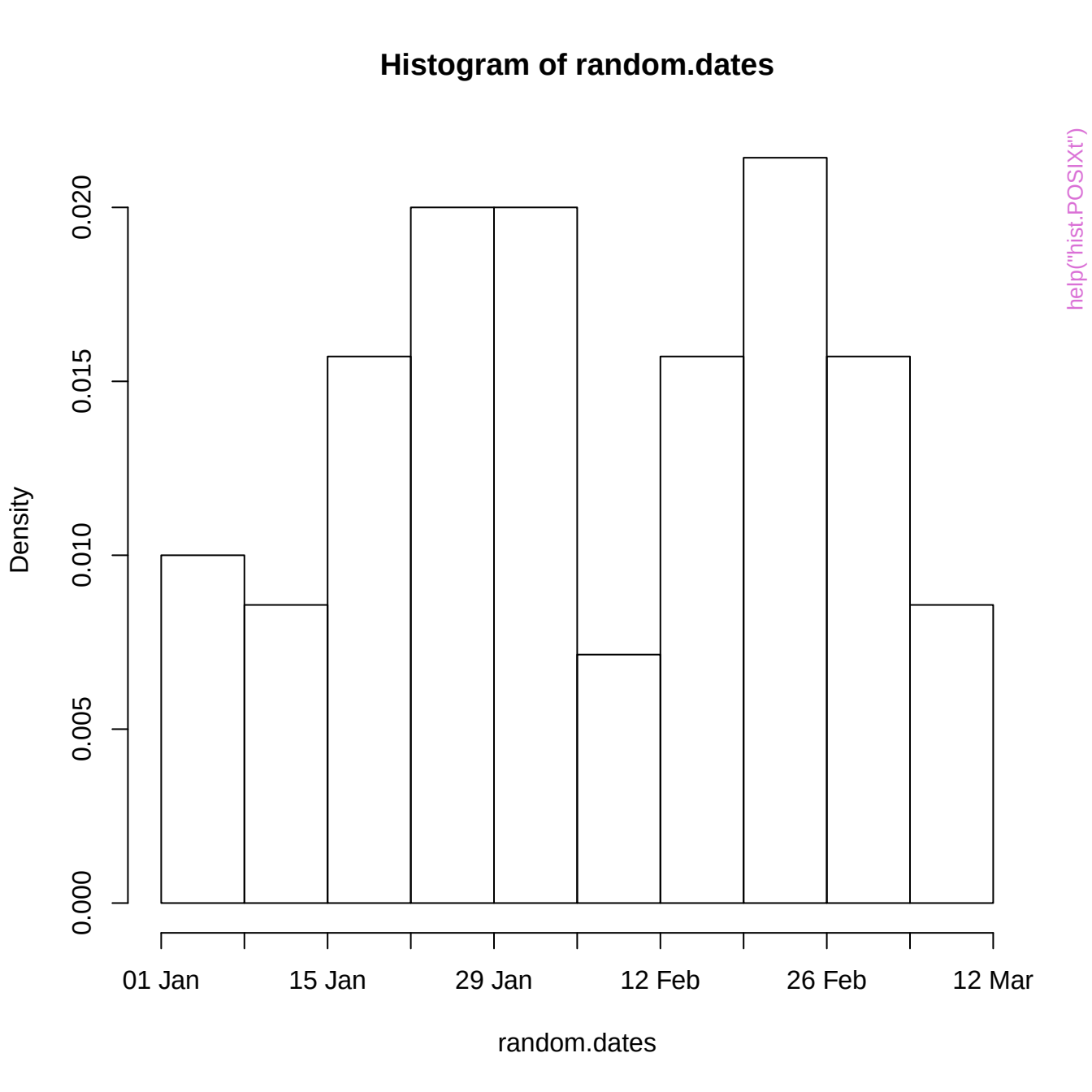
with(iris, plot(...., panel.first = grid(), ... panel.first = grid(3, lty = 1, lwd = 2)

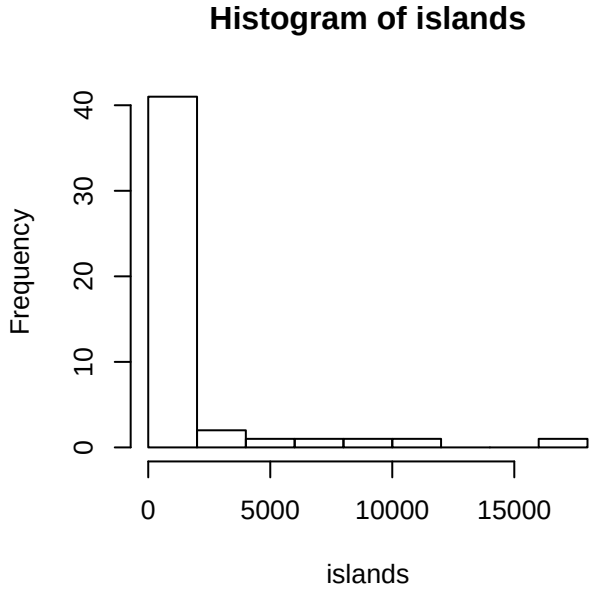


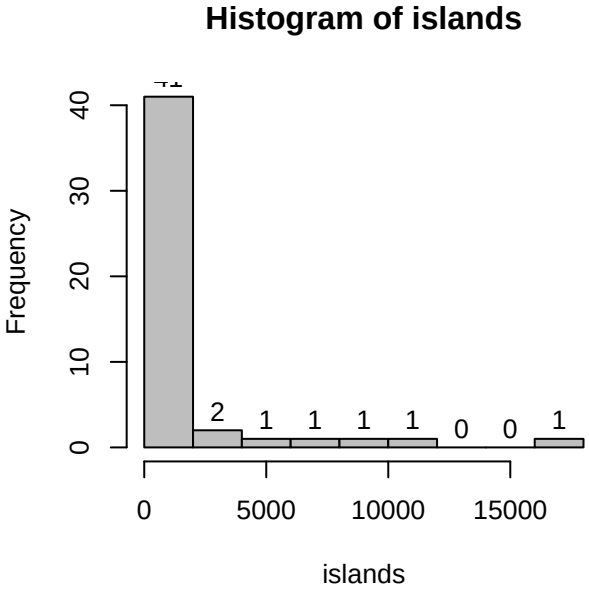



Histogram of .leap.seconds
Frequency
0.0
0.2
0.4
0.6
0.8
1.0
1971
1975
1979
1983
1987
1991
1995
1999
2003
2007
2011
.leap.seconds
help("hist.POSIXt")

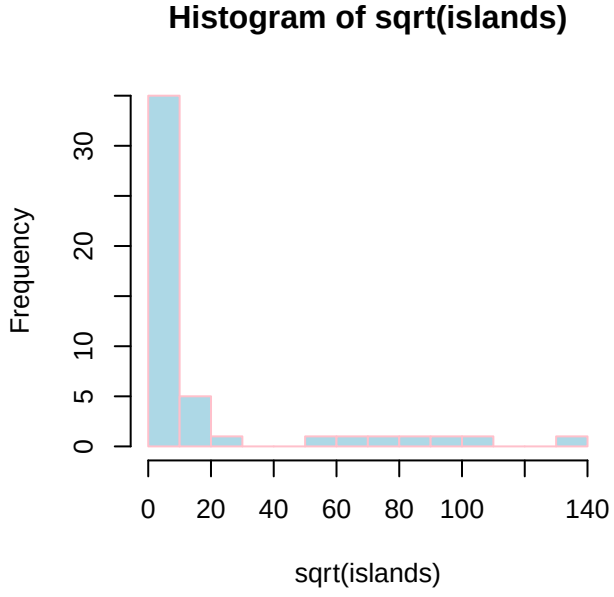

Histogram of .leap.seconds
help("hist.POSIXt")
Density
0.0e+00
2.0e−10
4.0e−10
6.0e−10
8.0e−10
1.0e−09
1.2e−09
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
.leap.seconds

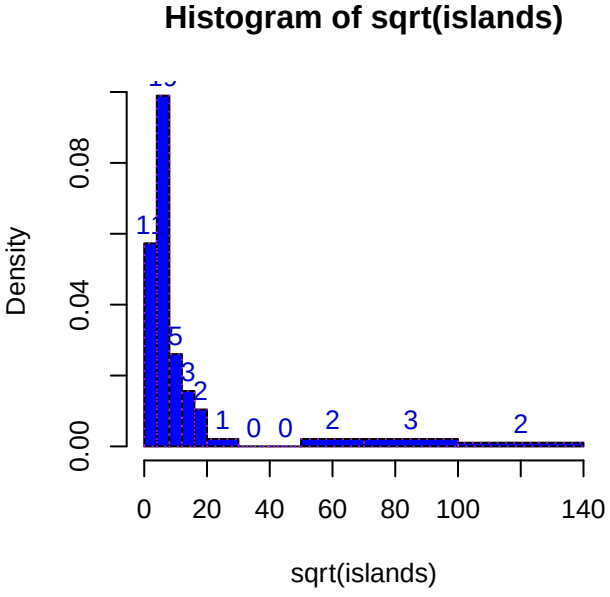

Histogram of random.dates
Density
0.000
0.005
0.010
0.015
0.020
01 Jan
15 Jan
29 Jan
12 Feb
26 Feb
12 Mar
random.dates
help("hist.POSIXt")

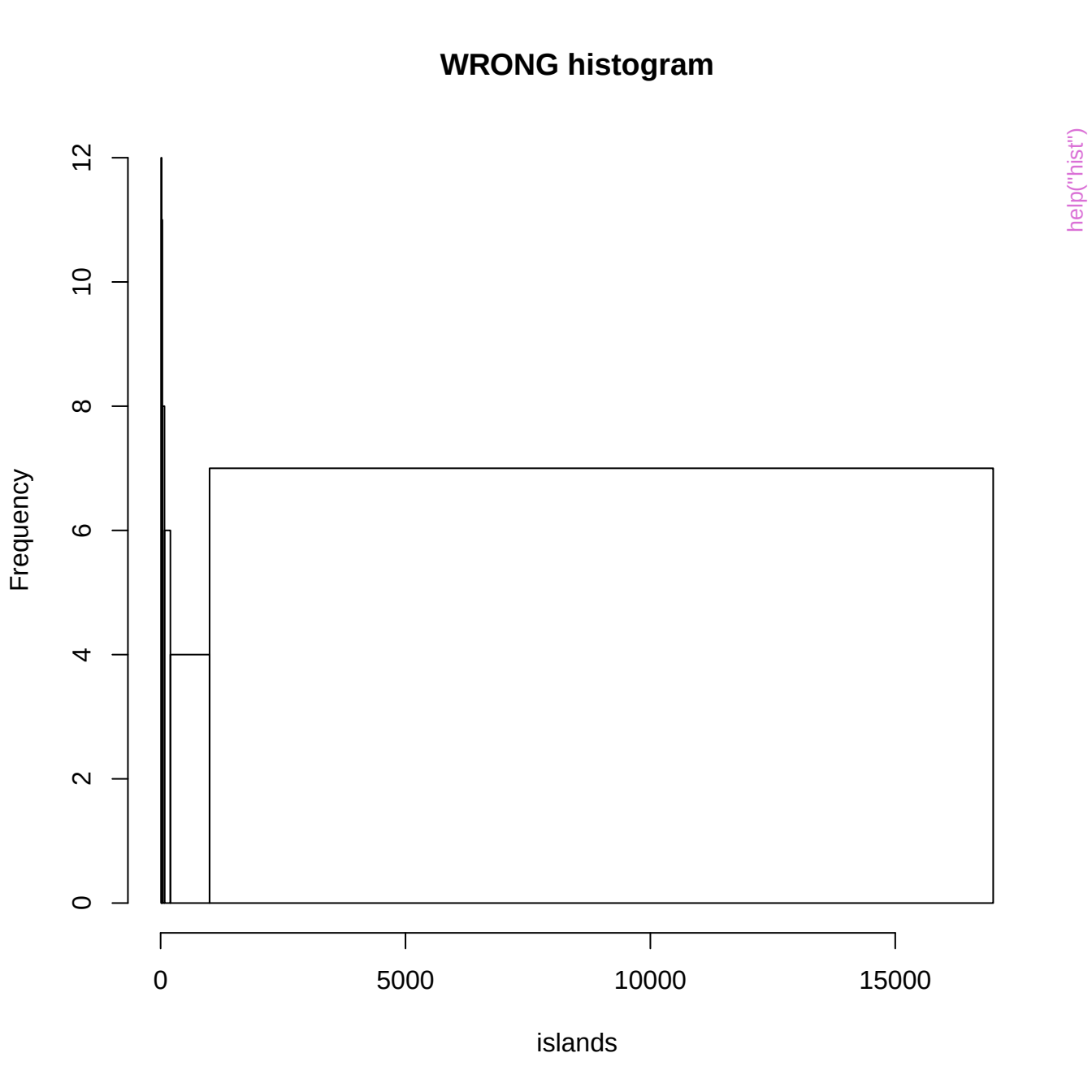

Histogram of islands
Frequency
0
10
20
30
40
0
5000
10000
15000
islands

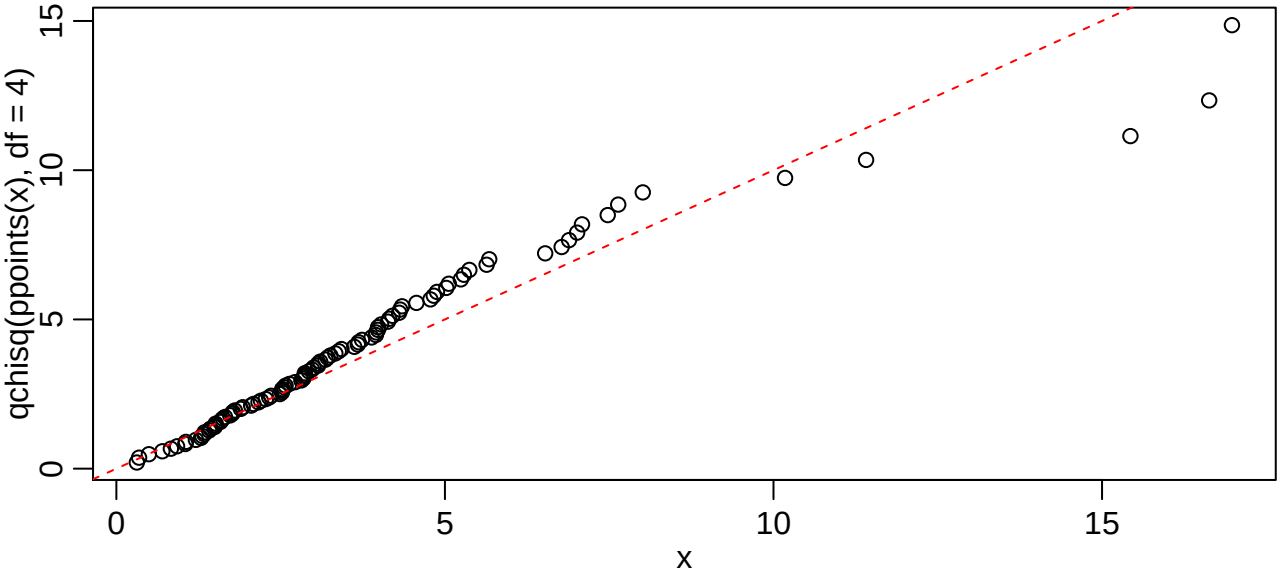

Histogram of islands
Frequency
0
10
20
30
40
41
2
1
1
1
1
0
0
1
0
5000
10000
15000
islands

help("hist")

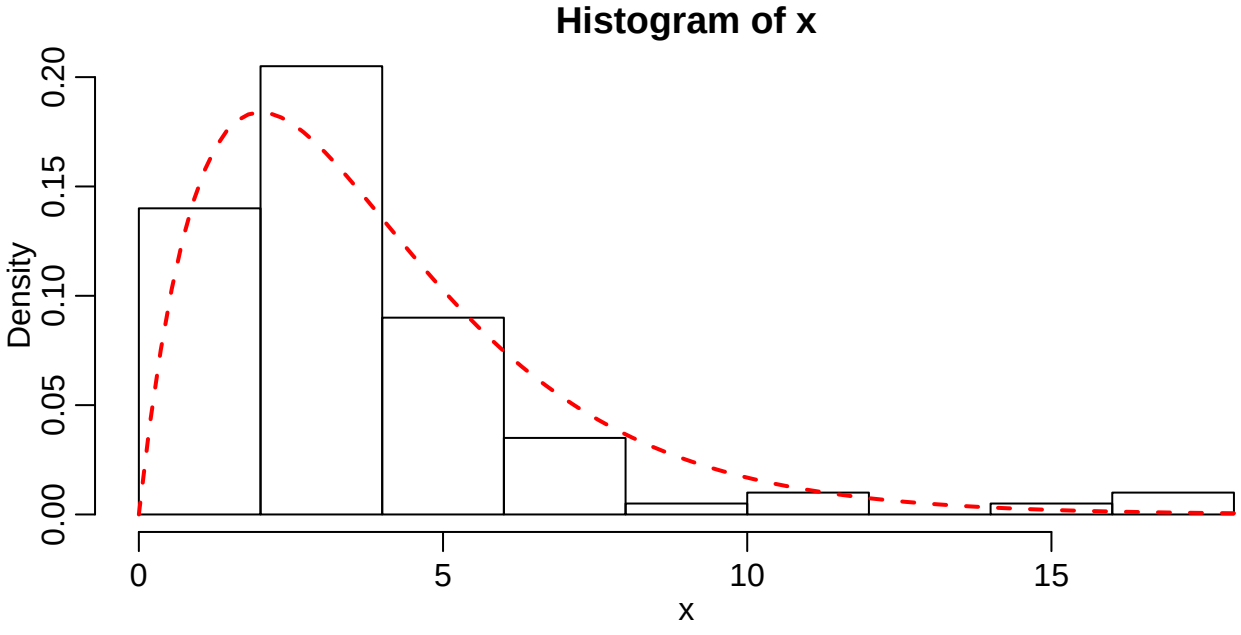

Histogram of sqrt(islands)
Frequency
0
5
10
20
30
0
20
40
60
80
100
140
sqrt(islands)

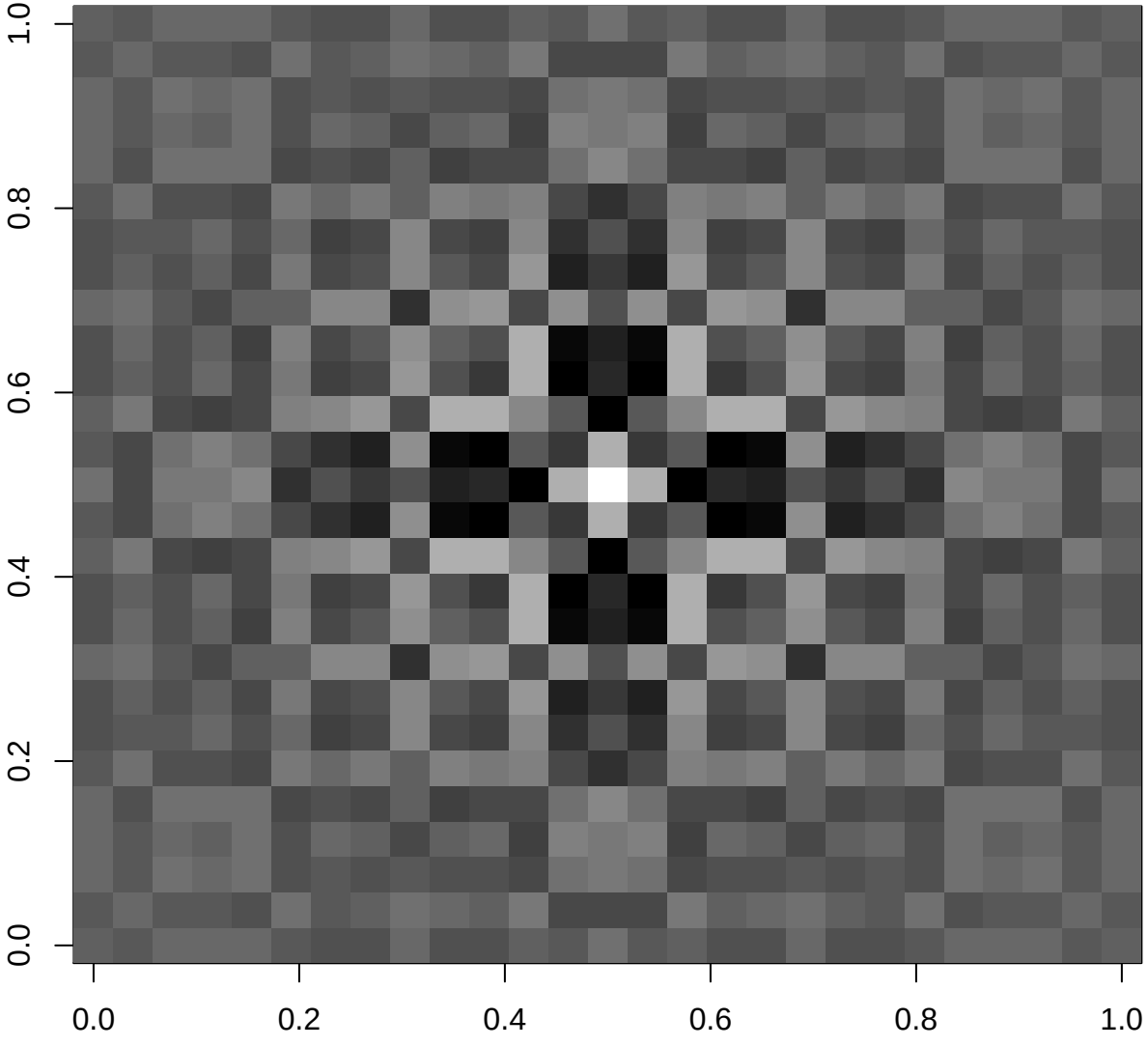

Histogram of sqrt(islands)
Density
0.00
0.04
0.08
11
5
3
2
1
0
0
2
3
2
0
20
40
60
80
100
140
sqrt(islands)


WRONG histogram
help("hist")
Frequency
0
2
4
6
8
10
12
0
5000
10000
15000
islands


qchisq(ppoints(x), df = 4)
0
5
10
15
0
5
10
15
x

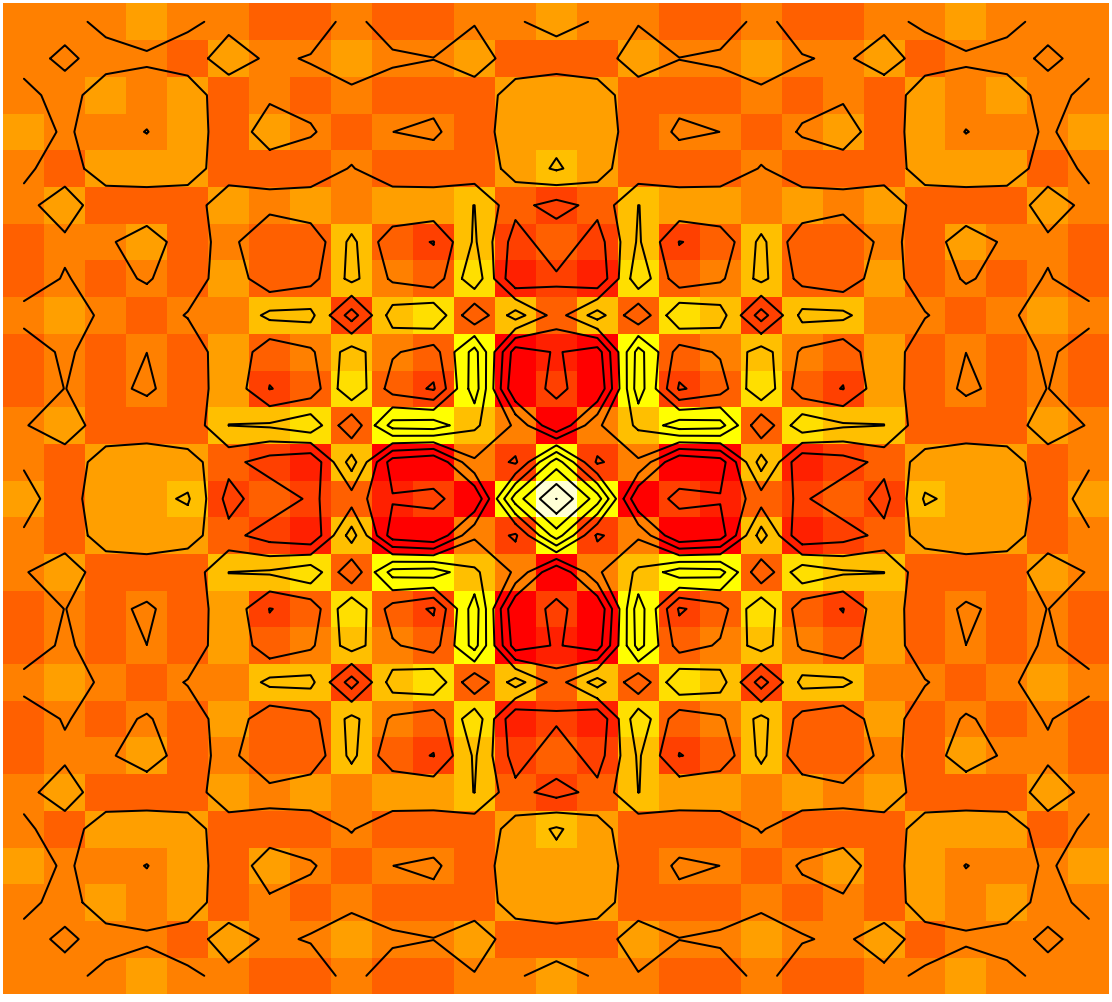
help("hist")


Histogram of x
Density
0.00
0.05
0.10
0.15
0.20
0
5
10
15
x

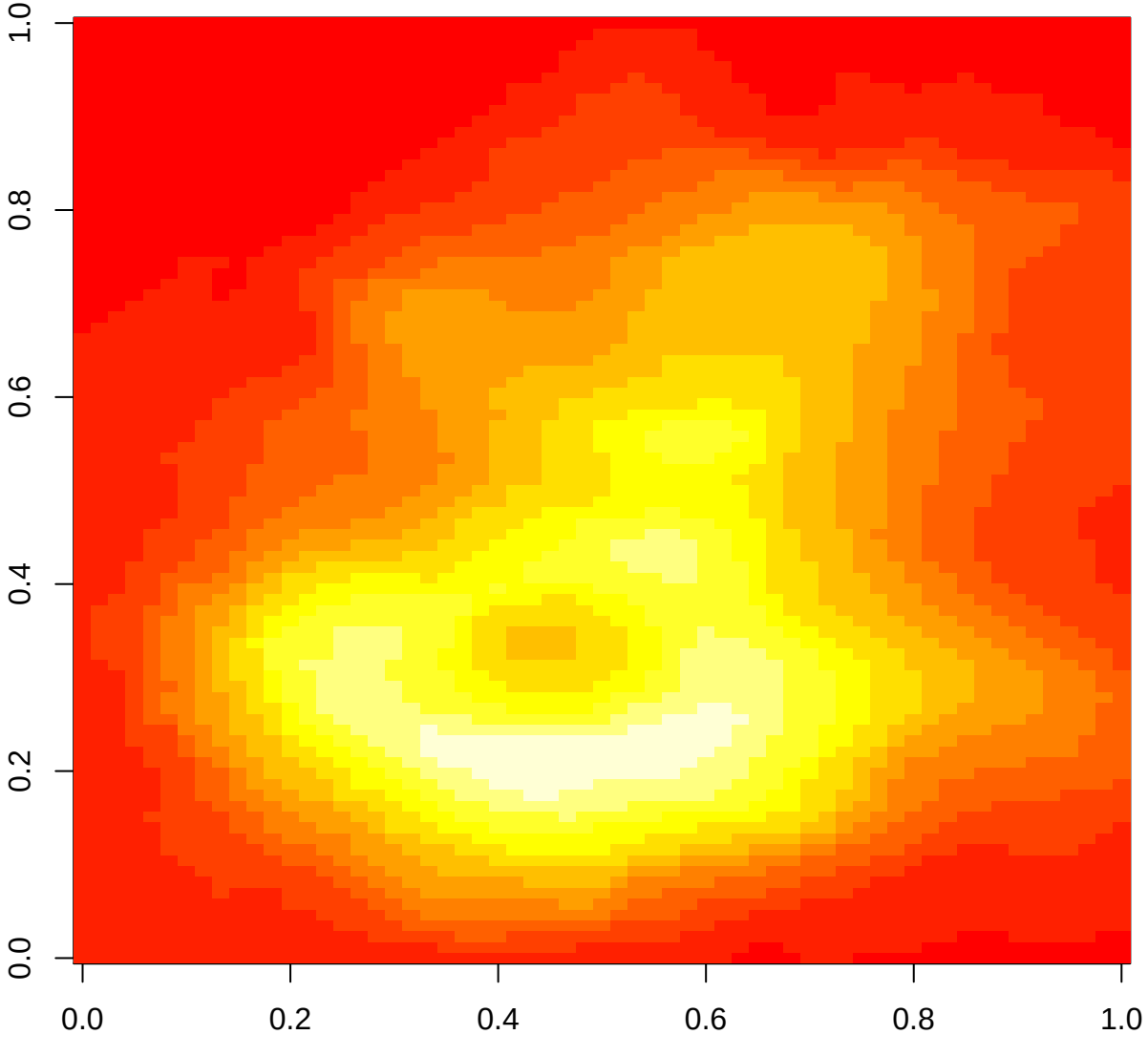

1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
help("image")

Math can be beautiful ...

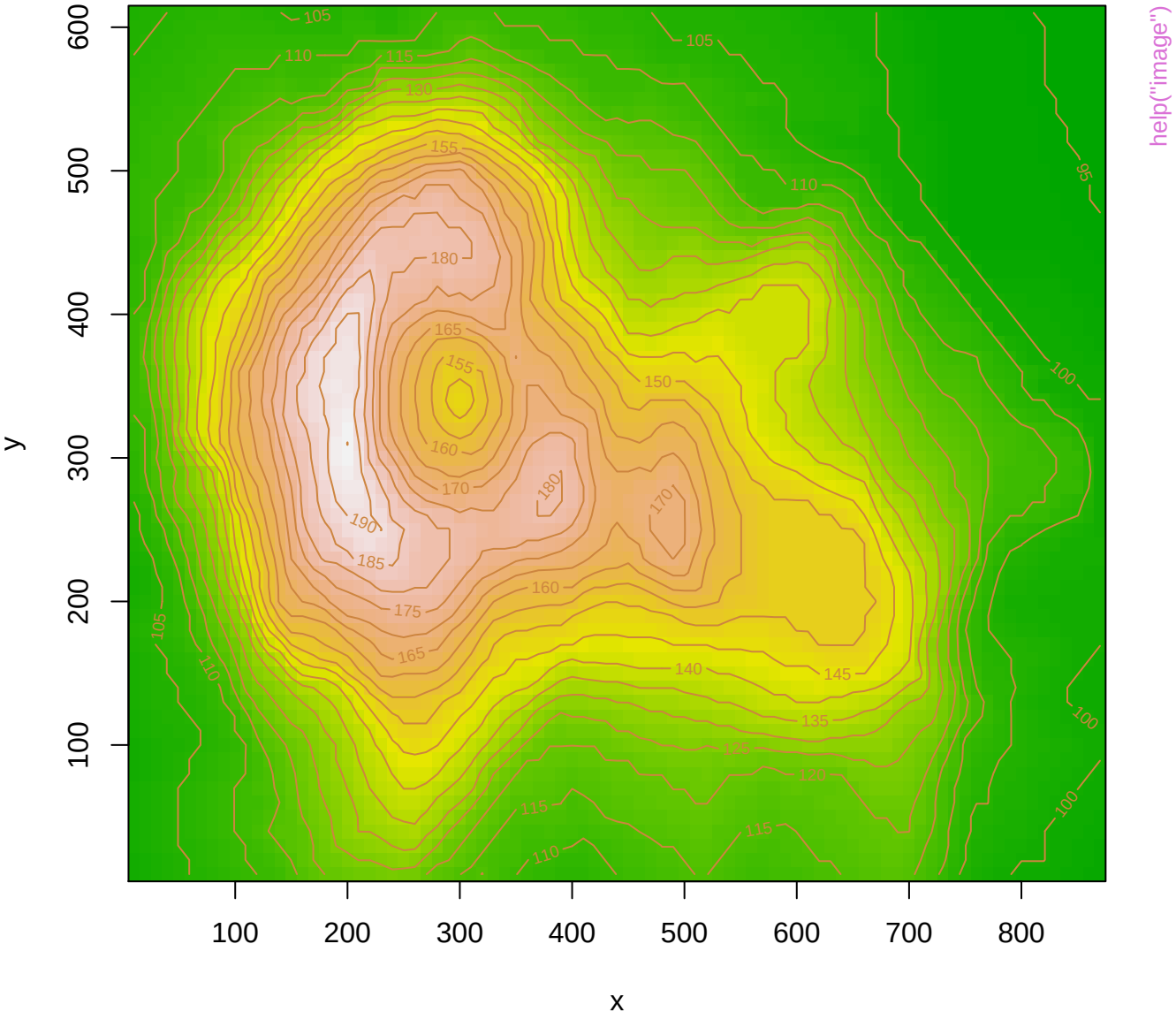
help("image")



$\cos(r^2)e^{-r/6}$


1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
help("image")

Maunga Whau Volcano

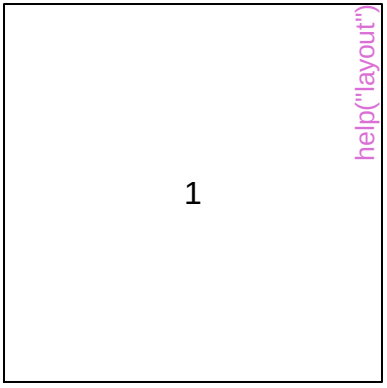


1

2

1

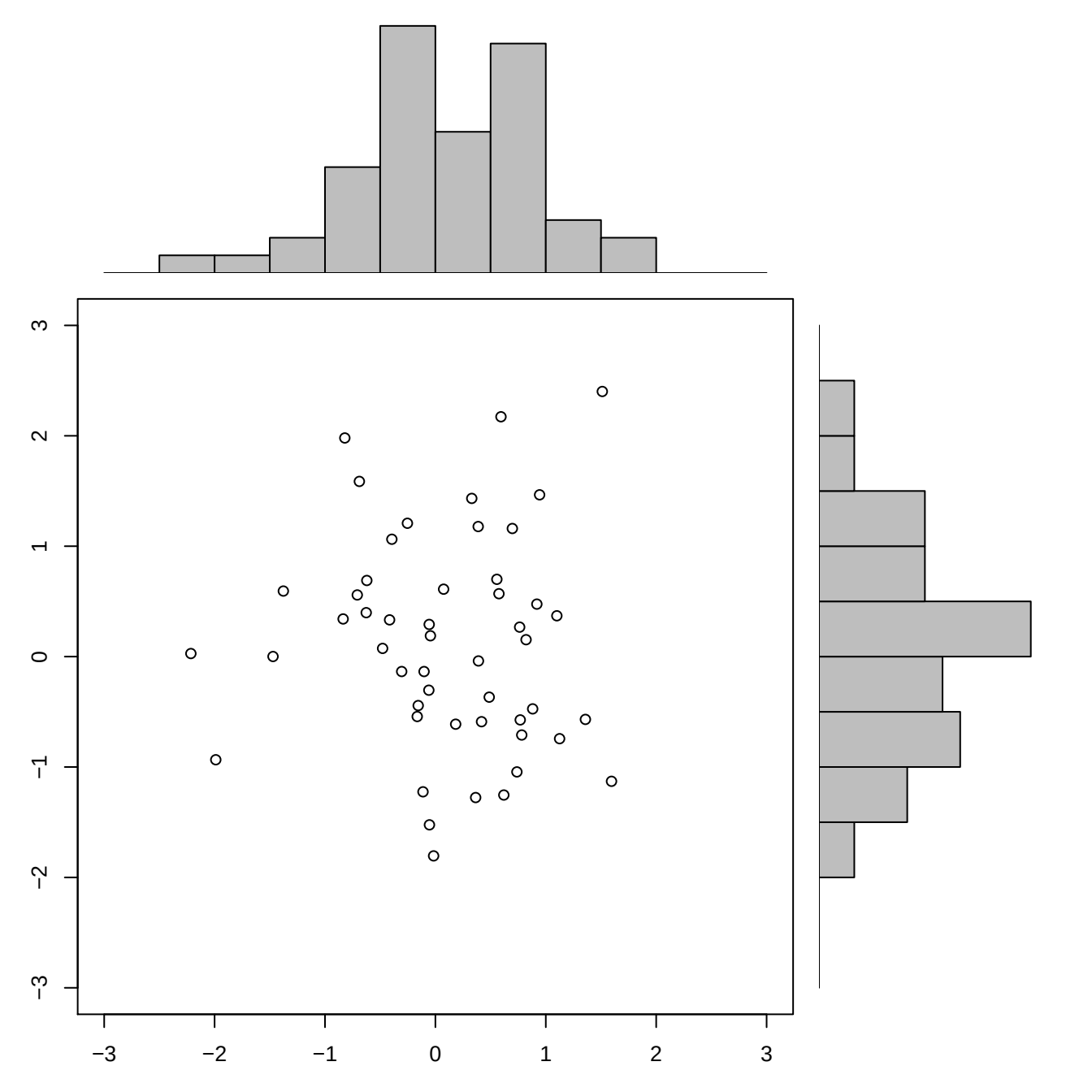
2

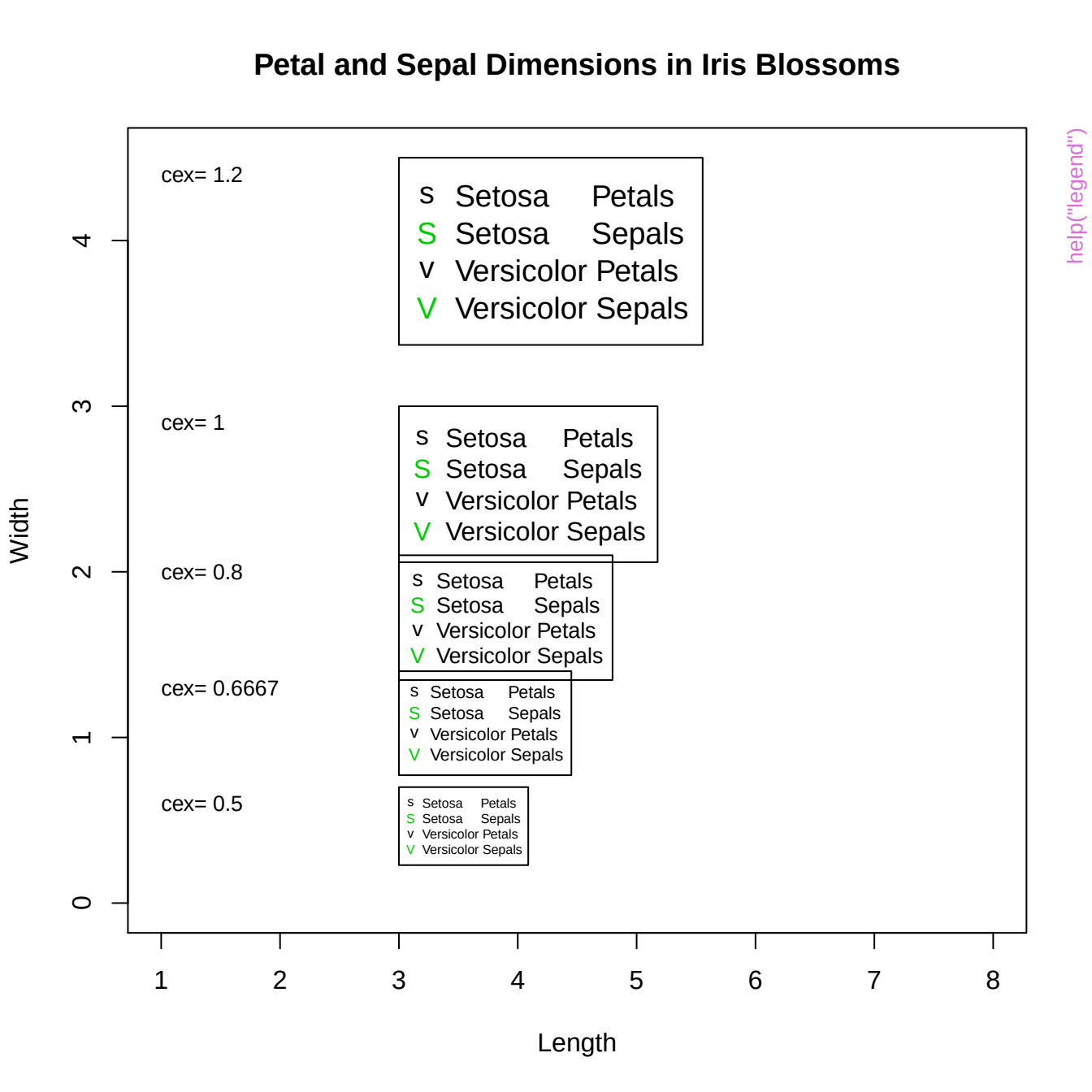

help("layout")
1

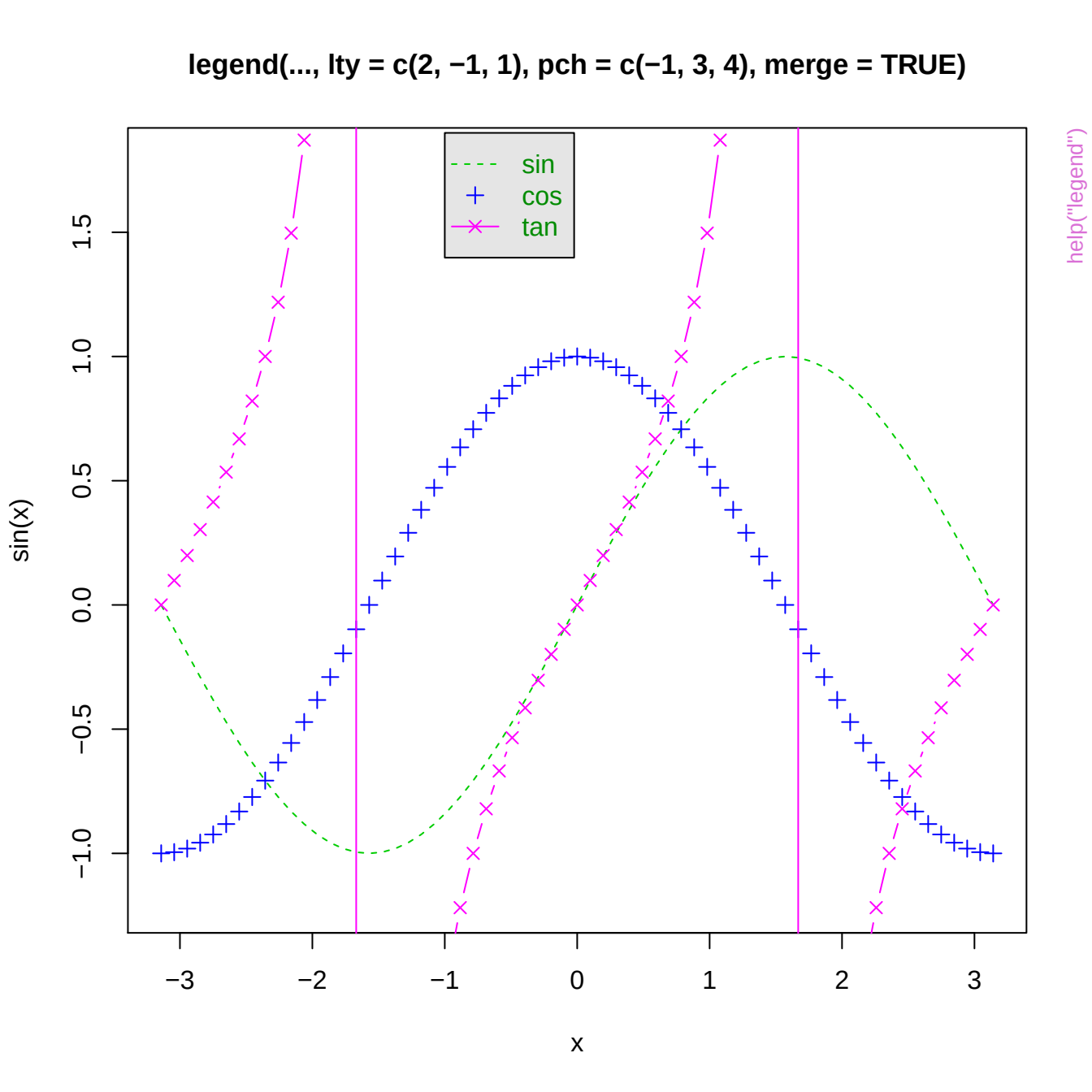
2

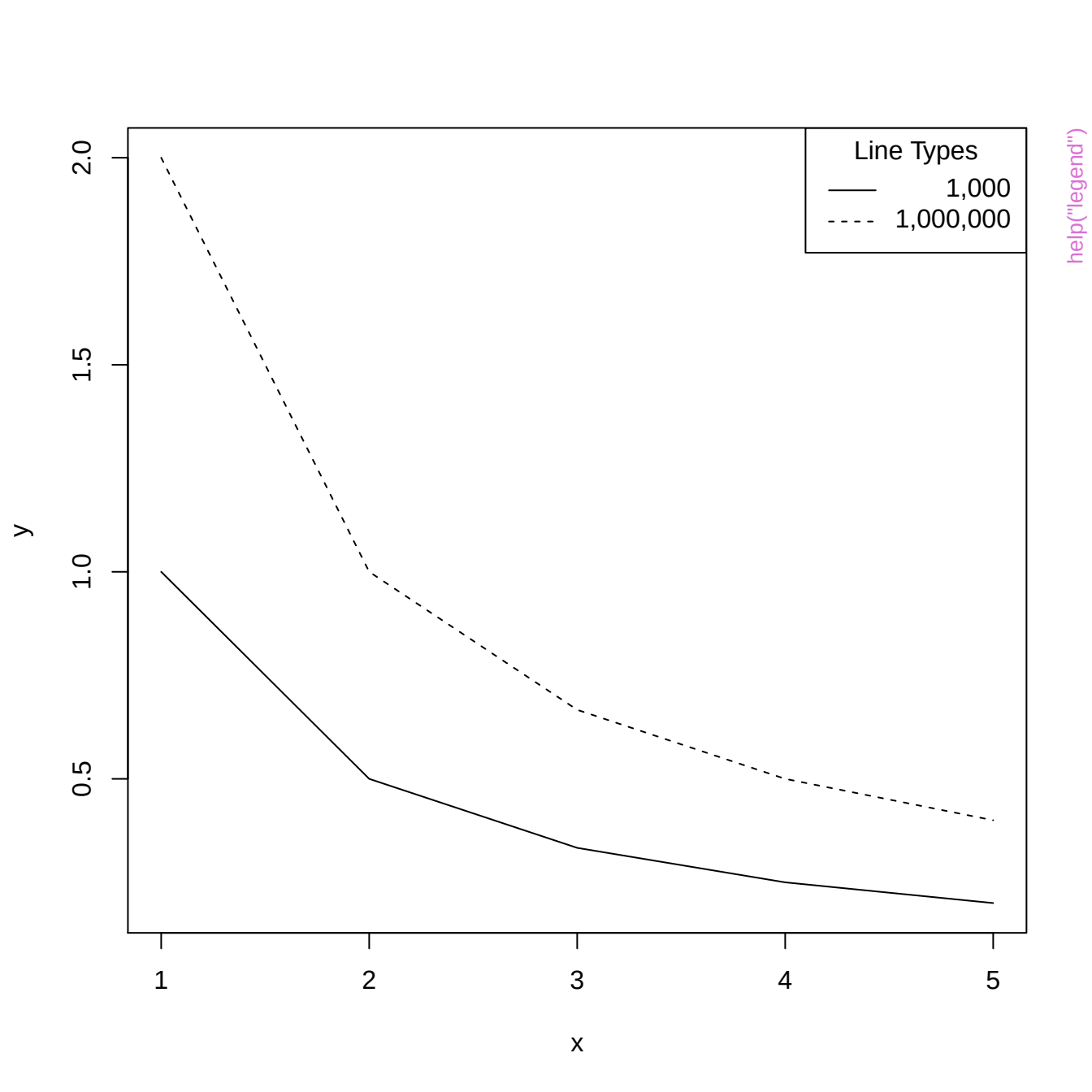
1

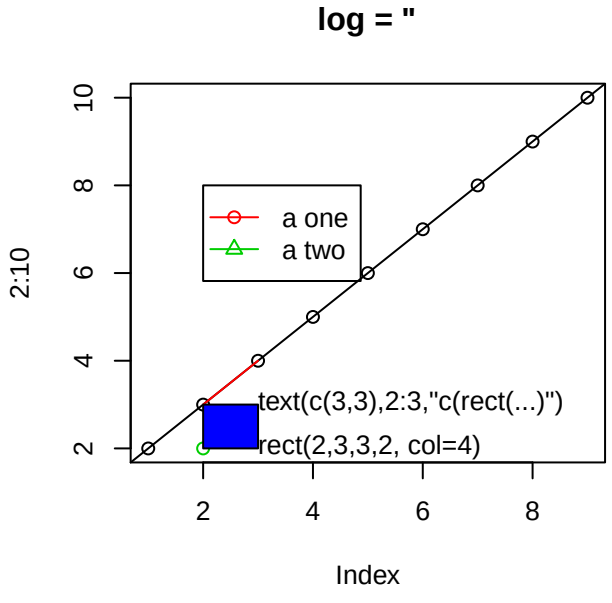
3

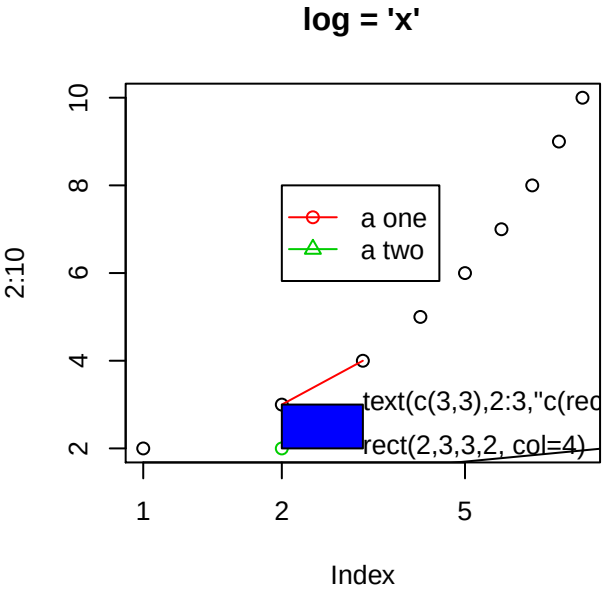

3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3


Petal and Sepal Dimensions in Iris Blossoms
help("legend")
cex= 1.2
cex= 1
cex= 0.8
cex= 0.6667
cex= 0.5
s Setosa Petals
S Setosa Sepals
v Versicolor Petals
V Versicolor Sepals
Width
Length
0
1
2
3
4
1
2
3
4
5
6
7
8

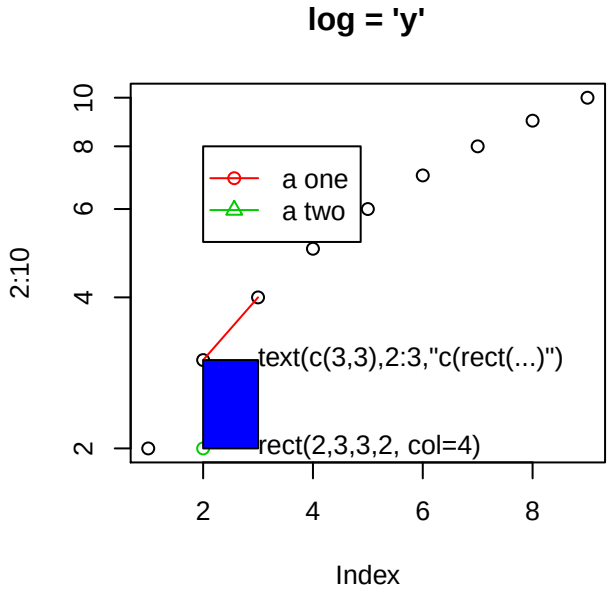

legend(..., lty = c(2, −1, 1), pch = c(−1, 3, 4), merge = TRUE)
sin
cos
tan
sin(x)
x
help("legend")

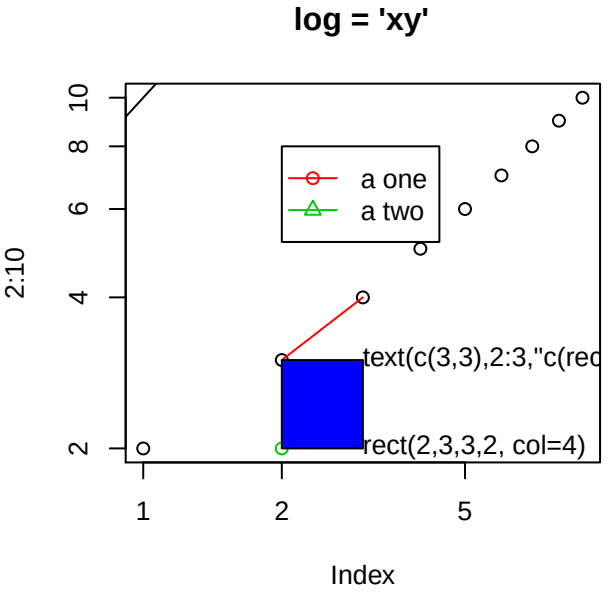

Line Types
1,000
1,000,000
2.0
1.5
1.0
0.5
y
1
2
3
4
5
x
help("legend")

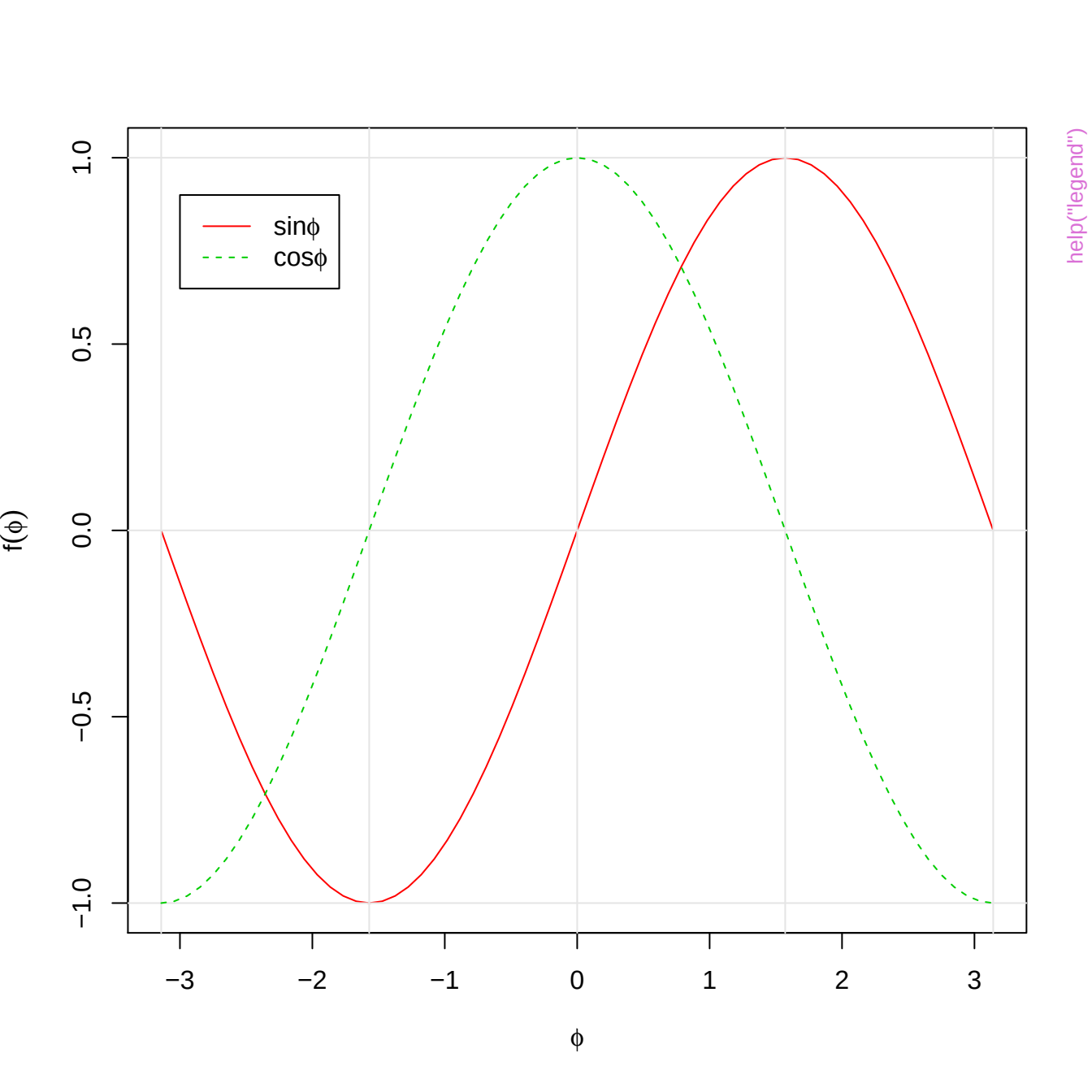

log = ''
2:10
Index
a one
a two
text(c(3,3),2:3,"c(rect(...)")
rect(2,3,3,2, col=4)

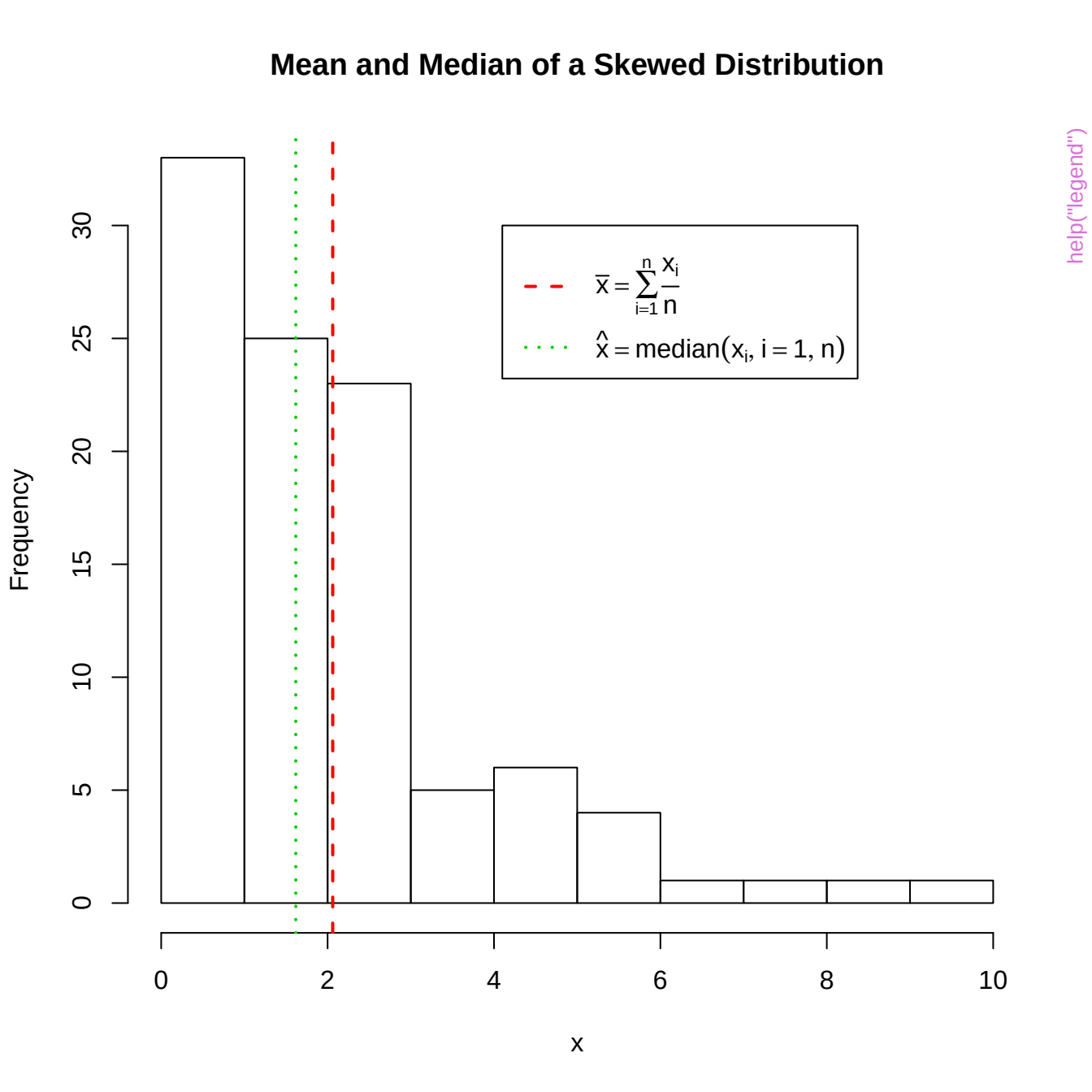

log = 'x'
2:10
Index
a one
a two
text(c(3,3),2:3,"c(rec
rect(2,3,3,2, col=4)

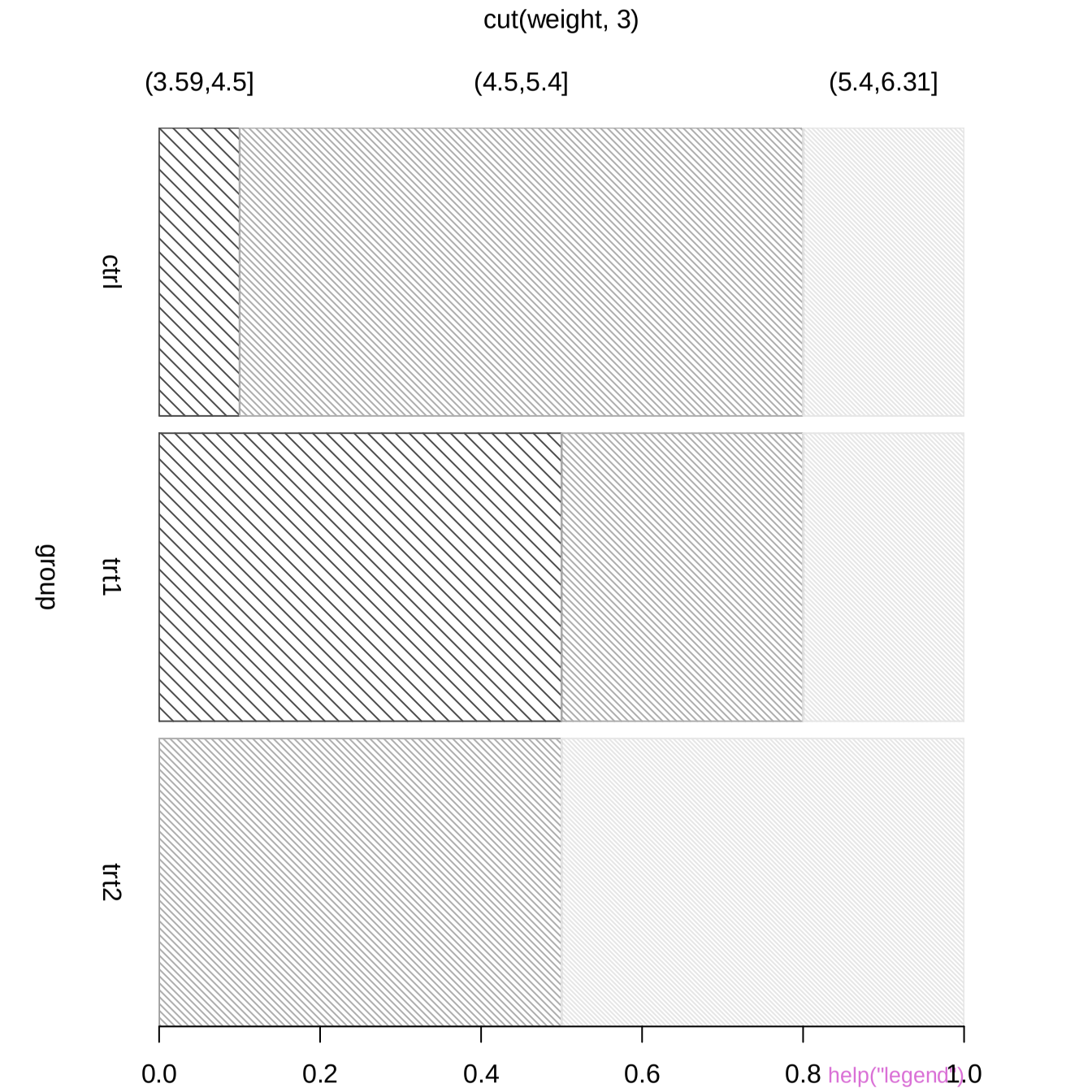
help("legend")

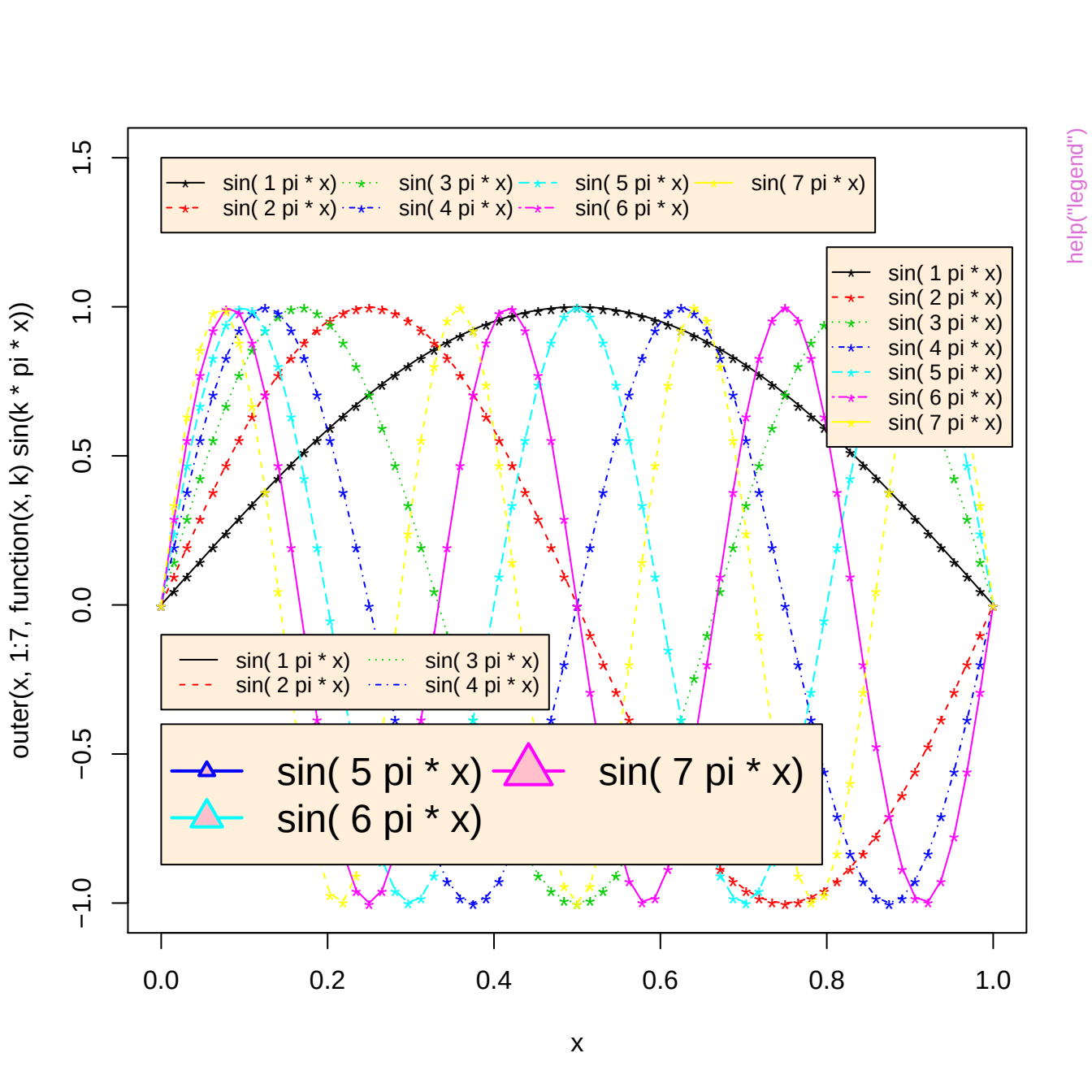

log = 'y'
2:10
Index
a one
a two
text(c(3,3),2:3,"c(rect(...)")
rect(2,3,3,2, col=4)

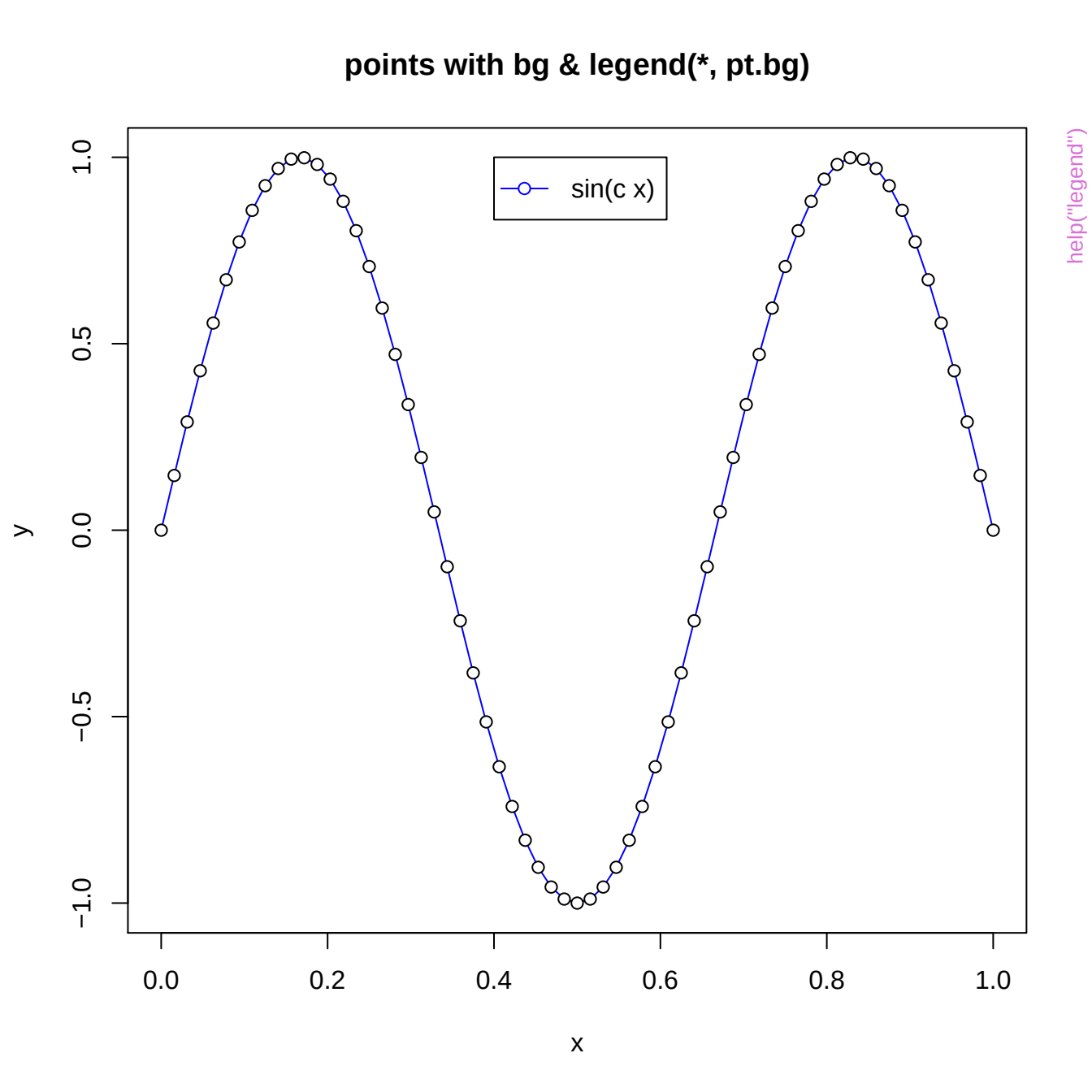

log = 'xy'
2:10
Index
a one
a two
text(c(3,3),2:3,"c(rec
rect(2,3,3,2, col=4)

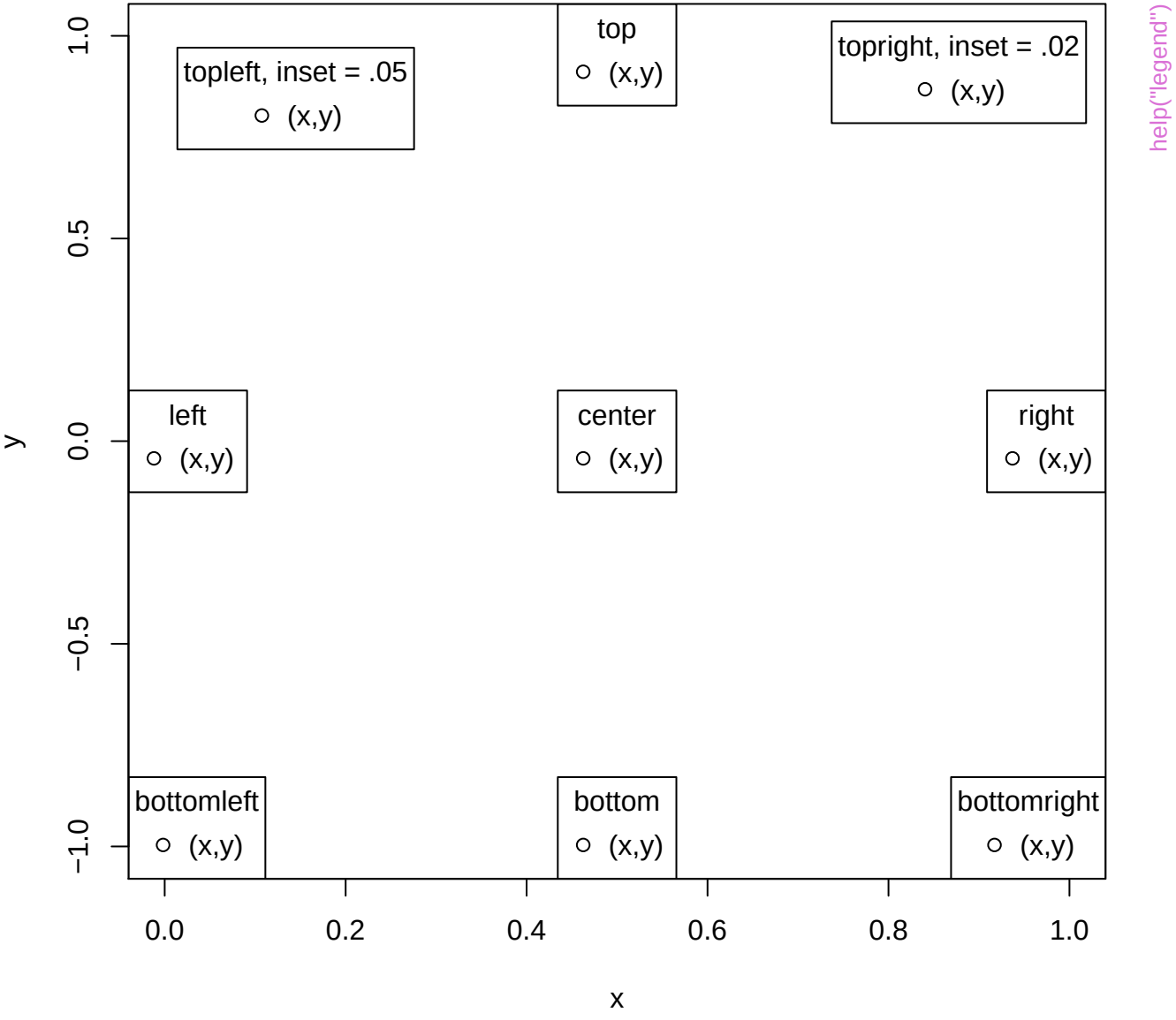

sinϕ
cosϕ
f(ϕ)
ϕ
1.0
0.5
0.0
−0.5
−1.0
−3
−2
−1
0
1
2
3
help("legend")


Mean and Median of a Skewed Distribution
help("legend")
$\overline{x} = \sum_{i=1}^{n} \frac{x_i}{n}$
$\hat{x} = \text{median}(x_i, i = 1, n)$
Frequency
0
5
10
15
20
25
30
0
2
4
6
8
10
x

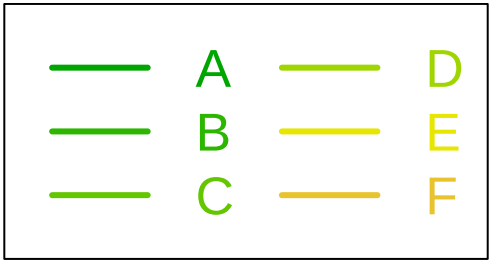

cut(weight, 3)
(3.59,4.5]
(4.5,5.4]
(5.4,6.31]
group
ctrl
trt1
trt2
0.0
0.2
0.4
0.6
0.8
1.0
help("legend")


sin(1 pi * x)
sin(2 pi * x)
sin(3 pi * x)
sin(4 pi * x)
sin(5 pi * x)
sin(6 pi * x)
sin(7 pi * x)
outer(x, 1:7, function(x, k) sin(k * pi * x))
x
help("legend")

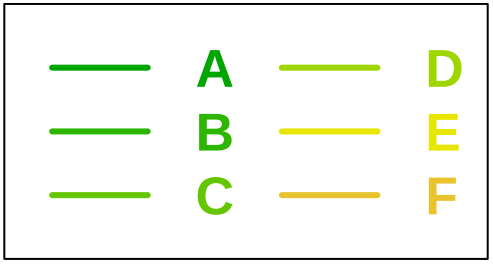

points with bg & legend(*, pt.bg)
sin(c x)
help("legend")
y
x
1.0
0.5
0.0
−0.5
−1.0
0.0
0.2
0.4
0.6
0.8
1.0


topleft, inset = .05
(x,y)
top
(x,y)
topright, inset = .02
(x,y)
left
(x,y)
center
(x,y)
right
(x,y)
bottomleft
(x,y)
bottom
(x,y)
bottomright
(x,y)
1.0
0.5
0.0
−0.5
−1.0
y
0.0
0.2
0.4
0.6
0.8
1.0
x
help("legend")

text.font = 1

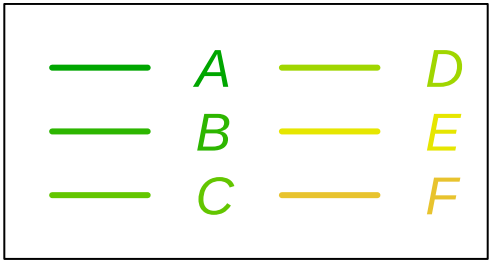


text.font = 2

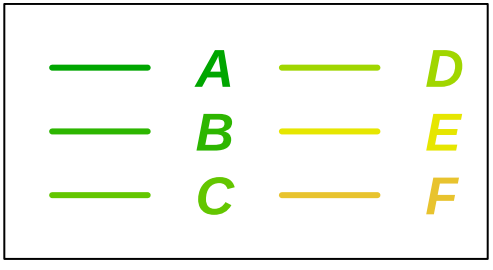


help("legend")

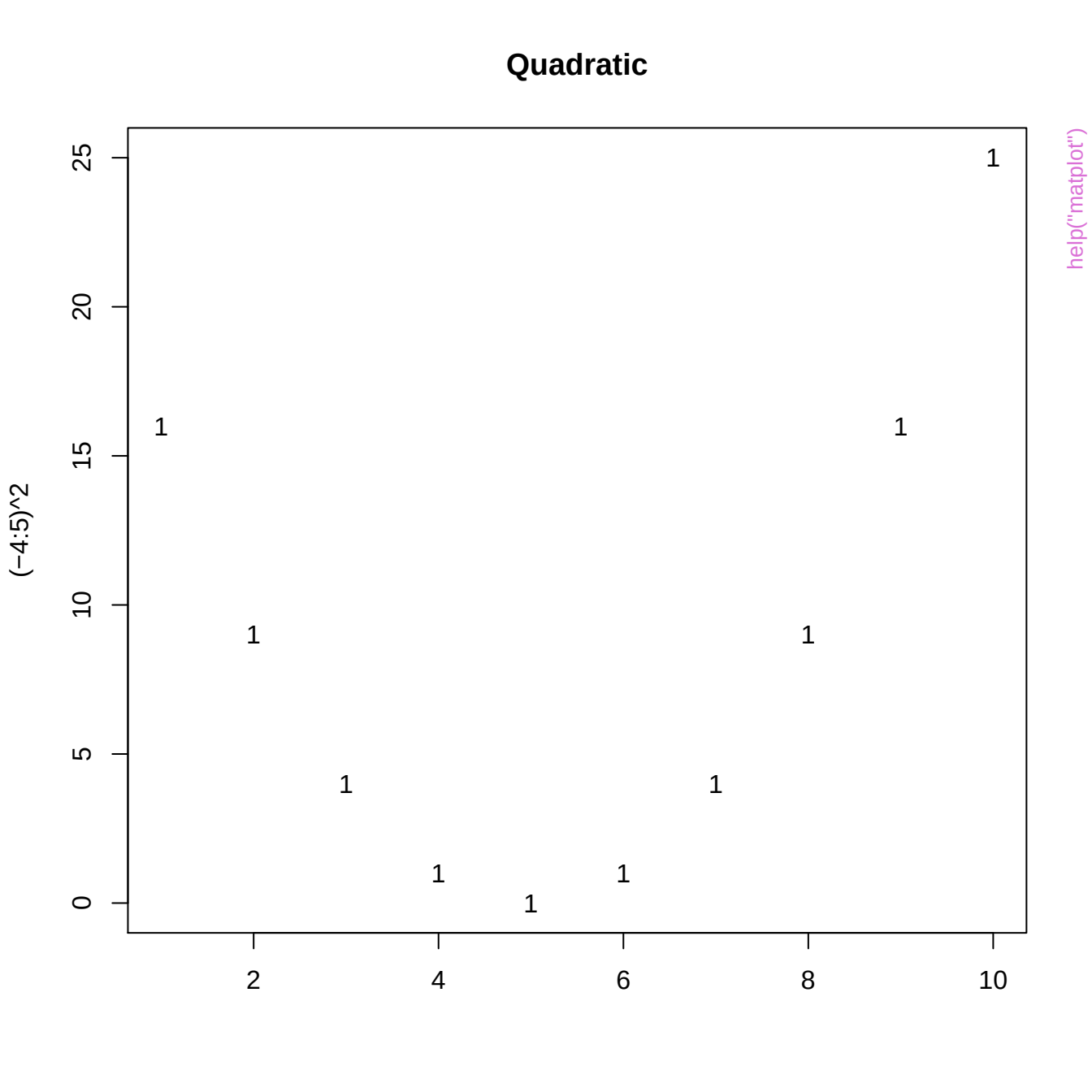
text.font = 3

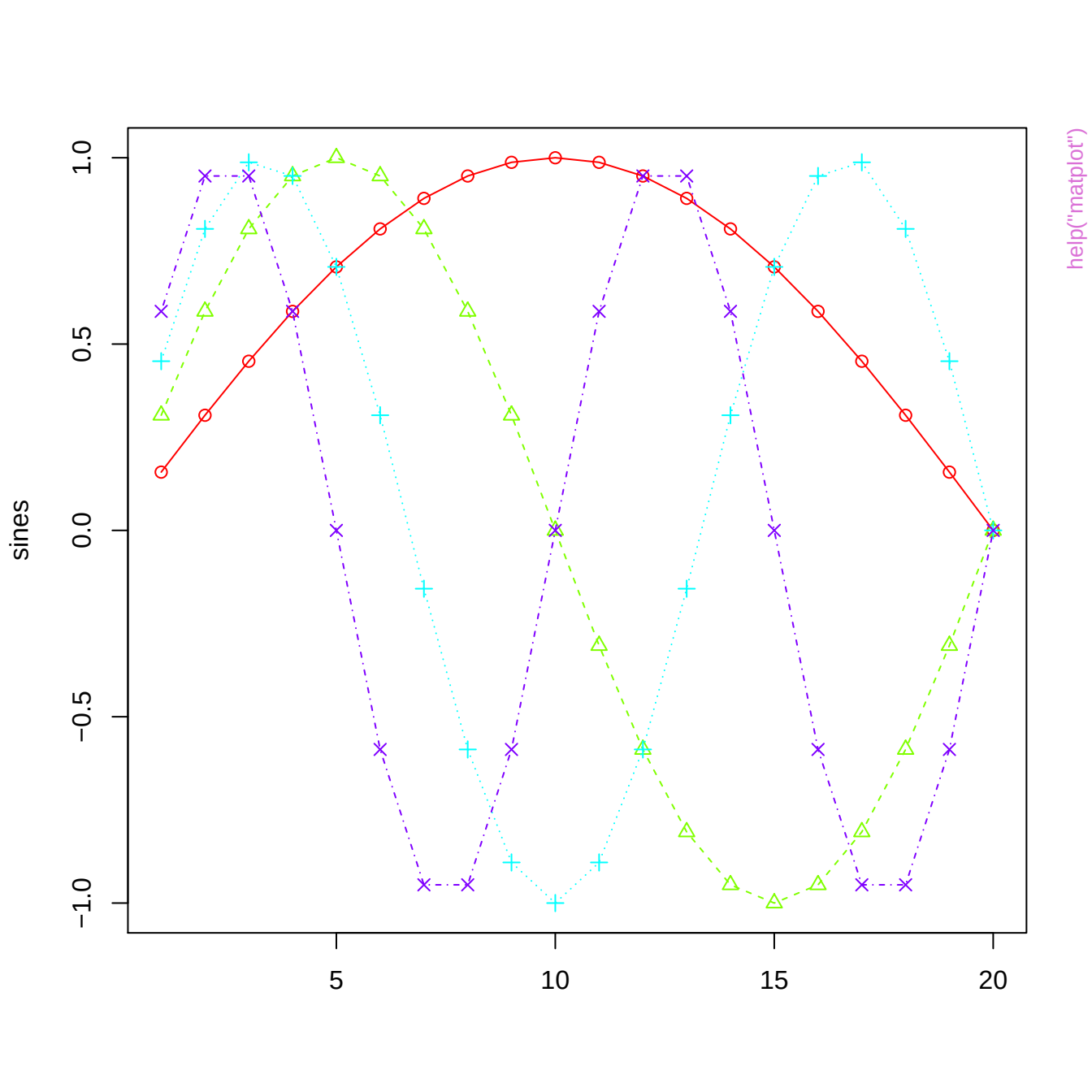


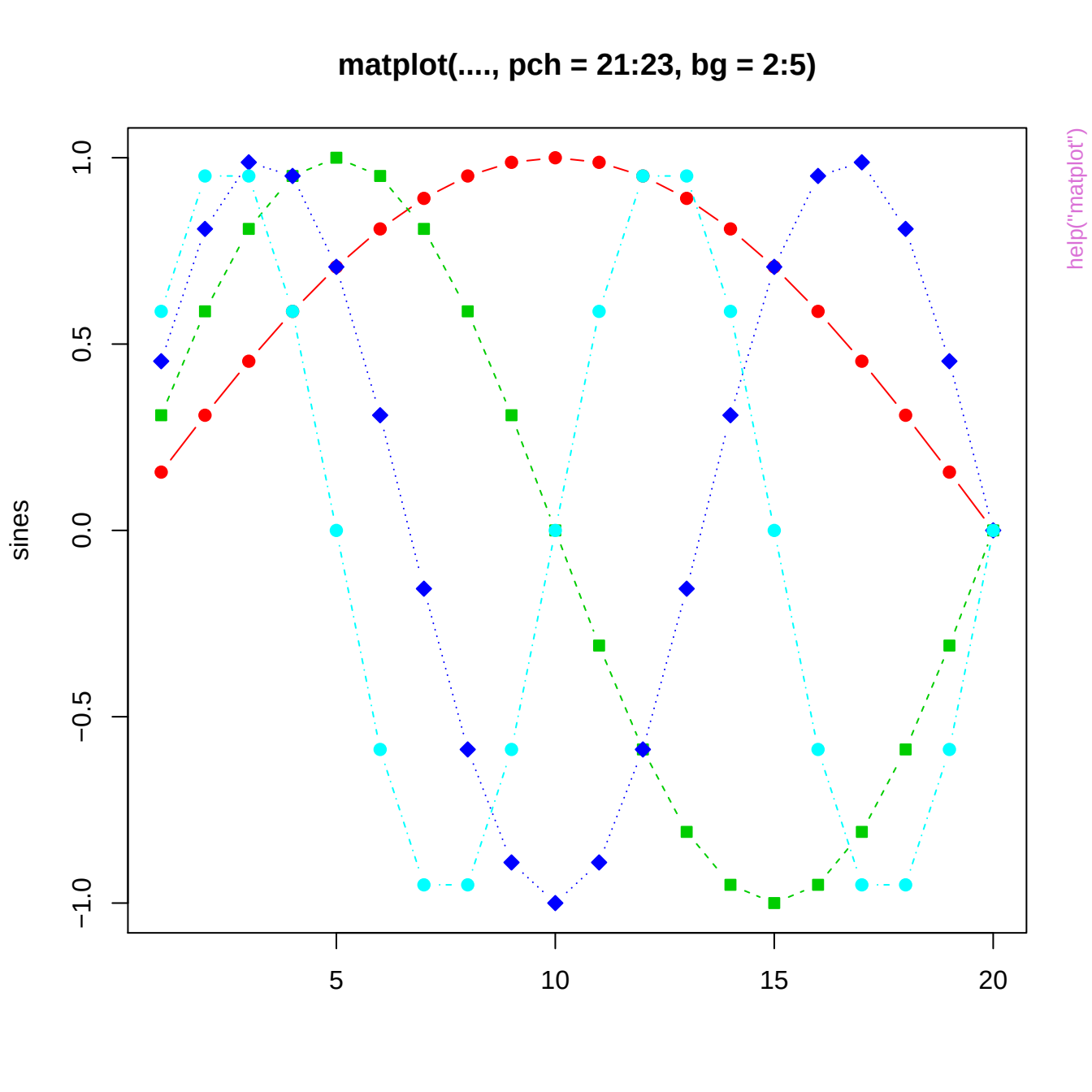
text.font = 4

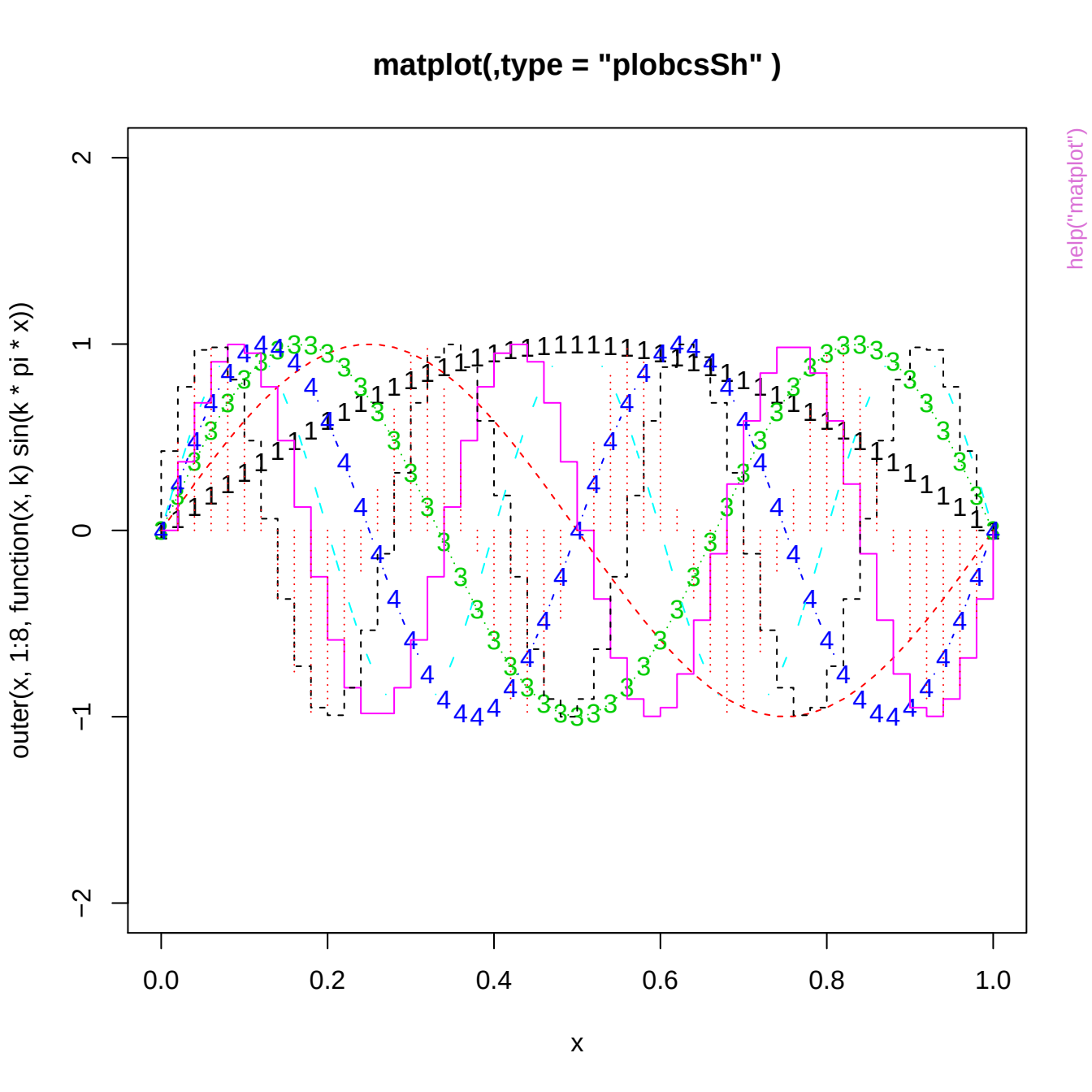


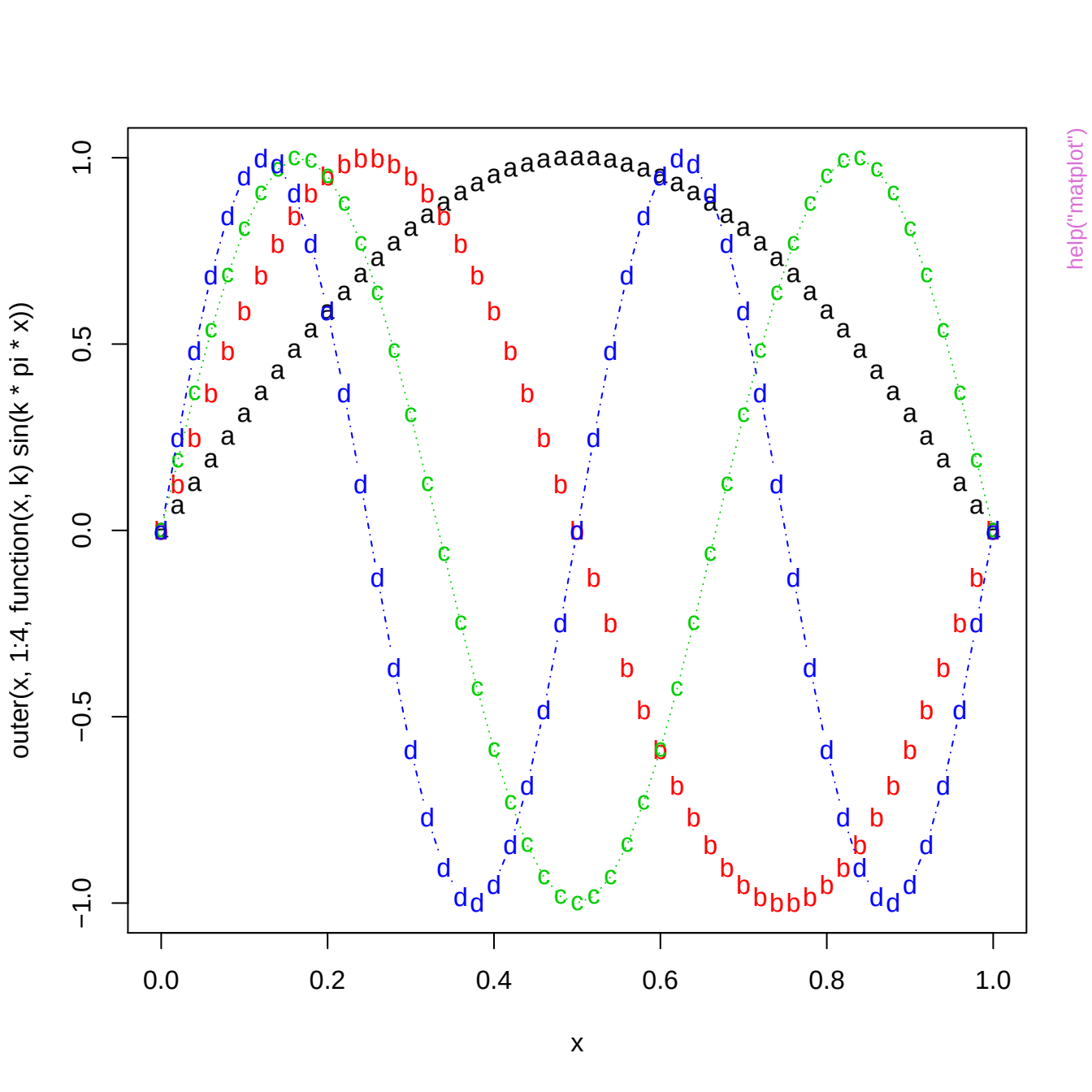

Stopping Distance versus Speed
dist
speed
0
20
40
60
80
100
120
5
10
15
20
25
help("lines")

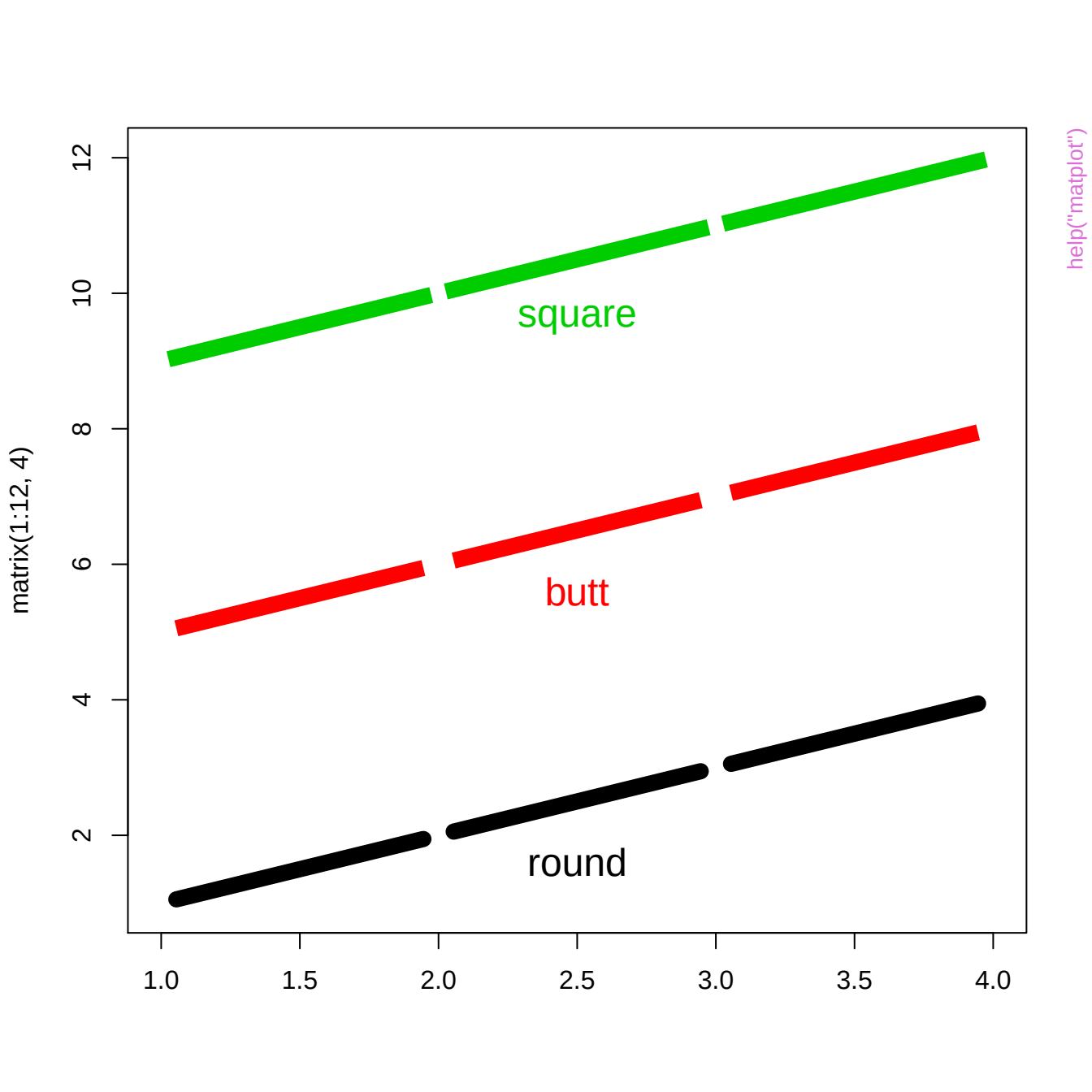

Quadratic
(−4:5)^2
0
5
10
15
20
25
2
4
6
8
10
1
1
1
1
1
1
1
1
1
1
help("matplot")

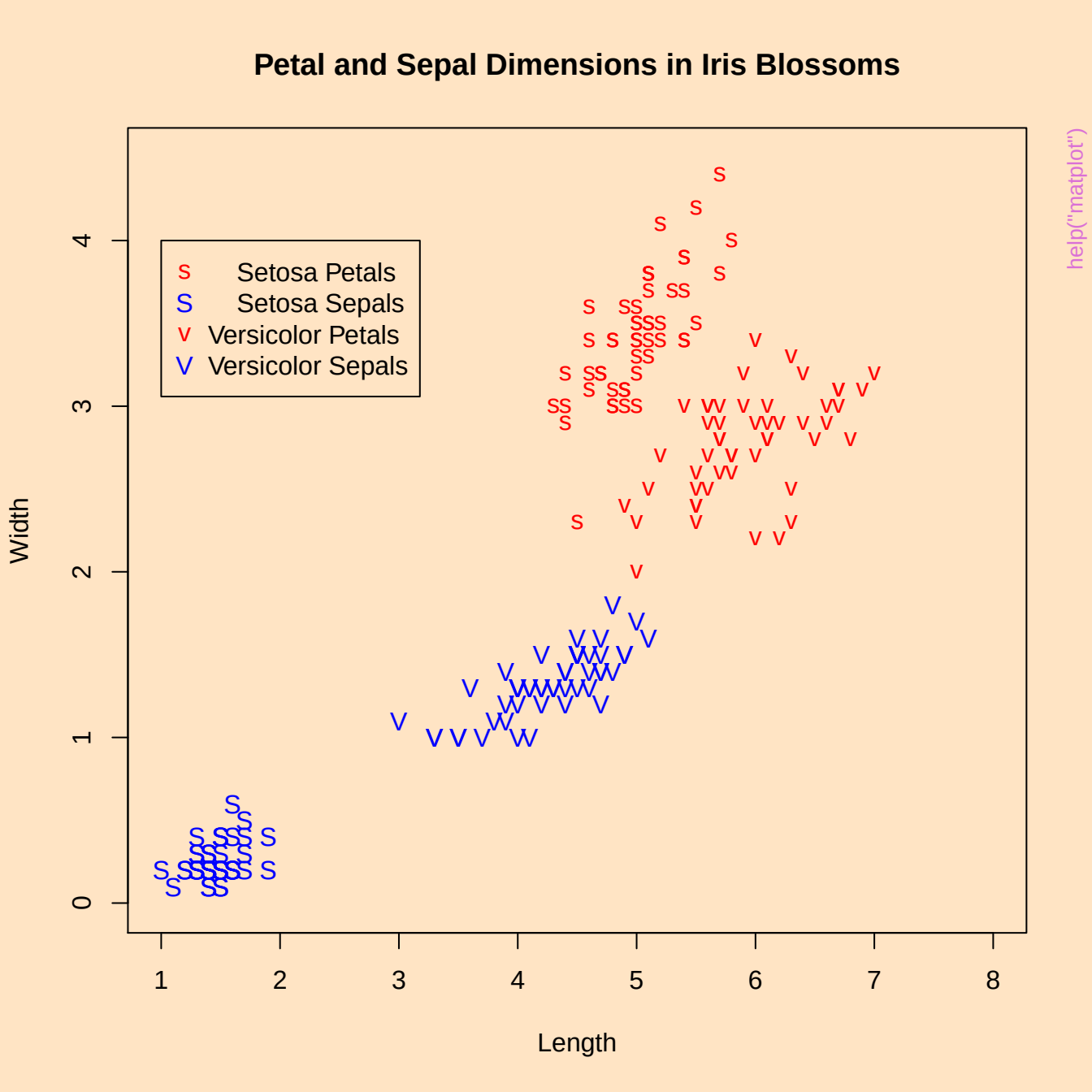

sines
1.0
0.5
0.0
−0.5
−1.0
5
10
15
20
help("matplot")

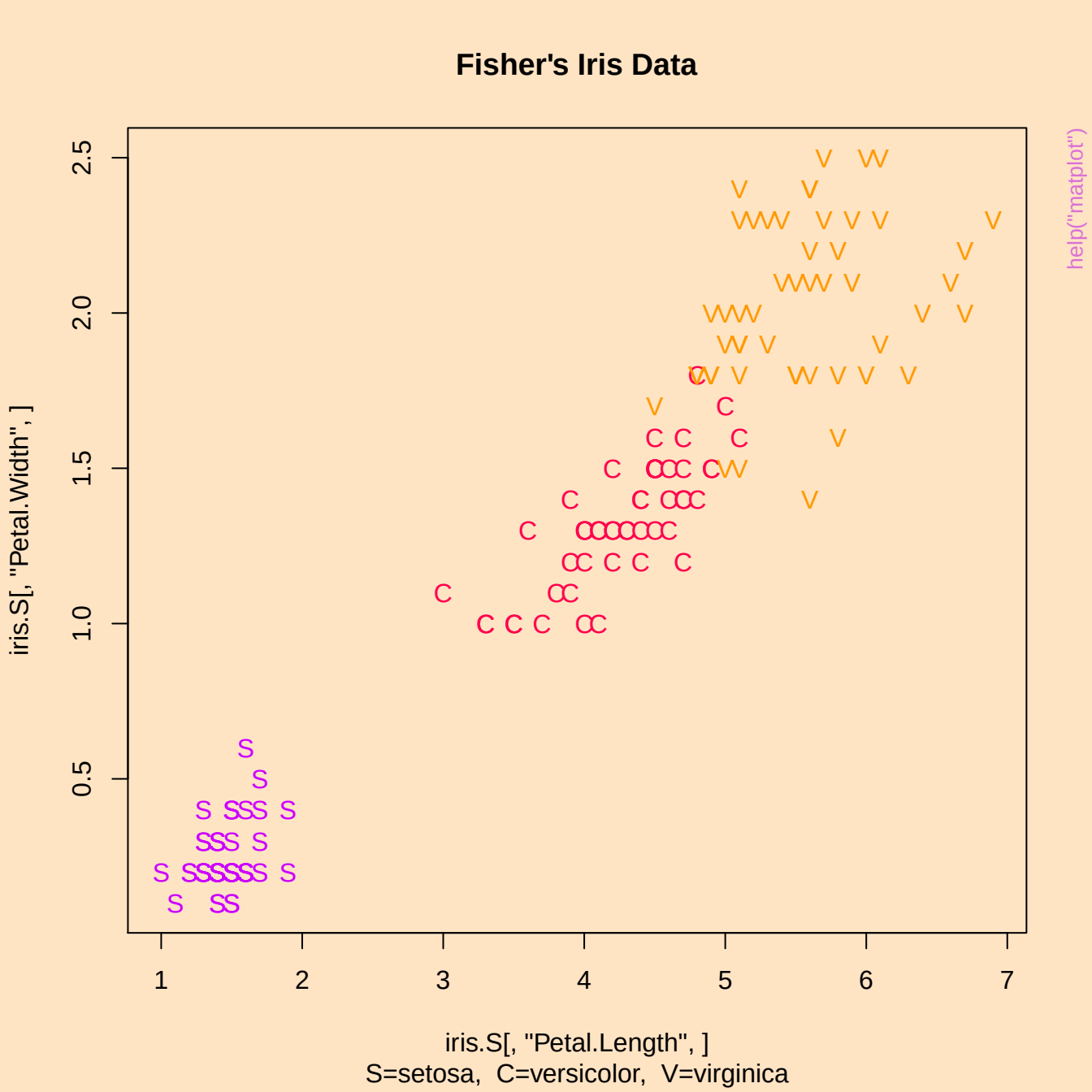

matplot(...., pch = 21:23, bg = 2:5)
sines
1.0
0.5
0.0
−0.5
−1.0
5
10
15
20
help("matplot")


matplot(,type = "plobcsSh")
outer(x, 1:8, function(x, k) sin(k * pi * x))
x
help("matplot")
2
1
0
−1
−2
0.0
0.2
0.4
0.6
0.8
1.0

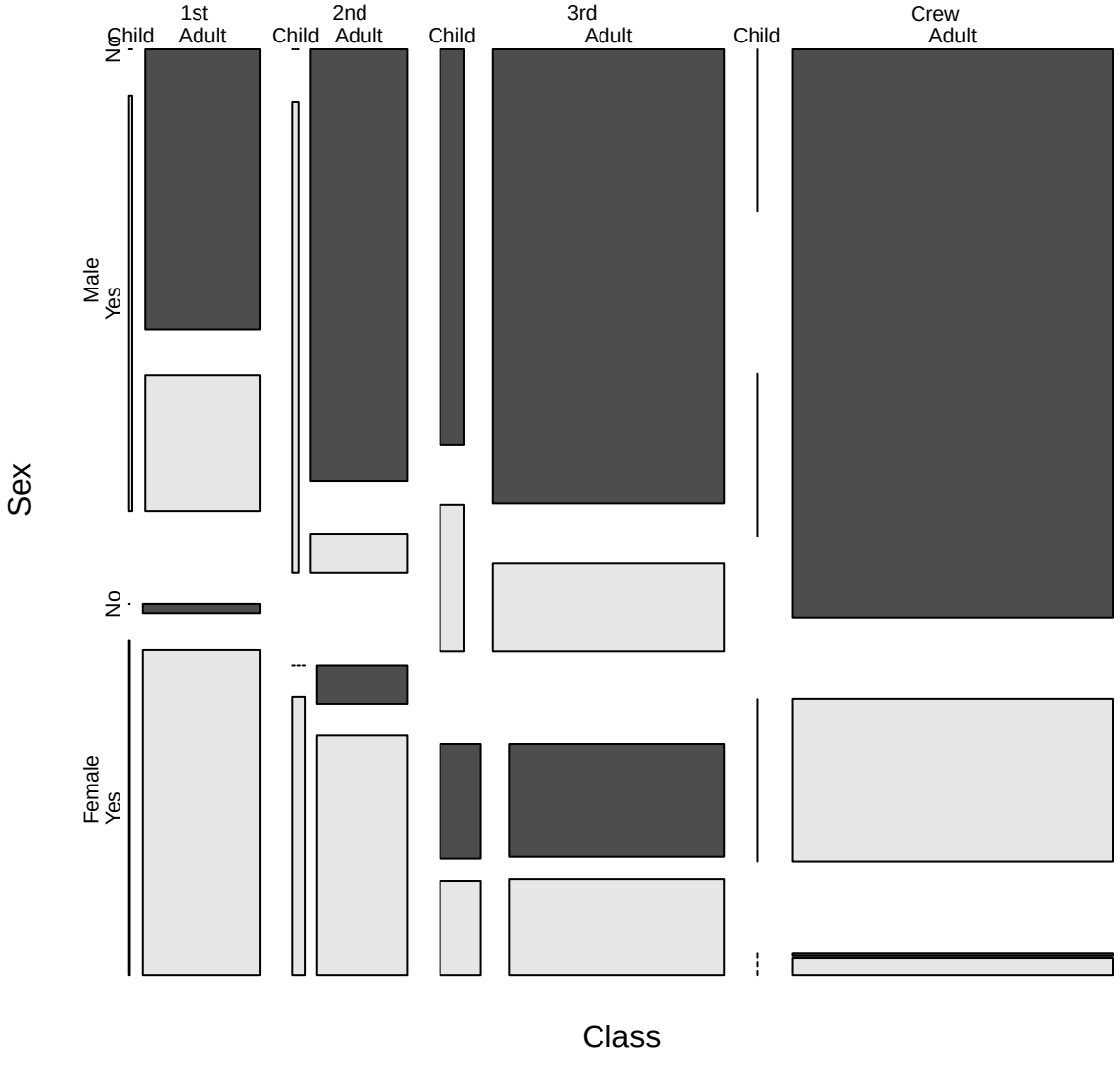

outer(x, 1:4, function(x, k) sin(k * pi * x))
x
1.0
0.5
0.0
−0.5
−1.0
0.0
0.2
0.4
0.6
0.8
1.0
help("matplot")


matrix(1:12, 4)
2
4
6
8
10
12
1.0
1.5
2.0
2.5
3.0
3.5
4.0
square
butt
round
help("matplot")

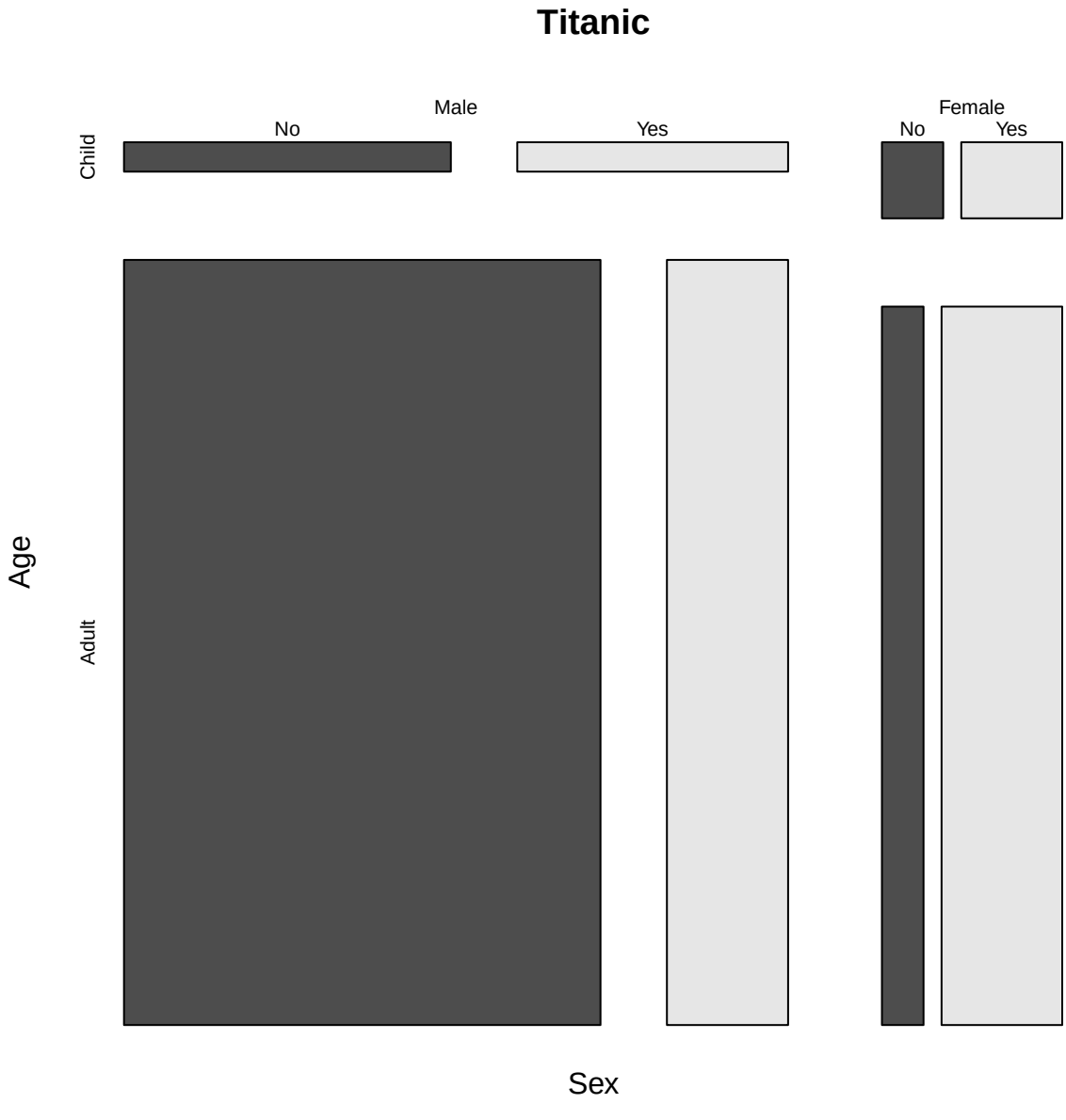

Petal and Sepal Dimensions in Iris Blossoms
Setosa Petals
Setosa Sepals
Versicolor Petals
Versicolor Sepals
Width
Length
0
1
2
3
4
1
2
3
4
5
6
7
8
help("matplot")

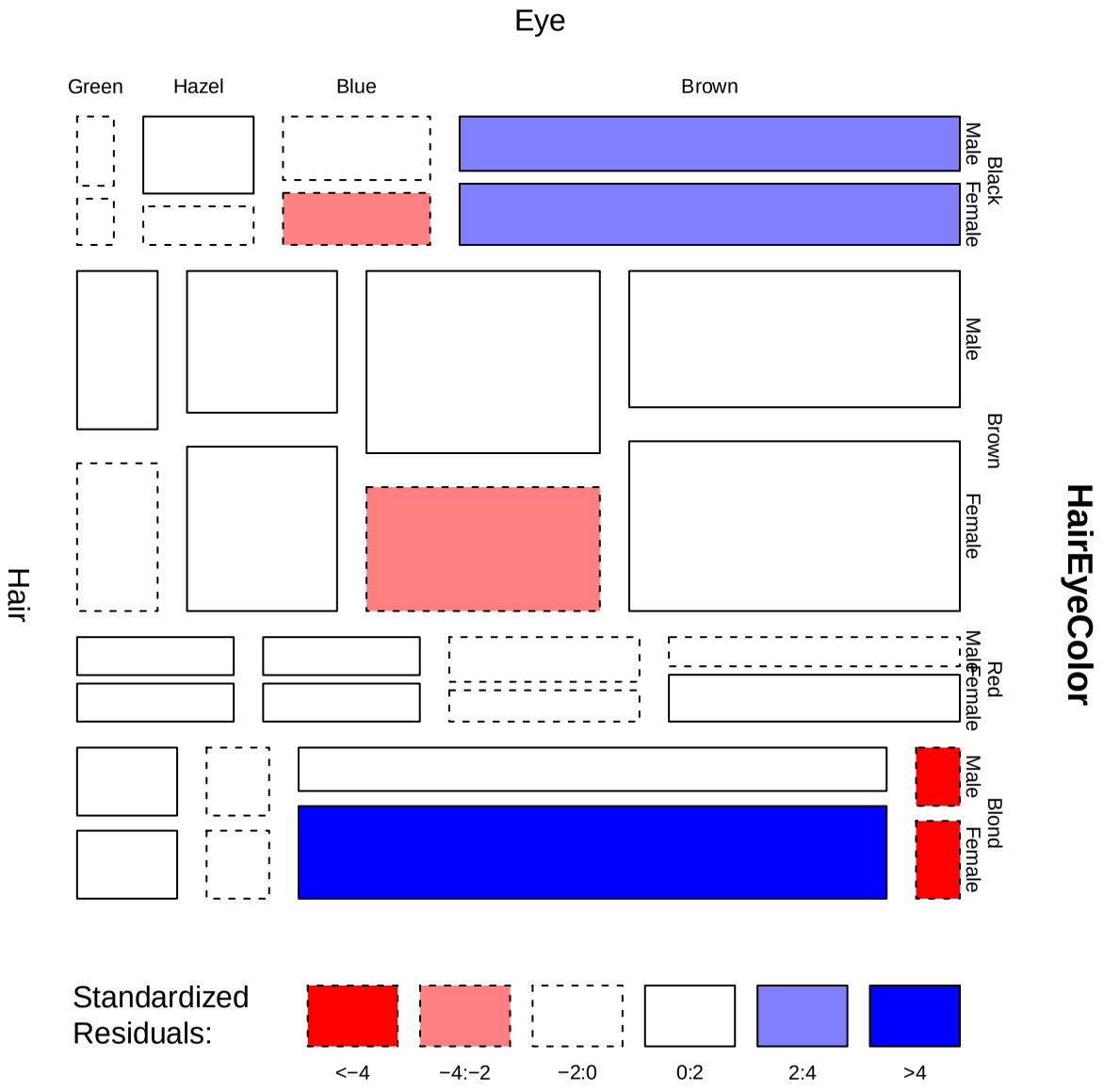

Fisher's Iris Data
iris.S[, "Petal.Width",]
0.5
1.0
1.5
2.0
2.5
1
2
3
4
5
6
7
iris.S[, "Petal.Length",]
S=setosa, C=versicolor, V=virginica
help("matplot")

Survival on the Titanic

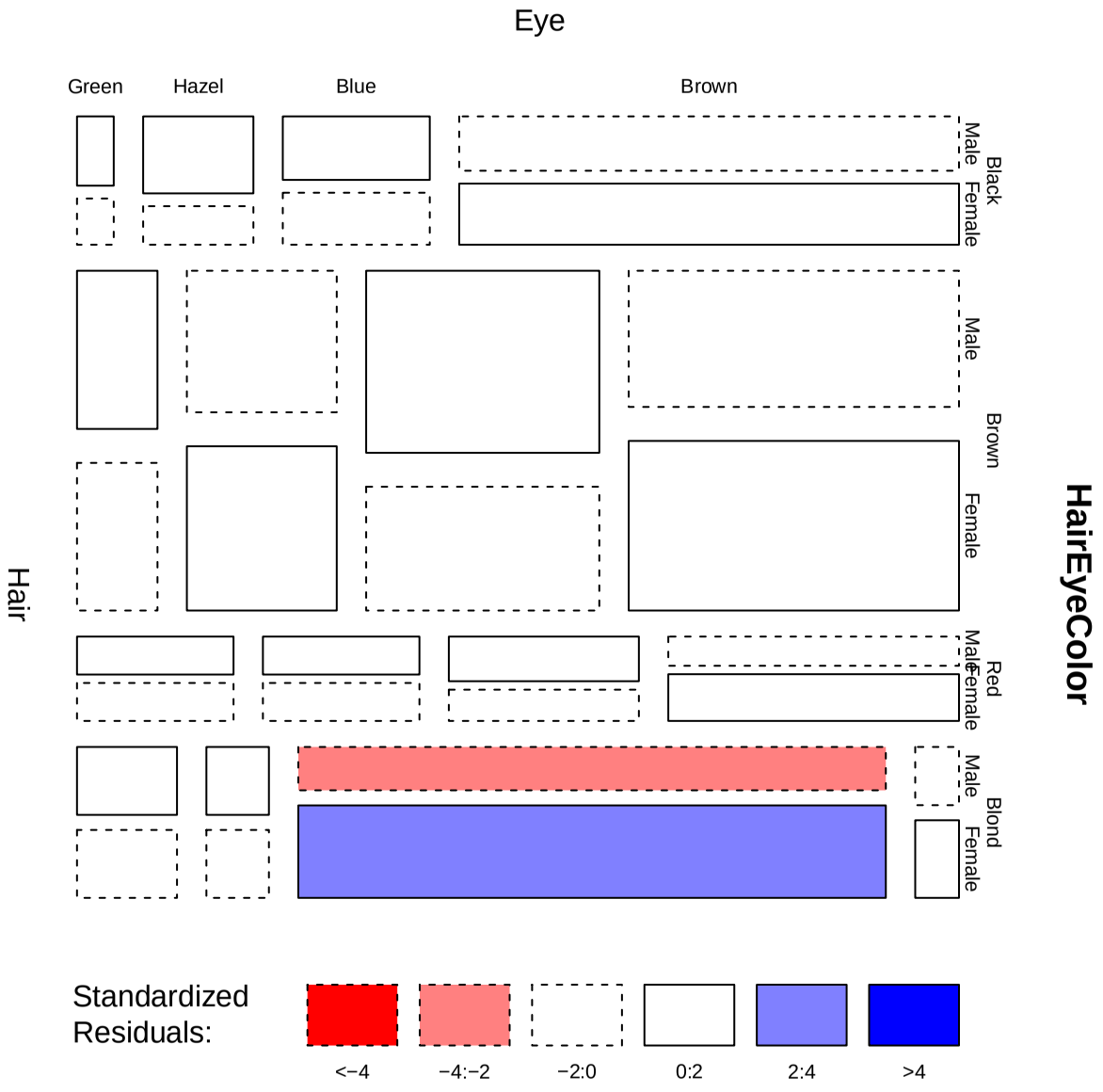


help("mosaicplot")

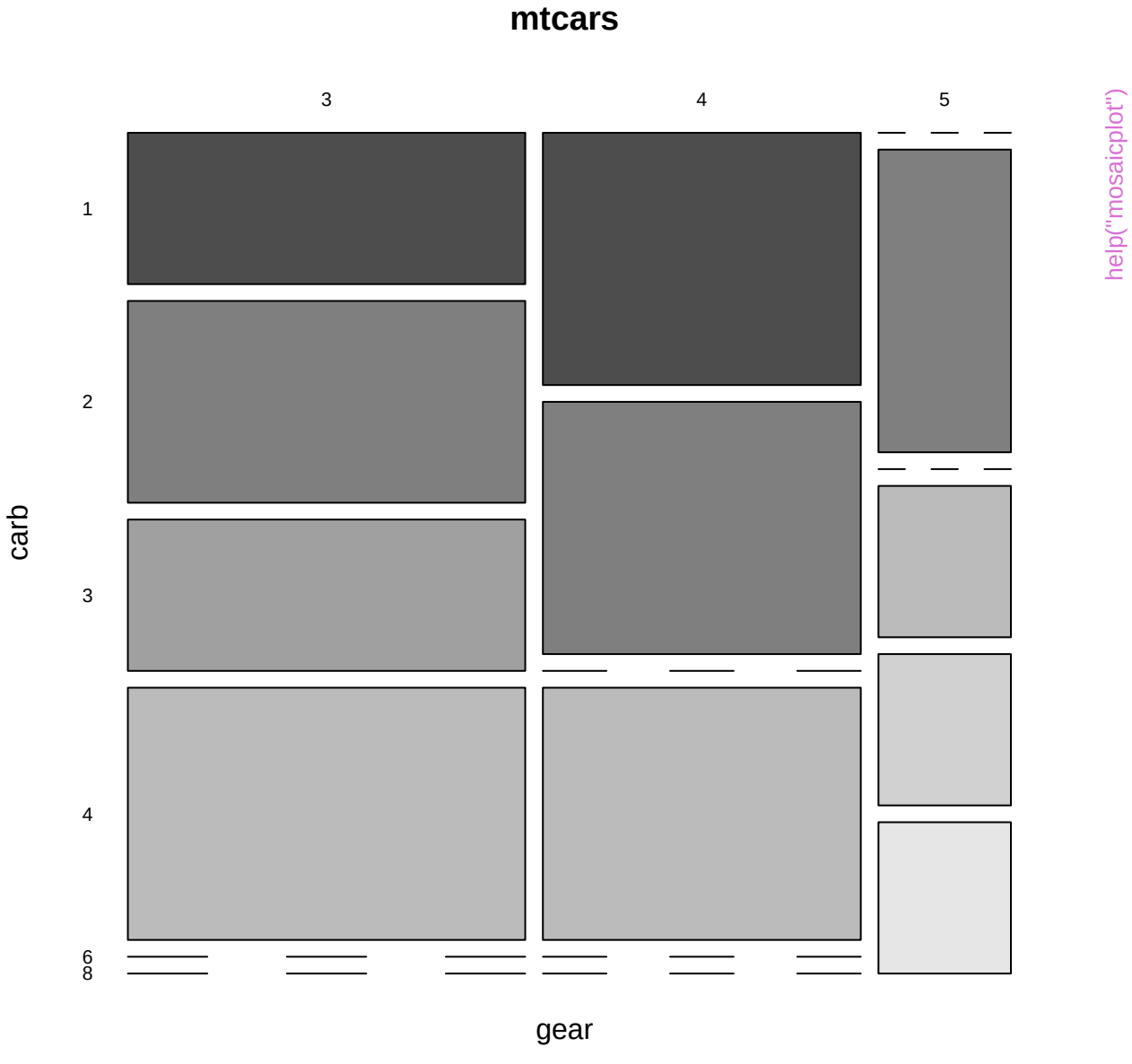

Titanic
Male
Female
No
Yes
No
Yes
Child
Adult
Age
Sex
help("mosaicplot")

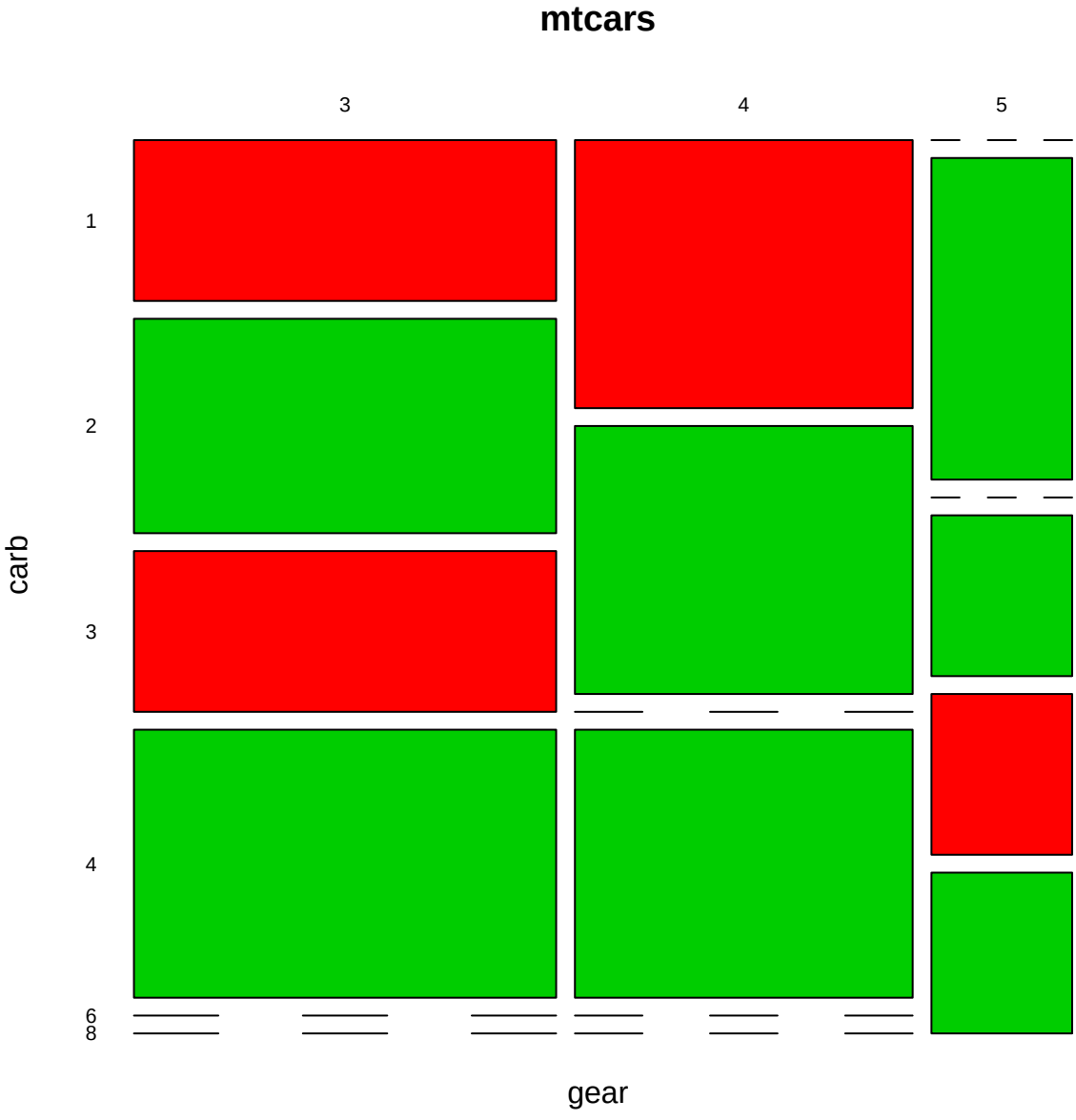


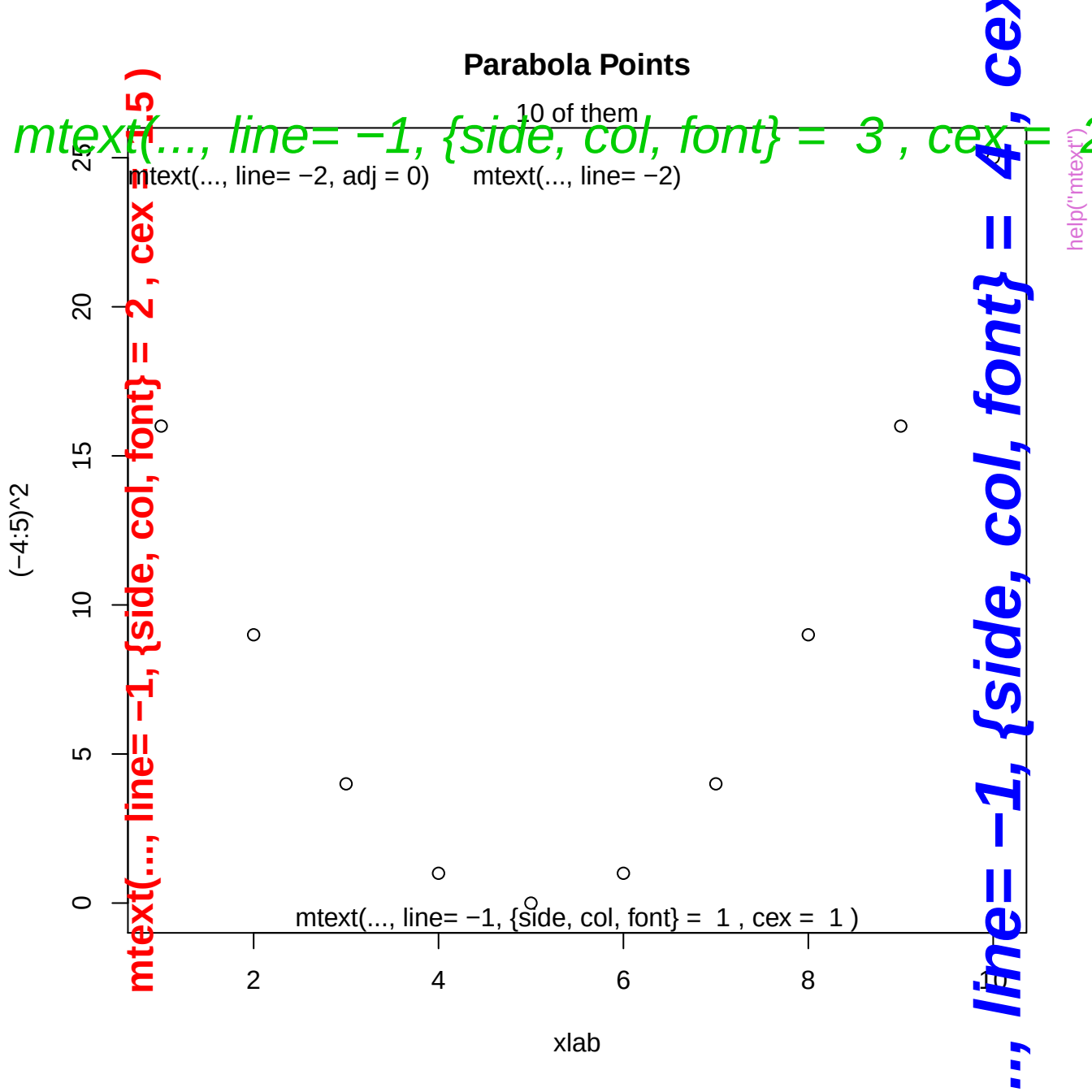
help("mosaicplot")



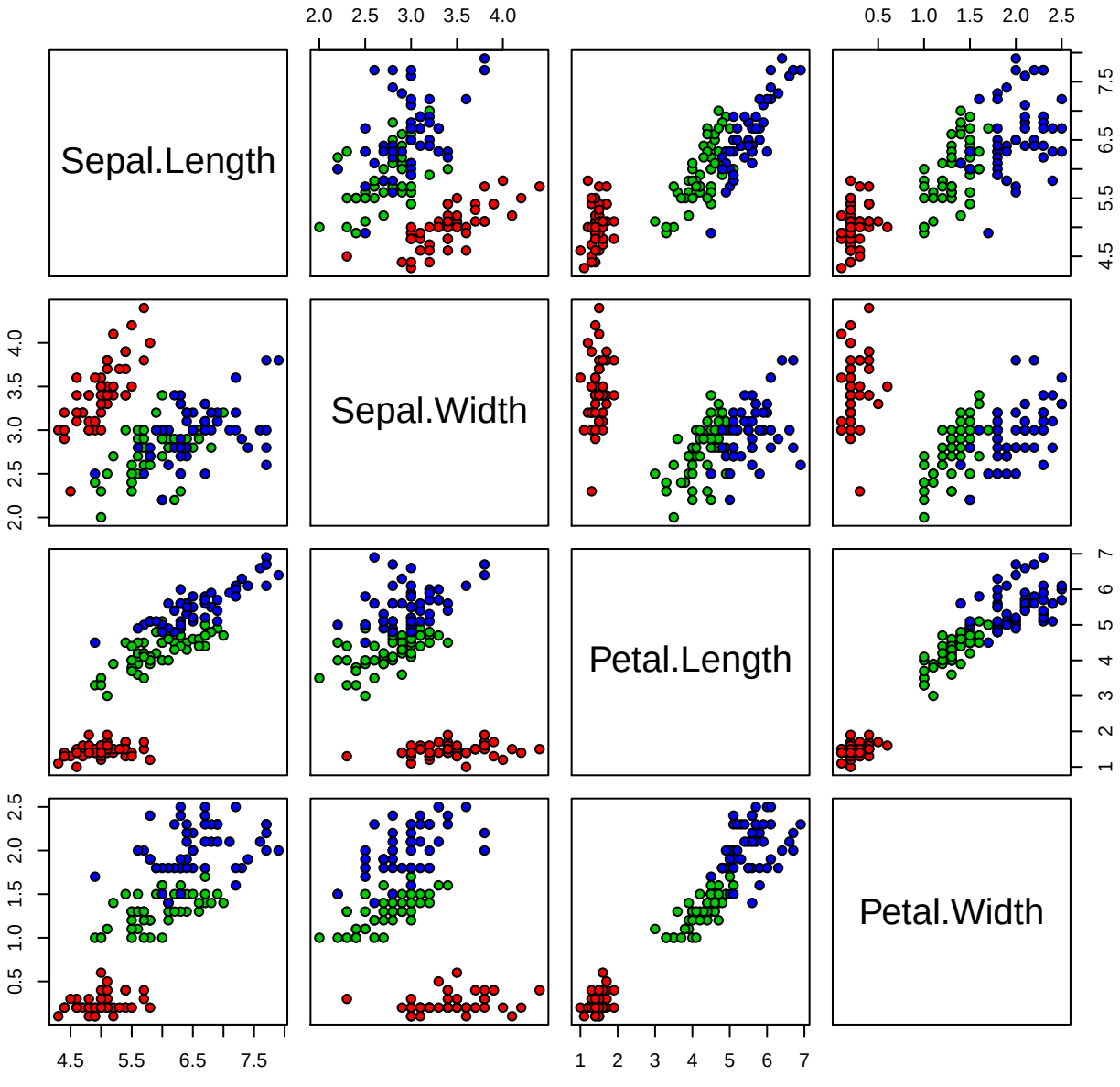
help("mosaicplot")

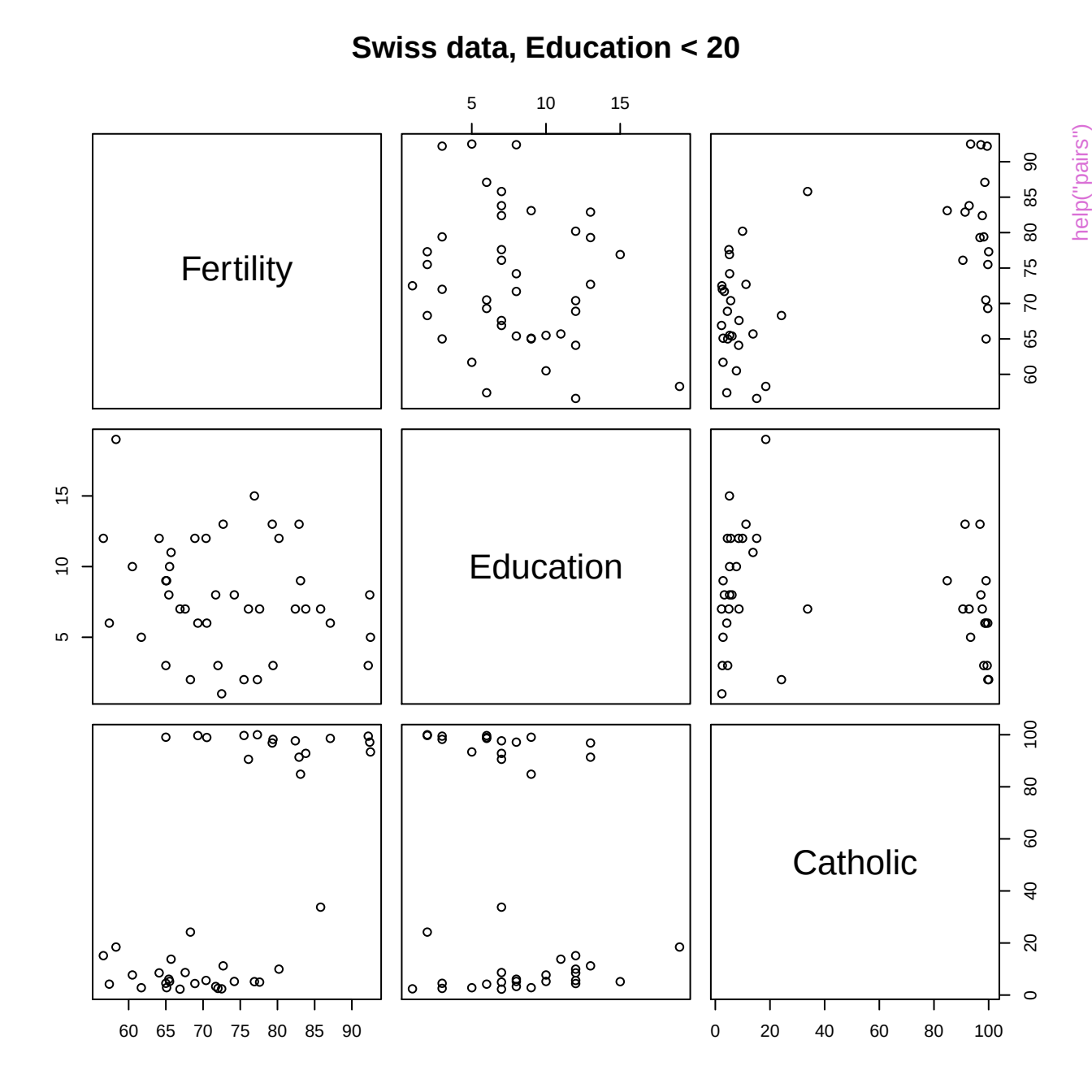

mtcars
3
4
5
1
2
3
4
6
8
carb
gear
help("mosaicplot")


mtcars
3
4
5
1
2
3
4
6
8
carb
gear
help("mosaicplot")

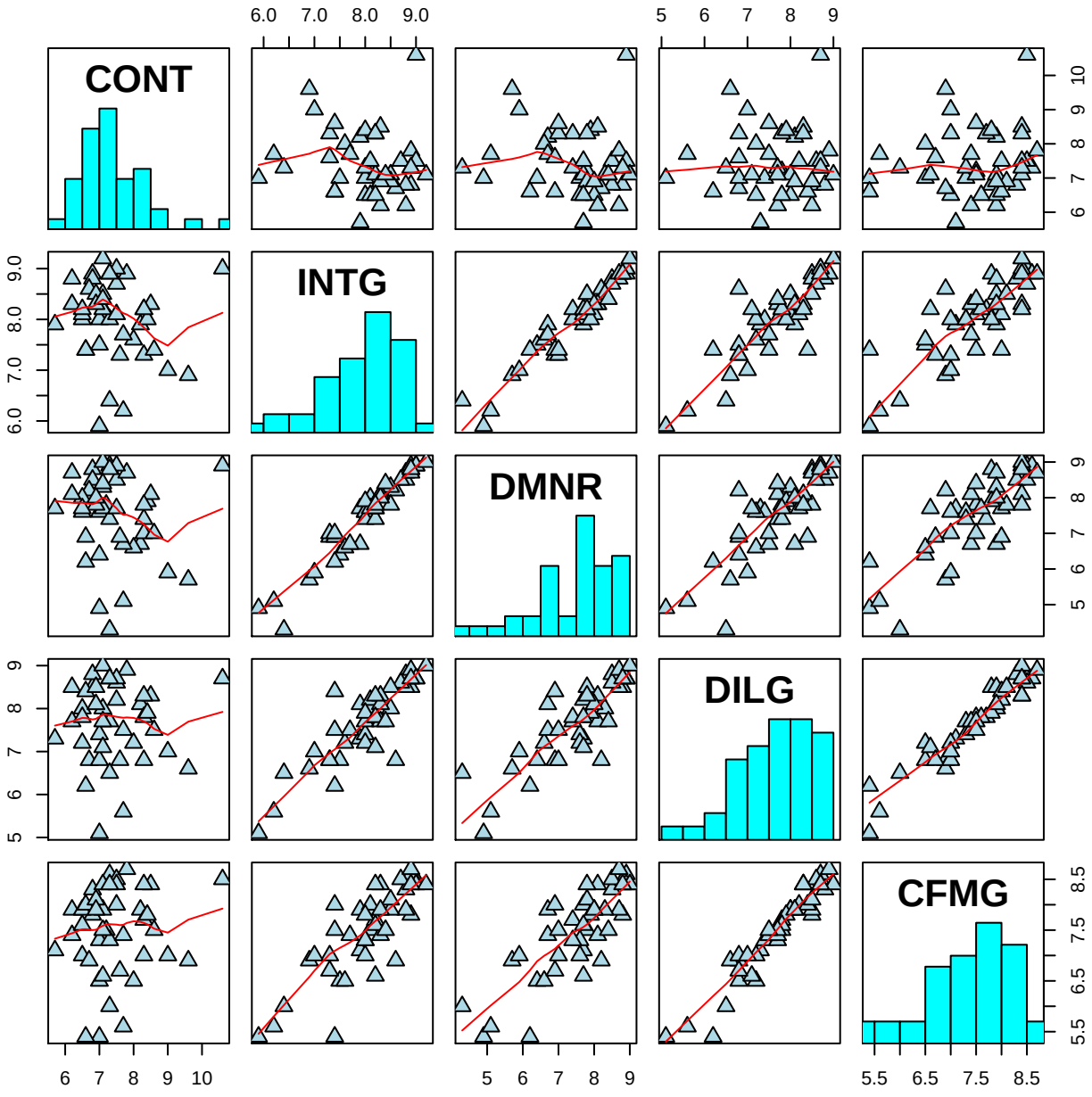

Parabola Points
10 of them
mtext(..., line= −2, adj = 0)
mtext(..., line= −2)
mtext(..., line= −1, {side, col, font} = 1 , cex = 1)
mtext(..., line= −1, {side, col, font} = 2 , cex = 1.5)
mtext(..., line= −1, {side, col, font} = 3 , cex = 2
mtext(..., line= −1, {side, col, font} = 4, cex
help("mtext")
(−4:5)^2
xlab
0
5
10
15
20
25
2
4
6
8

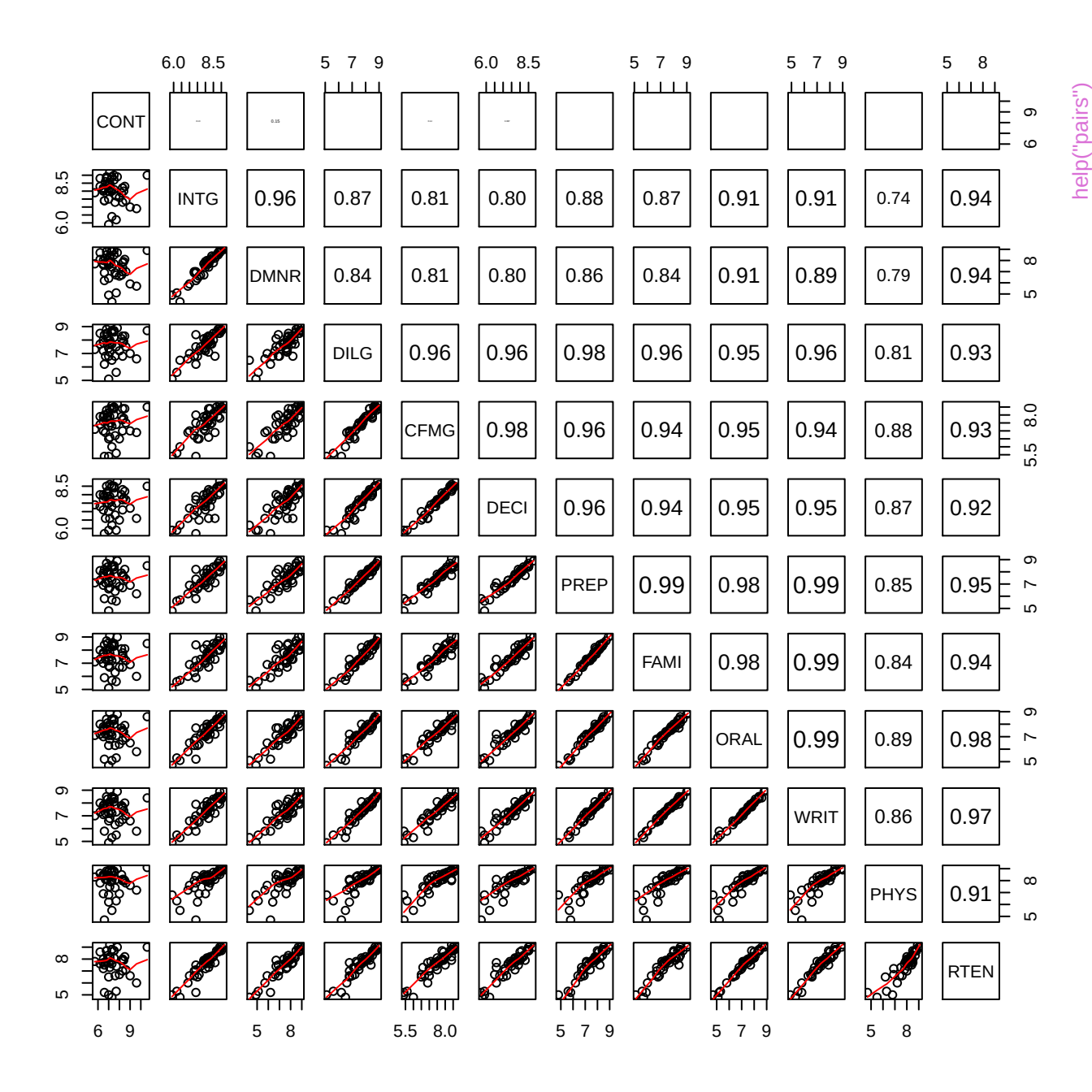
log ="y"
mtext(...,side= 3)
help("mtext")
exp(1:10)
mtext(...,side= 2)
mtext(...,side= 4)
5000
500
50
10
5
2
4
6
8
10
mtext(...,side= 1)
xlab

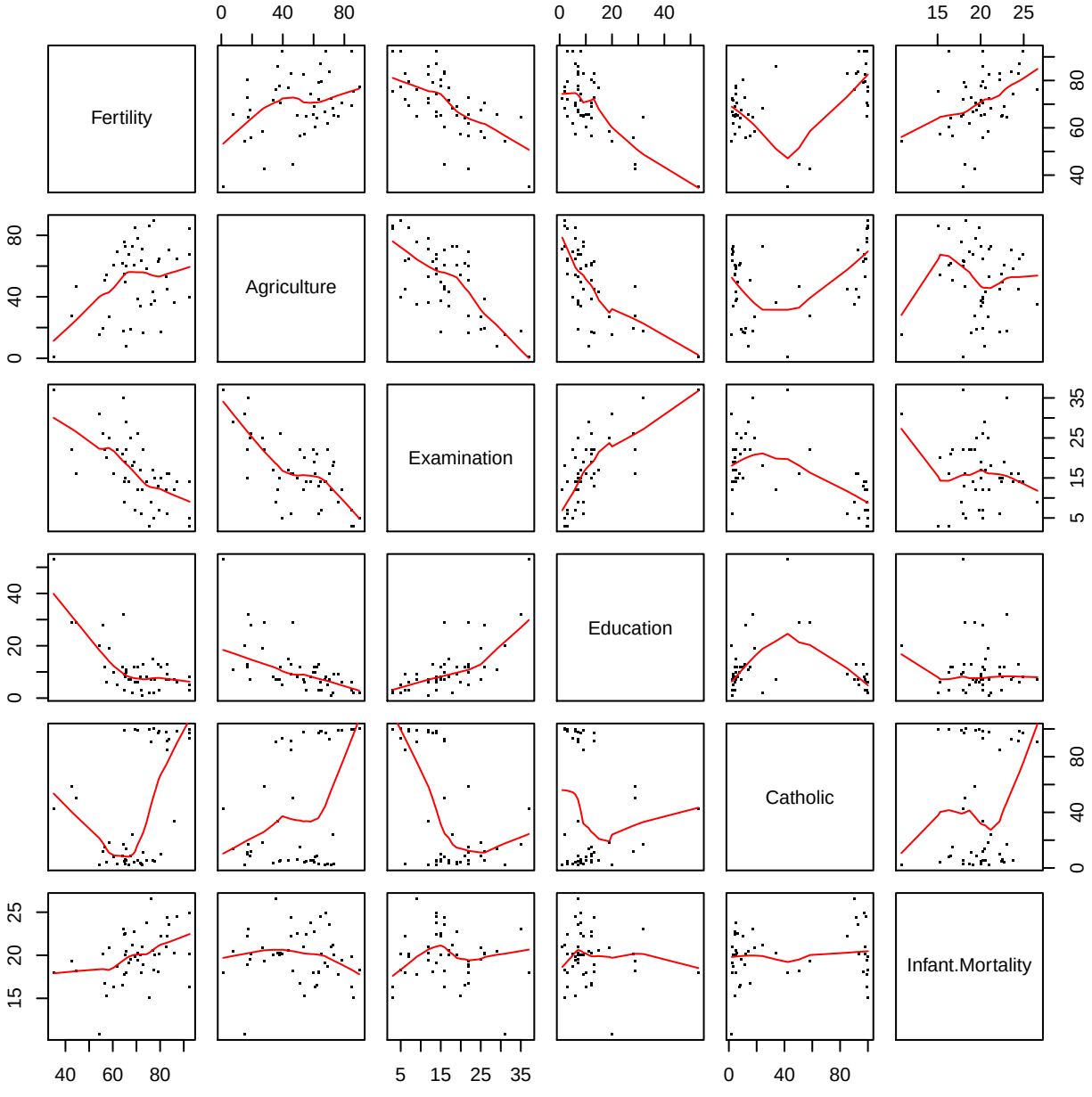

Anderson's Iris Data −− 3 species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
help("pairs")

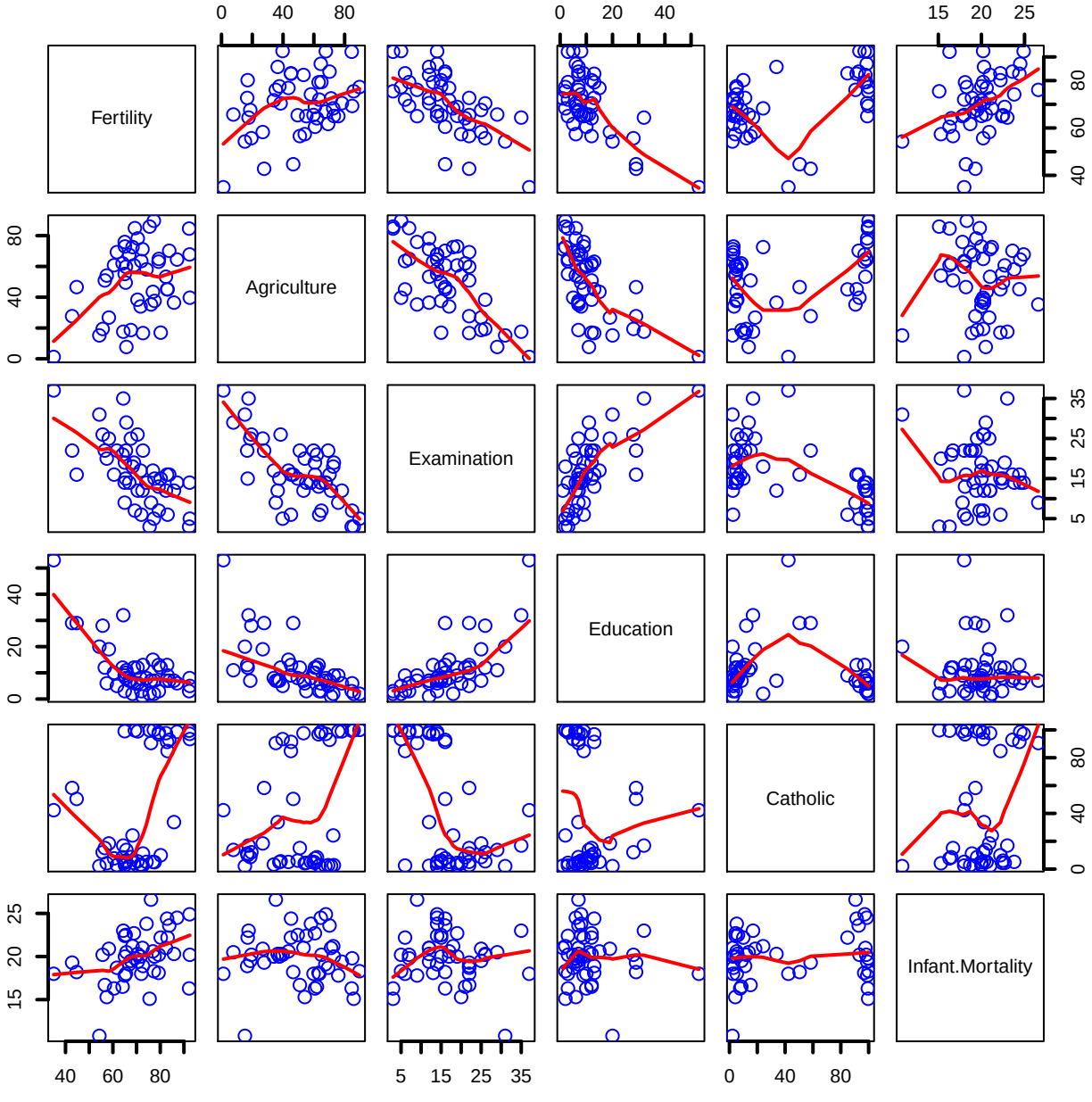

Swiss data, Education < 20
Fertility
Education
Catholic
5
10
15
60
65
70
75
80
85
90
0
20
40
60
80
100
help("pairs")

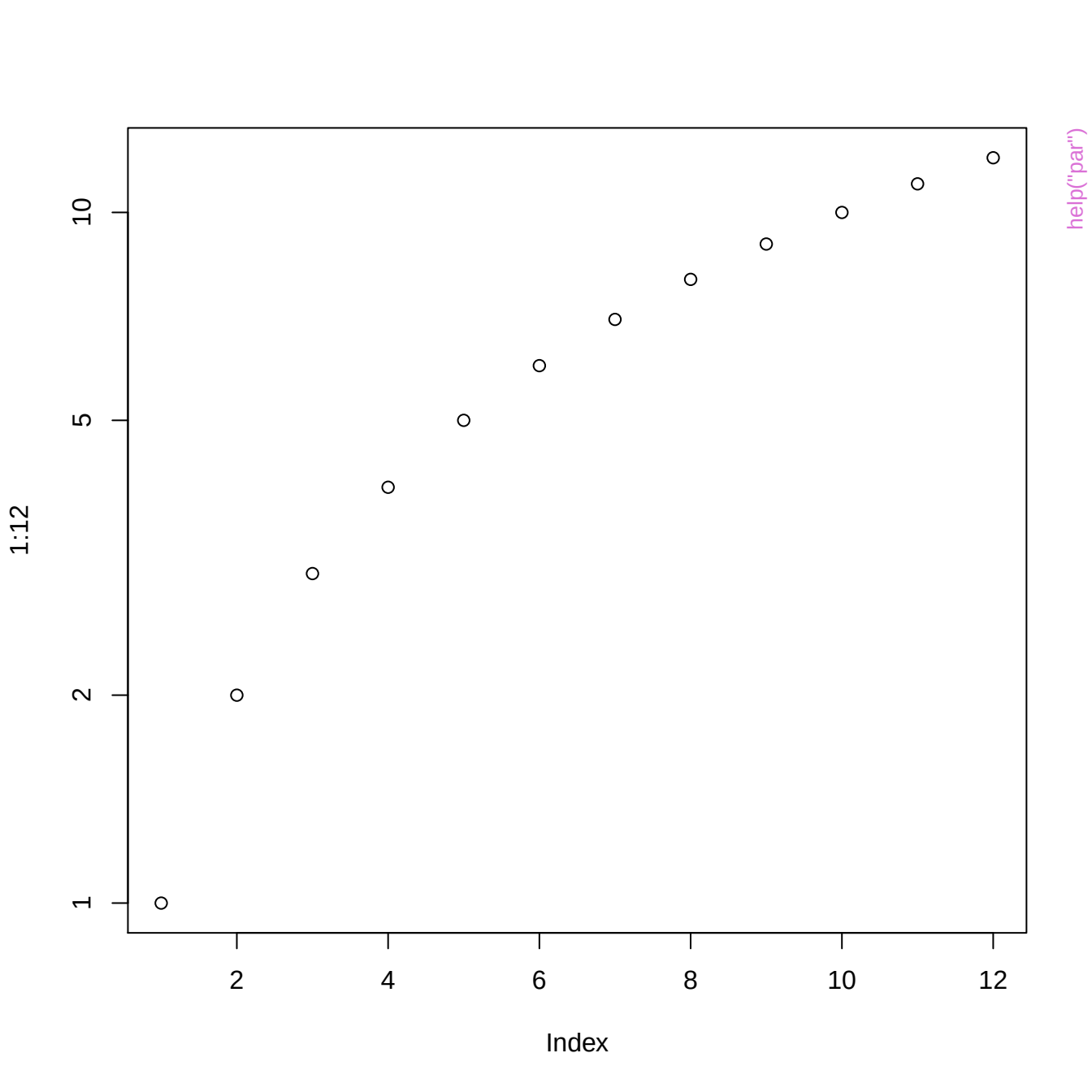
help("pairs")

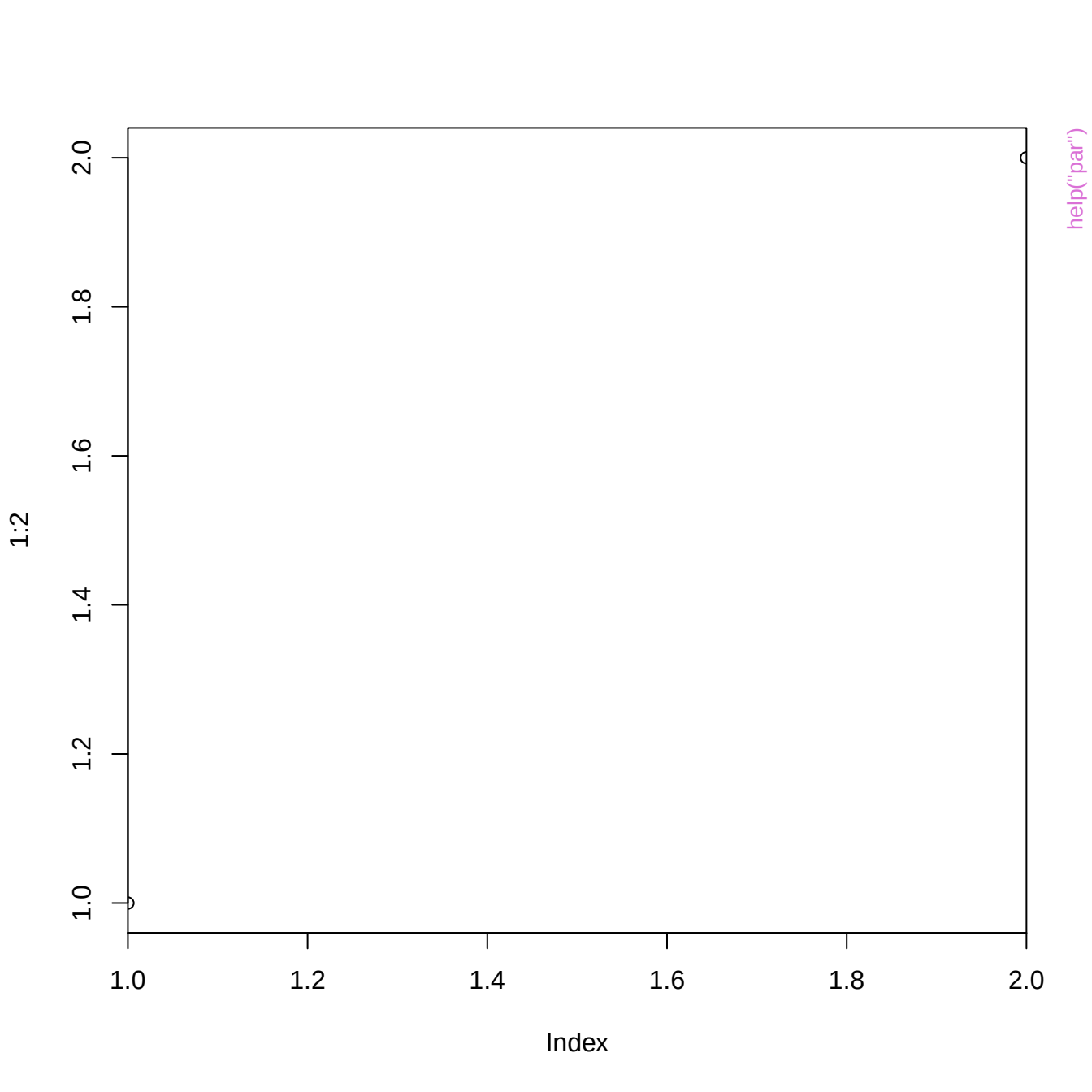

CONT
INTG
DMNR
DILG
CFMG
6.0 7.0 8.0 9.0
5 6 7 8 9
6 7 8 9 10
5 6 7 8 9
5.5 6.5 7.5 8.5
help("pairs")

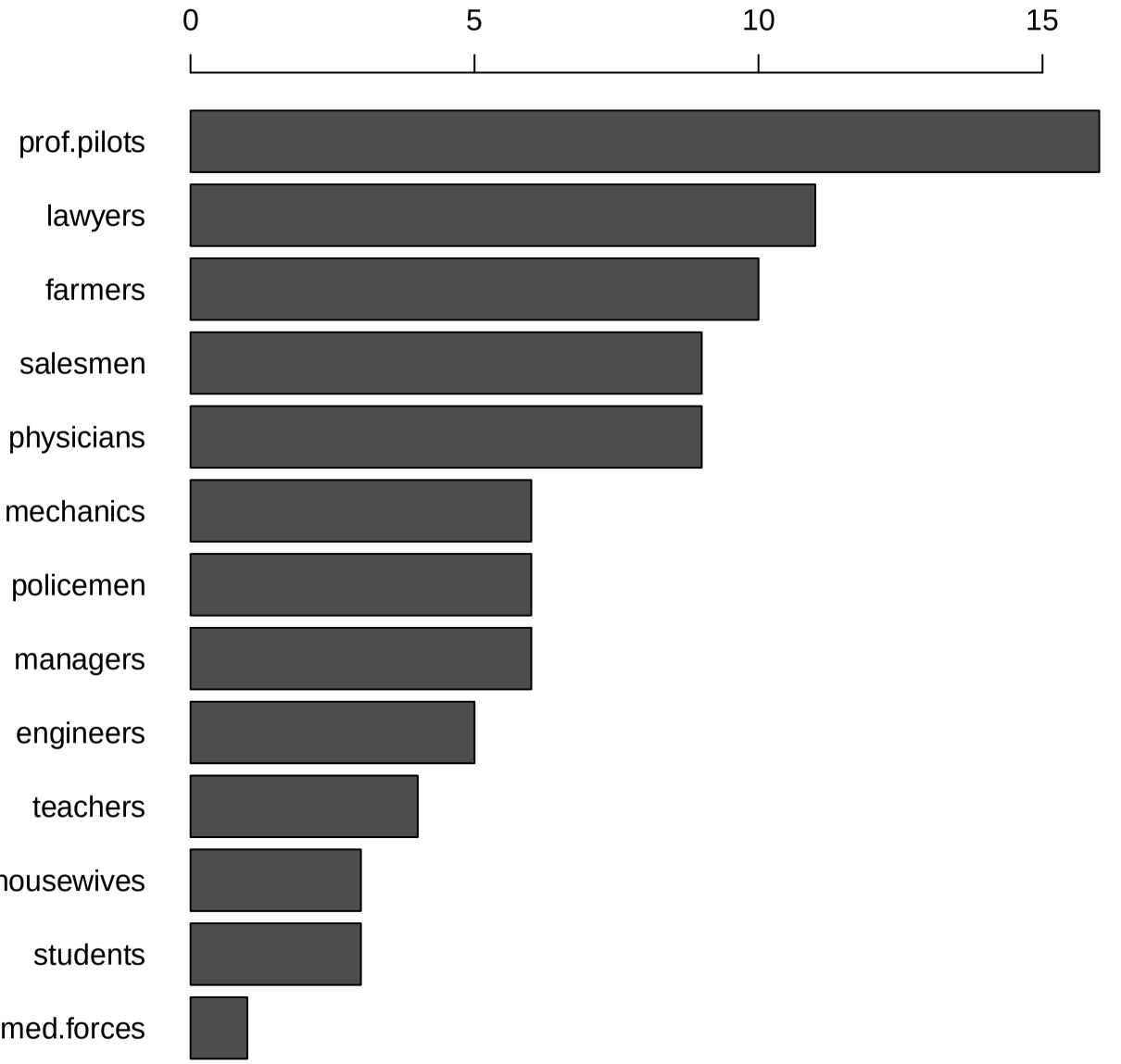

help("pairs")
CONT
INTG
DMNR
DILG
CFMG
DECI
PREP
FAMI
ORAL
WRIT
PHYS
RTEN
0.96 0.87 0.81 0.80 0.88 0.87 0.91 0.91 0.74 0.94
0.84 0.81 0.80 0.86 0.84 0.91 0.89 0.79 0.94
0.96 0.96 0.98 0.96 0.95 0.96 0.81 0.93
0.98 0.96 0.94 0.95 0.94 0.88 0.93
0.96 0.94 0.95 0.95 0.87 0.92
0.99 0.98 0.99 0.85 0.95
0.98 0.99 0.84 0.94
0.99 0.89 0.98
0.86 0.97
0.91


Fertility
Agriculture
Examination
Education
Catholic
Infant.Mortality
help("panel.smooth")

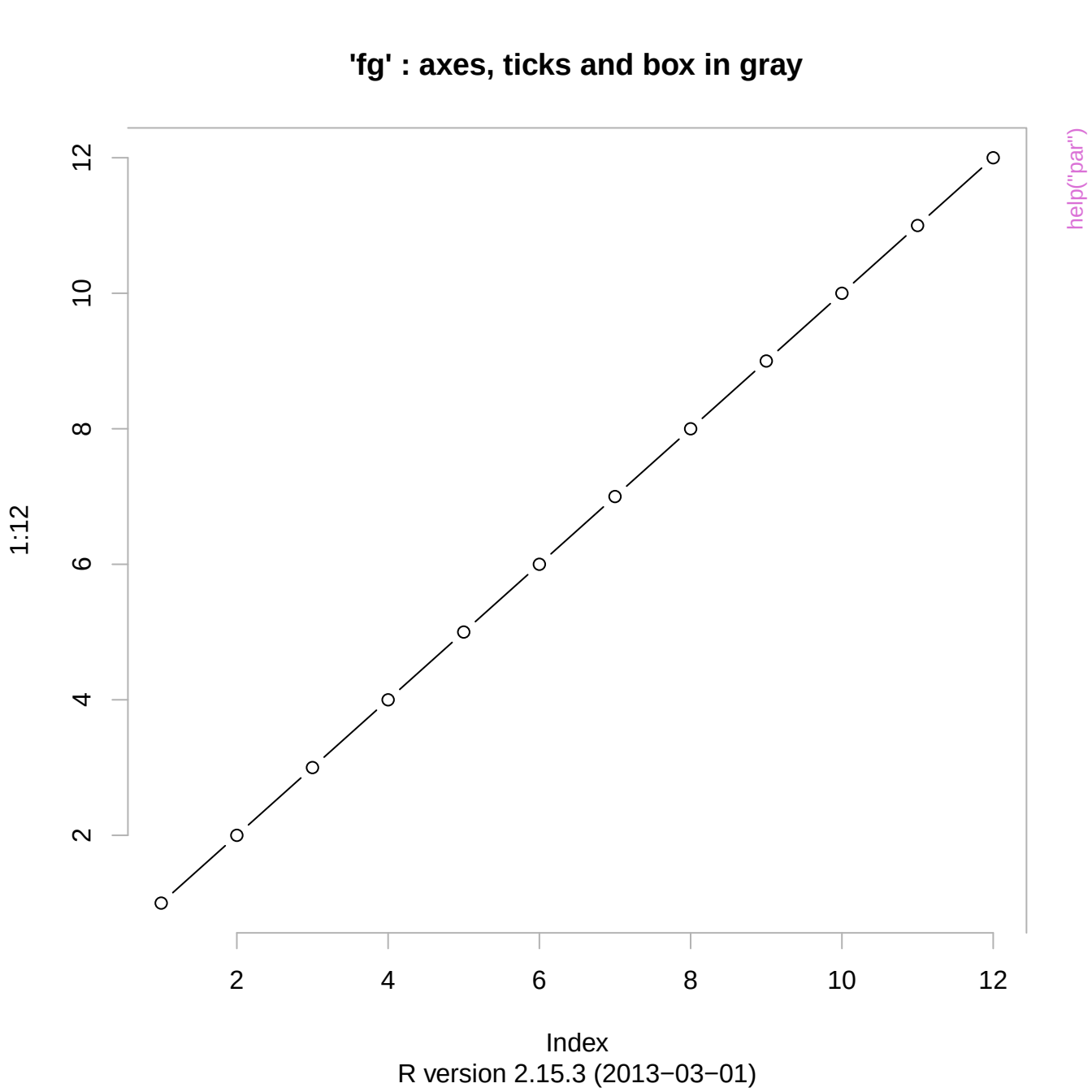

Fertility
Agriculture
Examination
Education
Catholic
Infant.Mortality
help("panel.smooth")

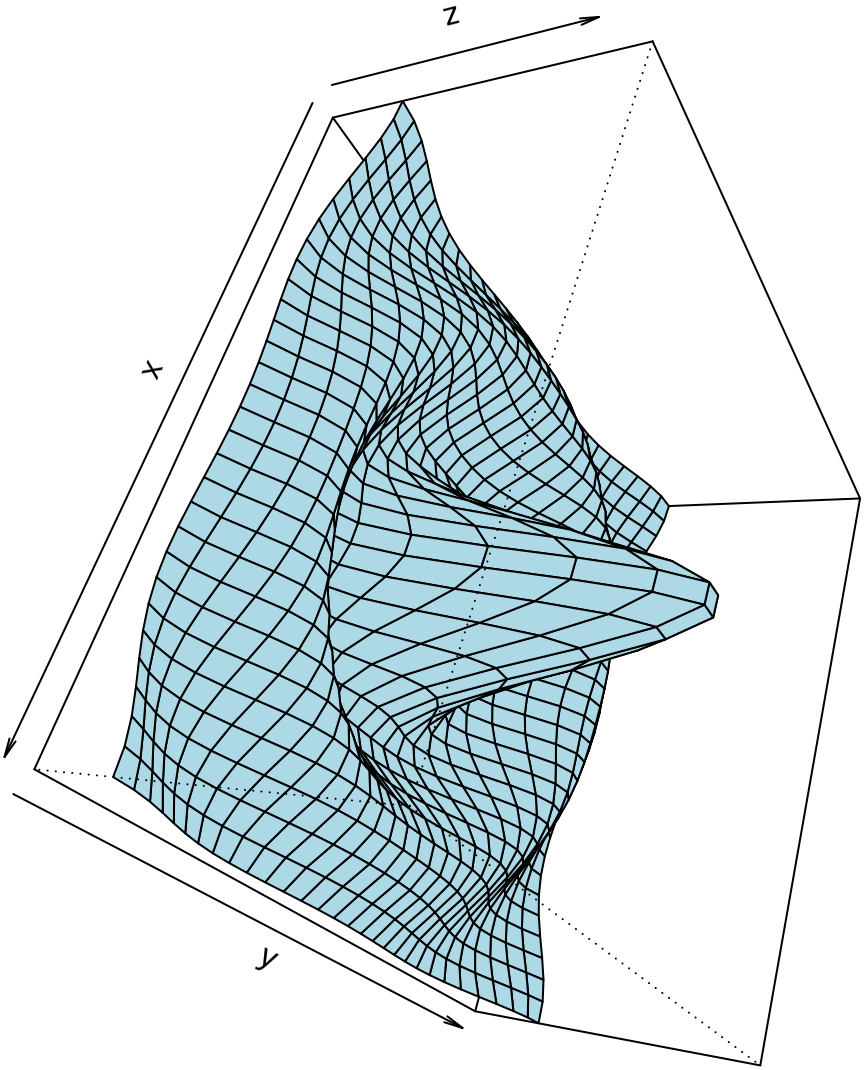

1:12
Index
1
2
5
10
2
4
6
8
10
12
help("par")


help("par")
1:2
2.0
1.8
1.6
1.4
1.2
1.0
1.0
1.2
1.4
1.6
1.8
2.0
Index

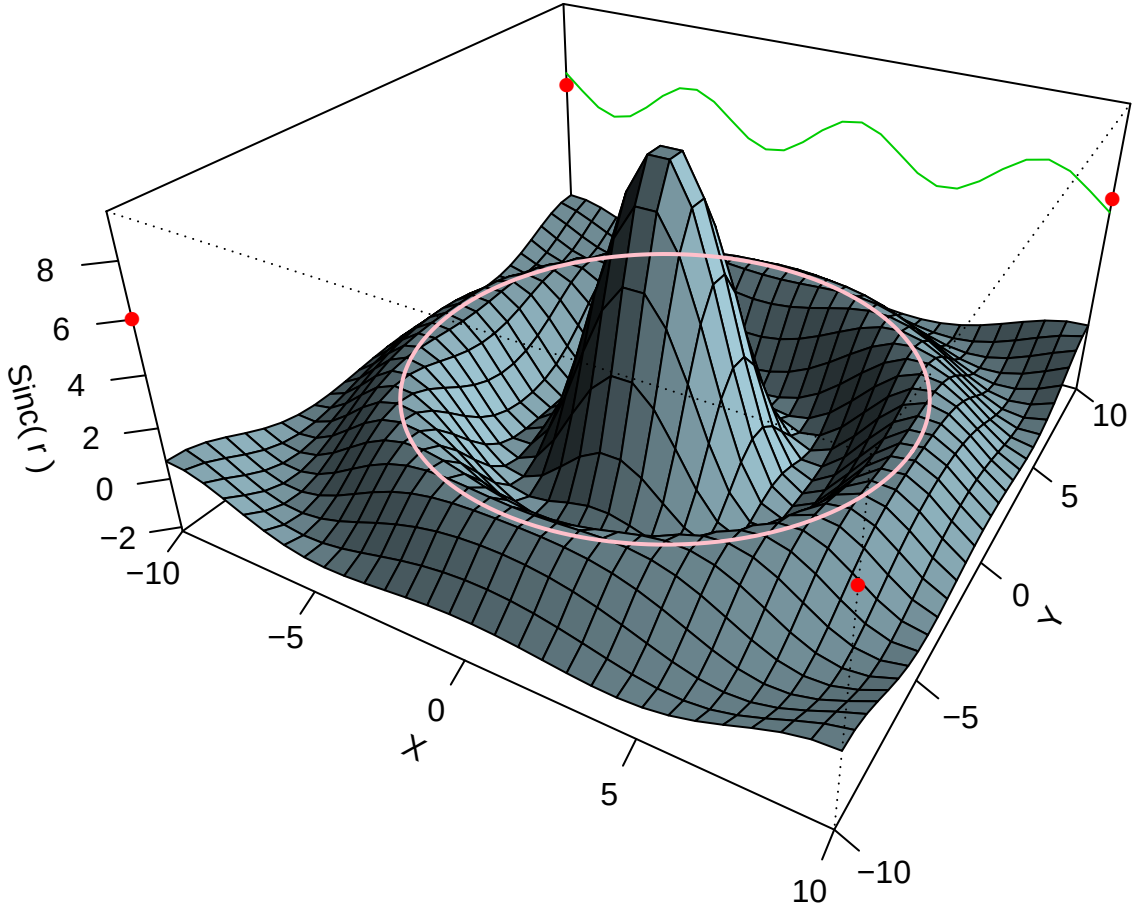

0
5
10
15
prof.pilots
lawyers
farmers
salesmen
physicians
mechanics
policemen
managers
engineers
teachers
housewives
students
med.forces

help("par")

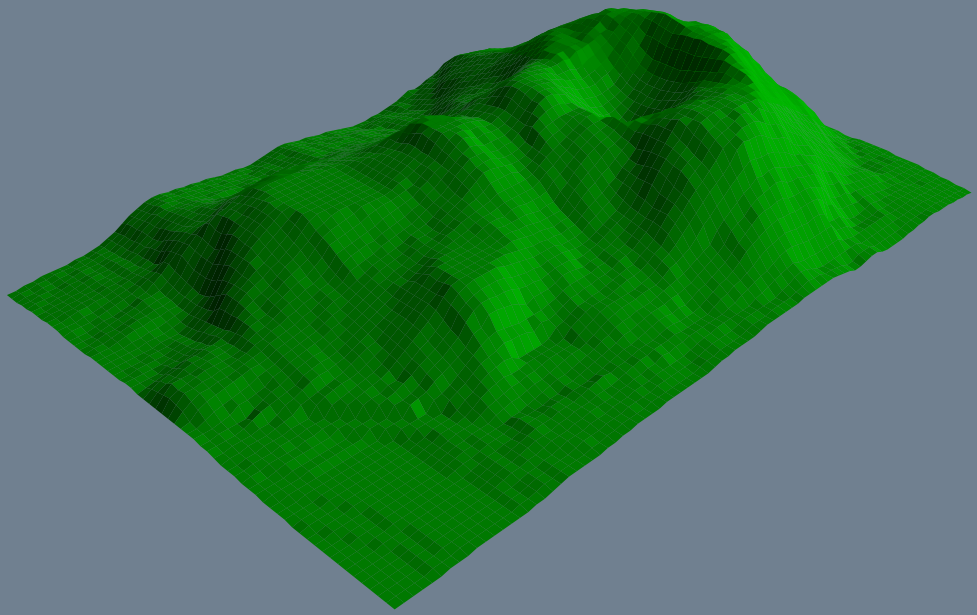

'fg' : axes, ticks and box in gray
1:12
2
4
6
8
10
12
Index
R version 2.15.3 (2013−03−01)
help("par")

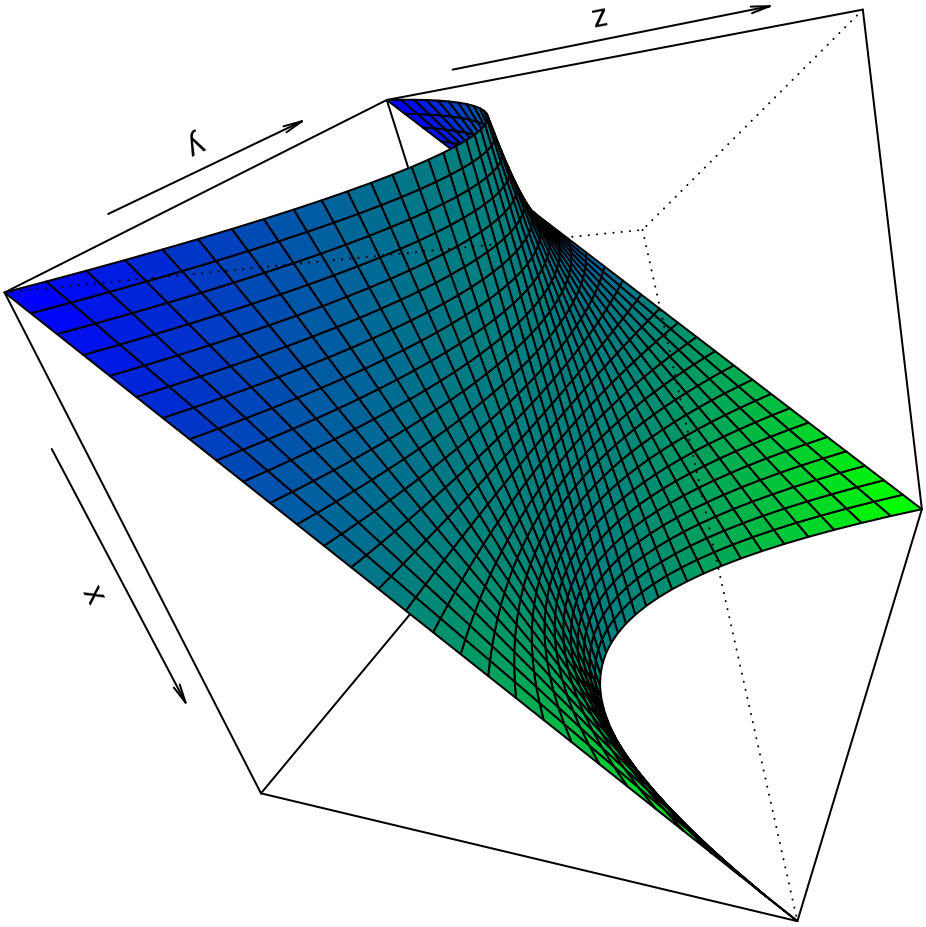


help("persp")

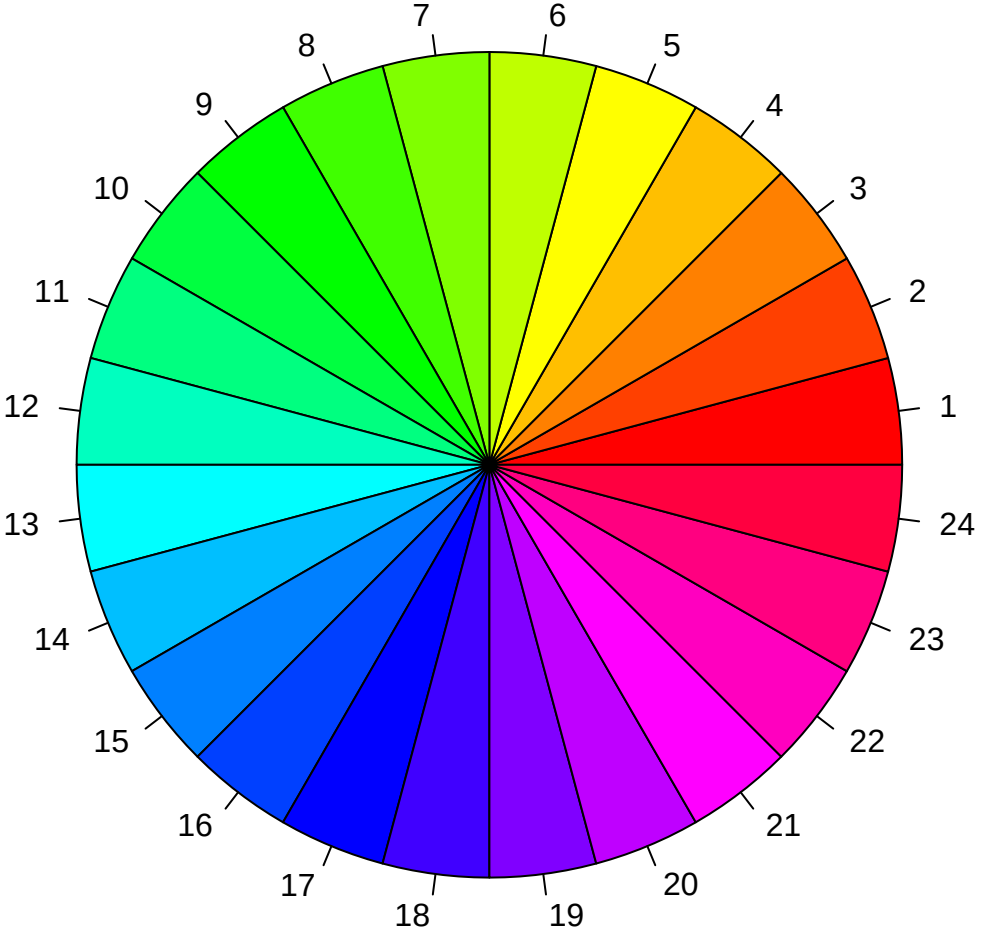


help("persp")

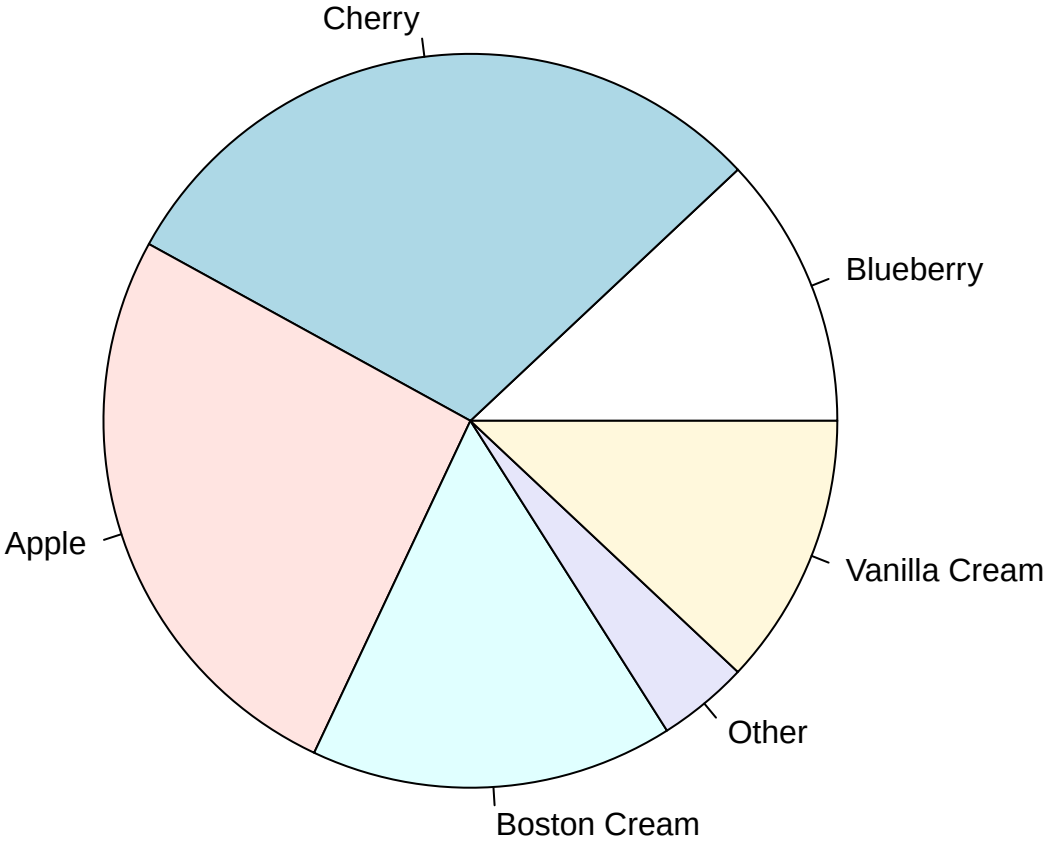

help("persp")



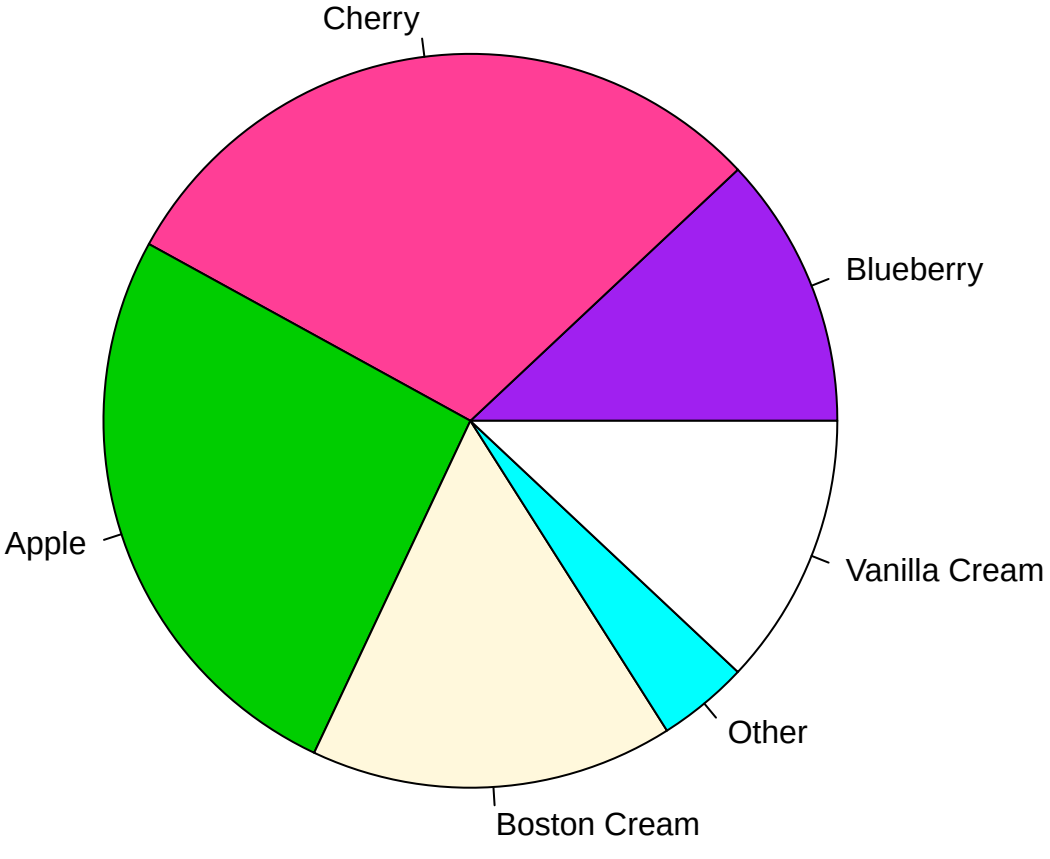
help("persp")



help("pie")

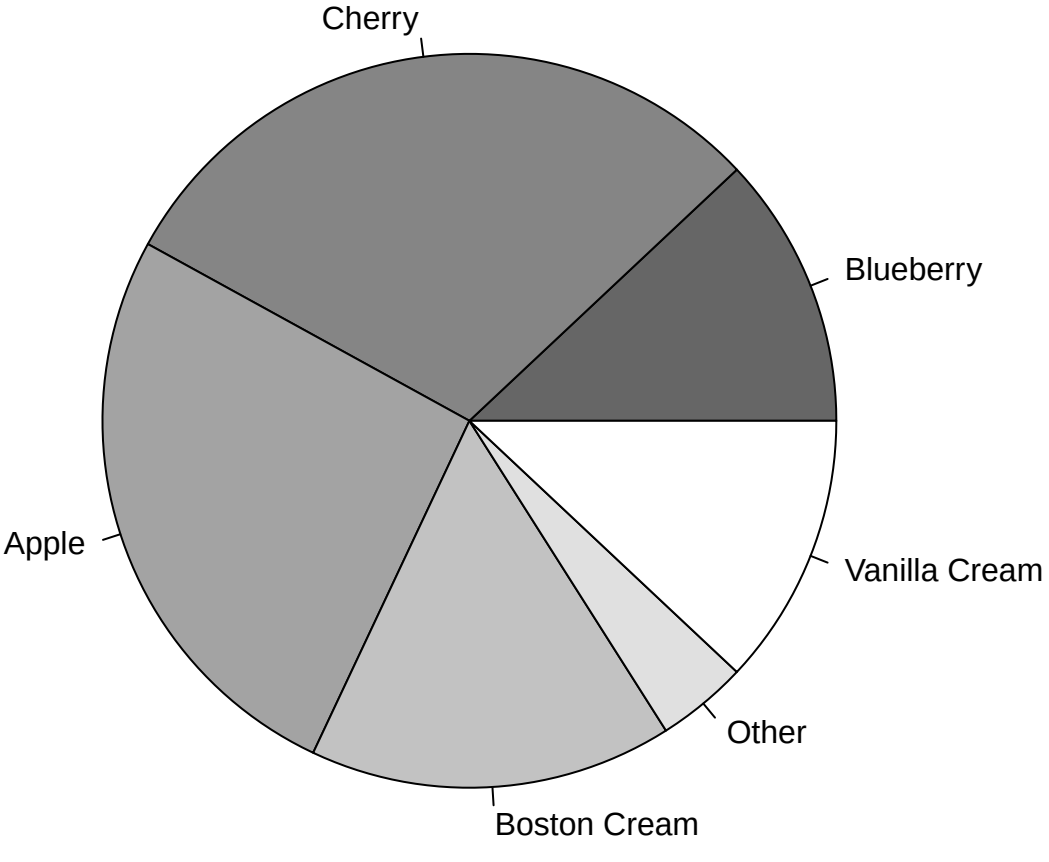


help("pie")

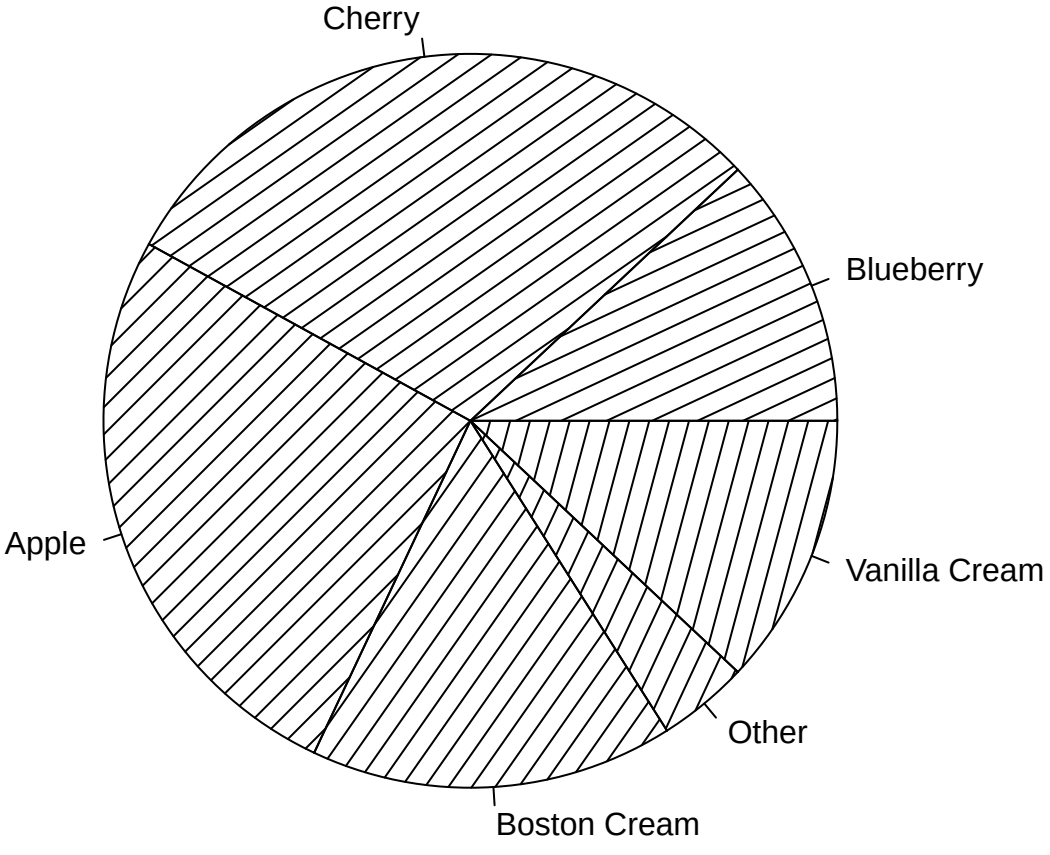


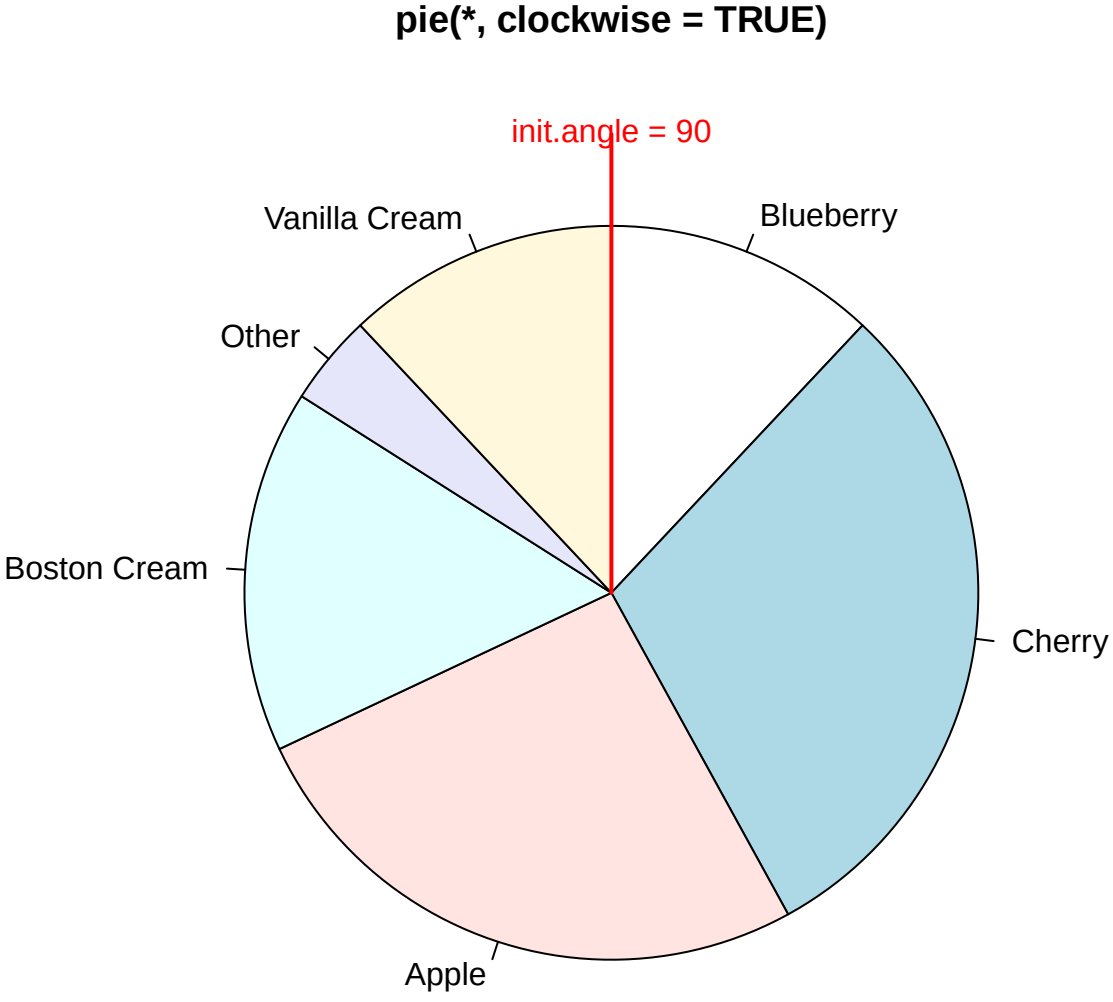
help("pie")

help("pie")

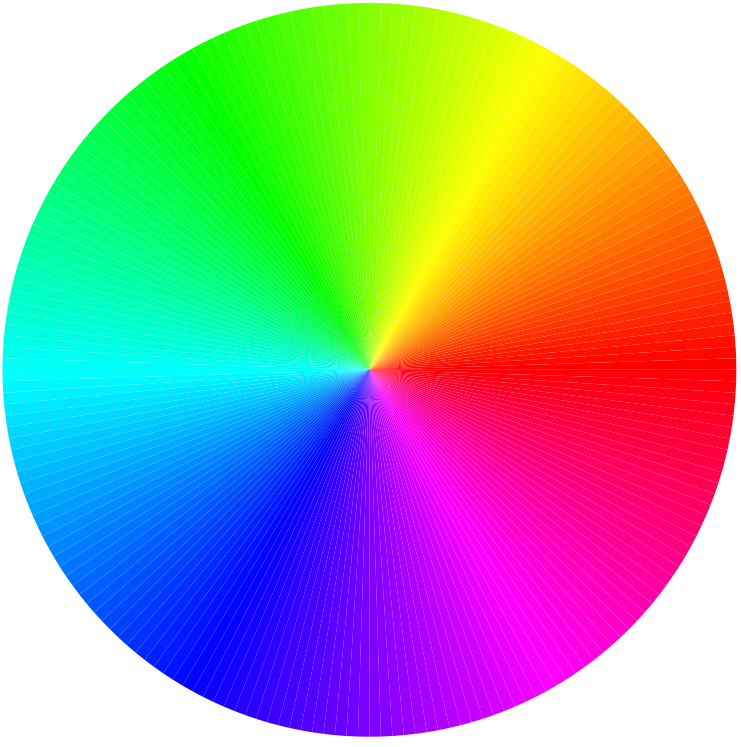


help("pie")

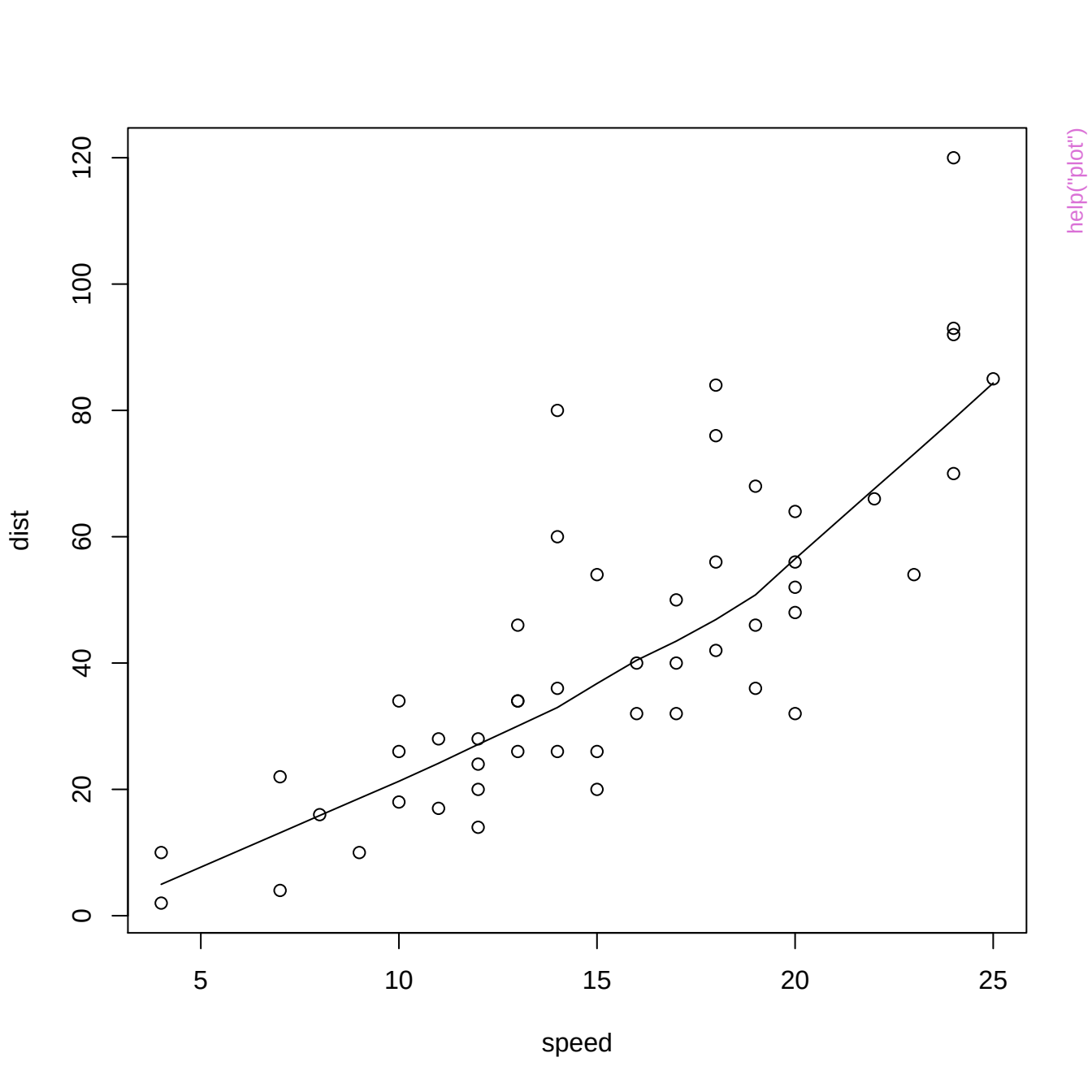


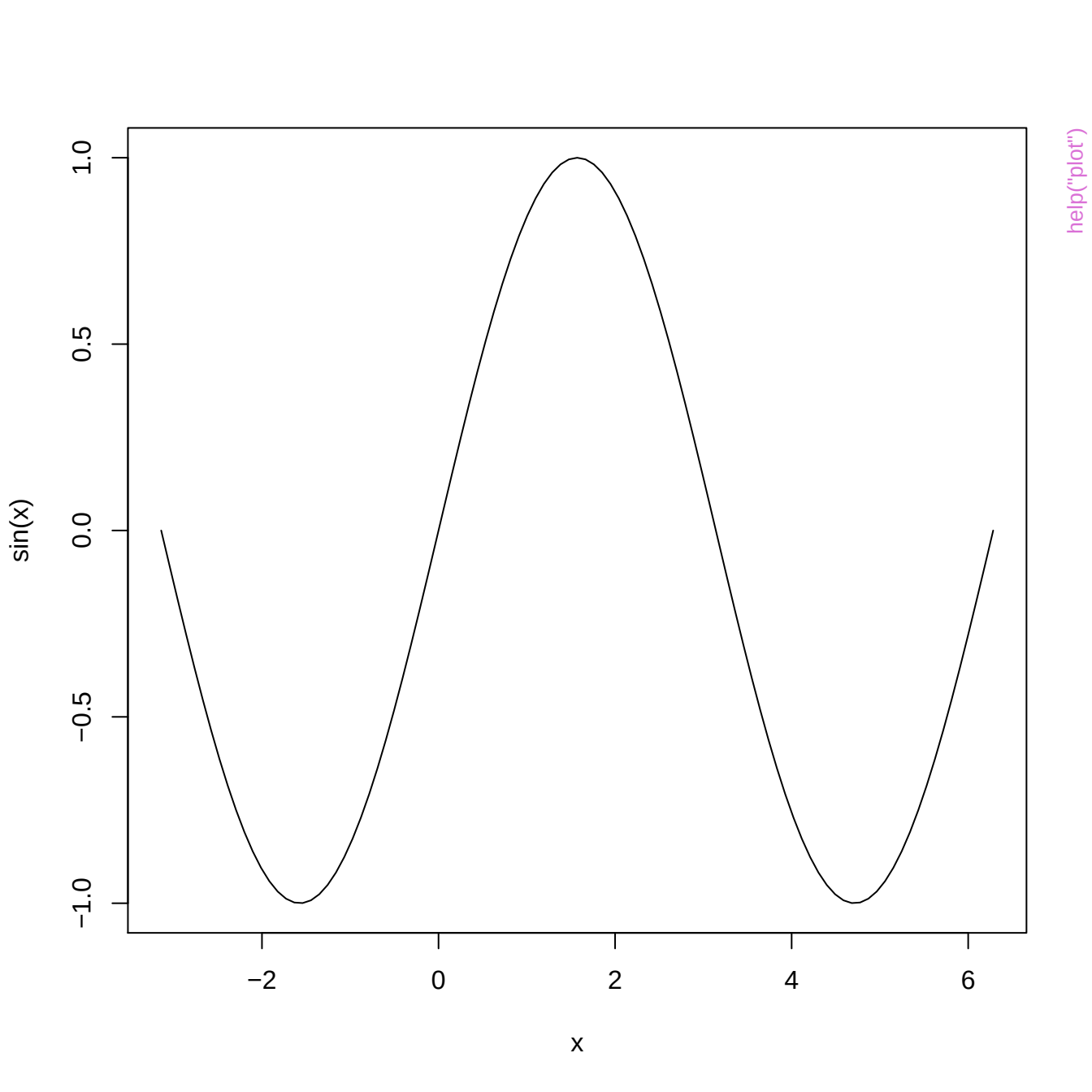

pie(*, clockwise = TRUE)
init.angle = 90
Vanilla Cream
Blueberry
Other
Boston Cream
Cherry
Apple
help("pie")

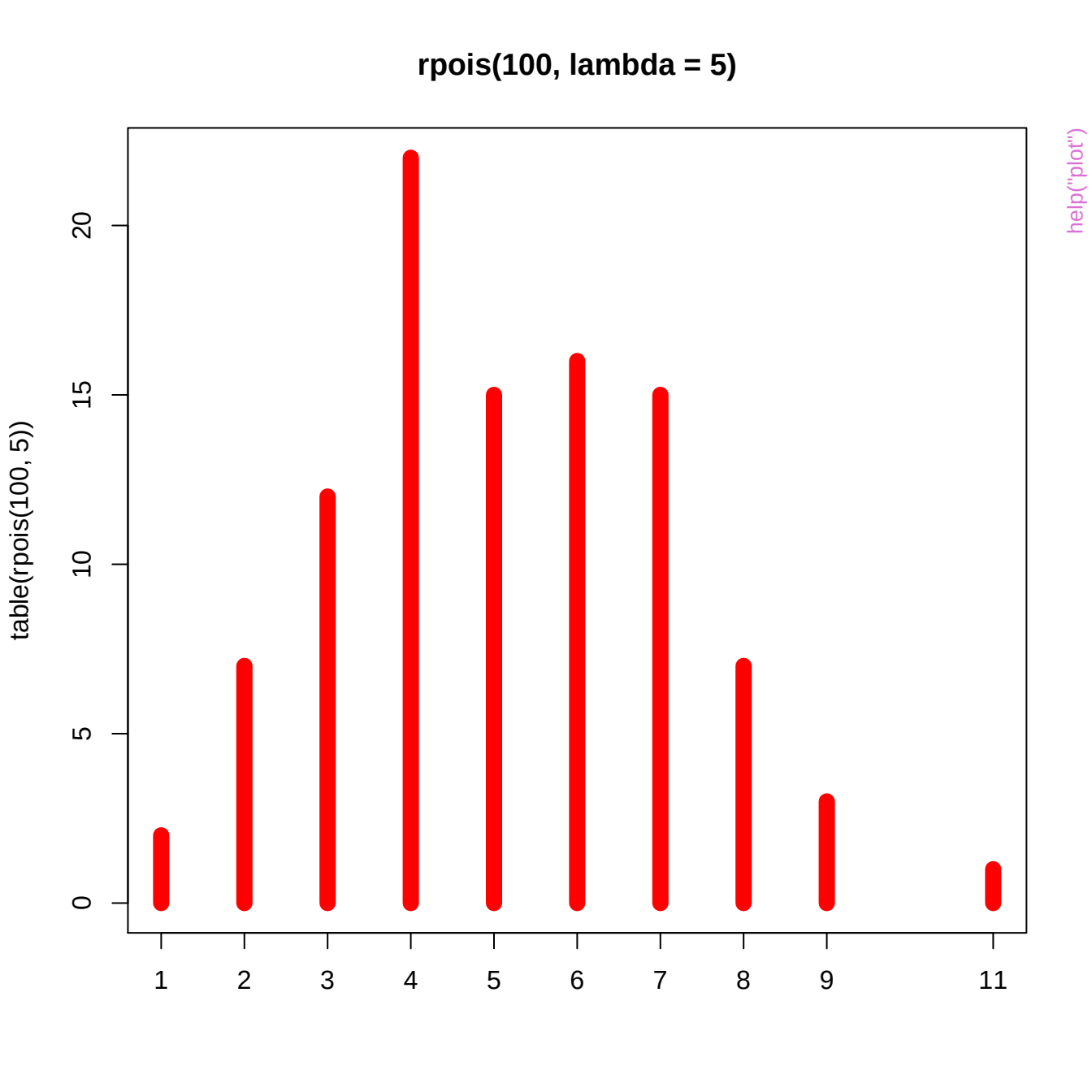
pie(*, labels="", col=rainbow(n), border=NA,..

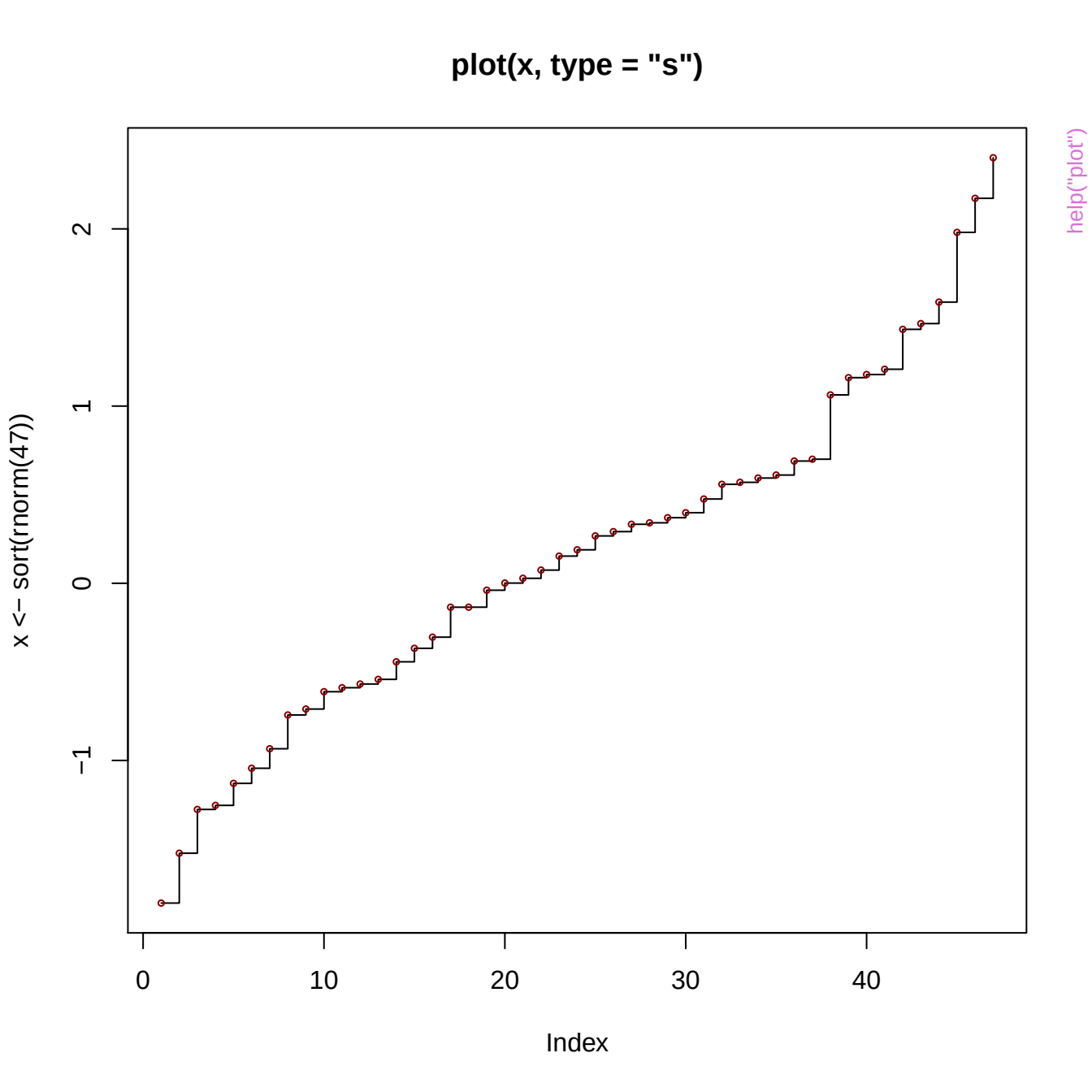


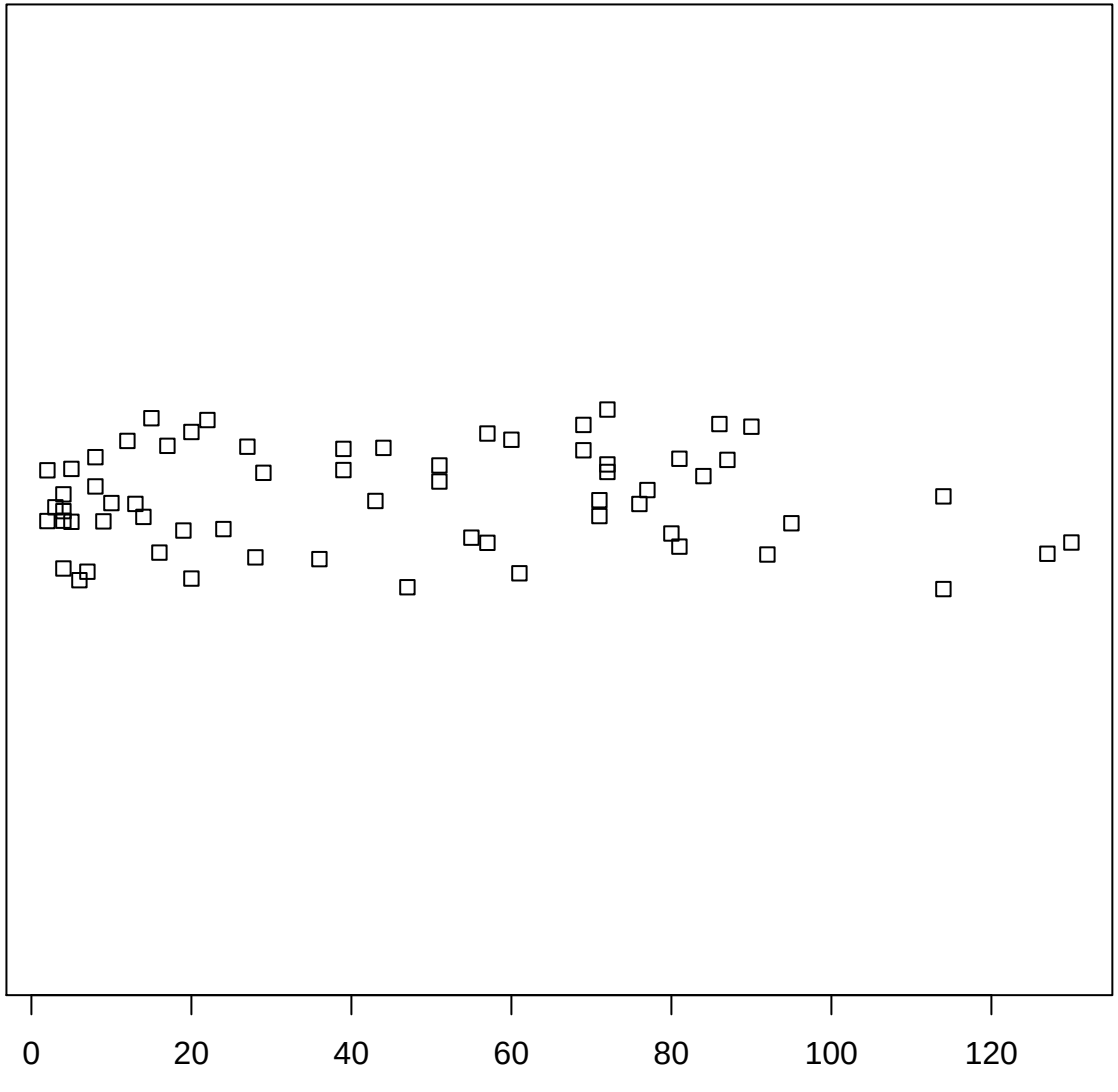
help("pie")


dist
speed
0
20
40
60
80
100
120
5
10
15
20
25
help("plot")

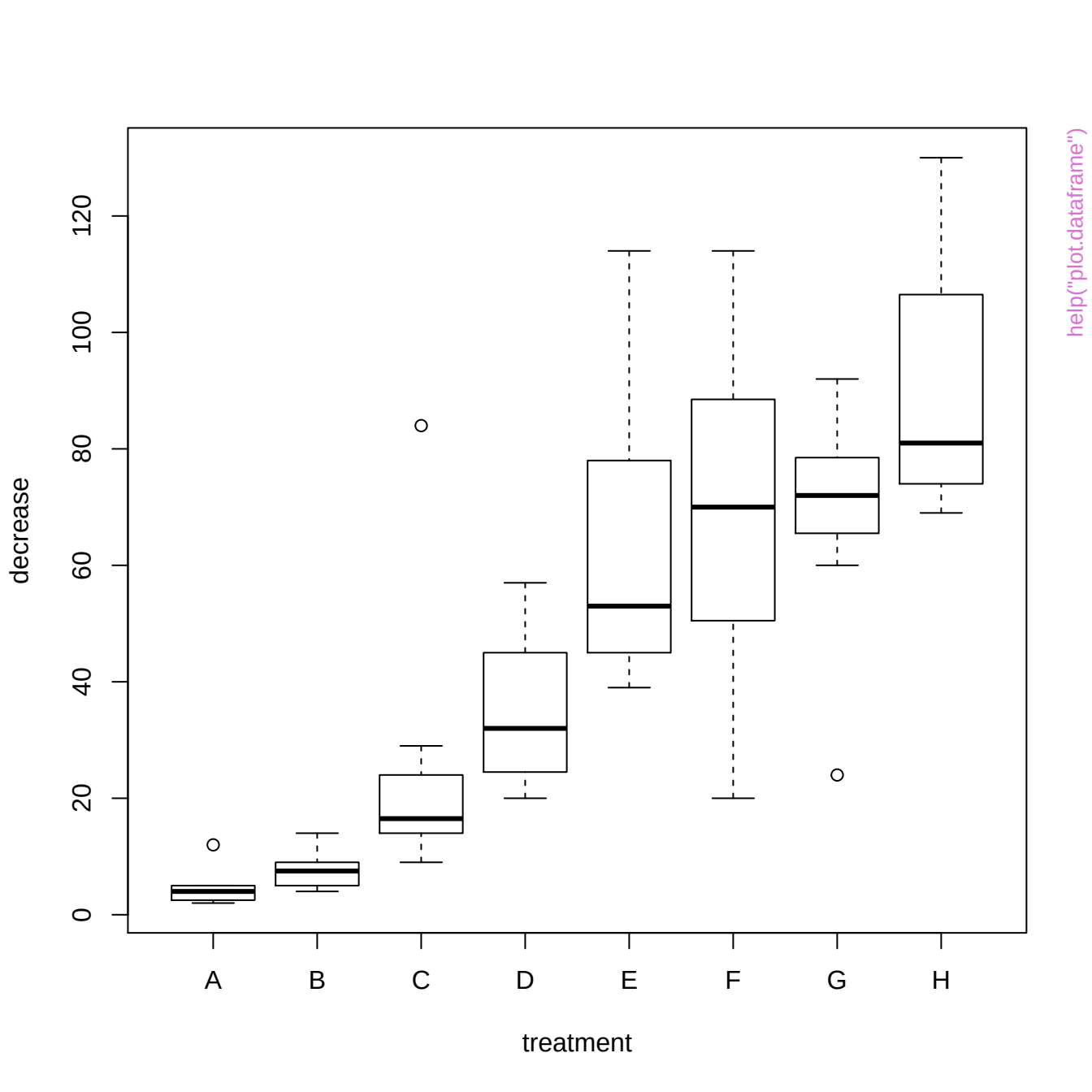

sin(x)
1.0
0.5
0.0
−0.5
−1.0
−2
0
2
4
6
x
help("plot")


rpois(100, lambda = 5)
table(rpois(100, 5))
0
5
10
15
20
1
2
3
4
5
6
7
8
9
11
help("plot")


plot(x, type = "s")
x <- sort(rnorm(47))
help("plot")
Index
0
10
20
30
40
−1
0
1
2

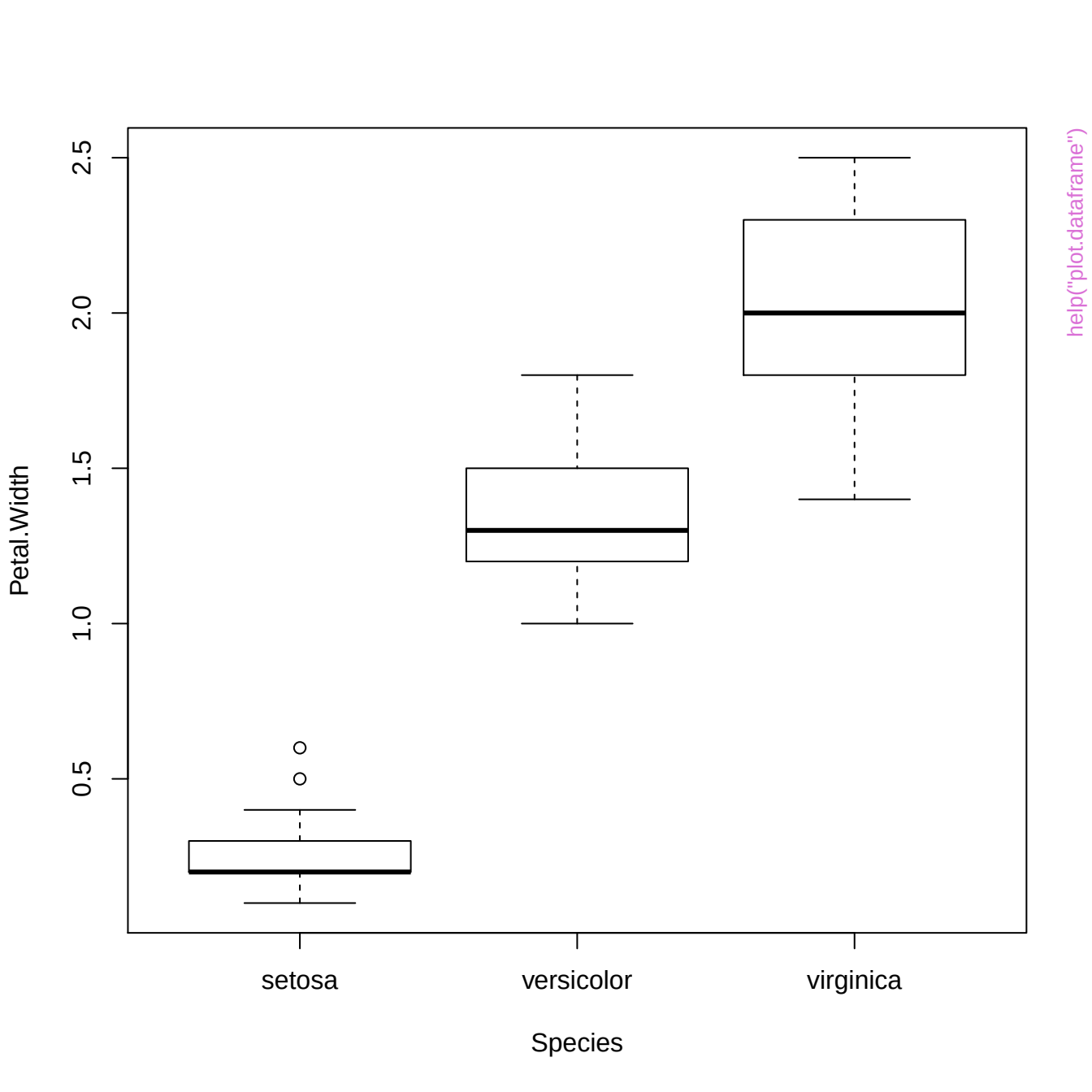


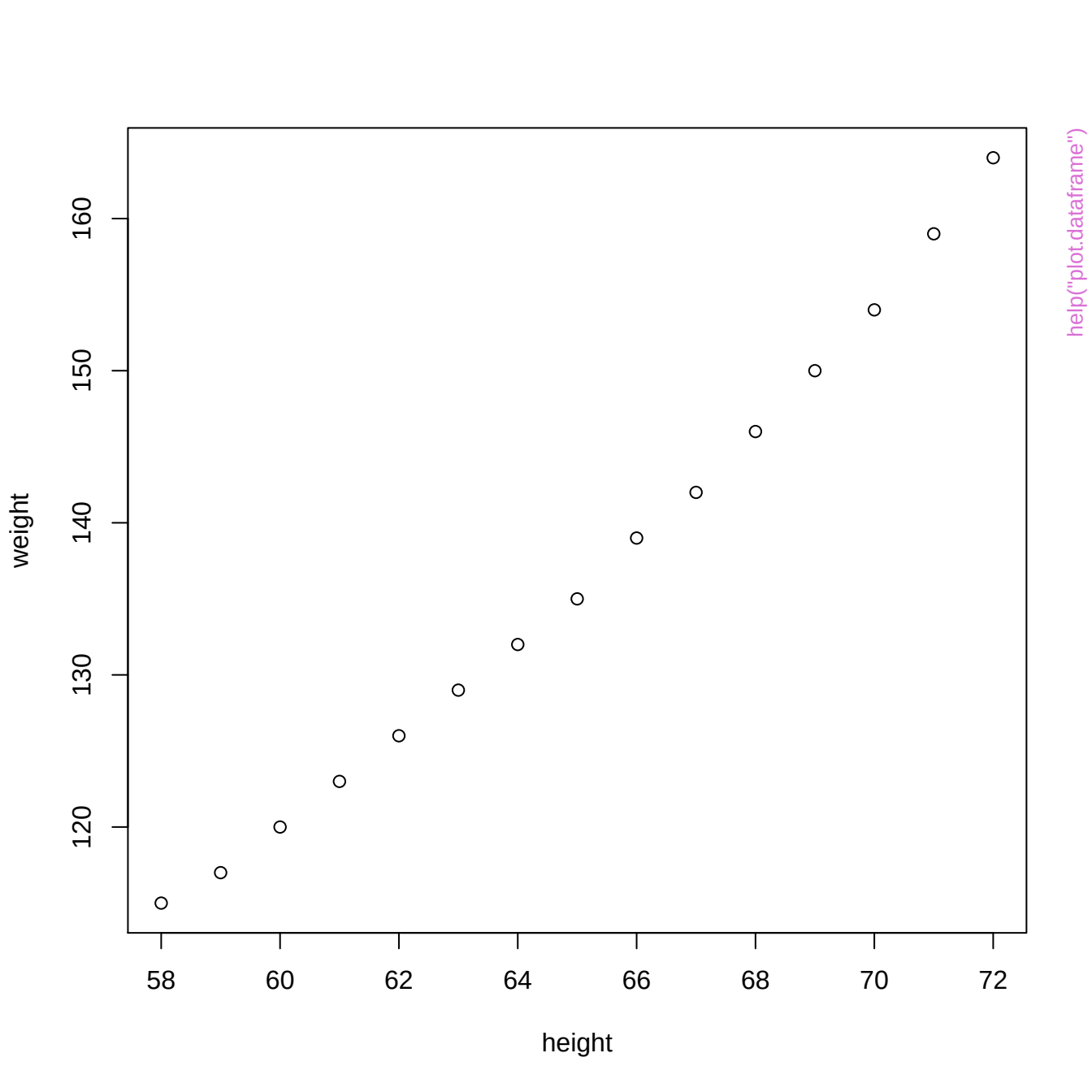
help("plot.dataframe")

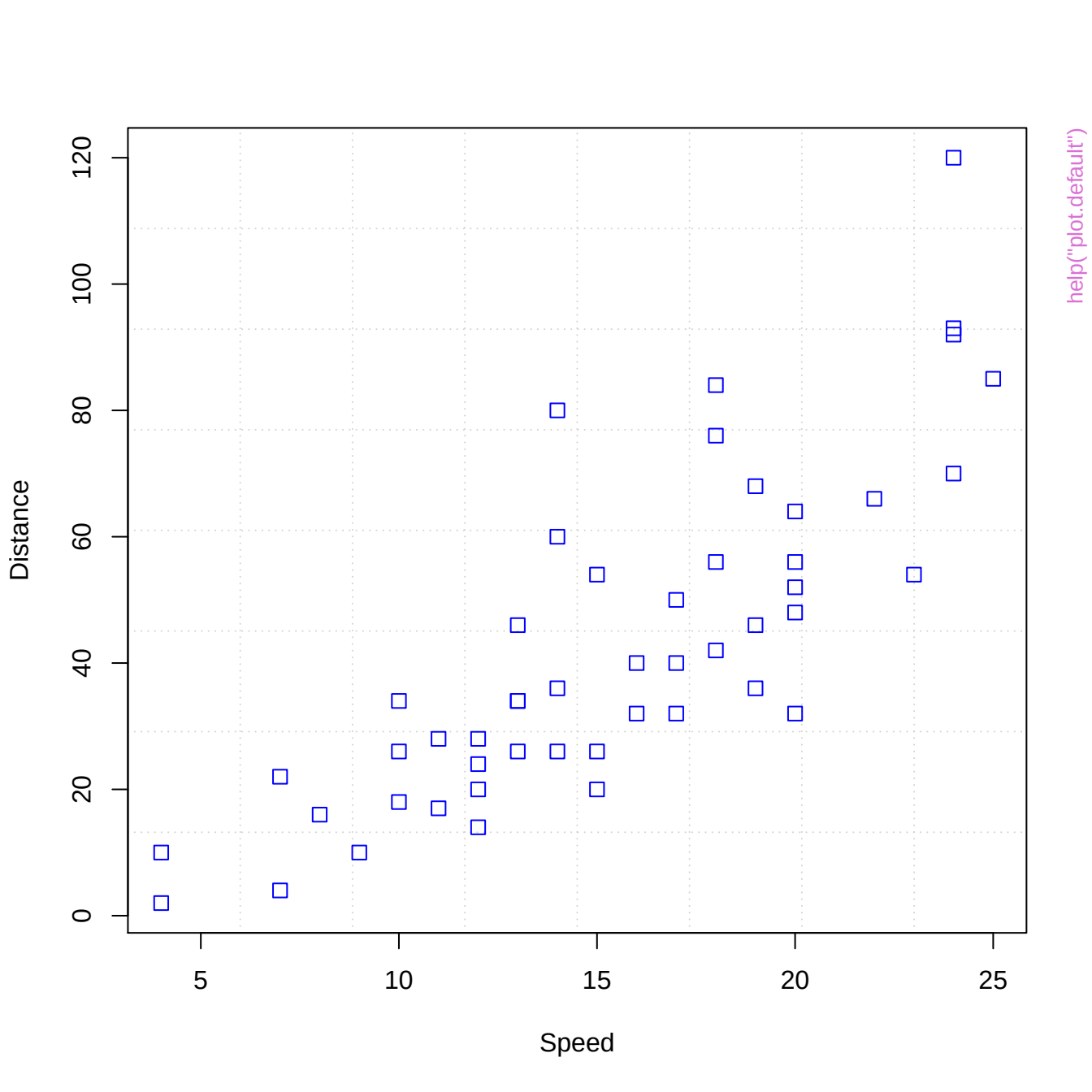

decrease
0
20
40
60
80
100
120
A
B
C
D
E
F
G
H
treatment
help("plot.dataframe")

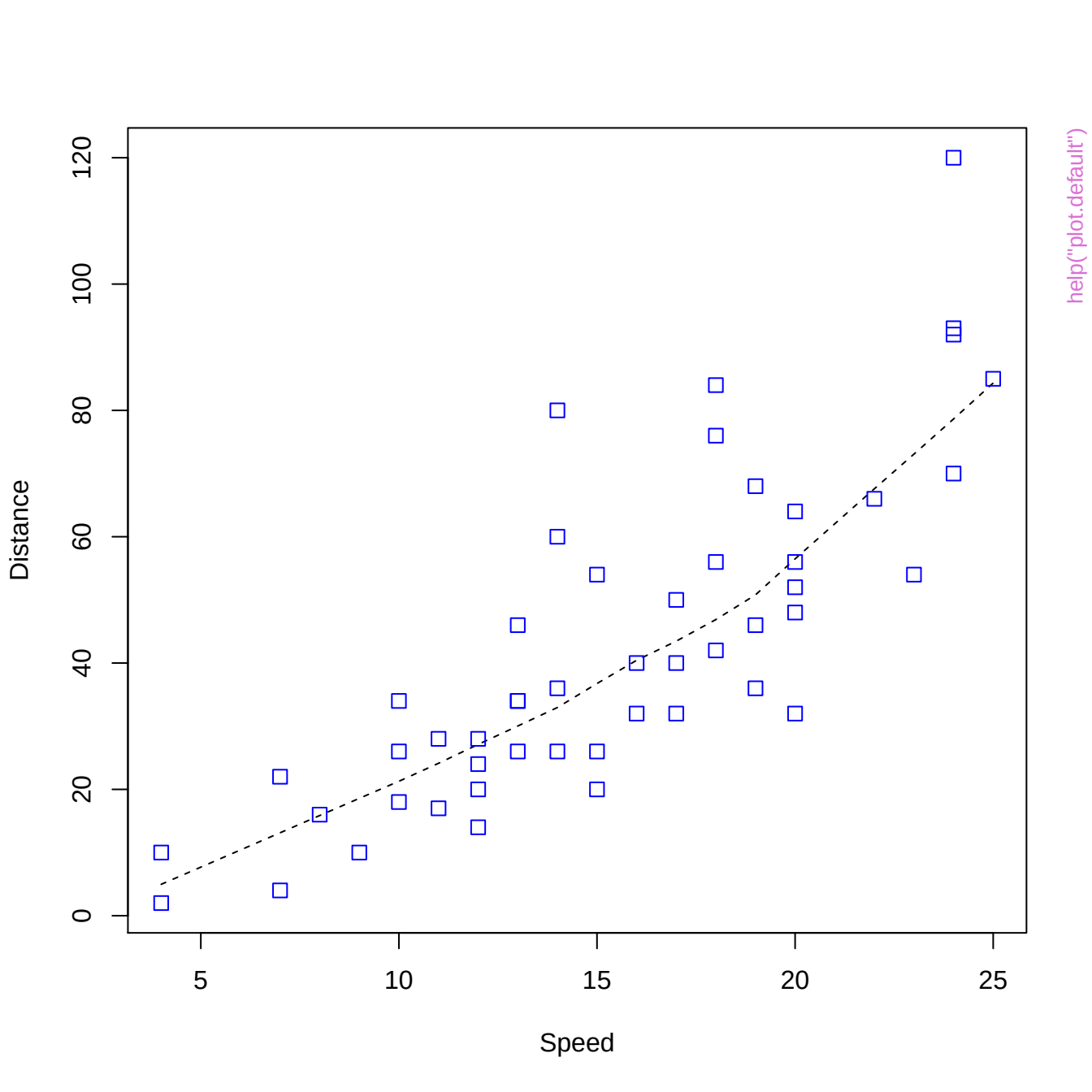
help("plot.dataframe")

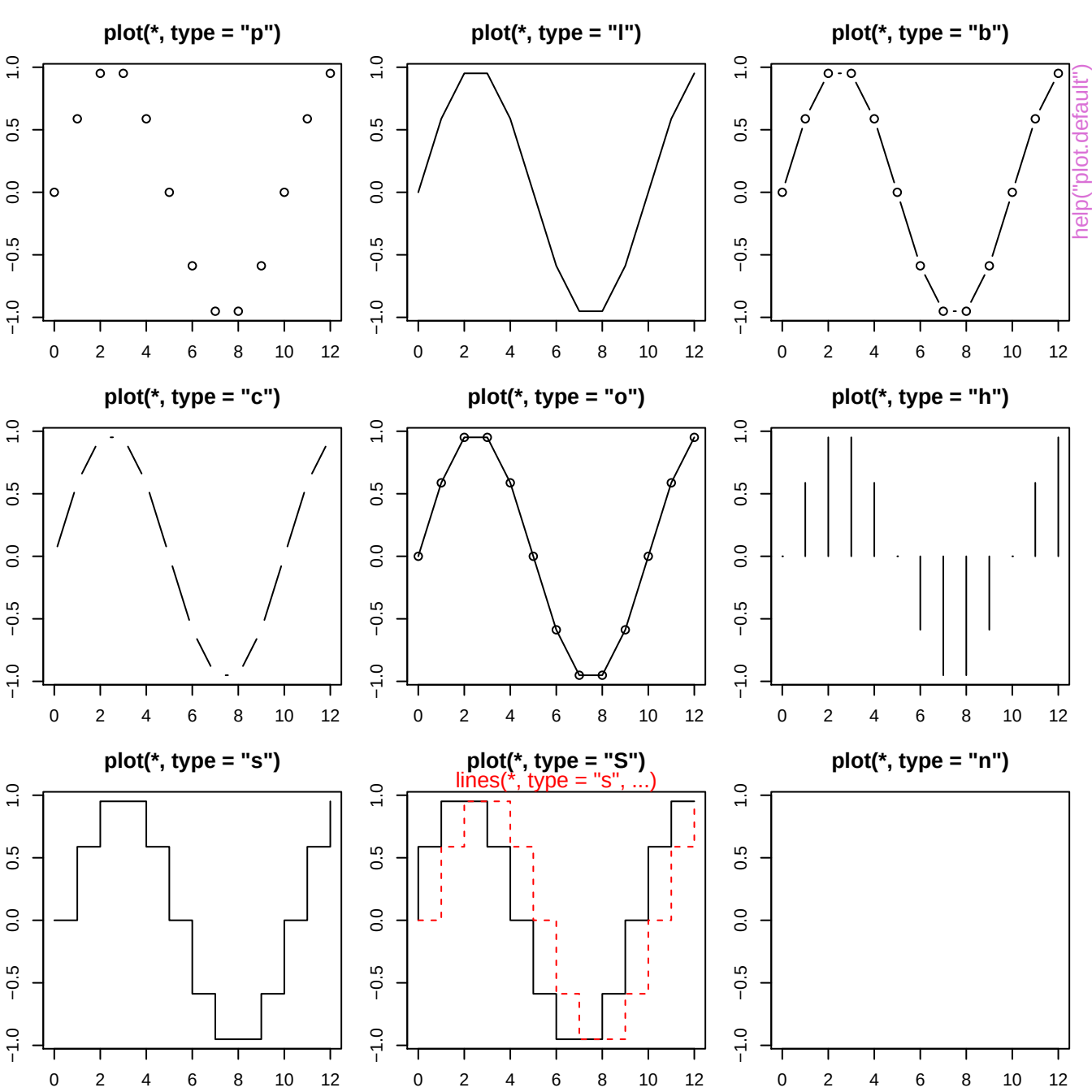
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
Species
help("plot.dataframe")

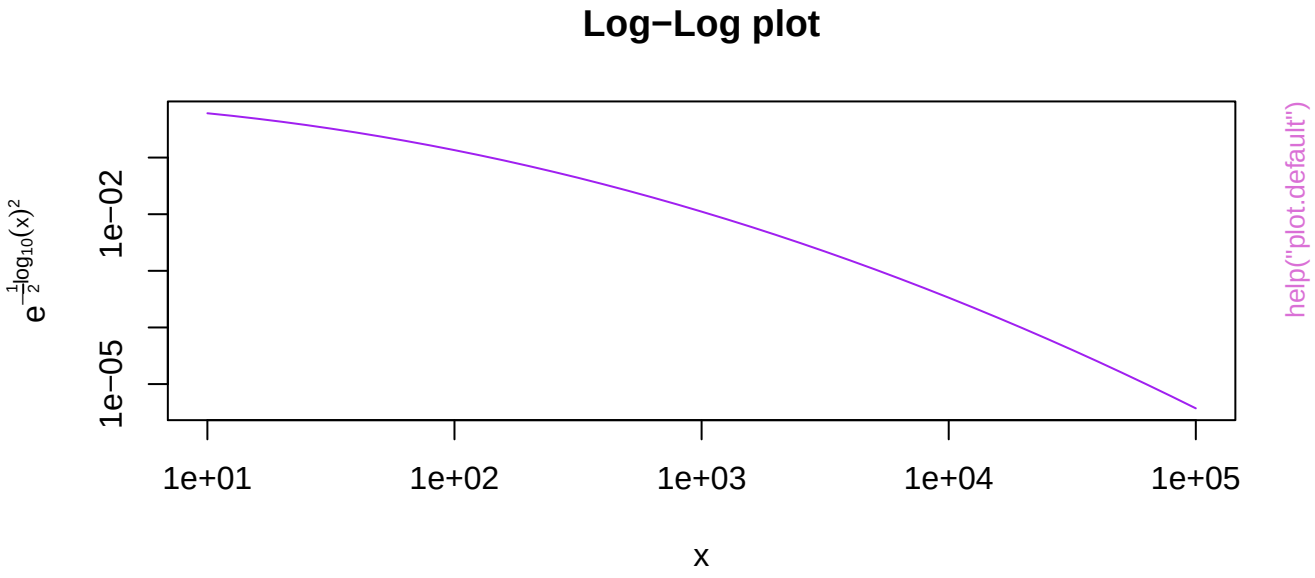

Petal.Width
0.5
1.0
1.5
2.0
2.5
setosa
versicolor
virginica
Species
help("plot.dataframe")

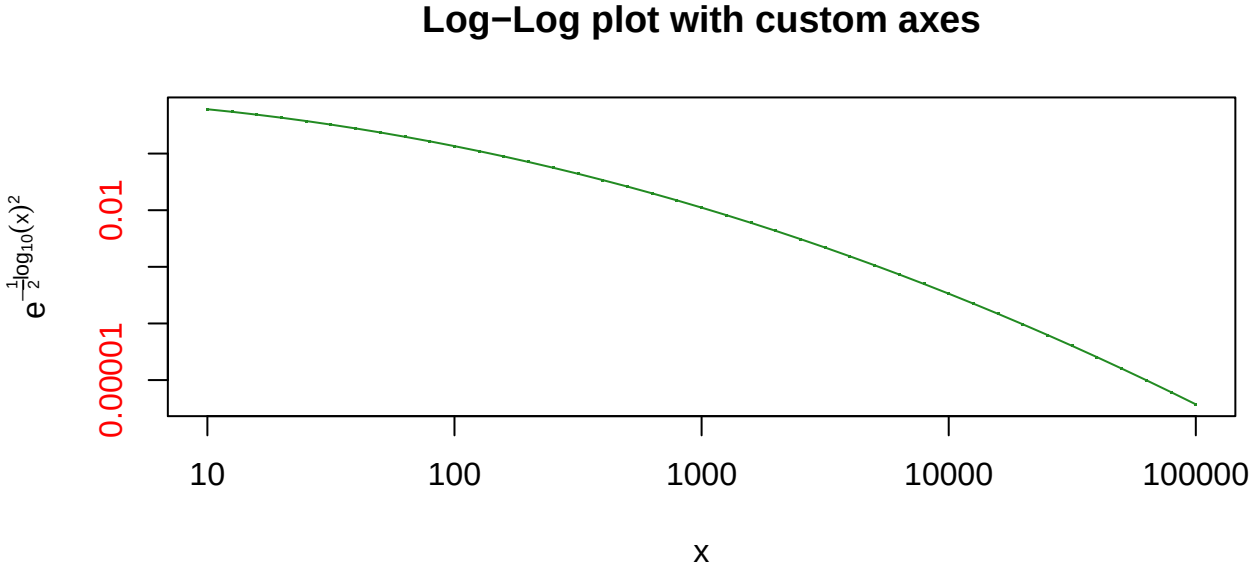

weight
120
130
140
150
160
58
60
62
64
66
68
70
72
height
help("plot.dataframe")

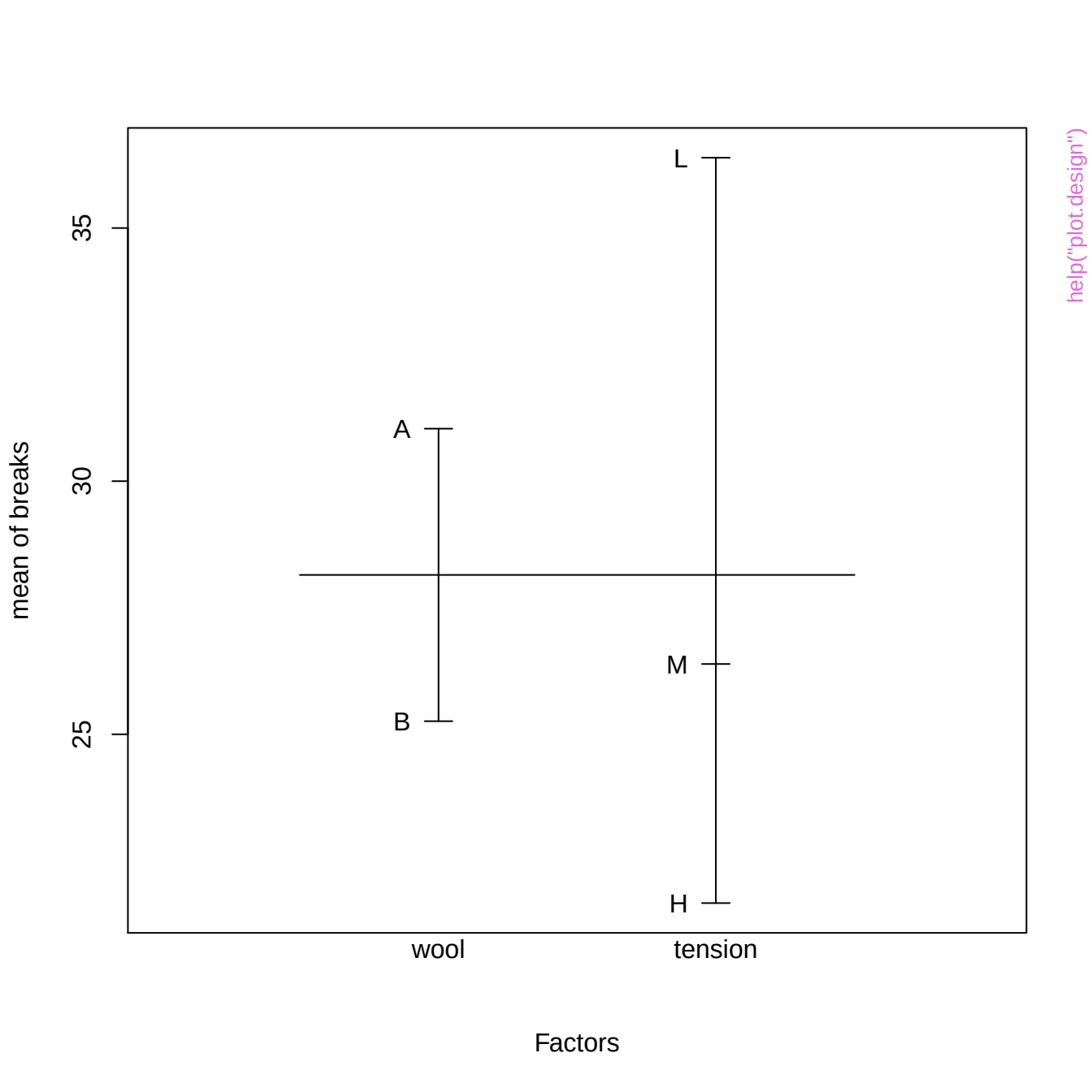

Distance
Speed
0
20
40
60
80
100
120
5
10
15
20
25
help("plot.default")

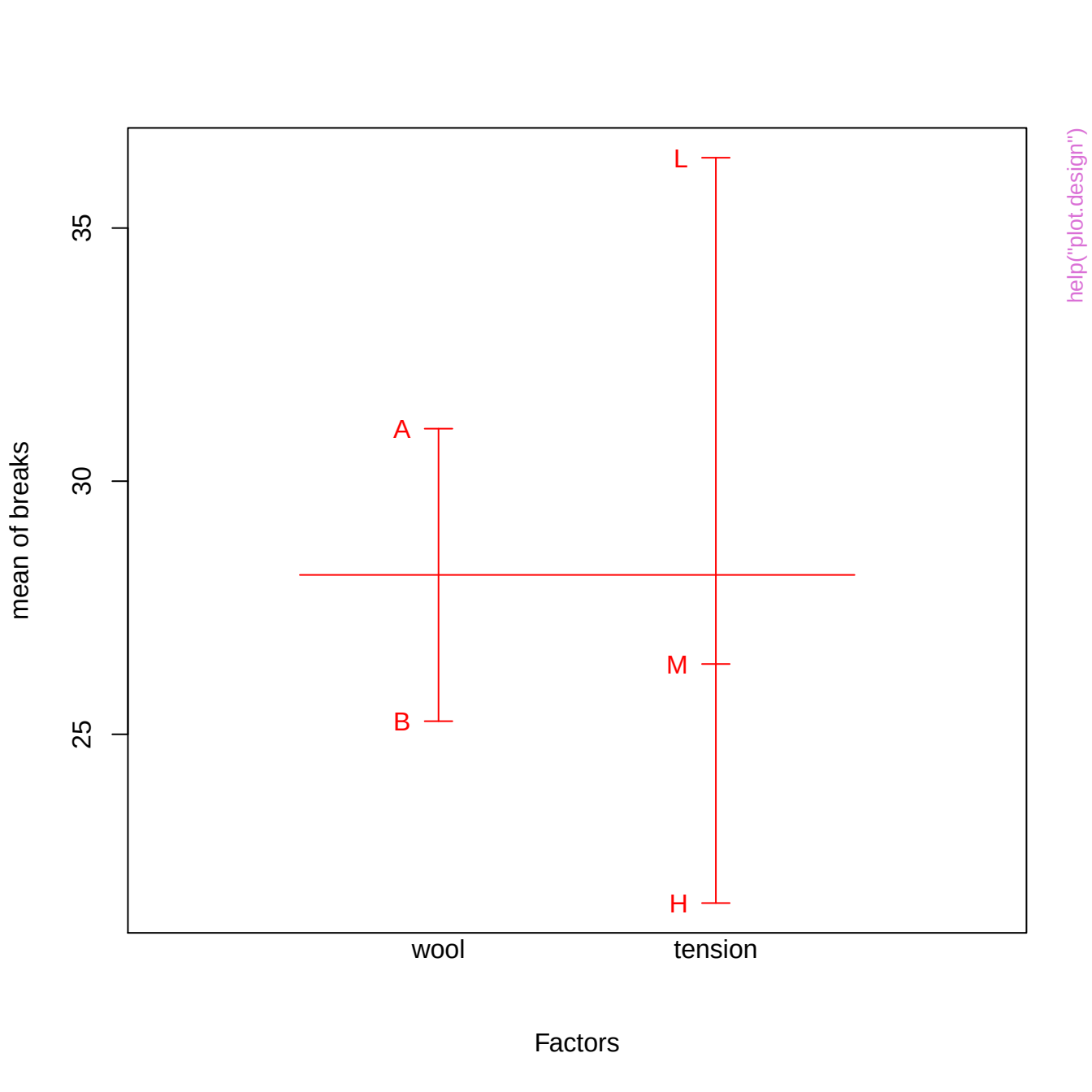

Distance
Speed
0
20
40
60
80
100
120
5
10
15
20
25
help("plot.default")

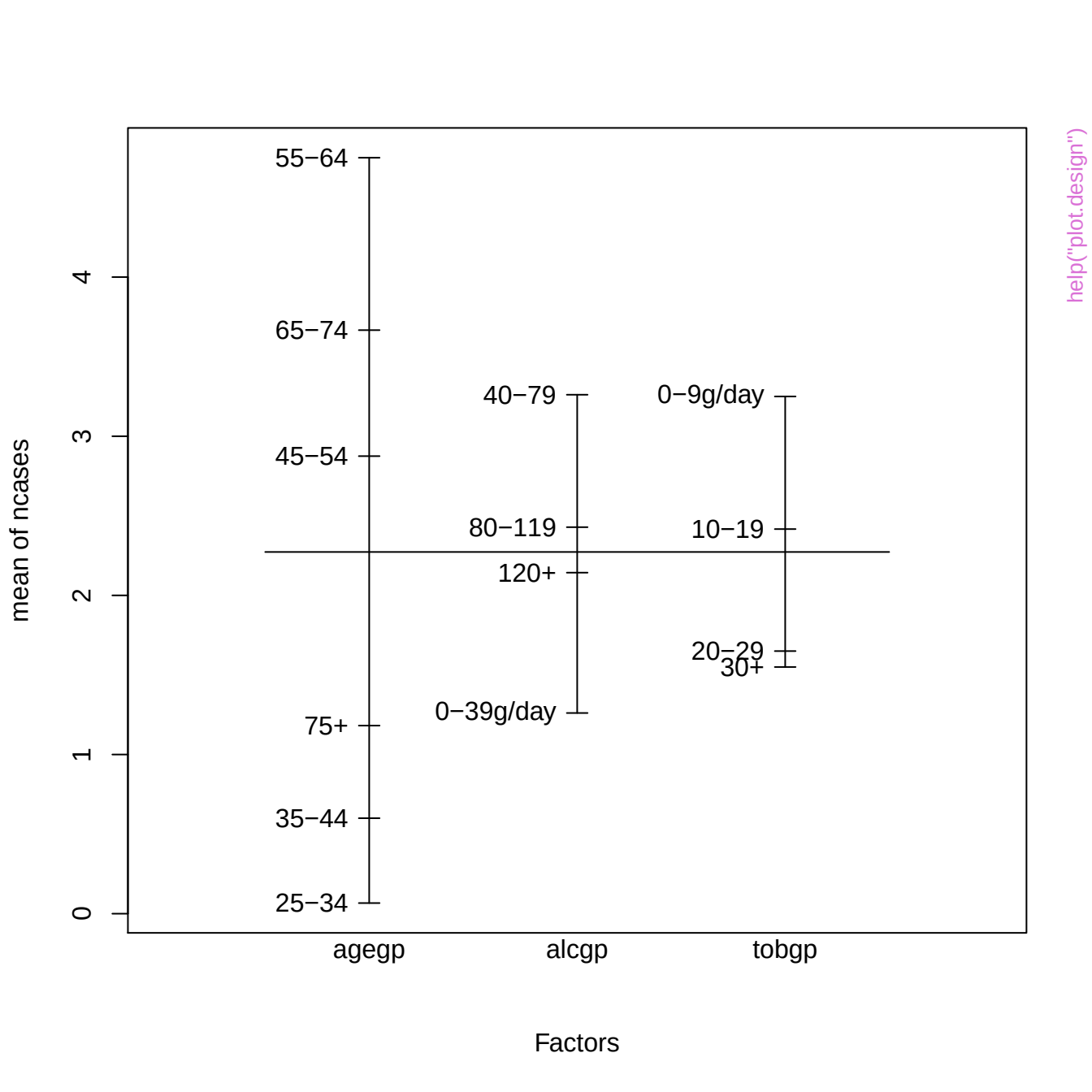

plot(*, type = "p")
plot(*, type = "l")
plot(*, type = "b")
help("plot.default")
plot(*, type = "c")
plot(*, type = "o")
plot(*, type = "h")
plot(*, type = "s")
plot(*, type = "S")
lines(*, type = "s", ...)
plot(*, type = "n")

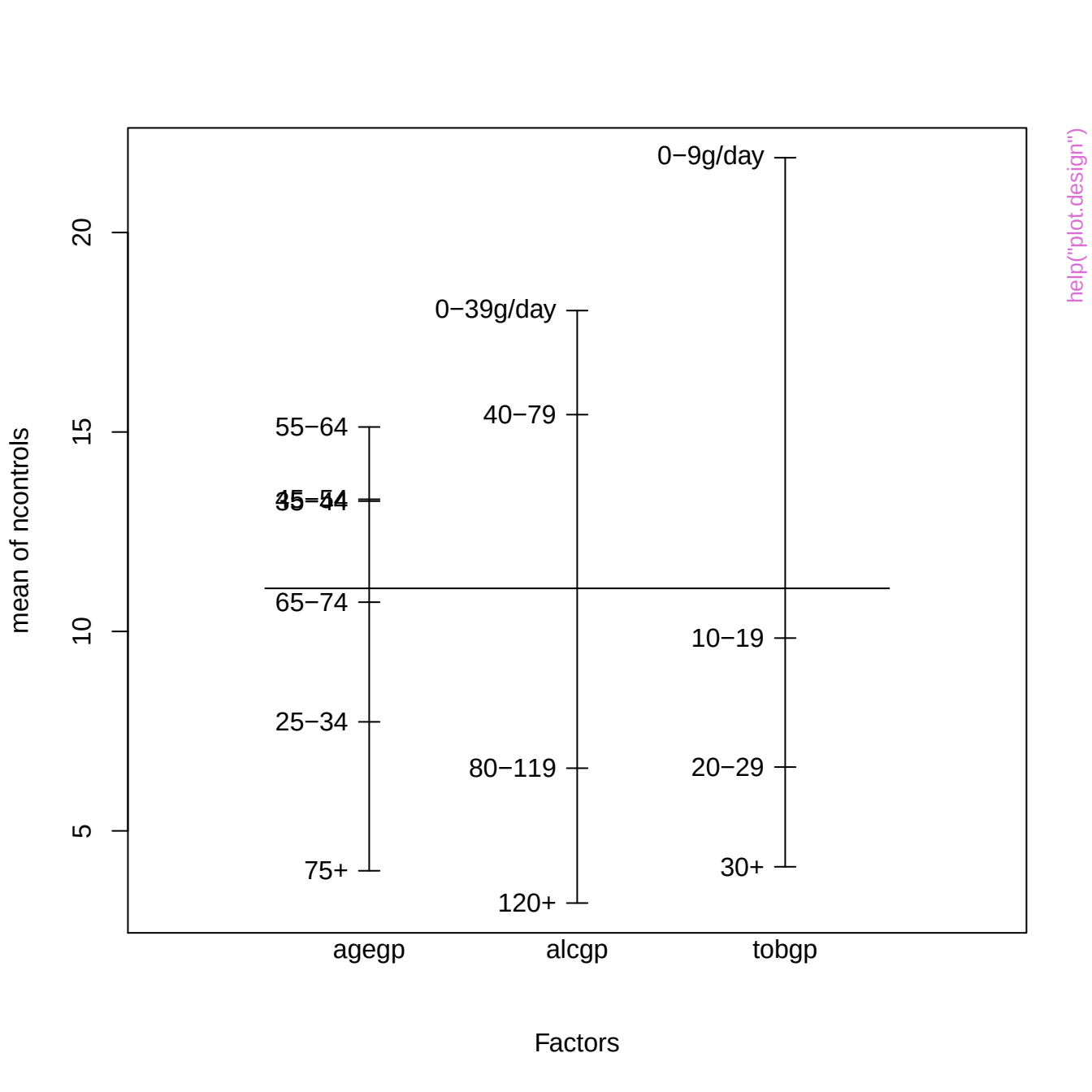

Log−Log plot
$e^{-\frac{1}{2}\log_{10}(x)^2}$
1e−02
1e−05
1e+01
1e+02
1e+03
1e+04
1e+05
x
help("plot.default")

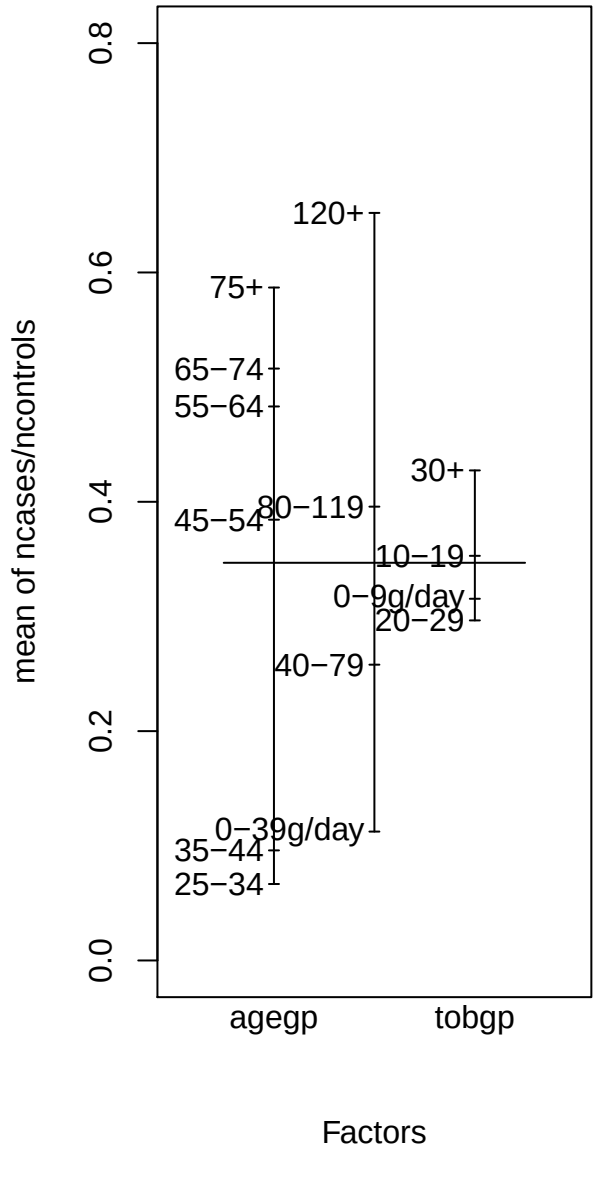

Log−Log plot with custom axes
$e^{-\frac{1}{2}\log_{10}(x)^2}$
0.01
0.00001
10
100
1000
10000
100000
x

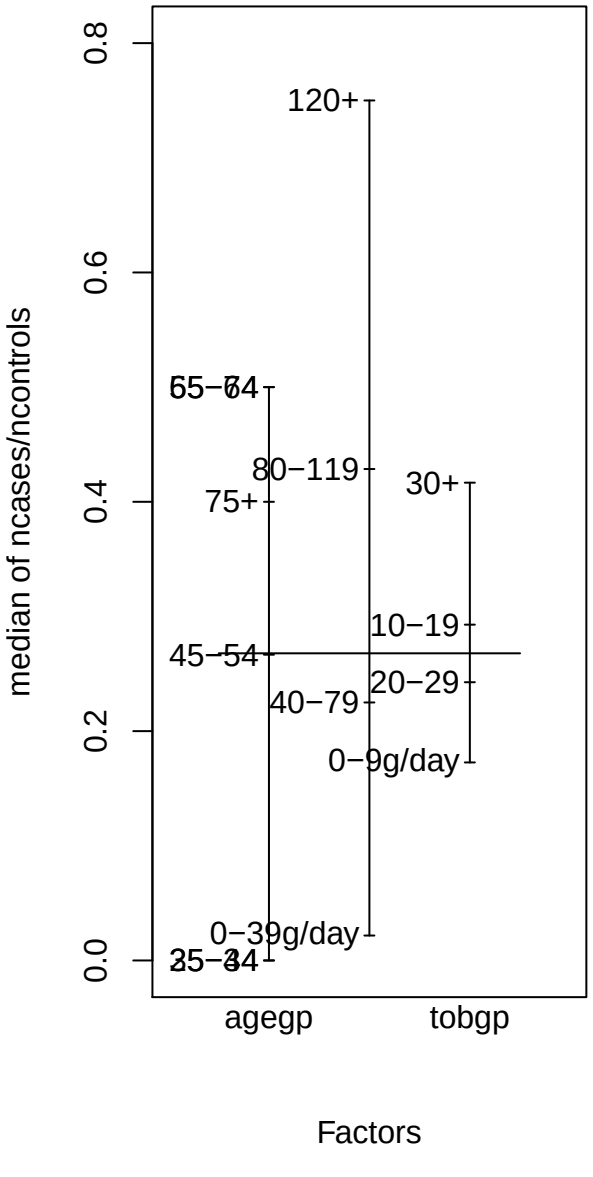

mean of breaks
35
30
25
A
B
L
M
H
wool
tension
Factors
help("plot.design")


mean of breaks
25
30
35
A
B
L
M
H
wool
tension
Factors
help("plot.design")

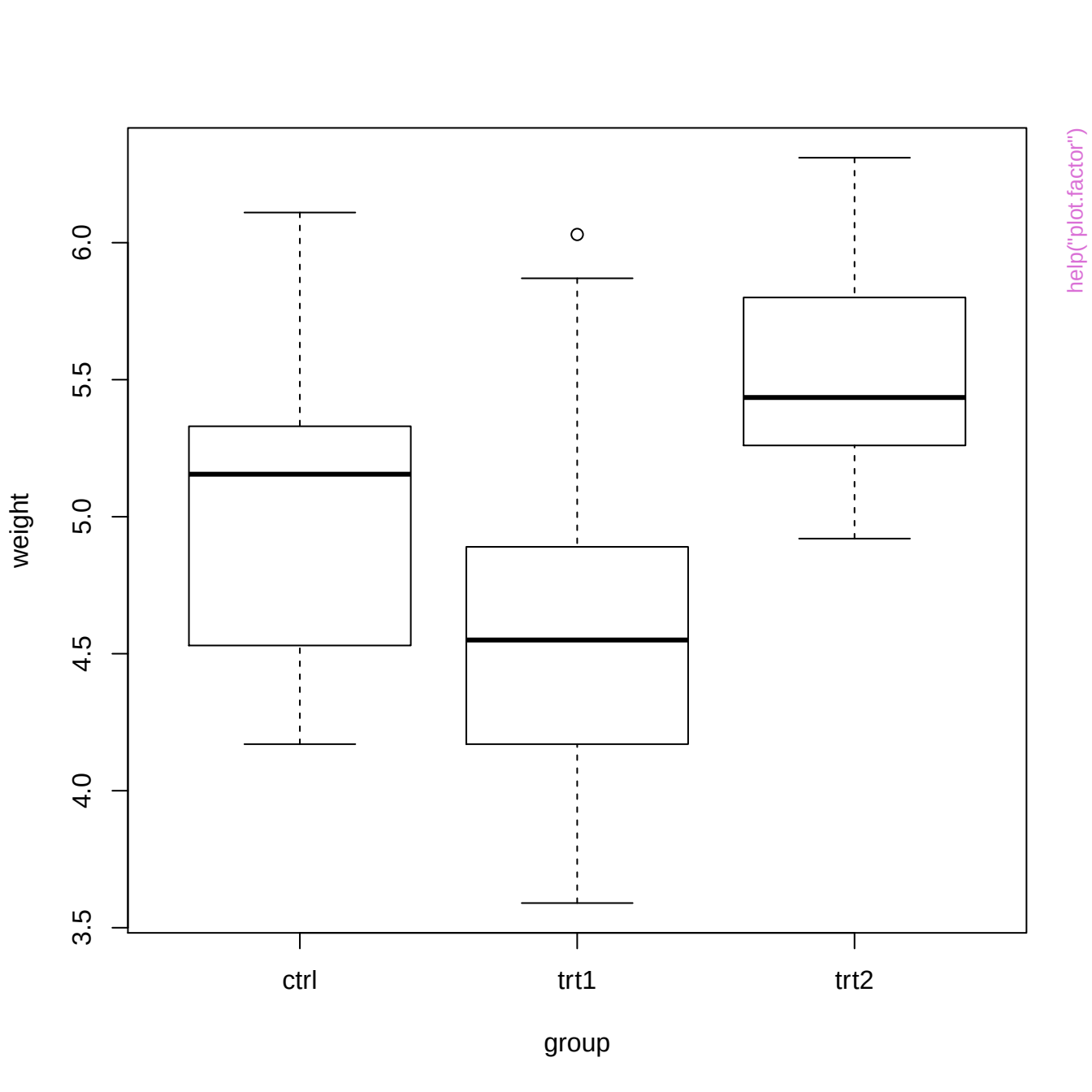

mean of ncases
0
1
2
3
4
55−64
65−74
45−54
75+
35−44
25−34
40−79
80−119
120+
0−39g/day
0−9g/day
10−19
20−29
30+
agegp
alcgp
tobgp
Factors
help("plot.design")

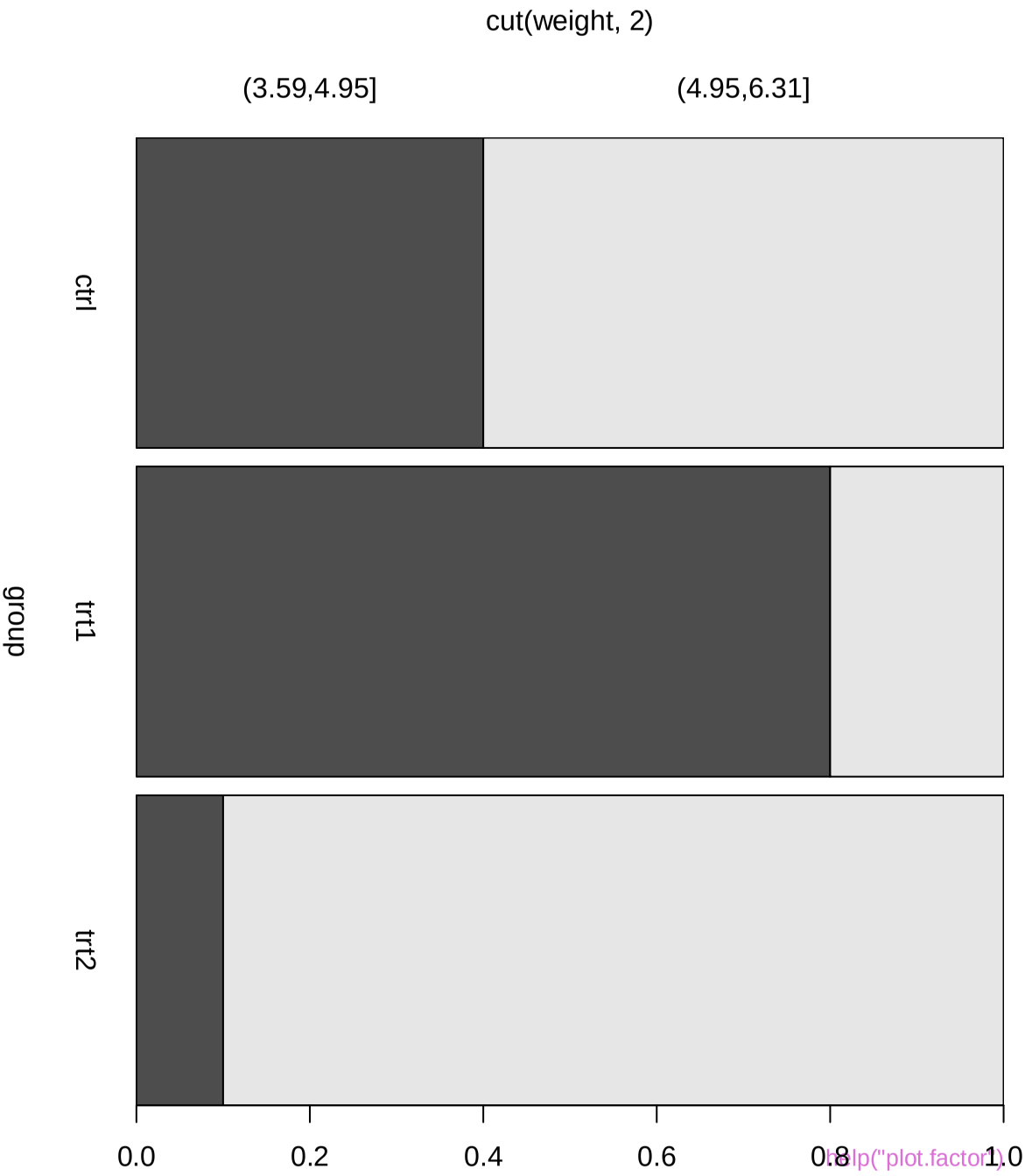

mean of ncontrols
5
10
15
20
0−9g/day
0−39g/day
40−79
55−64
45−54
35−44
65−74
10−19
25−34
80−119
20−29
75+
30+
120+
agegp
alcgp
tobgp
Factors
help("plot.design")

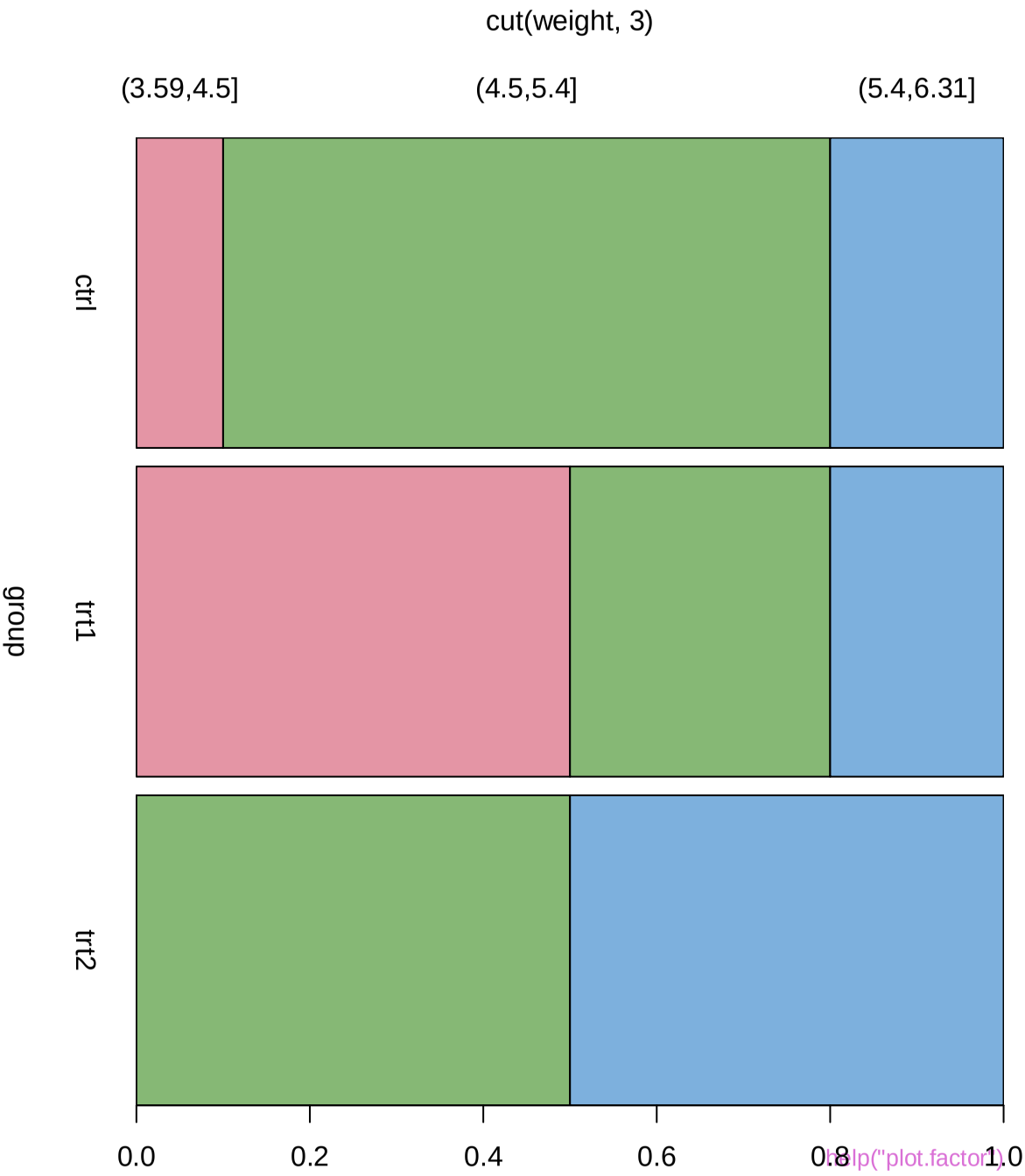


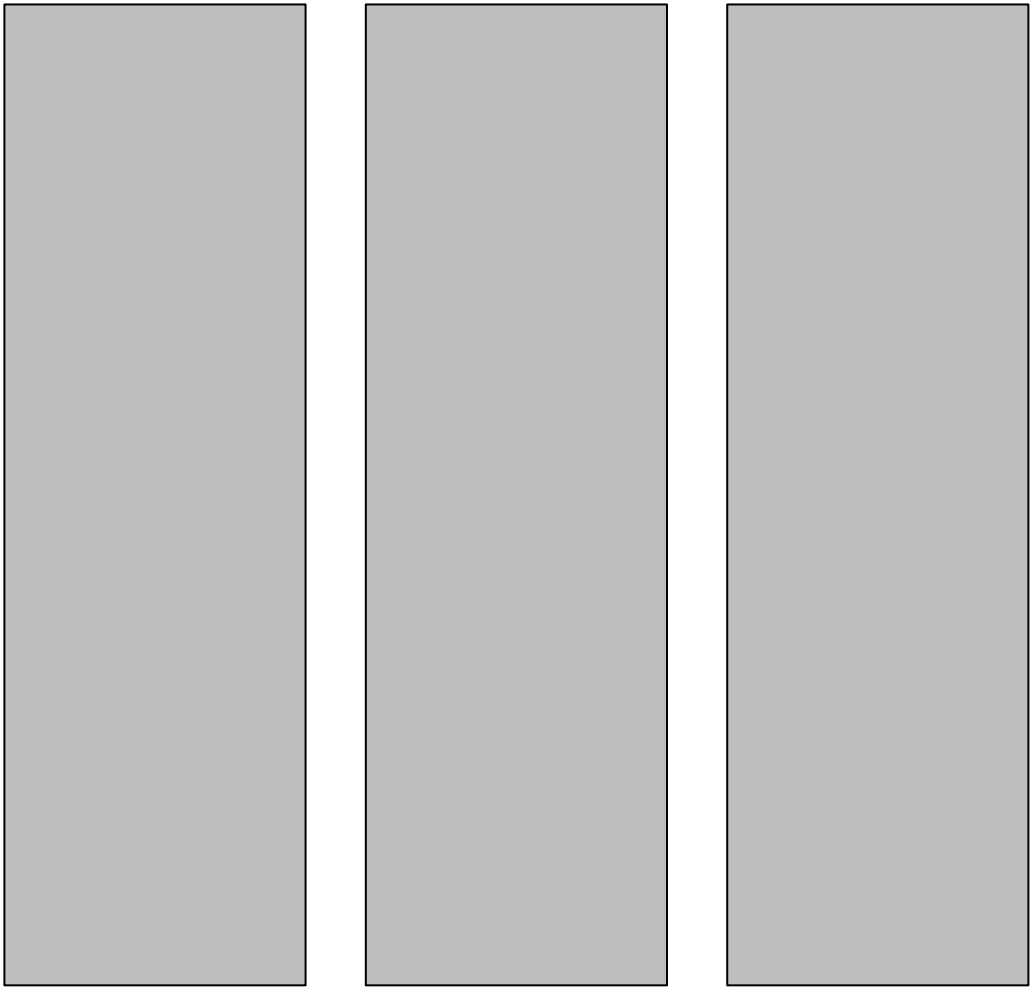


help("plot.design")

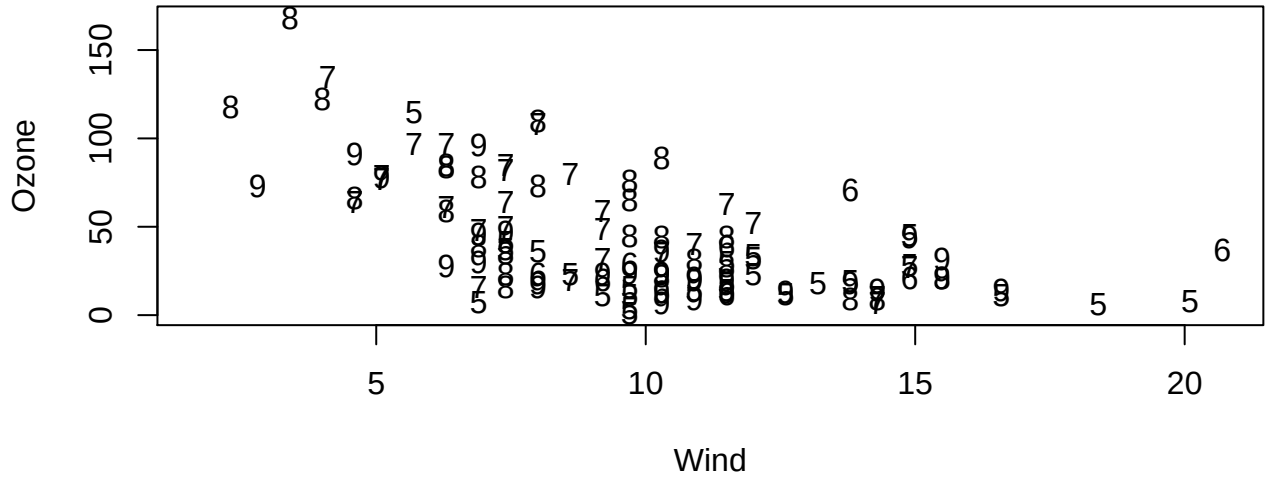

weight
3.5
4.0
4.5
5.0
5.5
6.0
ctrl
trt1
trt2
group
help("plot.factor")

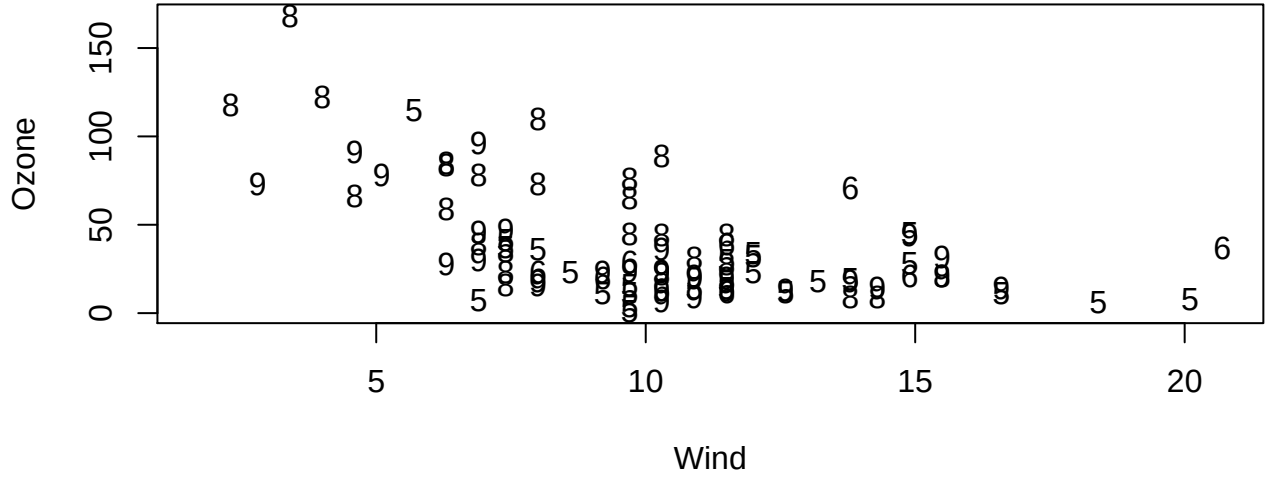

cut(weight, 2)
(3.59,4.95]
(4.95,6.31]
group
ctrl
trt1
trt2
0.0
0.2
0.4
0.6
0.8
1.0
help("plot.factor")


cut(weight, 3)
(3.59,4.5]
(4.5,5.4]
(5.4,6.31]
group
ctrl
trt1
trt2
0.0
0.2
0.4
0.6
0.8
1.0
help("plot.factor")

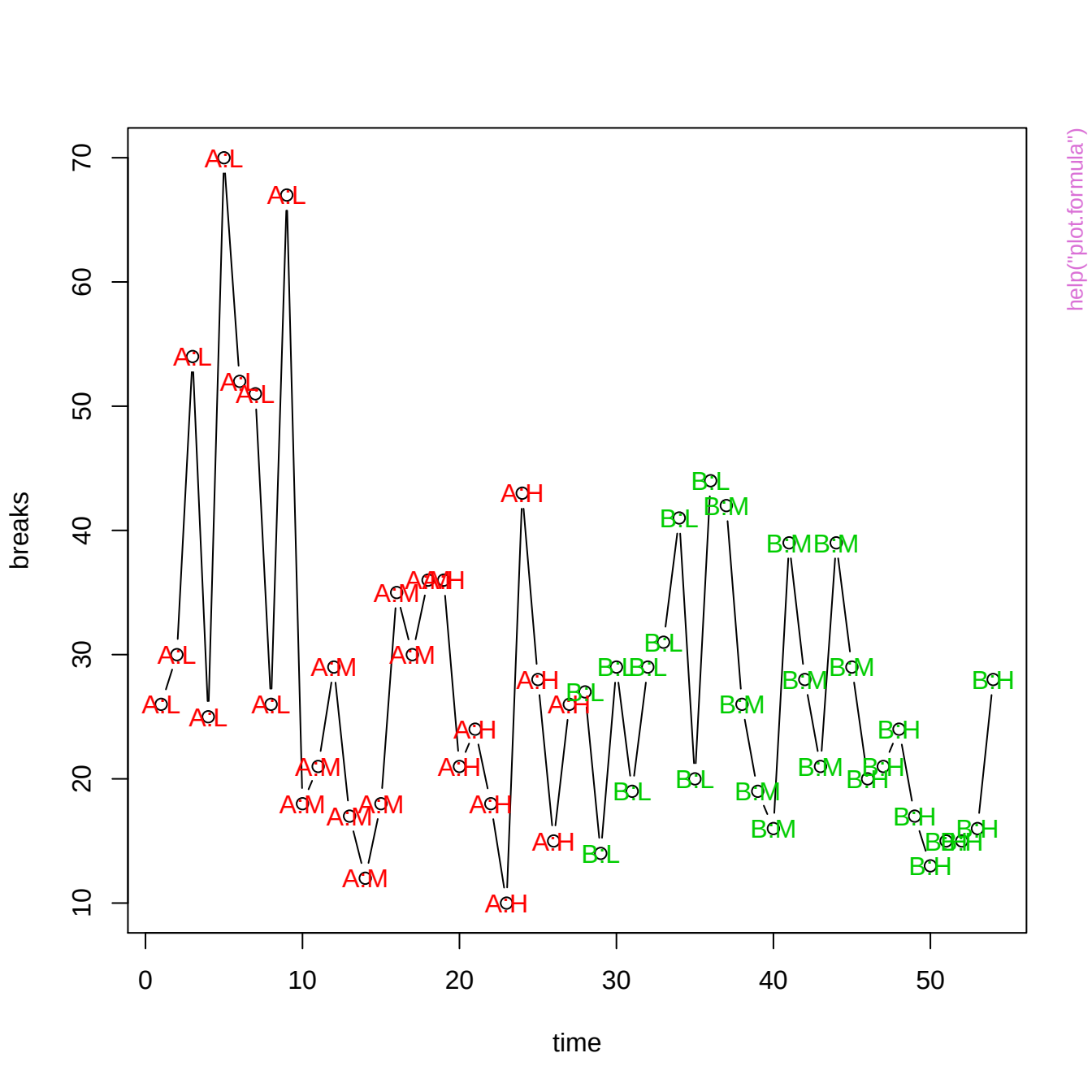


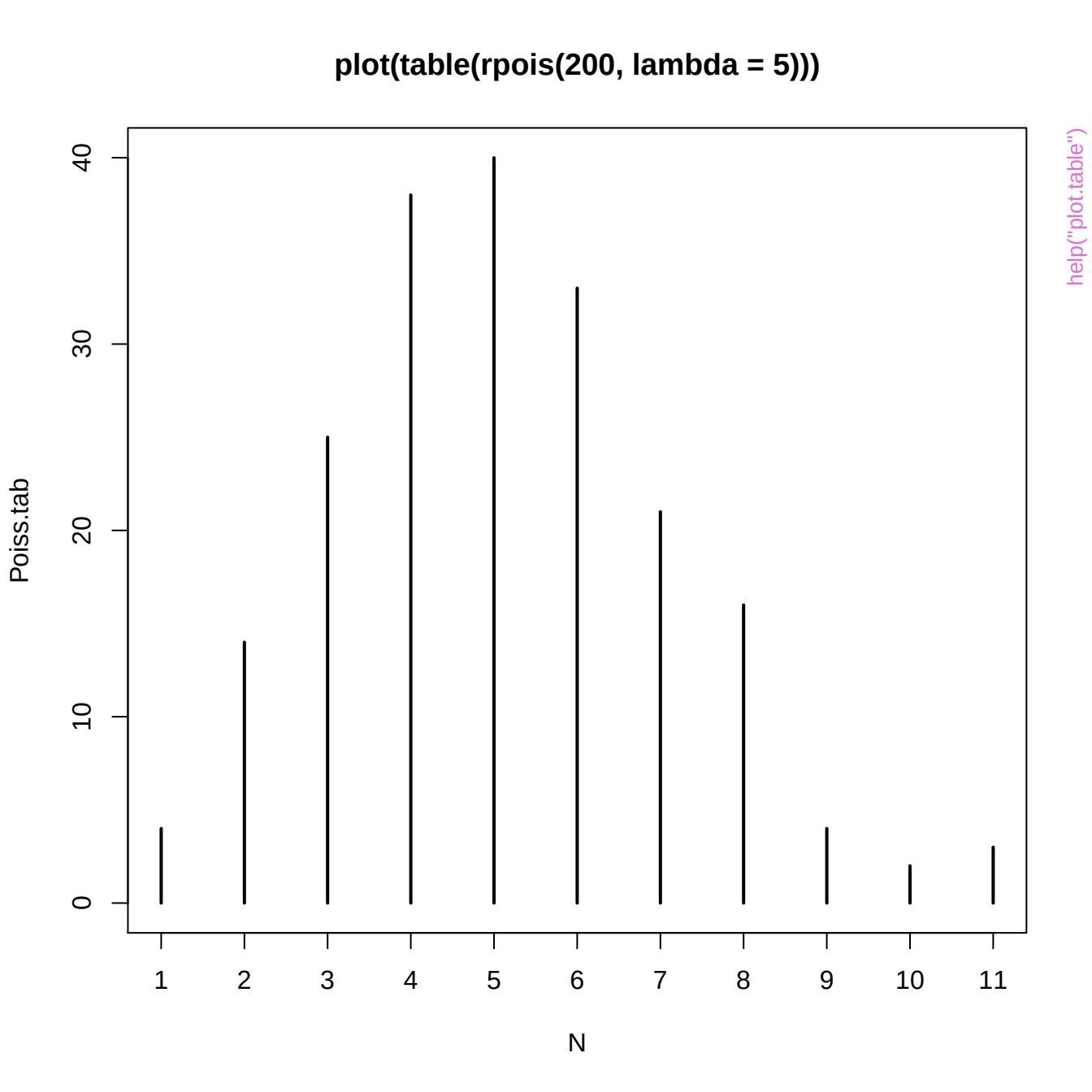
help("plot.factor")



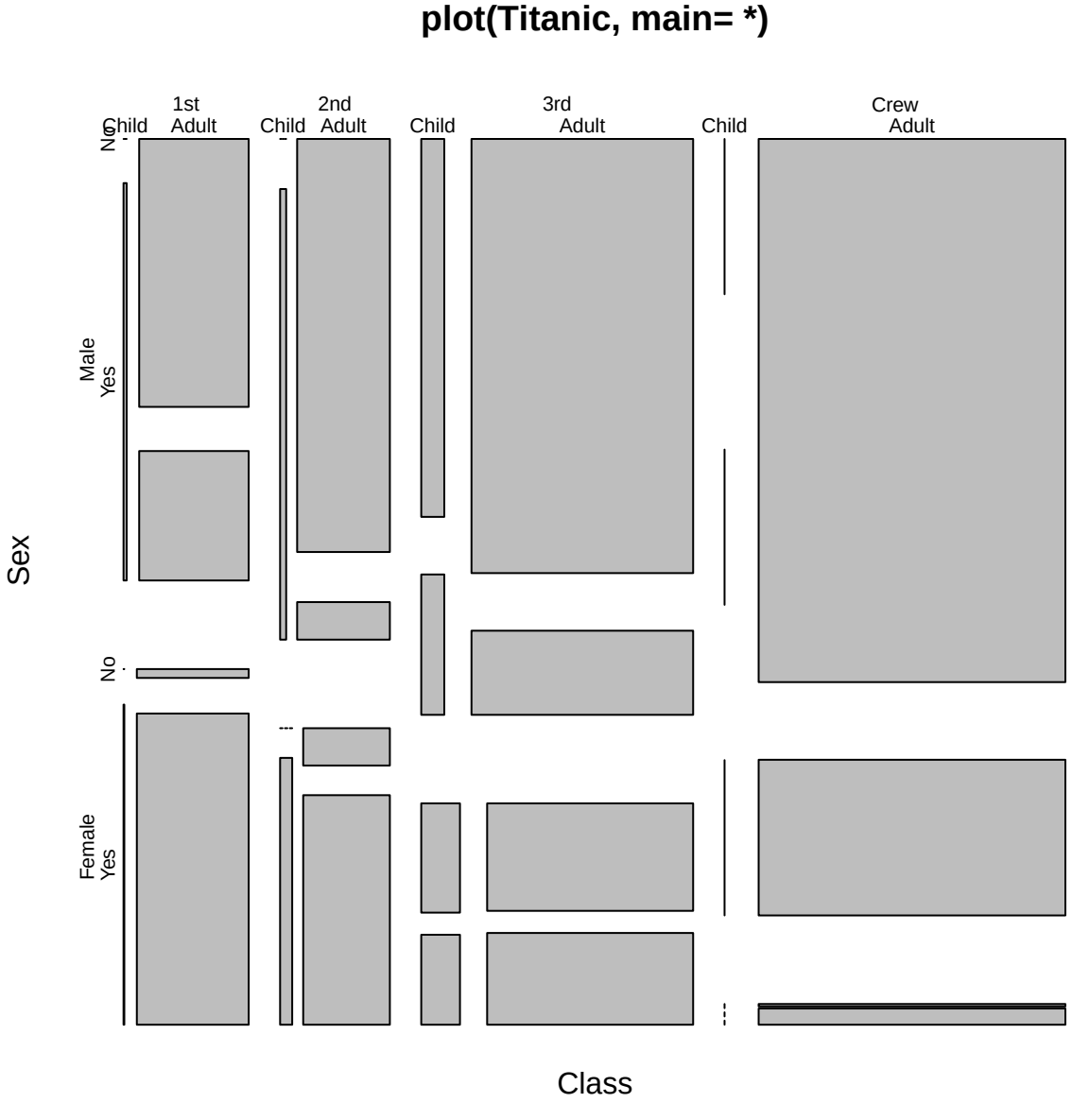


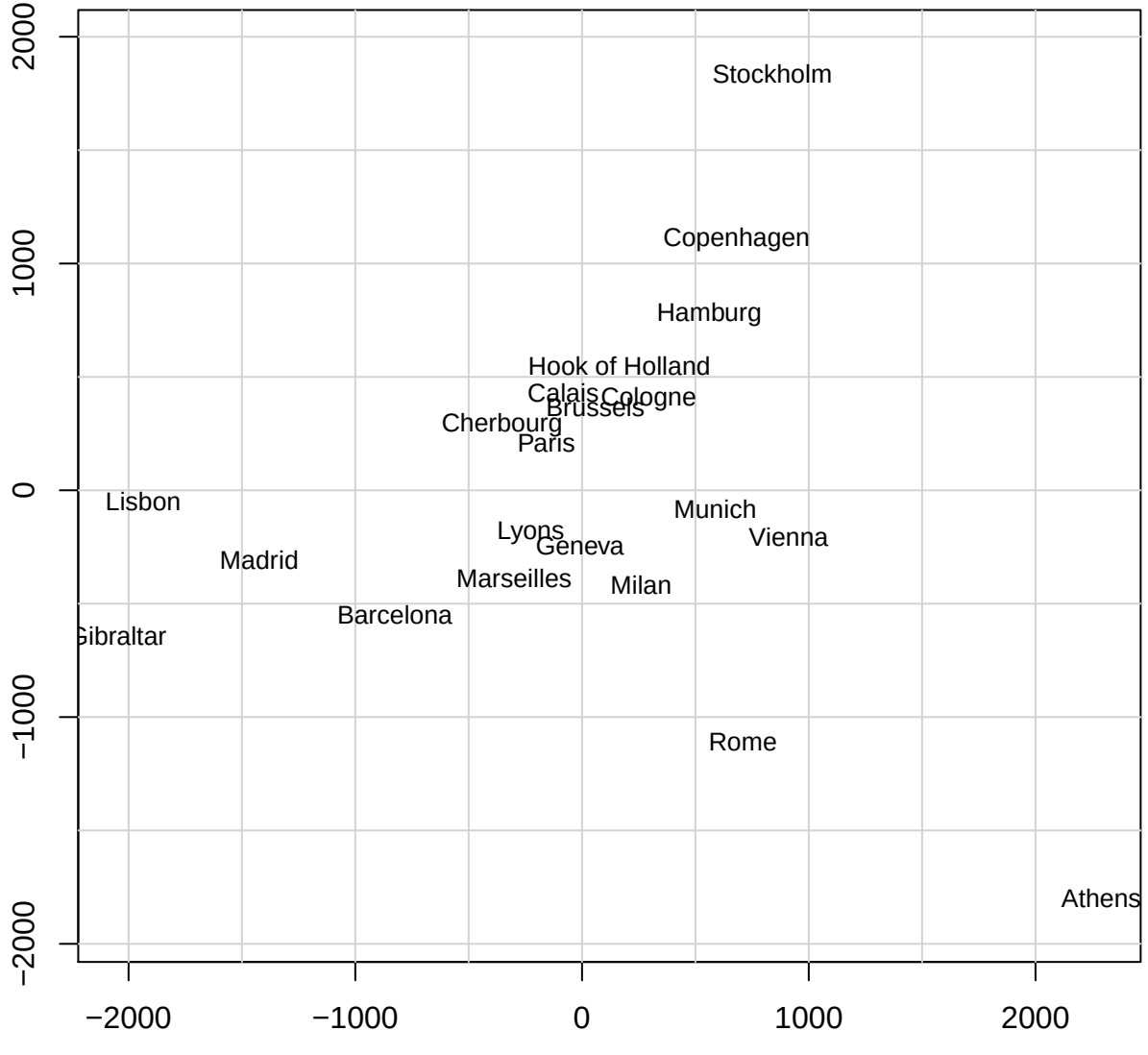
help("plot.formula")


breaks
time
10
20
30
40
50
60
70
0
10
20
30
40
50
help("plot.formula")

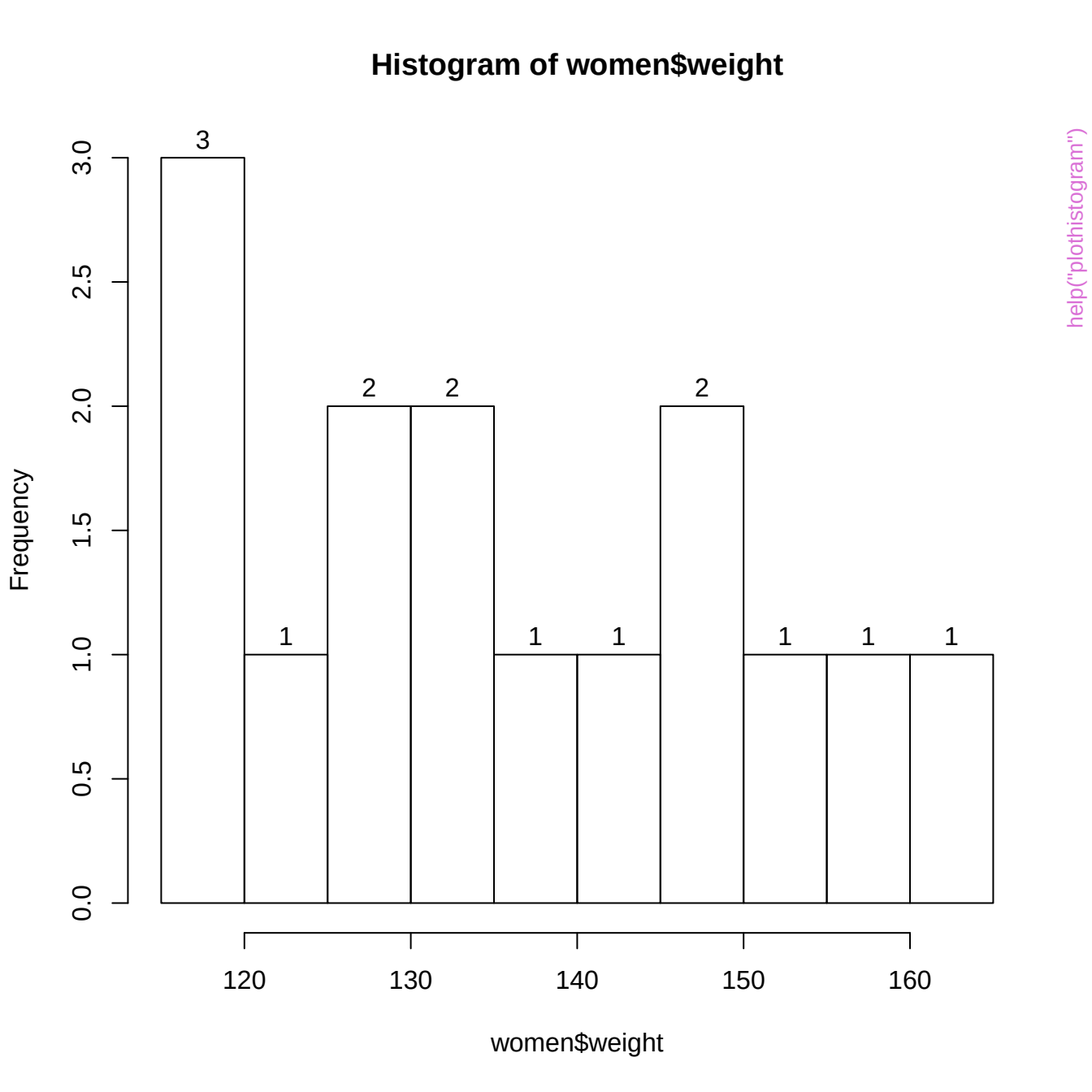

plot(table(rpois(200, lambda = 5)))
Poiss.tab
0
10
20
30
40
N
1
2
3
4
5
6
7
8
9
10
11
help("plot.table")

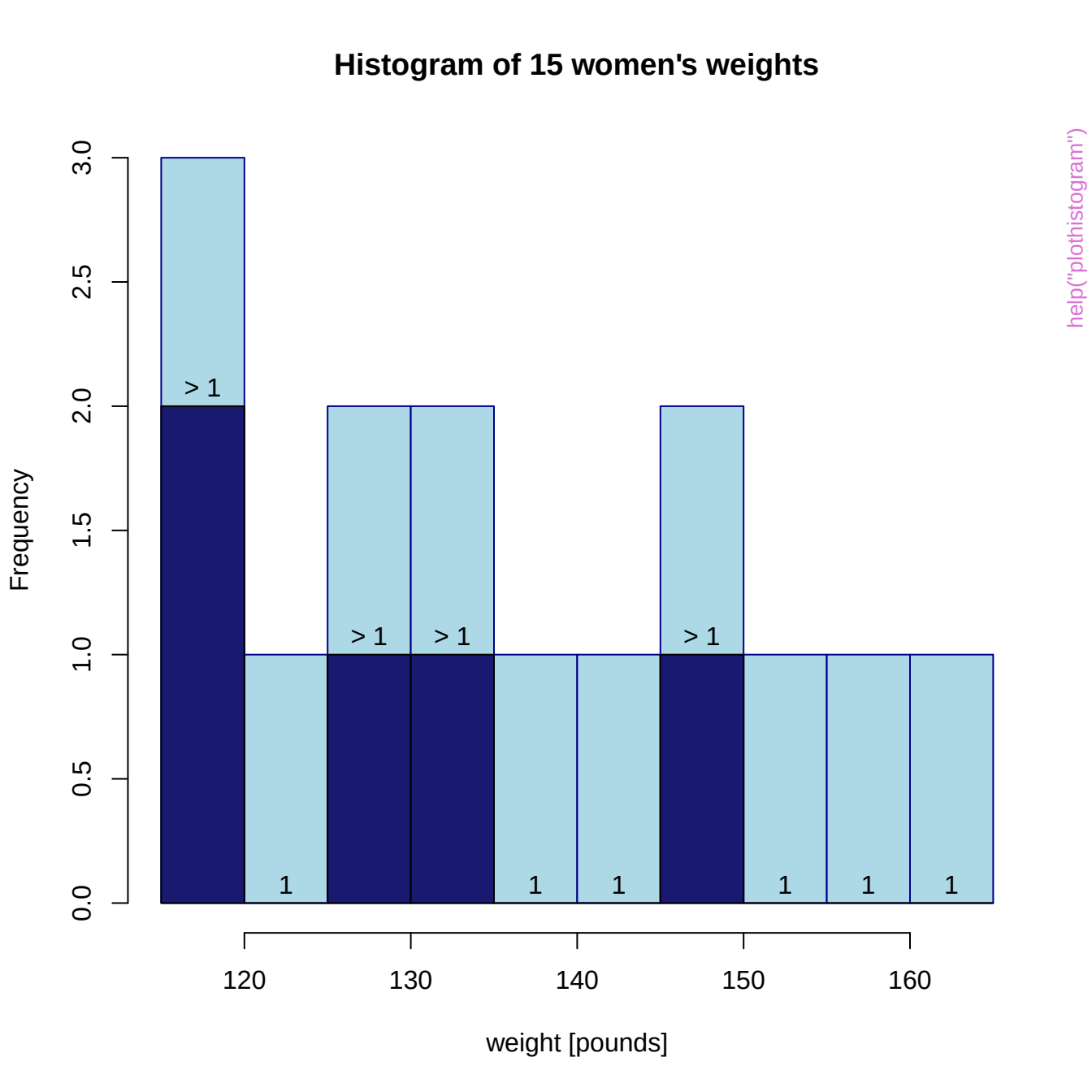
table(state.division)
0
2
4
6
8
New England
South Atlantic
East North Central
Mountain
state.division
help("plot.table")

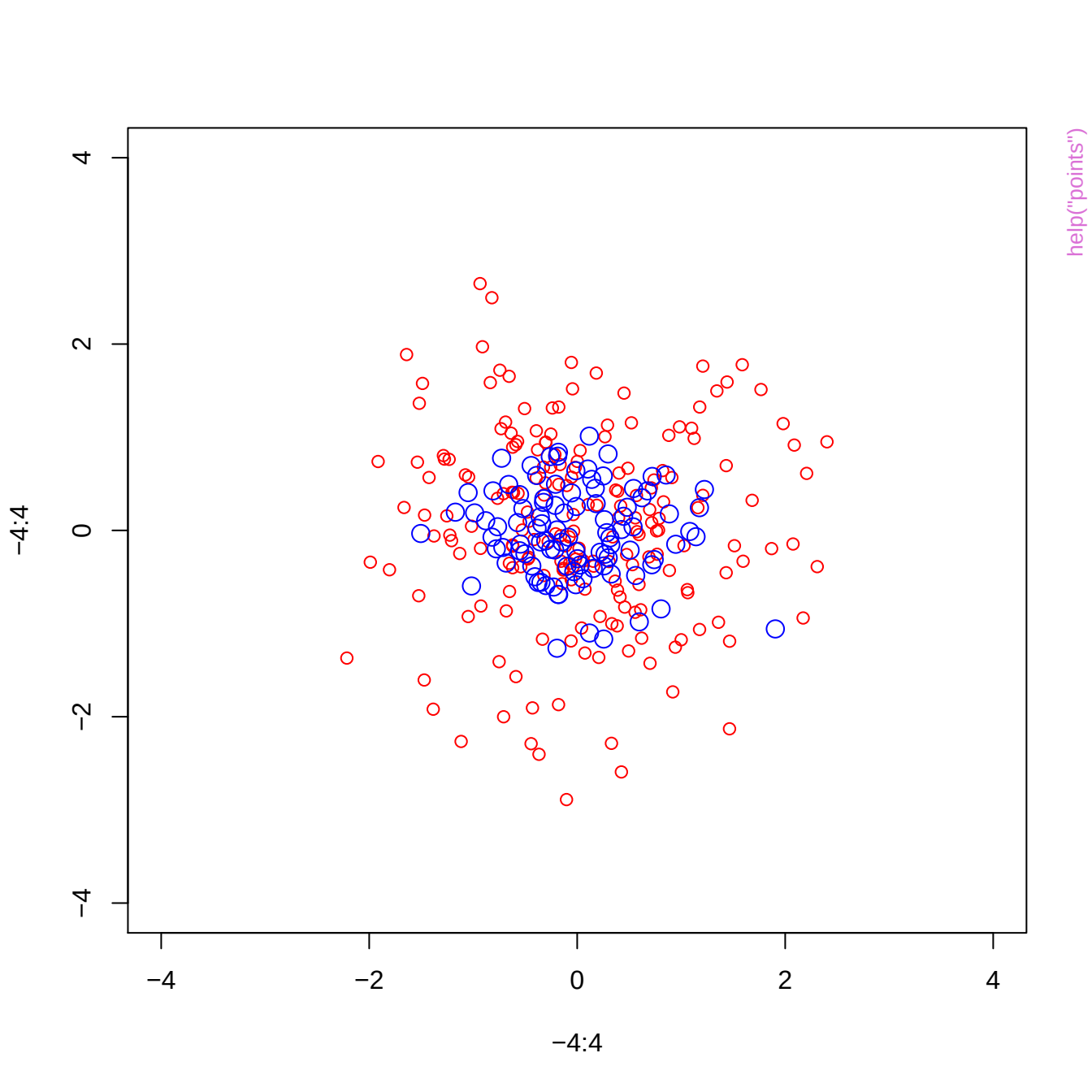


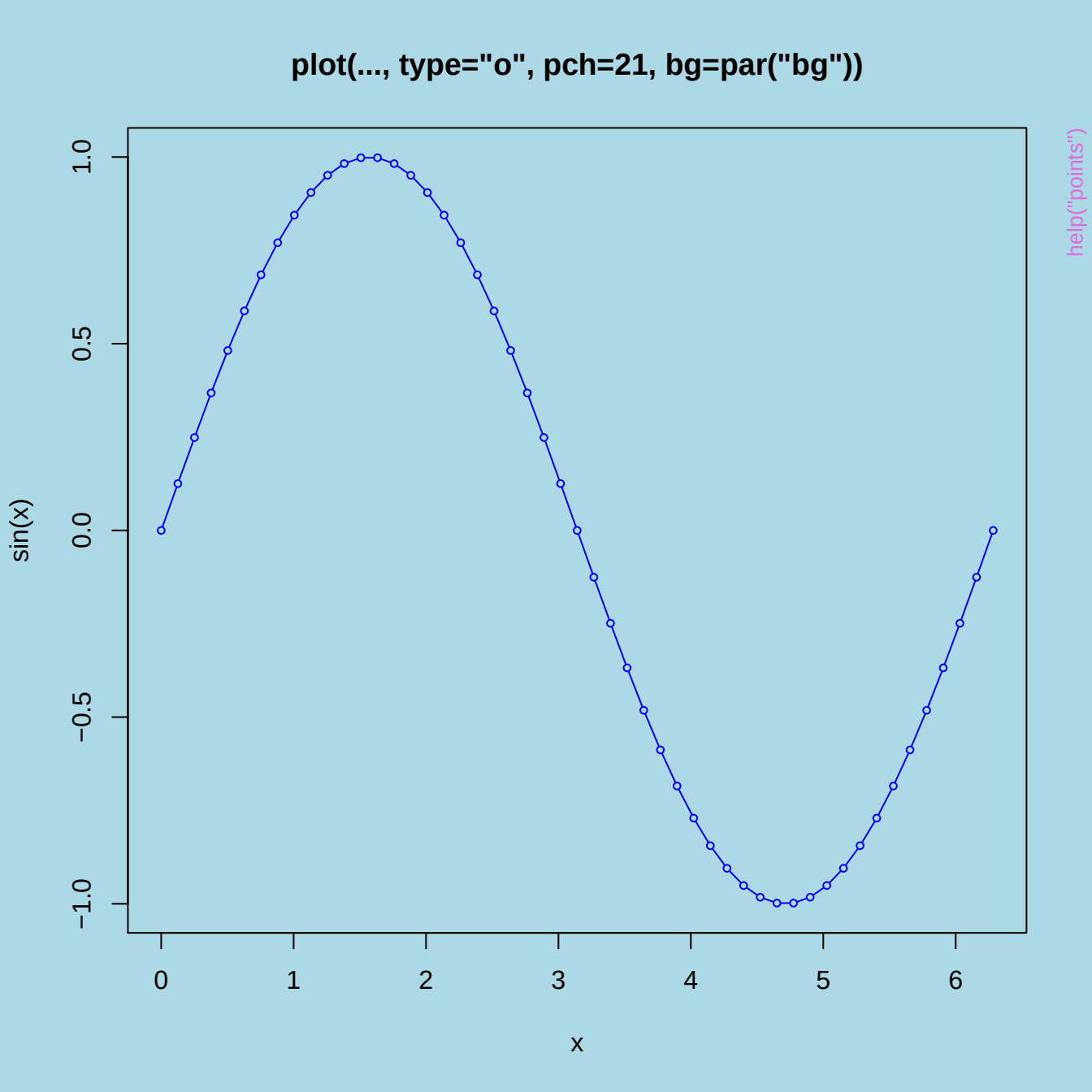


help("plot.window")

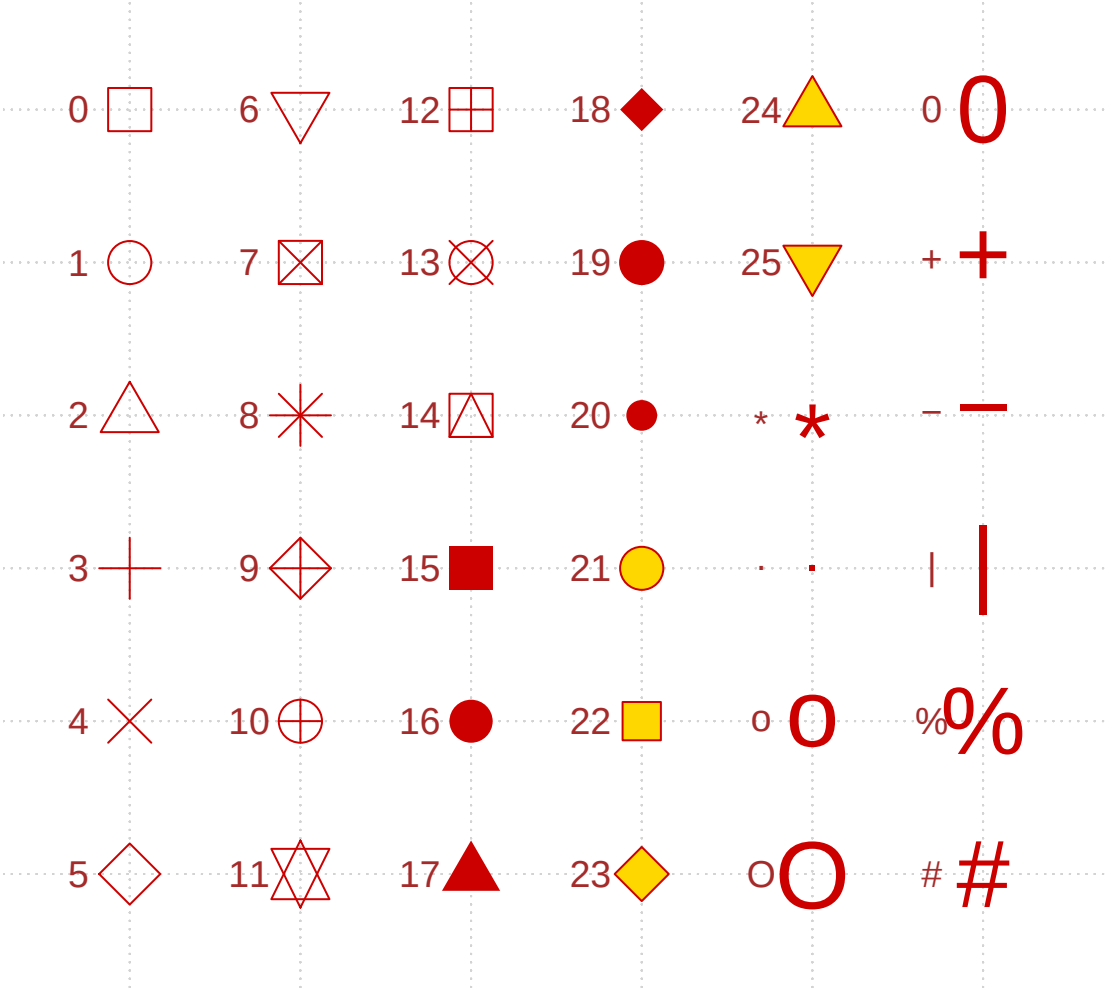

Histogram of women$weight
Frequency
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
1
2
2
1
1
2
1
1
1
120
130
140
150
160
women$weight
help("plothistogram")

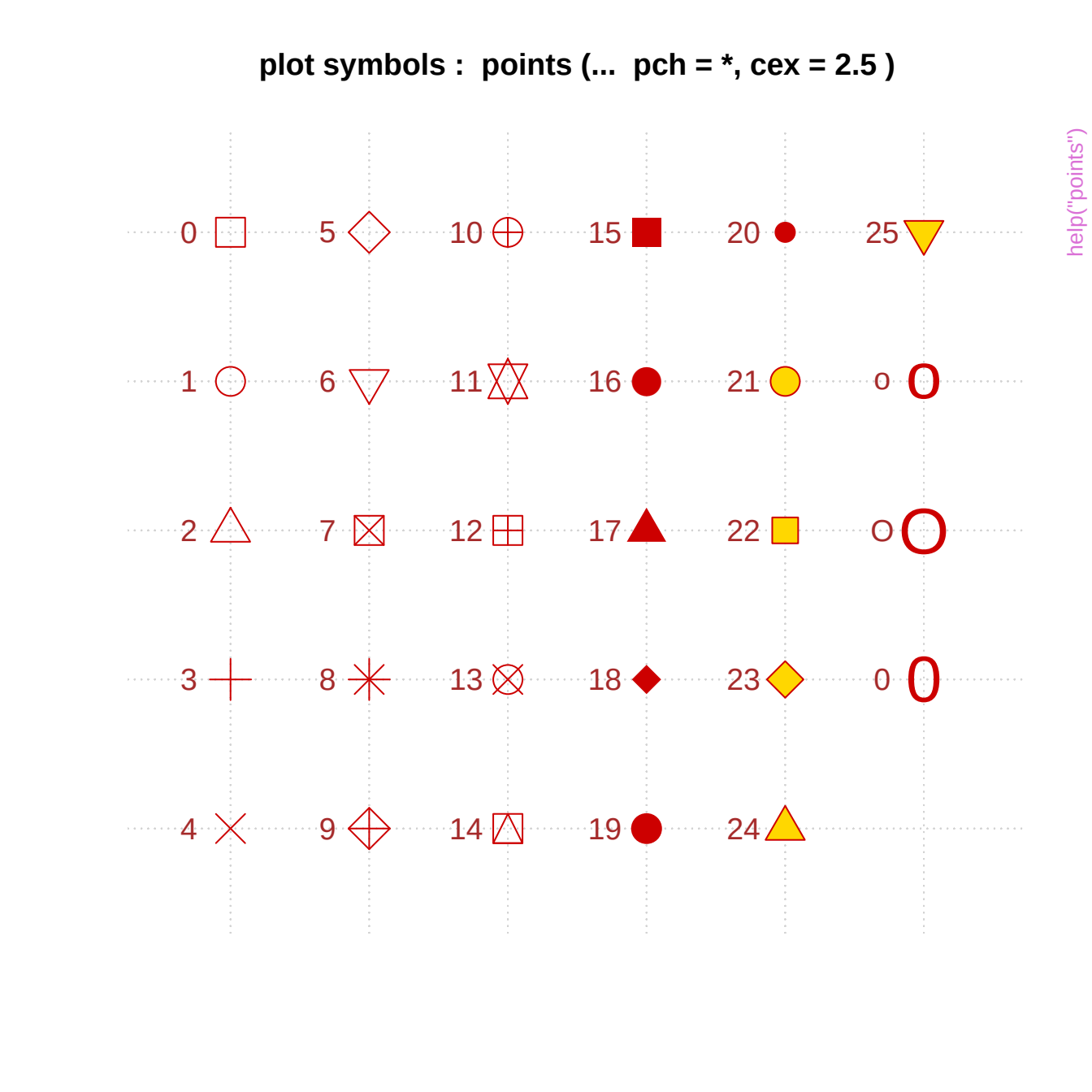

Histogram of 15 women's weights
help("plothistogram")
Frequency
0.0
0.5
1.0
1.5
2.0
2.5
3.0
> 1
> 1
> 1
> 1
1
1
1
1
1
120
130
140
150
160
weight [pounds]

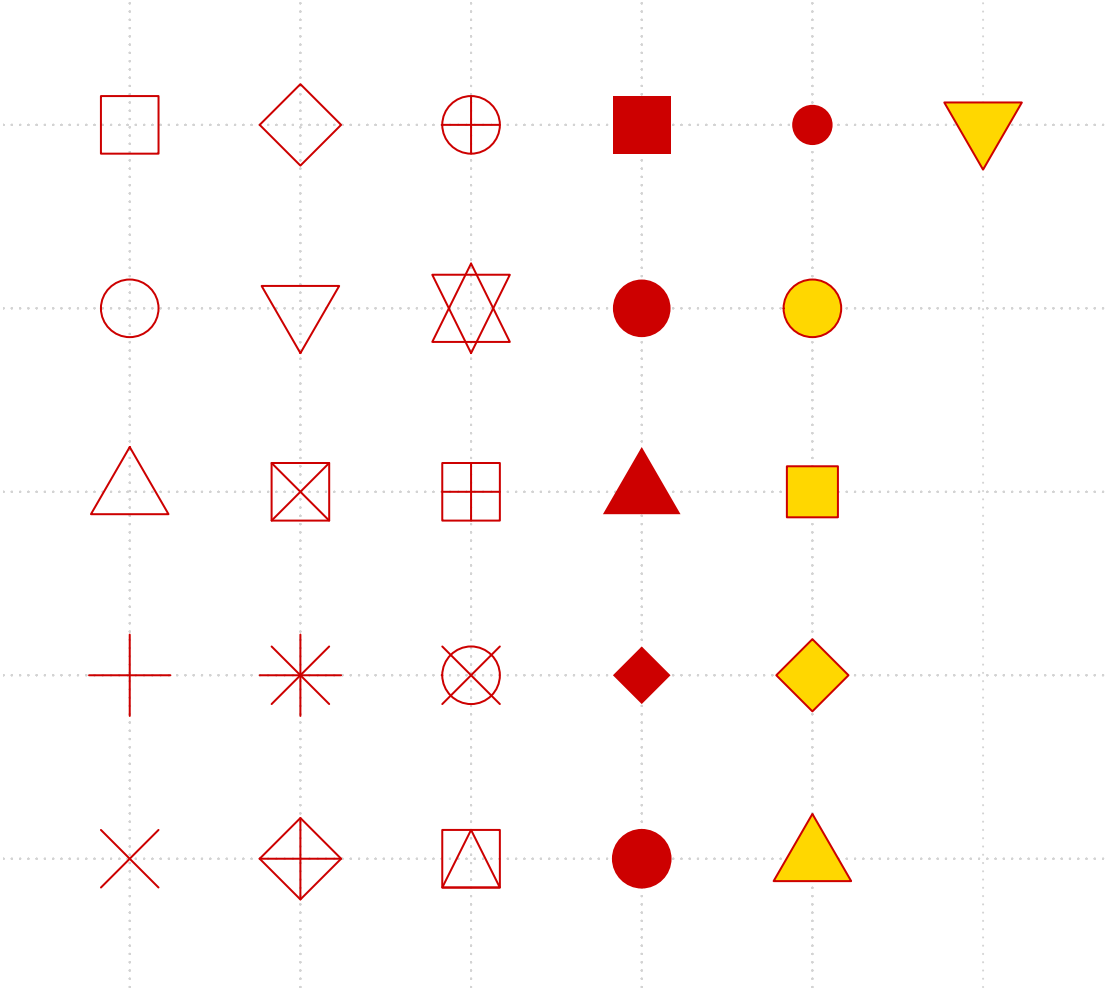

help("points")
−4:4
−4:4
4
2
0
−2
−4
−4
−2
0
2
4

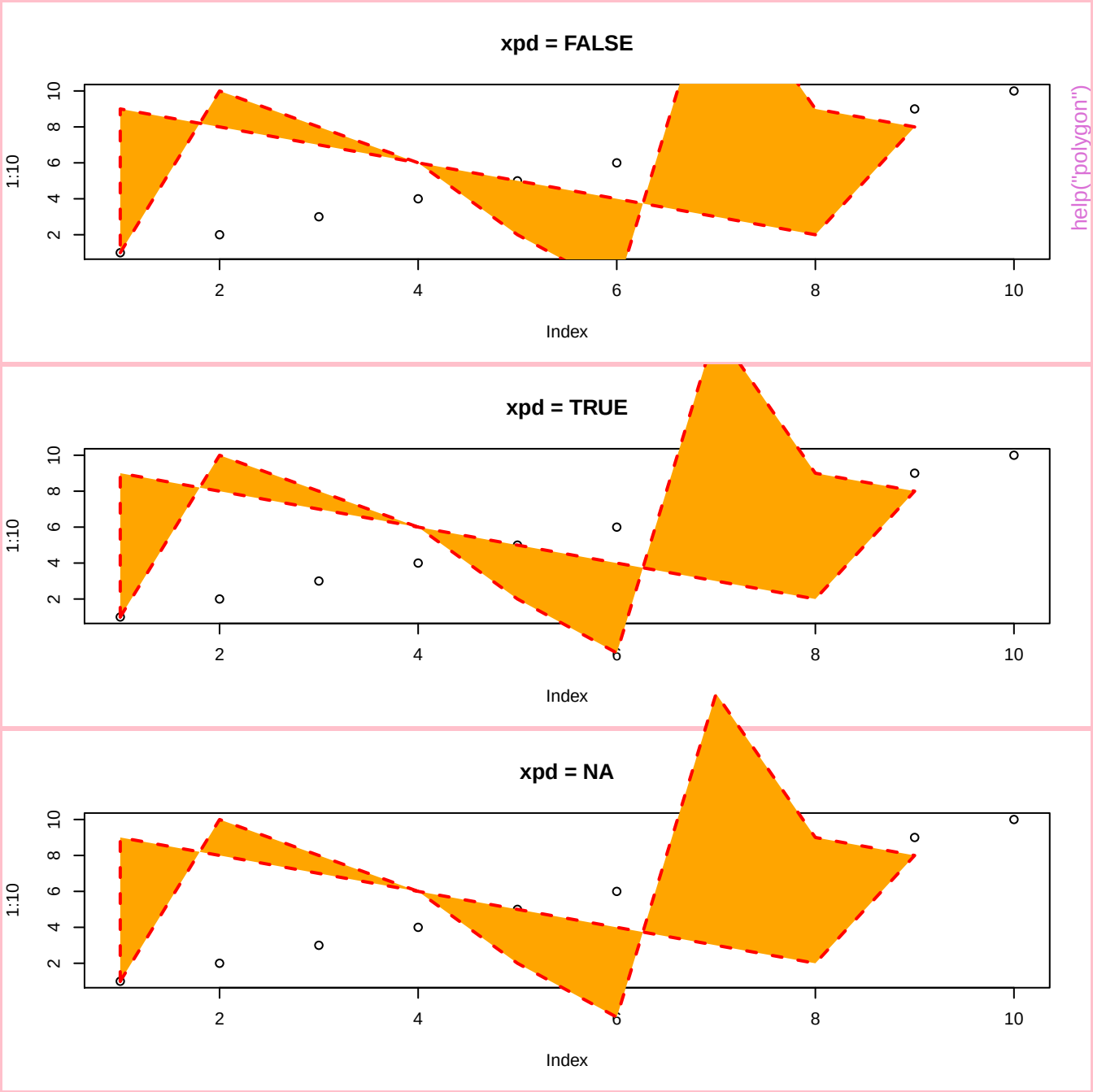

plot(..., type="o", pch=21, bg=par("bg"))
help("points")
sin(x)
1.0
0.5
0.0
−0.5
−1.0
0
1
2
3
4
5
6
x

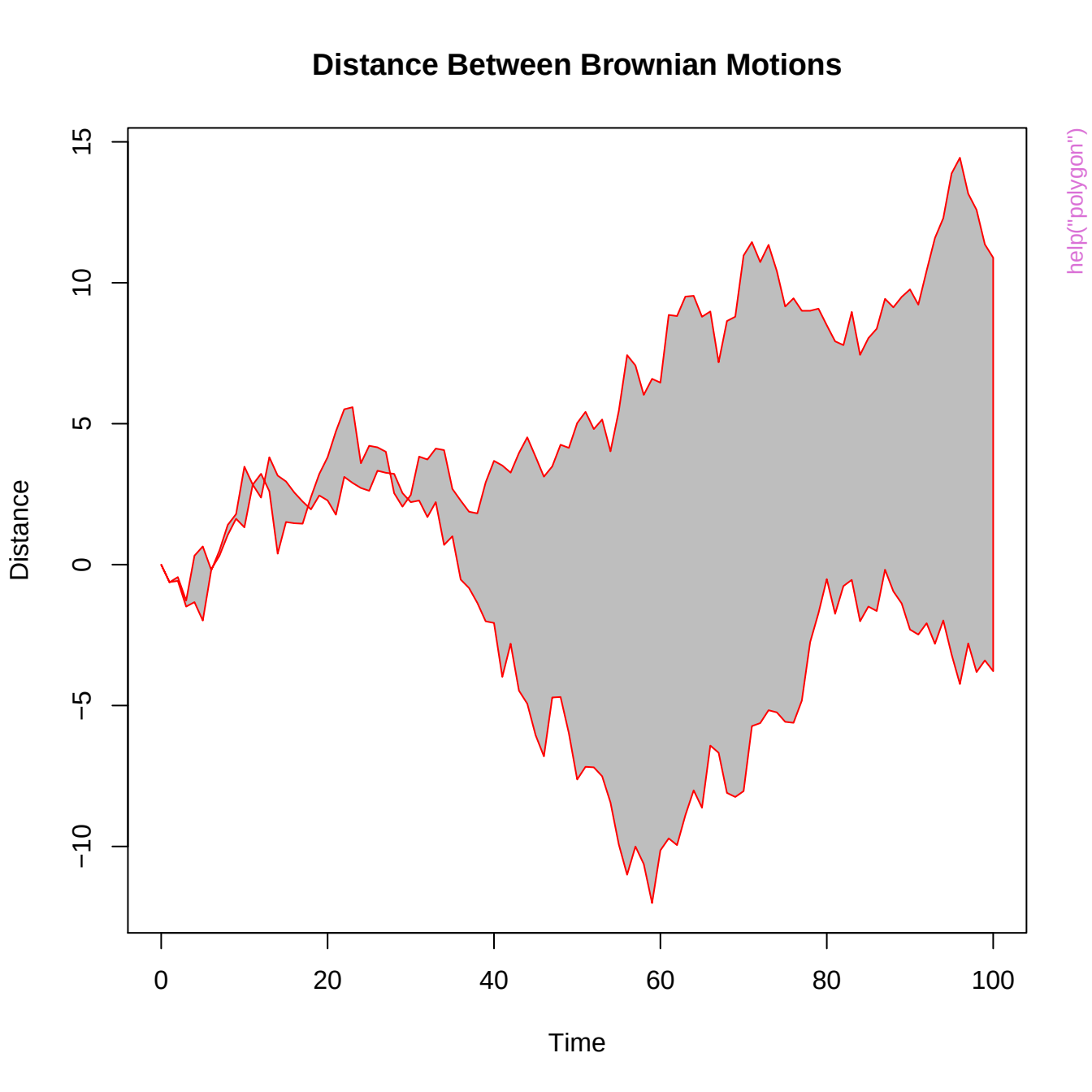
plot symbols : points (... pch = *, cex = 3)

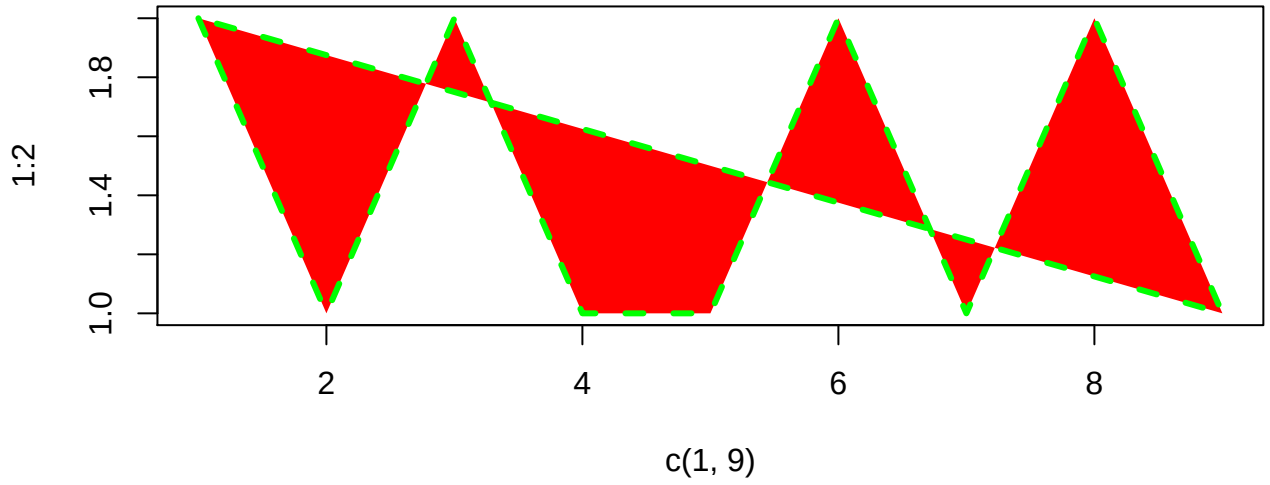



plot symbols : points (... pch = *, cex = 2.5)
help("points")
0
5
10
15
20
25
1
6
11
16
21
o
2
7
12
17
22
3
8
13
18
23
0
4
9
14
19
24

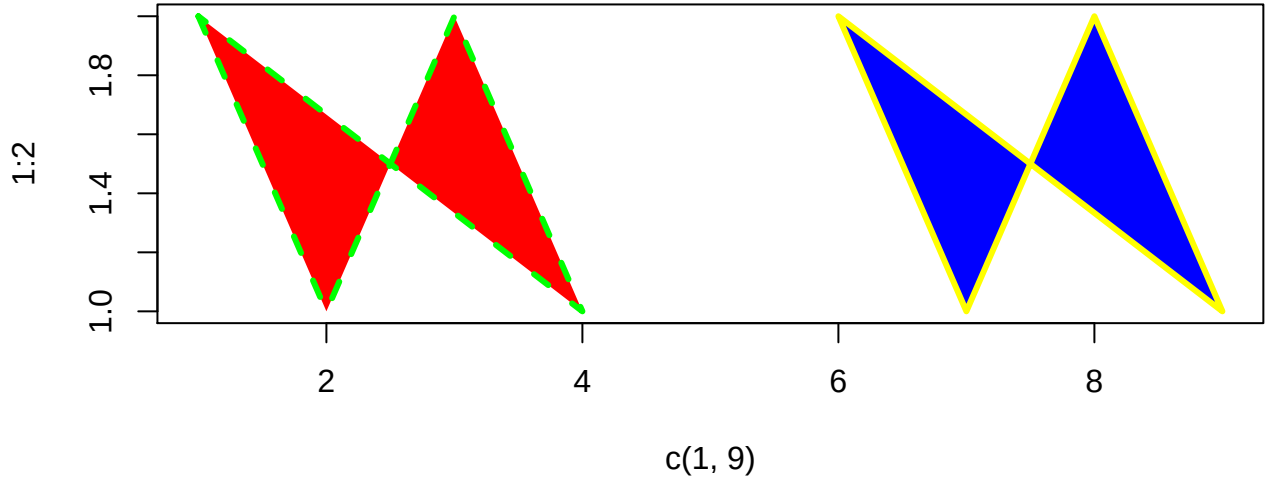

help("points")


xpd = FALSE
1:10
Index
help("polygon")
xpd = TRUE
1:10
Index
xpd = NA
1:10
Index


Distance Between Brownian Motions
Distance
Time
15
10
5
0
−5
−10
0
20
40
60
80
100
help("polygon")



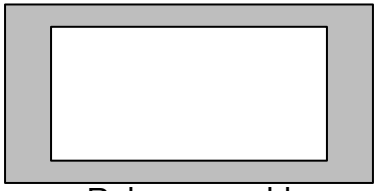
help("polygon")



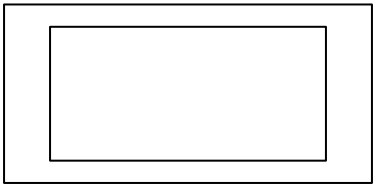
1:2
2.0
1.8
1.6
1.4
1.2
1.0
2
4
6
8
c(1, 9)
help("polygon")

Nested rectangles, both clockwise

Rule: winding

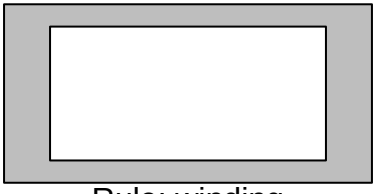


Rule: evenodd

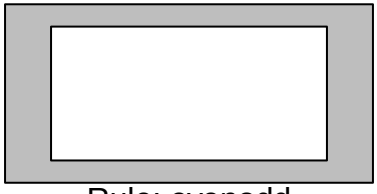


help("polypath")

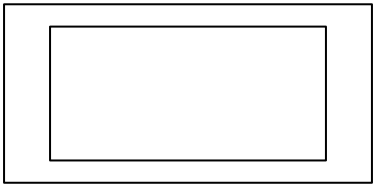
Nested rectangles, outer clockwise, inner anti−clockwise



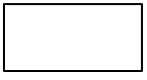
Rule: winding



Rule: evenodd

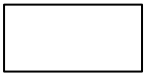


Disjoint rectangles

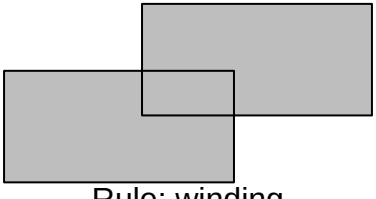


Rule: winding

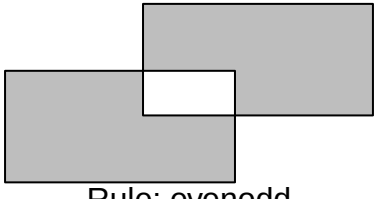
Rule: evenodd



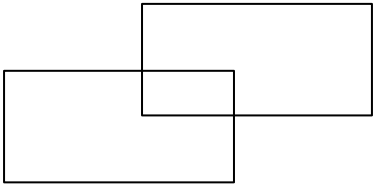
Overlapping rectangles, both clockwise



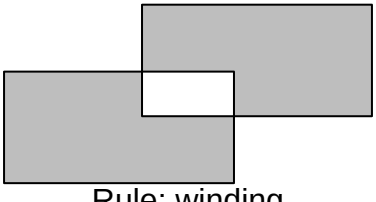
Rule: winding



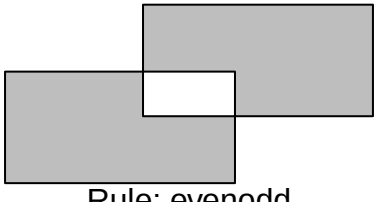
Rule: evenodd



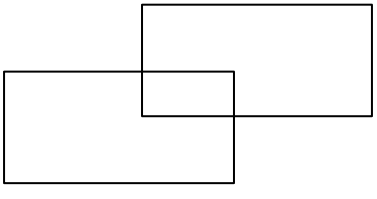
Overlapping rectangles, one clockwise, other anti−clockwise

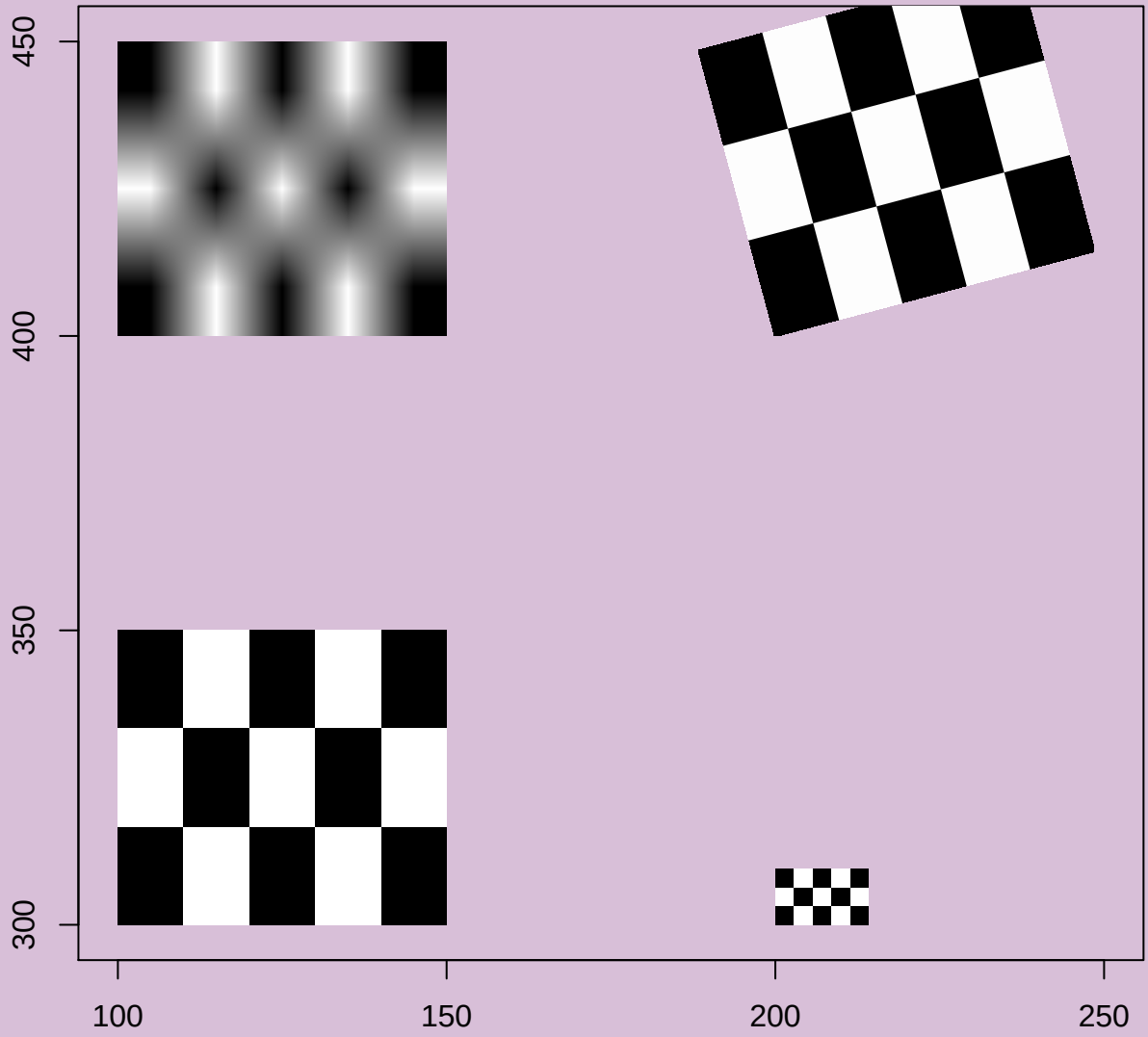


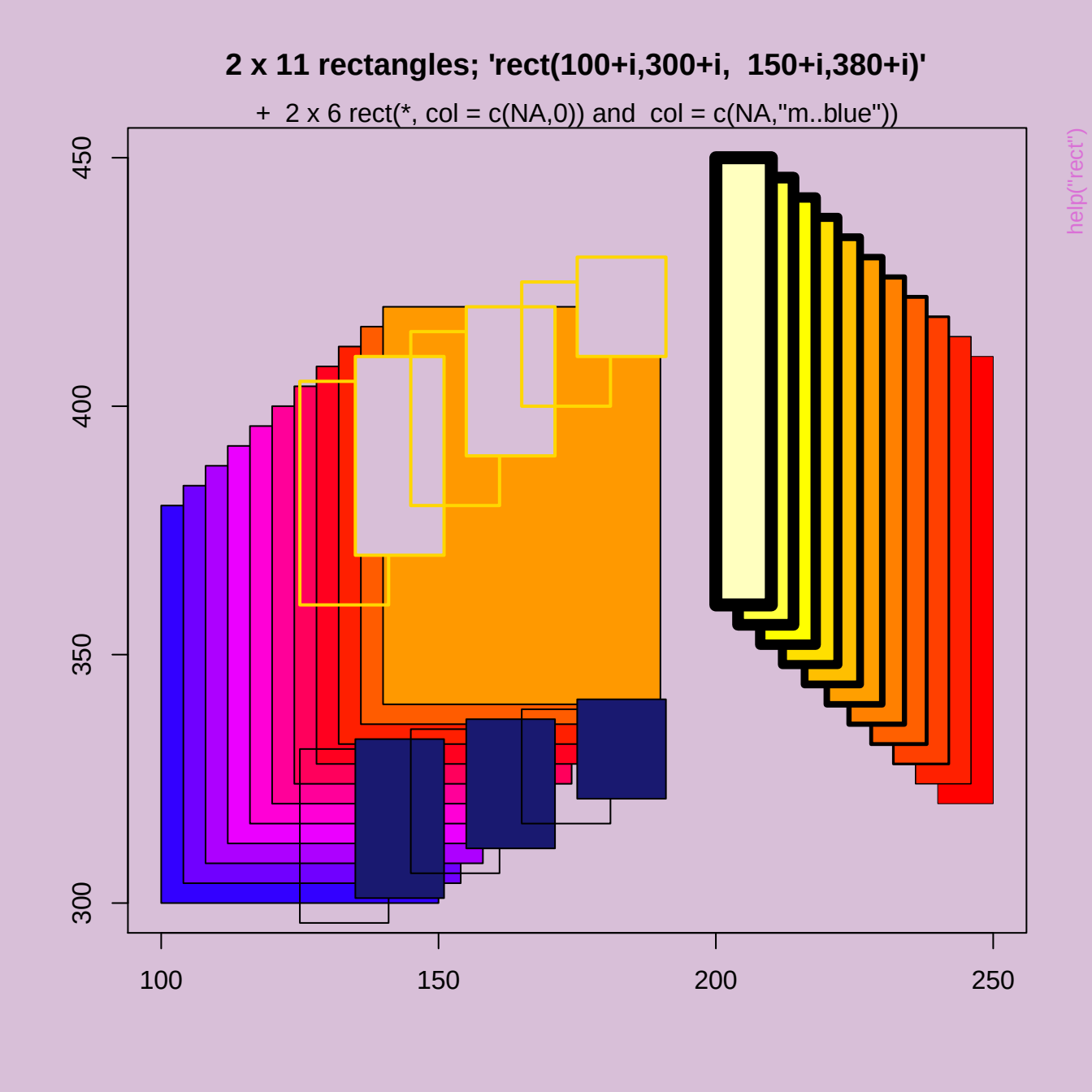
Rule: winding

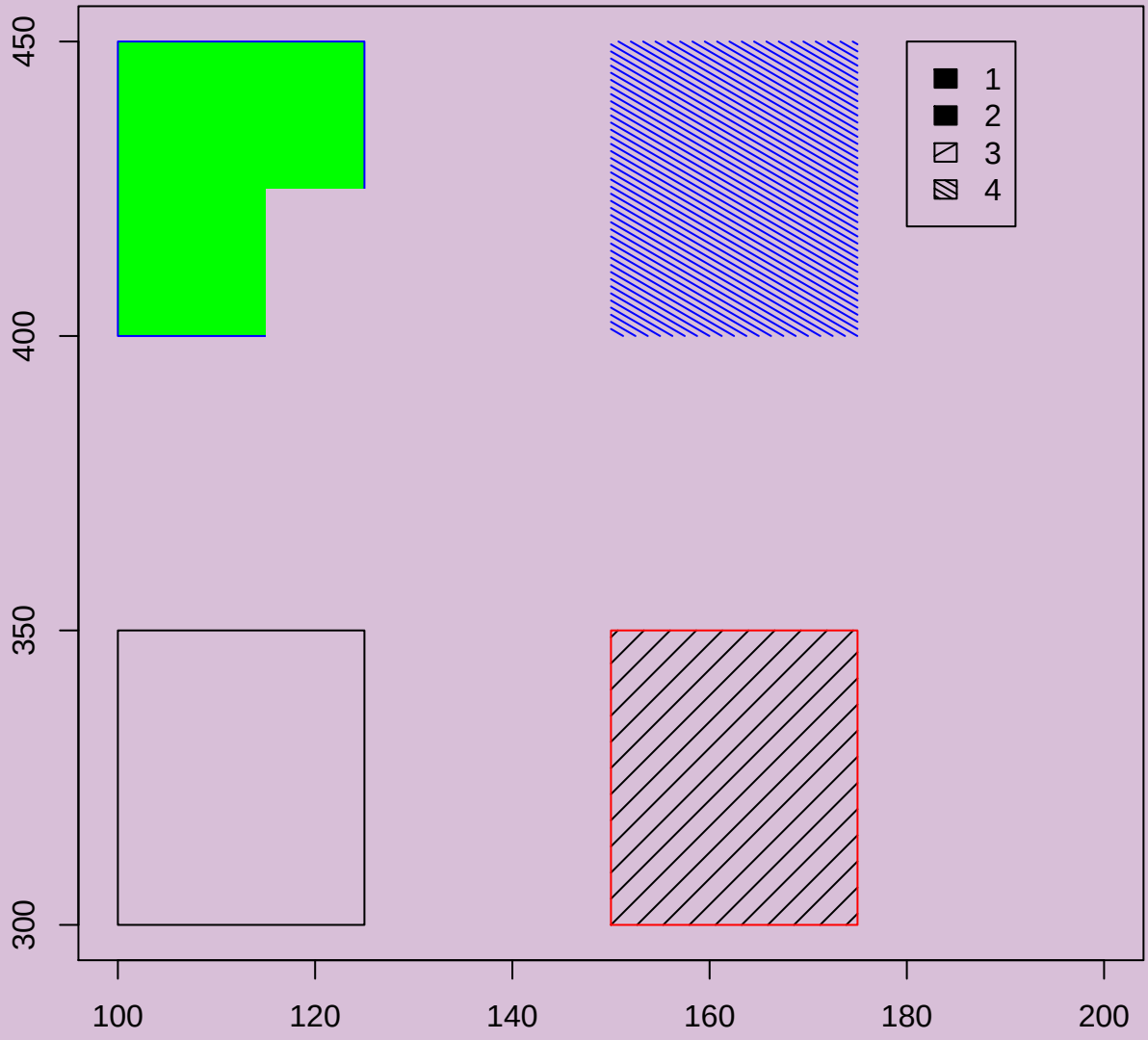


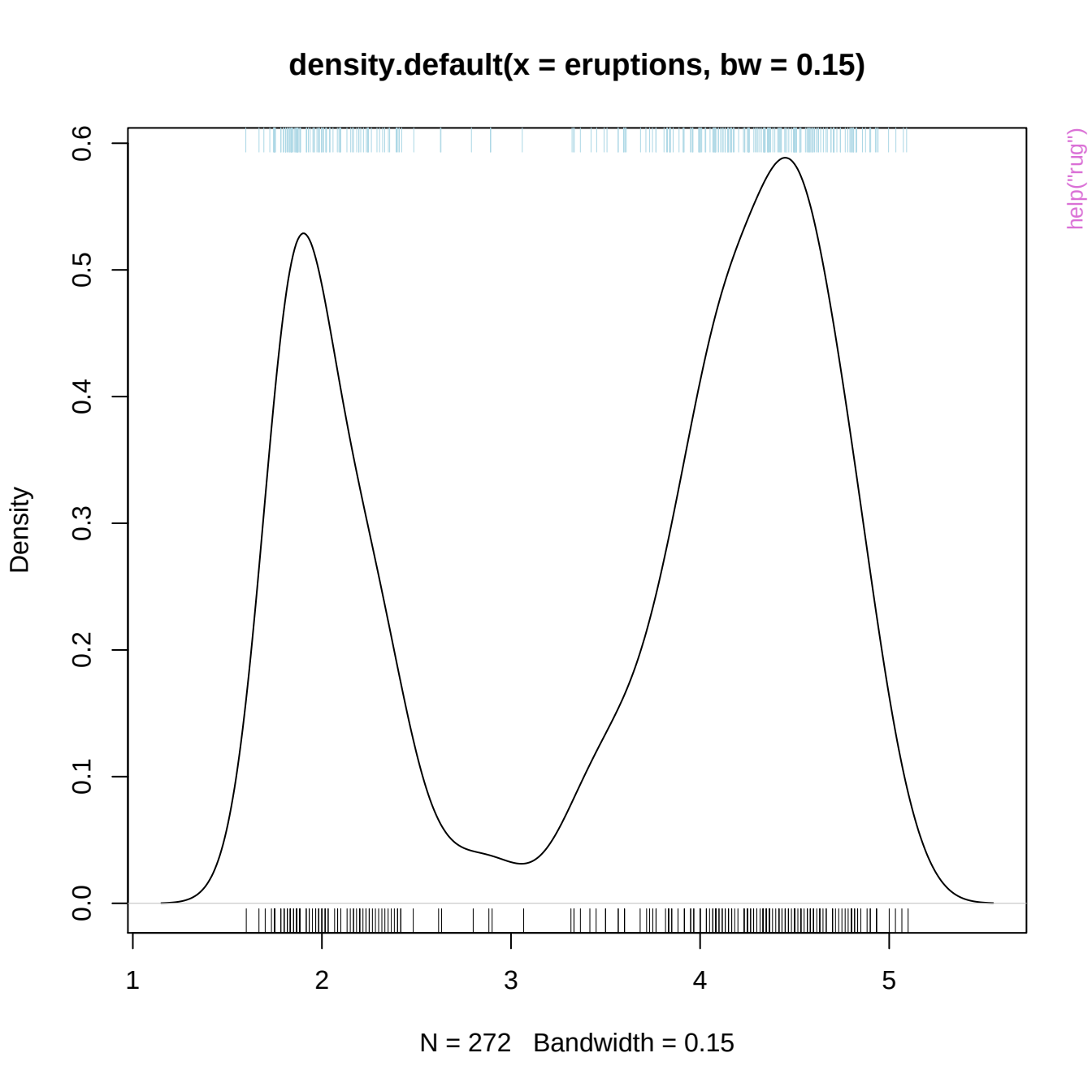
Rule: evenodd

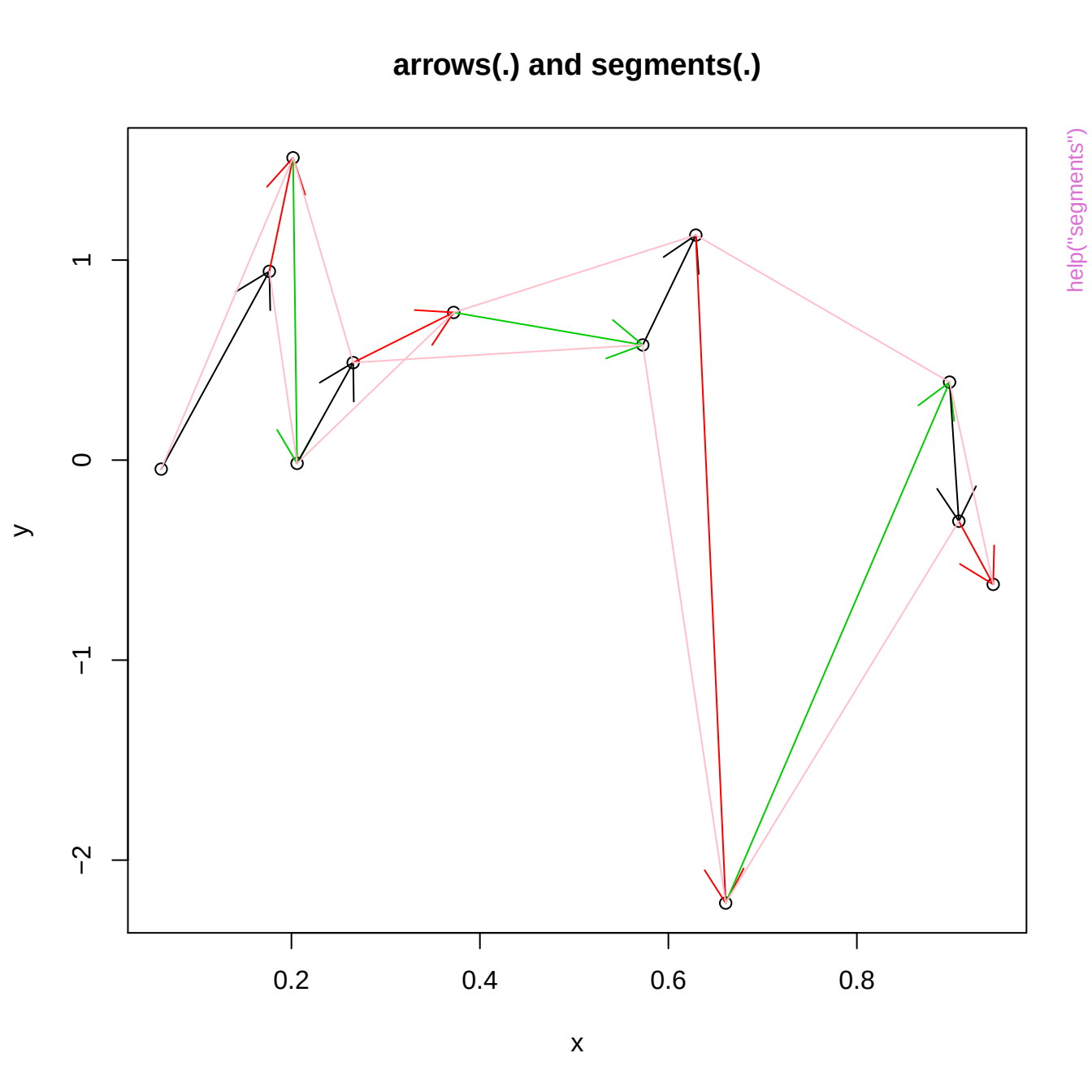


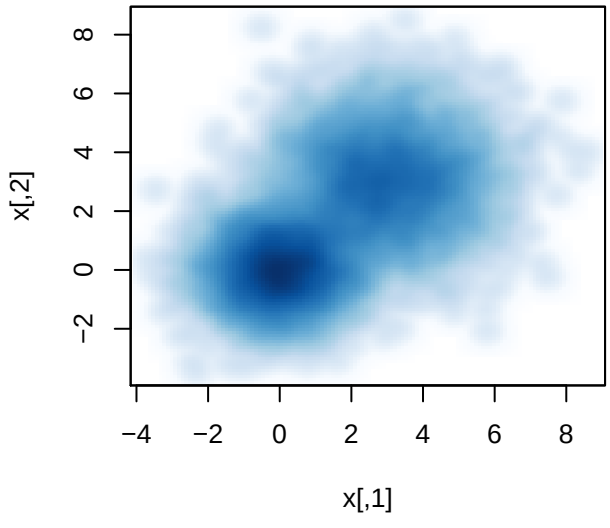

450
400
350
300
100
150
200
250
help("rasterImage")

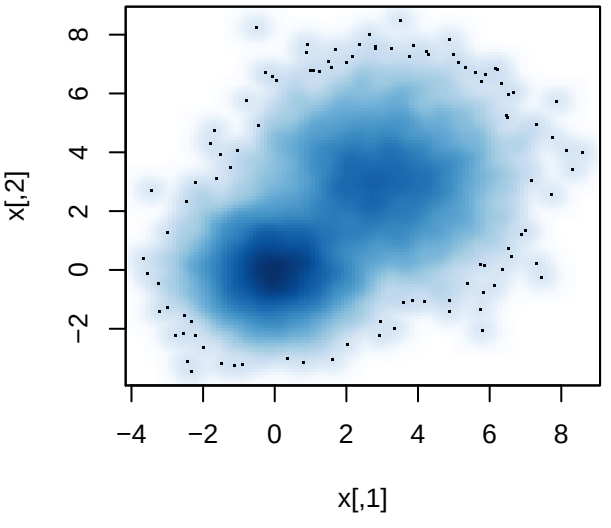

2 x 11 rectangles; 'rect(100+i,300+i, 150+i,380+i)'
+ 2 x 6 rect(*, col = c(NA,0)) and col = c(NA,"m..blue"))
450
400
350
300
100
150
200
250
help("rect")


450
400
350
300
100
120
140
160
180
200
1
2
3
4
help("rect")

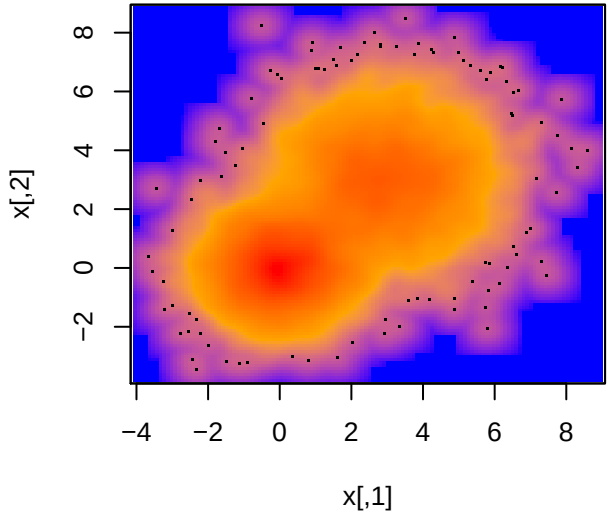

density.default(x = eruptions, bw = 0.15)
Density
0.0
0.1
0.2
0.3
0.4
0.5
0.6
1
2
3
4
5
N = 272 Bandwidth = 0.15
help("rug")

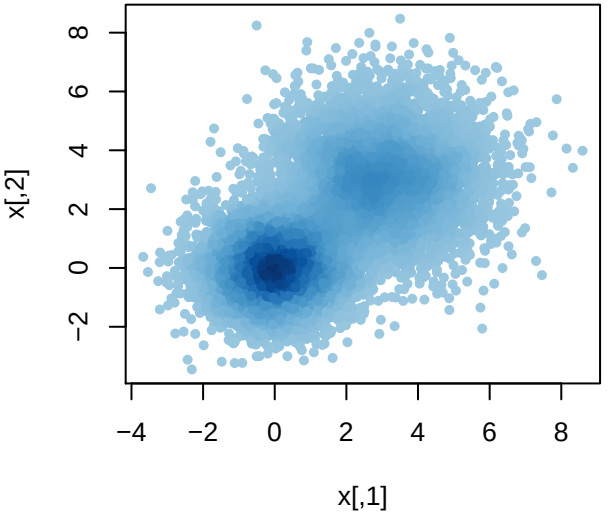

arrows(.) and segments(.)
help("segments")
y
x
1
0
−1
−2
0.2
0.4
0.6
0.8

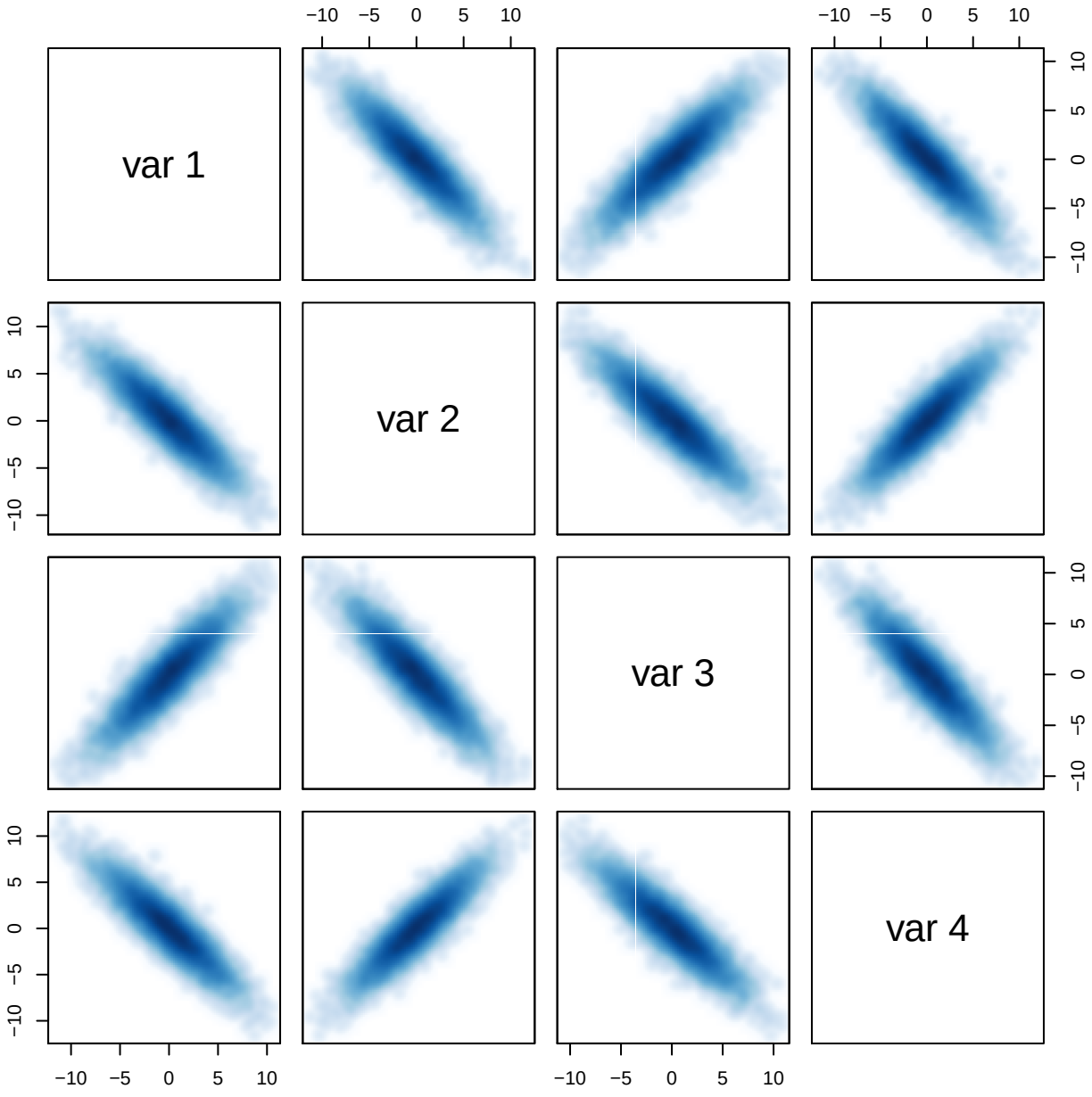


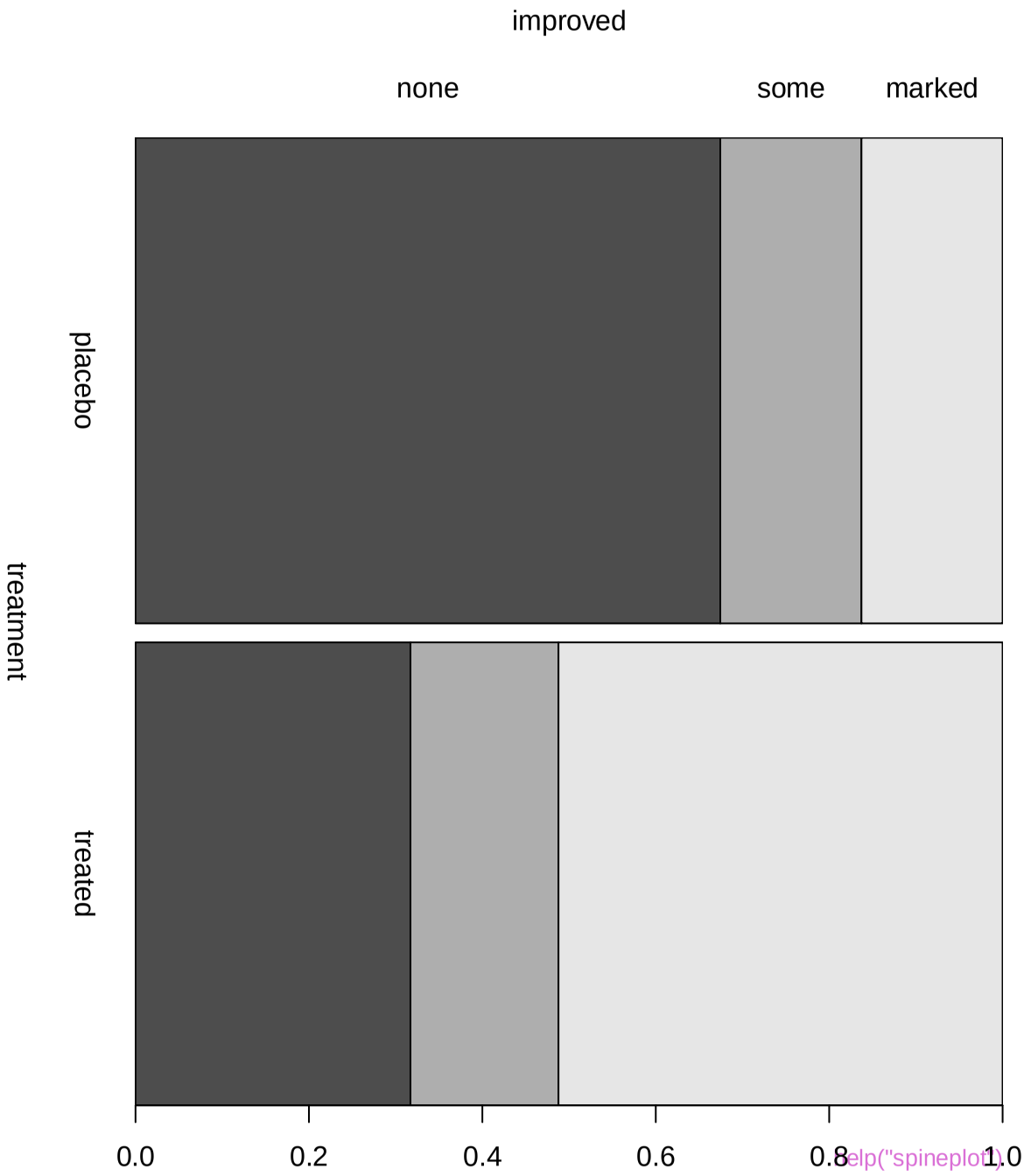


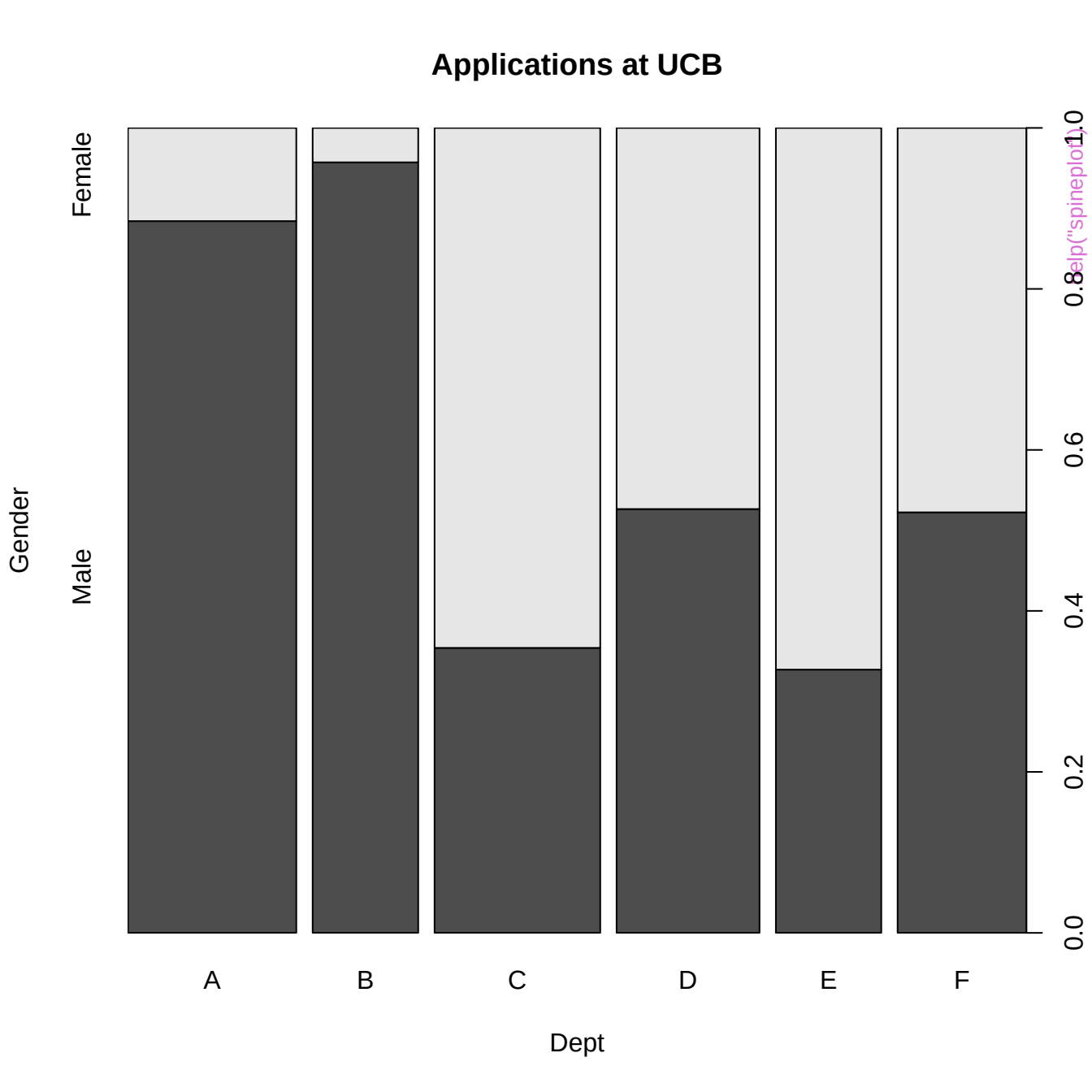
help("smoothScatter")



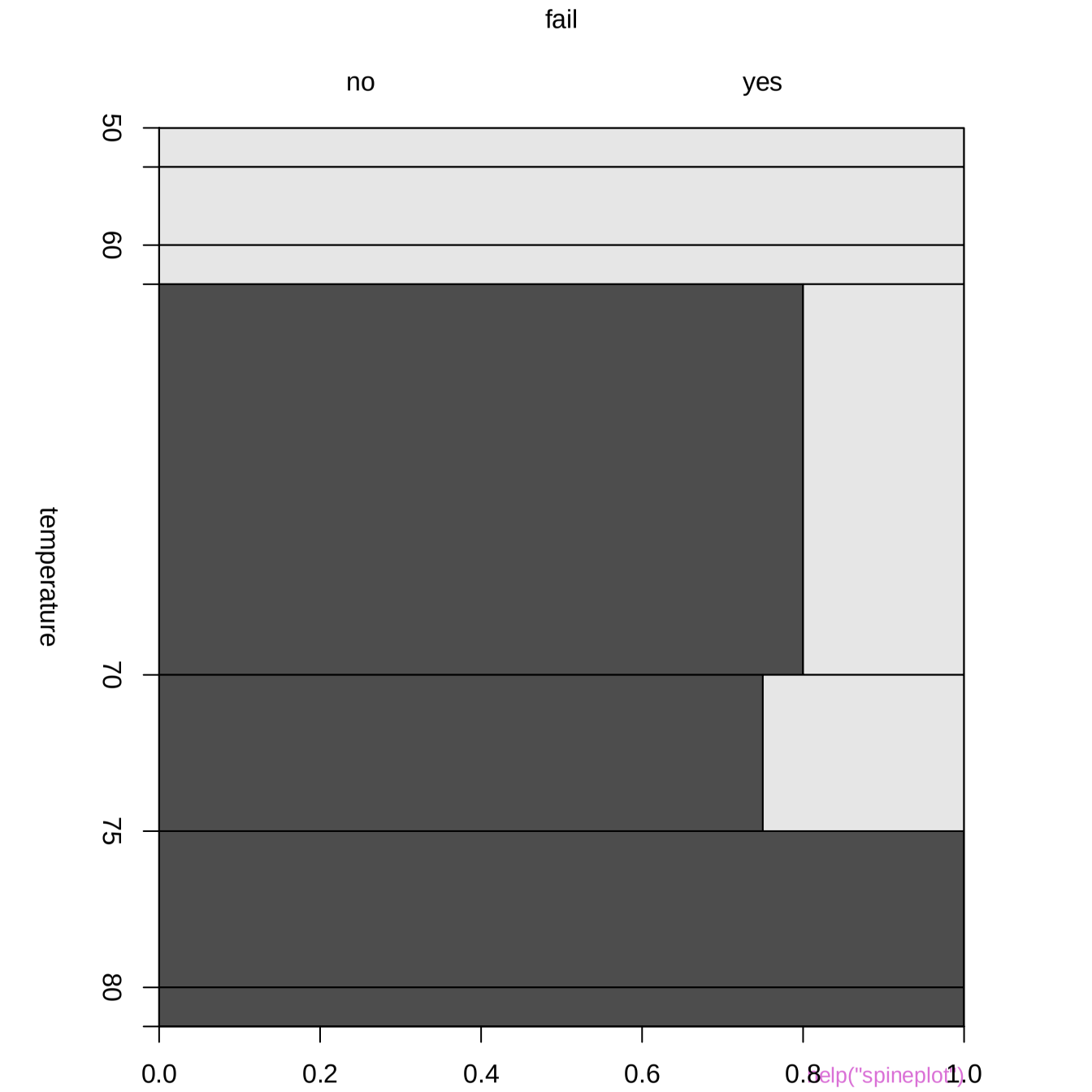


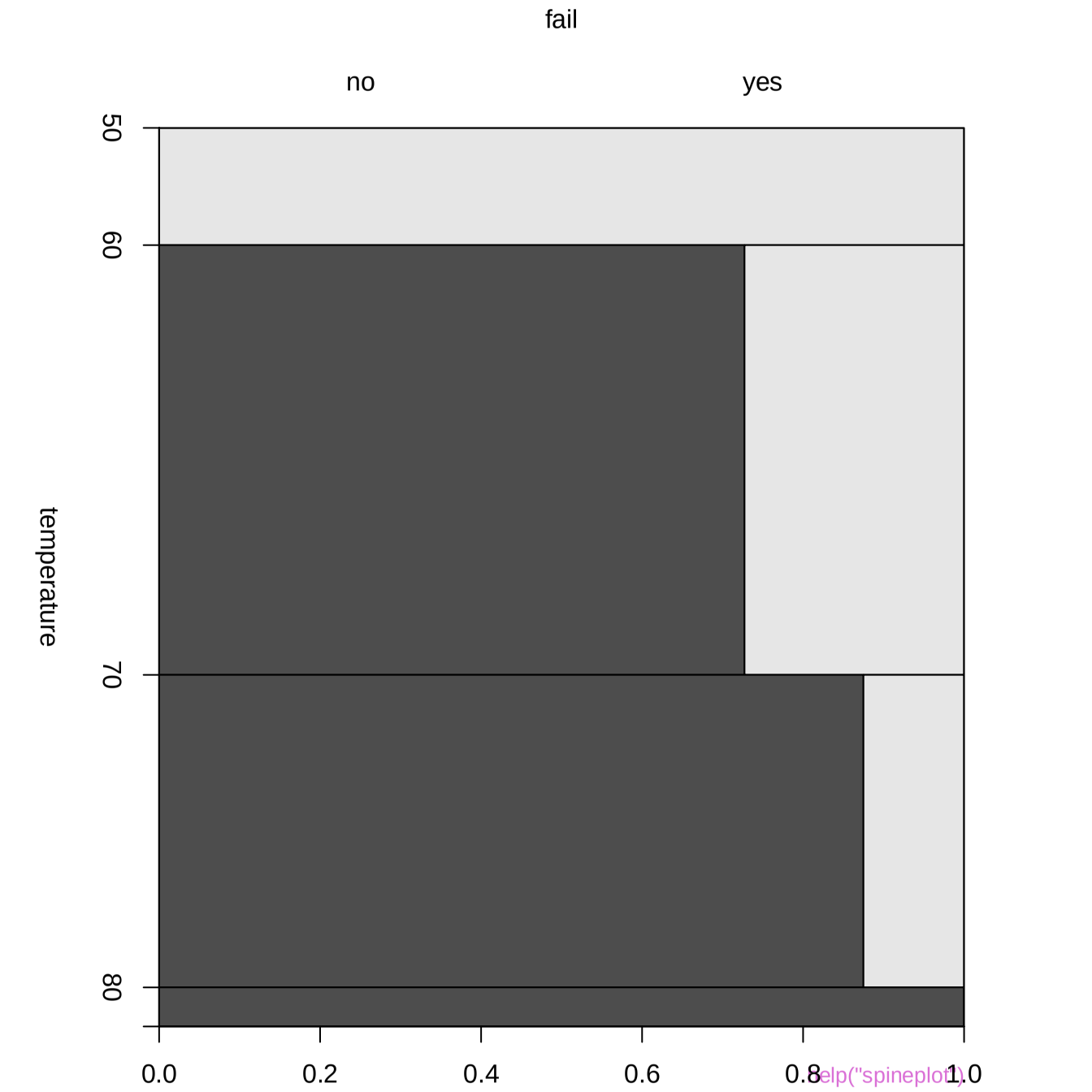

var 1
var 2
var 3
var 4
−10 −5 0 5 10
help("smoothScatter")


improved
none
some
marked
placebo
treated
treatment
0.0
0.2
0.4
0.6
0.8
1.0
elp("spineplot"),


Applications at UCB
Female
Male
Gender
0.0
0.2
0.4
0.6
0.8
1.0
help("spineplot")
A
B
C
D
E
F
Dept

Admissions at UCB
Admit
Rejected
Admitted
A
B
C
D
E
F
Dept
0.0
0.2
0.4
0.6
0.8
1.0
help("spineplot")


fail
no
yes
temperature
50
60
70
75
80
0.0
0.2
0.4
0.6
0.8
1.0
elp("spineplot"),


fail
no
yes
temperature
50
60
70
80
0.0
0.2
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0.6
0.8
1.0
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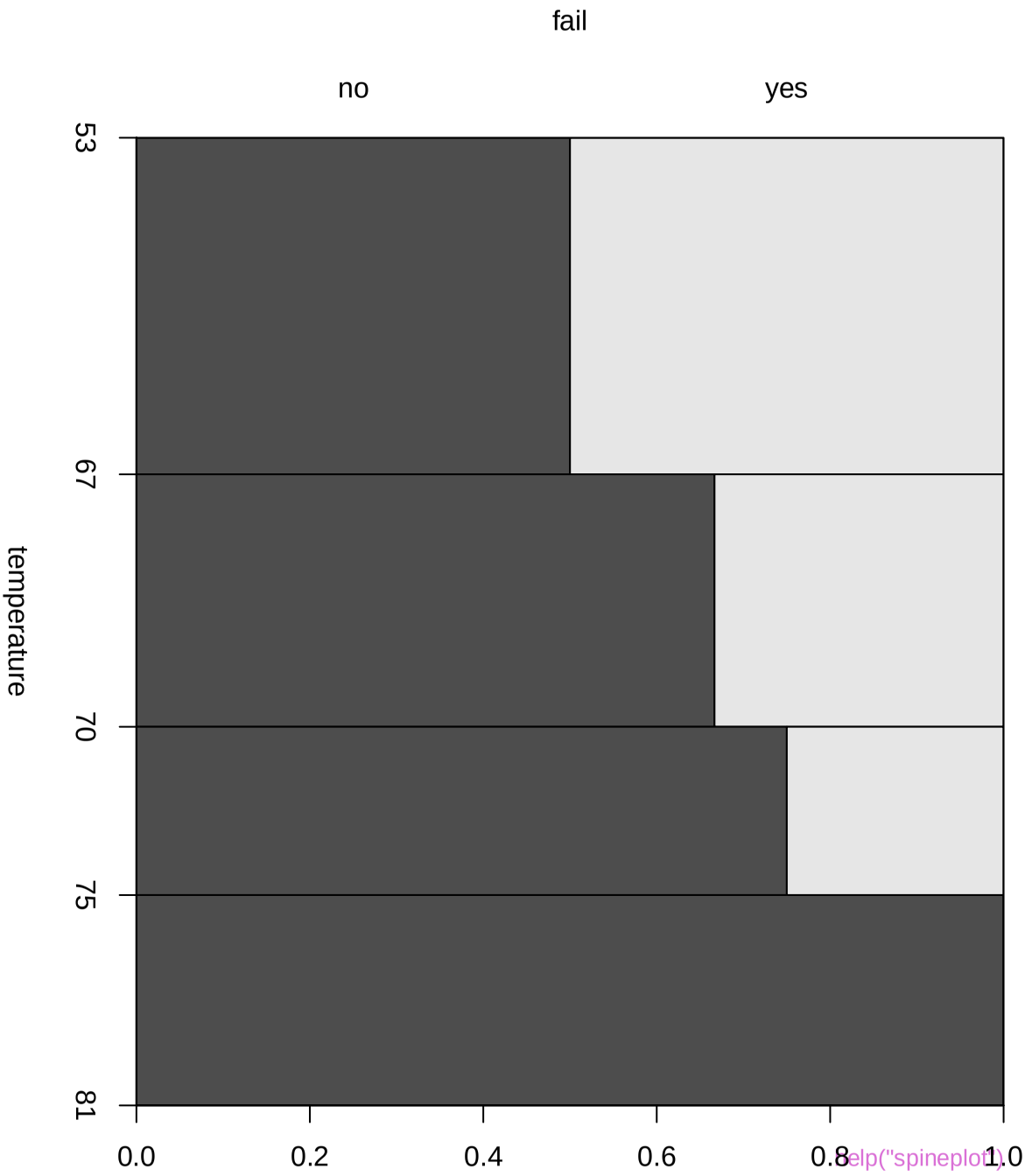
fail
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yes
temperature
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67
70
75
81
0.0
0.2
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0.6
0.8
1.0
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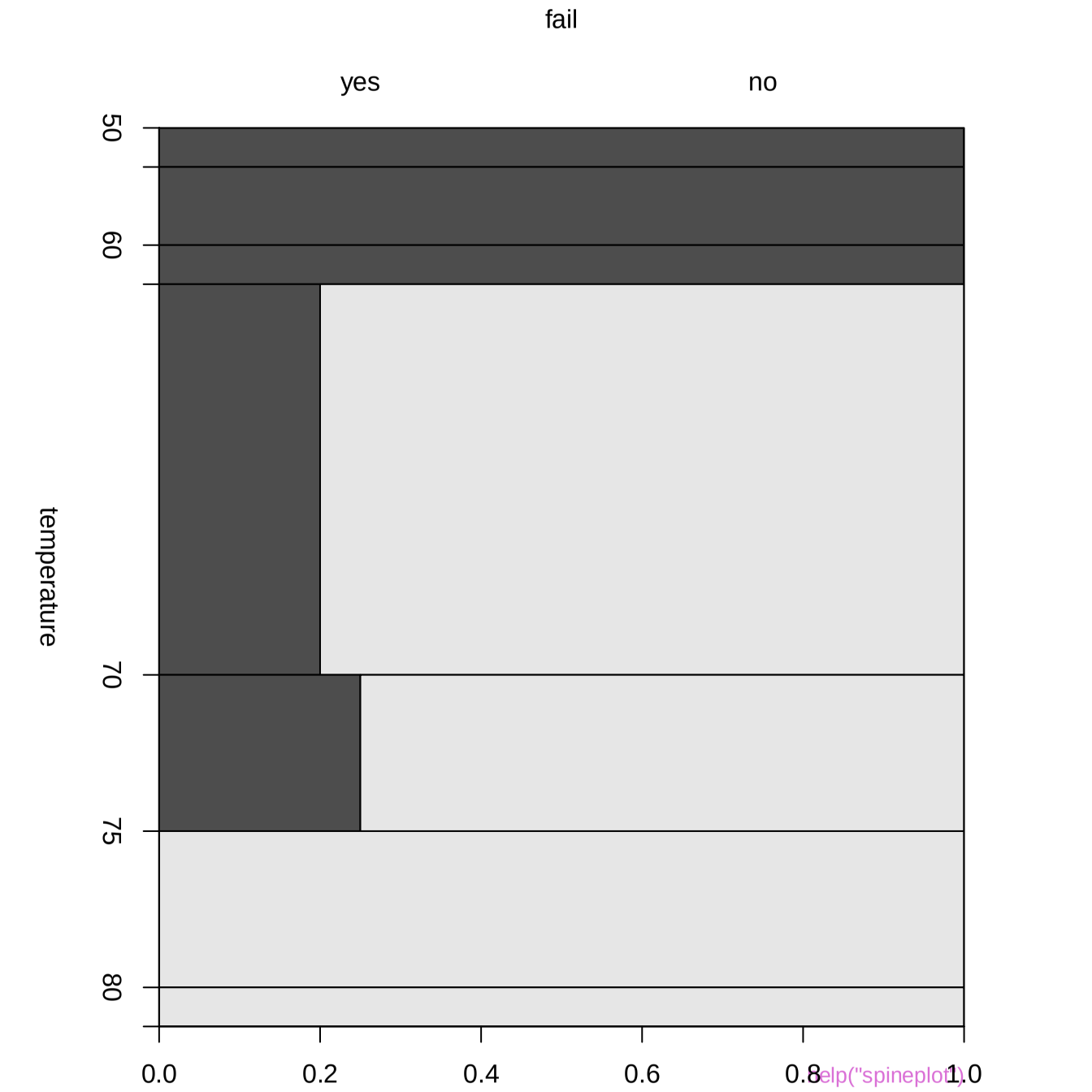
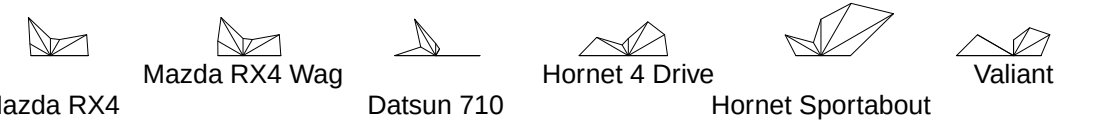
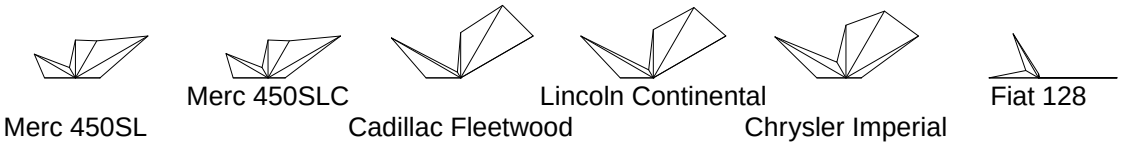
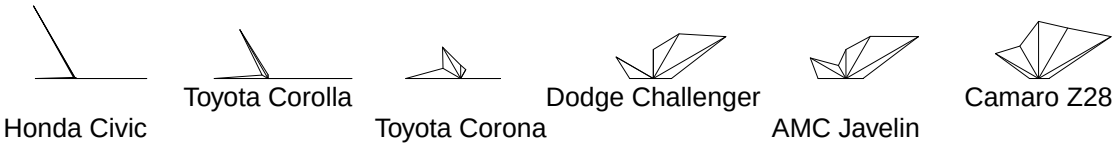
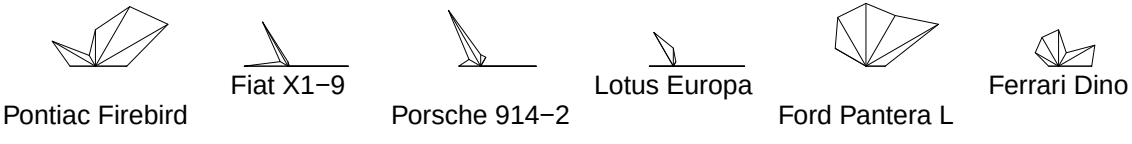

fail
yes
no
temperature
50
60
70
75
80
0.0
0.2
0.4
0.6
0.8
1.0
elp("spineplot"),

Motor Trend Cars : stars(*, full = F)



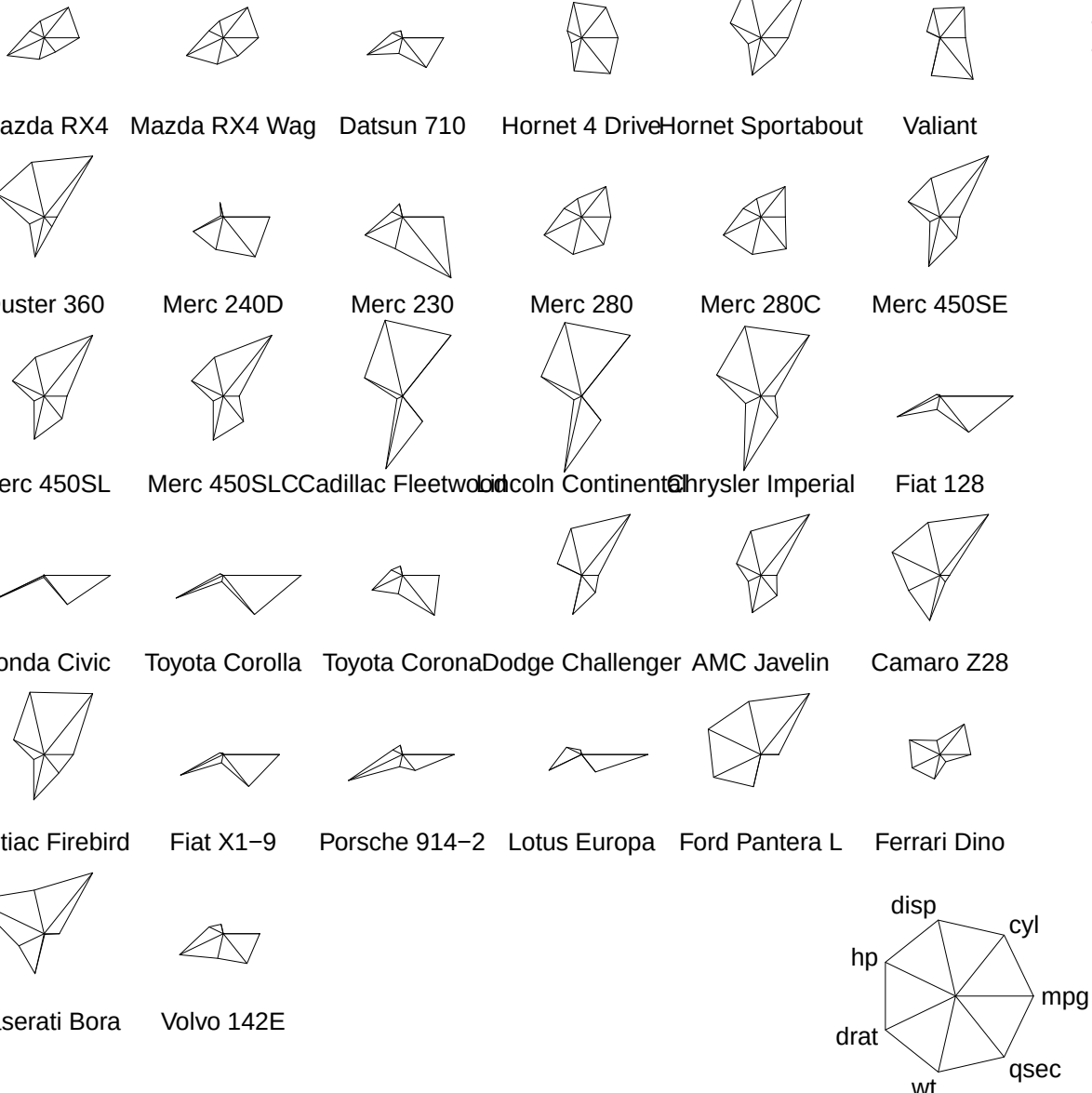




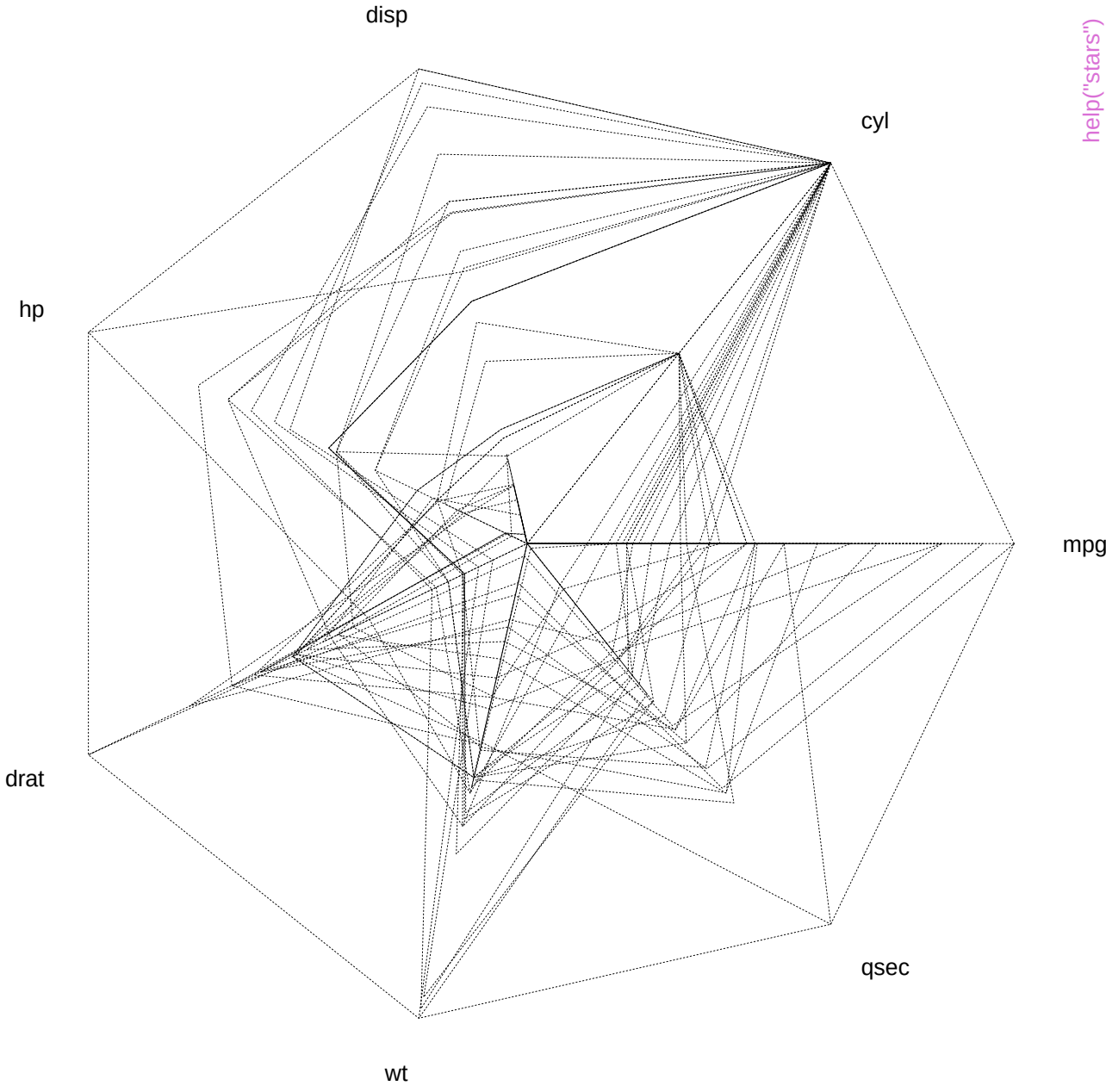


Motor Trend Cars : full stars()

help("stars")



Motor Trend Cars



help("stars")

Motor Trend Cars


Mazda RX4


Mazda RX4 Wag


Datsun 710


Hornet 4 Drive


Hornet Sportabout


Valiant


Duster 360


Merc 240D


Merc 230


Merc 280


Merc 280C


Merc 450SE


Merc 450SL


Merc 450SLC

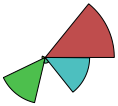

Cadillac Fleetwood


Lincoln Continental


Chrysler Imperial


Fiat 128


Honda Civic


Toyota Corolla


Toyota Corona


Dodge Challenger


AMC Javelin


Camaro Z28


Pontiac Firebird


Fiat X1−9


Porsche 914−2

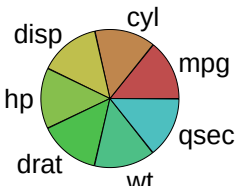

Lotus Europa


Ford Pantera L

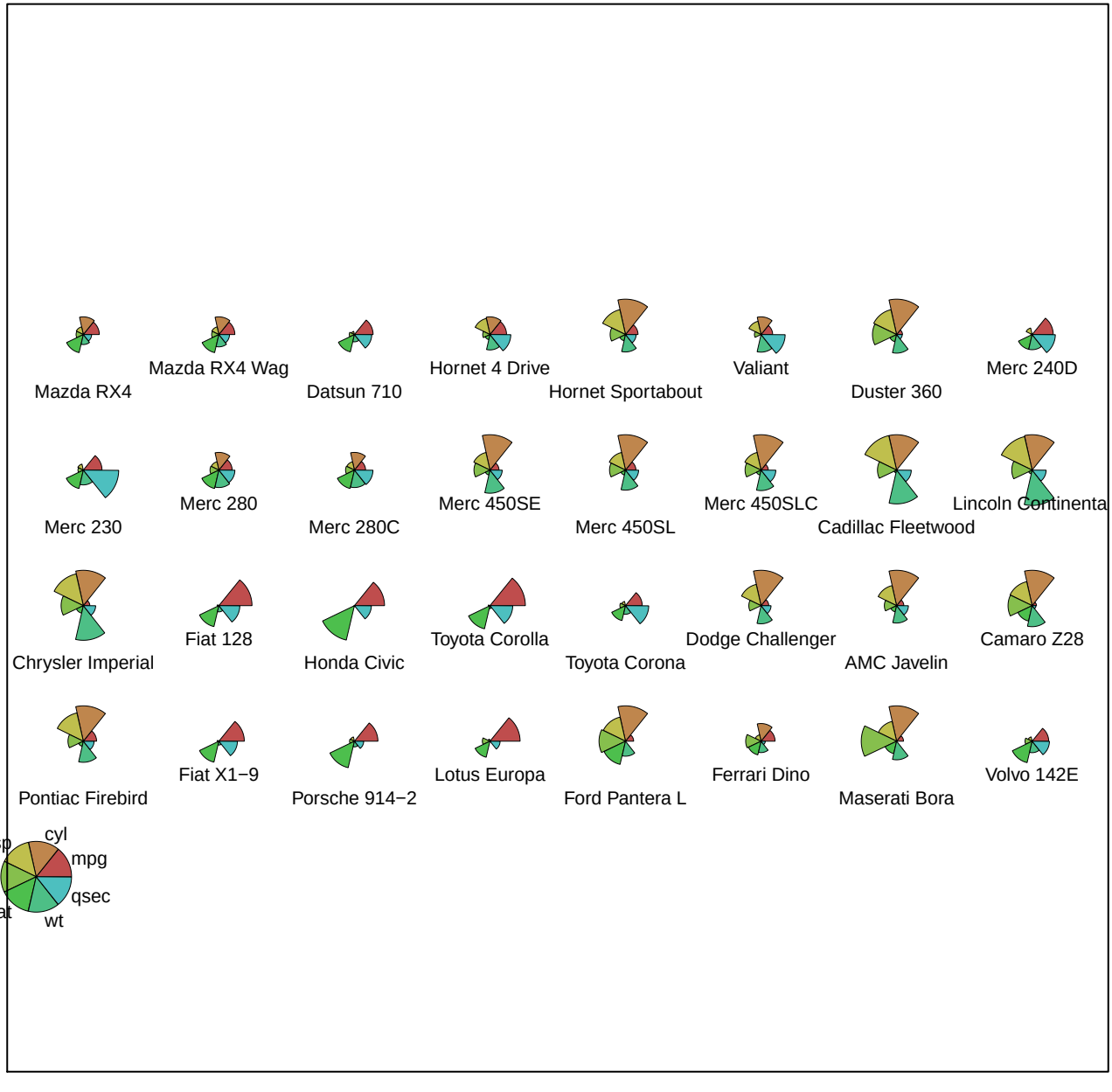

Ferrari Dino


Maserati Bora


Volvo 142E

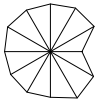


Motor Trend Cars

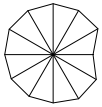


help("stars")

Judge not ...


AARONSON,L.H.

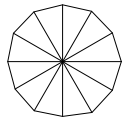

ALEXANDER,J.M.


ARMENTANO,A.J.

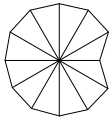

BERDON,R.I.


BRACKEN,J.J.

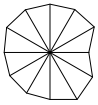

BURNS,E.B.


CALLAHAN,R.J.

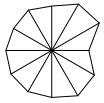

COHEN,S.S.


DALY,J.J.

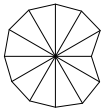

DANNEHY,J.F.


DEAN,H.H.


DEVITA,H.J.


DRISCOLL,P.J.

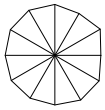

GRILLO,A.E.

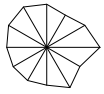

HADDEN,W.L.JR.


HAMILL,E.C.


HEALEY.A.H.


HULL,T.C.


LEVINE,I.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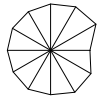
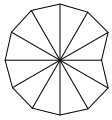

MARTIN,L.F.


MCGRATH,J.F.


MIGNONE,A.F.


MISSAL,H.M.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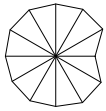
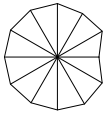
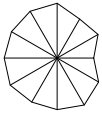
NARUK,H.J.


O'BRIEN,F.J.

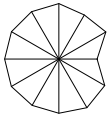

O'SULLIVAN,T.J.


PASKEY,L.


RUBINOW,J.E.


SADEN.G.A.

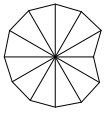

SATANIELLO,A.G.


SHEA,D.M.


SHEA,J.F.JR.


SIDOR,W.J.


SPEZIALE,J.A.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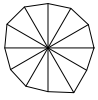
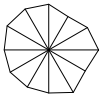
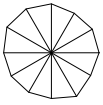
STAPLETON,J.F.


TESTO,R.J.

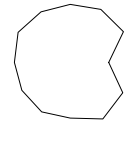

TIERNEY,W.L.JR.

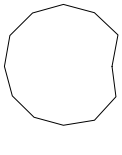

WALL,R.A.


WRIGHT,D.B.


ZARRILLI,K.J.

help("stars")


AARONSO

ALEXAND

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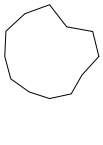
BERDON

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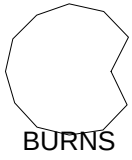
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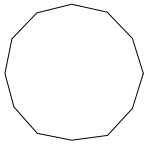
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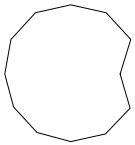
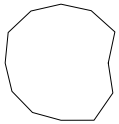
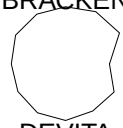
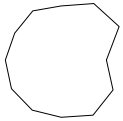
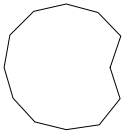
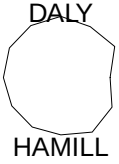
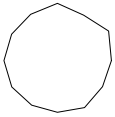
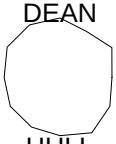
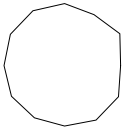
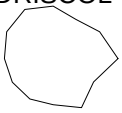
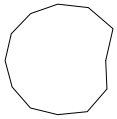
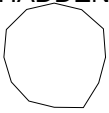
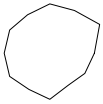
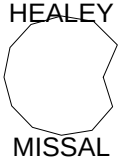
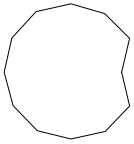
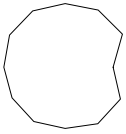
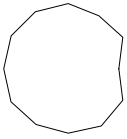
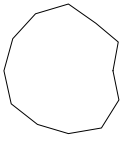
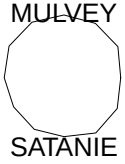
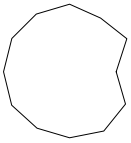
COHEN

DALY

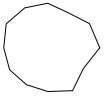
DANNEHY

DEAN

DEVITA

DRISCOL

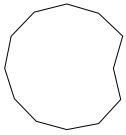
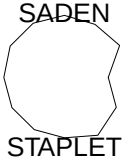
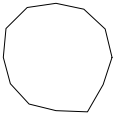
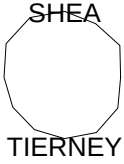
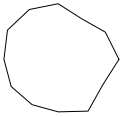
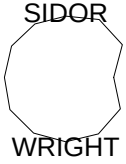
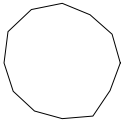
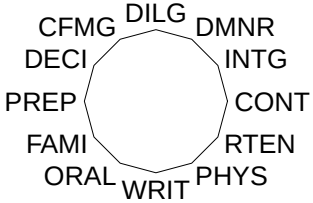
GRILLO

HADDEN

HAMILL

HEALEY

HULL

LEVINE

LEVISTE

MARTIN

MCGRATH

MIGNONE

MISSAL

MULVEY

NARUK

O'BRIEN

O'SULLI

PASKEY

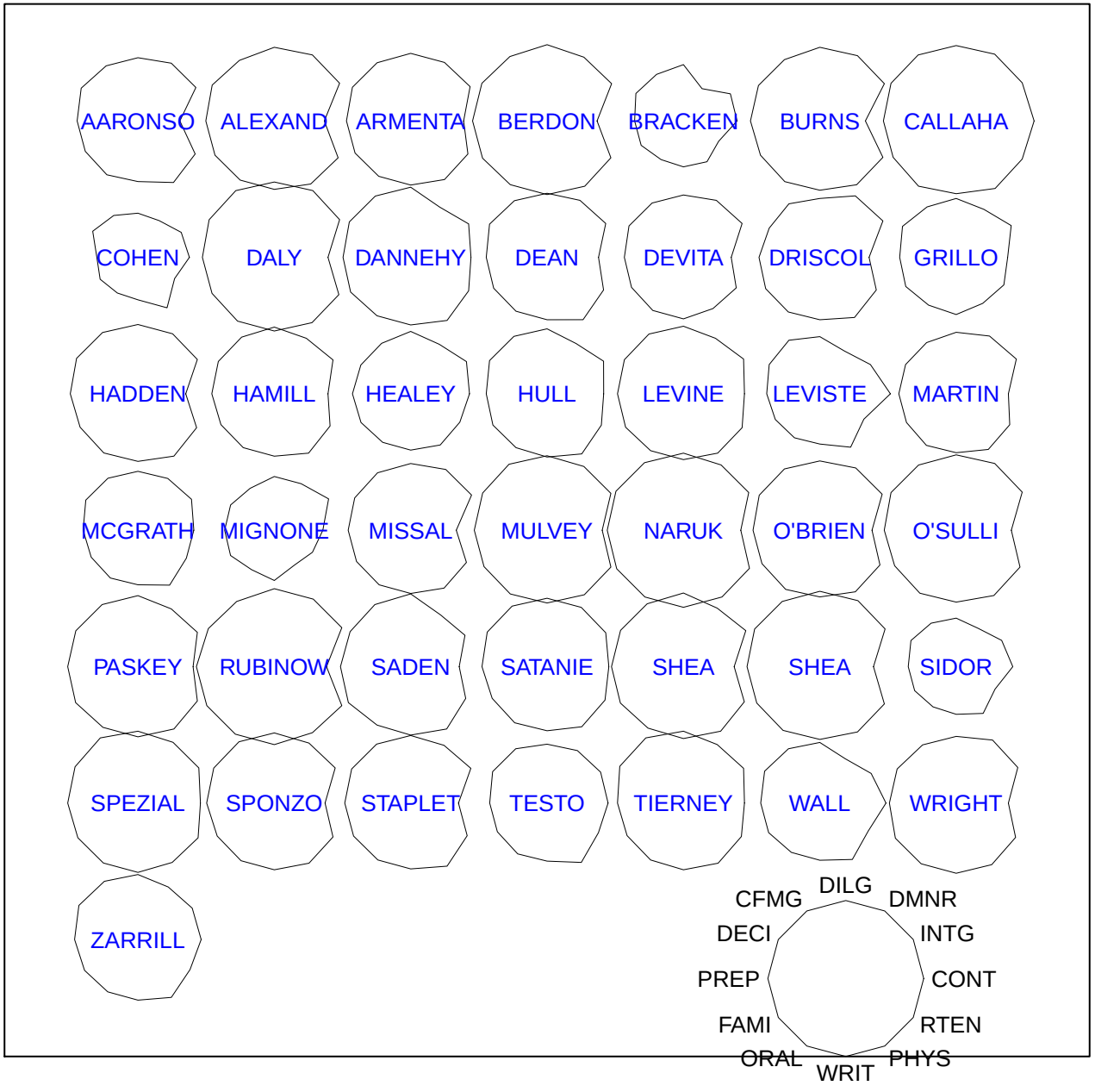
RUBINOW

SADEN

SATANIE

SHEA

SHEA

SIDOR

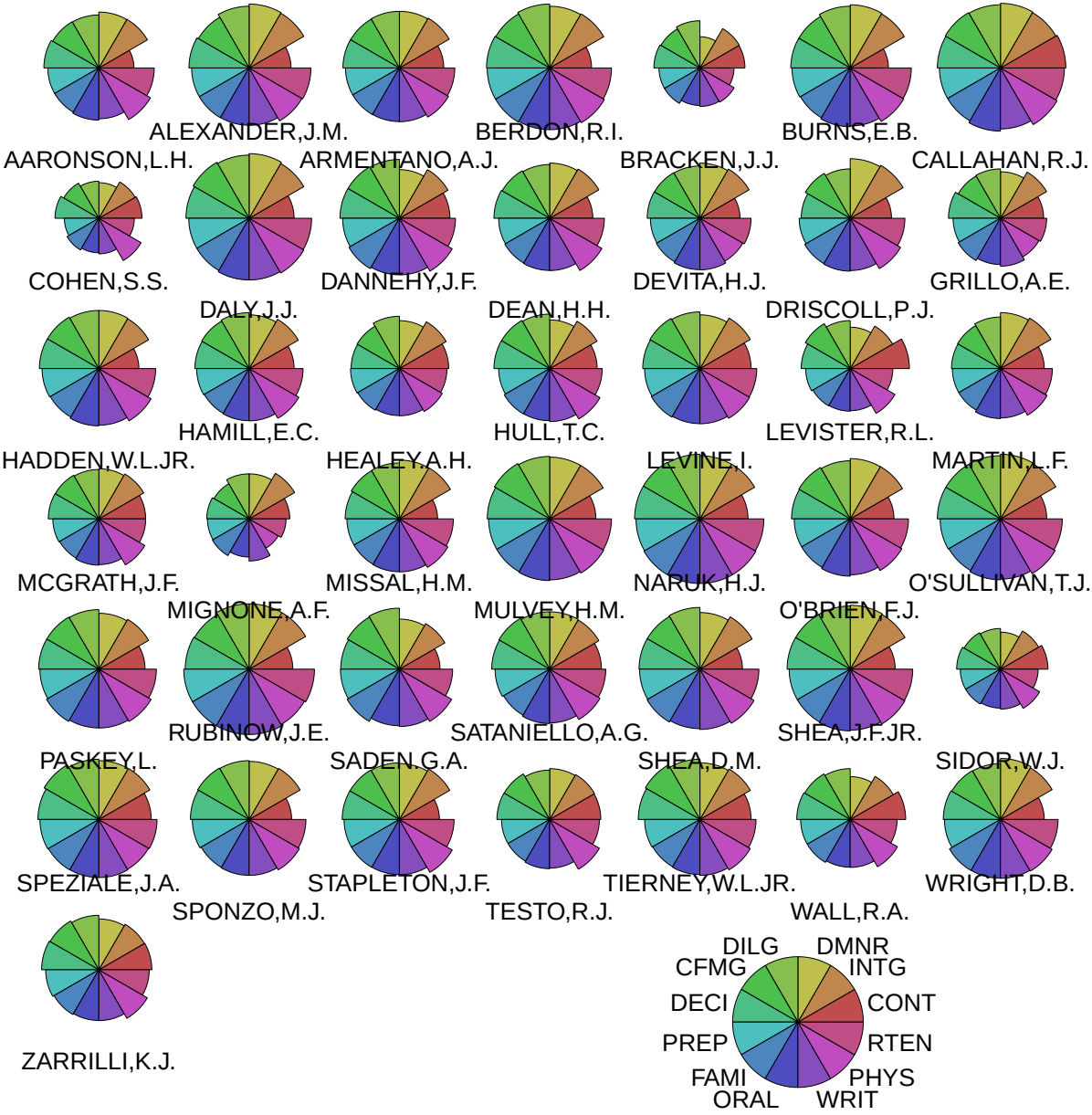
SPEZIAL

SPONZO

STAPLET

TESTO

TIERNEY

WALL

WRIGHT

ZARRILL


help("stars")

Judge not ...

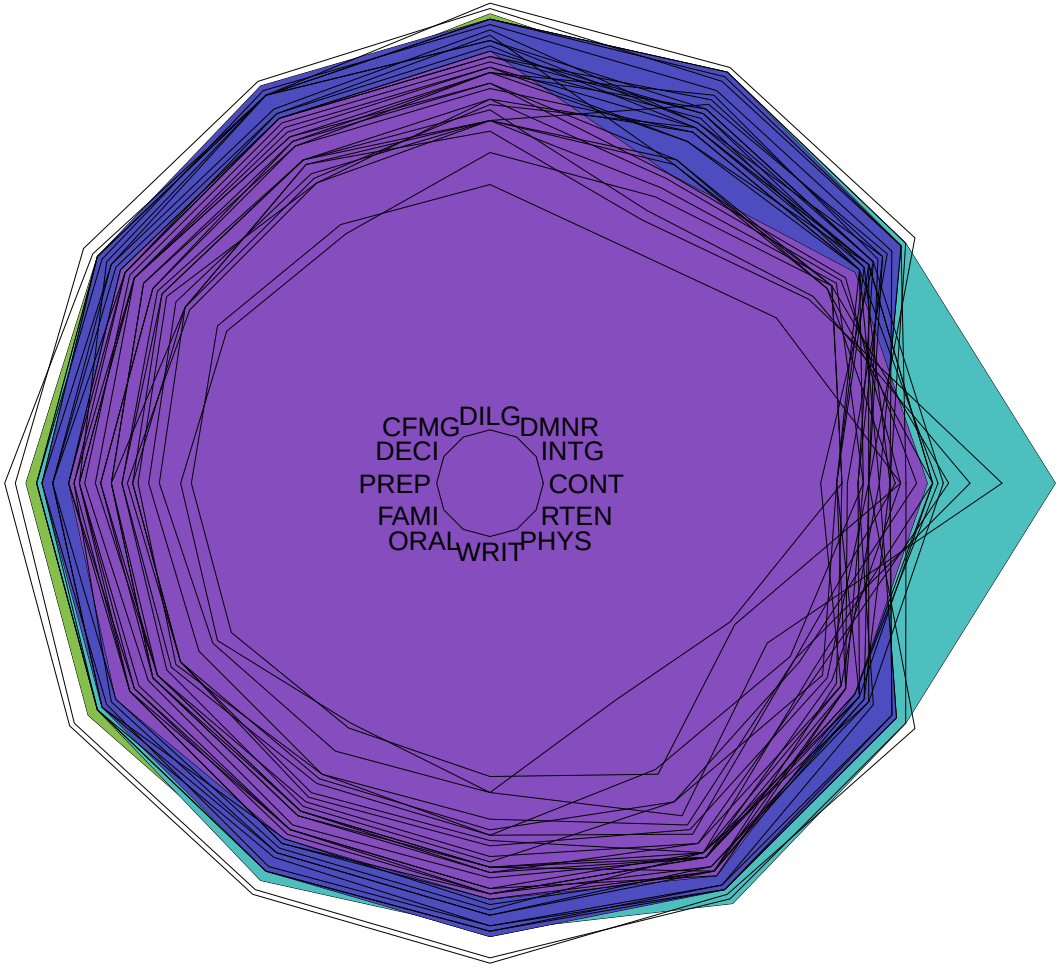


help("stars")


ALEXANDER,J.M.
BERDON,R.I.
BURNS,E.B.
AARONSON,L.H.
ARMENTANO,A.J.
BRACKEN,J.J.
CALLAHAN,R.J.
COHEN,S.S.
DALY,J.J.
DANNEHY,J.F.
DEAN,H.H.
DEVITA,H.J.
DRISCOLL,P.J.
GRILLO,A.E.
HADDEN,W.L.JR.
HAMILL,E.C.
HEALEY,A.H.
HULL,T.C.
LEVINE,I.
LEVISTER,R.L.
MARTIN,L.F.
MCGRATH,J.F.
MIGNONE,A.F.
MISSAL,H.M.
MULVEY,H.M.
NARUK,H.J.
O'BRIEN,F.J.
O'SULLIVAN,T.J.
PASKEY,L.
RUBINOW,J.E.
SADEN,G.A.
SATANIELLO,A.G.
SHEA,D.M.
SHEA,J.F.JR.
SIDOR,W.J.
SPEZIALE,J.A.
SPONZO,M.J.
STAPLETON,J.F.
TESTO,R.J.
TIERNEY,W.L.JR.
WALL,R.A.
WRIGHT,D.B.
ZARRILLI,K.J.
DILG
DMNR
CFMG
INTG
DECI
CONT
PREP
RTEN
FAMI
PHYS
ORAL
WRIT

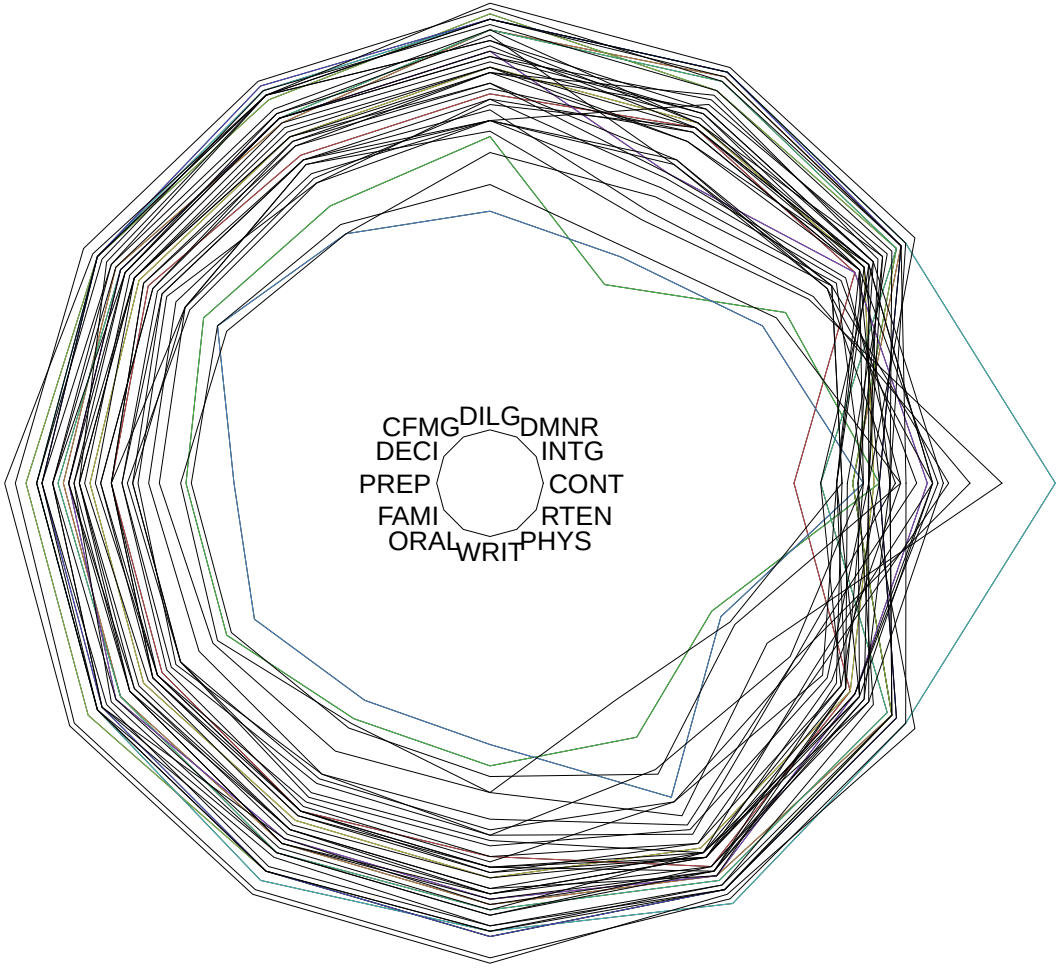
help("stars")

US Judges rated



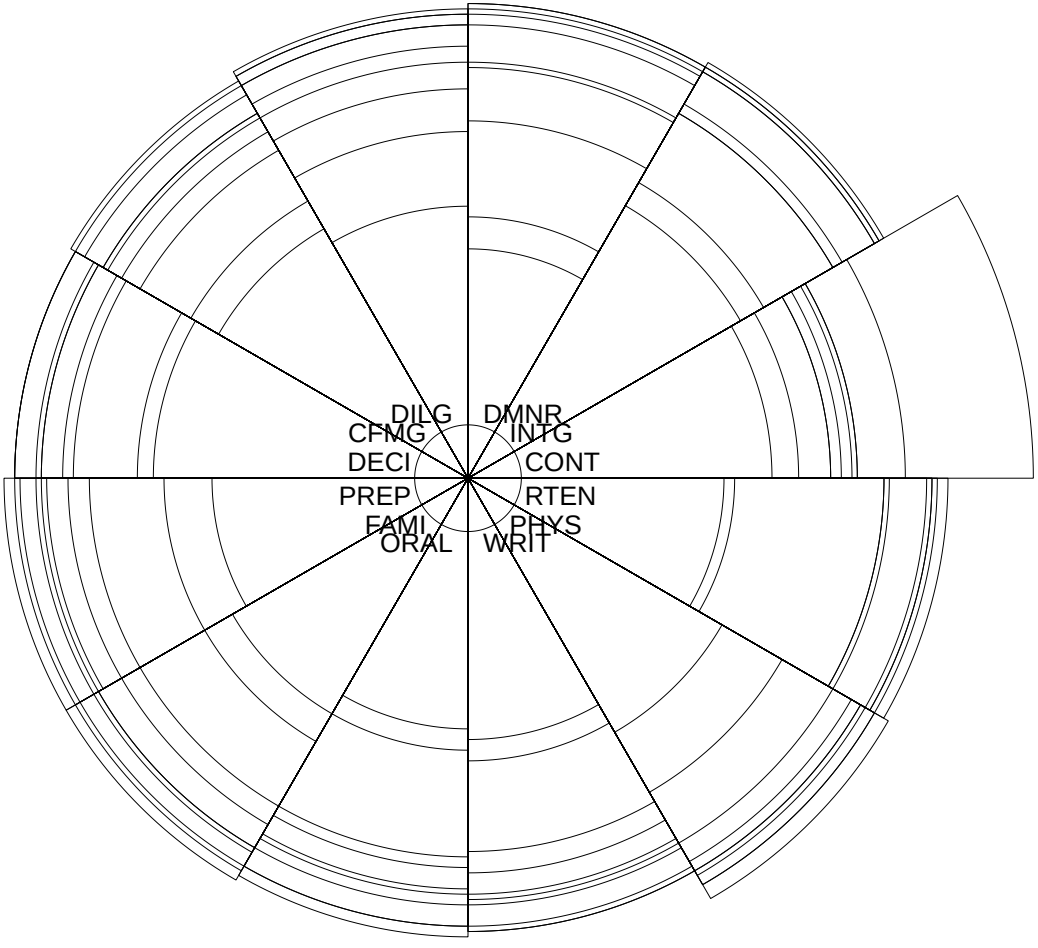
help("stars")

US Judges rated



help("stars")

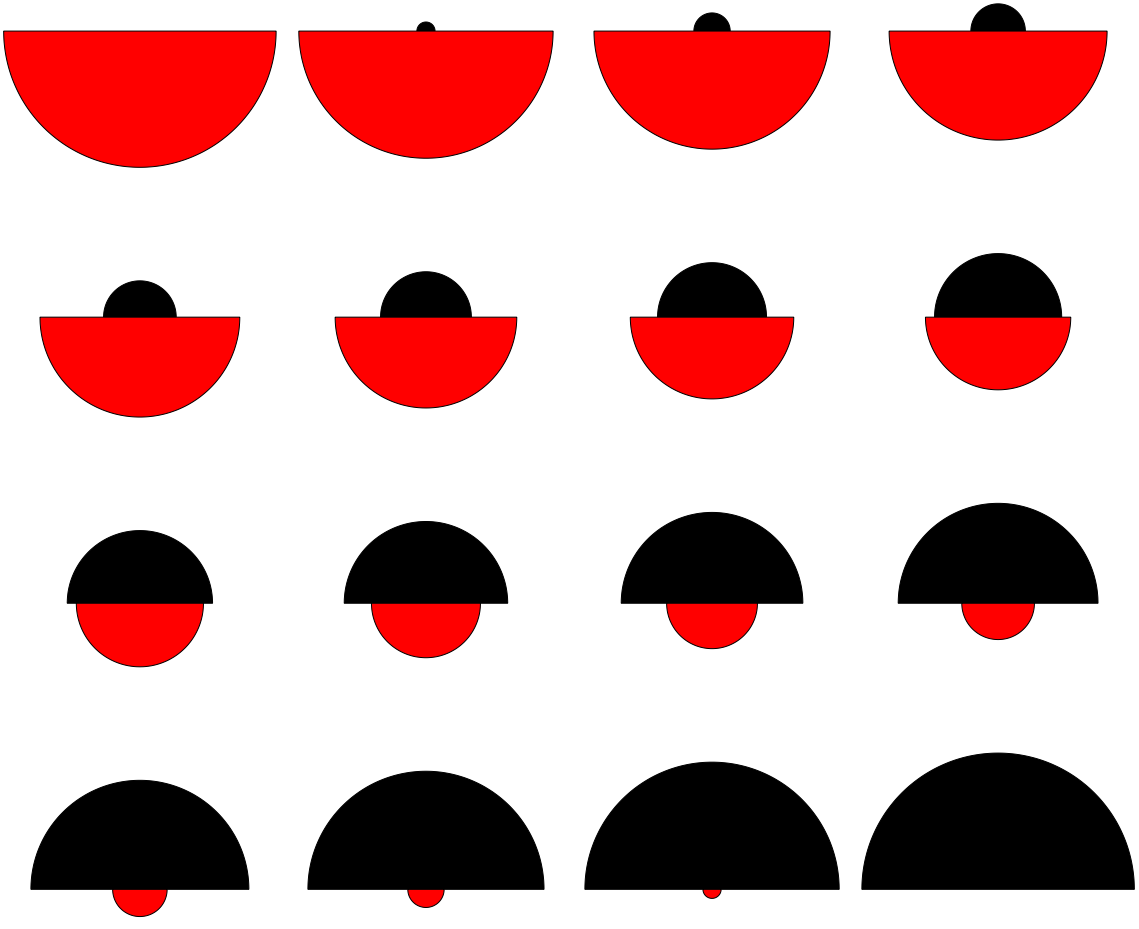
US Judges 1−10

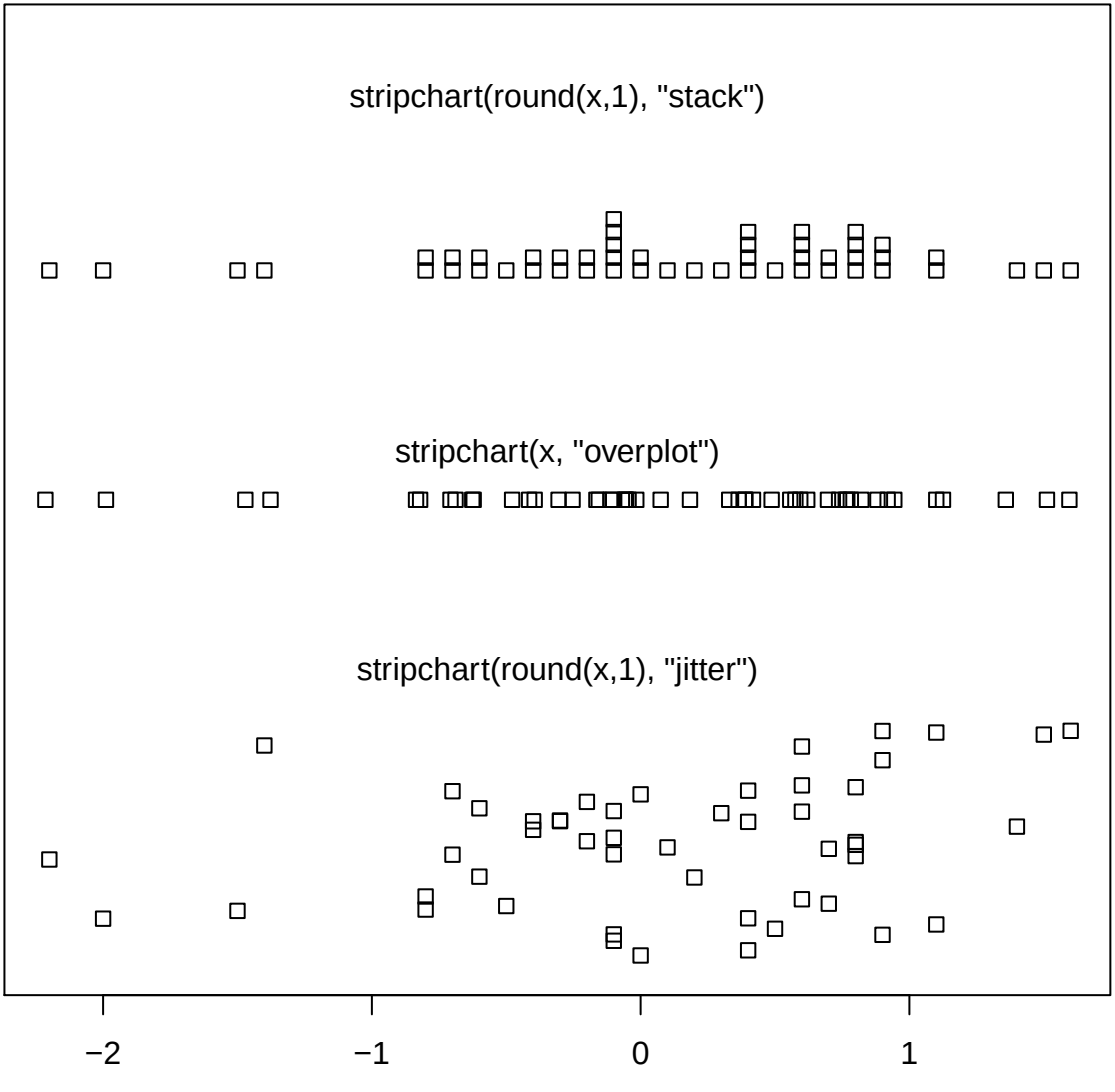


help("stars")

A Joke −− do *not* use symbols on 2D data!

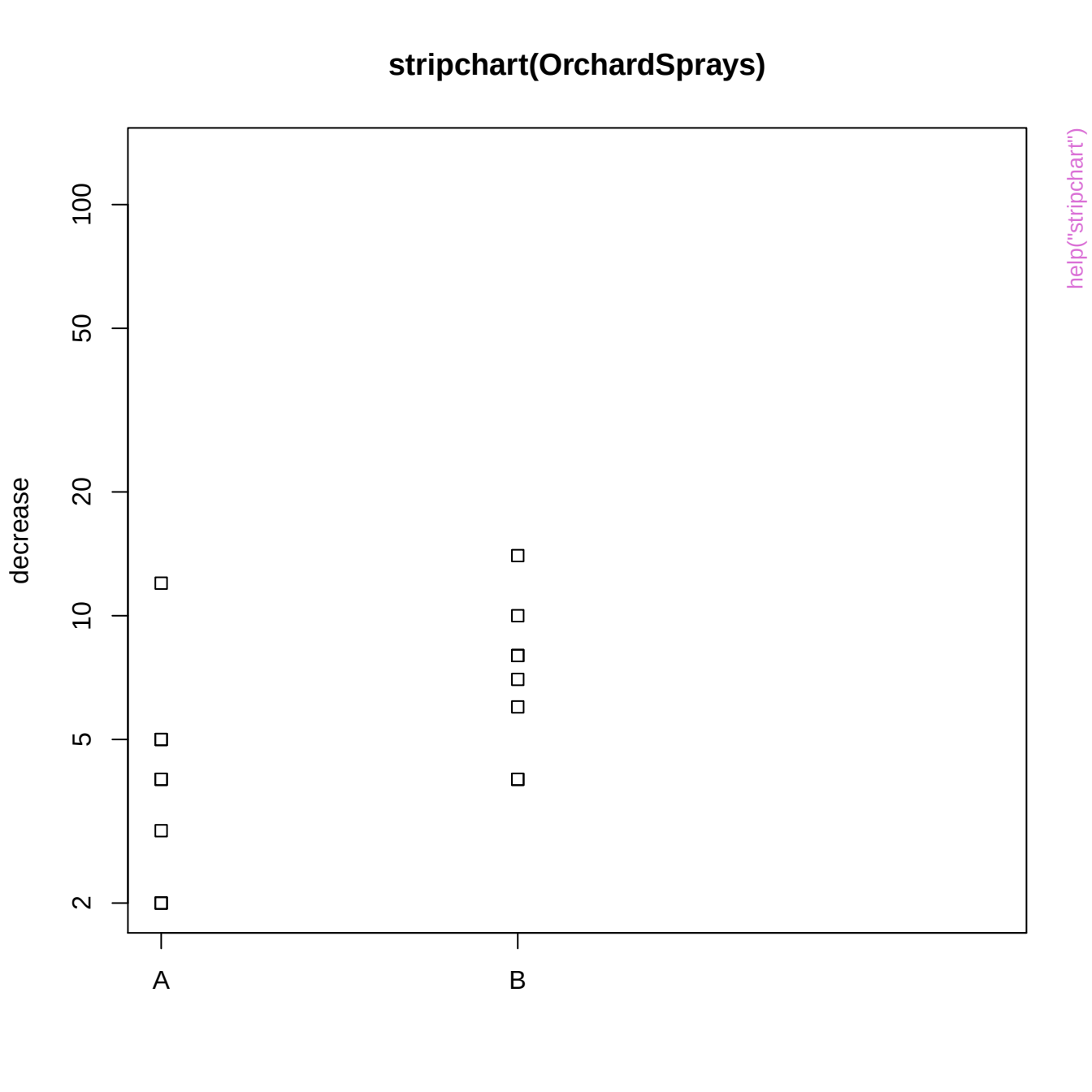
help("stars")

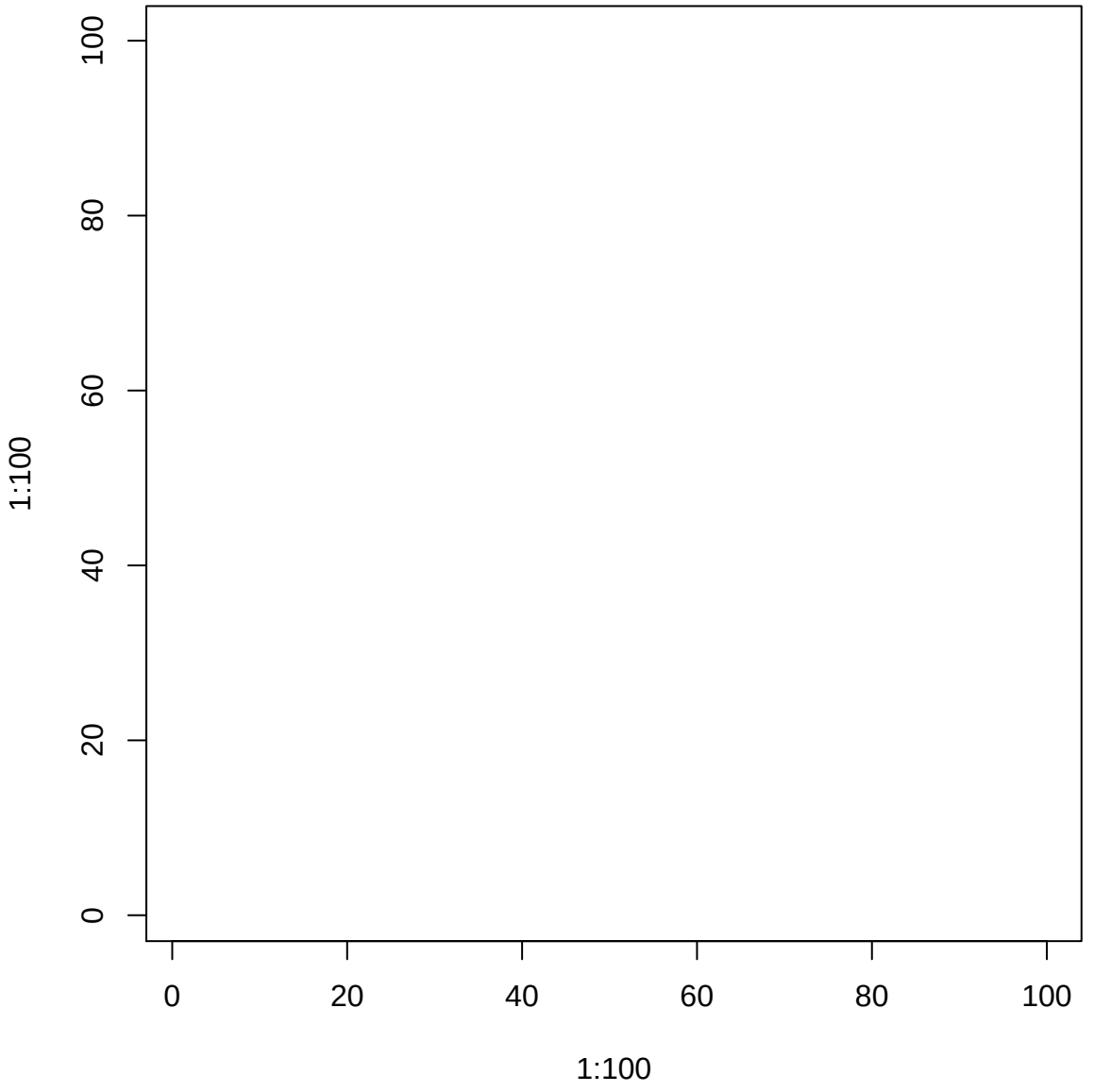


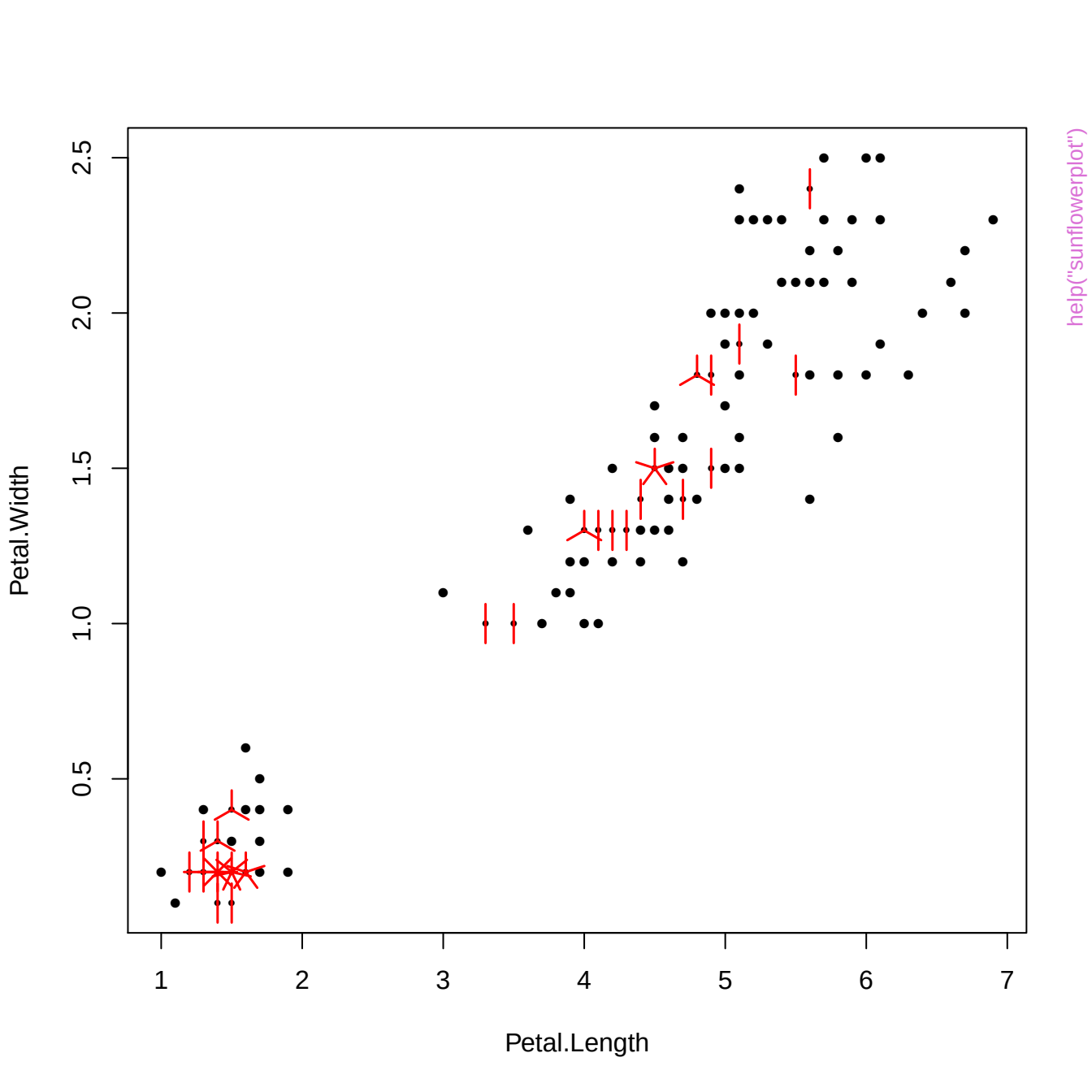


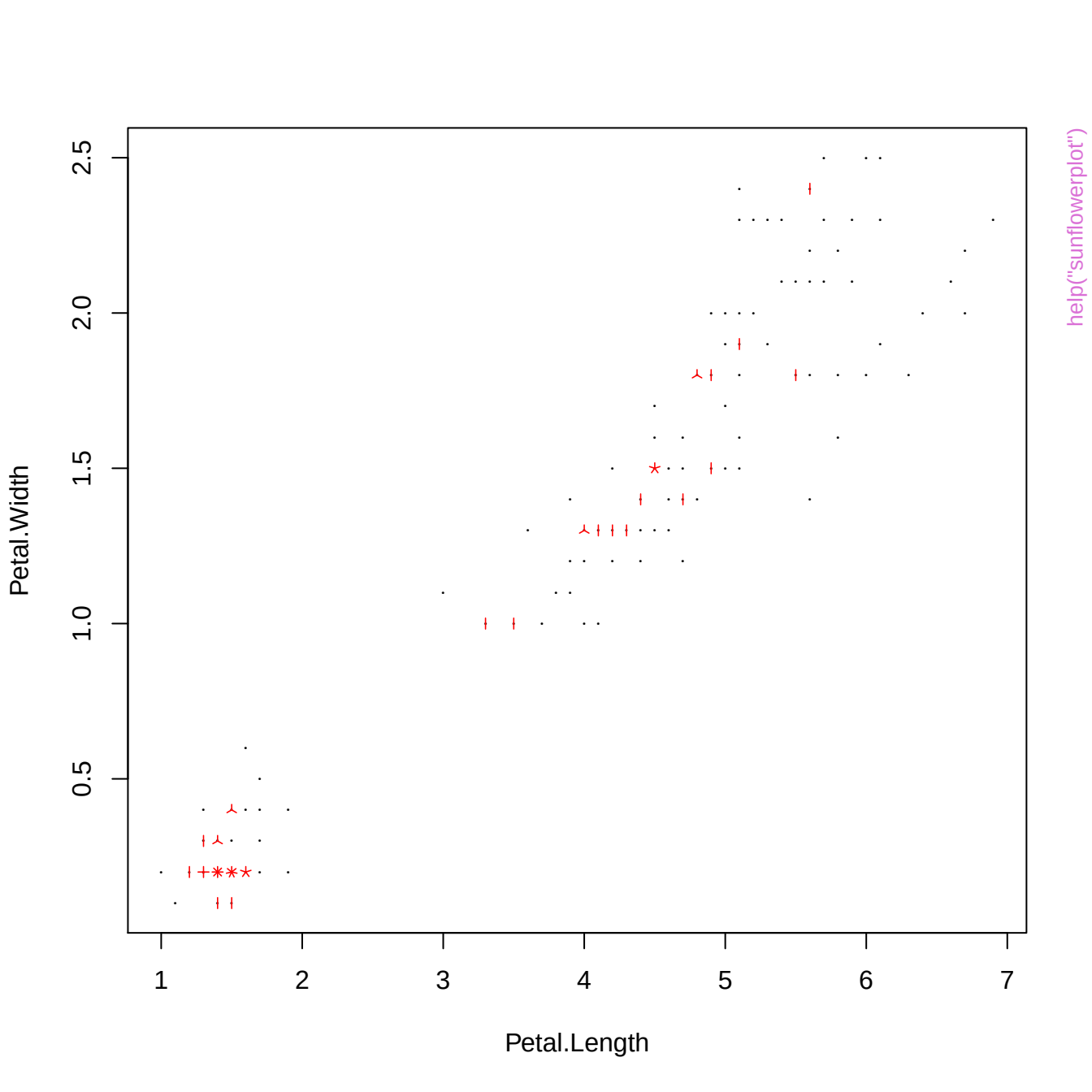
help("stripchart")

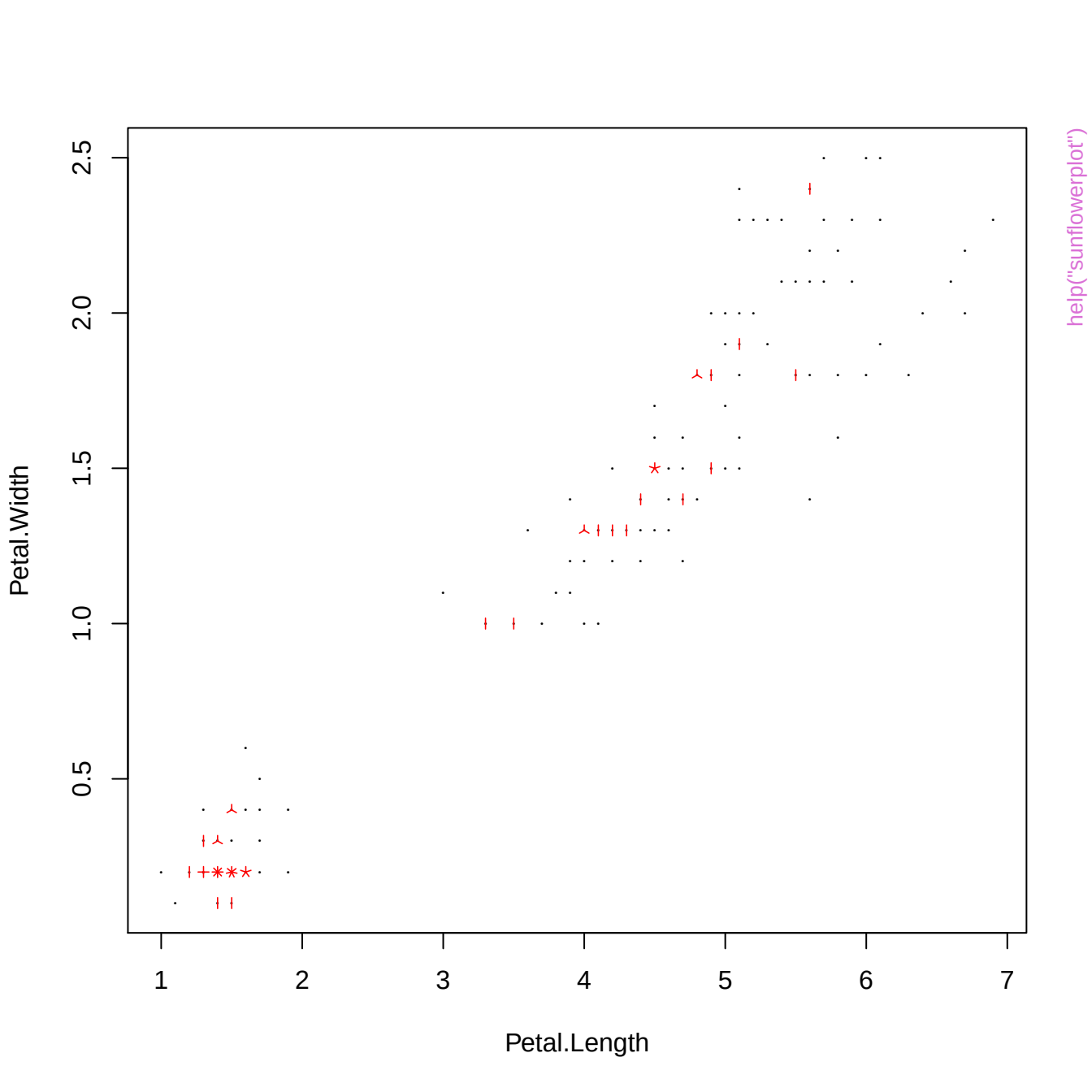
stripchart(OrchardSprays)
decrease
2
5
10
20
50
100
A
B
C
D
E
F
G
H
help("stripchart")

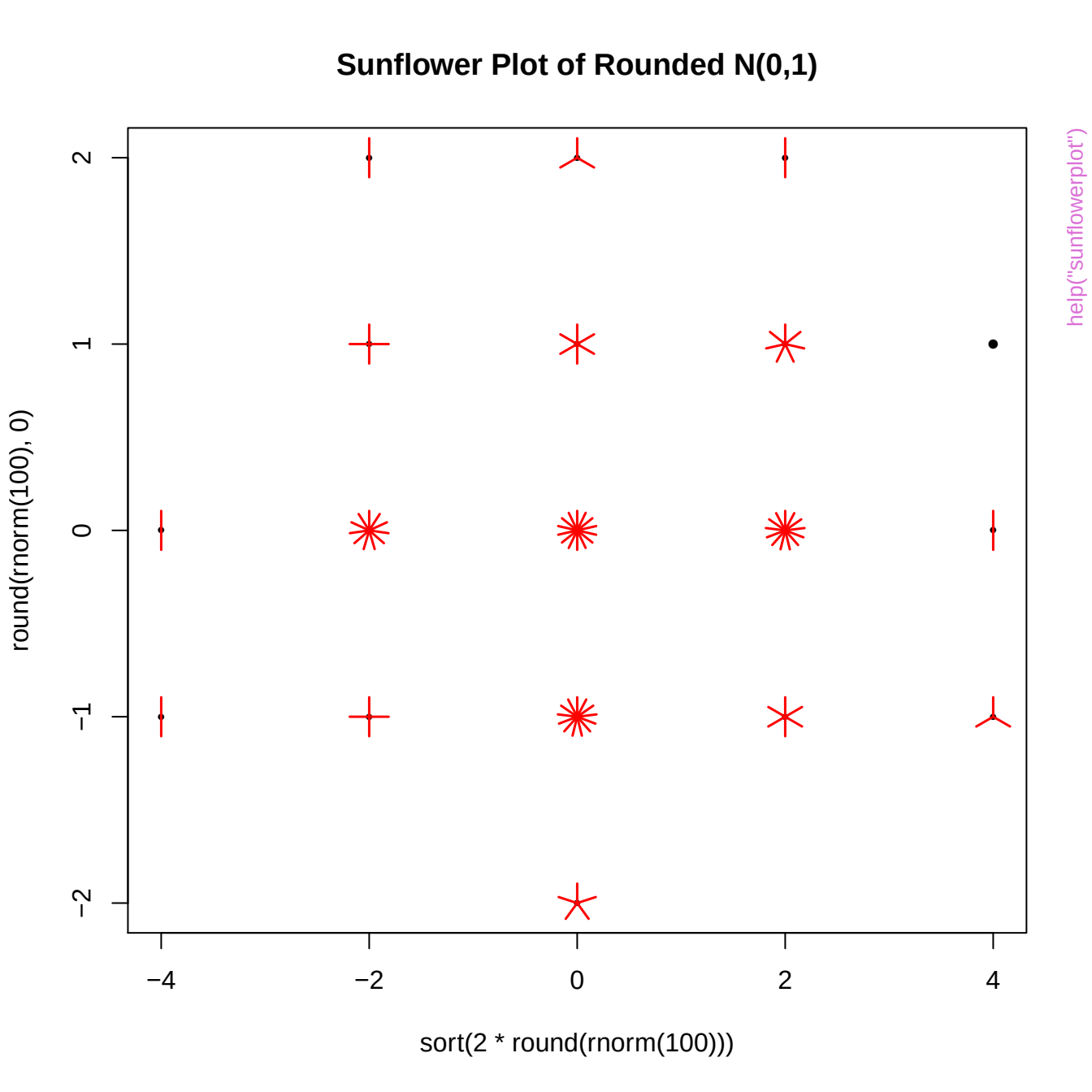

stripchart(OrchardSprays)
decrease
2
5
10
20
50
100
A
B
help("stripchart")

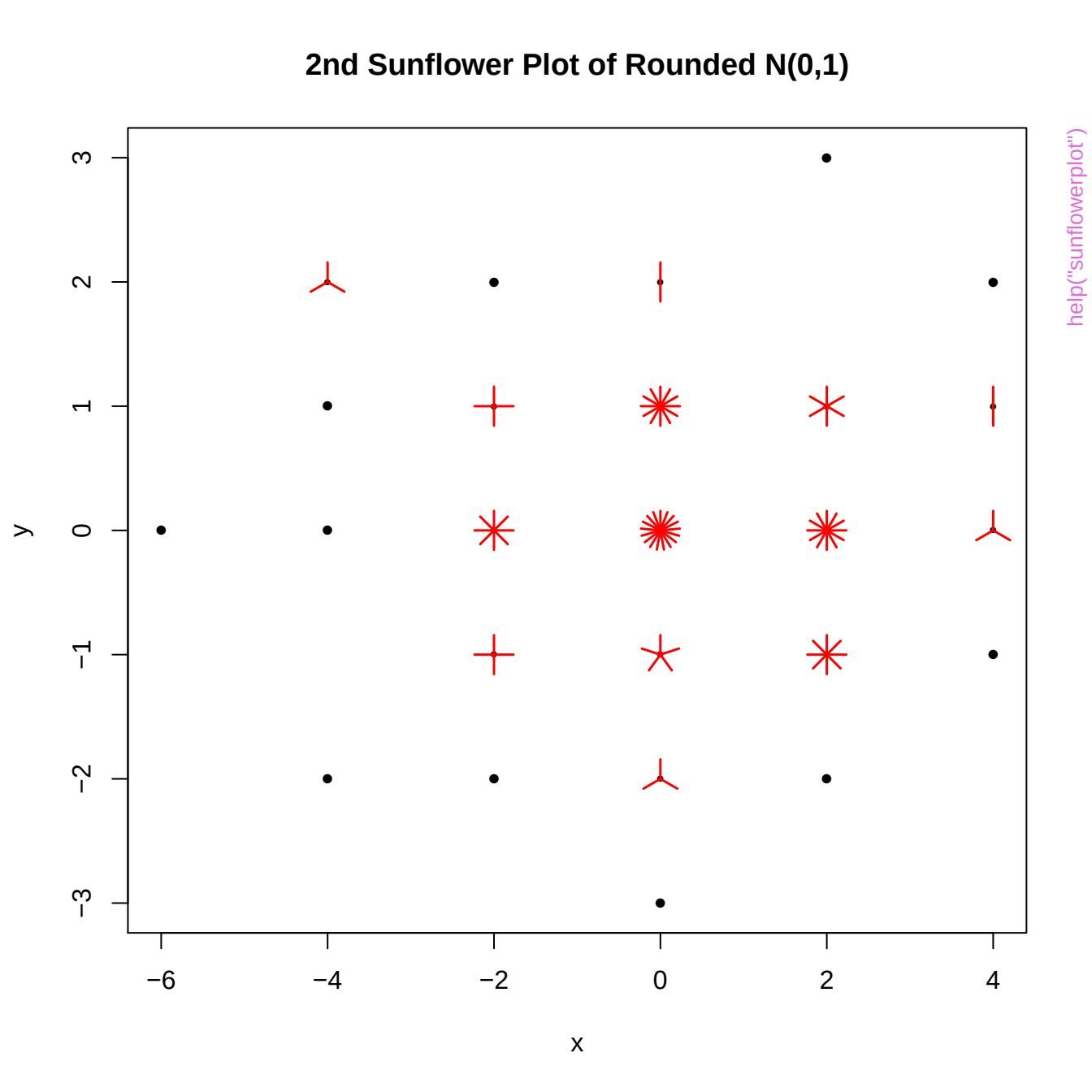

help("strwidth")
1:100
0
20
40
60
80
100
1:100
0
20
40
60
80
100

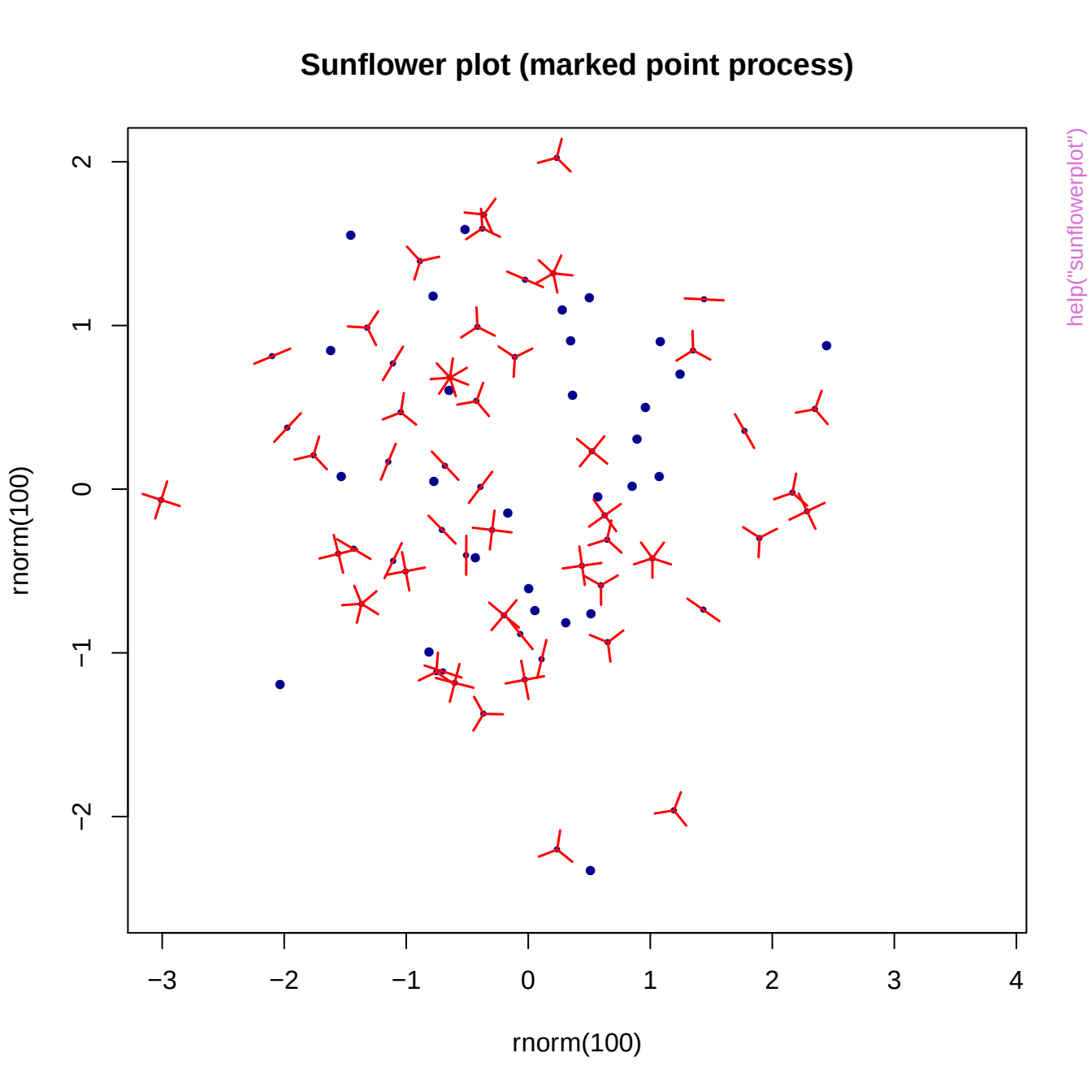

Petal.Width
0.5
1.0
1.5
2.0
2.5
1
2
3
4
5
6
7
Petal.Length
help("sunflowerplot")

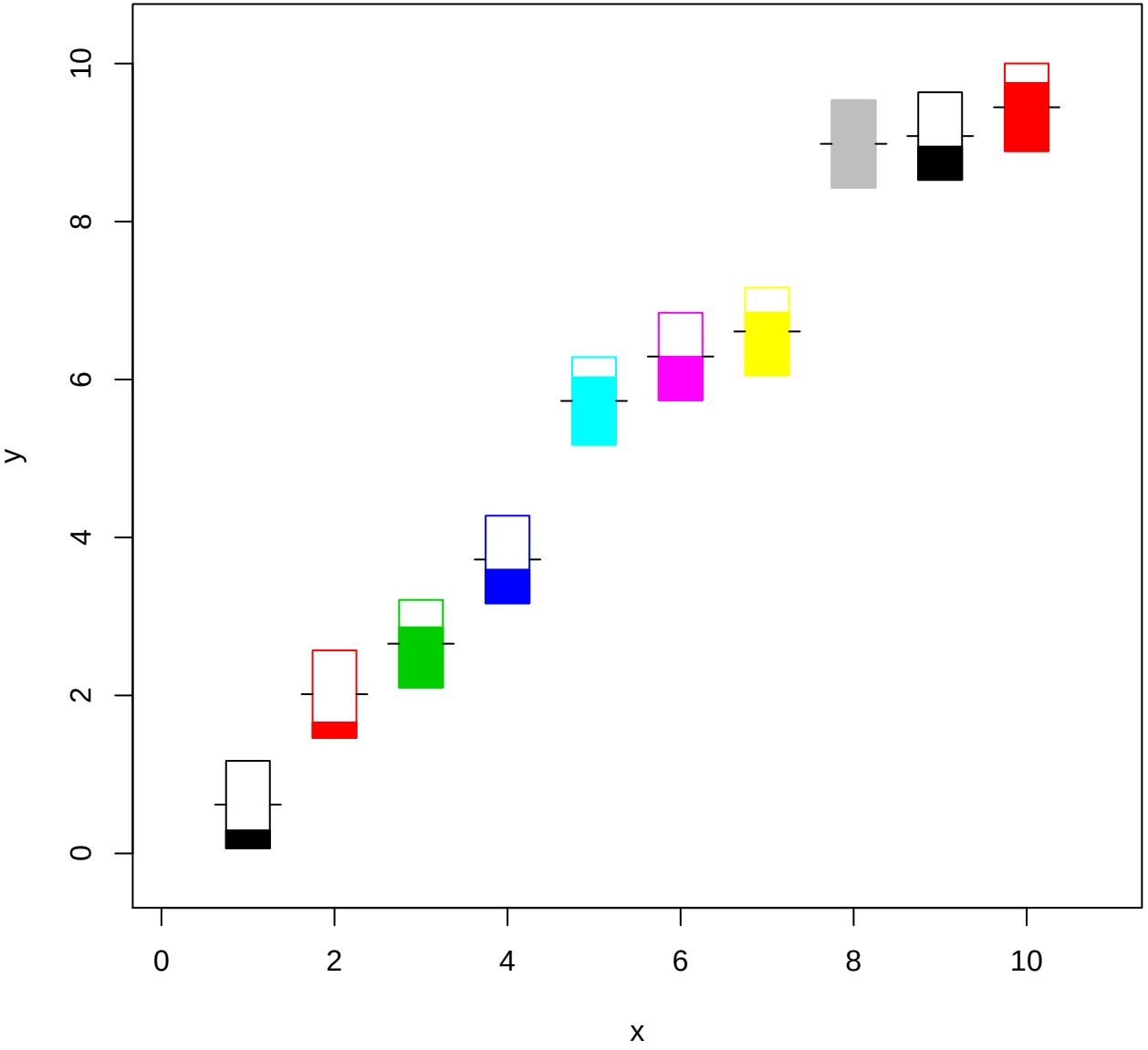

Petal.Width
0.5
1.0
1.5
2.0
2.5
1
2
3
4
5
6
7
Petal.Length
help("sunflowerplot")

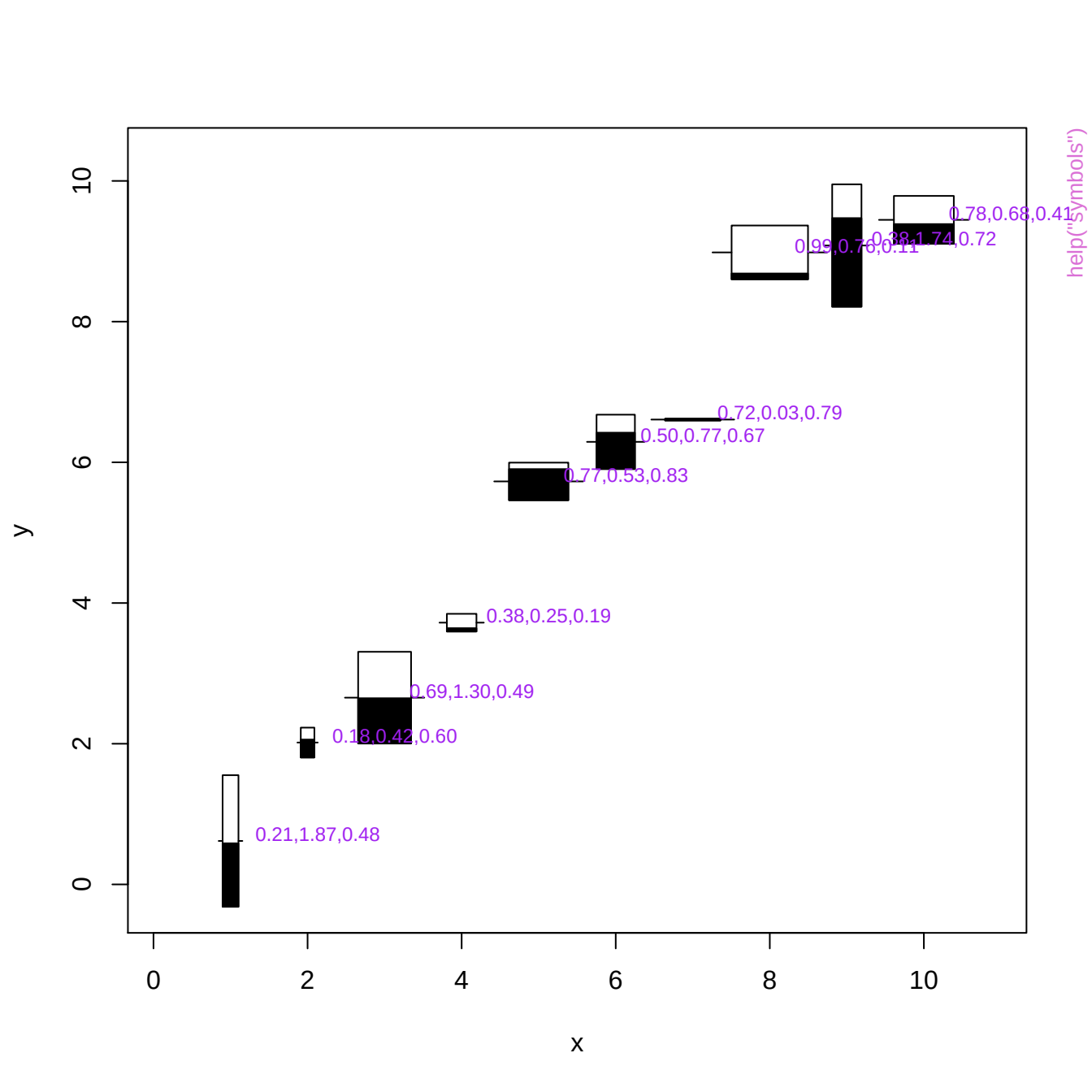

Petal.Width
0.5
1.0
1.5
2.0
2.5
1
2
3
4
5
6
7
Petal.Length
help("sunflowerplot")

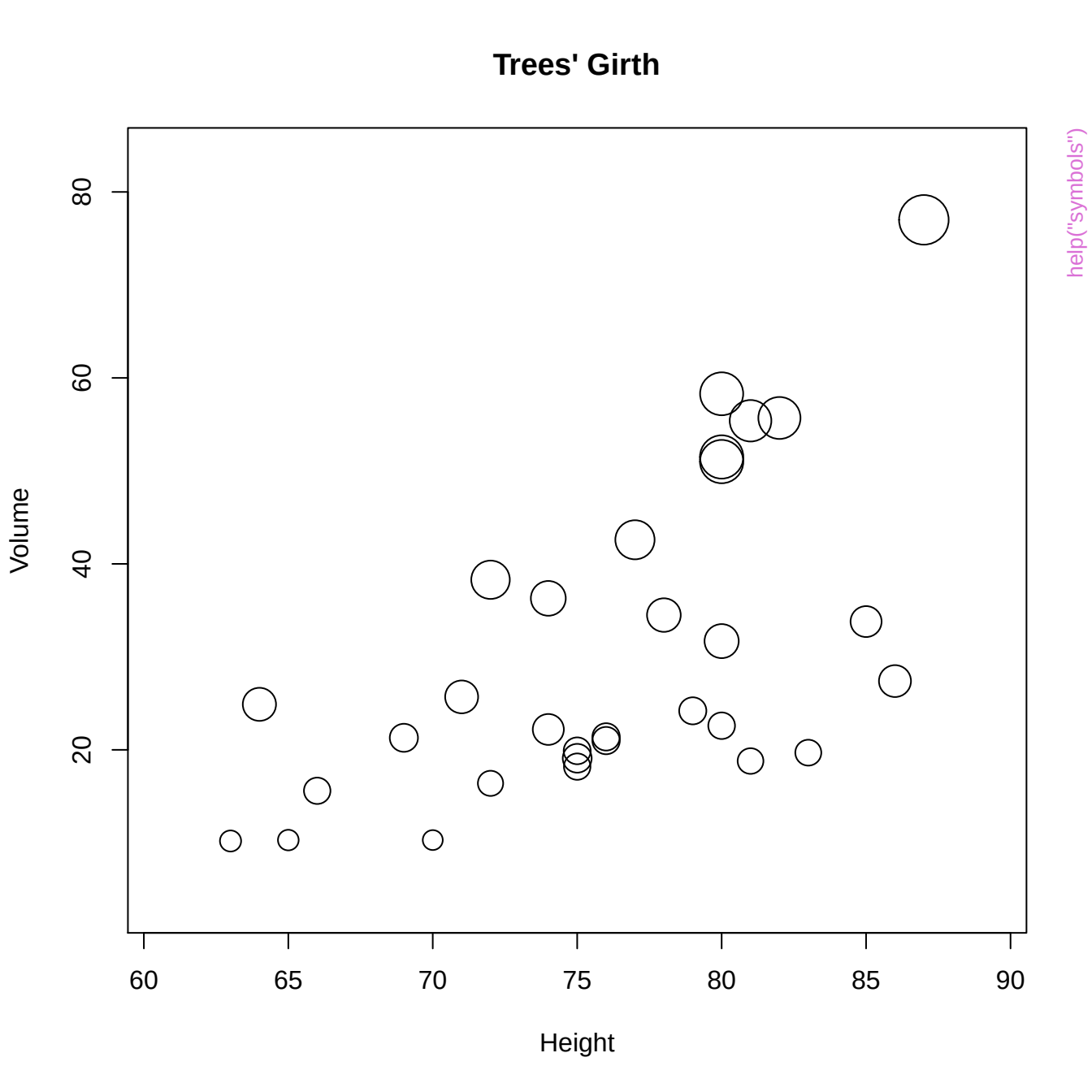

Sunflower Plot of Rounded N(0,1)
round(rnorm(100), 0)
sort(2 * round(rnorm(100)))
−4
−2
0
2
4
−2
−1
0
1
2
help("sunflowerplot")

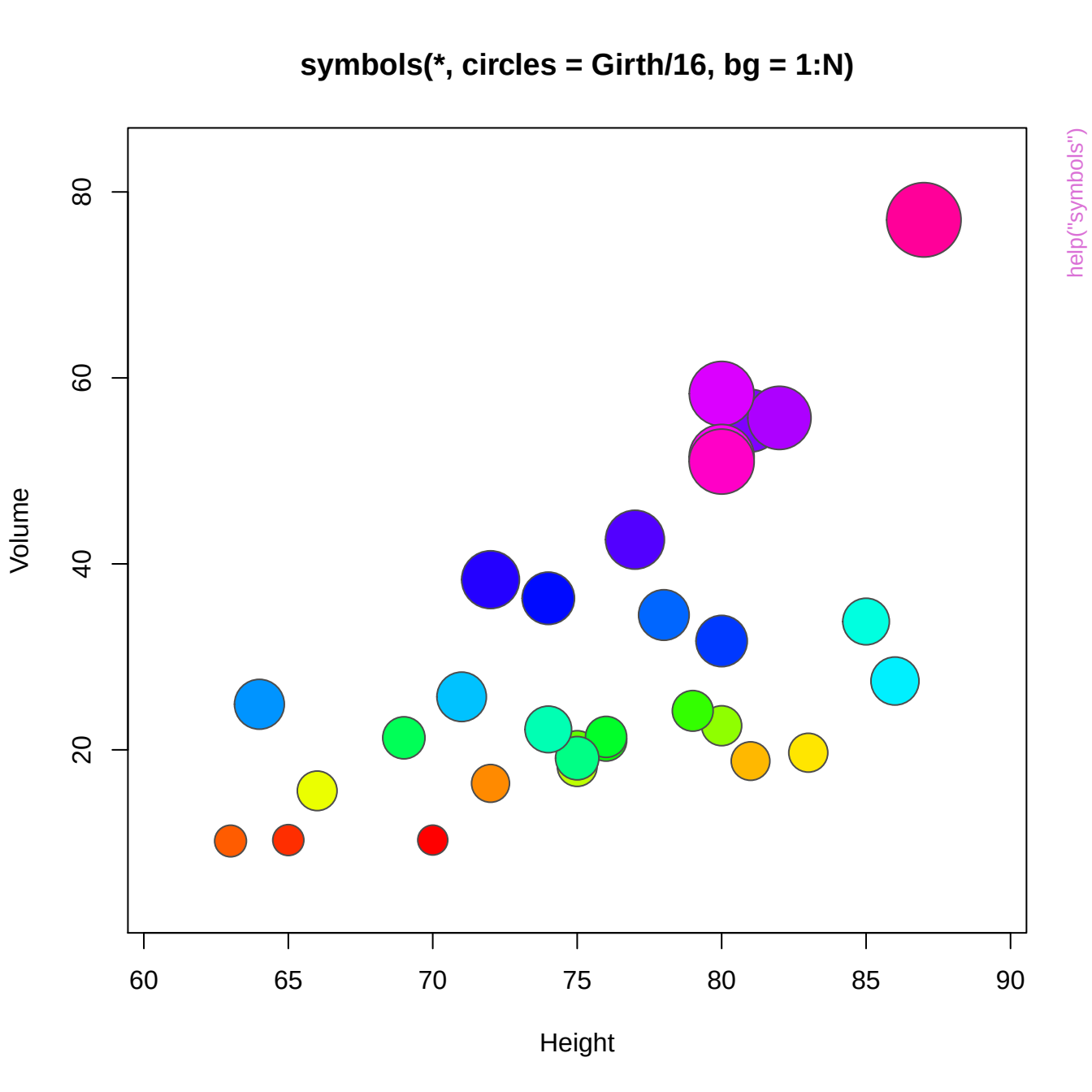

2nd Sunflower Plot of Rounded N(0,1)
y
x
3
2
1
0
−1
−2
−3
−6
−4
−2
0
2
4
help("sunflowerplot")

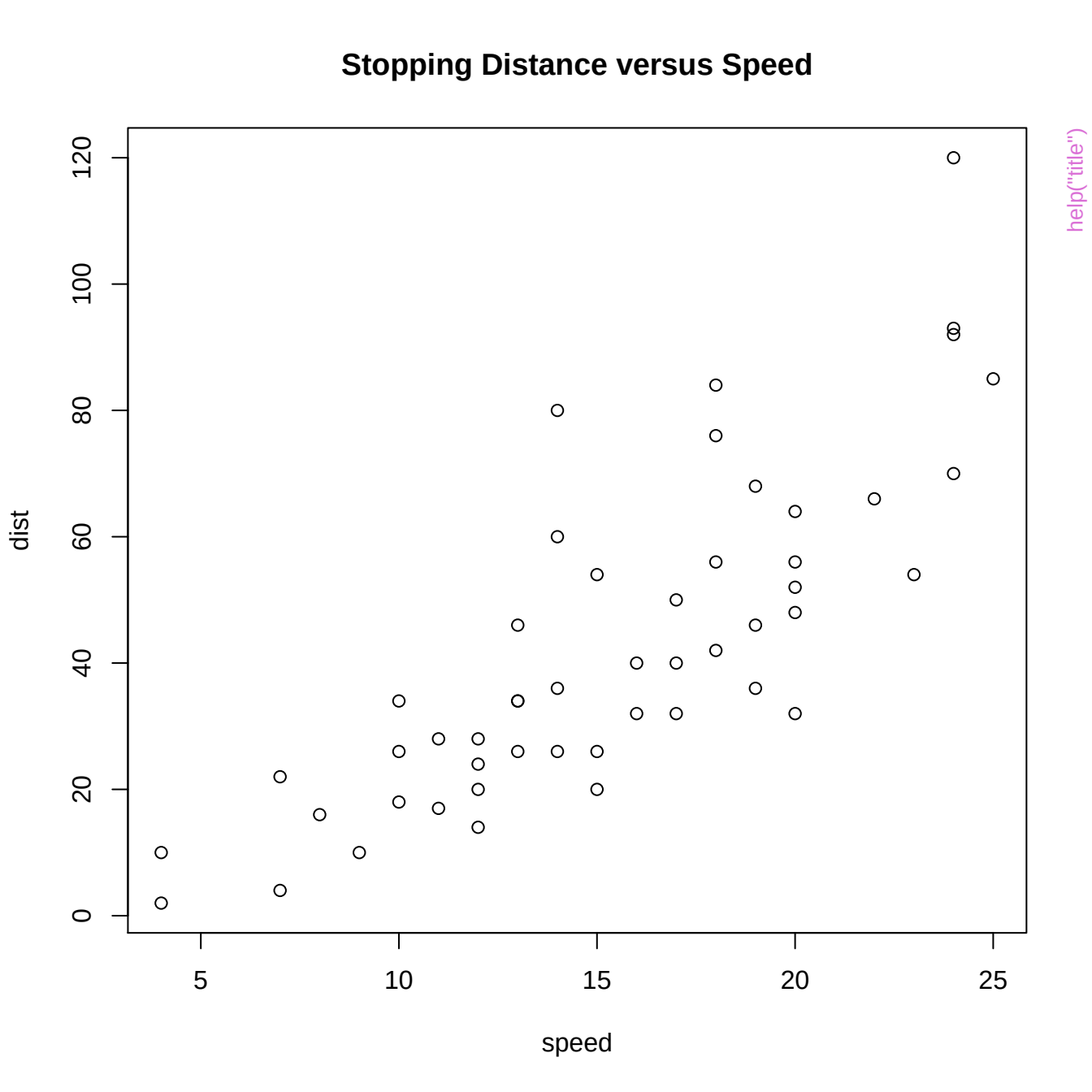

Sunflower plot (marked point process)
rnorm(100)
rnorm(100)
−3
−2
−1
0
1
2
3
4
2
1
0
−1
−2
help("sunflowerplot")


help("symbols")
y
x
0
2
4
6
8
10

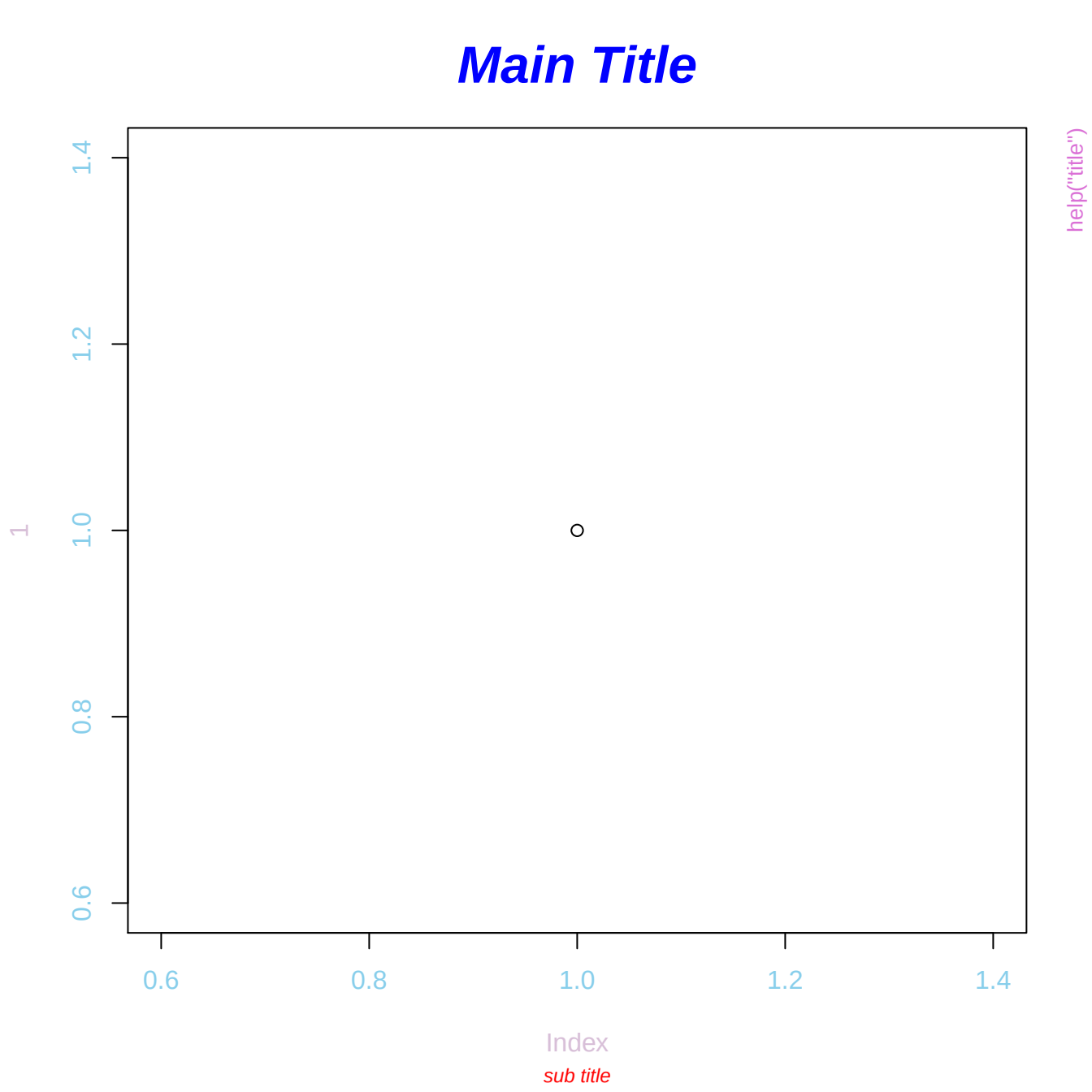

0.21,1.87,0.48
0.18,0.42,0.60
0.69,1.30,0.49
0.38,0.25,0.19
0.77,0.53,0.83
0.50,0.77,0.67
0.72,0.03,0.79
0.99,0.76,0.11
0.38,1.74,0.72
0.78,0.68,0.41
help("Symbols")
x
y
0
2
4
6
8
10

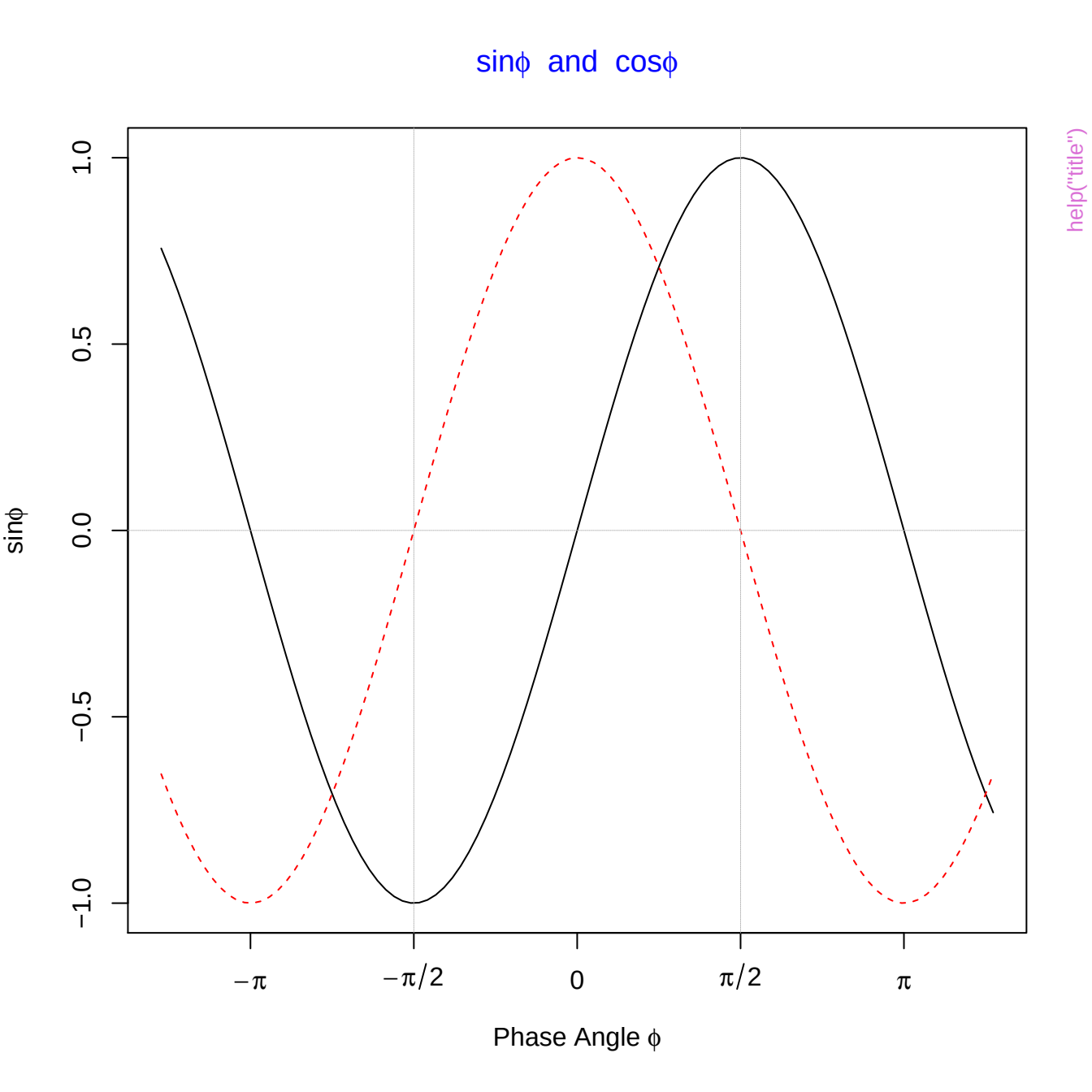

Trees' Girth
Volume
Height
20
40
60
80
60
65
70
75
80
85
90
help("symbols")

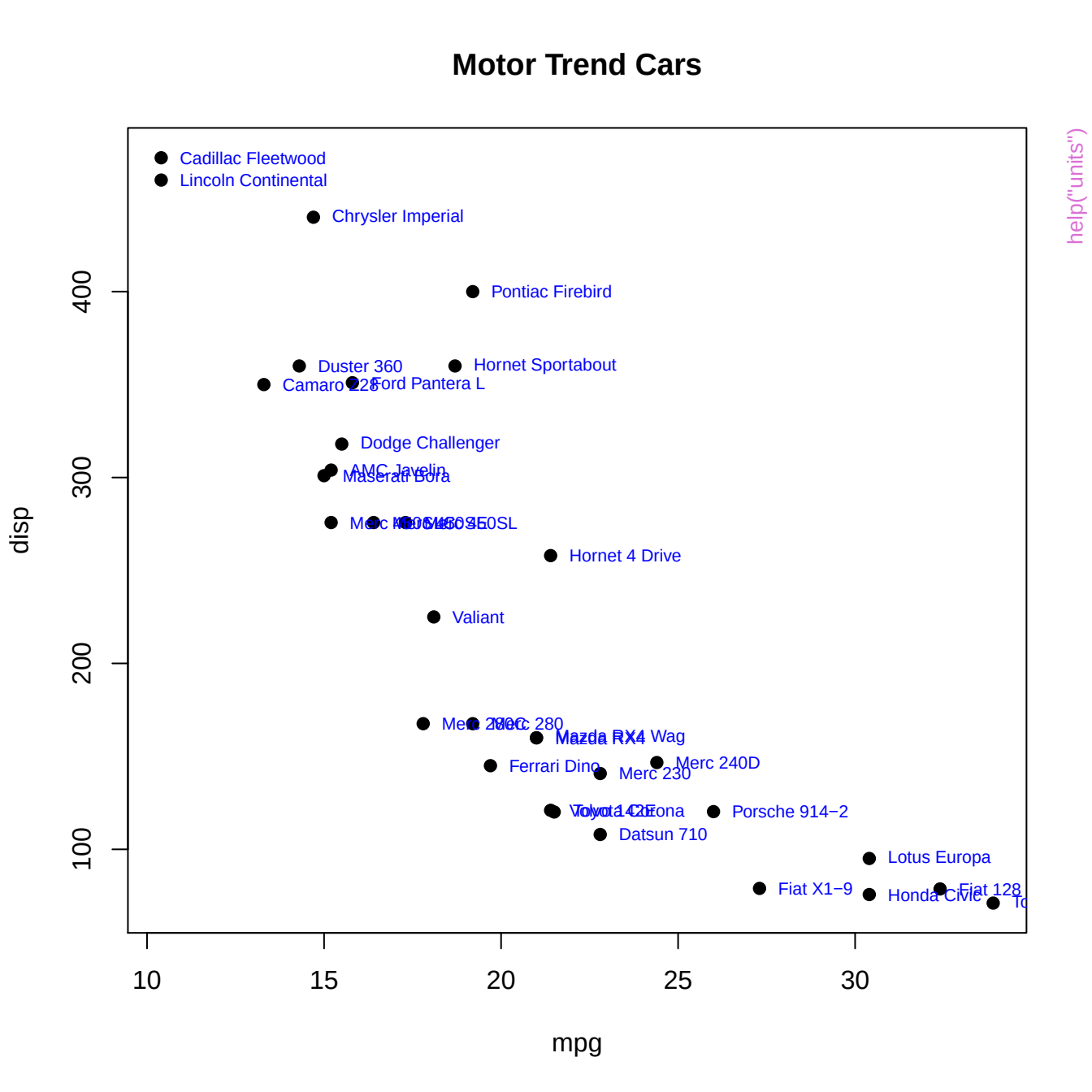

symbols(*, circles = Girth/16, bg = 1:N)
Volume
Height
20
40
60
80
60
65
70
75
80
85
90
help("symbols")


Stopping Distance versus Speed
dist
speed
0
20
40
60
80
100
120
5
10
15
20
25
help("title")

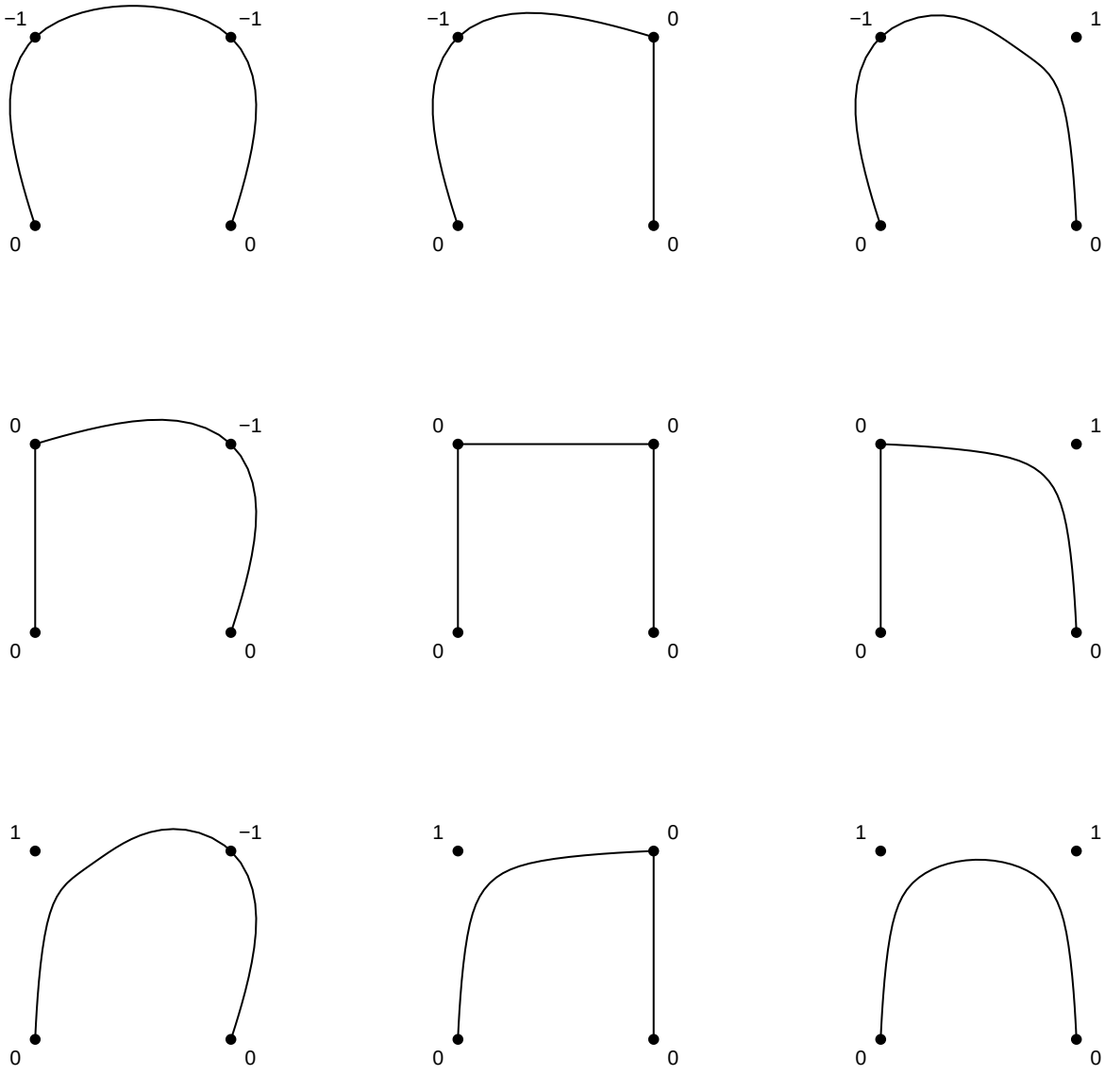

Stopping Distance versus Speed
help("title")
dist
0
20
40
60
80
100
120
speed
5
10
15
20
25


Main Title
help("title")
1
1.4
1.2
1.0
0.8
0.6
0.6
0.8
1.0
1.2
1.4
Index
sub title


sinϕ and cosϕ
help("title")
1.0
0.5
0.0
−0.5
−1.0
sinϕ
−π
−π/2
0
π/2
π
Phase Angle ϕ

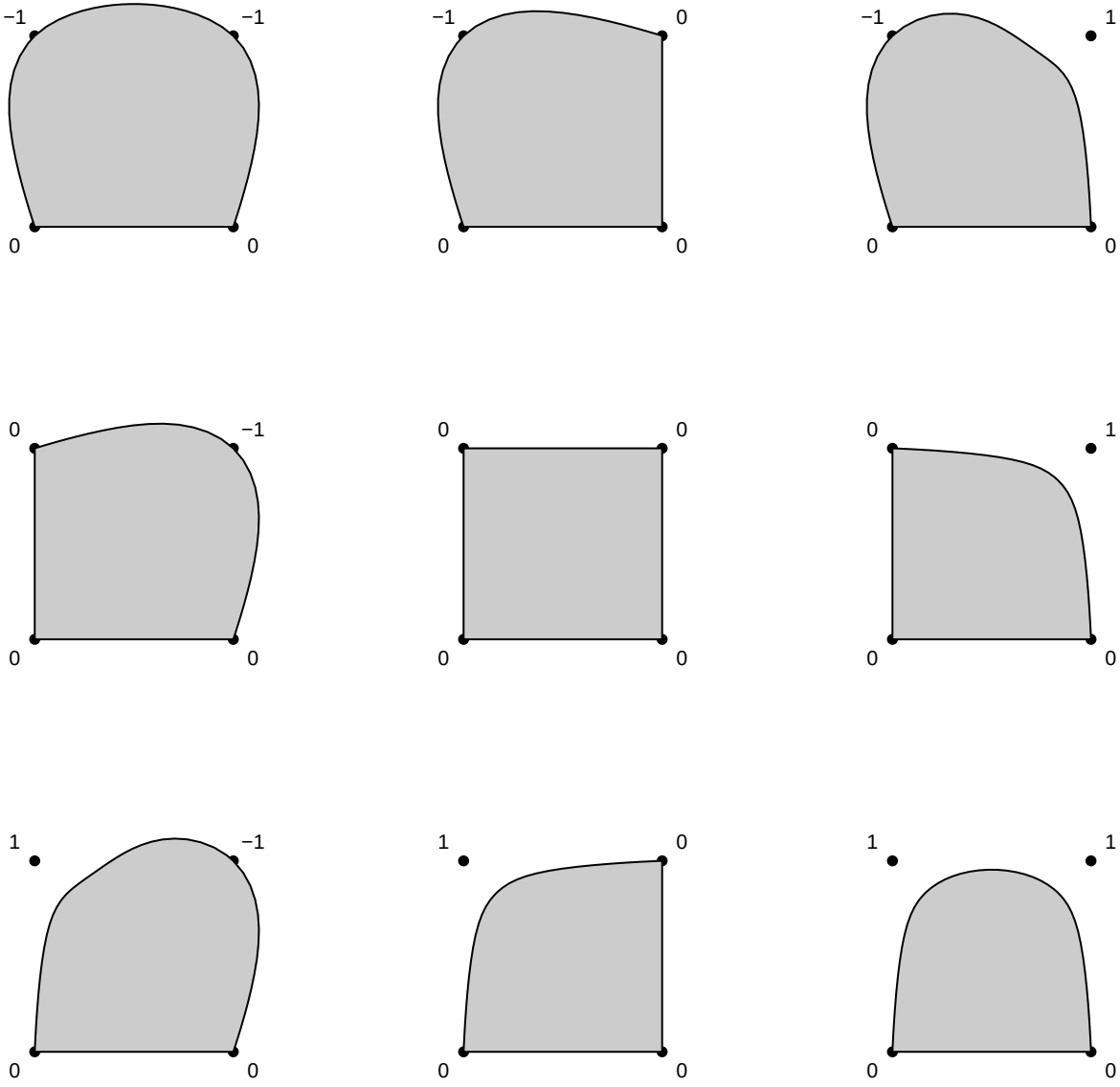

Motor Trend Cars
Cadillac Fleetwood
Lincoln Continental
Chrysler Imperial
Pontiac Firebird
Duster 360
Hornet Sportabout
Camaro Z28
Ford Pantera L
Dodge Challenger
AMC Javelin
Maserati Bora
Hornet 4 Drive
Valiant
Merc 280
Mazda RX4
Mazda RX4 Wag
Ferrari Dino
Merc 240D
Merc 230
Porsche 914−2
Datsun 710
Lotus Europa
Fiat X1−9
Honda Civic
Fiat 128
disp
mpg
100
200
300
400
10
15
20
25
30
help("units")

Open X−splines

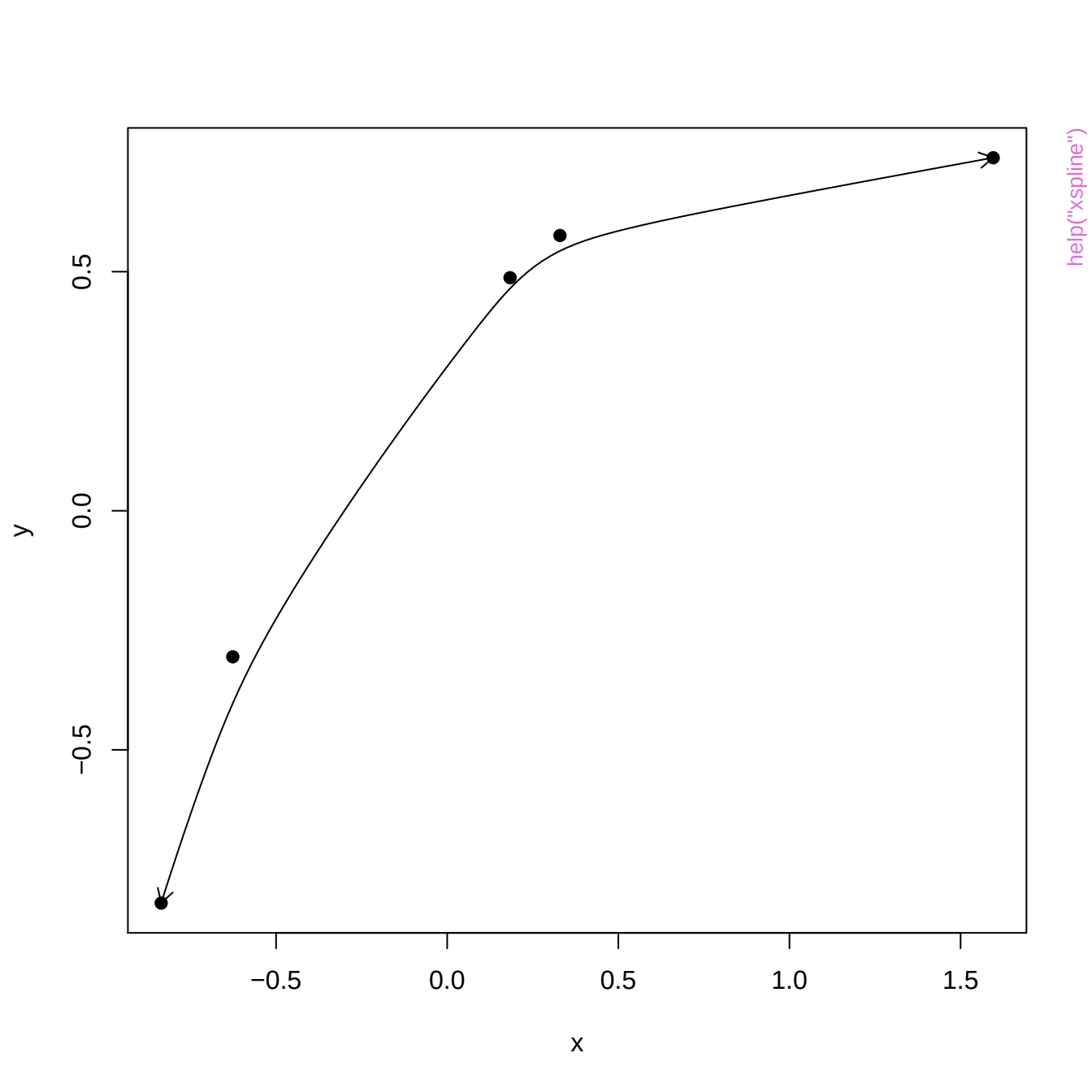


help("xspline")

Closed X−splines



help("xspline")


help("xspline")
y
0.5
0.0
−0.5
−0.5
0.0
0.5
1.0
1.5
x