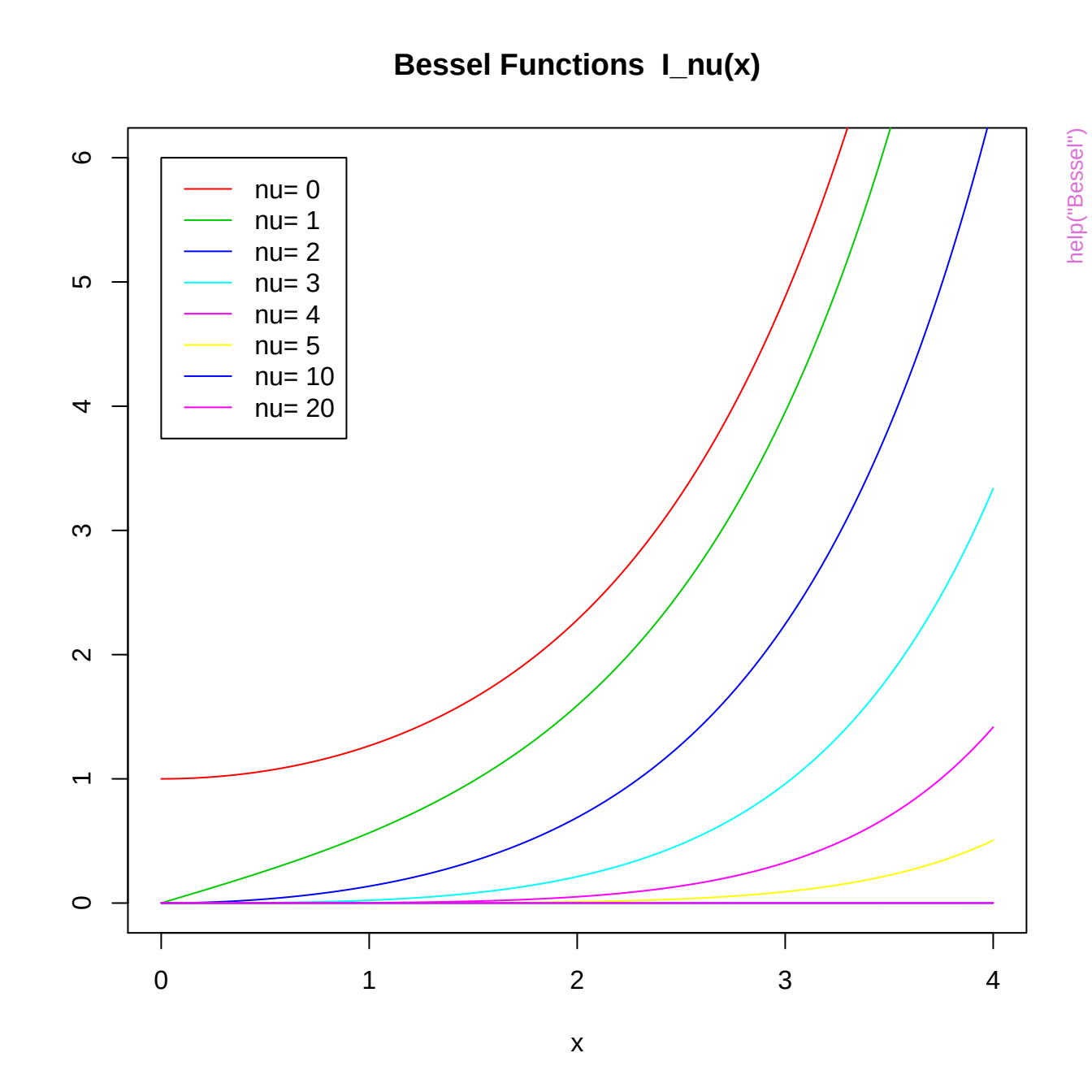
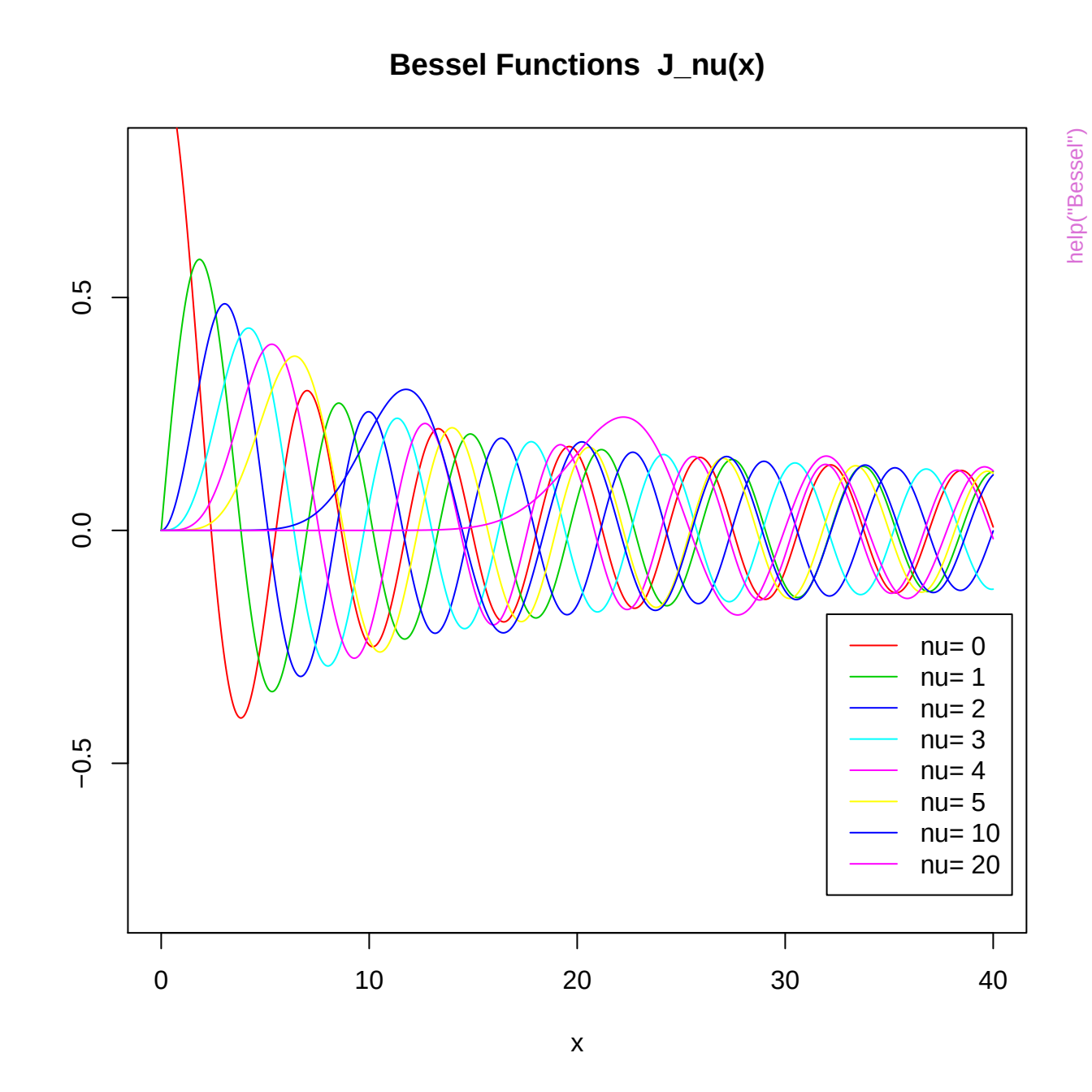
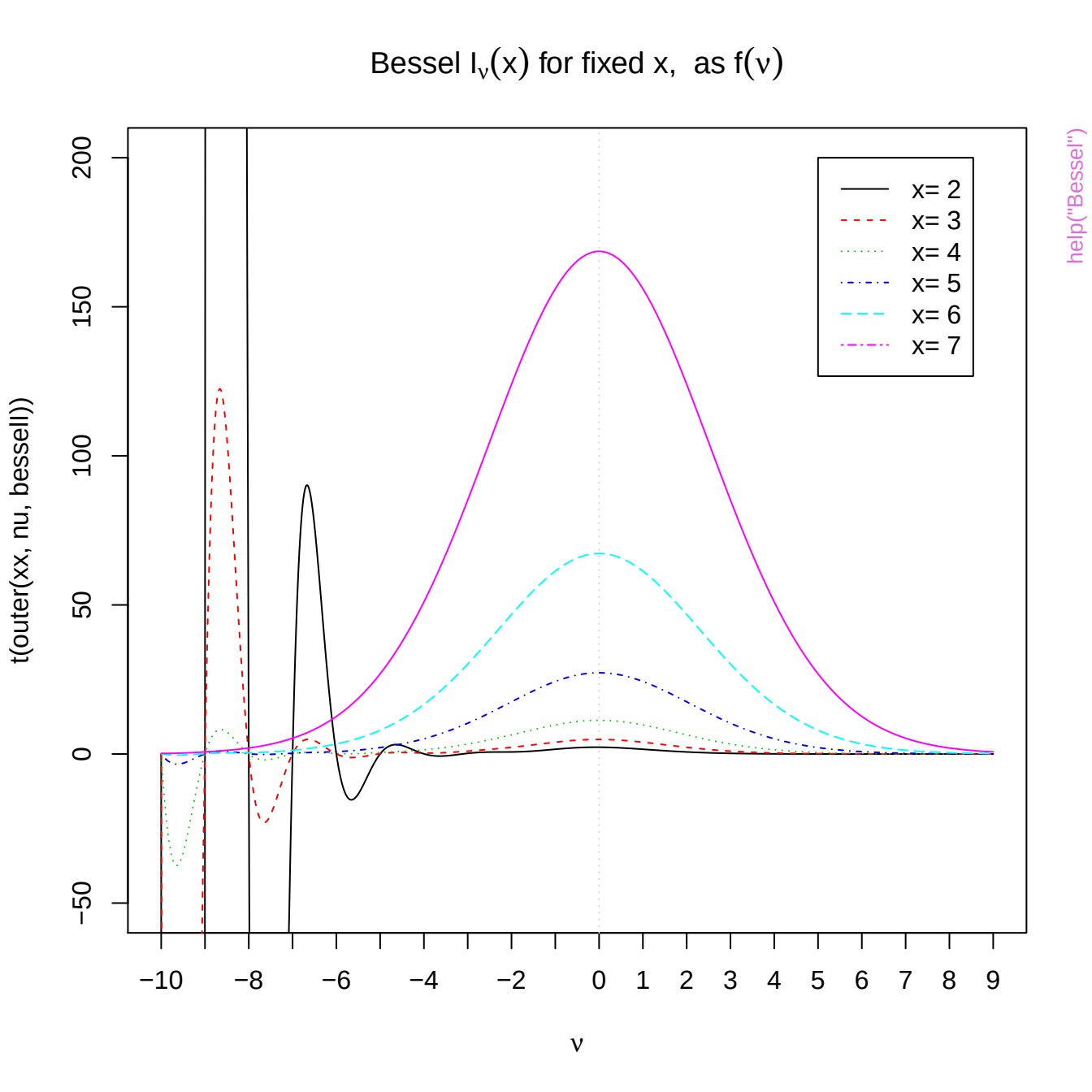
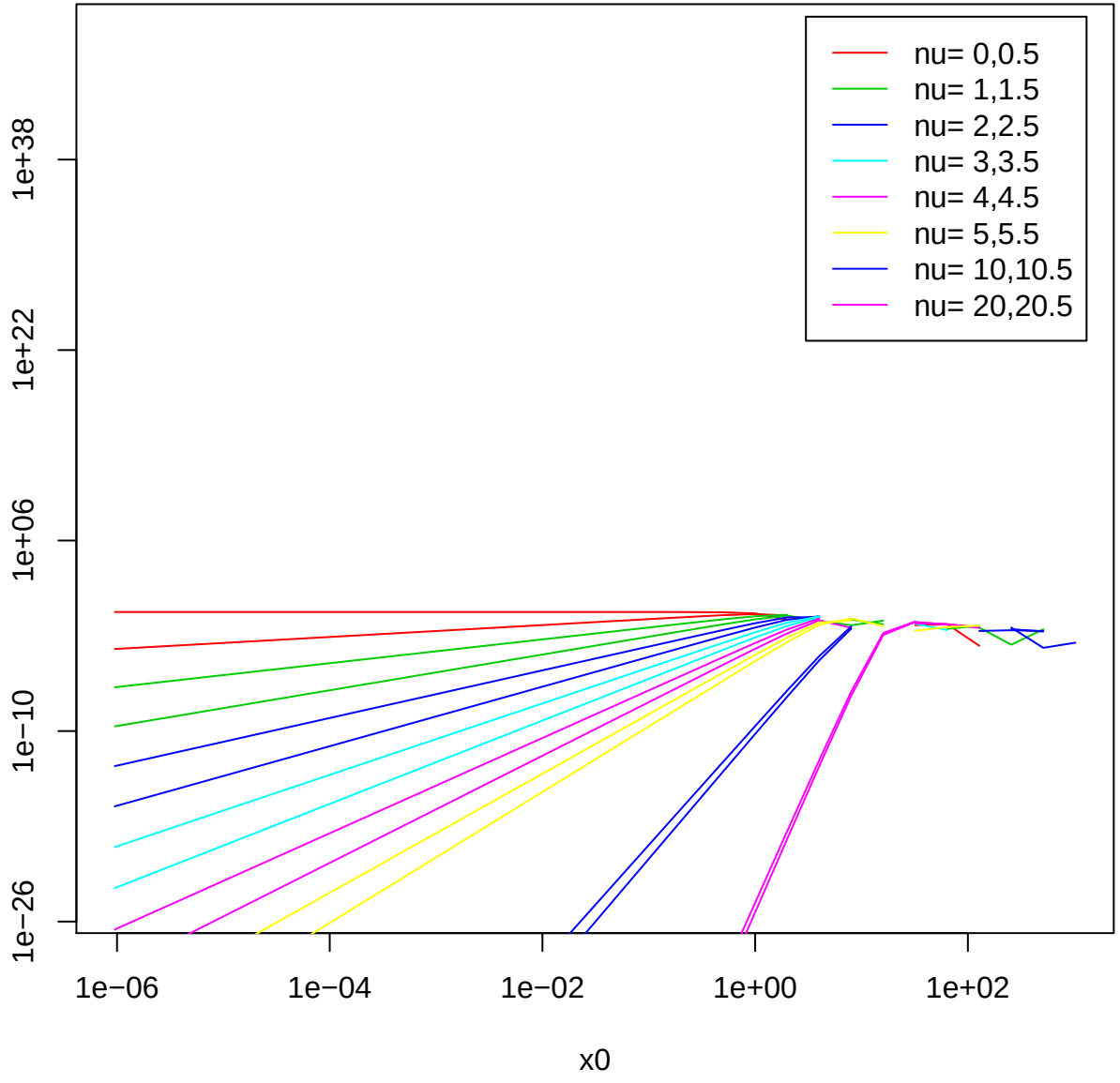
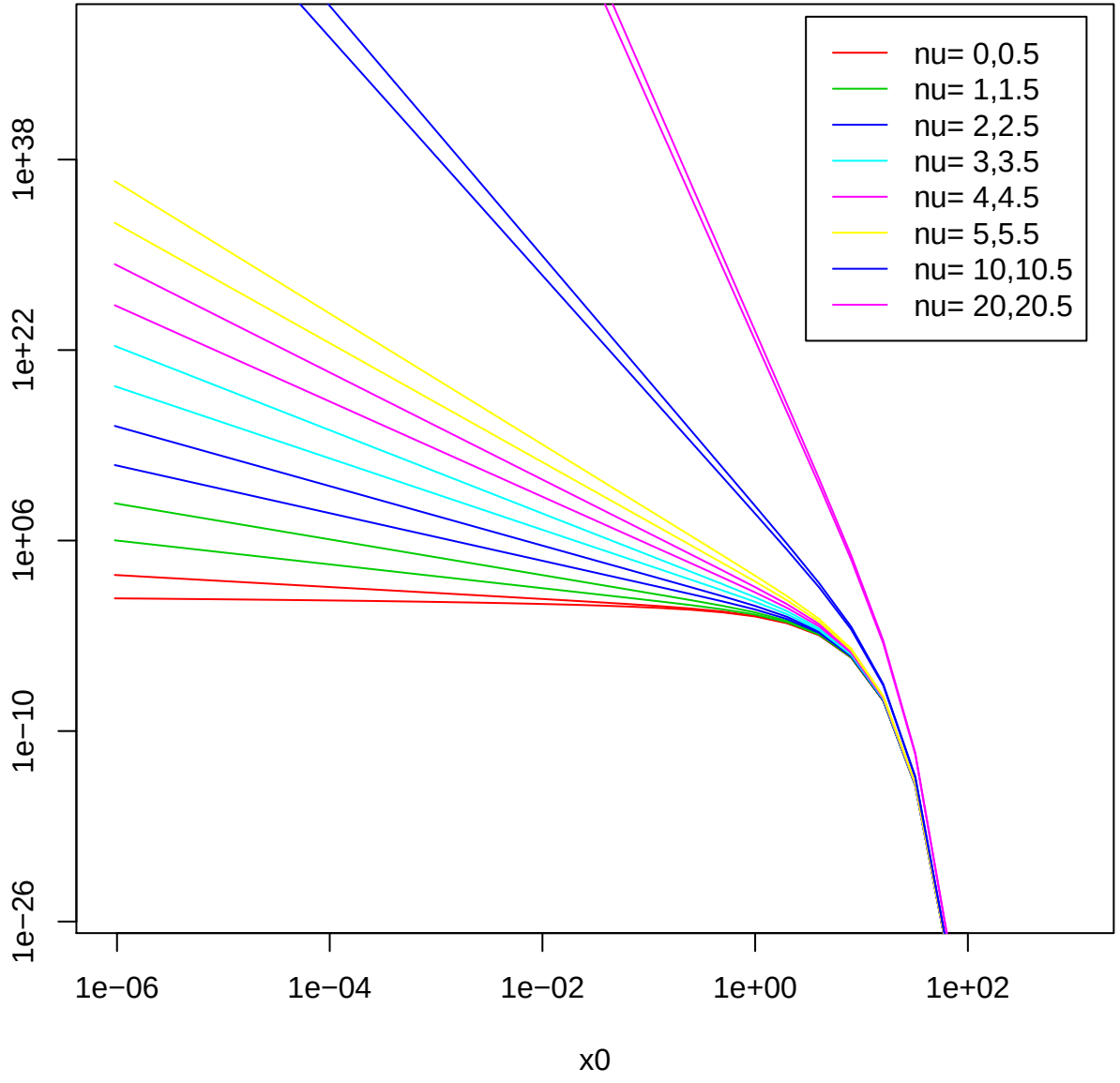
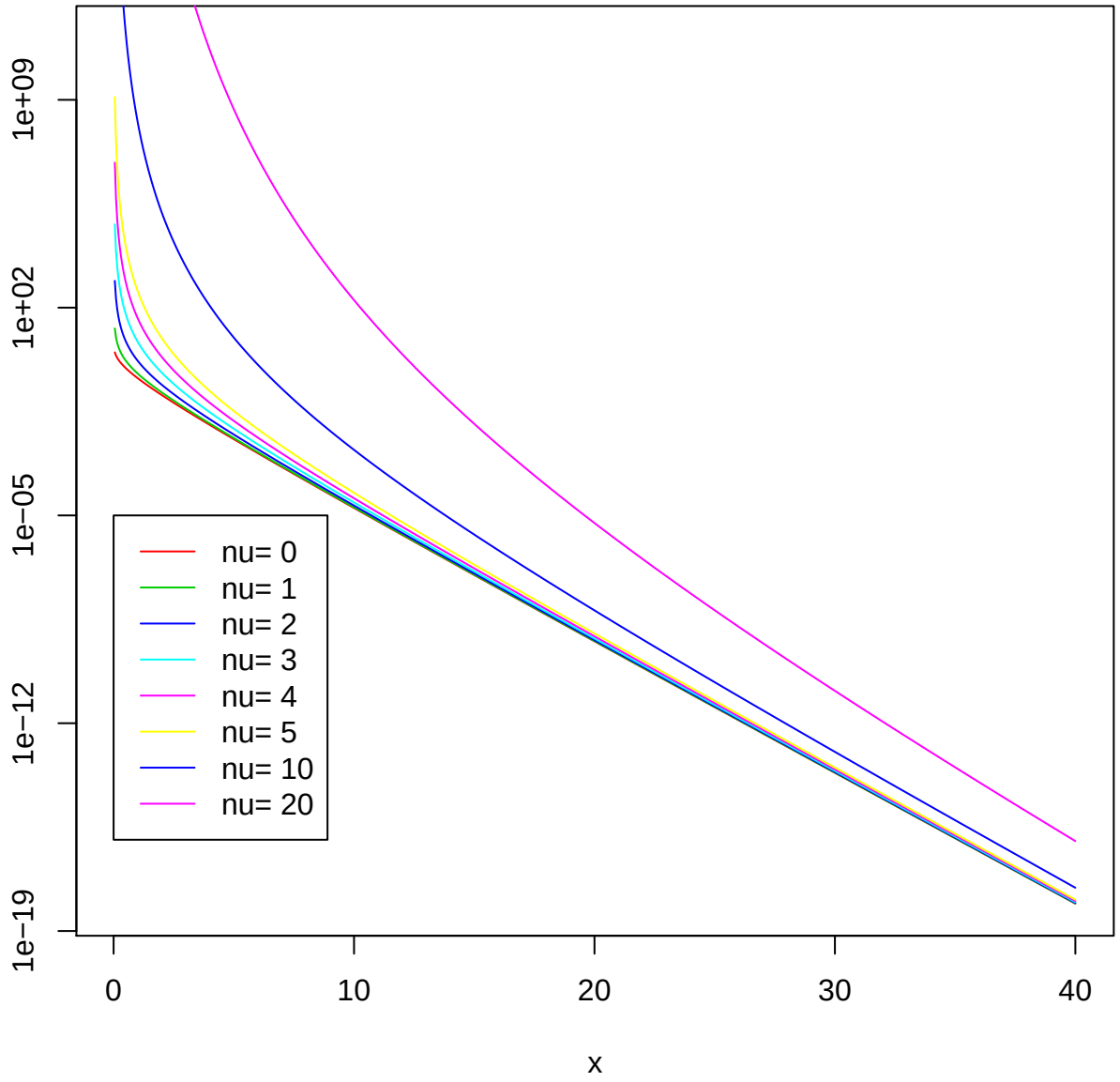

Bessel Functions I_nu(x)
nu= 0
nu= 1
nu= 2
nu= 3
nu= 4
nu= 5
nu= 10
nu= 20
0
1
2
3
4
5
6
0
1
2
3
4
x
help("Bessel")

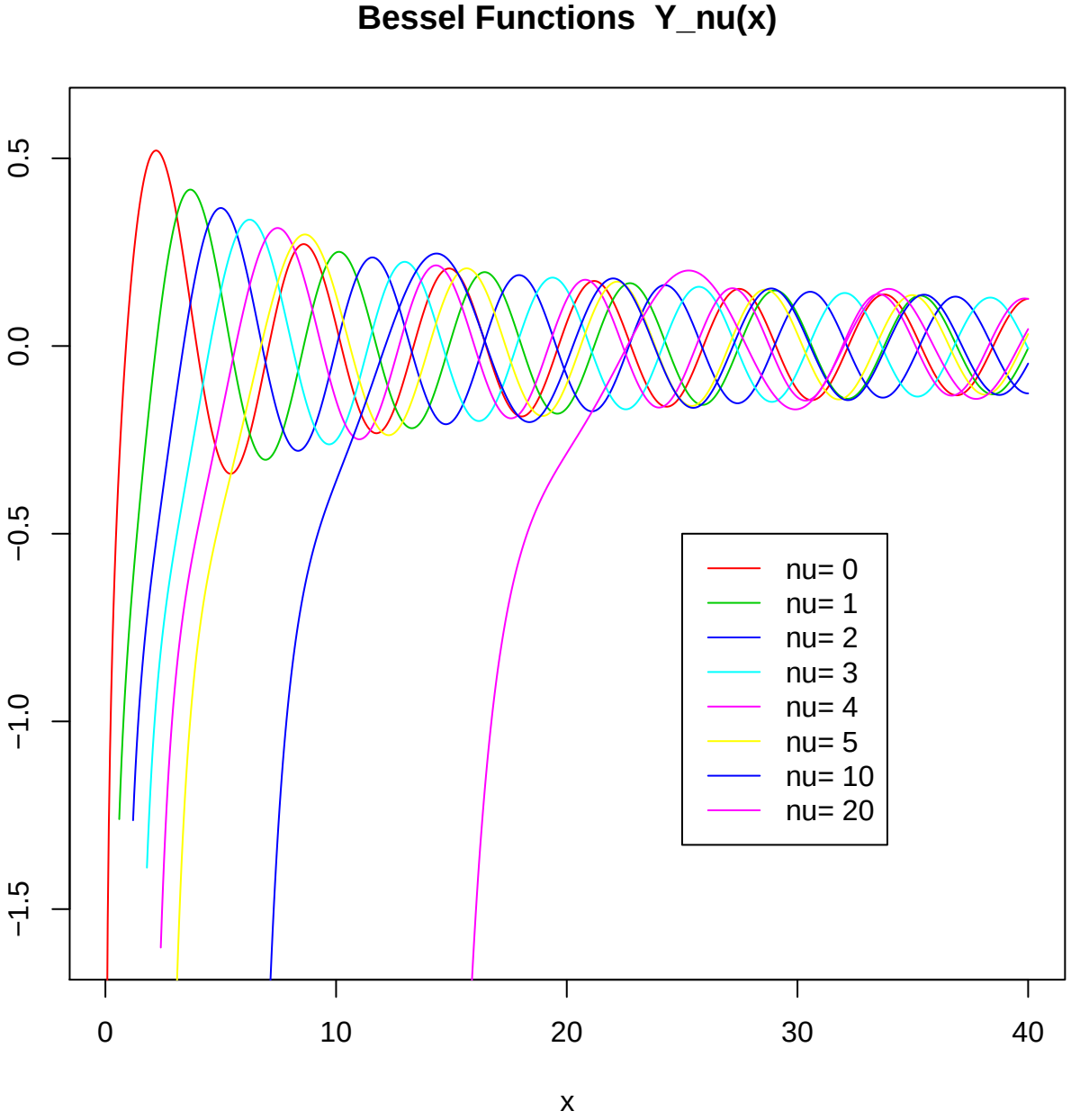

Bessel Functions J_nu(x)
help("Bessel")
0.5
0.0
−0.5
0
10
20
30
40
x
nu= 0
nu= 1
nu= 2
nu= 3
nu= 4
nu= 5
nu= 10
nu= 20

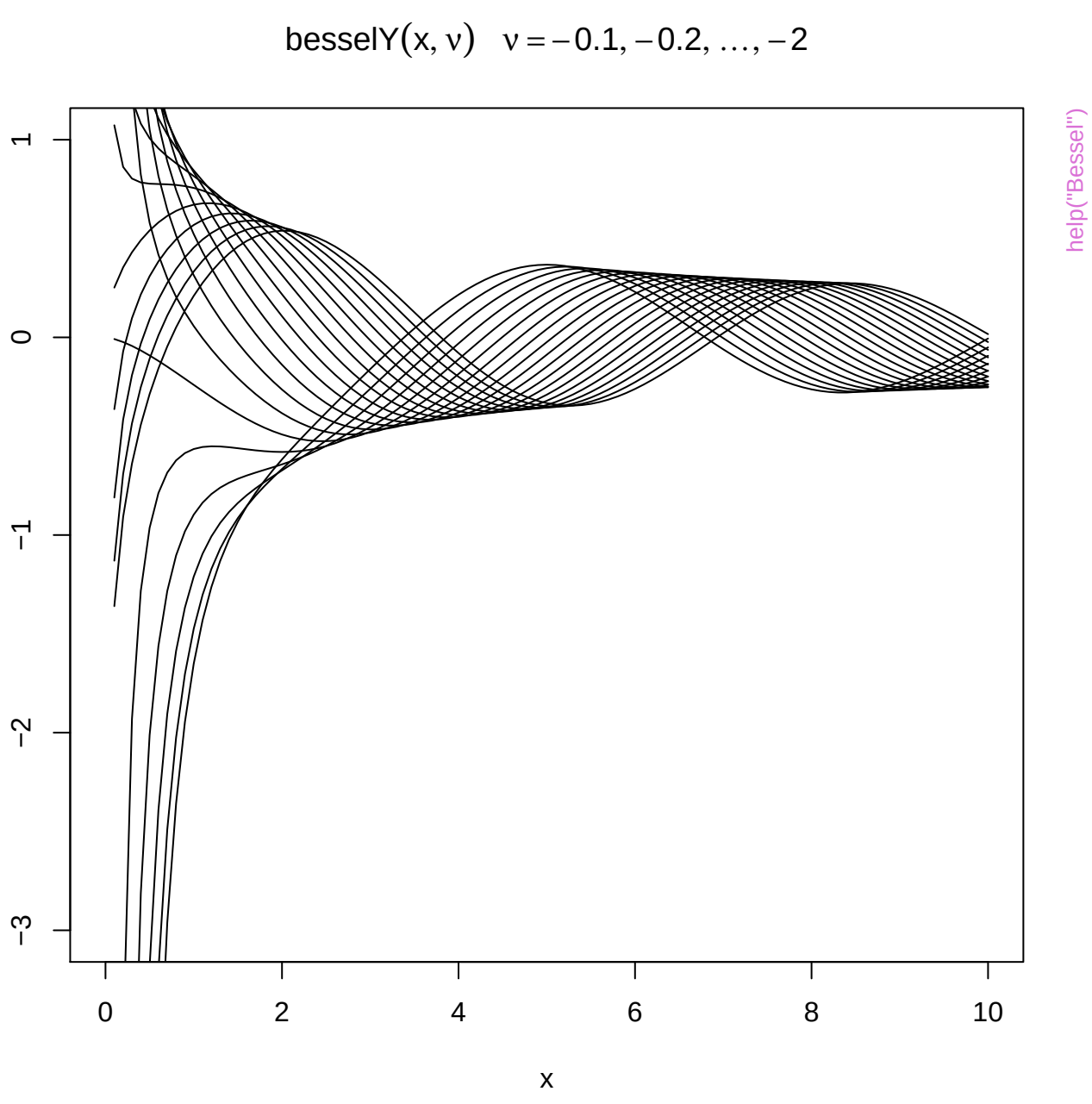

Bessel $I_\nu(x)$ for fixed x, as f(ν)
t(outer(xx, nu, bessel))
ν
x= 2
x= 3
x= 4
x= 5
x= 6
x= 7
help("Bessel")
200
150
100
50
0
−50
−10
−8
−6
−4
−2
0
1
2
3
4
5
6
7
8
9

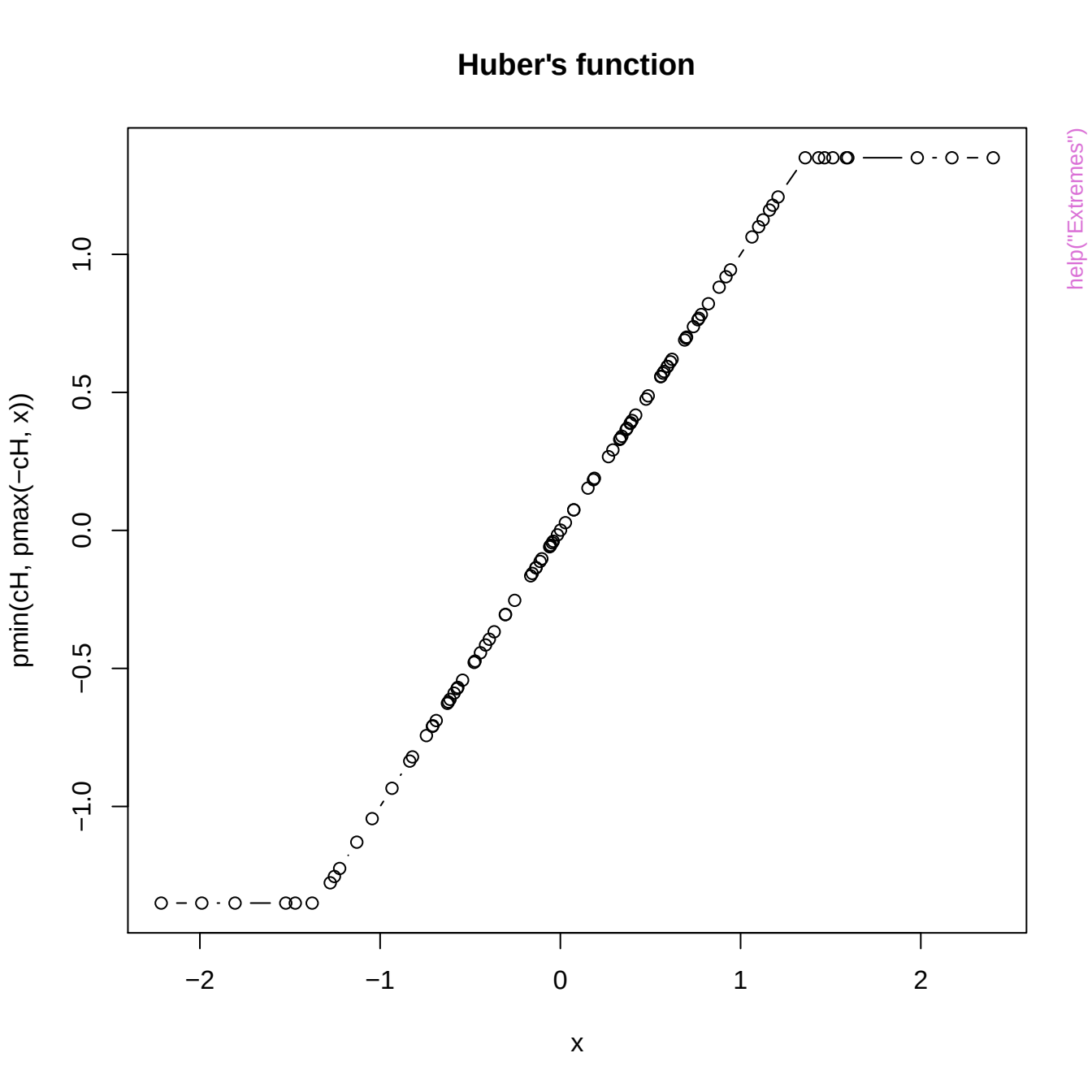

Bessel Functions J_nu(x) near 0
log − log scale
nu= 0,0.5
nu= 1,1.5
nu= 2,2.5
nu= 3,3.5
nu= 4,4.5
nu= 5,5.5
nu= 10,10.5
nu= 20,20.5
1e+38
1e+22
1e+06
1e−10
1e−26
1e−06
1e−04
1e−02
1e+00
1e+02
x0
help("Bessel")

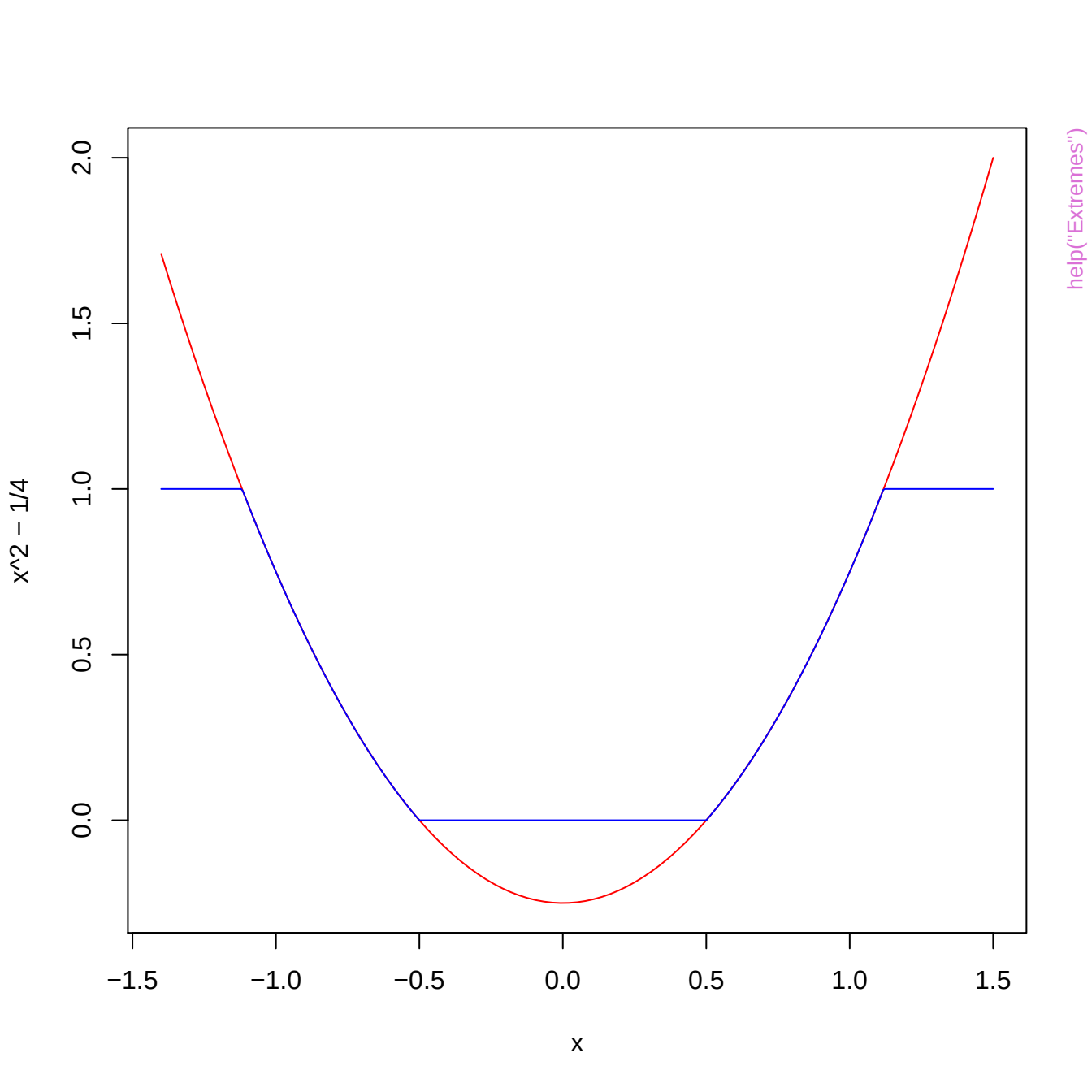

Bessel Functions K_nu(x) near 0
log − log scale
nu= 0,0.5
nu= 1,1.5
nu= 2,2.5
nu= 3,3.5
nu= 4,4.5
nu= 5,5.5
nu= 10,10.5
nu= 20,20.5
1e+38
1e+22
1e+06
1e−10
1e−26
1e−06
1e−04
1e−02
1e+00
1e+02
x0
help("Bessel")

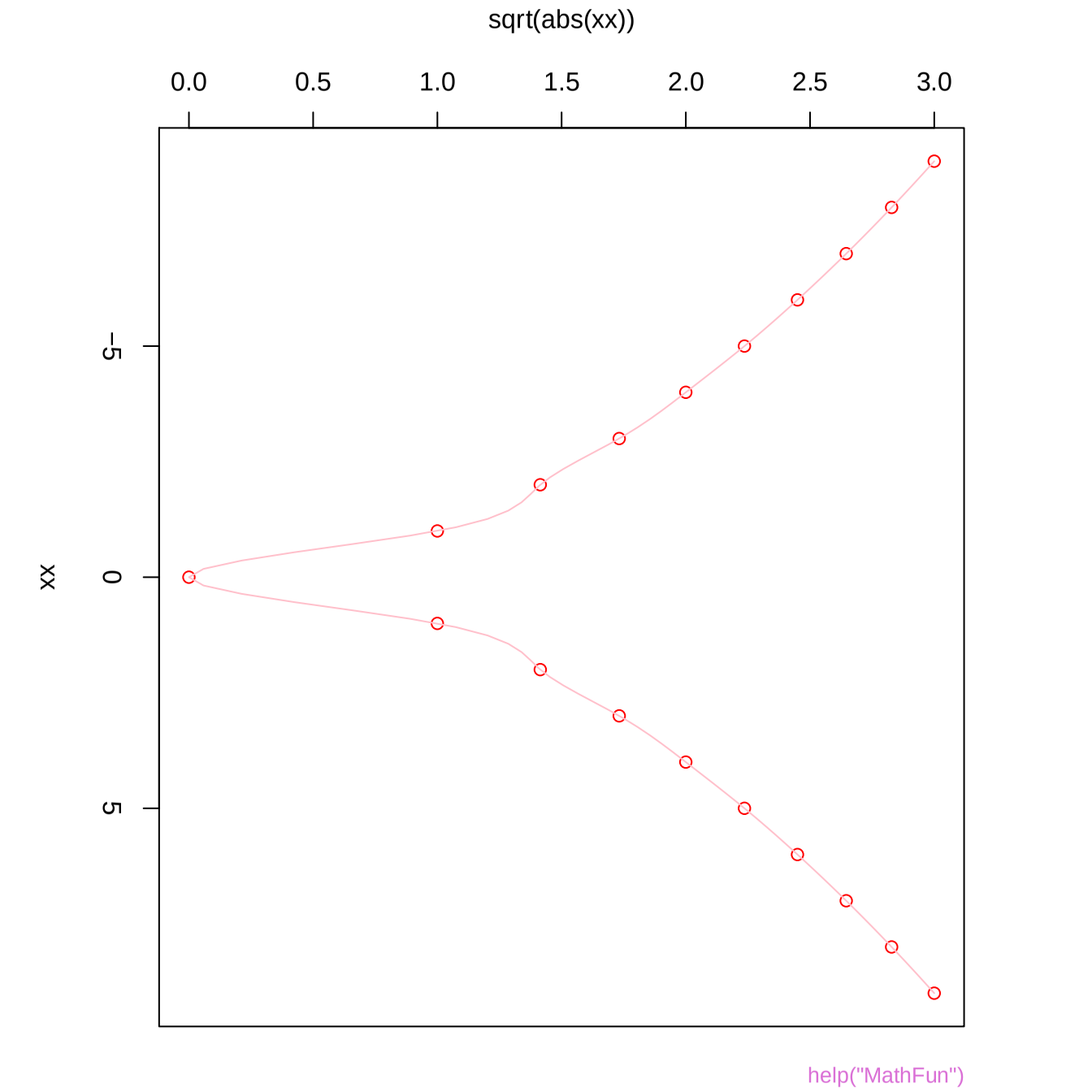

Bessel Functions K_nu(x)
help("Bessel")
1e+09
1e+02
1e−05
1e−12
1e−19
0
10
20
30
40
x
nu= 0
nu= 1
nu= 2
nu= 3
nu= 4
nu= 5
nu= 10
nu= 20

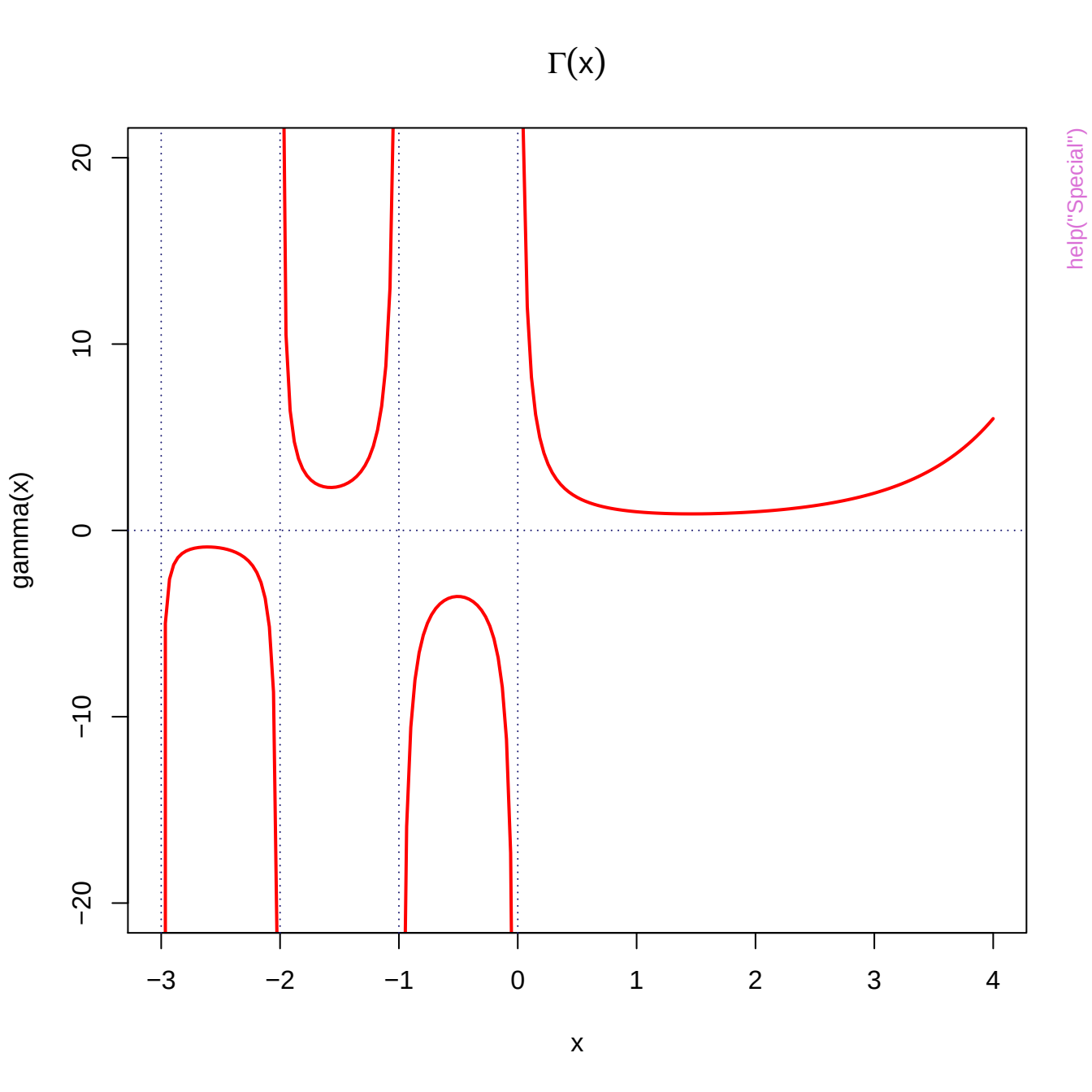

Bessel Functions Y_nu(x)
help("Bessel")
0.5
0.0
−0.5
−1.0
−1.5
0
10
20
30
40
x
nu= 0
nu= 1
nu= 2
nu= 3
nu= 4
nu= 5
nu= 10
nu= 20

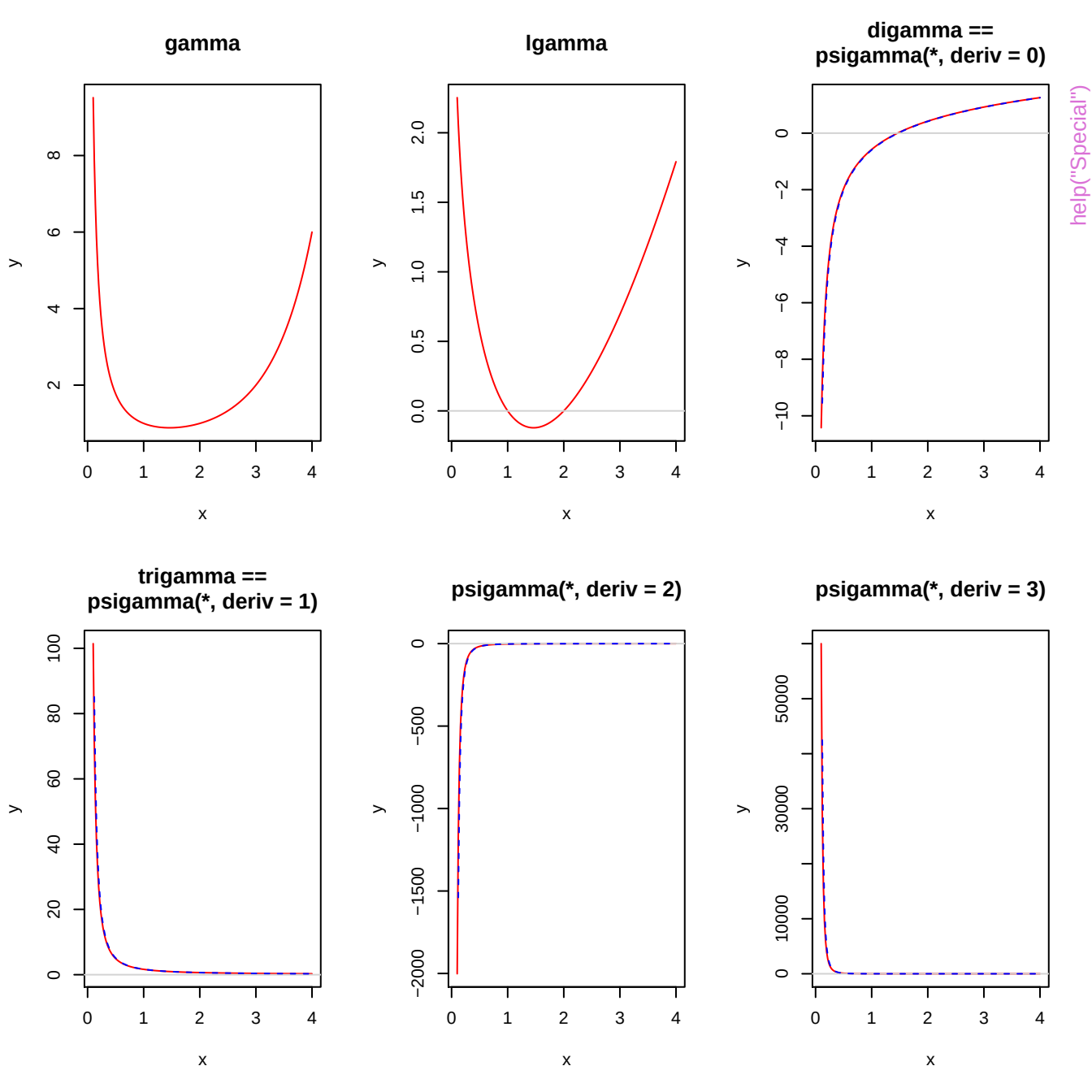

besselY(x, ν) ν = −0.1, −0.2, …, −2
help("Bessel")
1
0
−1
−2
−3
0
2
4
6
8
10
x

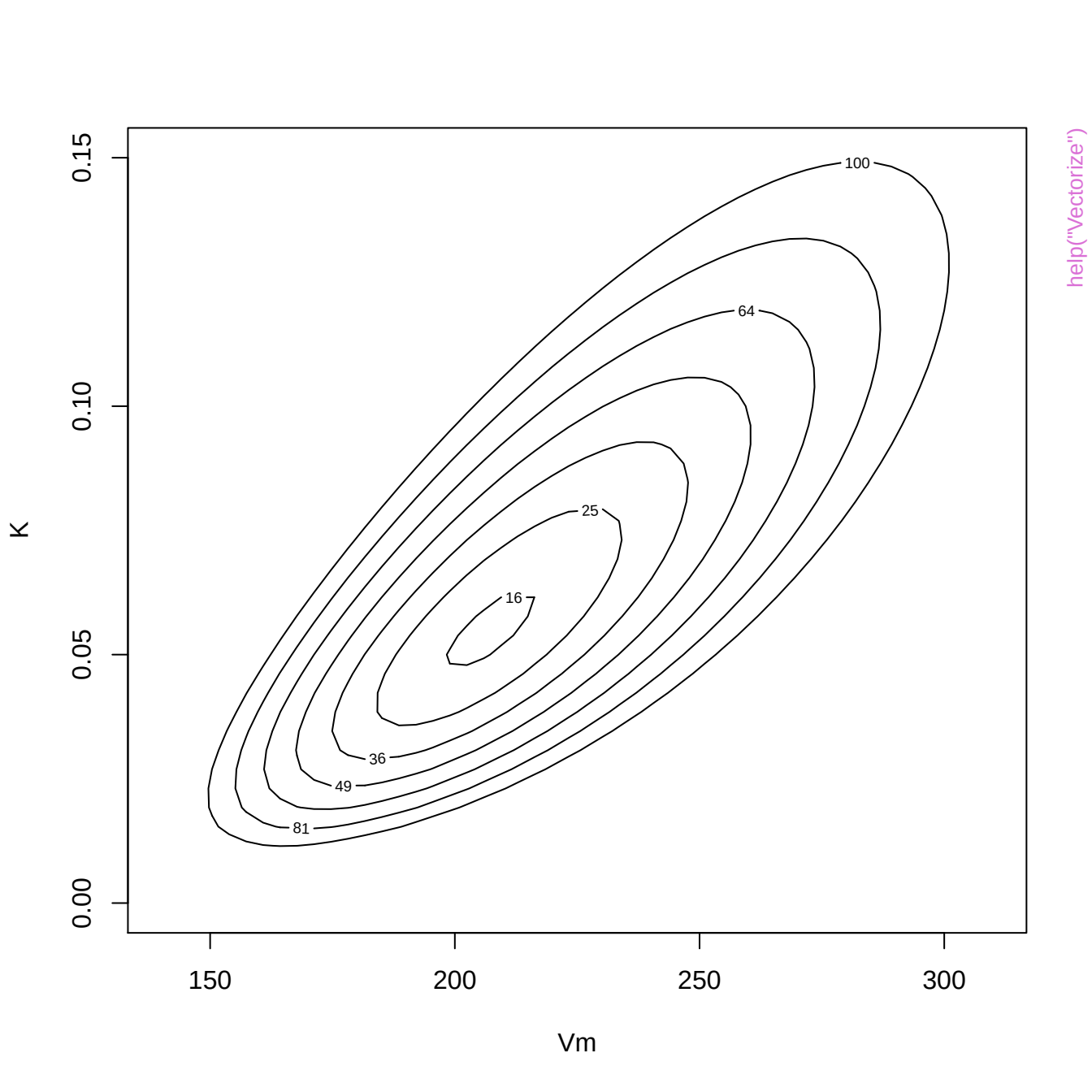

Huber's function
pmin(cH, pmax(−cH, x))
x
−2
−1
0
1
2
−1.0
−0.5
0.0
0.5
1.0
help("Extremes")

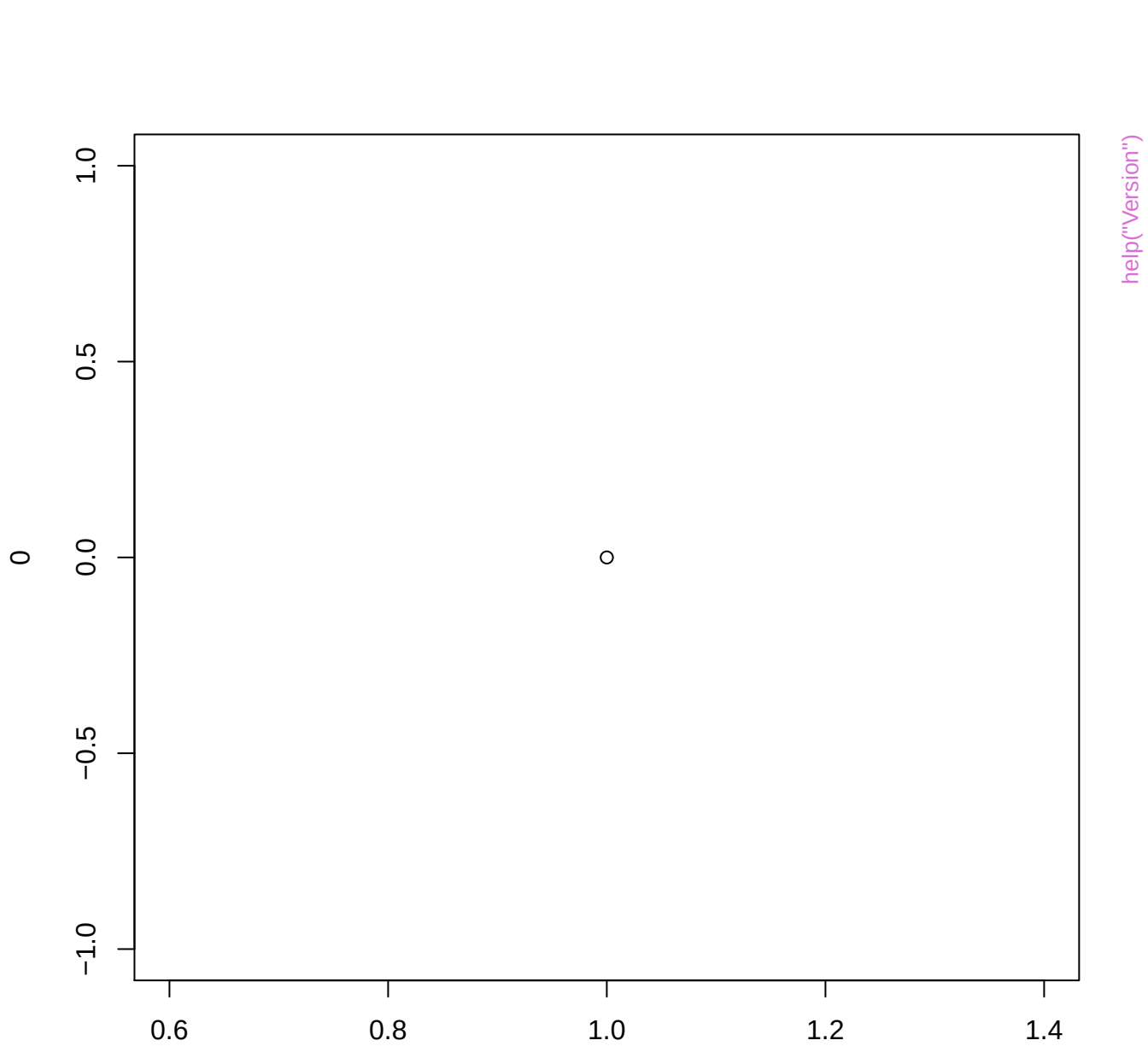

x^2 − 1/4
2.0
1.5
1.0
0.5
0.0
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
x
help("Extremes")

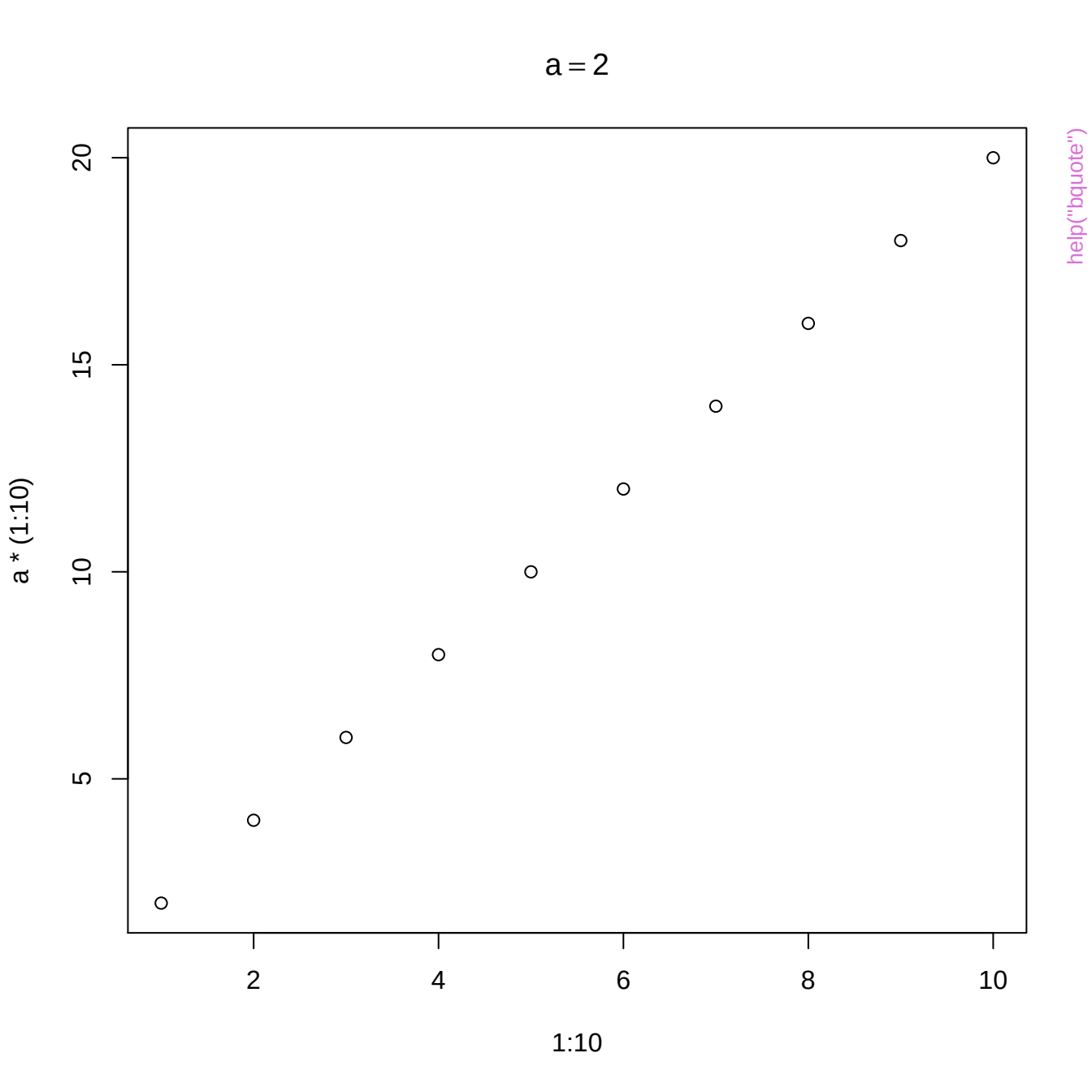

sqrt(abs(xx))
0.0
0.5
1.0
1.5
2.0
2.5
3.0
xx
−5
0
5
help("MathFun")

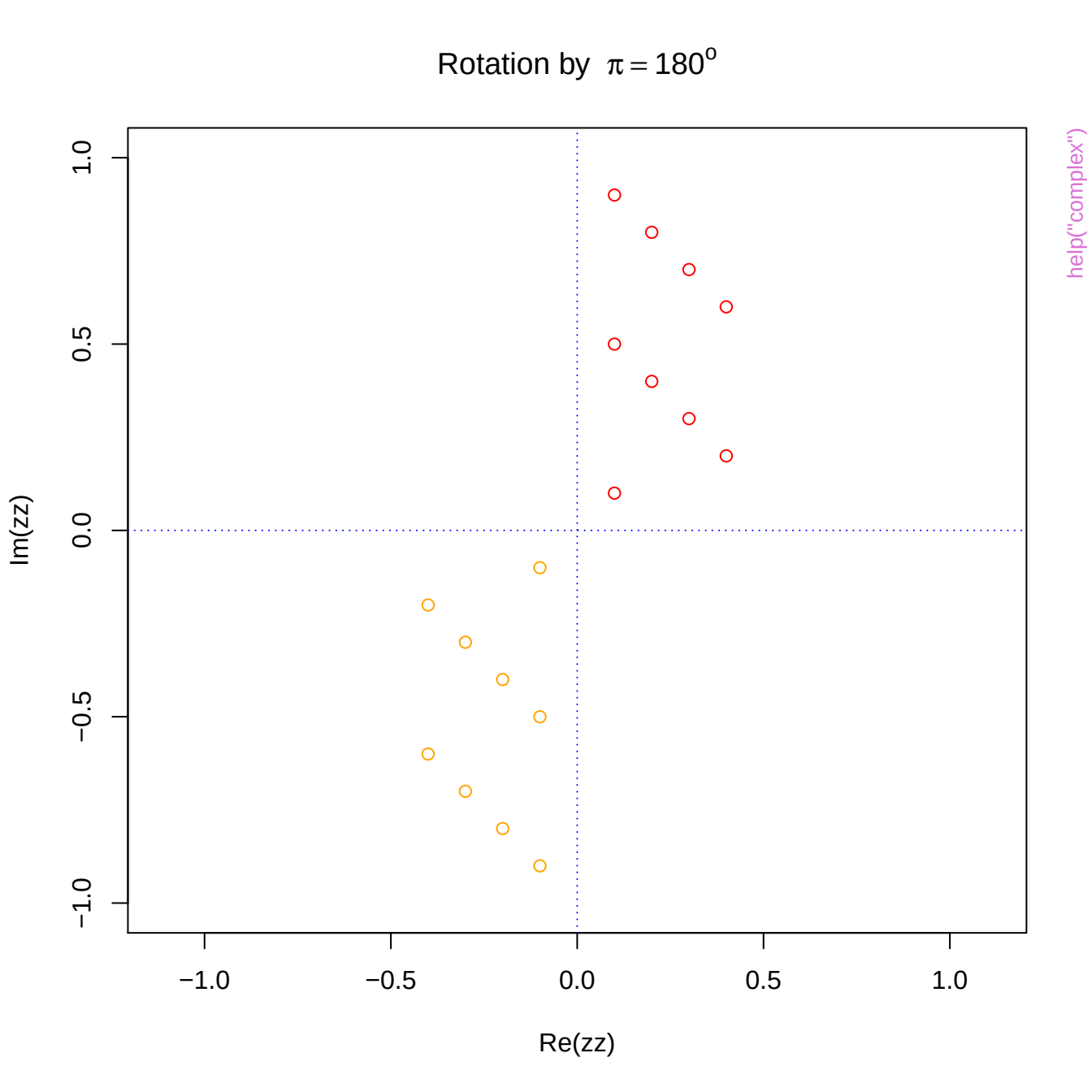

Γ(x)
gamma(x)
20
10
0
−10
−20
−3
−2
−1
0
1
2
3
4
x
help("Special")

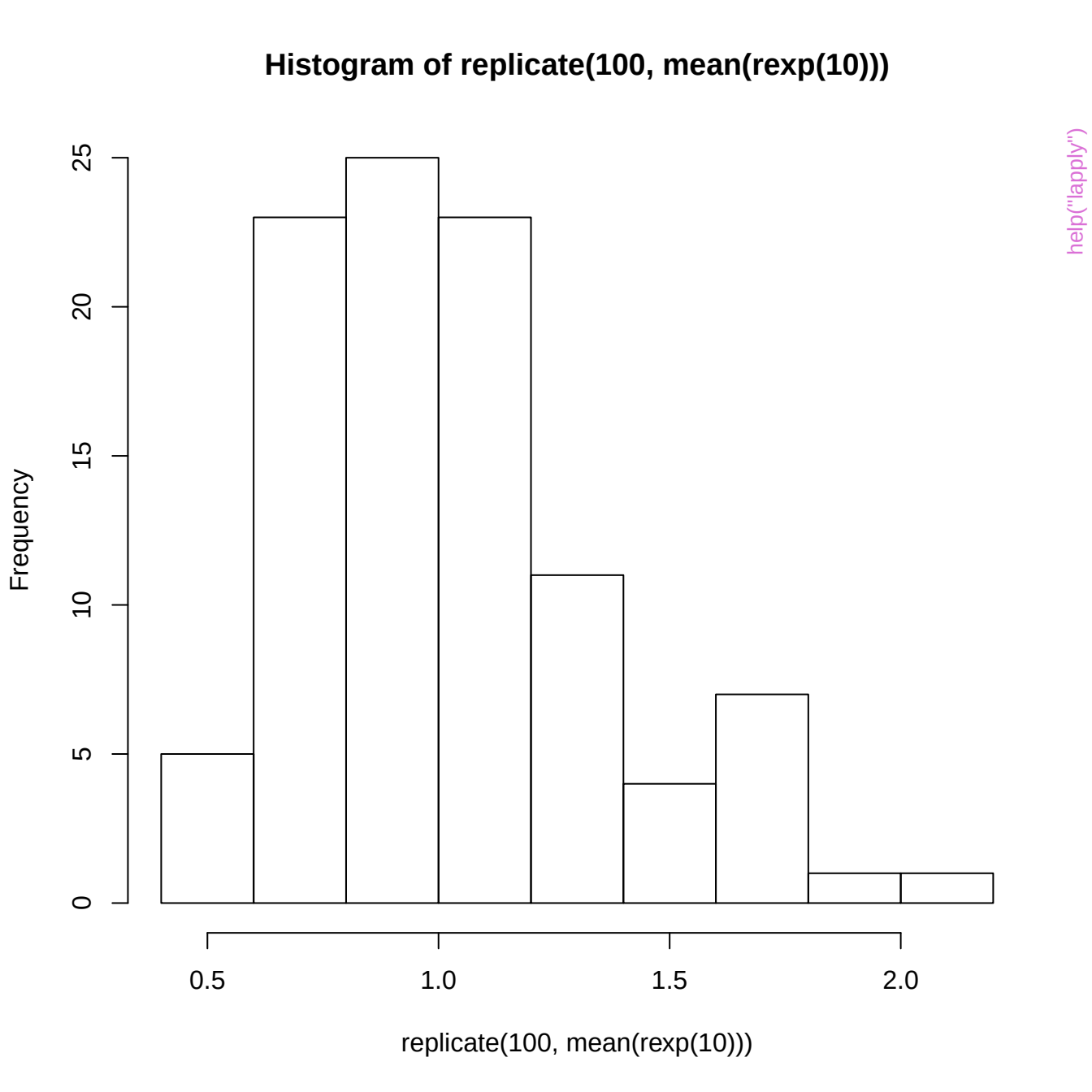

gamma
lgamma
digamma ==
psigamma(*, deriv = 0)
trigamma ==
psigamma(*, deriv = 1)
psigamma(*, deriv = 2)
psigamma(*, deriv = 3)
x
y
help("Special")

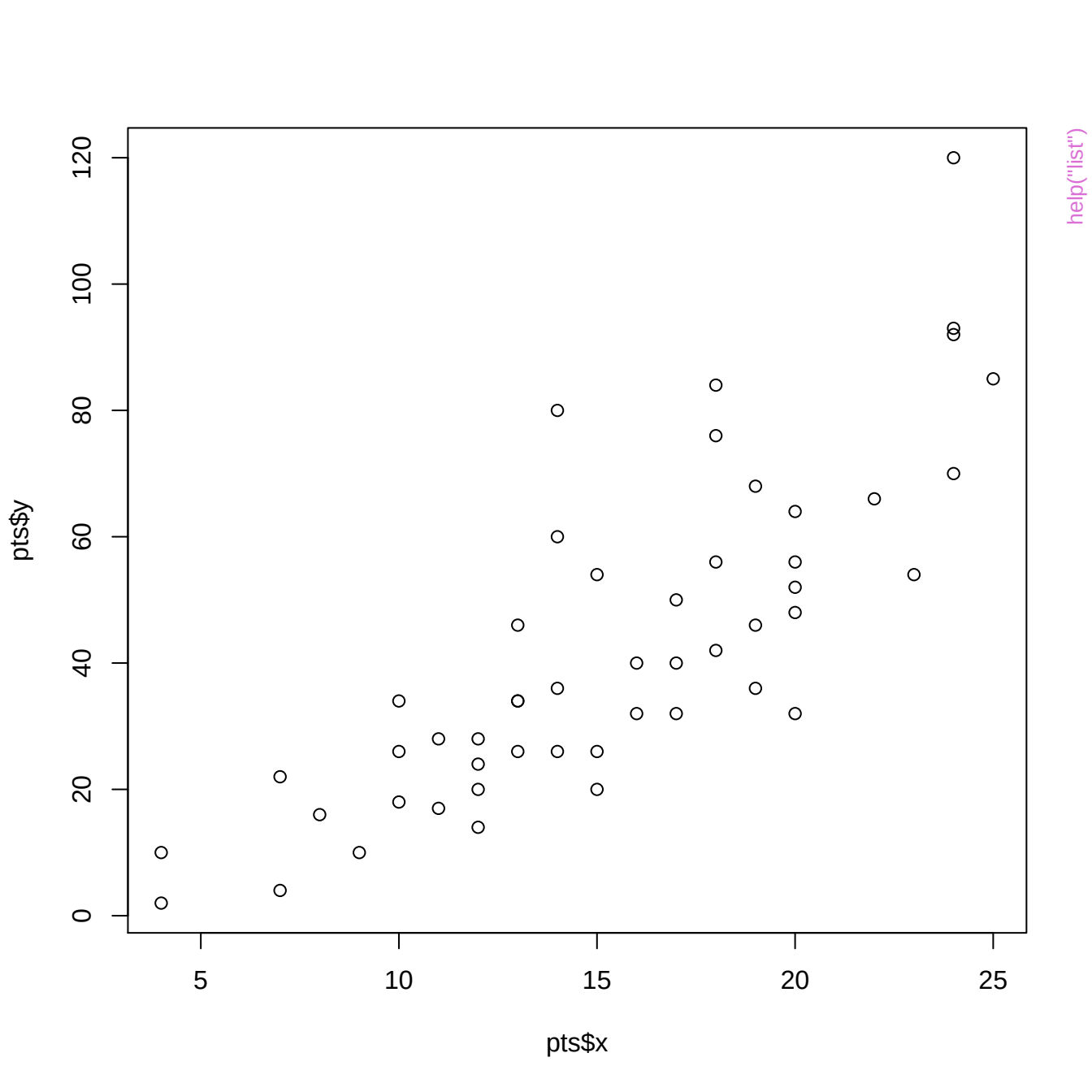

help("Vectorize")
K
0.00
0.05
0.10
0.15
Vm
150
200
250
300
100
64
25
16
36
49
81


0
1.0
0.5
0.0
−0.5
−1.0
0.6
0.8
1.0
1.2
1.4
Index
R version 2.15.3 (2013−03−01)
help("Version")

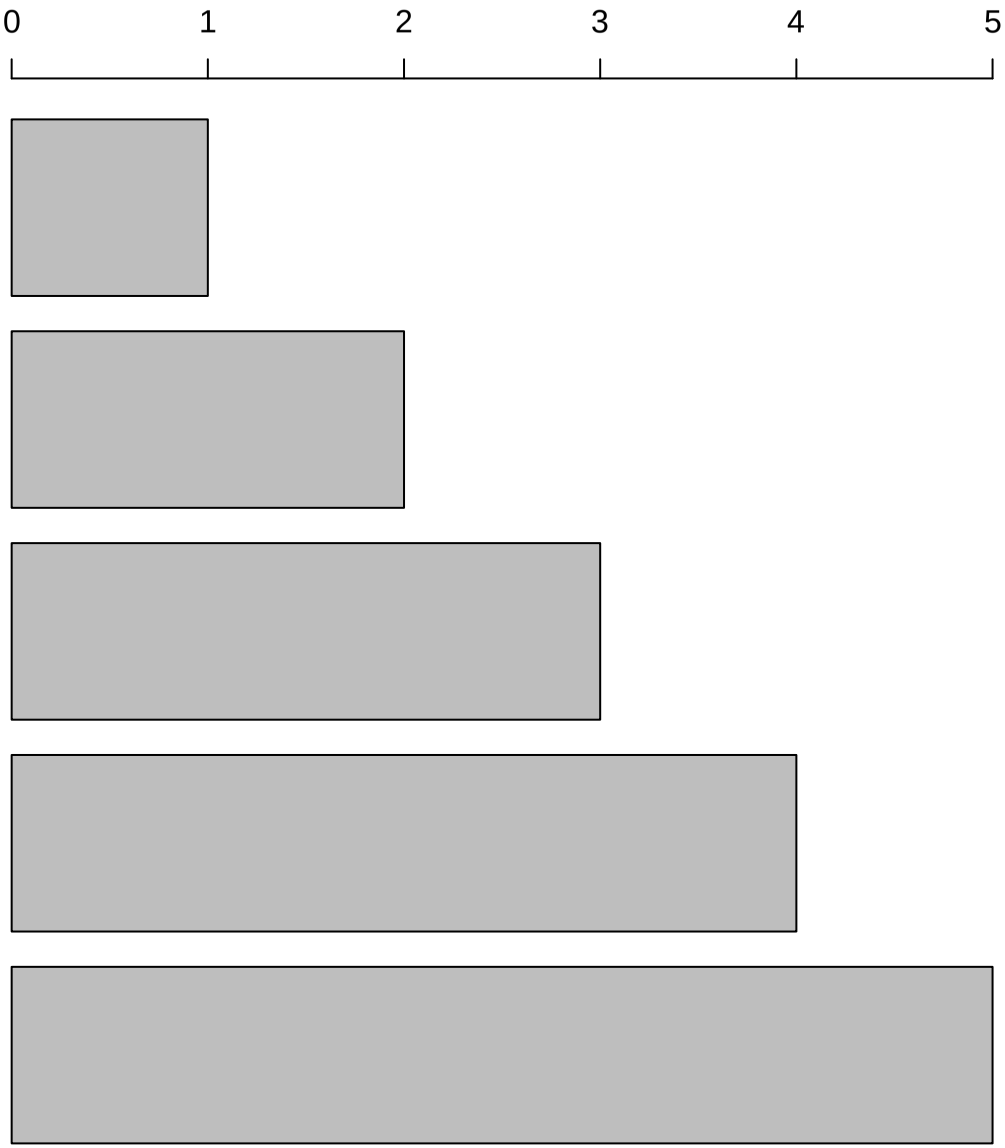

a = 2
a * (1:10)
1:10
5
10
15
20
2
4
6
8
10
help("bquote")


Rotation by $\pi = 180^o$
1.0
0.5
0.0
−0.5
−1.0
Im(zz)
−1.0
−0.5
0.0
0.5
1.0
Re(zz)
help("complex")

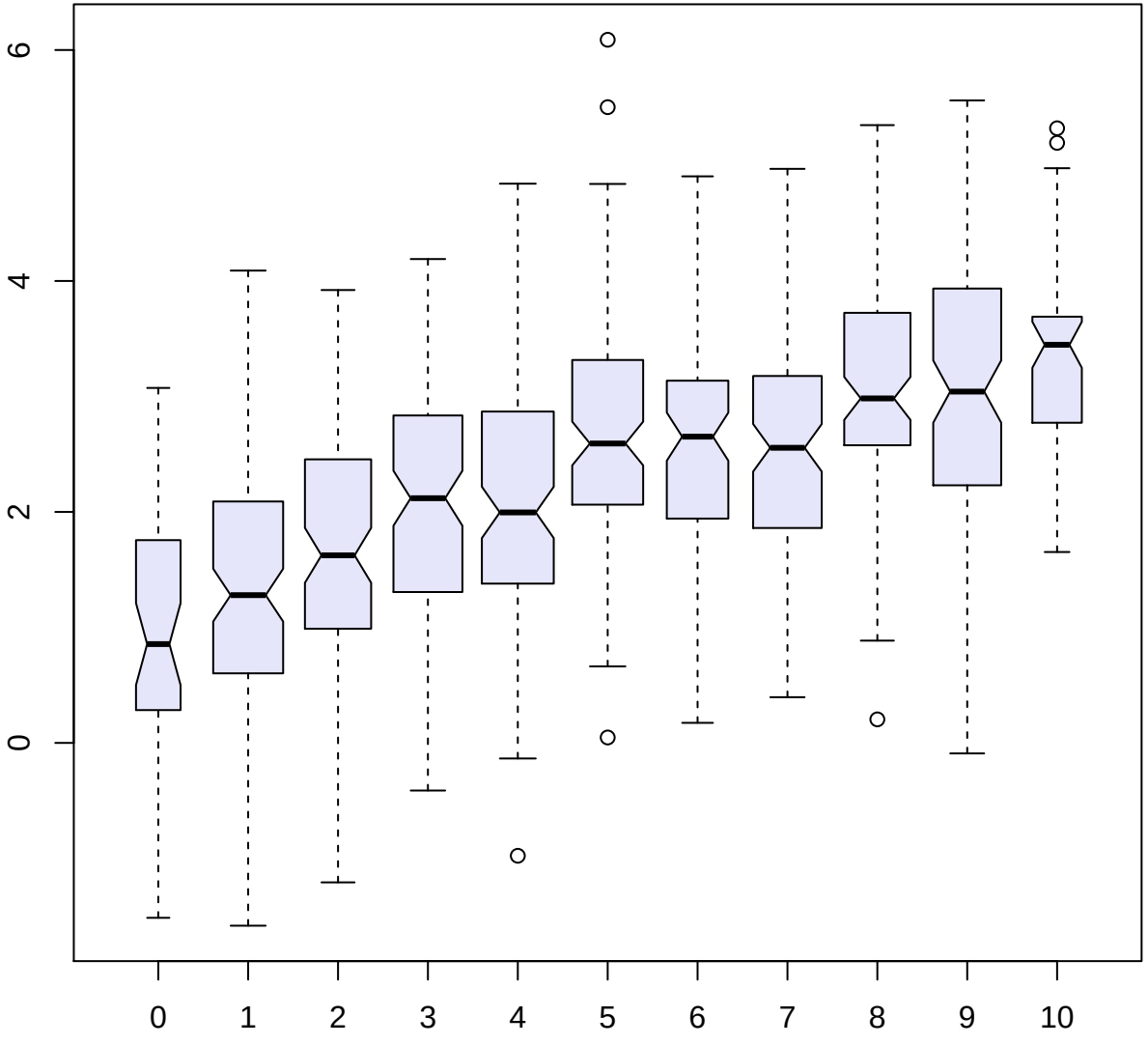

Histogram of replicate(100, mean(rexp(10)))
Frequency
0
5
10
15
20
25
0.5
1.0
1.5
2.0
replicate(100, mean(rexp(10)))
help("lapply")



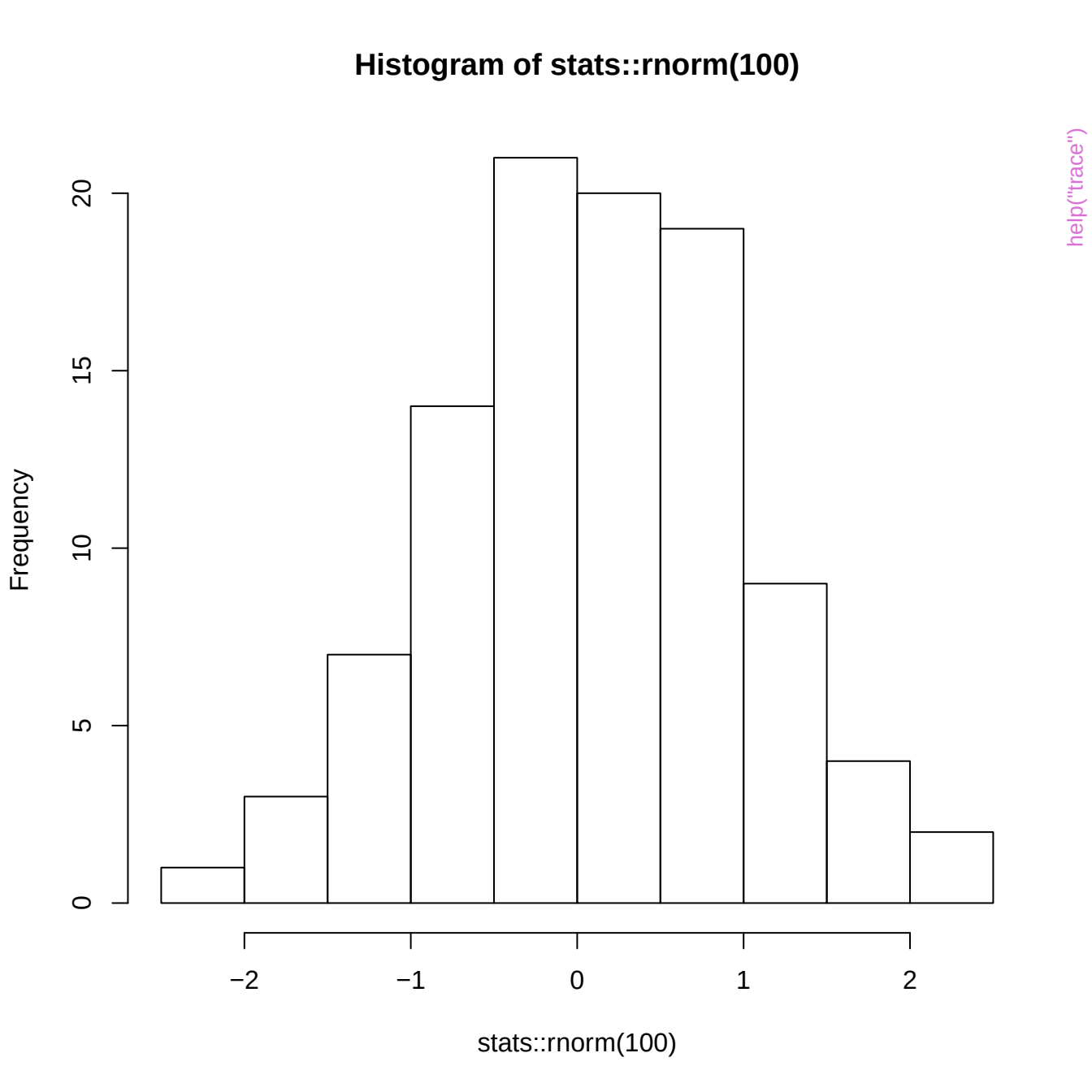
help("list")

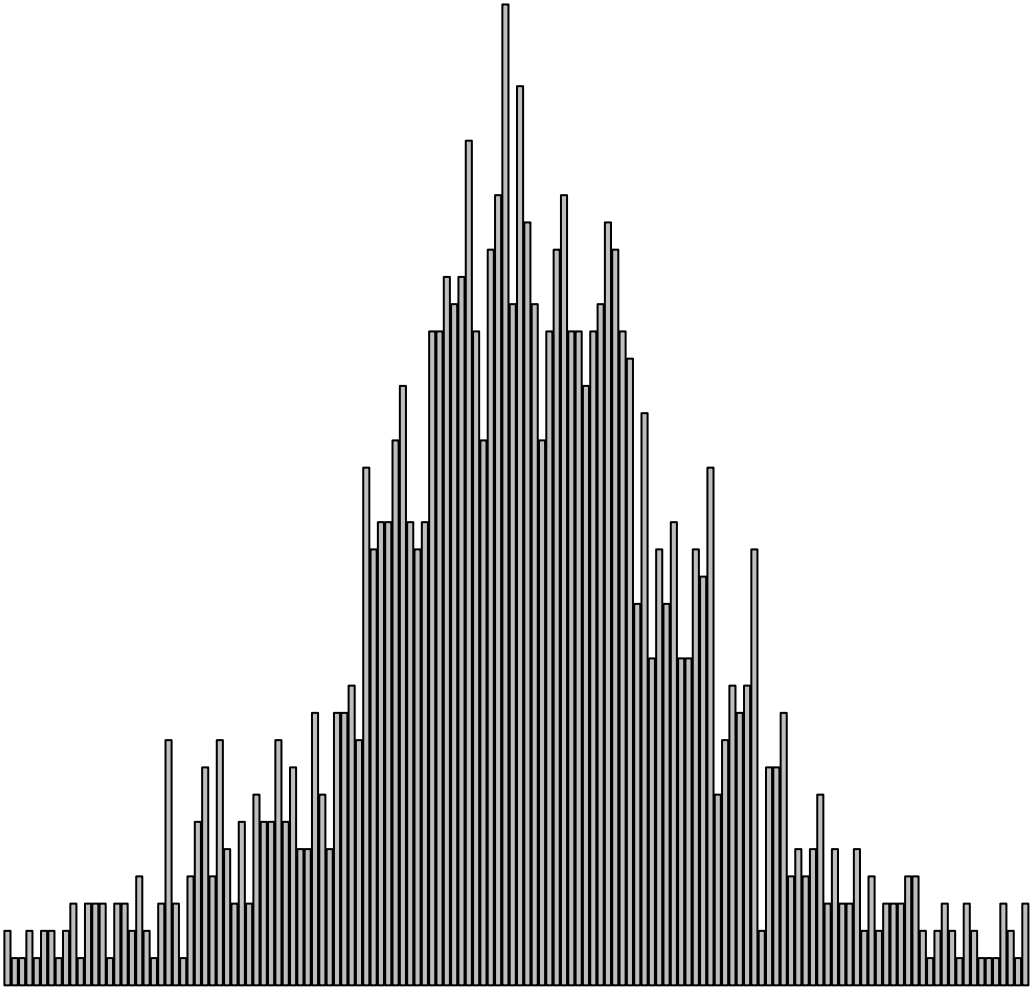


help("notyet")

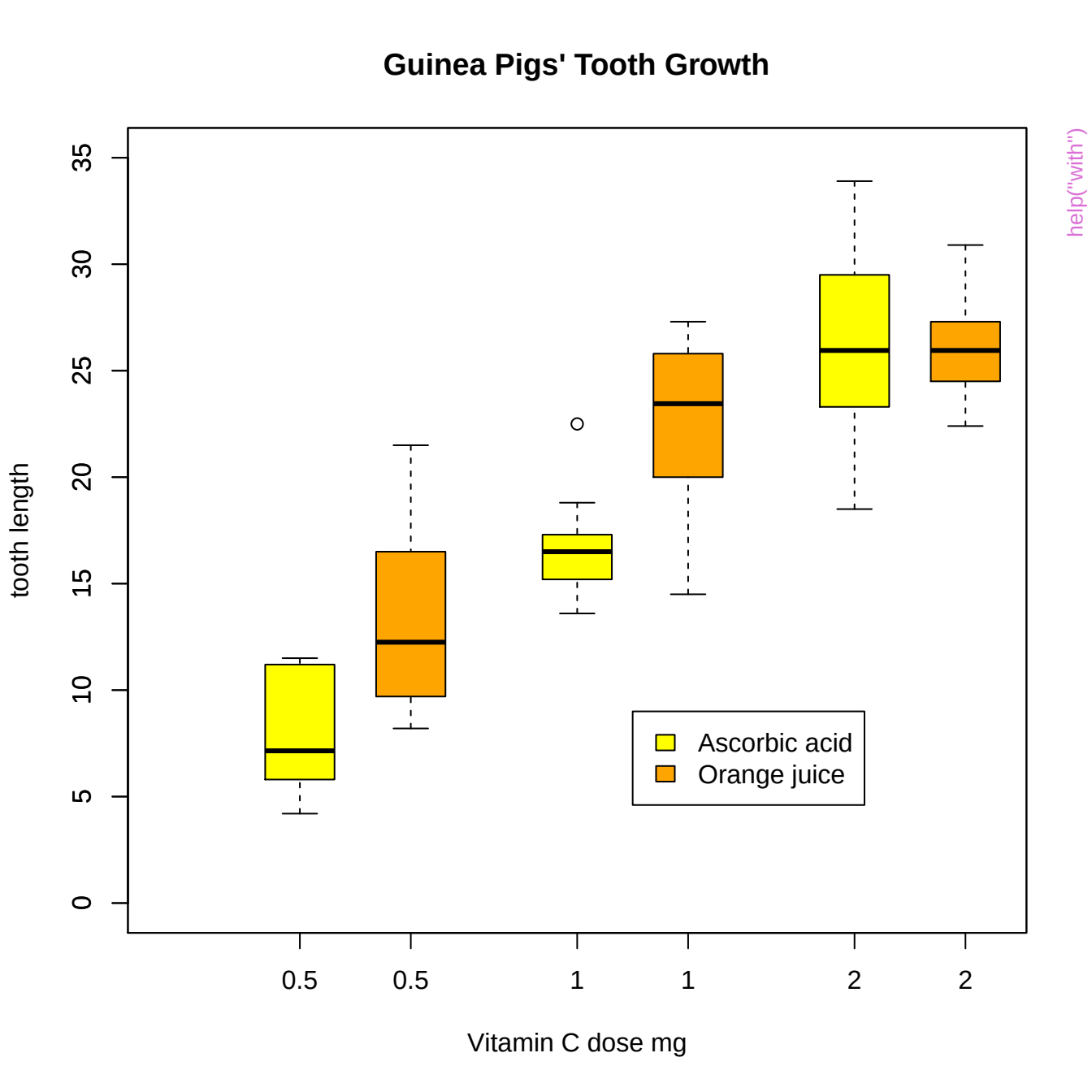


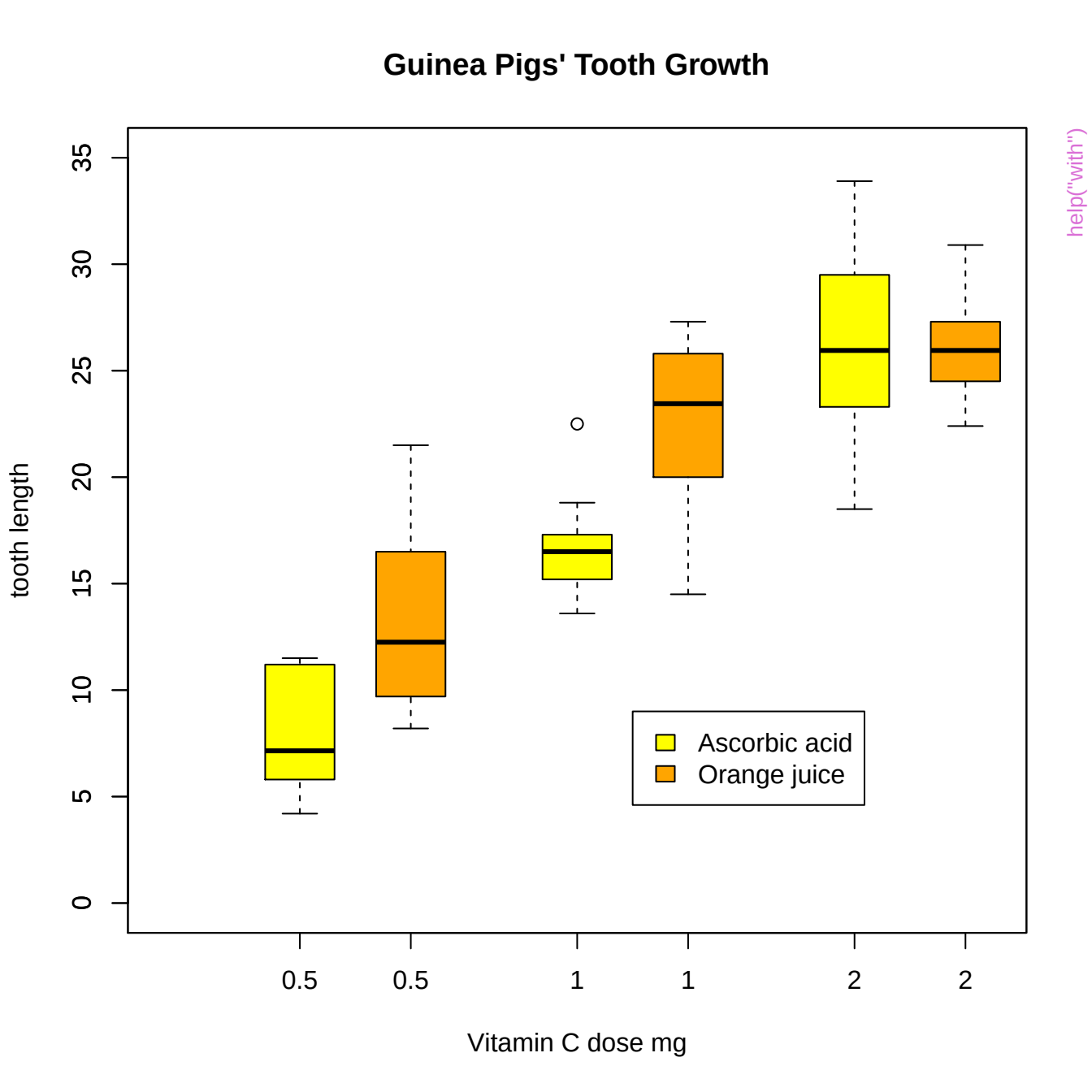
help("split")


Histogram of stats::rnorm(100)
Frequency
0
5
10
15
20
−2
−1
0
1
2
stats::rnorm(100)
help("trace")



help("unname")


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


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