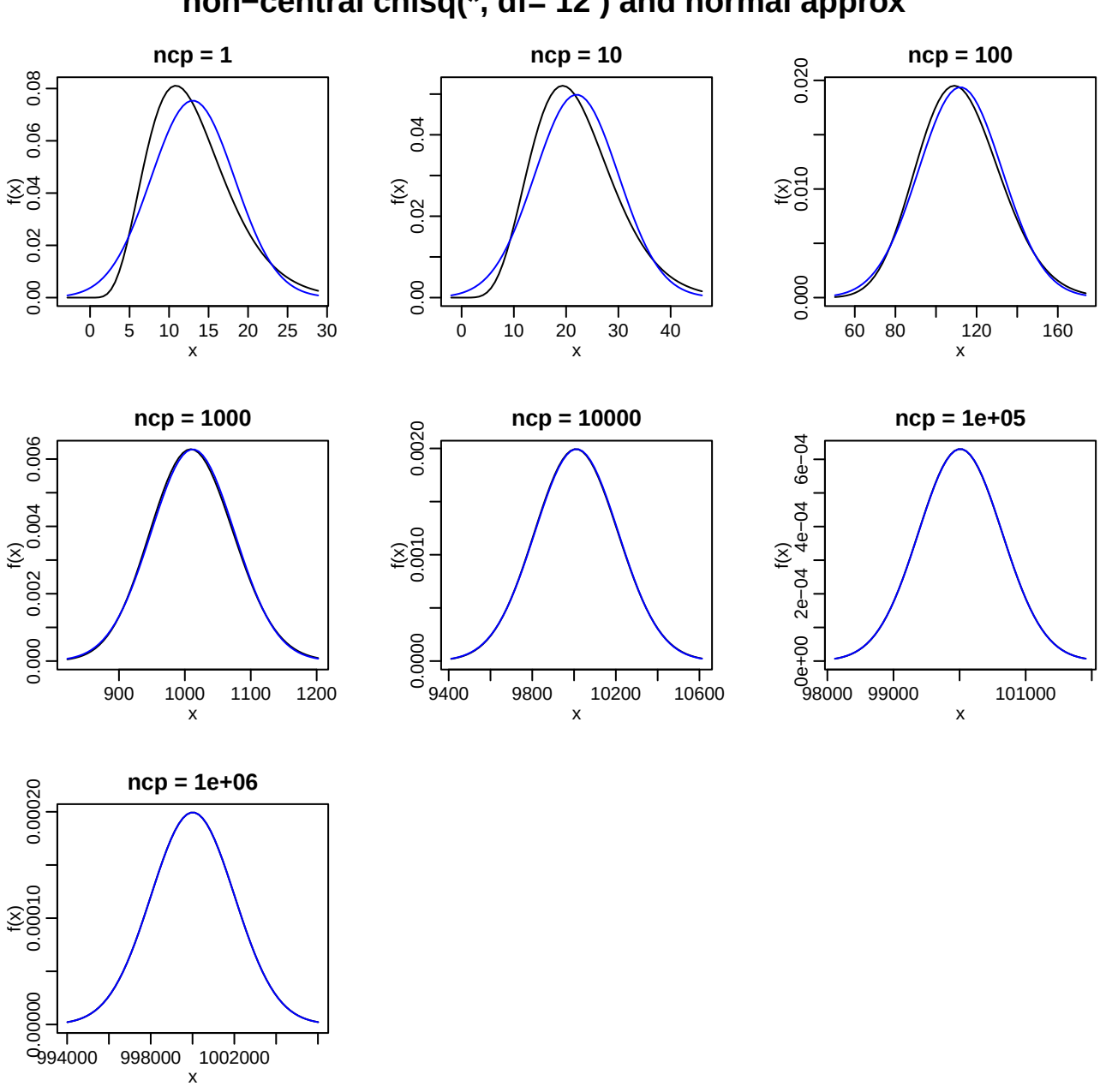
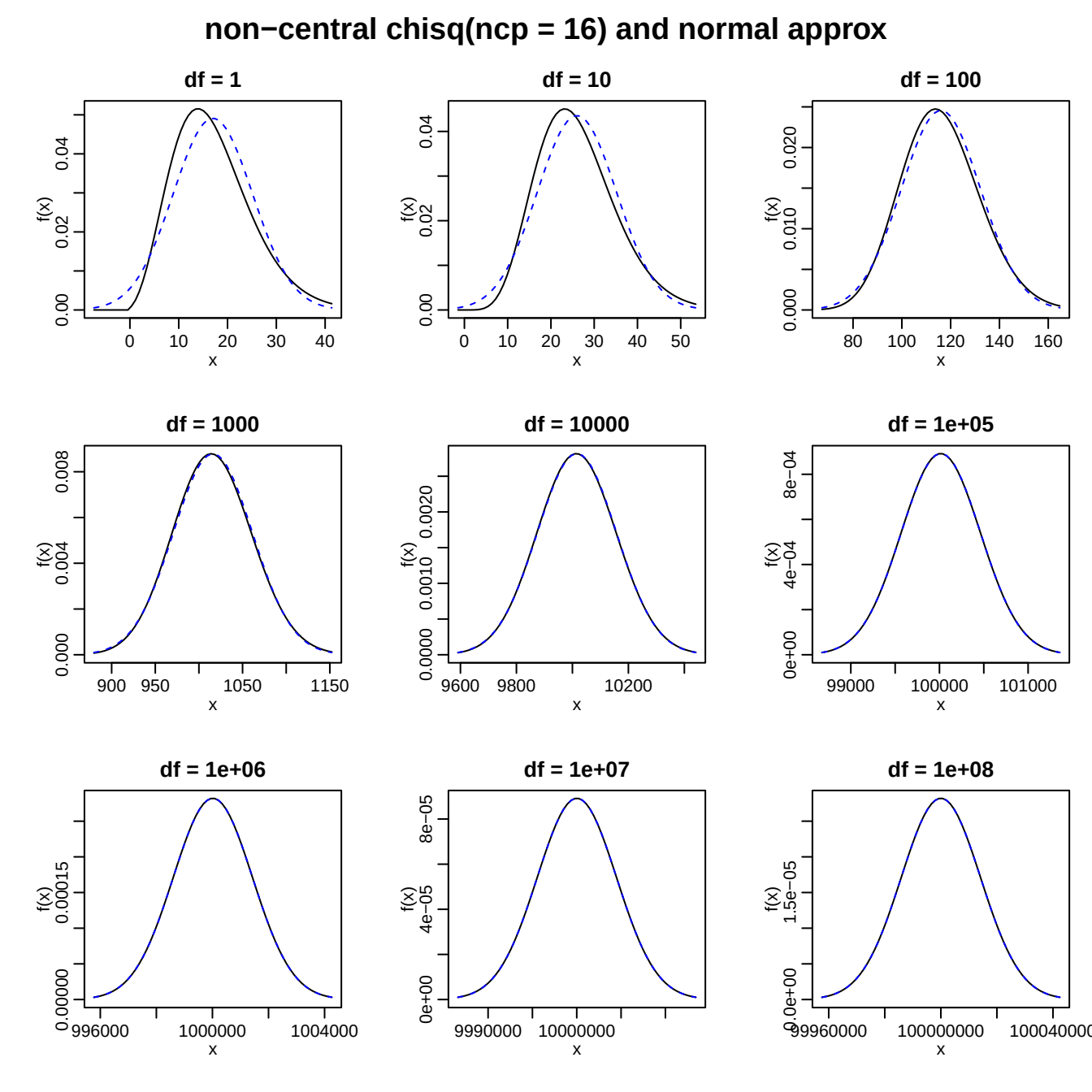
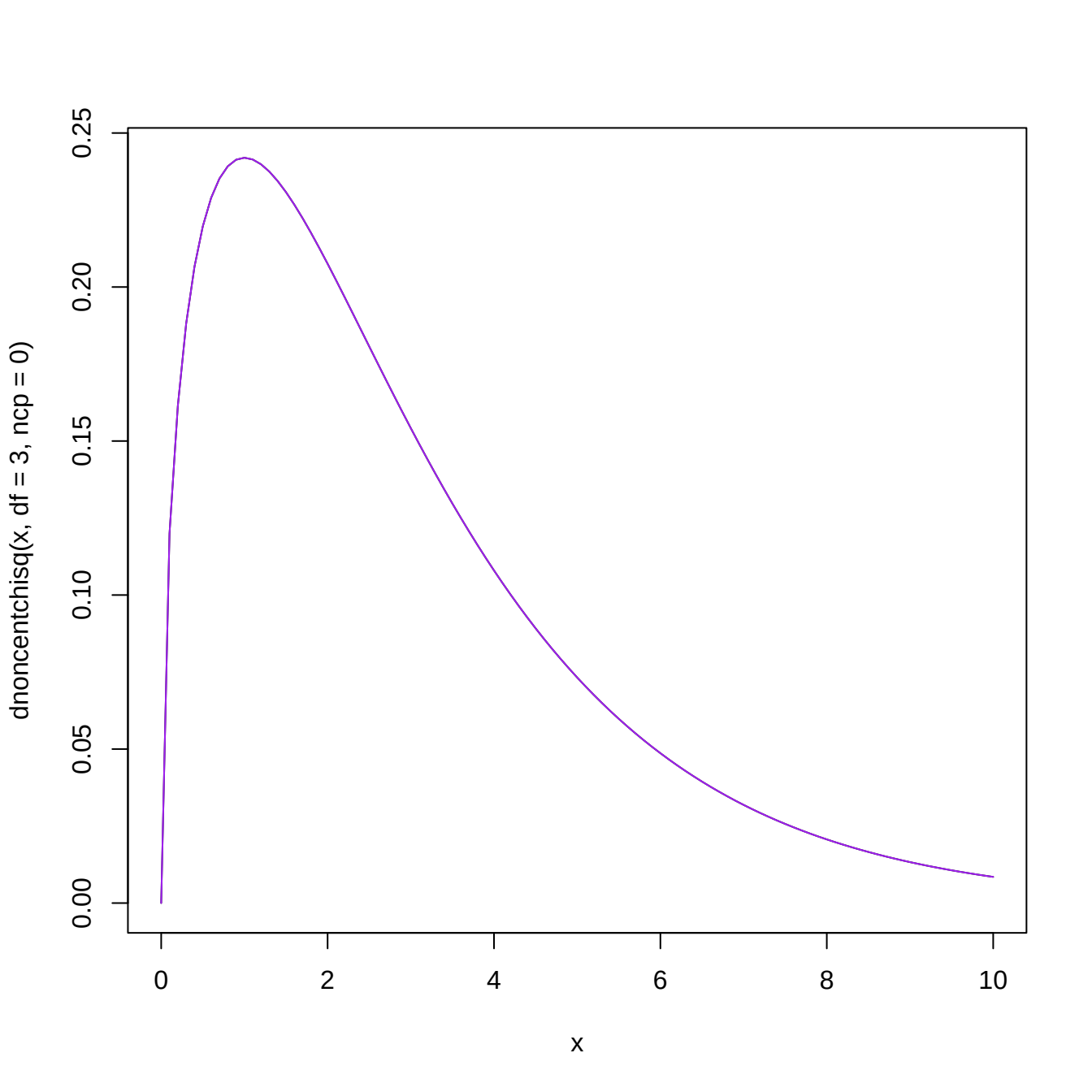
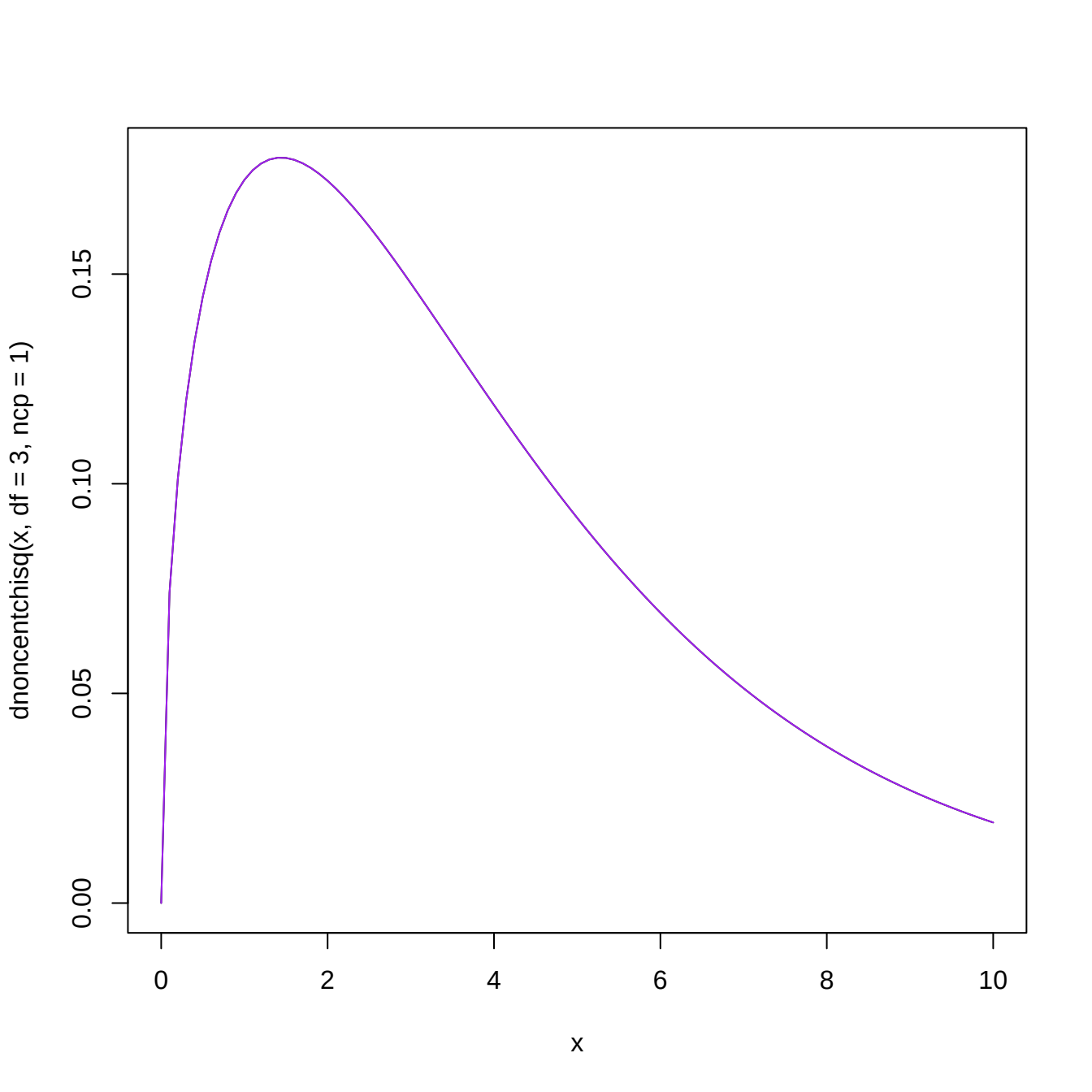
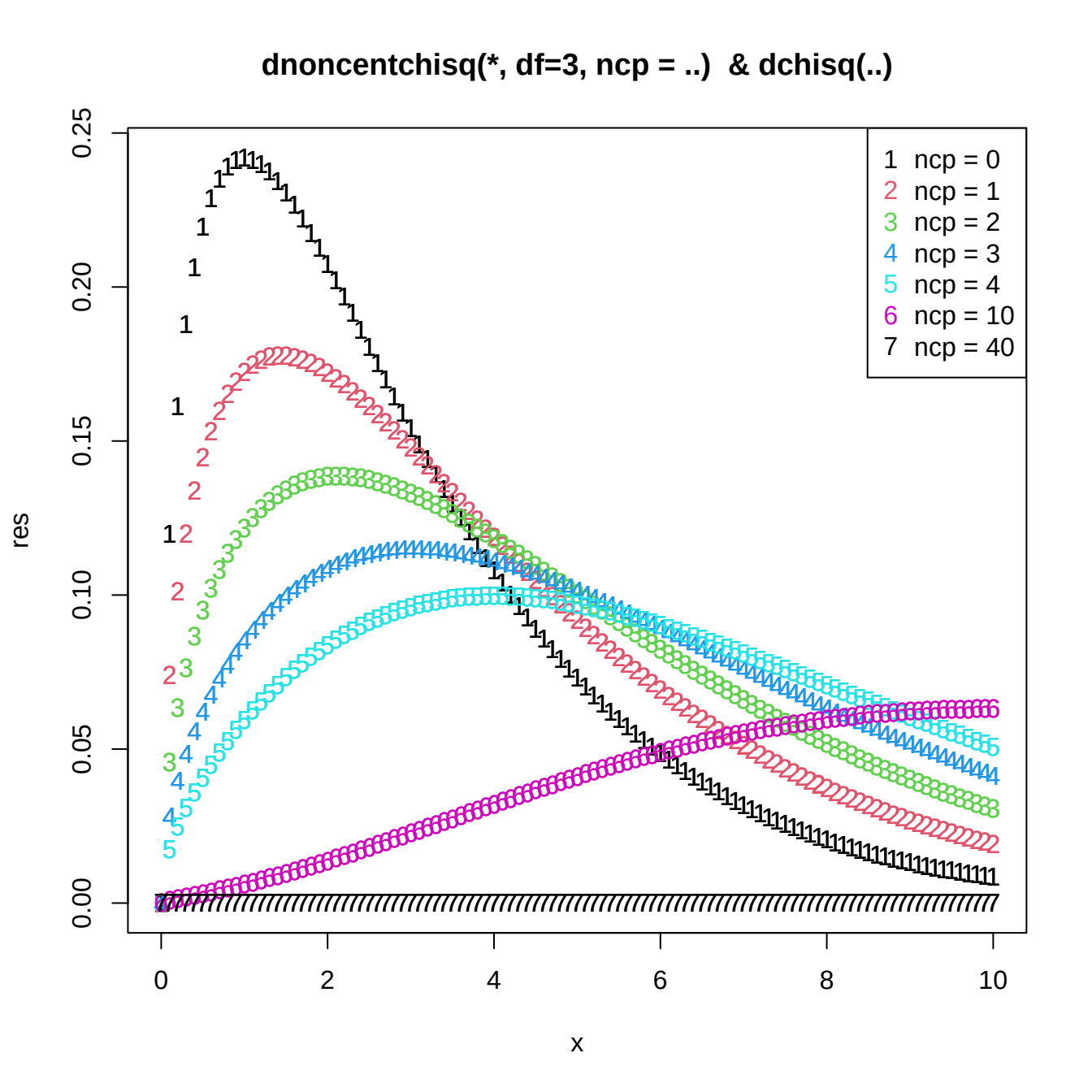
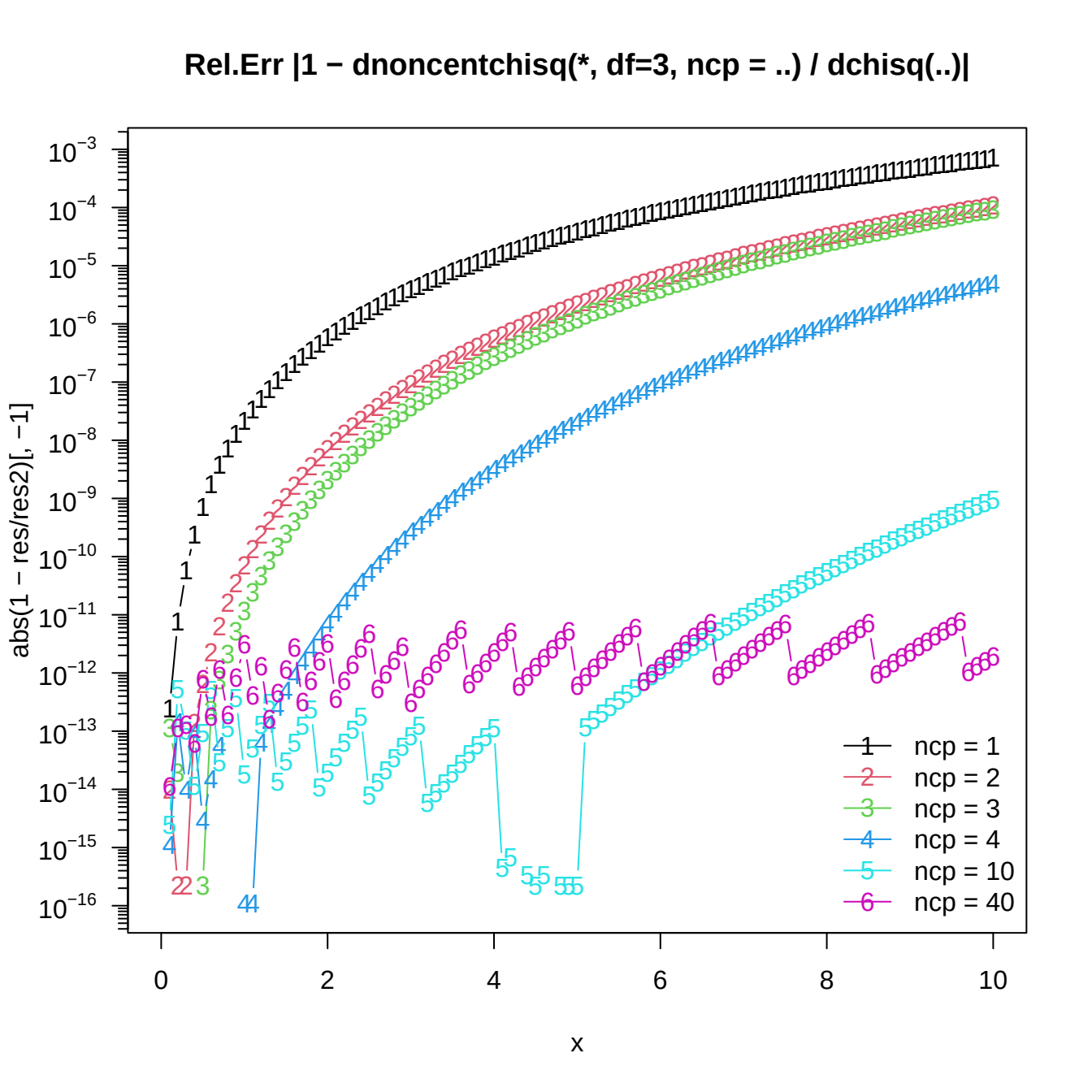

non−central chisq(*, df= 12) and normal approx
ncp = 1
ncp = 10
ncp = 100
ncp = 1000
ncp = 10000
ncp = 1e+05
ncp = 1e+06
f(x)
x

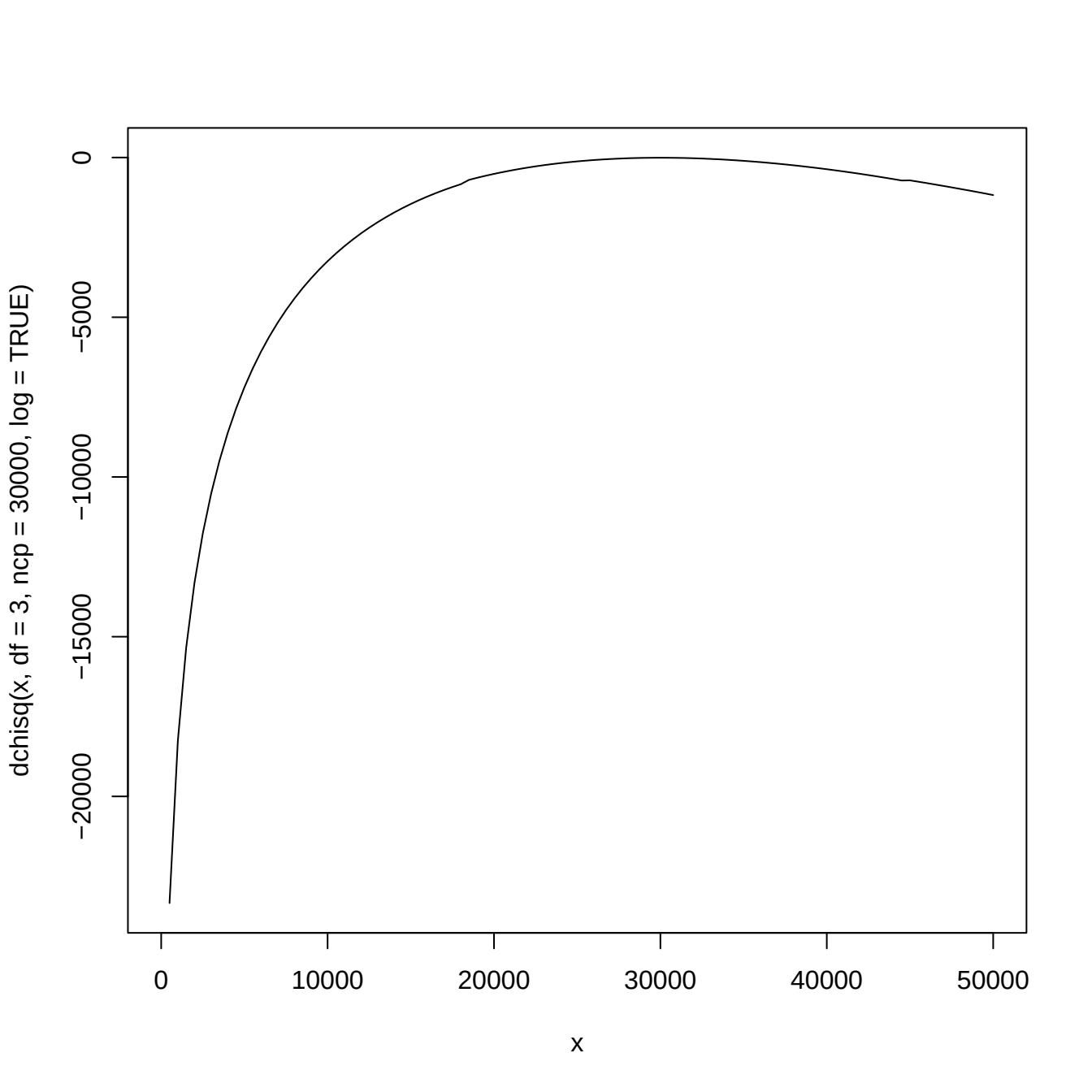

non−central chisq(ncp = 16) and normal approx
df = 1
df = 10
df = 100
df = 1000
df = 10000
df = 1e+05
df = 1e+06
df = 1e+07
df = 1e+08
f(x)
x

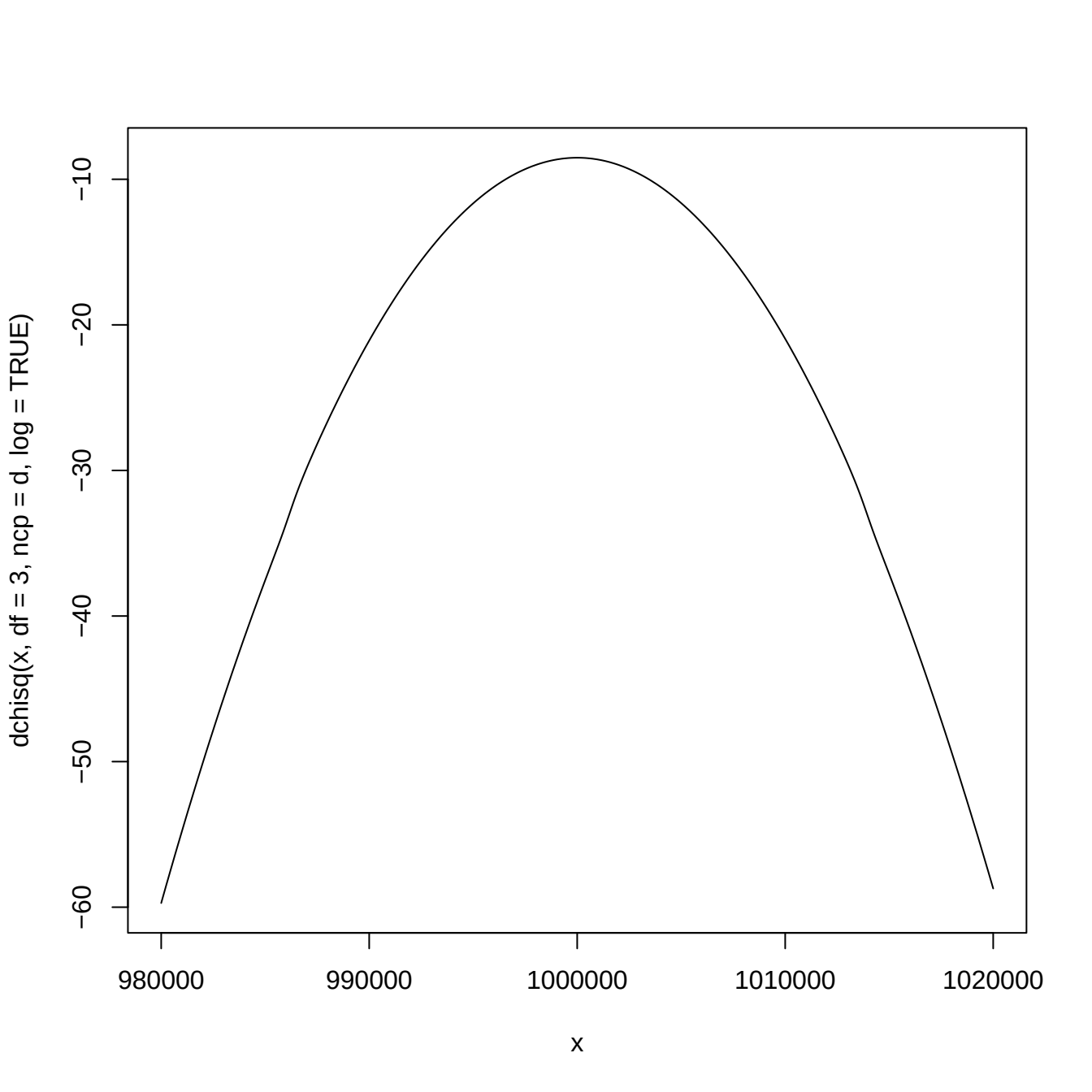

dnoncentchisq(x, df = 3, ncp = 0)
0.00
0.05
0.10
0.15
0.20
0.25
0
2
4
6
8
10
x

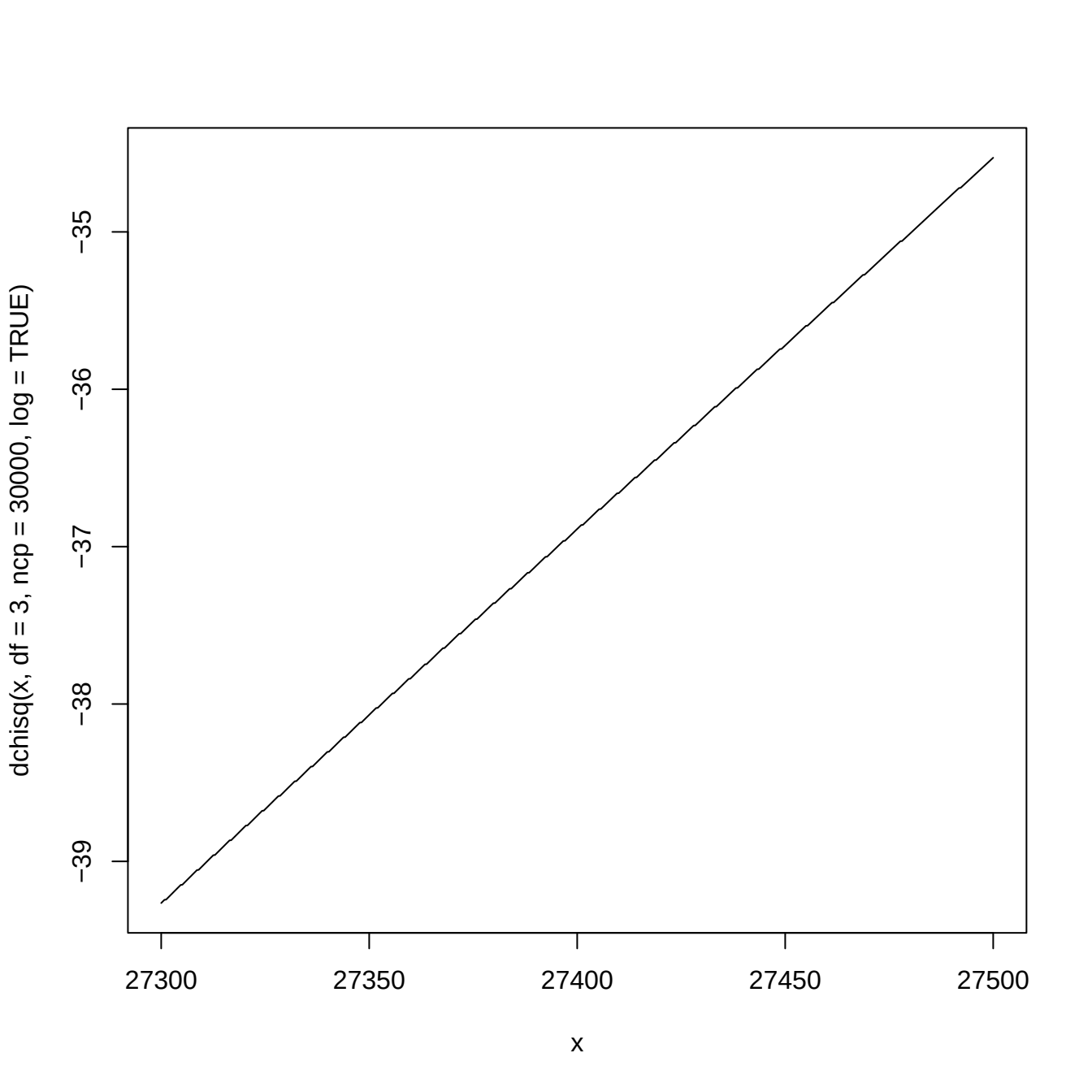

dnoncentchisq(x, df = 3, ncp = 1)
0.00
0.05
0.10
0.15
0
2
4
6
8
10
x

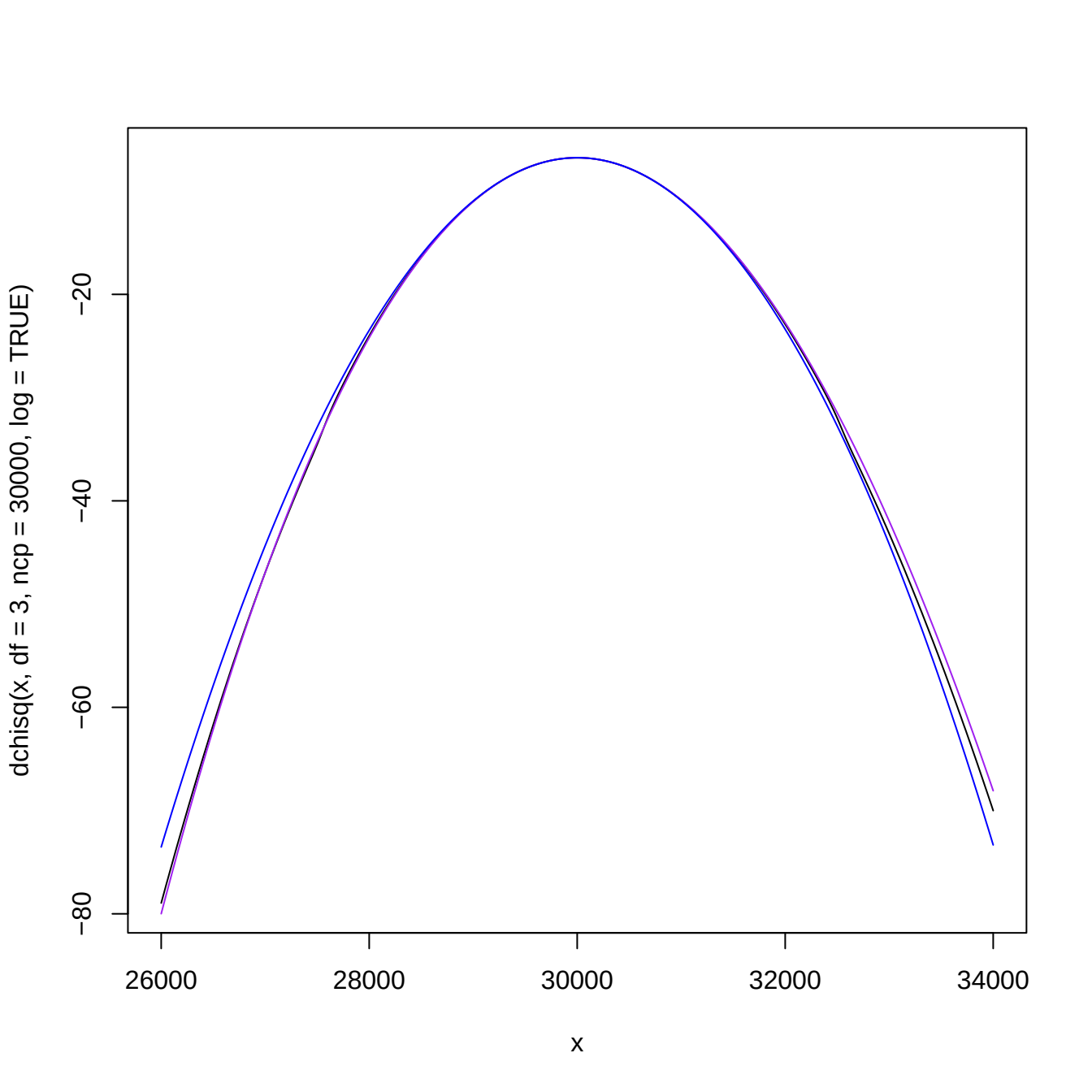

dnoncentchisq(*, df=3, ncp = ..) & dchisq(..)
res
x
0.00
0.05
0.10
0.15
0.20
0.25
0
2
4
6
8
10
1 ncp = 0
2 ncp = 1
3 ncp = 2
4 ncp = 3
5 ncp = 4
6 ncp = 10
7 ncp = 40

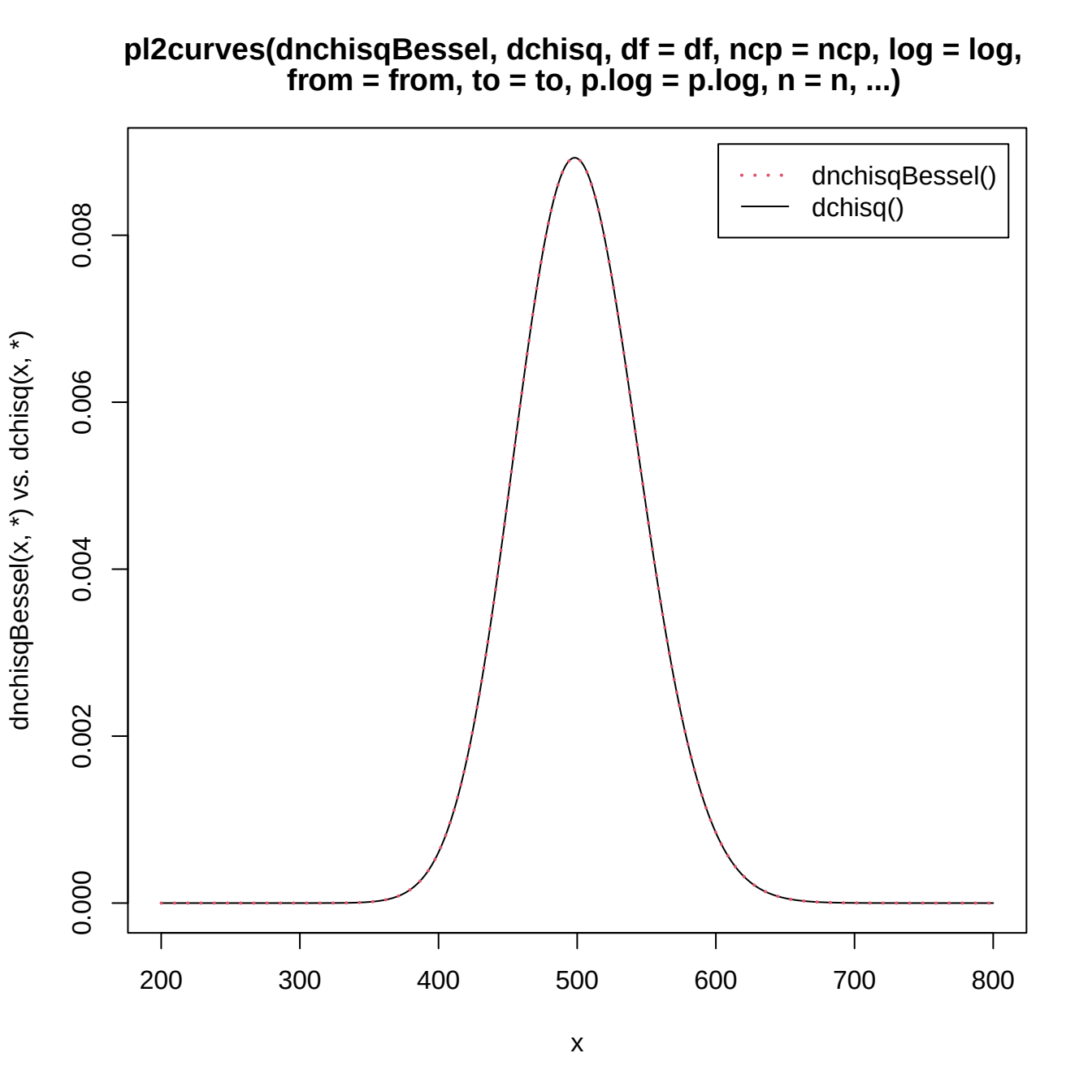

Rel.Err |1 − dnoncentchisq(*, df=3, ncp = ..) / dchisq(..)|
abs(1 − res/res2)[, −1]
x
ncp = 1
ncp = 2
ncp = 3
ncp = 4
ncp = 10
ncp = 40

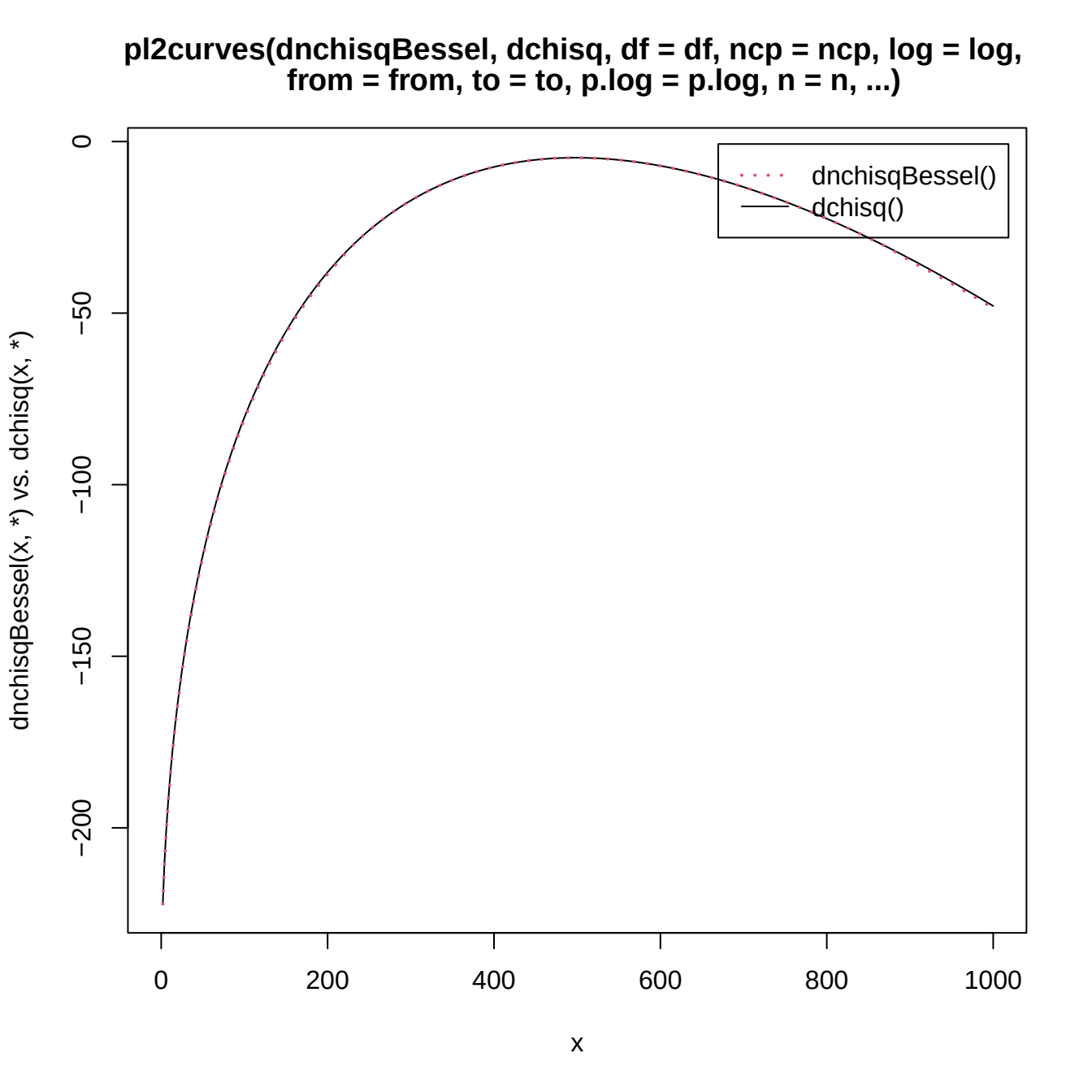

dchisq(x, df = 3, ncp = 30000, log = TRUE)
0
−5000
−10000
−15000
−20000
0
10000
20000
30000
40000
50000
x

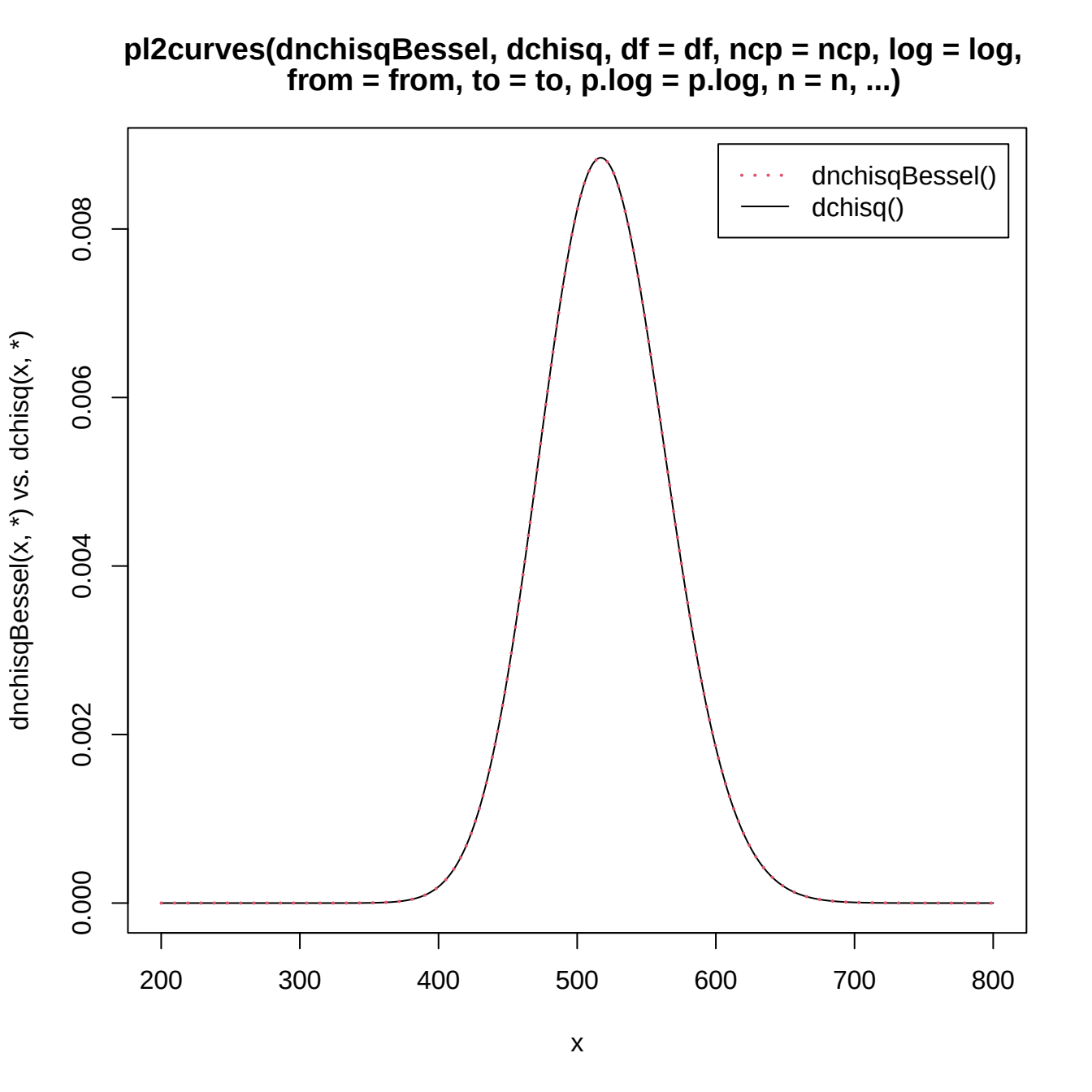

dchisq(x, df = 3, ncp = d, log = TRUE)
−10
−20
−30
−40
−50
−60
980000
990000
1000000
1010000
1020000
x

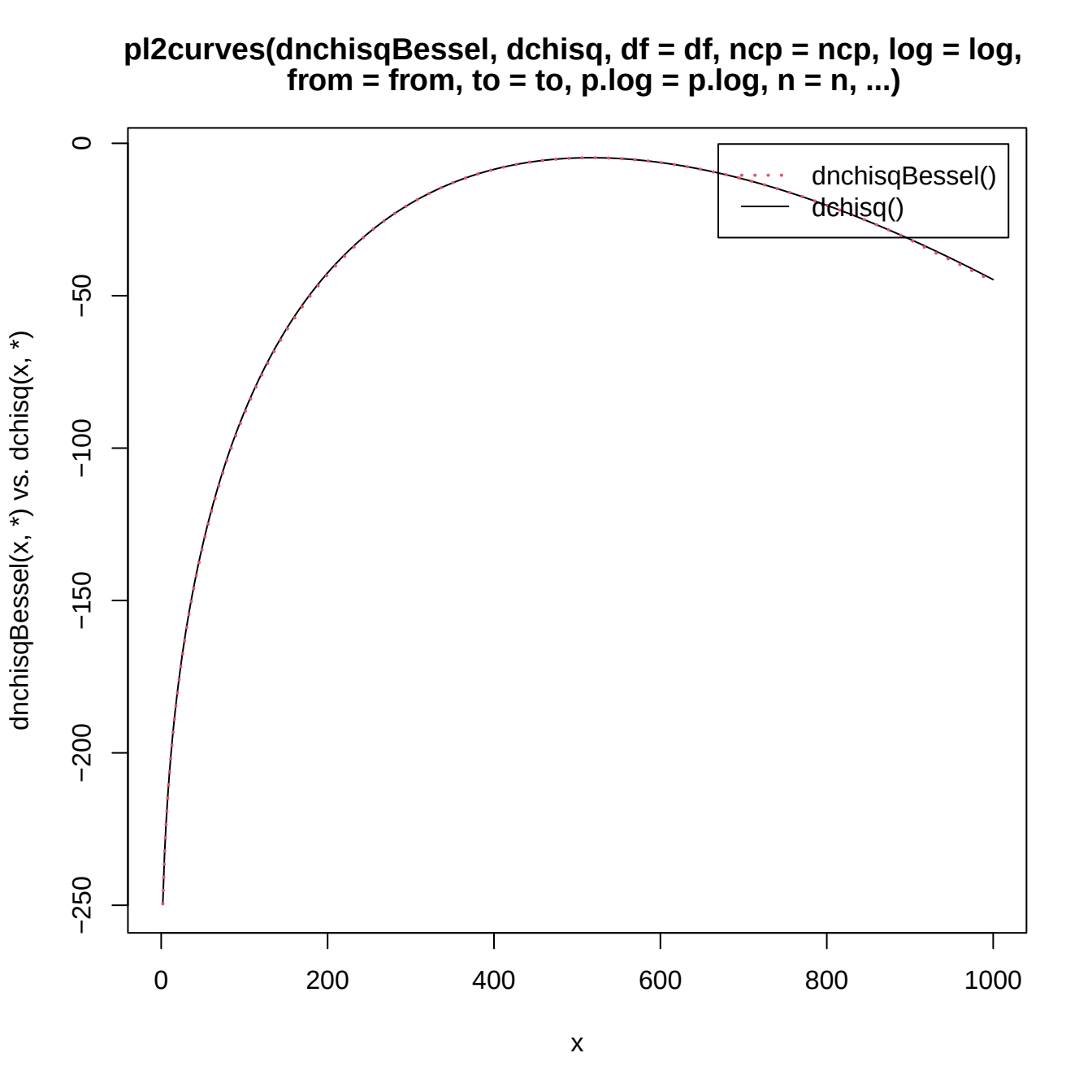

dchisq(x, df = 3, ncp = 30000, log = TRUE)
−35
−36
−37
−38
−39
27300
27350
27400
27450
27500
x

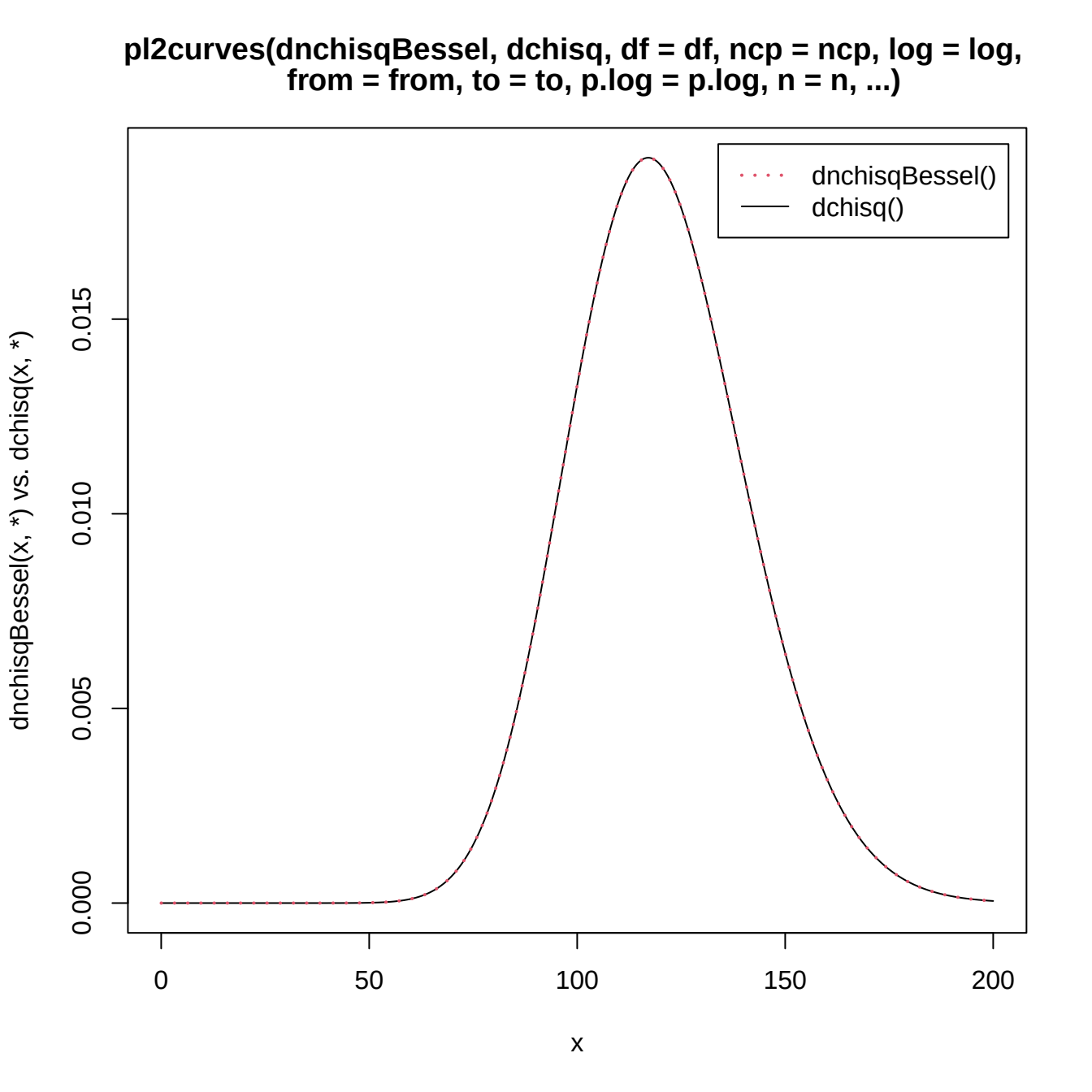

dchisq(x, df = 3, ncp = 30000, log = TRUE)
−20
−40
−60
−80
26000
28000
30000
32000
34000
x

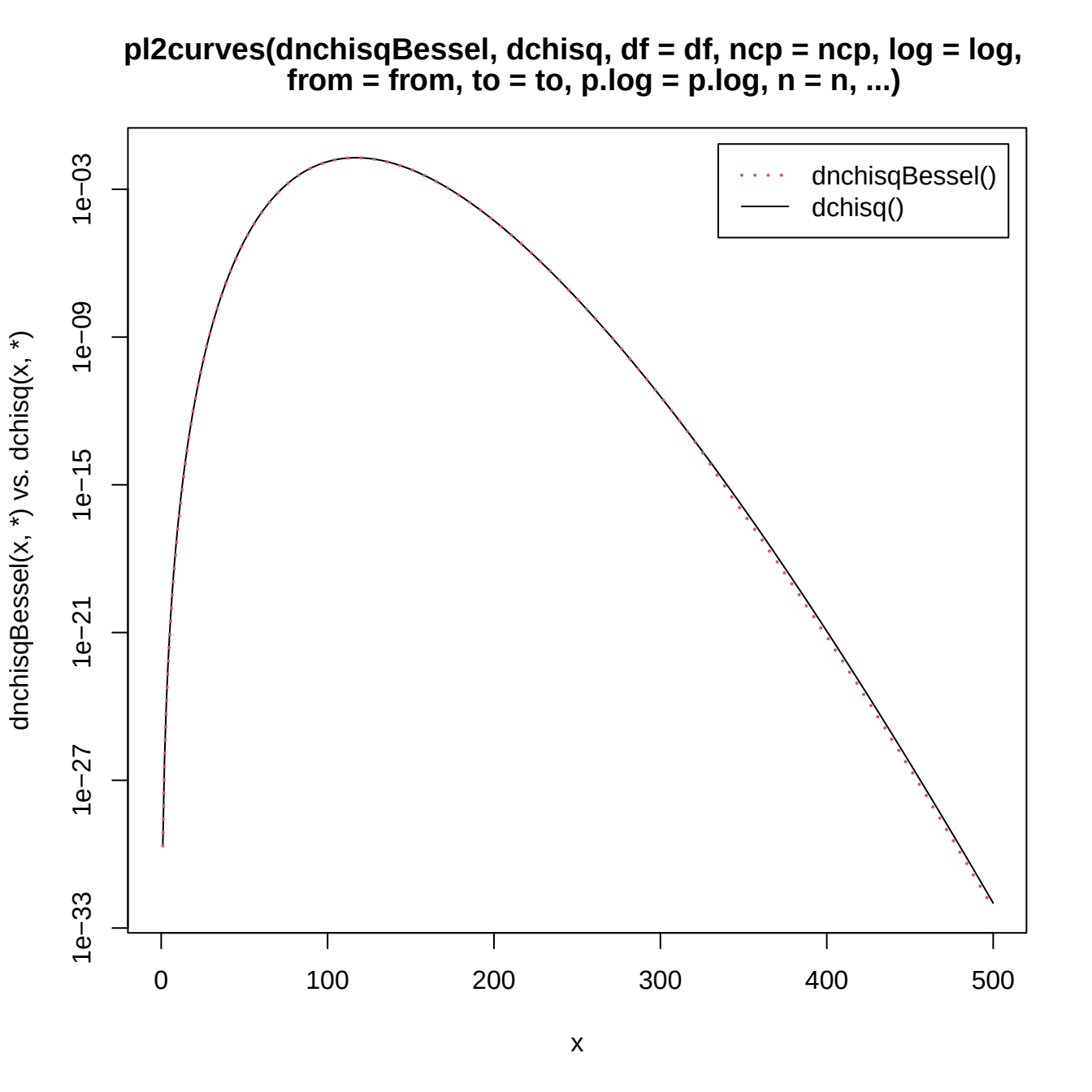

pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel()
dchisq()
dnchisqBessel(x, *) vs. dchisq(x, *)
0.000
0.002
0.004
0.006
0.008
200
300
400
500
600
700
800
x

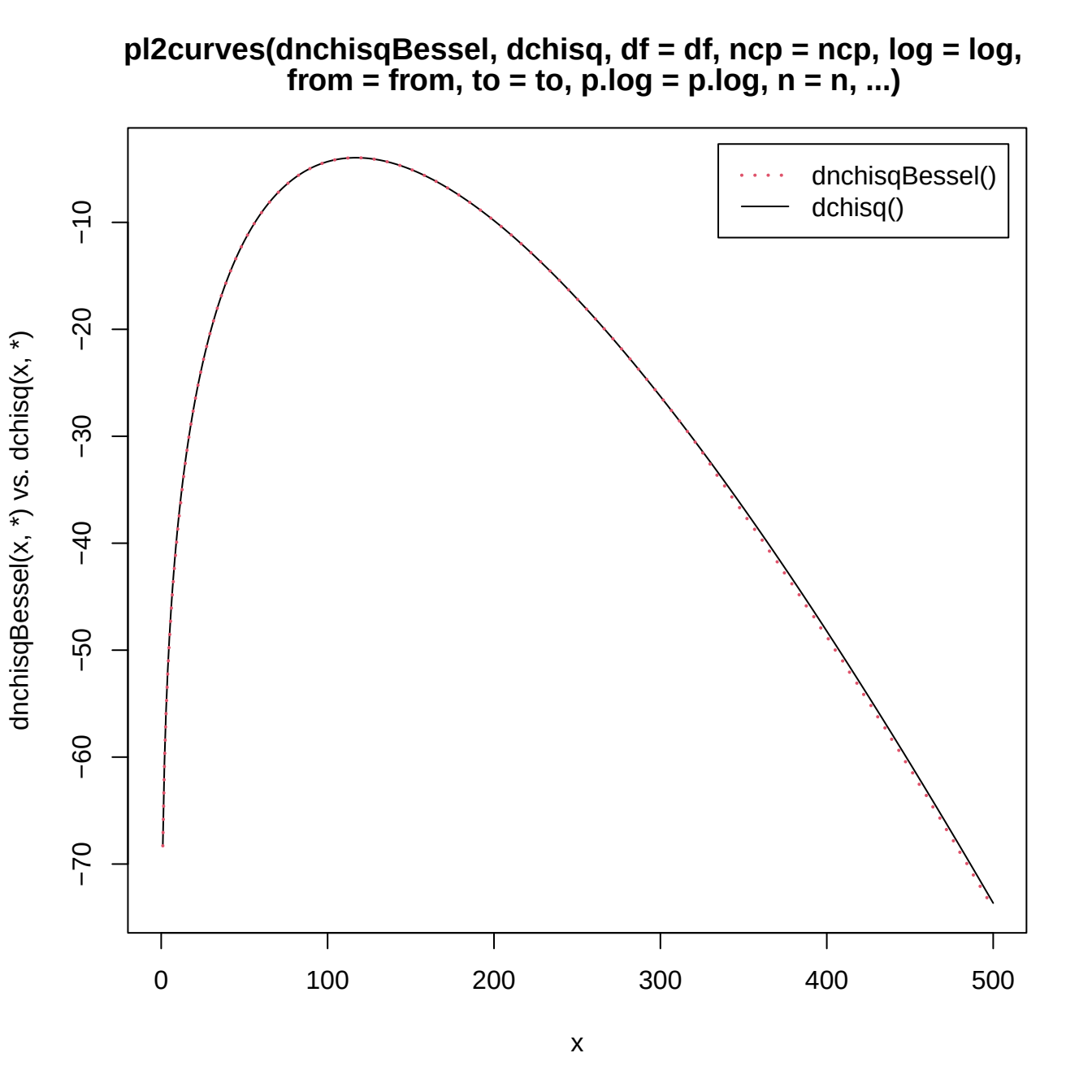

pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel(x, *) vs. dchisq(x, *)
dnchisqBessel()
dchisq()
0
−50
−100
−150
−200
0
200
400
600
800
1000
x

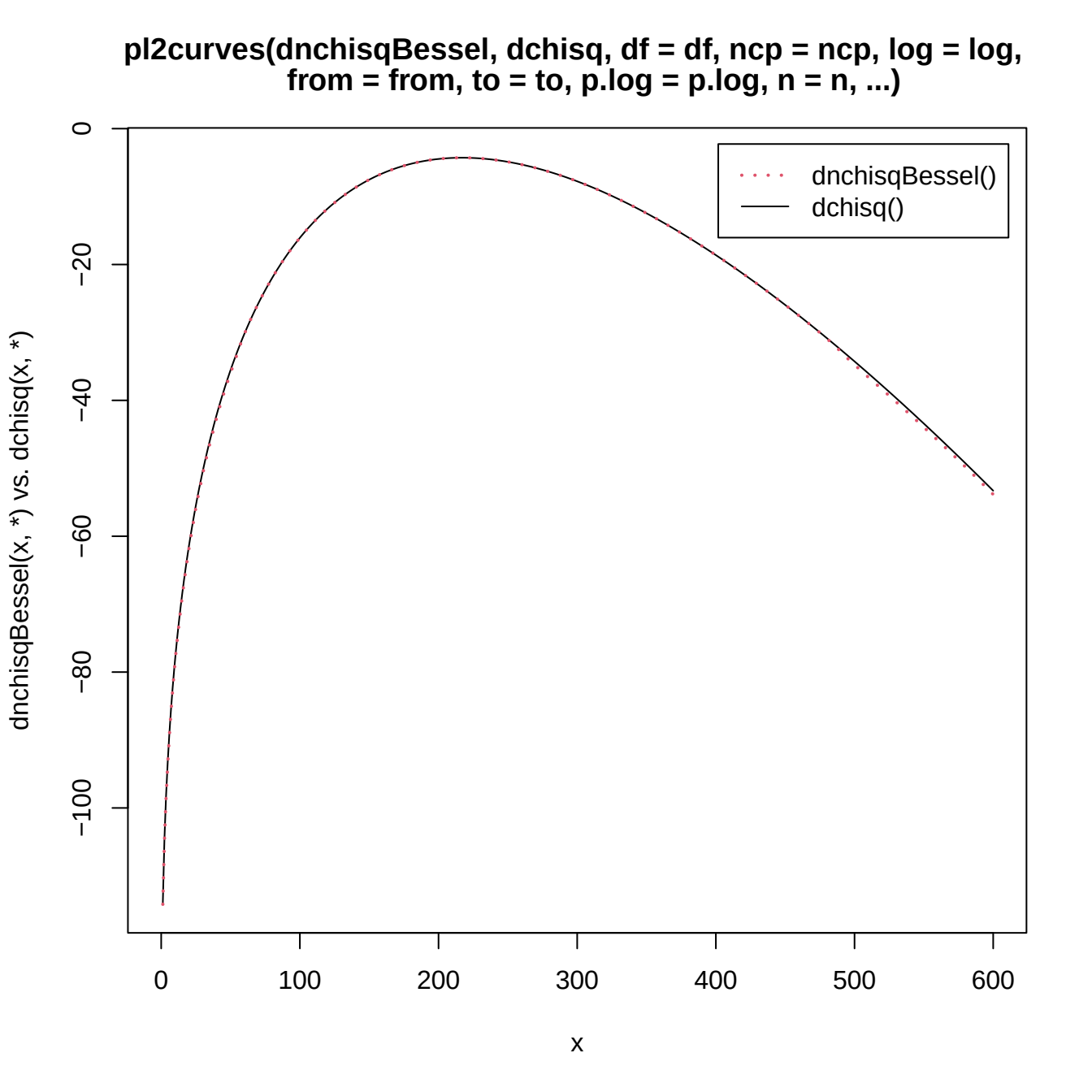

pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel()
dchisq()
dnchisqBessel(x, *) vs. dchisq(x, *)
0.000
0.002
0.004
0.006
0.008
200
300
400
500
600
700
800
x

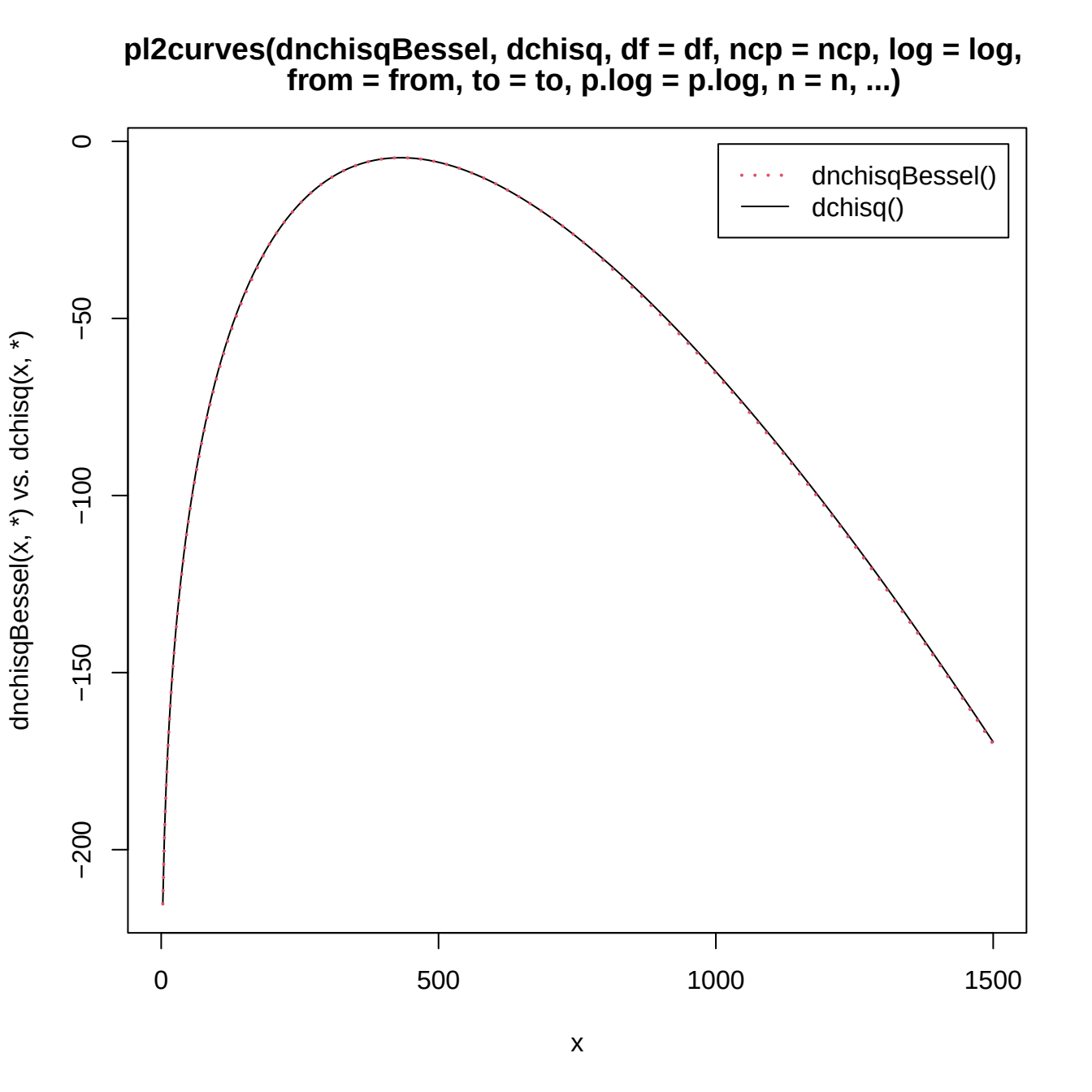

pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log, from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel(x, *) vs. dchisq(x, *)
dnchisqBessel()
dchisq()
0
−50
−100
−150
−200
−250
0
200
400
600
800
1000
x

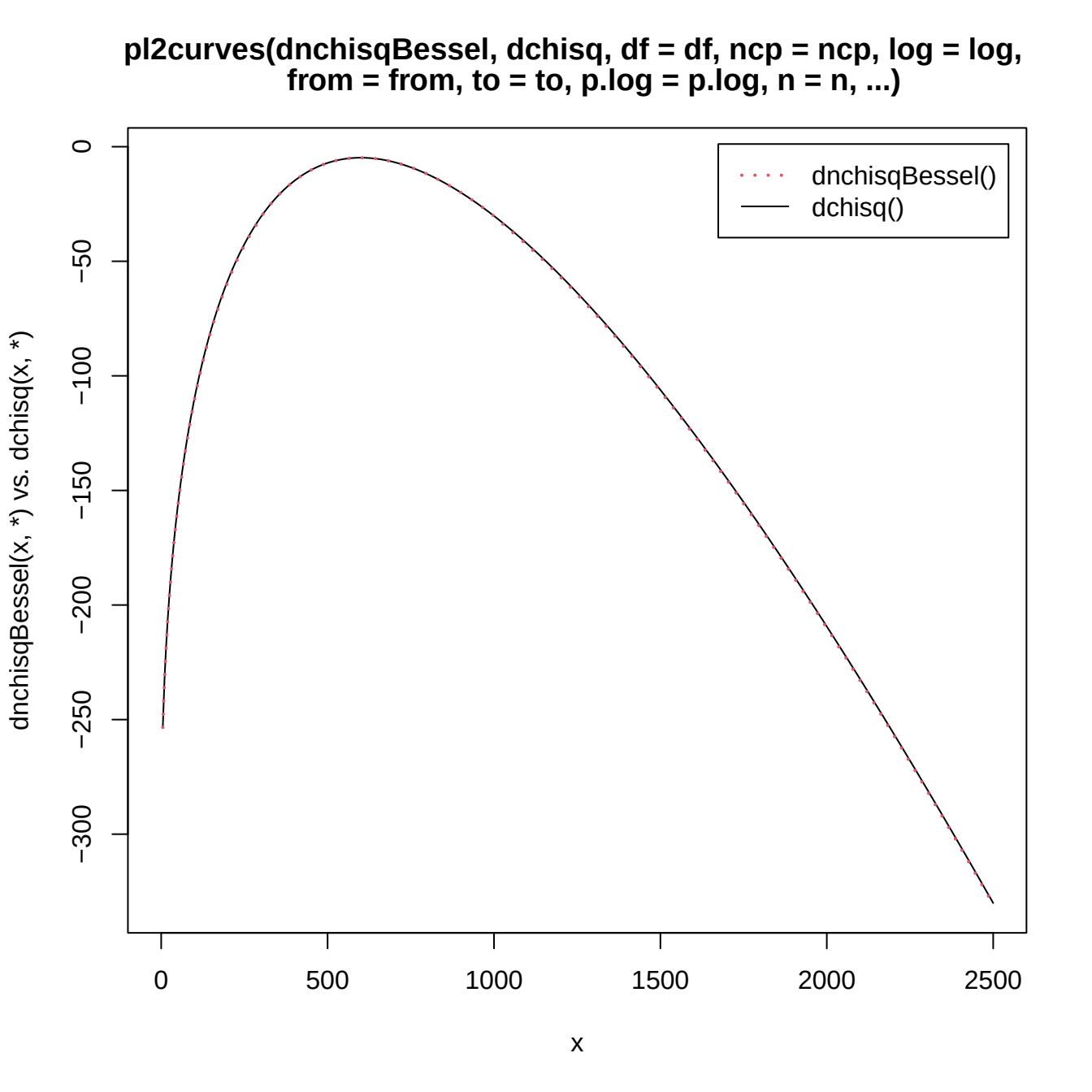

pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel()
dchisq()
dnchisqBessel(x, *) vs. dchisq(x, *)
0.000
0.005
0.010
0.015
0
50
100
150
200
x

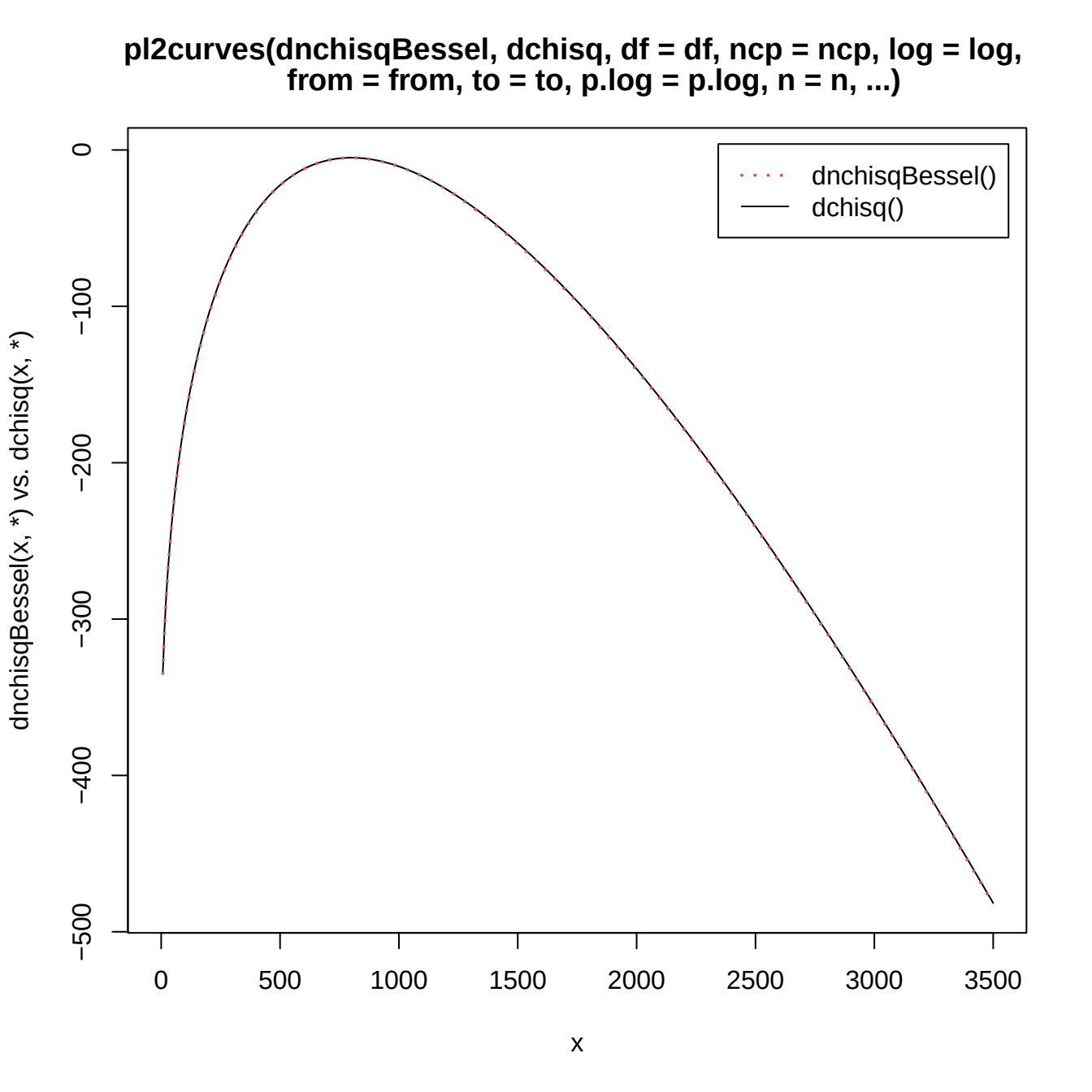

pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel(x, *) vs. dchisq(x, *)
dnchisqBessel()
dchisq()
1e−03
1e−09
1e−15
1e−21
1e−27
1e−33
0
100
200
300
400
500
x

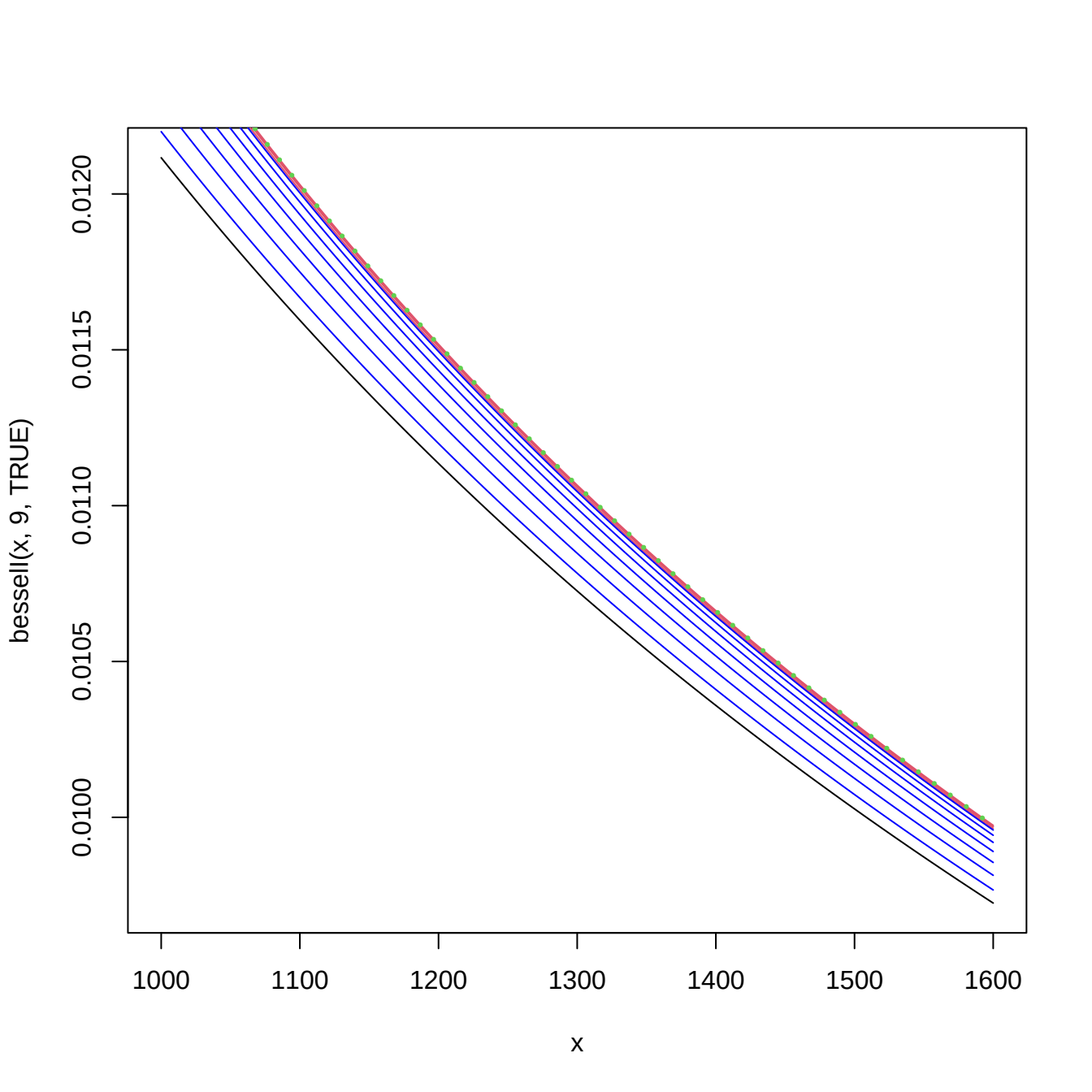

pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel()
dchisq()
dnchisqBessel(x, *) vs. dchisq(x, *)
−10
−20
−30
−40
−50
−60
−70
0
100
200
300
400
500
x


pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel(x, *) vs. dchisq(x, *)
x
dnchisqBessel()
dchisq()
0
−20
−40
−60
−80
−100
0
100
200
300
400
500
600


pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log, from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel(x, *) vs. dchisq(x, *)
dnchisqBessel()
dchisq()
0
−50
−100
−150
−200
0
500
1000
1500
x


pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log, from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel(x, *) vs. dchisq(x, *)
dnchisqBessel()
dchisq()
0
−50
−100
−150
−200
−250
−300
0
500
1000
1500
2000
2500
x


pl2curves(dnchisqBessel, dchisq, df = df, ncp = ncp, log = log,
from = from, to = to, p.log = p.log, n = n, ...)
dnchisqBessel()
dchisq()
dnchisqBessel(x, *) vs. dchisq(x, *)
0
−100
−200
−300
−400
−500
0
500
1000
1500
2000
2500
3000
3500
x


bessell(x, 9, TRUE)
0.0100
0.0105
0.0110
0.0115
0.0120
1000
1100
1200
1300
1400
1500
1600
x