

class2.R

macbook

2025-03-02

```
x=1:10; x

## [1] 1 2 3 4 5 6 7 8 9 10
length(x)

## [1] 10
seq(from=4, to=50)

## [1] 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
## [26] 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
(x=seq(1:10))

## [1] 1 2 3 4 5 6 7 8 9 10
x=seq(1:10);x

## [1] 1 2 3 4 5 6 7 8 9 10
seq(12)

## [1] 1 2 3 4 5 6 7 8 9 10 11 12
x=seq(0,100, 5)
x

## [1] 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
## [20] 95 100
seq(50,1, -5)

## [1] 50 45 40 35 30 25 20 15 10 5
seq(100,50,length = 10)

## [1] 100.00000 94.44444 88.88889 83.33333 77.77778 72.22222 66.66667
## [8] 61.11111 55.55556 50.00000
seq(100,50,length.out = 10)

## [1] 100.00000 94.44444 88.88889 83.33333 77.77778 72.22222 66.66667
## [8] 61.11111 55.55556 50.00000
seq(0,1,0.1)

## [1] 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
seq(0, 1, length= 10)
```

```
## [1] 0.0000000 0.1111111 0.2222222 0.3333333 0.4444444 0.5555556 0.6666667
## [8] 0.7777778 0.8888889 1.0000000
```

```
seq(0, 1, length= 11)
```

```
## [1] 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
```

```
seq(-3, 3, .1)
```

```
## [1] -3.0 -2.9 -2.8 -2.7 -2.6 -2.5 -2.4 -2.3 -2.2 -2.1 -2.0 -1.9 -1.8 -1.7 -1.6
## [16] -1.5 -1.4 -1.3 -1.2 -1.1 -1.0 -0.9 -0.8 -0.7 -0.6 -0.5 -0.4 -0.3 -0.2 -0.1
## [31] 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4
## [46] 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9
## [61] 3.0
```

```
y=10:2
```

```
y
```

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

```
rep(5,3)
```

```
## [1] 5 5 5
```

```
rep(5:10,times=3 )
```

```
## [1] 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10
```

```
rep(5:10,each=3 )
```

```
## [1] 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9 10 10 10
```

```
rep(5:10, c(3,3,3,3,3,3))
```

```
## [1] 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9 10 10 10
```

```
rep(5:10, rep(3,6))
```

```
## [1] 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9 10 10 10
```

```
rep(5:10, c(3,4,8,2,3,3))
```

```
## [1] 5 5 5 6 6 6 6 6 7 7 7 7 7 7 7 7 8 8 9 9 9 10 10 10
```

```
rep(5:10,3)
```

```
## [1] 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10
```

```
#
```

```
rep(5:10,c(3,3,3,3,3,3))
```

```
## [1] 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9 10 10 10
```

```
#
```

```

rep(5:10,c(rep(3,6)) )

## [1] 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9 10 10 10
rep('A',5)

## [1] "A" "A" "A" "A" "A"
rep("A",5)

## [1] "A" "A" "A" "A" "A"
rep('Hi Guys',6)

## [1] "Hi Guys" "Hi Guys" "Hi Guys" "Hi Guys" "Hi Guys" "Hi Guys"
rep(letters[1:4],3)

## [1] "a" "b" "c" "d" "a" "b" "c" "d" "a" "b" "c" "d"
rep(letters[1:4],c(3,4,5,6))

## [1] "a" "a" "a" "b" "b" "b" "b" "c" "c" "c" "c" "c" "d" "d" "d" "d" "d" "d"
rep(letters[1:4],c(rep(3,4)))

## [1] "a" "a" "a" "b" "b" "b" "c" "c" "c" "d" "d" "d"
rep(LETTERS[1:4],c(rep(3,4)))

## [1] "A" "A" "A" "B" "B" "B" "C" "C" "C" "D" "D" "D"
seq(from=3, to=50, length=24)

## [1] 3.000000 5.043478 7.086957 9.130435 11.173913 13.217391 15.260870
## [8] 17.304348 19.347826 21.391304 23.434783 25.478261 27.521739 29.565217
## [15] 31.608696 33.652174 35.695652 37.739130 39.782609 41.826087 43.869565
## [22] 45.913043 47.956522 50.000000
x=seq(-3,3, 0.01);x

## [1] -3.00 -2.99 -2.98 -2.97 -2.96 -2.95 -2.94 -2.93 -2.92 -2.91 -2.90 -2.89
## [13] -2.88 -2.87 -2.86 -2.85 -2.84 -2.83 -2.82 -2.81 -2.80 -2.79 -2.78 -2.77
## [25] -2.76 -2.75 -2.74 -2.73 -2.72 -2.71 -2.70 -2.69 -2.68 -2.67 -2.66 -2.65
## [37] -2.64 -2.63 -2.62 -2.61 -2.60 -2.59 -2.58 -2.57 -2.56 -2.55 -2.54 -2.53
## [49] -2.52 -2.51 -2.50 -2.49 -2.48 -2.47 -2.46 -2.45 -2.44 -2.43 -2.42 -2.41
## [61] -2.40 -2.39 -2.38 -2.37 -2.36 -2.35 -2.34 -2.33 -2.32 -2.31 -2.30 -2.29
## [73] -2.28 -2.27 -2.26 -2.25 -2.24 -2.23 -2.22 -2.21 -2.20 -2.19 -2.18 -2.17
## [85] -2.16 -2.15 -2.14 -2.13 -2.12 -2.11 -2.10 -2.09 -2.08 -2.07 -2.06 -2.05
## [97] -2.04 -2.03 -2.02 -2.01 -2.00 -1.99 -1.98 -1.97 -1.96 -1.95 -1.94 -1.93
## [109] -1.92 -1.91 -1.90 -1.89 -1.88 -1.87 -1.86 -1.85 -1.84 -1.83 -1.82 -1.81
## [121] -1.80 -1.79 -1.78 -1.77 -1.76 -1.75 -1.74 -1.73 -1.72 -1.71 -1.70 -1.69
## [133] -1.68 -1.67 -1.66 -1.65 -1.64 -1.63 -1.62 -1.61 -1.60 -1.59 -1.58 -1.57
## [145] -1.56 -1.55 -1.54 -1.53 -1.52 -1.51 -1.50 -1.49 -1.48 -1.47 -1.46 -1.45
## [157] -1.44 -1.43 -1.42 -1.41 -1.40 -1.39 -1.38 -1.37 -1.36 -1.35 -1.34 -1.33

```

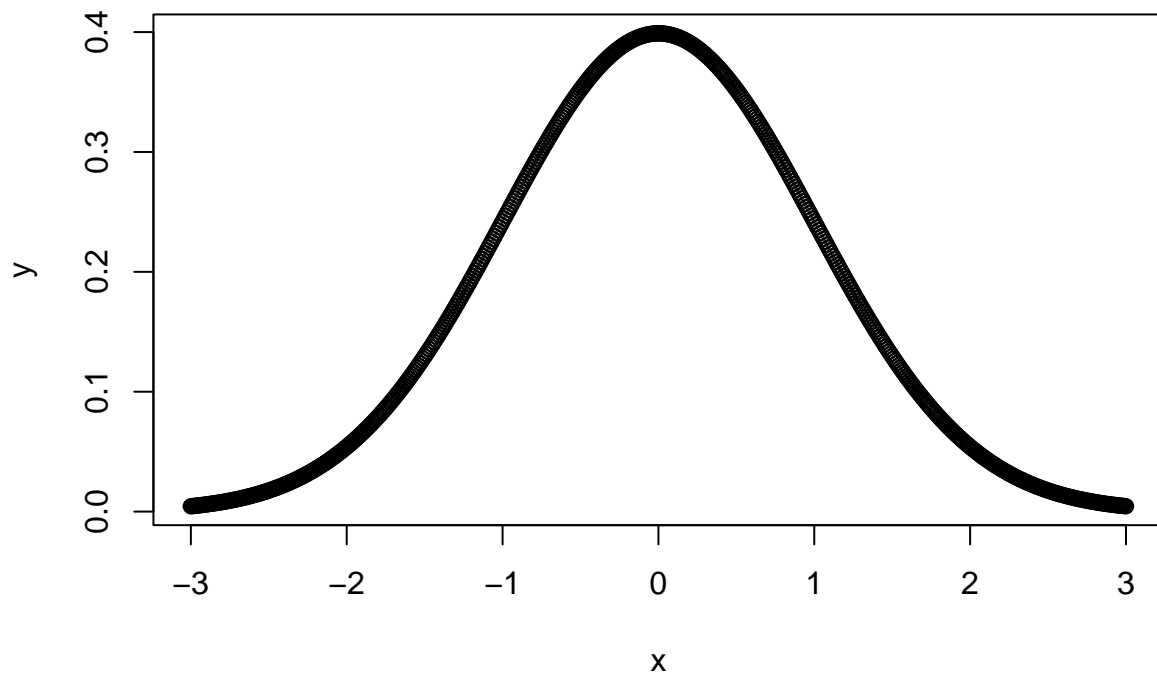
```
## [169] -1.32 -1.31 -1.30 -1.29 -1.28 -1.27 -1.26 -1.25 -1.24 -1.23 -1.22 -1.21
## [181] -1.20 -1.19 -1.18 -1.17 -1.16 -1.15 -1.14 -1.13 -1.12 -1.11 -1.10 -1.09
## [193] -1.08 -1.07 -1.06 -1.05 -1.04 -1.03 -1.02 -1.01 -1.00 -0.99 -0.98 -0.97
## [205] -0.96 -0.95 -0.94 -0.93 -0.92 -0.91 -0.90 -0.89 -0.88 -0.87 -0.86 -0.85
## [217] -0.84 -0.83 -0.82 -0.81 -0.80 -0.79 -0.78 -0.77 -0.76 -0.75 -0.74 -0.73
## [229] -0.72 -0.71 -0.70 -0.69 -0.68 -0.67 -0.66 -0.65 -0.64 -0.63 -0.62 -0.61
## [241] -0.60 -0.59 -0.58 -0.57 -0.56 -0.55 -0.54 -0.53 -0.52 -0.51 -0.50 -0.49
## [253] -0.48 -0.47 -0.46 -0.45 -0.44 -0.43 -0.42 -0.41 -0.40 -0.39 -0.38 -0.37
## [265] -0.36 -0.35 -0.34 -0.33 -0.32 -0.31 -0.30 -0.29 -0.28 -0.27 -0.26 -0.25
## [277] -0.24 -0.23 -0.22 -0.21 -0.20 -0.19 -0.18 -0.17 -0.16 -0.15 -0.14 -0.13
## [289] -0.12 -0.11 -0.10 -0.09 -0.08 -0.07 -0.06 -0.05 -0.04 -0.03 -0.02 -0.01
## [301] 0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11
## [313] 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 0.22 0.23
## [325] 0.24 0.25 0.26 0.27 0.28 0.29 0.30 0.31 0.32 0.33 0.34 0.35
## [337] 0.36 0.37 0.38 0.39 0.40 0.41 0.42 0.43 0.44 0.45 0.46 0.47
## [349] 0.48 0.49 0.50 0.51 0.52 0.53 0.54 0.55 0.56 0.57 0.58 0.59
## [361] 0.60 0.61 0.62 0.63 0.64 0.65 0.66 0.67 0.68 0.69 0.70 0.71
## [373] 0.72 0.73 0.74 0.75 0.76 0.77 0.78 0.79 0.80 0.81 0.82 0.83
## [385] 0.84 0.85 0.86 0.87 0.88 0.89 0.90 0.91 0.92 0.93 0.94 0.95
## [397] 0.96 0.97 0.98 0.99 1.00 1.01 1.02 1.03 1.04 1.05 1.06 1.07
## [409] 1.08 1.09 1.10 1.11 1.12 1.13 1.14 1.15 1.16 1.17 1.18 1.19
## [421] 1.20 1.21 1.22 1.23 1.24 1.25 1.26 1.27 1.28 1.29 1.30 1.31
## [433] 1.32 1.33 1.34 1.35 1.36 1.37 1.38 1.39 1.40 1.41 1.42 1.43
## [445] 1.44 1.45 1.46 1.47 1.48 1.49 1.50 1.51 1.52 1.53 1.54 1.55
## [457] 1.56 1.57 1.58 1.59 1.60 1.61 1.62 1.63 1.64 1.65 1.66 1.67
## [469] 1.68 1.69 1.70 1.71 1.72 1.73 1.74 1.75 1.76 1.77 1.78 1.79
## [481] 1.80 1.81 1.82 1.83 1.84 1.85 1.86 1.87 1.88 1.89 1.90 1.91
## [493] 1.92 1.93 1.94 1.95 1.96 1.97 1.98 1.99 2.00 2.01 2.02 2.03
## [505] 2.04 2.05 2.06 2.07 2.08 2.09 2.10 2.11 2.12 2.13 2.14 2.15
## [517] 2.16 2.17 2.18 2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27
## [529] 2.28 2.29 2.30 2.31 2.32 2.33 2.34 2.35 2.36 2.37 2.38 2.39
## [541] 2.40 2.41 2.42 2.43 2.44 2.45 2.46 2.47 2.48 2.49 2.50 2.51
## [553] 2.52 2.53 2.54 2.55 2.56 2.57 2.58 2.59 2.60 2.61 2.62 2.63
## [565] 2.64 2.65 2.66 2.67 2.68 2.69 2.70 2.71 2.72 2.73 2.74 2.75
## [577] 2.76 2.77 2.78 2.79 2.80 2.81 2.82 2.83 2.84 2.85 2.86 2.87
## [589] 2.88 2.89 2.90 2.91 2.92 2.93 2.94 2.95 2.96 2.97 2.98 2.99
## [601] 3.00
```

```
y=dnorm(x)
max(y)
```

```
## [1] 0.3989423
```

```
plot(x,y)
```

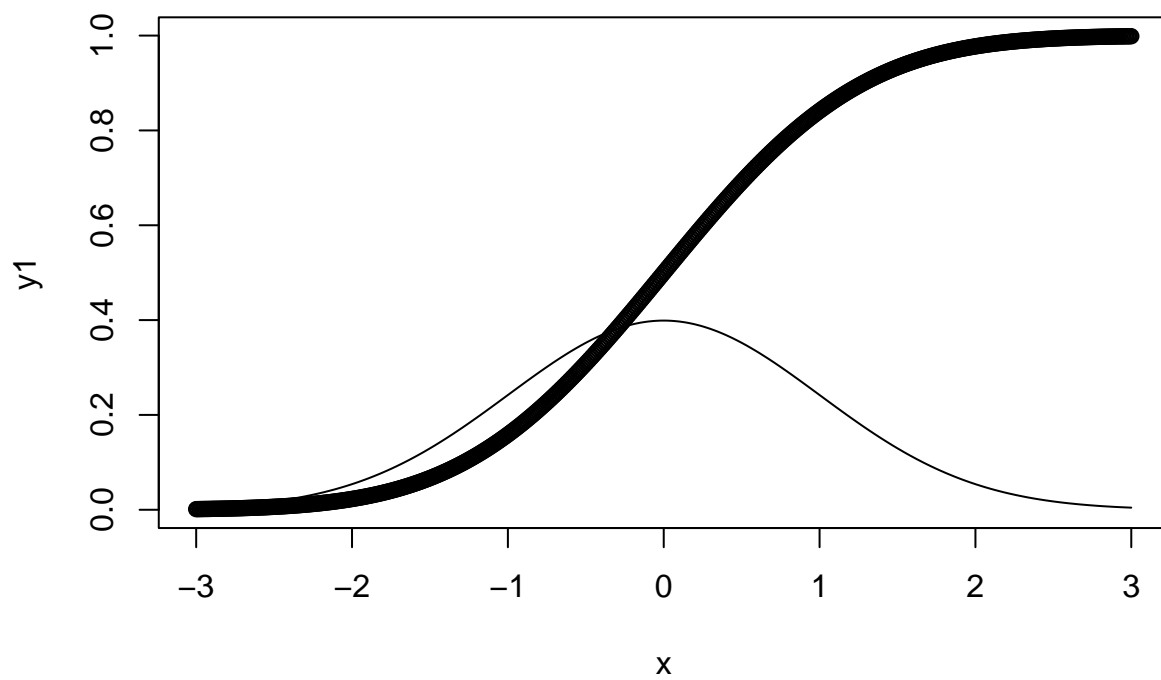
```
plot(x,y)
```



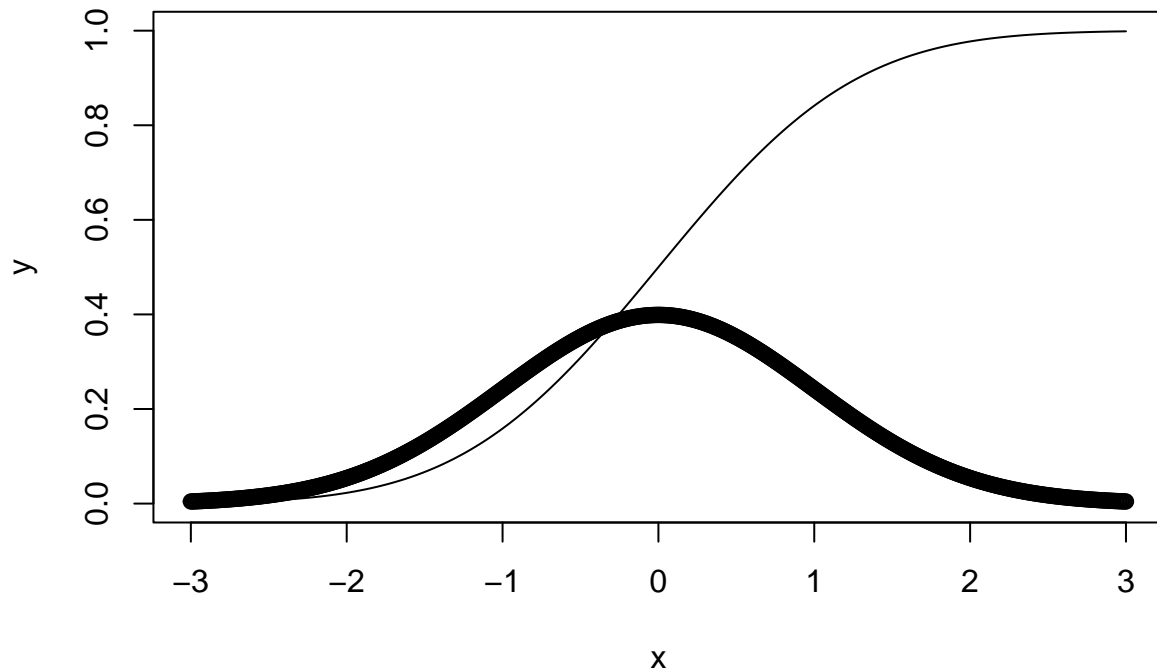
```
y1=pnorm(x)
max(y1)
```

```
## [1] 0.9986501
```

```
plot(x,y1)
plot(x,y1)
lines(x, y)
```



```
plot(x,y, ylim = c(0,1))
lines(x, y1)
```



```
x=seq(-3,3, 0.01); x
```

```
## [1] -3.00 -2.99 -2.98 -2.97 -2.96 -2.95 -2.94 -2.93 -2.92 -2.91 -2.90 -2.89
## [13] -2.88 -2.87 -2.86 -2.85 -2.84 -2.83 -2.82 -2.81 -2.80 -2.79 -2.78 -2.77
## [25] -2.76 -2.75 -2.74 -2.73 -2.72 -2.71 -2.70 -2.69 -2.68 -2.67 -2.66 -2.65
## [37] -2.64 -2.63 -2.62 -2.61 -2.60 -2.59 -2.58 -2.57 -2.56 -2.55 -2.54 -2.53
## [49] -2.52 -2.51 -2.50 -2.49 -2.48 -2.47 -2.46 -2.45 -2.44 -2.43 -2.42 -2.41
## [61] -2.40 -2.39 -2.38 -2.37 -2.36 -2.35 -2.34 -2.33 -2.32 -2.31 -2.30 -2.29
## [73] -2.28 -2.27 -2.26 -2.25 -2.24 -2.23 -2.22 -2.21 -2.20 -2.19 -2.18 -2.17
## [85] -2.16 -2.15 -2.14 -2.13 -2.12 -2.11 -2.10 -2.09 -2.08 -2.07 -2.06 -2.05
## [97] -2.04 -2.03 -2.02 -2.01 -2.00 -1.99 -1.98 -1.97 -1.96 -1.95 -1.94 -1.93
## [109] -1.92 -1.91 -1.90 -1.89 -1.88 -1.87 -1.86 -1.85 -1.84 -1.83 -1.82 -1.81
## [121] -1.80 -1.79 -1.78 -1.77 -1.76 -1.75 -1.74 -1.73 -1.72 -1.71 -1.70 -1.69
## [133] -1.68 -1.67 -1.66 -1.65 -1.64 -1.63 -1.62 -1.61 -1.60 -1.59 -1.58 -1.57
## [145] -1.56 -1.55 -1.54 -1.53 -1.52 -1.51 -1.50 -1.49 -1.48 -1.47 -1.46 -1.45
## [157] -1.44 -1.43 -1.42 -1.41 -1.40 -1.39 -1.38 -1.37 -1.36 -1.35 -1.34 -1.33
## [169] -1.32 -1.31 -1.30 -1.29 -1.28 -1.27 -1.26 -1.25 -1.24 -1.23 -1.22 -1.21
## [181] -1.20 -1.19 -1.18 -1.17 -1.16 -1.15 -1.14 -1.13 -1.12 -1.11 -1.10 -1.09
## [193] -1.08 -1.07 -1.06 -1.05 -1.04 -1.03 -1.02 -1.01 -1.00 -0.99 -0.98 -0.97
## [205] -0.96 -0.95 -0.94 -0.93 -0.92 -0.91 -0.90 -0.89 -0.88 -0.87 -0.86 -0.85
## [217] -0.84 -0.83 -0.82 -0.81 -0.80 -0.79 -0.78 -0.77 -0.76 -0.75 -0.74 -0.73
## [229] -0.72 -0.71 -0.70 -0.69 -0.68 -0.67 -0.66 -0.65 -0.64 -0.63 -0.62 -0.61
## [241] -0.60 -0.59 -0.58 -0.57 -0.56 -0.55 -0.54 -0.53 -0.52 -0.51 -0.50 -0.49
## [253] -0.48 -0.47 -0.46 -0.45 -0.44 -0.43 -0.42 -0.41 -0.40 -0.39 -0.38 -0.37
## [265] -0.36 -0.35 -0.34 -0.33 -0.32 -0.31 -0.30 -0.29 -0.28 -0.27 -0.26 -0.25
## [277] -0.24 -0.23 -0.22 -0.21 -0.20 -0.19 -0.18 -0.17 -0.16 -0.15 -0.14 -0.13
## [289] -0.12 -0.11 -0.10 -0.09 -0.08 -0.07 -0.06 -0.05 -0.04 -0.03 -0.02 -0.01
## [301] 0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11
## [313] 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 0.22 0.23
## [325] 0.24 0.25 0.26 0.27 0.28 0.29 0.30 0.31 0.32 0.33 0.34 0.35
## [337] 0.36 0.37 0.38 0.39 0.40 0.41 0.42 0.43 0.44 0.45 0.46 0.47
## [349] 0.48 0.49 0.50 0.51 0.52 0.53 0.54 0.55 0.56 0.57 0.58 0.59
## [361] 0.60 0.61 0.62 0.63 0.64 0.65 0.66 0.67 0.68 0.69 0.70 0.71
```

```
## [373] 0.72 0.73 0.74 0.75 0.76 0.77 0.78 0.79 0.80 0.81 0.82 0.83
## [385] 0.84 0.85 0.86 0.87 0.88 0.89 0.90 0.91 0.92 0.93 0.94 0.95
## [397] 0.96 0.97 0.98 0.99 1.00 1.01 1.02 1.03 1.04 1.05 1.06 1.07
## [409] 1.08 1.09 1.10 1.11 1.12 1.13 1.14 1.15 1.16 1.17 1.18 1.19
## [421] 1.20 1.21 1.22 1.23 1.24 1.25 1.26 1.27 1.28 1.29 1.30 1.31
## [433] 1.32 1.33 1.34 1.35 1.36 1.37 1.38 1.39 1.40 1.41 1.42 1.43
## [445] 1.44 1.45 1.46 1.47 1.48 1.49 1.50 1.51 1.52 1.53 1.54 1.55
## [457] 1.56 1.57 1.58 1.59 1.60 1.61 1.62 1.63 1.64 1.65 1.66 1.67
## [469] 1.68 1.69 1.70 1.71 1.72 1.73 1.74 1.75 1.76 1.77 1.78 1.79
## [481] 1.80 1.81 1.82 1.83 1.84 1.85 1.86 1.87 1.88 1.89 1.90 1.91
## [493] 1.92 1.93 1.94 1.95 1.96 1.97 1.98 1.99 2.00 2.01 2.02 2.03
## [505] 2.04 2.05 2.06 2.07 2.08 2.09 2.10 2.11 2.12 2.13 2.14 2.15
## [517] 2.16 2.17 2.18 2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27
## [529] 2.28 2.29 2.30 2.31 2.32 2.33 2.34 2.35 2.36 2.37 2.38 2.39
## [541] 2.40 2.41 2.42 2.43 2.44 2.45 2.46 2.47 2.48 2.49 2.50 2.51
## [553] 2.52 2.53 2.54 2.55 2.56 2.57 2.58 2.59 2.60 2.61 2.62 2.63
## [565] 2.64 2.65 2.66 2.67 2.68 2.69 2.70 2.71 2.72 2.73 2.74 2.75
## [577] 2.76 2.77 2.78 2.79 2.80 2.81 2.82 2.83 2.84 2.85 2.86 2.87
## [589] 2.88 2.89 2.90 2.91 2.92 2.93 2.94 2.95 2.96 2.97 2.98 2.99
## [601] 3.00
```

```
y=dnorm(x);y
```

```
## [1] 0.004431848 0.004566590 0.004704958 0.004847033 0.004992899 0.005142641
## [7] 0.005296344 0.005454095 0.005615984 0.005782099 0.005952532 0.006127377
## [13] 0.006306726 0.006490676 0.006679324 0.006872767 0.007071105 0.007274439
## [19] 0.007482873 0.007696508 0.007915452 0.008139809 0.008369689 0.008605201
## [25] 0.008846454 0.009093563 0.009346638 0.009605797 0.009871154 0.010142827
## [31] 0.010420935 0.010705598 0.010996937 0.011295075 0.011600135 0.011912244
## [37] 0.012231526 0.012558111 0.012892126 0.013233702 0.013582969 0.013940061
## [43] 0.014305109 0.014678249 0.015059616 0.015449347 0.015847579 0.016254450
## [49] 0.016670101 0.017094670 0.017528300 0.017971133 0.018423311 0.018884977
## [55] 0.019356277 0.019837354 0.020328356 0.020829427 0.021340715 0.021862367
## [61] 0.022394530 0.022937354 0.023490985 0.024055574 0.024631269 0.025218220
## [67] 0.025816575 0.026426485 0.027048100 0.027681567 0.028327038 0.028984661
## [73] 0.029654585 0.030333695 0.031031932 0.031739652 0.032460266 0.033193921
## [79] 0.033940763 0.034700939 0.035474593 0.036261869 0.037062910 0.037877859
## [85] 0.038706856 0.039550042 0.040407554 0.041279530 0.042166107 0.043067418
## [91] 0.043983596 0.044914772 0.045861076 0.046822635 0.047799575 0.048792019
## [97] 0.049800088 0.050823901 0.051863577 0.052919228 0.053990967 0.055078902
## [103] 0.056183142 0.057303789 0.058440944 0.059594706 0.060765169 0.061952425
## [109] 0.063156561 0.064377664 0.065615815 0.066871091 0.068143566 0.069433312
## [115] 0.070740393 0.072064874 0.073406813 0.074766262 0.076143274 0.077537892
## [121] 0.078950158 0.080380109 0.081827776 0.083293186 0.084776361 0.086277319
## [127] 0.087796071 0.089332623 0.090886979 0.092459133 0.094049077 0.095656796
## [133] 0.097282269 0.098925471 0.100586368 0.102264925 0.103961095 0.105674831
## [139] 0.107406075 0.109154766 0.110920835 0.112704207 0.114504800 0.116322528
## [145] 0.118157295 0.120009001 0.121877537 0.123762790 0.125664637 0.127582951
## [151] 0.129517596 0.131468430 0.133435304 0.135418062 0.137416539 0.139430566
## [157] 0.141459965 0.143504551 0.145564130 0.147638504 0.149727466 0.151830800
## [163] 0.153948287 0.156079696 0.158224790 0.160383327 0.162555055 0.164739715
## [169] 0.166937042 0.169146761 0.171368592 0.173602247 0.175847430 0.178103839
## [175] 0.180371163 0.182649085 0.184937281 0.187235418 0.189543158 0.191860155
## [181] 0.194186055 0.196520499 0.198863119 0.201213543 0.203571388 0.205936269
## [187] 0.208307790 0.210685552 0.213069147 0.215458162 0.217852177 0.220250767
```

```

## [193] 0.222653499 0.225059935 0.227469632 0.229882141 0.232297005 0.234713764
## [199] 0.237131952 0.239551098 0.241970725 0.244390351 0.246809491 0.249227652
## [205] 0.251644341 0.254059056 0.256471294 0.258880547 0.261286301 0.263688042
## [211] 0.266085250 0.268477402 0.270863972 0.273244431 0.275618247 0.277984886
## [217] 0.280343811 0.282694482 0.285036358 0.287368897 0.289691553 0.292003780
## [223] 0.294305030 0.296594755 0.298872406 0.301137432 0.303389284 0.305627410
## [229] 0.307851260 0.310060285 0.312253933 0.314431657 0.316592908 0.318737138
## [235] 0.320863804 0.322972360 0.325062264 0.327132977 0.329183961 0.331214680
## [241] 0.333224603 0.335213199 0.337179944 0.339124313 0.341045789 0.342943855
## [247] 0.344818001 0.346667721 0.348492513 0.350291879 0.352065327 0.353812370
## [253] 0.355532529 0.357225325 0.358890291 0.360526962 0.362134882 0.363713600
## [259] 0.365262673 0.366781662 0.368270140 0.369727684 0.371153879 0.372548319
## [265] 0.373910605 0.375240347 0.376537162 0.377800677 0.379030526 0.380226355
## [271] 0.381387815 0.382514571 0.383606292 0.384662661 0.385683369 0.386668117
## [277] 0.387616615 0.388528585 0.389403759 0.390241878 0.391042694 0.391805971
## [283] 0.392531483 0.393219015 0.393868362 0.394479331 0.395051741 0.395585421
## [289] 0.396080212 0.396535966 0.396952547 0.397329832 0.397667706 0.397966068
## [295] 0.398224830 0.398443914 0.398623254 0.398762797 0.398862500 0.398922334
## [301] 0.398942280 0.398922334 0.398862500 0.398762797 0.398623254 0.398443914
## [307] 0.398224830 0.397966068 0.397667706 0.397329832 0.396952547 0.396535966
## [313] 0.396080212 0.395585421 0.395051741 0.394479331 0.393868362 0.393219015
## [319] 0.392531483 0.391805971 0.391042694 0.390241878 0.389403759 0.388528585
## [325] 0.387616615 0.386668117 0.385683369 0.384662661 0.383606292 0.382514571
## [331] 0.381387815 0.380226355 0.379030526 0.377800677 0.376537162 0.375240347
## [337] 0.373910605 0.372548319 0.371153879 0.369727684 0.368270140 0.366781662
## [343] 0.365262673 0.363713600 0.362134882 0.360526962 0.358890291 0.357225325
## [349] 0.355532529 0.353812370 0.352065327 0.350291879 0.348492513 0.346667721
## [355] 0.344818001 0.342943855 0.341045789 0.339124313 0.337179944 0.335213199
## [361] 0.333224603 0.331214680 0.329183961 0.327132977 0.325062264 0.322972360
## [367] 0.320863804 0.318737138 0.316592908 0.314431657 0.312253933 0.310060285
## [373] 0.307851260 0.305627410 0.303389284 0.301137432 0.298872406 0.296594755
## [379] 0.294305030 0.292003780 0.289691553 0.287368897 0.285036358 0.282694482
## [385] 0.280343811 0.277984886 0.275618247 0.273244431 0.270863972 0.268477402
## [391] 0.266085250 0.263688042 0.261286301 0.258880547 0.256471294 0.254059056
## [397] 0.251644341 0.249227652 0.246809491 0.244390351 0.241970725 0.239551098
## [403] 0.237131952 0.234713764 0.232297005 0.229882141 0.227469632 0.225059935
## [409] 0.222653499 0.220250767 0.217852177 0.215458162 0.213069147 0.210685552
## [415] 0.208307790 0.205936269 0.203571388 0.201213543 0.198863119 0.196520499
## [421] 0.194186055 0.191860155 0.189543158 0.187235418 0.184937281 0.182649085
## [427] 0.180371163 0.178103839 0.175847430 0.173602247 0.171368592 0.169146761
## [433] 0.166937042 0.164739715 0.162555055 0.160383327 0.158224790 0.156079696
## [439] 0.153948287 0.151830800 0.149727466 0.147638504 0.145564130 0.143504551
## [445] 0.141459965 0.139430566 0.137416539 0.135418062 0.133435304 0.131468430
## [451] 0.129517596 0.127582951 0.125664637 0.123762790 0.121877537 0.120009001
## [457] 0.118157295 0.116322528 0.114504800 0.112704207 0.110920835 0.109154766
## [463] 0.107406075 0.105674831 0.103961095 0.102264925 0.100586368 0.098925471
## [469] 0.097282269 0.095656796 0.094049077 0.092459133 0.090886979 0.089332623
## [475] 0.087796071 0.086277319 0.084776361 0.083293186 0.081827776 0.080380109
## [481] 0.078950158 0.077537892 0.076143274 0.074766262 0.073406813 0.072064874
## [487] 0.070740393 0.069433312 0.068143566 0.066871091 0.065615815 0.064377664
## [493] 0.063156561 0.061952425 0.060765169 0.059594706 0.058440944 0.057303789
## [499] 0.056183142 0.055078902 0.053990967 0.052919228 0.051863577 0.050823901
## [505] 0.049800088 0.048792019 0.047799575 0.046822635 0.045861076 0.044914772
## [511] 0.043983596 0.043067418 0.042166107 0.041279530 0.040407554 0.039550042

```



```
## [517] 0.038706856 0.037877859 0.037062910 0.036261869 0.035474593 0.034700939
## [523] 0.033940763 0.033193921 0.032460266 0.031739652 0.031031932 0.030336959
## [529] 0.029654585 0.028984661 0.028327038 0.027681567 0.027048100 0.026426485
## [535] 0.025816575 0.025218220 0.024631269 0.024055574 0.023490985 0.022937354
## [541] 0.022394530 0.021862367 0.021340715 0.020829427 0.020328356 0.019837354
## [547] 0.019356277 0.018884977 0.018423311 0.017971133 0.017528300 0.017094670
## [553] 0.016670101 0.016254450 0.015847579 0.015449347 0.015059616 0.014678249
## [559] 0.014305109 0.013940061 0.013582969 0.013233702 0.012892126 0.012558111
## [565] 0.012231526 0.011912244 0.011600135 0.011295075 0.010996937 0.010705598
## [571] 0.010420935 0.010142827 0.009871154 0.009605797 0.009346638 0.009093563
## [577] 0.008846454 0.008605201 0.008369689 0.008139809 0.007915452 0.007696508
## [583] 0.007482873 0.007274439 0.007071105 0.006872767 0.006679324 0.006490676
## [589] 0.006306726 0.006127377 0.005952532 0.005782099 0.005615984 0.005454095
## [595] 0.005296344 0.005142641 0.004992899 0.004847033 0.004704958 0.004566590
## [601] 0.004431848
```

```
y1=pnorm(x);y1
```

```
## [1] 0.001349898 0.001394887 0.001441242 0.001488999 0.001538195 0.001588870
## [7] 0.001641061 0.001694810 0.001750157 0.001807144 0.001865813 0.001926209
## [13] 0.001988376 0.002052359 0.002118205 0.002185961 0.002255677 0.002327400
## [19] 0.002401182 0.002477075 0.002555130 0.002635402 0.002717945 0.002802815
## [25] 0.002890068 0.002979763 0.003071959 0.003166716 0.003264096 0.003364160
## [31] 0.003466974 0.003572601 0.003681108 0.003792562 0.003907033 0.004024589
## [37] 0.004145301 0.004269243 0.004396488 0.004527111 0.004661188 0.004798797
## [43] 0.004940016 0.005084926 0.005233608 0.005386146 0.005542623 0.005703126
## [49] 0.005867742 0.006036558 0.006209665 0.006387155 0.006569119 0.006755653
## [55] 0.006946851 0.007142811 0.007343631 0.007549411 0.007760254 0.007976260
## [61] 0.008197536 0.008424186 0.008656319 0.008894043 0.009137468 0.009386706
## [67] 0.009641870 0.009903076 0.010170439 0.010444077 0.010724110 0.011010658
## [73] 0.011303844 0.011603792 0.011910625 0.012224473 0.012545461 0.012873721
## [79] 0.013209384 0.013552581 0.013903448 0.014262118 0.014628731 0.015003423
## [85] 0.015386335 0.015777607 0.016177383 0.016585807 0.017003023 0.017429178
## [91] 0.017864421 0.018308900 0.018762766 0.019226172 0.019699270 0.020182215
## [97] 0.020675163 0.021178270 0.021691694 0.022215594 0.022750132 0.023295468
## [103] 0.023851764 0.024419185 0.024997895 0.025588060 0.026189845 0.026803419
## [109] 0.027428950 0.028066607 0.028716560 0.029378980 0.030054039 0.030741909
## [115] 0.031442763 0.032156775 0.032884119 0.033624969 0.034379502 0.035147894
## [121] 0.035930319 0.036726956 0.037537980 0.038363570 0.039203903 0.040059157
## [127] 0.040929509 0.041815138 0.042716221 0.043632937 0.044565463 0.045513977
## [133] 0.046478658 0.047459682 0.048457226 0.049471468 0.050502583 0.051550748
## [139] 0.052616138 0.053698928 0.054799292 0.055917403 0.057053433 0.058207556
## [145] 0.059379941 0.060570758 0.061780177 0.063008364 0.064255488 0.065521712
## [151] 0.066807201 0.068112118 0.069436623 0.070780877 0.072145037 0.073529260
## [157] 0.074933700 0.076358510 0.077803841 0.079269841 0.080756659 0.082264439
## [163] 0.083793322 0.085343451 0.086914962 0.088507991 0.090122672 0.091759136
## [169] 0.093417509 0.095097918 0.096800485 0.098525329 0.100272568 0.102042315
## [175] 0.103834681 0.105649774 0.107487697 0.109348552 0.111232437 0.113139446
## [181] 0.115069670 0.117023196 0.119000107 0.121000484 0.123024403 0.125071936
## [187] 0.127143151 0.129238112 0.131356881 0.133499513 0.135666061 0.137856572
## [193] 0.140071090 0.142309654 0.144572300 0.146859056 0.149169950 0.151505003
## [199] 0.153864230 0.156247645 0.158655254 0.161087060 0.163543059 0.166023246
## [205] 0.168527607 0.171056126 0.173608780 0.176185542 0.178786380 0.181411255
## [211] 0.184060125 0.186732943 0.189429655 0.192150202 0.194894521 0.197662543
## [217] 0.200454193 0.203269392 0.206108054 0.208970088 0.211855399 0.214763884
```

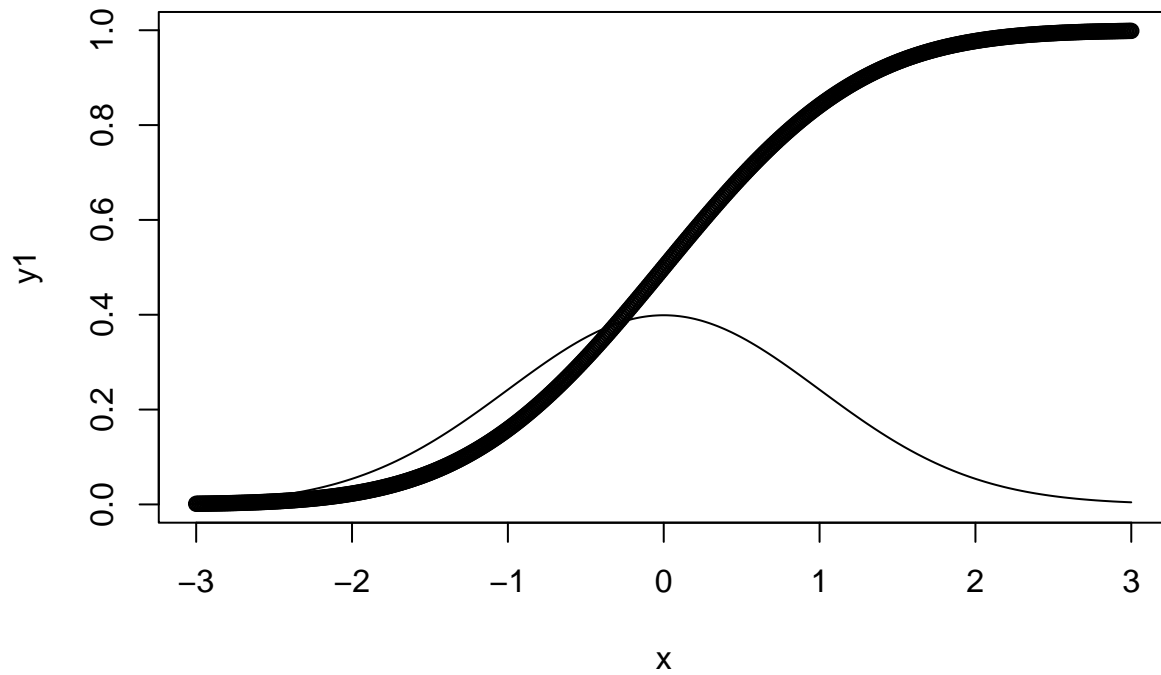
```

## [223] 0.217695438 0.220649946 0.223627292 0.226627352 0.229649997 0.232695092
## [229] 0.235762498 0.238852068 0.241963652 0.245097094 0.248252230 0.251428895
## [235] 0.254626915 0.257846111 0.261086300 0.264347292 0.267628893 0.270930904
## [241] 0.274253118 0.277595325 0.280957309 0.284338849 0.287739719 0.291159687
## [247] 0.294598516 0.298055965 0.301531788 0.305025731 0.308537539 0.312066949
## [253] 0.315613697 0.319177509 0.322758110 0.326355220 0.329968554 0.333597821
## [259] 0.337242727 0.340902974 0.344578258 0.348268273 0.351972708 0.355691245
## [265] 0.359423567 0.363169349 0.366928264 0.370699981 0.374484165 0.378280478
## [271] 0.382088578 0.385908119 0.389738752 0.393580127 0.397431887 0.401293674
## [277] 0.405165128 0.409045885 0.412935577 0.416833837 0.420740291 0.424654565
## [283] 0.428576284 0.432505068 0.436440537 0.440382308 0.444329995 0.448283213
## [289] 0.452241574 0.456204687 0.460172163 0.464143607 0.468118628 0.472096830
## [295] 0.476077817 0.480061194 0.484046563 0.488033527 0.492021686 0.496010644
## [301] 0.500000000 0.503989356 0.507978314 0.511966473 0.515953437 0.519938806
## [307] 0.523922183 0.527903170 0.531881372 0.535856393 0.539827837 0.543795313
## [313] 0.547758426 0.551716787 0.555670005 0.559617692 0.563559463 0.567494932
## [319] 0.571423716 0.575345435 0.579259709 0.583166163 0.587064423 0.590954115
## [325] 0.594834872 0.598706326 0.602568113 0.606419873 0.610261248 0.614091881
## [331] 0.617911422 0.621719522 0.625515835 0.629300019 0.633071736 0.636830651
## [337] 0.640576433 0.644308755 0.648027292 0.651731727 0.655421742 0.659097026
## [343] 0.662757273 0.666402179 0.670031446 0.673644780 0.677241890 0.680822491
## [349] 0.684386303 0.687933051 0.691462461 0.694974269 0.698468212 0.701944035
## [355] 0.705401484 0.708840313 0.712260281 0.715661151 0.719042691 0.722404675
## [361] 0.725746882 0.729069096 0.732371107 0.735652708 0.738913700 0.742153889
## [367] 0.745373085 0.748571105 0.751747770 0.754902906 0.758036348 0.761147932
## [373] 0.764237502 0.767304908 0.770350003 0.773372648 0.776372708 0.779350054
## [379] 0.782304562 0.785236116 0.788144601 0.791029912 0.793891946 0.796730608
## [385] 0.799545807 0.802337457 0.805105479 0.807849798 0.810570345 0.813267057
## [391] 0.815939875 0.818588745 0.821213620 0.823814458 0.826391220 0.828943874
## [397] 0.831472393 0.833976754 0.836456941 0.838912940 0.841344746 0.843752355
## [403] 0.846135770 0.848494997 0.850830050 0.853140944 0.855427700 0.857690346
## [409] 0.859928910 0.862143428 0.864333939 0.866500487 0.868643119 0.870761888
## [415] 0.872856849 0.874928064 0.876975597 0.878999516 0.880999893 0.882976804
## [421] 0.884930330 0.886860554 0.888767563 0.890651448 0.892512303 0.894350226
## [427] 0.896165319 0.897957685 0.899727432 0.901474671 0.903199515 0.904902082
## [433] 0.906582491 0.908240864 0.909877328 0.911492009 0.913085038 0.914656549
## [439] 0.916206678 0.917735561 0.919243341 0.920730159 0.922196159 0.923641490
## [445] 0.925066300 0.926470740 0.927854963 0.929219123 0.930563377 0.931887882
## [451] 0.933192799 0.934478288 0.935744512 0.936991636 0.938219823 0.939429242
## [457] 0.940620059 0.941792444 0.942946567 0.944082597 0.945200708 0.946301072
## [463] 0.947383862 0.948449252 0.949497417 0.950528532 0.951542774 0.952540318
## [469] 0.953521342 0.954486023 0.955434537 0.956367063 0.957283779 0.958184862
## [475] 0.959070491 0.959940843 0.960796097 0.961636430 0.962462020 0.963273044
## [481] 0.964069681 0.964852106 0.965620498 0.966375031 0.967115881 0.967843225
## [487] 0.968557237 0.969258091 0.969945961 0.970621020 0.971283440 0.971933393
## [493] 0.972571050 0.973196581 0.973810155 0.974411940 0.975002105 0.975580815
## [499] 0.976148236 0.976704532 0.977249868 0.977784406 0.978308306 0.978821730
## [505] 0.979324837 0.979817785 0.980300730 0.980773828 0.981237234 0.981691100
## [511] 0.982135579 0.982570822 0.982996977 0.983414193 0.983822617 0.984222393
## [517] 0.984613665 0.984996577 0.985371269 0.985737882 0.986096552 0.986447419
## [523] 0.986790616 0.987126279 0.987454539 0.987775527 0.988089375 0.988396208
## [529] 0.988696156 0.988989342 0.989275890 0.989555923 0.989829561 0.990096924
## [535] 0.990358130 0.990613294 0.990862532 0.991105957 0.991343681 0.991575814
## [541] 0.991802464 0.992023740 0.992239746 0.992450589 0.992656369 0.992857189

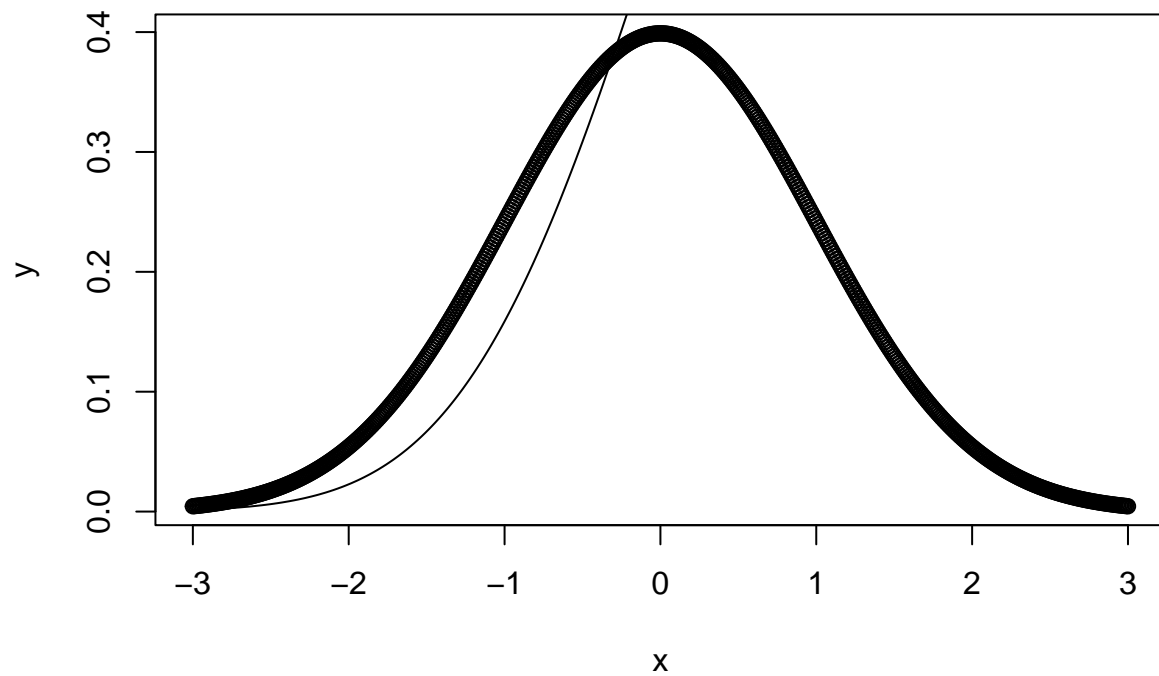
```

```
## [547] 0.993053149 0.993244347 0.993430881 0.993612845 0.993790335 0.993963442
## [553] 0.994132258 0.994296874 0.994457377 0.994613854 0.994766392 0.994915074
## [559] 0.995059984 0.995201203 0.995338812 0.995472889 0.995603512 0.995730757
## [565] 0.995854699 0.995975411 0.996092967 0.996207438 0.996318892 0.996427399
## [571] 0.996533026 0.996635840 0.996735904 0.996833284 0.996928041 0.997020237
## [577] 0.997109932 0.997197185 0.997282055 0.997364598 0.997444870 0.997522925
## [583] 0.997598818 0.997672600 0.997744323 0.997814039 0.997881795 0.997947641
## [589] 0.998011624 0.998073791 0.998134187 0.998192856 0.998249843 0.998305190
## [595] 0.998358939 0.998411130 0.998461805 0.998511001 0.998558758 0.998605113
## [601] 0.998650102
```

```
plot(x,y1)
lines(x,y)
```



```
plot(x,y)
lines(x,y1)
```



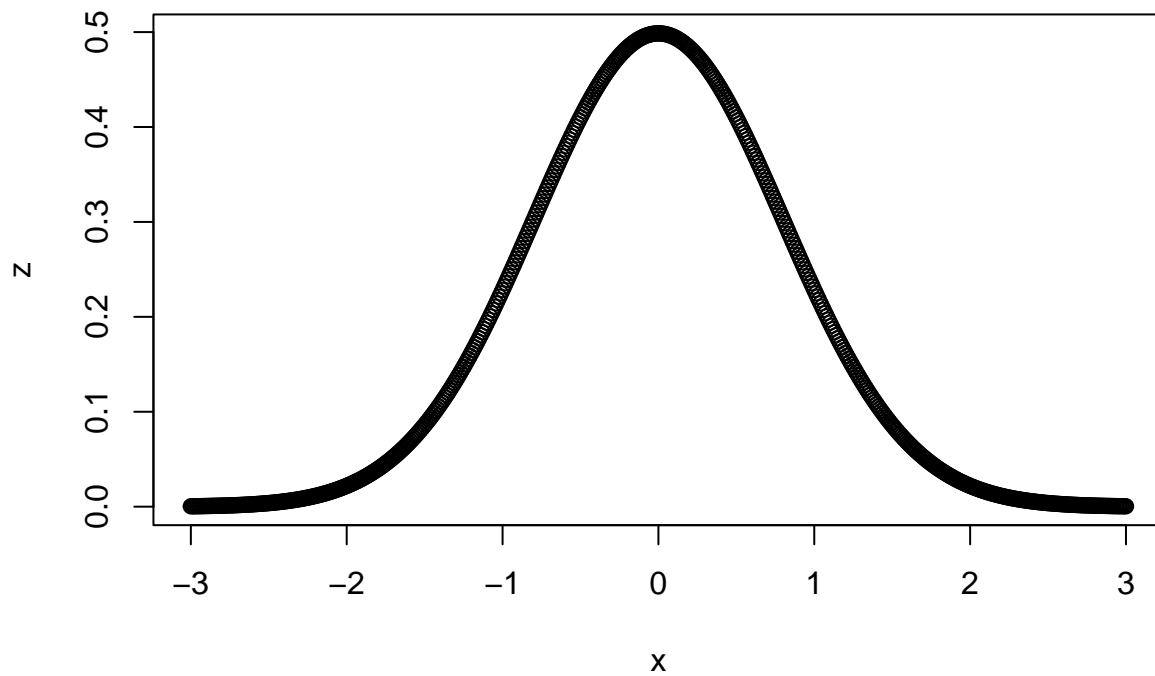
```
max(y)
```

```
## [1] 0.3989423
```

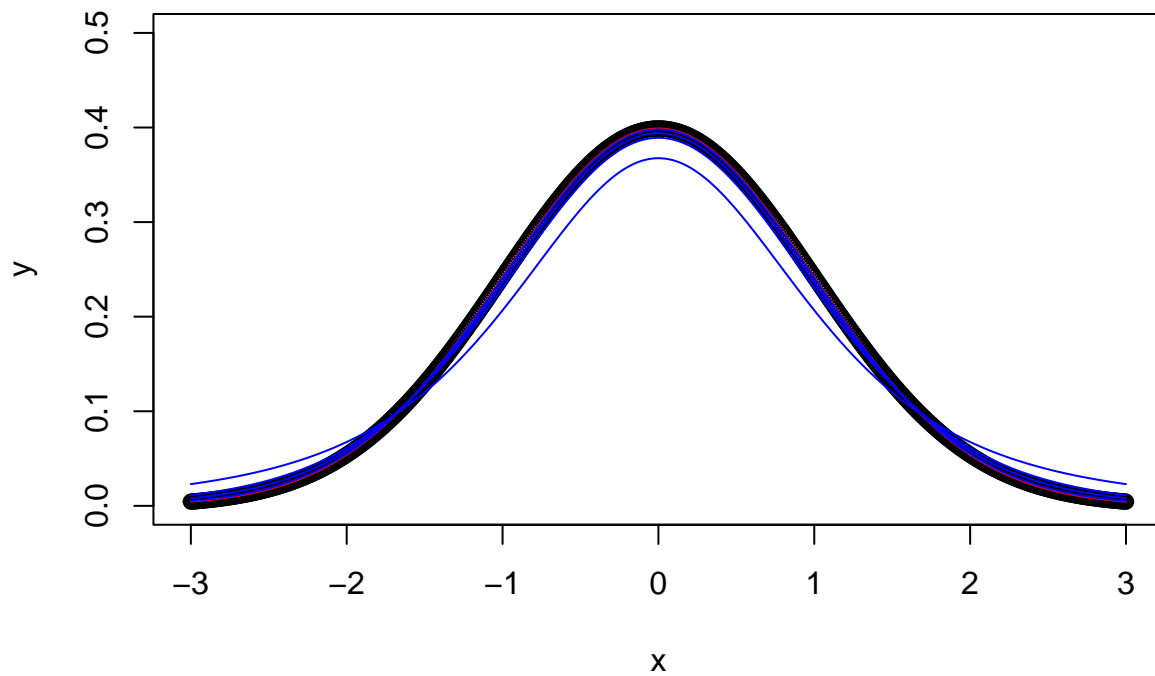
```
max(y1)
```

```
## [1] 0.9986501
```

```
y2=dt(x, 10)  
y3=dt(x, 20)  
y4=dt(x, 100)  
z=dnorm(x, 0,.8)  
plot(x, z)
```



```
plot(x, y, ylim=c(0,.5))
lines(x, dt(x, 3), col='blue')
lines(x, y,col='red')
lines(x, y2, col='blue')
lines(x, y3, col='blue')
lines(x, y4, col='blue')
```



```
y=2*x+3
x
```

```
## [1] -3.00 -2.99 -2.98 -2.97 -2.96 -2.95 -2.94 -2.93 -2.92 -2.91 -2.90 -2.89
## [13] -2.88 -2.87 -2.86 -2.85 -2.84 -2.83 -2.82 -2.81 -2.80 -2.79 -2.78 -2.77
```

```

## [25] -2.76 -2.75 -2.74 -2.73 -2.72 -2.71 -2.70 -2.69 -2.68 -2.67 -2.66 -2.65
## [37] -2.64 -2.63 -2.62 -2.61 -2.60 -2.59 -2.58 -2.57 -2.56 -2.55 -2.54 -2.53
## [49] -2.52 -2.51 -2.50 -2.49 -2.48 -2.47 -2.46 -2.45 -2.44 -2.43 -2.42 -2.41
## [61] -2.40 -2.39 -2.38 -2.37 -2.36 -2.35 -2.34 -2.33 -2.32 -2.31 -2.30 -2.29
## [73] -2.28 -2.27 -2.26 -2.25 -2.24 -2.23 -2.22 -2.21 -2.20 -2.19 -2.18 -2.17
## [85] -2.16 -2.15 -2.14 -2.13 -2.12 -2.11 -2.10 -2.09 -2.08 -2.07 -2.06 -2.05
## [97] -2.04 -2.03 -2.02 -2.01 -2.00 -1.99 -1.98 -1.97 -1.96 -1.95 -1.94 -1.93
## [109] -1.92 -1.91 -1.90 -1.89 -1.88 -1.87 -1.86 -1.85 -1.84 -1.83 -1.82 -1.81
## [121] -1.80 -1.79 -1.78 -1.77 -1.76 -1.75 -1.74 -1.73 -1.72 -1.71 -1.70 -1.69
## [133] -1.68 -1.67 -1.66 -1.65 -1.64 -1.63 -1.62 -1.61 -1.60 -1.59 -1.58 -1.57
## [145] -1.56 -1.55 -1.54 -1.53 -1.52 -1.51 -1.50 -1.49 -1.48 -1.47 -1.46 -1.45
## [157] -1.44 -1.43 -1.42 -1.41 -1.40 -1.39 -1.38 -1.37 -1.36 -1.35 -1.34 -1.33
## [169] -1.32 -1.31 -1.30 -1.29 -1.28 -1.27 -1.26 -1.25 -1.24 -1.23 -1.22 -1.21
## [181] -1.20 -1.19 -1.18 -1.17 -1.16 -1.15 -1.14 -1.13 -1.12 -1.11 -1.10 -1.09
## [193] -1.08 -1.07 -1.06 -1.05 -1.04 -1.03 -1.02 -1.01 -1.00 -0.99 -0.98 -0.97
## [205] -0.96 -0.95 -0.94 -0.93 -0.92 -0.91 -0.90 -0.89 -0.88 -0.87 -0.86 -0.85
## [217] -0.84 -0.83 -0.82 -0.81 -0.80 -0.79 -0.78 -0.77 -0.76 -0.75 -0.74 -0.73
## [229] -0.72 -0.71 -0.70 -0.69 -0.68 -0.67 -0.66 -0.65 -0.64 -0.63 -0.62 -0.61
## [241] -0.60 -0.59 -0.58 -0.57 -0.56 -0.55 -0.54 -0.53 -0.52 -0.51 -0.50 -0.49
## [253] -0.48 -0.47 -0.46 -0.45 -0.44 -0.43 -0.42 -0.41 -0.40 -0.39 -0.38 -0.37
## [265] -0.36 -0.35 -0.34 -0.33 -0.32 -0.31 -0.30 -0.29 -0.28 -0.27 -0.26 -0.25
## [277] -0.24 -0.23 -0.22 -0.21 -0.20 -0.19 -0.18 -0.17 -0.16 -0.15 -0.14 -0.13
## [289] -0.12 -0.11 -0.10 -0.09 -0.08 -0.07 -0.06 -0.05 -0.04 -0.03 -0.02 -0.01
## [301] 0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11
## [313] 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19 0.20 0.21 0.22 0.23
## [325] 0.24 0.25 0.26 0.27 0.28 0.29 0.30 0.31 0.32 0.33 0.34 0.35
## [337] 0.36 0.37 0.38 0.39 0.40 0.41 0.42 0.43 0.44 0.45 0.46 0.47
## [349] 0.48 0.49 0.50 0.51 0.52 0.53 0.54 0.55 0.56 0.57 0.58 0.59
## [361] 0.60 0.61 0.62 0.63 0.64 0.65 0.66 0.67 0.68 0.69 0.70 0.71
## [373] 0.72 0.73 0.74 0.75 0.76 0.77 0.78 0.79 0.80 0.81 0.82 0.83
## [385] 0.84 0.85 0.86 0.87 0.88 0.89 0.90 0.91 0.92 0.93 0.94 0.95
## [397] 0.96 0.97 0.98 0.99 1.00 1.01 1.02 1.03 1.04 1.05 1.06 1.07
## [409] 1.08 1.09 1.10 1.11 1.12 1.13 1.14 1.15 1.16 1.17 1.18 1.19
## [421] 1.20 1.21 1.22 1.23 1.24 1.25 1.26 1.27 1.28 1.29 1.30 1.31
## [433] 1.32 1.33 1.34 1.35 1.36 1.37 1.38 1.39 1.40 1.41 1.42 1.43
## [445] 1.44 1.45 1.46 1.47 1.48 1.49 1.50 1.51 1.52 1.53 1.54 1.55
## [457] 1.56 1.57 1.58 1.59 1.60 1.61 1.62 1.63 1.64 1.65 1.66 1.67
## [469] 1.68 1.69 1.70 1.71 1.72 1.73 1.74 1.75 1.76 1.77 1.78 1.79
## [481] 1.80 1.81 1.82 1.83 1.84 1.85 1.86 1.87 1.88 1.89 1.90 1.91
## [493] 1.92 1.93 1.94 1.95 1.96 1.97 1.98 1.99 2.00 2.01 2.02 2.03
## [505] 2.04 2.05 2.06 2.07 2.08 2.09 2.10 2.11 2.12 2.13 2.14 2.15
## [517] 2.16 2.17 2.18 2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27
## [529] 2.28 2.29 2.30 2.31 2.32 2.33 2.34 2.35 2.36 2.37 2.38 2.39
## [541] 2.40 2.41 2.42 2.43 2.44 2.45 2.46 2.47 2.48 2.49 2.50 2.51
## [553] 2.52 2.53 2.54 2.55 2.56 2.57 2.58 2.59 2.60 2.61 2.62 2.63
## [565] 2.64 2.65 2.66 2.67 2.68 2.69 2.70 2.71 2.72 2.73 2.74 2.75
## [577] 2.76 2.77 2.78 2.79 2.80 2.81 2.82 2.83 2.84 2.85 2.86 2.87
## [589] 2.88 2.89 2.90 2.91 2.92 2.93 2.94 2.95 2.96 2.97 2.98 2.99
## [601] 3.00

```

```

plot(x,y)
y2=x^2;y2

```

```

## [1] 9.0000 8.9401 8.8804 8.8209 8.7616 8.7025 8.6436 8.5849 8.5264 8.4681
## [11] 8.4100 8.3521 8.2944 8.2369 8.1796 8.1225 8.0656 8.0089 7.9524 7.8961

```

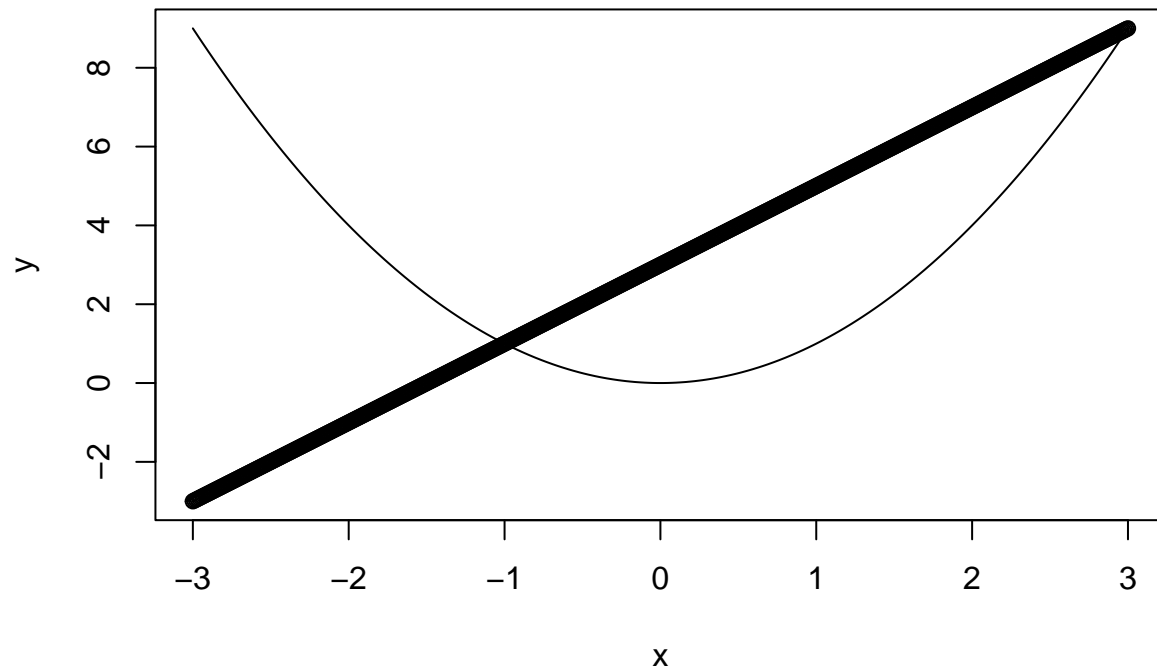
```

## [21] 7.8400 7.7841 7.7284 7.6729 7.6176 7.5625 7.5076 7.4529 7.3984 7.3441
## [31] 7.2900 7.2361 7.1824 7.1289 7.0756 7.0225 6.9696 6.9169 6.8644 6.8121
## [41] 6.7600 6.7081 6.6564 6.6049 6.5536 6.5025 6.4516 6.4009 6.3504 6.3001
## [51] 6.2500 6.2001 6.1504 6.1009 6.0516 6.0025 5.9536 5.9049 5.8564 5.8081
## [61] 5.7600 5.7121 5.6644 5.6169 5.5696 5.5225 5.4756 5.4289 5.3824 5.3361
## [71] 5.2900 5.2441 5.1984 5.1529 5.1076 5.0625 5.0176 4.9729 4.9284 4.8841
## [81] 4.8400 4.7961 4.7524 4.7089 4.6656 4.6225 4.5796 4.5369 4.4944 4.4521
## [91] 4.4100 4.3681 4.3264 4.2849 4.2436 4.2025 4.1616 4.1209 4.0804 4.0401
## [101] 4.0000 3.9601 3.9204 3.8809 3.8416 3.8025 3.7636 3.7249 3.6864 3.6481
## [111] 3.6100 3.5721 3.5344 3.4969 3.4596 3.4225 3.3856 3.3489 3.3124 3.2761
## [121] 3.2400 3.2041 3.1684 3.1329 3.0976 3.0625 3.0276 2.9929 2.9584 2.9241
## [131] 2.8900 2.8561 2.8224 2.7889 2.7556 2.7225 2.6896 2.6569 2.6244 2.5921
## [141] 2.5600 2.5281 2.4964 2.4649 2.4336 2.4025 2.3716 2.3409 2.3104 2.2801
## [151] 2.2500 2.2201 2.1904 2.1609 2.1316 2.1025 2.0736 2.0449 2.0164 1.9881
## [161] 1.9600 1.9321 1.9044 1.8769 1.8496 1.8225 1.7956 1.7689 1.7424 1.7161
## [171] 1.6900 1.6641 1.6384 1.6129 1.5876 1.5625 1.5376 1.5129 1.4884 1.4641
## [181] 1.4400 1.4161 1.3924 1.3689 1.3456 1.3225 1.2996 1.2769 1.2544 1.2321
## [191] 1.2100 1.1881 1.1664 1.1449 1.1236 1.1025 1.0816 1.0609 1.0404 1.0201
## [201] 1.0000 0.9801 0.9604 0.9409 0.9216 0.9025 0.8836 0.8649 0.8464 0.8281
## [211] 0.8100 0.7921 0.7744 0.7569 0.7396 0.7225 0.7056 0.6889 0.6724 0.6561
## [221] 0.6400 0.6241 0.6084 0.5929 0.5776 0.5625 0.5476 0.5329 0.5184 0.5041
## [231] 0.4900 0.4761 0.4624 0.4489 0.4356 0.4225 0.4096 0.3969 0.3844 0.3721
## [241] 0.3600 0.3481 0.3364 0.3249 0.3136 0.3025 0.2916 0.2809 0.2704 0.2601
## [251] 0.2500 0.2401 0.2304 0.2209 0.2116 0.2025 0.1936 0.1849 0.1764 0.1681
## [261] 0.1600 0.1521 0.1444 0.1369 0.1296 0.1225 0.1156 0.1089 0.1024 0.0961
## [271] 0.0900 0.0841 0.0784 0.0729 0.0676 0.0625 0.0576 0.0529 0.0484 0.0441
## [281] 0.0400 0.0361 0.0324 0.0289 0.0256 0.0225 0.0196 0.0169 0.0144 0.0121
## [291] 0.0100 0.0081 0.0064 0.0049 0.0036 0.0025 0.0016 0.0009 0.0004 0.0001
## [301] 0.0000 0.0001 0.0004 0.0009 0.0016 0.0025 0.0036 0.0049 0.0064 0.0081
## [311] 0.0100 0.0121 0.0144 0.0169 0.0196 0.0225 0.0256 0.0289 0.0324 0.0361
## [321] 0.0400 0.0441 0.0484 0.0529 0.0576 0.0625 0.0676 0.0729 0.0784 0.0841
## [331] 0.0900 0.0961 0.1024 0.1089 0.1156 0.1225 0.1296 0.1369 0.1444 0.1521
## [341] 0.1600 0.1681 0.1764 0.1849 0.1936 0.2025 0.2116 0.2209 0.2304 0.2401
## [351] 0.2500 0.2601 0.2704 0.2809 0.2916 0.3025 0.3136 0.3249 0.3364 0.3481
## [361] 0.3600 0.3721 0.3844 0.3969 0.4096 0.4225 0.4356 0.4489 0.4624 0.4761
## [371] 0.4900 0.5041 0.5184 0.5329 0.5476 0.5625 0.5776 0.5929 0.6084 0.6241
## [381] 0.6400 0.6561 0.6724 0.6889 0.7056 0.7225 0.7396 0.7569 0.7744 0.7921
## [391] 0.8100 0.8281 0.8464 0.8649 0.8836 0.9025 0.9216 0.9409 0.9604 0.9801
## [401] 1.0000 1.0201 1.0404 1.0609 1.0816 1.1025 1.1236 1.1449 1.1664 1.1881
## [411] 1.2100 1.2321 1.2544 1.2769 1.2996 1.3225 1.3456 1.3689 1.3924 1.4161
## [421] 1.4400 1.4641 1.4884 1.5129 1.5376 1.5625 1.5876 1.6129 1.6384 1.6641
## [431] 1.6900 1.7161 1.7424 1.7689 1.7956 1.8225 1.8496 1.8769 1.9044 1.9321
## [441] 1.9600 1.9881 2.0164 2.0449 2.0736 2.1025 2.1316 2.1609 2.1904 2.2201
## [451] 2.2500 2.2801 2.3104 2.3409 2.3716 2.4025 2.4336 2.4649 2.4964 2.5281
## [461] 2.5600 2.5921 2.6244 2.6569 2.6896 2.7225 2.7556 2.7889 2.8224 2.8561
## [471] 2.8900 2.9241 2.9584 2.9929 3.0276 3.0625 3.0976 3.1329 3.1684 3.2041
## [481] 3.2400 3.2761 3.3124 3.3489 3.3856 3.4225 3.4596 3.4969 3.5344 3.5721
## [491] 3.6100 3.6481 3.6864 3.7249 3.7636 3.8025 3.8416 3.8809 3.9204 3.9601
## [501] 4.0000 4.0401 4.0804 4.1209 4.1616 4.2025 4.2436 4.2849 4.3264 4.3681
## [511] 4.4100 4.4521 4.4944 4.5369 4.5796 4.6225 4.6656 4.7089 4.7524 4.7961
## [521] 4.8400 4.8841 4.9284 4.9729 5.0176 5.0625 5.1076 5.1529 5.1984 5.2441
## [531] 5.2900 5.3361 5.3824 5.4289 5.4756 5.5225 5.5696 5.6169 5.6644 5.7121
## [541] 5.7600 5.8081 5.8564 5.9049 5.9536 6.0025 6.0516 6.1009 6.1504 6.2001
## [551] 6.2500 6.3001 6.3504 6.4009 6.4516 6.5025 6.5536 6.6049 6.6564 6.7081

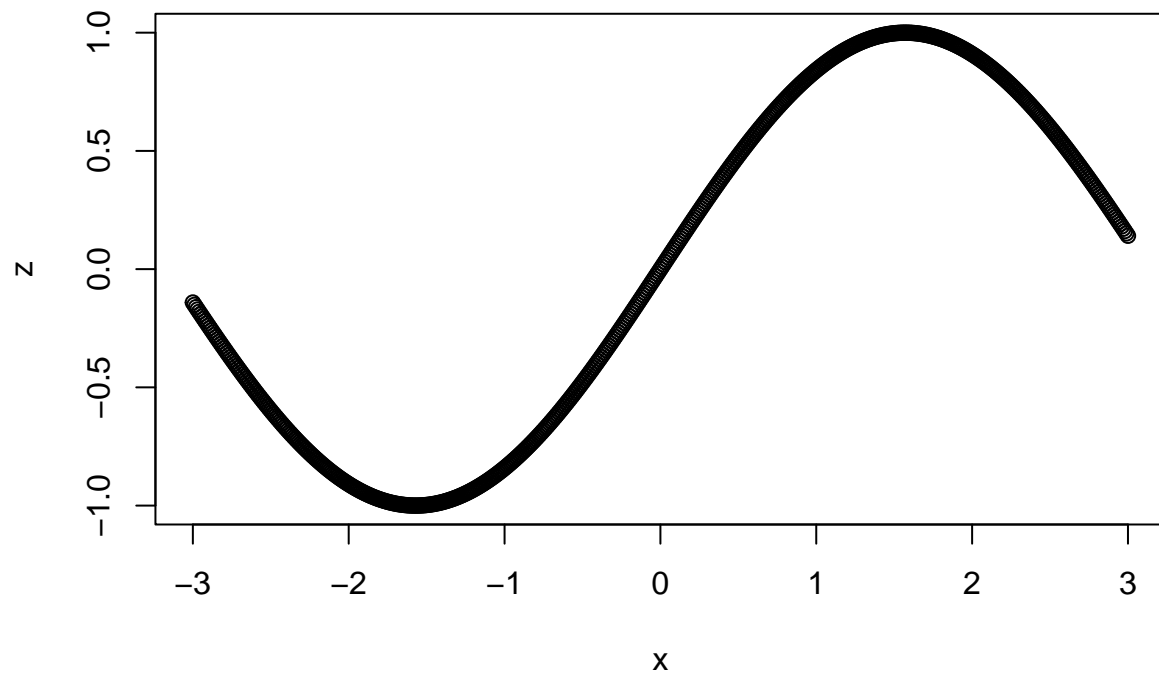
```

```
## [561] 6.7600 6.8121 6.8644 6.9169 6.9696 7.0225 7.0756 7.1289 7.1824 7.2361
## [571] 7.2900 7.3441 7.3984 7.4529 7.5076 7.5625 7.6176 7.6729 7.7284 7.7841
## [581] 7.8400 7.8961 7.9524 8.0089 8.0656 8.1225 8.1796 8.2369 8.2944 8.3521
## [591] 8.4100 8.4681 8.5264 8.5849 8.6436 8.7025 8.7616 8.8209 8.8804 8.9401
## [601] 9.0000
```

```
plot(x,y)
lines(x,y)
lines(x,y2)
```



```
z=sin(x)
plot(x,z)
```

```
plot(x,y2)  
lines(x,y)
```

