Tarea 4

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```
P = read.csv("El marcapasos.csv") #leer la base de datos
z = P[[2]]
```

Distribución Normal Estándar (z)

```
dnorm(P[[2]])
```

```
##   [1] 0.3955338 0.3810430 0.3817295 0.3658739 0.3361993 0.3957880 0.3962210
##   [8] 0.3821802 0.3900772 0.3880772 0.3911207 0.3690028 0.3976677 0.3595484
##  [15] 0.3880772 0.3825146 0.3912756 0.3602019 0.3862786 0.3962672 0.3965794
##  [22] 0.3865713 0.3978807 0.3988075 0.3915052 0.3915052 0.3915809 0.3979096
##  [29] 0.3920276 0.3922458 0.3967492 0.3879858 0.3968317 0.3715756 0.3971836
##  [36] 0.3896591 0.3649553 0.3771731 0.3923894 0.3937416 0.3786651 0.3896591
##  [43] 0.3982947 0.3986543 0.3987969 0.3804614 0.3804614 0.3944200 0.3989032
##  [50] 0.3989261 0.3989373 0.3950517 0.3818427 0.3834987 0.3745796 0.3619754
##  [57] 0.3953234 0.3954818 0.3849726 0.3906470 0.3884390 0.3918802 0.3755024
##  [64] 0.3968317 0.3630856 0.3895744 0.3852794 0.3919541 0.3678268 0.3859826
##  [71] 0.3955854 0.3960325 0.3860816 0.3970699 0.3987381 0.3925315 0.3925315
##  [78] 0.3925315 0.3982718 0.3929486 0.3941787 0.3965794 0.3879858 0.3967492
##  [85] 0.3767925 0.3967906 0.3904861 0.3684173 0.3782967 0.3947129 0.3947704
##  [92] 0.3804614 0.3904861 0.3983824 0.3985906 0.3986390 0.3804614 0.3816160
##  [99] 0.3948841 0.3988703 0.3989351 0.3989373
```

```
pnorm(P[[2]])
```

```
##   [1] 0.5521123 0.6190551 0.6167667 0.6612950 0.7207261 0.5501340 0.5465700
##   [8] 0.6152389 0.5839465 0.5928956 0.5788686 0.6535786 0.5318814 0.6758050
##  [15] 0.5928956 0.6140919 0.5780862 0.6743655 0.6002522 0.5461737 0.5433988
##  [22] 0.5990929 0.5290969 0.5103713 0.5769121 0.5769121 0.5765205 0.5286990
##  [29] 0.5741697 0.5729933 0.5418121 0.5932837 0.5410185 0.6469132 0.5374454
##  [36] 0.5858958 0.6634875 0.6311875 0.5722086 0.5643471 0.6266524 0.5858958
##  [43] 0.5227274 0.5151562 0.5107701 0.6209588 0.6209588 0.5600121 0.5055850
##  [50] 0.5035904 0.5019947 0.5556700 0.6163850 0.6106448 0.6387052 0.6703935
##  [57] 0.5536941 0.5525079 0.6052654 0.5812139 0.5913426 0.5749536 0.6360799
##  [64] 0.5410185 0.6678558 0.5862854 0.6041100 0.5745617 0.6565259 0.6014106
```

```
##  [71] 0.5517168 0.5481545 0.6010246 0.5386368 0.5127640 0.5714237 0.5714237
##  [78] 0.5714237 0.5231257 0.5690673 0.5615893 0.5433988 0.5932837 0.5418121
##  [85] 0.6323184 0.5414153 0.5819951 0.6550534 0.6277878 0.5580393 0.5576446
##  [92] 0.6209588 0.5819951 0.5211340 0.5167507 0.5155548 0.6209588 0.6171484
##  [99] 0.5568549 0.5075794 0.5023936 0.5019947
```

```
1 - pnorm(P[[2]])
```

```
##   [1] 0.4478877 0.3809449 0.3832333 0.3387050 0.2792739 0.4498660 0.4534300
##   [8] 0.3847611 0.4160535 0.4071044 0.4211314 0.3464214 0.4681186 0.3241950
##  [15] 0.4071044 0.3859081 0.4219138 0.3256345 0.3997478 0.4538263 0.4566012
##  [22] 0.4009071 0.4709031 0.4896287 0.4230879 0.4230879 0.4234795 0.4713010
##  [29] 0.4258303 0.4270067 0.4581879 0.4067163 0.4589815 0.3530868 0.4625546
##  [36] 0.4141042 0.3365125 0.3688125 0.4277914 0.4356529 0.3733476 0.4141042
##  [43] 0.4772726 0.4848438 0.4892299 0.3790412 0.3790412 0.4399879 0.4944150
##  [50] 0.4964096 0.4980053 0.4443300 0.3836150 0.3893552 0.3612948 0.3296065
##  [57] 0.4463059 0.4474921 0.3947346 0.4187861 0.4086574 0.4250464 0.3639201
##  [64] 0.4589815 0.3321442 0.4137146 0.3958900 0.4254383 0.3434741 0.3985894
##  [71] 0.4482832 0.4518455 0.3989754 0.4613632 0.4872360 0.4285763 0.4285763
##  [78] 0.4285763 0.4768743 0.4309327 0.4384107 0.4566012 0.4067163 0.4581879
##  [85] 0.3676816 0.4585847 0.4180049 0.3449466 0.3722122 0.4419607 0.4423554
##  [92] 0.3790412 0.4180049 0.4788660 0.4832493 0.4844452 0.3790412 0.3828516
##  [99] 0.4431451 0.4924206 0.4976064 0.4980053
```

```
qnorm(P[[2]])
```

```
##   [1] -1.1216765 -0.5157916 -0.5330485 -0.2121372  0.2147016 -1.1455051
##   [7] -1.1901180 -0.5446417 -0.7995009 -0.7224791 -0.8451985 -0.2663106
##  [13] -1.4050716 -0.1105162 -0.7224791 -0.5533847 -0.8523858 -0.1206099
##  [19] -0.6619551 -1.1952228 -1.2318637 -0.6713462 -1.4538064 -1.9431338
##  [25] -0.8632501 -0.8632501 -0.8668942 -1.4610563 -0.8890057 -0.9002260
##  [31] -1.2535654 -0.7192287 -1.2646411 -0.3133694 -1.3165187 -0.7823652
##  [37] -0.1967796 -0.4261480 -0.9077695 -0.9862713 -0.4593261 -0.7823652
##  [43] -1.5804668 -1.7743819 -1.9268366 -0.5015274 -0.5015274 -1.0321540
##  [49] -2.1972864 -2.3656181 -2.5758293 -1.0803193 -0.5359400 -0.5798734
##  [55] -0.3718561 -0.1484343 -1.1030626 -1.1169867 -0.6219116 -0.8238936
##  [61] -0.7355576 -0.8815873 -0.3907257 -1.2646411 -0.1661994 -0.7789656
##  [67] -0.6310620 -0.8852904 -0.2455895 -0.6526220 -1.1263911 -1.1700024
##  [73] -0.6557267 -1.2988366 -1.8521799 -0.9153651 -0.9153651 -0.9153651
##  [79] -1.5717868 -0.9384757 -1.0152220 -1.2318637 -0.7192287 -1.2535654
##  [85] -0.4179277 -1.2590840 -0.8168748 -0.2559363 -0.4509855 -1.0537443
##  [91] -1.0581216 -0.5015274 -0.8168748 -1.6164364 -1.7279343 -1.7624103
##  [97] -0.5015274 -0.5301614 -1.0669376 -2.0748547 -2.5121443 -2.5758293
```

```
library(BSDA)
```

```
## Loading required package: lattice
```

```
##
## Attaching package: 'BSDA'
```

```
## The following object is masked from 'package:datasets':
##
##     Orange
```

```
z.test(z, conf.level = 0.95, sigma.x = sd(z))
```

```
##
##  One-sample z-Test
##
## data:  z
## z = 16.54, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 0
## 95 percent confidence interval:
##  0.1776404 0.2253988
## sample estimates:
## mean of x
## 0.2015196
```

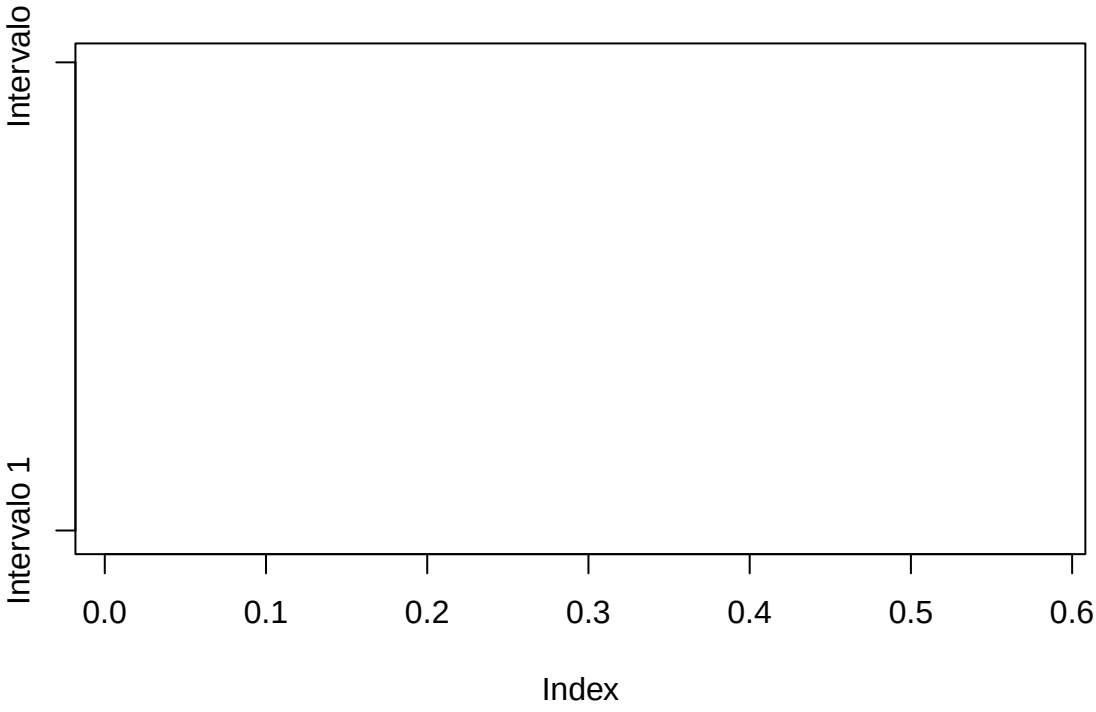
Distribución t de Student (t) con gl grados de libertad

```
t.test(z, conf.level = 0.95)
```

```
##
##  One Sample t-test
##
## data:  z
## t = 16.54, df = 101, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 0
## 95 percent confidence interval:
##  0.1773509 0.2256883
## sample estimates:
## mean of x
## 0.2015196
```

Para graficar n intervalos de confianza en un eje

```
plot(0, ylim=c(0,100), xlim=c(min(z),max(z)), yaxt="n", ylab="")
axis(2, at=c(1,100), labels=c("Intervalo 1","Intervalo "))
```


Intervalo
Intervalo 1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
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