# Taller 1 de R: Introducción

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## Crear objetos simples/introducir datos

```
> z <- scan()#dos veces enter para terminar
> z

numeric(0)

> x <- c(3,8,9,6,4,5)
> x

[1] 3 8 9 6 4 5

> w <- 1:10
> w

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

> y <- seq(1, 20, 2)
> y

 [1]  1  3  5  7  9 11 13 15 17 19

> u<-rep(1,7)
> u

[1] 1 1 1 1 1 1 1

> u<-rep(c(1,2),c(3,4))
> u

[1] 1 1 1 2 2 2 2

> t<- rep(c(3,4),c(3,4))
> t

[1] 3 3 3 4 4 4 4

> c(u,t)

 [1] 1 1 1 2 2 2 2 3 3 3 4 4 4 4
```

```
> ut1<-cbind(u,t) #combinar columnas
> ut1

     u t
[1,] 1 3
[2,] 1 3
[3,] 1 3
[4,] 2 4
[5,] 2 4
[6,] 2 4
[7,] 2 4

> ut2<-rbind(u,t) #combinar filas
> ut2

  [,1] [,2] [,3] [,4] [,5] [,6] [,7]
u    1    1    1    2    2    2    2
t    3    3    3    4    4    4    4

> class(ut2)

[1] "matrix"

> x <- rnorm(1000, mean = 3, sd = 2)
> x[1:100]

  [1]  2.02465801  3.51637570  5.52242437  0.73972411  3.20310938  3.56808284
  [7]  5.95994289  1.96207360  1.08497299  4.26528169  4.72792169  4.90338726
 [13]  1.46936427  1.34182880  2.48227999  5.31470921  3.19309026  4.55733882
 [19]  2.98611759  6.36061953  3.69646637  1.77771587  3.09463628  0.92798121
 [25]  4.32368696  1.89445358  1.87694947  1.74085030  1.14797312  0.37119635
 [31]  2.98821102  3.16819987  2.73176874  1.46467231  3.57313730  3.33112764
 [37]  4.16656533  3.91062415  8.05517813  3.59765766  2.66838660  3.54841537
 [43]  2.69823041  3.90291609  2.33314660  4.03733343  0.82781849  3.58354762
 [49]  2.23951976  5.49354397 -0.34964045  5.21238152  5.06554245  3.68534471
 [55]  1.12218879  1.44349312  0.19705395  1.81191165  5.52624850  4.87698189
 [61] -1.25704936  0.03046679  1.74806455  5.76383572  3.91328747  2.43400129
 [67]  2.88498201  2.35687191  1.51368781  0.74355055  0.23946154  2.71073694
 [73]  4.02257088  3.78912829  4.50738667  1.86004354  2.95303445  5.38119612
 [79]  1.76143340  2.77183591  1.69733558  2.78646243  3.27355696  1.72341149
 [85]  1.69744941  1.82685380  0.93002100  4.28283386  2.57607186  3.80310542
 [91]  2.54346684  0.98934971  0.59300828  0.67628744  2.05682437  7.56321506
 [97]  0.53295603  2.64329598  1.90822965  4.18978189

> x1 <- matrix(x,nrow = 10, ncol = 100)
> x1

           [,1]     [,2]      [,3]     [,4]      [,5]       [,6]        [,7]
 [1,] 2.0246580 4.727922 3.6964664 2.988211 2.6683866 -0.3496405 -1.25704936
 [2,] 3.5163757 4.903387 1.7777159 3.168200 3.5484154  5.2123815  0.03046679
```

```
 [3,] 5.5224244 1.469364 3.0946363 2.731769 2.6982304  5.0655425  1.74806455
 [4,] 0.7397241 1.341829 0.9279812 1.464672 3.9029161  3.6853447  5.76383572
 [5,] 3.2031094 2.482280 4.3236870 3.573137 2.3331466  1.1221888  3.91328747
 [6,] 3.5680828 5.314709 1.8944536 3.331128 4.0373334  1.4434931  2.43400129
 [7,] 5.9599429 3.193090 1.8769495 4.166565 0.8278185  0.1970539  2.88498201
 [8,] 1.9620736 4.557339 1.7408503 3.910624 3.5835476  1.8119116  2.35687191
 [9,] 1.0849730 2.986118 1.1479731 8.055178 2.2395198  5.5262485  1.51368781
[10,] 4.2652817 6.360620 0.3711964 3.597658 5.4935440  4.8769819  0.74355055
           [,8]     [,9]     [,10]      [,11]     [,12]       [,13]    [,14]
 [1,] 0.2394615 1.697336 2.5434668 -0.7596025 2.3733638 -0.29926317 2.235320
 [2,] 2.7107369 2.786462 0.9893497  3.3921817 4.4735310  4.85560527 4.159478
 [3,] 4.0225709 3.273557 0.5930083  1.5643600 0.4304434  3.19622126 2.621571
 [4,] 3.7891283 1.723411 0.6762874  1.9765432 4.9388493  1.65240389 1.678215
 [5,] 4.5073867 1.697449 2.0568244  4.5255873 3.5451348  8.01485312 3.683200
 [6,] 1.8600435 1.826854 7.5632151  3.2080838 2.0690584  4.22188182 3.903593
 [7,] 2.9530345 0.930021 0.5329560  4.2215012 6.0585408  0.96306971 2.871780
 [8,] 5.3811961 4.282834 2.6432960  4.6656020 4.9677729  3.82814664 0.903704
 [9,] 1.7614334 2.576072 1.9082297  1.1152521 4.4860517 -0.67601021 2.388916
[10,] 2.7718359 3.803105 4.1897819  0.9225056 2.8503429 -0.06861209 4.897343
          [,15]      [,16]      [,17]     [,18]      [,19]      [,20]    [,21]
 [1,]  0.2738678  0.3390058  3.9775316 0.6272493  1.7130728  2.2694425 3.788532
 [2,]  6.0845516  0.4533320  3.7493642 5.5197733  5.1280341  3.1916198 3.267045
 [3,]  1.7847050  2.6815661  6.3191277 1.9345636  2.9842140 -0.9311824 3.167890
 [4,]  3.0438071  1.4876430  5.5835319 1.9266100  2.3380578  3.3524386 4.233721
 [5,]  3.4485457  2.3190365  4.0417948 2.2250181  4.7348843  2.6483827 3.125576
 [6,]  1.4685460  2.4407838  3.5596793 3.7306767  5.4506882  4.1233717 2.107311
 [7,]  8.3271070  6.4369966 -0.1066223 2.9895535 -0.7566614  4.5769533 3.175233
 [8,]  6.0591541  0.6998200  4.3389319 3.5019872  3.2018412  3.6782641 3.167098
 [9,] -4.2437254 -2.0265106  0.9602570 3.0313505  1.5188400  4.5353021 4.641888
[10,]  5.4967186  0.6330186  3.9801548 1.4620765  2.2814305  2.5467452 2.659070
        [,22]    [,23]     [,24]     [,25]     [,26]     [,27]      [,28]
 [1,] 3.520253 2.310372 3.0437400  1.091090 4.2835247 2.6815113  0.8014947
 [2,] 3.236337 3.297493 4.7986165  5.276067 5.7071490 2.4826702  4.9900059
 [3,] 1.779797 3.427722 3.1560056  5.122196 2.3998223 0.5474704  5.2540984
 [4,] 3.933773 2.457639 6.0004693  3.568486 1.0327063 2.7874487  0.8141263
 [5,] 8.236788 2.048844 2.3994815  1.499684 1.5019151 7.0854822  0.5150787
 [6,] 3.688256 3.995183 5.2904273  2.356673 4.0584903 0.9933912 -2.3227120
 [7,] 1.952748 2.956297 1.1243772  4.805494 3.9621762 1.6591329  4.0558799
 [8,] 1.509298 1.176313 3.6180031 -2.241330 1.4816016 6.4068108  3.6566369
 [9,] 3.160761 3.004103 0.7035558  3.250166 0.1627803 2.6637368  5.3796596
[10,] 3.104077 5.115660 0.1482593 -1.835487 1.3386634 1.9488163  1.0055980
          [,29]      [,30]      [,31]    [,32]      [,33]       [,34]
 [1,]  2.3585383  3.5185725  3.0366445 7.433727  3.4780416  3.02331746
 [2,]  4.5086483  3.6291175  2.2033143 2.488873  3.2894175  2.48773766
 [3,]  3.9318618  0.2900898  3.0300769 3.369028  6.0261570  3.23591521
 [4,]  1.6717442 -0.6643786  1.9937864 6.499793  1.4447553  4.07388137
 [5,]  4.1749431  2.0201131  0.9334664 4.612256  3.4997600  1.39262040
 [6,]  5.2893777  3.9545696  1.0796664 1.151743  3.5014485  4.05617450
 [7,]  3.9144518  3.1059301  1.4657383 1.708981  4.1412154  6.00509141
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 [8,] -0.2369278  2.1349760 -0.8626009 3.850860  0.3727261 -1.60942122
 [9,]  2.6176750 -1.1220149  1.9010589 1.499419  5.2733526 -0.01424953
[10,]  2.5965207  3.0892167 -0.2180971 1.109219 -0.1640124  4.90578201
          [,35]     [,36]     [,37]     [,38]      [,39]      [,40]       [,41]
 [1,]  7.4440097 0.5015273  3.319212 3.962093  3.7620859  5.5545033  2.76346088
 [2,]  1.2951553 1.4480232  4.710264 2.905687  1.8294076  5.4441848  1.34659132
 [3,]  5.1327527 5.4574019  2.992521 5.458839 -0.3784974 -0.1662571  6.62758110
 [4,] -0.2412668 4.3567247 -2.469091 3.681602  3.9340353  8.2912789  2.81804124
 [5,]  4.4886126 1.1176330  5.448850 1.657793  1.9821171  4.5056488  4.93503216
 [6,]  1.0340354 3.4725363  5.341783 4.601659  1.0772898  4.4337342  0.06624096
 [7,]  6.6138672 5.3985489  5.372660 5.048820  1.0477450  0.7303850 -0.46346353
 [8,]  6.8320284 3.4486110  3.168325 4.123575  0.1488748  5.5635713  3.32390959
 [9,]  2.0720317 3.9906734  4.192395 1.724700  0.9442085  0.6824131  5.64899376
[10,]  2.1684892 1.7237618  3.735133 1.420435  3.6784880  2.8155459  4.09486210
          [,42]    [,43]     [,44]     [,45]      [,46]    [,47]    [,48]
 [1,]  3.9486135 2.293422 0.3685629 4.0738667  0.2739143 1.618255 1.426288
 [2,] -1.9025263 4.372205 3.8315628 2.9422557  5.7610305 4.624469 4.457298
 [3,]  3.3171776 1.173162 3.2538966 5.4116805  3.0990682 4.796194 5.774105
 [4,]  1.3525406 1.148352 5.5816916 2.6075923  2.0807442 3.290381 3.511559
 [5,]  2.7630863 4.405679 4.2920344 6.1649180  8.3592508 4.712811 3.271259
 [6,]  7.0390637 5.539606 3.2830607 0.5356898  3.3852537 3.345507 4.272967
 [7,]  1.3795513 1.853361 1.8476427 5.3745761  5.0664092 2.740423 2.505792
 [8,]  0.3584084 2.484508 2.6533665 0.6756291 -0.4343757 2.951974 3.641152
 [9,]  2.0898559 2.469507 0.1998290 1.8987658  0.8915918 2.713393 5.483960
[10,]  3.4772593 1.117735 3.4036126 3.5371948  1.1687447 4.832100 1.161327
          [,49]     [,50]      [,51]      [,52]     [,53]    [,54]      [,55]
 [1,]  6.6502334 4.1677715  0.8660172 10.8873838 3.5151107 3.319938  4.7712261
 [2,]  2.0648421 5.4715000  3.6961671  0.9034241 5.5747912 2.389119  0.4602523
 [3,]  1.9039182 1.8420411  6.6838010  3.2071559 2.6205875 3.039356  2.0277995
 [4,]  2.1738182 2.6076891 -3.0367129 -3.8024442 1.0567509 2.059466  2.1910637
 [5,]  3.3956683 4.5096417  2.1619035  3.0002826 0.2055194 3.804652  2.8325940
 [6,]  0.6531515 2.8385214  2.1089984  3.2166044 0.7008568 6.234283  4.3470850
 [7,] -2.2016167 4.7095066  5.2421329  0.8756304 1.1961940 2.229095 -0.2424409
 [8,]  1.3452640 4.5870480  4.1295612  1.2021206 1.8347667 5.374879  2.3060568
 [9,]  4.8168768 7.0528027  3.0301056  7.8293869 4.3136742 4.592927  3.4805365
[10,] -1.0636724 0.5363787  6.7142628  4.6542197 1.3053495 6.275417  2.9011268
         [,56]      [,57]    [,58]      [,59]     [,60]      [,61]     [,62]
 [1,] 4.7163699  3.1323442 2.599058  0.2447822 0.1308199  5.4819737  2.397599
 [2,] 0.5119131  2.0438579 1.994839  7.2486743 3.9088277  1.5708837  3.415458
 [3,] 5.4508237  0.4240307 3.640293  3.4847941 3.2613262  4.6300616  4.771492
 [4,] 5.2960037  5.7525786 3.604970  2.4462421 1.4873947  0.8948343  8.460153
 [5,] 4.5940653  1.8190596 3.706943  2.7851643 2.4347184 -0.1819619  2.095954
 [6,] 0.1686209  2.0008549 5.797938 -0.9840013 3.8759252  3.9582832  1.164997
 [7,] 1.0618680  3.7749464 5.290281  2.2904626 2.1444720  1.2234626  5.531610
 [8,] 4.5033293  1.9945952 3.719030  4.1362249 2.8829833  3.6889891 -0.690163
 [9,] 3.9876994 -0.2500281 7.039947  4.4064788 4.1736398  5.3920828  1.031503
[10,] 4.3142509  3.2960660 5.590298  2.7611407 1.3542350  5.1079223  1.721049
         [,63]        [,64]      [,65]      [,66]       [,67]    [,68]
 [1,] 6.1919323  3.719876919  6.5906697  2.6266749  1.74599732 4.006293
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```
 [2,] 3.4918936  3.968753455  4.7603543  3.9474848  5.08096175 3.647293
 [3,] 5.0613645  2.205917384  4.0429418  5.2966111  1.96205448 2.896078
 [4,] 5.0194420  2.674078740  3.4548440  2.7204372  1.61618625 5.189808
 [5,] 1.8280659  3.901589698 -0.3867362  2.7587793  2.11228870 3.677416
 [6,] 3.9774091 -0.275278908  5.1261224  1.3938517  0.52150171 1.144063
 [7,] 3.3630440  4.547395134  2.2739084  4.9940476  3.05222611 4.788178
 [8,] 0.1370581  6.313700127  2.0391710 -0.5172532  1.88416968 3.448734
 [9,] 5.2110050  3.256738865  3.1213572  3.4873416 -0.07178535 3.532785
[10,] 1.7630595 -0.003926022  5.7947144  0.1724705  2.02317982 6.672500
          [,69]      [,70]    [,71]     [,72]     [,73]    [,74]     [,75]
 [1,] 0.8927027 -0.2427409 6.327787 5.4353332 3.5964992 1.261034 0.4173271
 [2,] 4.4689469  1.3060637 2.934236 1.6133709 0.3219234 4.805559 0.3315251
 [3,] 5.8270484 -0.5810243 3.248666 5.2425776 1.6987979 1.066169 2.0753729
 [4,] 2.3952850  2.8172895 4.635821 2.7695283 4.0506315 7.773248 4.6368141
 [5,] 1.7523523  6.2059167 2.187662 1.6011689 3.2703178 4.521286 1.3286227
 [6,] 2.6560844 -1.0015238 6.463936 3.2267970 4.0418686 4.830627 1.3262066
 [7,] 1.7490349  1.0071789 5.861717 5.1502633 0.6322083 3.729212 3.4357337
 [8,] 4.4176507  1.6722153 3.631897 2.0406487 6.0161226 7.859778 1.6043067
 [9,] 0.3669229  3.7509295 3.878856 5.4337318 0.2860095 5.134345 1.9225008
[10,] 2.2850839  2.2465742 2.509423 0.2663064 4.0764887 6.540386 4.5120869
          [,76]      [,77]      [,78]      [,79]      [,80]       [,81]
 [1,]  2.2549895 -0.8949467  5.4079060  4.6324715  4.5267050  5.39252616
 [2,]  5.0277699  4.9407963  4.3405132 -1.0315628  3.7014960  2.48245836
 [3,]  4.3525007  4.6030421  2.6593967  0.9162055  4.5945766  2.43269495
 [4,]  0.5492410  3.9008938  5.9992046  1.6495547  0.7399653 -0.07763751
 [5,]  4.3741987  1.0018226  5.0586285  3.1470168  5.1162522  3.35643147
 [6,]  3.1087679  3.8152278  3.2108766  4.9844080  4.6388512  2.74689768
 [7,]  5.2260221  0.1874242  1.7641544  4.5628491 -0.1015507  5.48602487
 [8,]  1.0735602  1.5935523 -0.4386736  1.8358715  1.2568393  2.83858376
 [9,] -0.5673659 -0.5632022  1.5160715  3.8050762  2.2166049  4.03462280
[10,]  6.2191058  2.1833983  3.0680158  1.0798941  4.5972738  4.23826567
          [,82]      [,83]     [,84]      [,85]     [,86]    [,87]     [,88]
 [1,] 4.6202254  3.9764442  3.865990  1.9456524 3.2547377 4.066182 3.2294907
 [2,] 1.2814927  5.4757376  3.576500  3.2951050 0.9952846 3.981389 4.0641008
 [3,] 3.4098439  1.9507320  2.541018  2.4750168 1.9129088 2.847013 1.9535468
 [4,] 0.6470518  3.7939787  2.114610  0.4189256 3.7079708 2.531237 6.0542576
 [5,] 2.7779674  0.9666717  1.390026 -0.5026275 5.5617746 2.362011 3.8833442
 [6,] 3.9146928 -2.2409465  3.500464  6.7911179 1.4439921 3.183291 1.5442772
 [7,] 6.2465902  1.8767580  5.038529 -0.8290650 0.9627433 4.822135 1.8850674
 [8,] 3.1823388  1.0437385  6.734507  0.1002481 3.0028741 3.651386 2.6473889
 [9,] 2.1892367  4.4959032 -1.818096  3.1653451 1.2438642 5.612099 4.2818096
[10,] 5.4469059  2.1293073  3.196283  5.4246224 4.3880369 7.176025 0.5854947
          [,89]     [,90]    [,91]     [,92]     [,93]     [,94]     [,95]
 [1,]  4.9740628  5.686036 4.551847 4.4929177 0.8324094 4.3263925 7.0176314
 [2,]  2.9070891  3.852211 2.667423 1.2454210 3.9918287 1.7430552 0.5929799
 [3,]  3.9347546  1.829028 1.681541 0.2432624 7.1941371 5.2875610 7.3773327
 [4,]  0.7519317 -1.291186 5.776818 0.8941020 0.1541564 0.6852932 4.6525443
 [5,]  1.4702732  1.244343 4.950961 3.9272817 1.7681362 2.6971245 4.4266383
 [6,]  0.4334786  4.079387 8.290128 4.6357999 5.6117293 1.7303859 5.3009496
```

```
 [7,]  2.9006695  1.554916 4.618724 6.0901511 4.5531415 5.8212145 2.6380673
 [8,]  6.2541470  5.888862 3.745468 2.6949523 1.5787417 5.3364778 1.9333112
 [9,] -0.4185513  4.255655 4.819506 2.7726177 1.3949789 5.5554461 3.8861108
[10,]  0.2469791  2.189744 6.731764 5.1735830 3.2279813 3.6927173 3.3973189
           [,96]    [,97]     [,98]     [,99]     [,100]
 [1,]  1.3605779 2.848000  3.164197 0.7193092  2.1938506
 [2,]  2.6868477 1.514415  3.681218 3.5716222  4.4306855
 [3,]  2.3385734 1.878673  5.098674 5.1932218  6.0495312
 [4,] -0.3813595 4.746170  5.348677 1.4948798  2.3244769
 [5,]  4.6739427 3.909510  3.231327 4.3507956  1.9035703
 [6,]  4.5577943 3.676016  2.726087 4.2656750 -0.7843161
 [7,]  4.5166639 4.200516  3.563942 4.1549556  1.4880062
 [8,]  0.9487592 4.328463  2.893378 4.1668383  0.7669177
 [9,]  3.6316091 1.484530 -2.030243 4.5605006  3.7323371
[10,]  1.8686332 1.497927  3.400988 6.9397705  2.1909782

> class(x1)

[1] "matrix"

> dim(x)

NULL

> x2<-as.data.frame(x1)
> x2

          V1       V2        V3       V4        V5         V6          V7
1  2.0246580 4.727922 3.6964664 2.988211 2.6683866 -0.3496405 -1.25704936
2  3.5163757 4.903387 1.7777159 3.168200 3.5484154  5.2123815  0.03046679
3  5.5224244 1.469364 3.0946363 2.731769 2.6982304  5.0655425  1.74806455
4  0.7397241 1.341829 0.9279812 1.464672 3.9029161  3.6853447  5.76383572
5  3.2031094 2.482280 4.3236870 3.573137 2.3331466  1.1221888  3.91328747
6  3.5680828 5.314709 1.8944536 3.331128 4.0373334  1.4434931  2.43400129
7  5.9599429 3.193090 1.8769495 4.166565 0.8278185  0.1970539  2.88498201
8  1.9620736 4.557339 1.7408503 3.910624 3.5835476  1.8119116  2.35687191
9  1.0849730 2.986118 1.1479731 8.055178 2.2395198  5.5262485  1.51368781
10 4.2652817 6.360620 0.3711964 3.597658 5.4935440  4.8769819  0.74355055
          V8       V9       V10        V11       V12         V13      V14
1  0.2394615 1.697336 2.5434668 -0.7596025 2.3733638 -0.29926317 2.235320
2  2.7107369 2.786462 0.9893497  3.3921817 4.4735310  4.85560527 4.159478
3  4.0225709 3.273557 0.5930083  1.5643600 0.4304434  3.19622126 2.621571
4  3.7891283 1.723411 0.6762874  1.9765432 4.9388493  1.65240389 1.678215
5  4.5073867 1.697449 2.0568244  4.5255873 3.5451348  8.01485312 3.683200
6  1.8600435 1.826854 7.5632151  3.2080838 2.0690584  4.22188182 3.903593
7  2.9530345 0.930021 0.5329560  4.2215012 6.0585408  0.96306971 2.871780
8  5.3811961 4.282834 2.6432960  4.6656020 4.9677729  3.82814664 0.903704
9  1.7614334 2.576072 1.9082297  1.1152521 4.4860517 -0.67601021 2.388916
10 2.7718359 3.803105 4.1897819  0.9225056 2.8503429 -0.06861209 4.897343
          V15        V16        V17       V18        V19        V20      V21
```

```
1   0.2738678  0.3390058  3.9775316 0.6272493  1.7130728  2.2694425 3.788532
2   6.0845516  0.4533320  3.7493642 5.5197733  5.1280341  3.1916198 3.267045
3   1.7847050  2.6815661  6.3191277 1.9345636  2.9842140 -0.9311824 3.167890
4   3.0438071  1.4876430  5.5835319 1.9266100  2.3380578  3.3524386 4.233721
5   3.4485457  2.3190365  4.0417948 2.2250181  4.7348843  2.6483827 3.125576
6   1.4685460  2.4407838  3.5596793 3.7306767  5.4506882  4.1233717 2.107311
7   8.3271070  6.4369966 -0.1066223 2.9895535 -0.7566614  4.5769533 3.175233
8   6.0591541  0.6998200  4.3389319 3.5019872  3.2018412  3.6782641 3.167098
9  -4.2437254 -2.0265106  0.9602570 3.0313505  1.5188400  4.5353021 4.641888
10  5.4967186  0.6330186  3.9801548 1.4620765  2.2814305  2.5467452 2.659070
        V22      V23       V24       V25       V26       V27        V28
1  3.520253 2.310372 3.0437400  1.091090 4.2835247 2.6815113  0.8014947
2  3.236337 3.297493 4.7986165  5.276067 5.7071490 2.4826702  4.9900059
3  1.779797 3.427722 3.1560056  5.122196 2.3998223 0.5474704  5.2540984
4  3.933773 2.457639 6.0004693  3.568486 1.0327063 2.7874487  0.8141263
5  8.236788 2.048844 2.3994815  1.499684 1.5019151 7.0854822  0.5150787
6  3.688256 3.995183 5.2904273  2.356673 4.0584903 0.9933912 -2.3227120
7  1.952748 2.956297 1.1243772  4.805494 3.9621762 1.6591329  4.0558799
8  1.509298 1.176313 3.6180031 -2.241330 1.4816016 6.4068108  3.6566369
9  3.160761 3.004103 0.7035558  3.250166 0.1627803 2.6637368  5.3796596
10 3.104077 5.115660 0.1482593 -1.835487 1.3386634 1.9488163  1.0055980
          V29        V30        V31      V32        V33          V34        V35
1   2.3585383  3.5185725  3.0366445 7.433727  3.4780416  3.02331746  7.4440097
2   4.5086483  3.6291175  2.2033143 2.488873  3.2894175  2.48773766  1.2951553
3   3.9318618  0.2900898  3.0300769 3.369028  6.0261570  3.23591521  5.1327527
4   1.6717442 -0.6643786  1.9937864 6.499793  1.4447553  4.07388137 -0.2412668
5   4.1749431  2.0201131  0.9334664 4.612256  3.4997600  1.39262040  4.4886126
6   5.2893777  3.9545696  1.0796664 1.151743  3.5014485  4.05617450  1.0340354
7   3.9144518  3.1059301  1.4657383 1.708981  4.1412154  6.00509141  6.6138672
8  -0.2369278  2.1349760 -0.8626009 3.850860  0.3727261 -1.60942122  6.8320284
9   2.6176750 -1.1220149  1.9010589 1.499419  5.2733526 -0.01424953  2.0720317
10  2.5965207  3.0892167 -0.2180971 1.109219 -0.1640124  4.90578201  2.1684892
         V36       V37      V38        V39        V40         V41         V42
1  0.5015273  3.319212 3.962093  3.7620859  5.5545033  2.76346088  3.9486135
2  1.4480232  4.710264 2.905687  1.8294076  5.4441848  1.34659132 -1.9025263
3  5.4574019  2.992521 5.458839 -0.3784974 -0.1662571  6.62758110  3.3171776
4  4.3567247 -2.469091 3.681602  3.9340353  8.2912789  2.81804124  1.3525406
5  1.1176330  5.448850 1.657793  1.9821171  4.5056488  4.93503216  2.7630863
6  3.4725363  5.341783 4.601659  1.0772898  4.4337342  0.06624096  7.0390637
7  5.3985489  5.372660 5.048820  1.0477450  0.7303850 -0.46346353  1.3795513
8  3.4486110  3.168325 4.123575  0.1488748  5.5635713  3.32390959  0.3584084
9  3.9906734  4.192395 1.724700  0.9442085  0.6824131  5.64899376  2.0898559
10 1.7237618  3.735133 1.420435  3.6784880  2.8155459  4.09486210  3.4772593
        V43       V44       V45        V46      V47      V48        V49
1  2.293422 0.3685629 4.0738667  0.2739143 1.618255 1.426288  6.6502334
2  4.372205 3.8315628 2.9422557  5.7610305 4.624469 4.457298  2.0648421
3  1.173162 3.2538966 5.4116805  3.0990682 4.796194 5.774105  1.9039182
4  1.148352 5.5816916 2.6075923  2.0807442 3.290381 3.511559  2.1738182
5  4.405679 4.2920344 6.1649180  8.3592508 4.712811 3.271259  3.3956683
```

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6  5.539606 3.2830607 0.5356898  3.3852537 3.345507 4.272967  0.6531515
7  1.853361 1.8476427 5.3745761  5.0664092 2.740423 2.505792 -2.2016167
8  2.484508 2.6533665 0.6756291 -0.4343757 2.951974 3.641152  1.3452640
9  2.469507 0.1998290 1.8987658  0.8915918 2.713393 5.483960  4.8168768
10 1.117735 3.4036126 3.5371948  1.1687447 4.832100 1.161327 -1.0636724
         V50        V51        V52       V53      V54        V55       V56
1  4.1677715  0.8660172 10.8873838 3.5151107 3.319938  4.7712261 4.7163699
2  5.4715000  3.6961671  0.9034241 5.5747912 2.389119  0.4602523 0.5119131
3  1.8420411  6.6838010  3.2071559 2.6205875 3.039356  2.0277995 5.4508237
4  2.6076891 -3.0367129 -3.8024442 1.0567509 2.059466  2.1910637 5.2960037
5  4.5096417  2.1619035  3.0002826 0.2055194 3.804652  2.8325940 4.5940653
6  2.8385214  2.1089984  3.2166044 0.7008568 6.234283  4.3470850 0.1686209
7  4.7095066  5.2421329  0.8756304 1.1961940 2.229095 -0.2424409 1.0618680
8  4.5870480  4.1295612  1.2021206 1.8347667 5.374879  2.3060568 4.5033293
9  7.0528027  3.0301056  7.8293869 4.3136742 4.592927  3.4805365 3.9876994
10 0.5363787  6.7142628  4.6542197 1.3053495 6.275417  2.9011268 4.3142509
          V57      V58        V59       V60        V61       V62       V63
1   3.1323442 2.599058  0.2447822 0.1308199  5.4819737  2.397599 6.1919323
2   2.0438579 1.994839  7.2486743 3.9088277  1.5708837  3.415458 3.4918936
3   0.4240307 3.640293  3.4847941 3.2613262  4.6300616  4.771492 5.0613645
4   5.7525786 3.604970  2.4462421 1.4873947  0.8948343  8.460153 5.0194420
5   1.8190596 3.706943  2.7851643 2.4347184 -0.1819619  2.095954 1.8280659
6   2.0008549 5.797938 -0.9840013 3.8759252  3.9582832  1.164997 3.9774091
7   3.7749464 5.290281  2.2904626 2.1444720  1.2234626  5.531610 3.3630440
8   1.9945952 3.719030  4.1362249 2.8829833  3.6889891 -0.690163 0.1370581
9  -0.2500281 7.039947  4.4064788 4.1736398  5.3920828  1.031503 5.2110050
10  3.2960660 5.590298  2.7611407 1.3542350  5.1079223  1.721049 1.7630595
             V64        V65        V66         V67      V68       V69        V70
1   3.719876919  6.5906697  2.6266749  1.74599732 4.006293 0.8927027 -0.2427409
2   3.968753455  4.7603543  3.9474848  5.08096175 3.647293 4.4689469  1.3060637
3   2.205917384  4.0429418  5.2966111  1.96205448 2.896078 5.8270484 -0.5810243
4   2.674078740  3.4548440  2.7204372  1.61618625 5.189808 2.3952850  2.8172895
5   3.901589698 -0.3867362  2.7587793  2.11228870 3.677416 1.7523523  6.2059167
6  -0.275278908  5.1261224  1.3938517  0.52150171 1.144063 2.6560844 -1.0015238
7   4.547395134  2.2739084  4.9940476  3.05222611 4.788178 1.7490349  1.0071789
8   6.313700127  2.0391710 -0.5172532  1.88416968 3.448734 4.4176507  1.6722153
9   3.256738865  3.1213572  3.4873416 -0.07178535 3.532785 0.3669229  3.7509295
10 -0.003926022  5.7947144  0.1724705  2.02317982 6.672500 2.2850839  2.2465742
        V71       V72       V73       V74       V75        V76        V77
1  6.327787 5.4353332 3.5964992 1.261034 0.4173271  2.2549895 -0.8949467
2  2.934236 1.6133709 0.3219234 4.805559 0.3315251  5.0277699  4.9407963
3  3.248666 5.2425776 1.6987979 1.066169 2.0753729  4.3525007  4.6030421
4  4.635821 2.7695283 4.0506315 7.773248 4.6368141  0.5492410  3.9008938
5  2.187662 1.6011689 3.2703178 4.521286 1.3286227  4.3741987  1.0018226
6  6.463936 3.2267970 4.0418686 4.830627 1.3262066  3.1087679  3.8152278
7  5.861717 5.1502633 0.6322083 3.729212 3.4357337  5.2260221  0.1874242
8  3.631897 2.0406487 6.0161226 7.859778 1.6043067  1.0735602  1.5935523
9  3.878856 5.4337318 0.2860095 5.134345 1.9225008 -0.5673659 -0.5632022
10 2.509423 0.2663064 4.0764887 6.540386 4.5120869  6.2191058  2.1833983
```

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          V78        V79        V80         V81       V82        V83       V84
1   5.4079060  4.6324715  4.5267050  5.39252616 4.6202254  3.9764442  3.865990
2   4.3405132 -1.0315628  3.7014960  2.48245836 1.2814927  5.4757376  3.576500
3   2.6593967  0.9162055  4.5945766  2.43269495 3.4098439  1.9507320  2.541018
4   5.9992046  1.6495547  0.7399653 -0.07763751 0.6470518  3.7939787  2.114610
5   5.0586285  3.1470168  5.1162522  3.35643147 2.7779674  0.9666717  1.390026
6   3.2108766  4.9844080  4.6388512  2.74689768 3.9146928 -2.2409465  3.500464
7   1.7641544  4.5628491 -0.1015507  5.48602487 6.2465902  1.8767580  5.038529
8  -0.4386736  1.8358715  1.2568393  2.83858376 3.1823388  1.0437385  6.734507
9   1.5160715  3.8050762  2.2166049  4.03462280 2.1892367  4.4959032 -1.818096
10  3.0680158  1.0798941  4.5972738  4.23826567 5.4469059  2.1293073  3.196283
          V85       V86      V87       V88        V89       V90      V91
1   1.9456524 3.2547377 4.066182 3.2294907  4.9740628  5.686036 4.551847
2   3.2951050 0.9952846 3.981389 4.0641008  2.9070891  3.852211 2.667423
3   2.4750168 1.9129088 2.847013 1.9535468  3.9347546  1.829028 1.681541
4   0.4189256 3.7079708 2.531237 6.0542576  0.7519317 -1.291186 5.776818
5  -0.5026275 5.5617746 2.362011 3.8833442  1.4702732  1.244343 4.950961
6   6.7911179 1.4439921 3.183291 1.5442772  0.4334786  4.079387 8.290128
7  -0.8290650 0.9627433 4.822135 1.8850674  2.9006695  1.554916 4.618724
8   0.1002481 3.0028741 3.651386 2.6473889  6.2541470  5.888862 3.745468
9   3.1653451 1.2438642 5.612099 4.2818096 -0.4185513  4.255655 4.819506
10  5.4246224 4.3880369 7.176025 0.5854947  0.2469791  2.189744 6.731764
         V92       V93       V94       V95        V96      V97       V98
1  4.4929177 0.8324094 4.3263925 7.0176314  1.3605779 2.848000  3.164197
2  1.2454210 3.9918287 1.7430552 0.5929799  2.6868477 1.514415  3.681218
3  0.2432624 7.1941371 5.2875610 7.3773327  2.3385734 1.878673  5.098674
4  0.8941020 0.1541564 0.6852932 4.6525443 -0.3813595 4.746170  5.348677
5  3.9272817 1.7681362 2.6971245 4.4266383  4.6739427 3.909510  3.231327
6  4.6357999 5.6117293 1.7303859 5.3009496  4.5577943 3.676016  2.726087
7  6.0901511 4.5531415 5.8212145 2.6380673  4.5166639 4.200516  3.563942
8  2.6949523 1.5787417 5.3364778 1.9333112  0.9487592 4.328463  2.893378
9  2.7726177 1.3949789 5.5554461 3.8861108  3.6316091 1.484530 -2.030243
10 5.1735830 3.2279813 3.6927173 3.3973189  1.8686332 1.497927  3.400988
         V99       V100
1  0.7193092  2.1938506
2  3.5716222  4.4306855
3  5.1932218  6.0495312
4  1.4948798  2.3244769
5  4.3507956  1.9035703
6  4.2656750 -0.7843161
7  4.1549556  1.4880062
8  4.1668383  0.7669177
9  4.5605006  3.7323371
10 6.9397705  2.1909782
> class(x2)
[1] "data.frame"
> y <- x1[3, ]
> y
```

```
  [1]  5.5224244  1.4693643  3.0946363  2.7317687  2.6982304  5.0655425
  [7]  1.7480646  4.0225709  3.2735570  0.5930083  1.5643600  0.4304434
 [13]  3.1962213  2.6215709  1.7847050  2.6815661  6.3191277  1.9345636
 [19]  2.9842140 -0.9311824  3.1678895  1.7797970  3.4277221  3.1560056
 [25]  5.1221960  2.3998223  0.5474704  5.2540984  3.9318618  0.2900898
 [31]  3.0300769  3.3690284  6.0261570  3.2359152  5.1327527  5.4574019
 [37]  2.9925213  5.4588389 -0.3784974 -0.1662571  6.6275811  3.3171776
 [43]  1.1731619  3.2538966  5.4116805  3.0990682  4.7961941  5.7741051
 [49]  1.9039182  1.8420411  6.6838010  3.2071559  2.6205875  3.0393560
 [55]  2.0277995  5.4508237  0.4240307  3.6402931  3.4847941  3.2613262
 [61]  4.6300616  4.7714919  5.0613645  2.2059174  4.0429418  5.2966111
 [67]  1.9620545  2.8960784  5.8270484 -0.5810243  3.2486663  5.2425776
 [73]  1.6987979  1.0661693  2.0753729  4.3525007  4.6030421  2.6593967
 [79]  0.9162055  4.5945766  2.4326949  3.4098439  1.9507320  2.5410182
 [85]  2.4750168  1.9129088  2.8470126  1.9535468  3.9347546  1.8290278
 [91]  1.6815410  0.2432624  7.1941371  5.2875610  7.3773327  2.3385734
 [97]  1.8786735  5.0986739  5.1932218  6.0495312

> y <- x1[, -1]
> y

          [,1]      [,2]     [,3]      [,4]       [,5]        [,6]      [,7]
 [1,] 4.727922 3.6964664 2.988211 2.6683866 -0.3496405 -1.25704936 0.2394615
 [2,] 4.903387 1.7777159 3.168200 3.5484154  5.2123815  0.03046679 2.7107369
 [3,] 1.469364 3.0946363 2.731769 2.6982304  5.0655425  1.74806455 4.0225709
 [4,] 1.341829 0.9279812 1.464672 3.9029161  3.6853447  5.76383572 3.7891283
 [5,] 2.482280 4.3236870 3.573137 2.3331466  1.1221888  3.91328747 4.5073867
 [6,] 5.314709 1.8944536 3.331128 4.0373334  1.4434931  2.43400129 1.8600435
 [7,] 3.193090 1.8769495 4.166565 0.8278185  0.1970539  2.88498201 2.9530345
 [8,] 4.557339 1.7408503 3.910624 3.5835476  1.8119116  2.35687191 5.3811961
 [9,] 2.986118 1.1479731 8.055178 2.2395198  5.5262485  1.51368781 1.7614334
[10,] 6.360620 0.3711964 3.597658 5.4935440  4.8769819  0.74355055 2.7718359
          [,8]      [,9]      [,10]     [,11]       [,12]    [,13]      [,14]
 [1,] 1.697336 2.5434668 -0.7596025 2.3733638 -0.29926317 2.235320  0.2738678
 [2,] 2.786462 0.9893497  3.3921817 4.4735310  4.85560527 4.159478  6.0845516
 [3,] 3.273557 0.5930083  1.5643600 0.4304434  3.19622126 2.621571  1.7847050
 [4,] 1.723411 0.6762874  1.9765432 4.9388493  1.65240389 1.678215  3.0438071
 [5,] 1.697449 2.0568244  4.5255873 3.5451348  8.01485312 3.683200  3.4485457
 [6,] 1.826854 7.5632151  3.2080838 2.0690584  4.22188182 3.903593  1.4685460
 [7,] 0.930021 0.5329560  4.2215012 6.0585408  0.96306971 2.871780  8.3271070
 [8,] 4.282834 2.6432960  4.6656020 4.9677729  3.82814664 0.903704  6.0591541
 [9,] 2.576072 1.9082297  1.1152521 4.4860517 -0.67601021 2.388916 -4.2437254
[10,] 3.803105 4.1897819  0.9225056 2.8503429 -0.06861209 4.897343  5.4967186
          [,15]      [,16]     [,17]      [,18]      [,19]    [,20]    [,21]
 [1,]  0.3390058  3.9775316 0.6272493  1.7130728  2.2694425 3.788532 3.520253
 [2,]  0.4533320  3.7493642 5.5197733  5.1280341  3.1916198 3.267045 3.236337
 [3,]  2.6815661  6.3191277 1.9345636  2.9842140 -0.9311824 3.167890 1.779797
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> y <- x1[x1 >= 2]
> y

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[365]  2.306057  3.480537  2.901127  4.716370  5.450824  5.296004  4.594065
[372]  4.503329  3.987699  4.314251  3.132344  2.043858  5.752579  2.000855
[379]  3.774946  3.296066  2.599058  3.640293  3.604970  3.706943  5.797938
```

```
[386]  5.290281  3.719030  7.039947  5.590298  7.248674  3.484794  2.446242
[393]  2.785164  2.290463  4.136225  4.406479  2.761141  3.908828  3.261326
[400]  2.434718  3.875925  2.144472  2.882983  4.173640  5.481974  4.630062
[407]  3.958283  3.688989  5.392083  5.107922  2.397599  3.415458  4.771492
[414]  8.460153  2.095954  5.531610  6.191932  3.491894  5.061365  5.019442
[421]  3.977409  3.363044  5.211005  3.719877  3.968753  2.205917  2.674079
[428]  3.901590  4.547395  6.313700  3.256739  6.590670  4.760354  4.042942
[435]  3.454844  5.126122  2.273908  2.039171  3.121357  5.794714  2.626675
[442]  3.947485  5.296611  2.720437  2.758779  4.994048  3.487342  5.080962
[449]  2.112289  3.052226  2.023180  4.006293  3.647293  2.896078  5.189808
[456]  3.677416  4.788178  3.448734  3.532785  6.672500  4.468947  5.827048
[463]  2.395285  2.656084  4.417651  2.285084  2.817290  6.205917  3.750929
[470]  2.246574  6.327787  2.934236  3.248666  4.635821  2.187662  6.463936
[477]  5.861717  3.631897  3.878856  2.509423  5.435333  5.242578  2.769528
[484]  3.226797  5.150263  2.040649  5.433732  3.596499  4.050632  3.270318
[491]  4.041869  6.016123  4.076489  4.805559  7.773248  4.521286  4.830627
[498]  3.729212  7.859778  5.134345  6.540386  2.075373  4.636814  3.435734
[505]  4.512087  2.254990  5.027770  4.352501  4.374199  3.108768  5.226022
[512]  6.219106  4.940796  4.603042  3.900894  3.815228  2.183398  5.407906
[519]  4.340513  2.659397  5.999205  5.058628  3.210877  3.068016  4.632472
[526]  3.147017  4.984408  4.562849  3.805076  4.526705  3.701496  4.594577
[533]  5.116252  4.638851  2.216605  4.597274  5.392526  2.482458  2.432695
[540]  3.356431  2.746898  5.486025  2.838584  4.034623  4.238266  4.620225
[547]  3.409844  2.777967  3.914693  6.246590  3.182339  2.189237  5.446906
[554]  3.976444  5.475738  3.793979  4.495903  2.129307  3.865990  3.576500
[561]  2.541018  2.114610  3.500464  5.038529  6.734507  3.196283  3.295105
[568]  2.475017  6.791118  3.165345  5.424622  3.254738  3.707971  5.561775
[575]  3.002874  4.388037  4.066182  3.981389  2.847013  2.531237  2.362011
[582]  3.183291  4.822135  3.651386  5.612099  7.176025  3.229491  4.064101
[589]  6.054258  3.883344  2.647389  4.281810  4.974063  2.907089  3.934755
[596]  2.900669  6.254147  5.686036  3.852211  4.079387  5.888862  4.255655
[603]  2.189744  4.551847  2.667423  5.776818  4.950961  8.290128  4.618724
[610]  3.745468  4.819506  6.731764  4.492918  3.927282  4.635800  6.090151
[617]  2.694952  2.772618  5.173583  3.991829  7.194137  5.611729  4.553142
[624]  3.227981  4.326393  5.287561  2.697124  5.821214  5.336478  5.555446
[631]  3.692717  7.017631  7.377333  4.652544  4.426638  5.300950  2.638067
[638]  3.886111  3.397319  2.686848  2.338573  4.673943  4.557794  4.516664
[645]  3.631609  2.848000  4.746170  3.909510  3.676016  4.200516  4.328463
[652]  3.164197  3.681218  5.098674  5.348677  3.231327  2.726087  3.563942
[659]  2.893378  3.400988  3.571622  5.193222  4.350796  4.265675  4.154956
[666]  4.166838  4.560501  6.939770  2.193851  4.430685  6.049531  2.324477
[673]  3.732337  2.190978
```

```
> getwd()
```

```
[1] "/home/juan/Documentos/ExampleSweave"
```

# Leyendo Tablas

```
> read.table("data.txt")
```

```
     V1   V2    V3
1  sexo peso talla
2     h   60   170
3     f   57   169
4     f   51   172
5     f   55   174
6     f   50   168
7     f   50   161
8     f   48   162
9     h   72   189
10    f   52   160
11    h   64   175
12    f   53   165
13    h   72   164
14    h   61   175
15    h   78   184
16    h   68   178
17    f   51   158
18    f   53   164
19    h   79   179
20    h   74   182
21    h   62   174
22    f   49   158
23    f   50   163
24    h   74   172
25    h   60   185
26    f   53   170
27    h   73   178
28    h   70   180
29    h   72   189
30    f   70   172
31    f   62   174
32    h   77   200
33    h   70   178
34    h   76   178
35    f   51   169
36    f   52   170
37    f   57   160
38    f   53   163
39    f   55   168
40    f   66   172
41    h   65   175
42    h   75   180
43    f   50   162
44    f   53   177
```

```
45    h   55   169
46    h   55   173
47    h   72   182
48    h   75   183
49    h   73   184
50    h   71   181
51    h   66   180
52    h   71   178
53    h   79   178
54    h   62   168
55    f   47   161
56    h   73   171
57    h   72   180
58    h   60   174
59    h   67   175
60    h   85   182
61    h   73   181
62    h   82   188
63    h   86   182
64    h   85   189
65    h   65   178
66    f   47   150
67    h   74   186
```

```
> read.table("data.txt")[1:5, ]
```

```
    V1   V2    V3
1 sexo peso talla
2    h   60   170
3    f   57   169
4    f   51   172
5    f   55   174
```

```
> read.table("data.txt", header=TRUE)
```

```
   sexo peso talla
1     h   60   170
2     f   57   169
3     f   51   172
4     f   55   174
5     f   50   168
6     f   50   161
7     f   48   162
8     h   72   189
9     f   52   160
10    h   64   175
11    f   53   165
12    h   72   164
13    h   61   175
14    h   78   184
```

| | | | |
|---|---|---|---|
| 15 | h | 68 | 178 |
| 16 | f | 51 | 158 |
| 17 | f | 53 | 164 |
| 18 | h | 79 | 179 |
| 19 | h | 74 | 182 |
| 20 | h | 62 | 174 |
| 21 | f | 49 | 158 |
| 22 | f | 50 | 163 |
| 23 | h | 74 | 172 |
| 24 | h | 60 | 185 |
| 25 | f | 53 | 170 |
| 26 | h | 73 | 178 |
| 27 | h | 70 | 180 |
| 28 | h | 72 | 189 |
| 29 | f | 70 | 172 |
| 30 | f | 62 | 174 |
| 31 | h | 77 | 200 |
| 32 | h | 70 | 178 |
| 33 | h | 76 | 178 |
| 34 | f | 51 | 169 |
| 35 | f | 52 | 170 |
| 36 | f | 57 | 160 |
| 37 | f | 53 | 163 |
| 38 | f | 55 | 168 |
| 39 | f | 66 | 172 |
| 40 | h | 65 | 175 |
| 41 | h | 75 | 180 |
| 42 | f | 50 | 162 |
| 43 | f | 53 | 177 |
| 44 | h | 55 | 169 |
| 45 | h | 55 | 173 |
| 46 | h | 72 | 182 |
| 47 | h | 75 | 183 |
| 48 | h | 73 | 184 |
| 49 | h | 71 | 181 |
| 50 | h | 66 | 180 |
| 51 | h | 71 | 178 |
| 52 | h | 79 | 178 |
| 53 | h | 62 | 168 |
| 54 | f | 47 | 161 |
| 55 | h | 73 | 171 |
| 56 | h | 72 | 180 |
| 57 | h | 60 | 174 |
| 58 | h | 67 | 175 |
| 59 | h | 85 | 182 |
| 60 | h | 73 | 181 |
| 61 | h | 82 | 188 |
| 62 | h | 86 | 182 |
| 63 | h | 85 | 189 |

```
64    h   65   178
65    f   47   150
66    h   74   186
```

```
> data <- read.table("data.txt", header=TRUE)
> data
```

```
   sexo peso talla
1     h   60   170
2     f   57   169
3     f   51   172
4     f   55   174
5     f   50   168
6     f   50   161
7     f   48   162
8     h   72   189
9     f   52   160
10    h   64   175
11    f   53   165
12    h   72   164
13    h   61   175
14    h   78   184
15    h   68   178
16    f   51   158
17    f   53   164
18    h   79   179
19    h   74   182
20    h   62   174
21    f   49   158
22    f   50   163
23    h   74   172
24    h   60   185
25    f   53   170
26    h   73   178
27    h   70   180
28    h   72   189
29    f   70   172
30    f   62   174
31    h   77   200
32    h   70   178
33    h   76   178
34    f   51   169
35    f   52   170
36    f   57   160
37    f   53   163
38    f   55   168
39    f   66   172
40    h   65   175
41    h   75   180
```

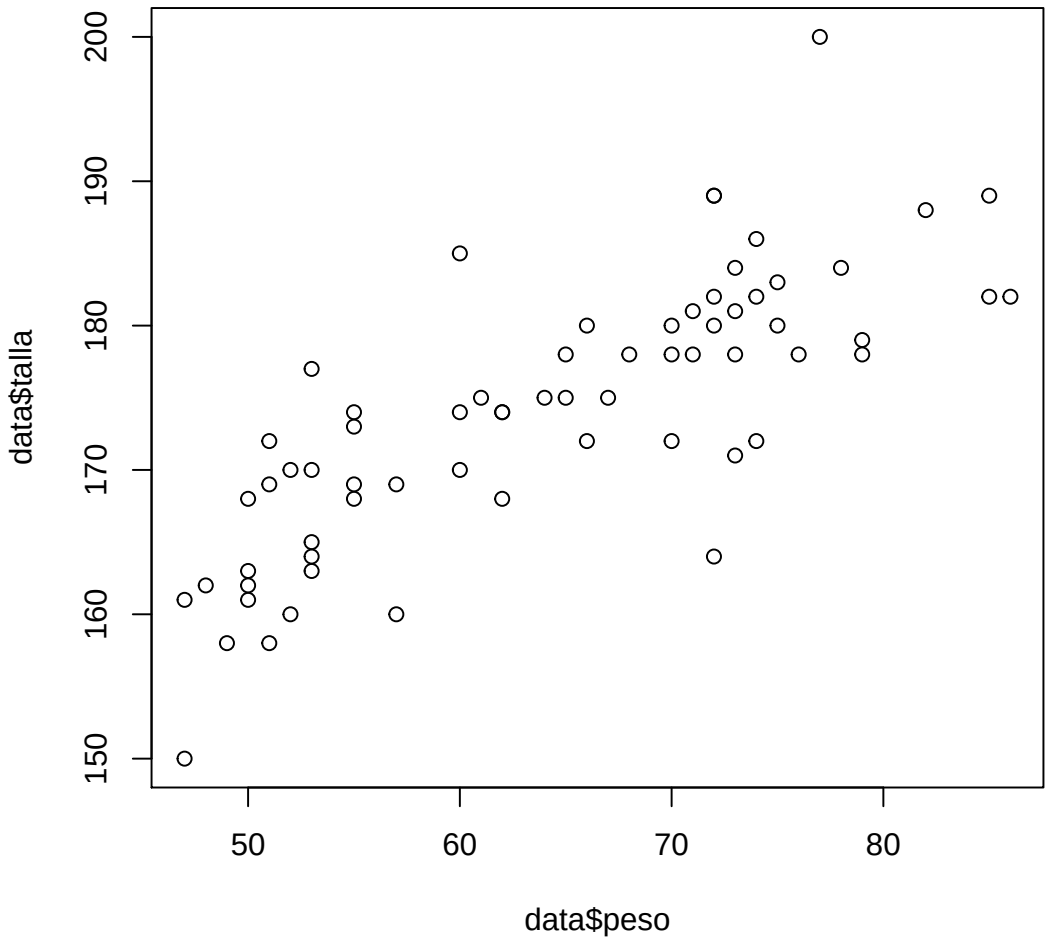
```
42    f   50   162
43    f   53   177
44    h   55   169
45    h   55   173
46    h   72   182
47    h   75   183
48    h   73   184
49    h   71   181
50    h   66   180
51    h   71   178
52    h   79   178
53    h   62   168
54    f   47   161
55    h   73   171
56    h   72   180
57    h   60   174
58    h   67   175
59    h   85   182
60    h   73   181
61    h   82   188
62    h   86   182
63    h   85   189
64    h   65   178
65    f   47   150
66    h   74   186
```

## Para caracterizar los datos y realizar gráficas

```
> summary(data)
```

```
 sexo        peso           talla
 f:25   Min.   :47.00   Min.   :150.0
 h:41   1st Qu.:53.00   1st Qu.:168.2
        Median :65.00   Median :174.5
        Mean   :64.21   Mean   :174.1
        3rd Qu.:73.00   3rd Qu.:180.0
        Max.   :86.00   Max.   :200.0
```

```
> plot(data$peso, data$talla)
```



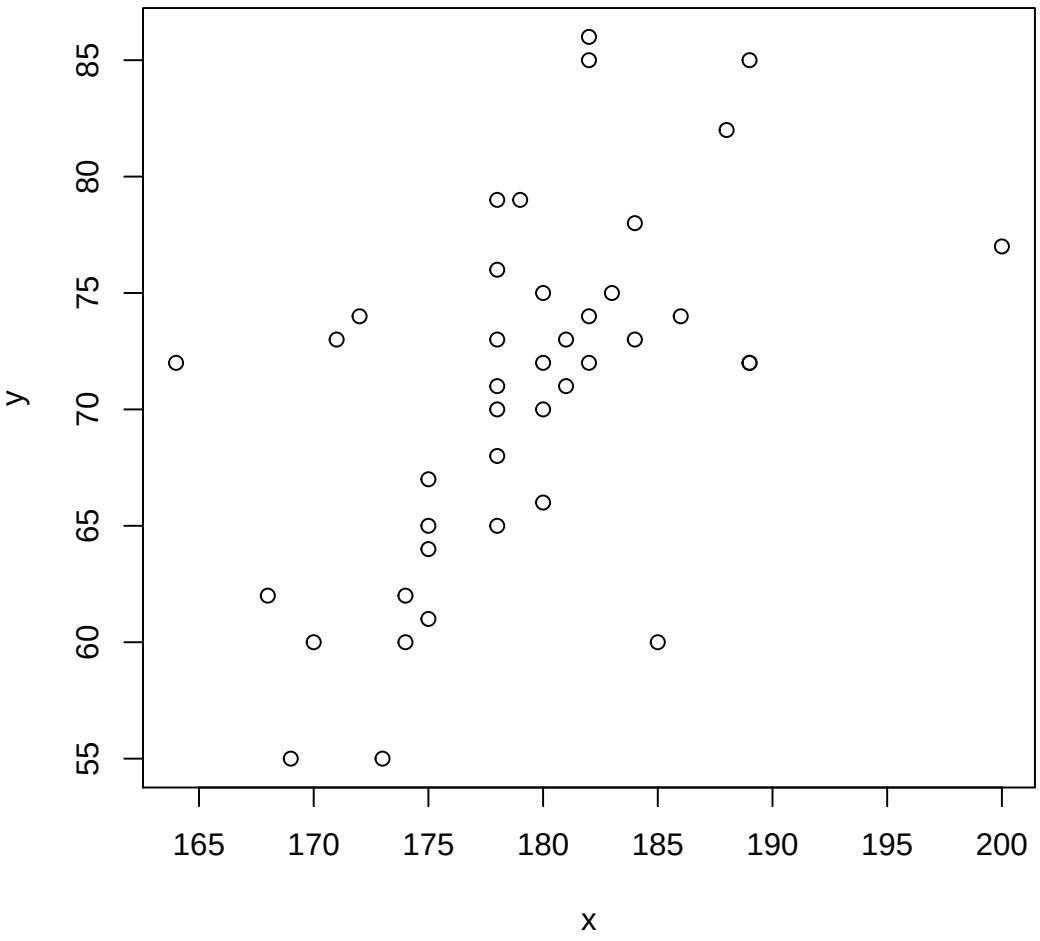

```
> x <- data$talla[data$sexo == "h"]
> x

 [1] 170 189 175 164 175 184 178 179 182 174 172 185 178 180 189 200 178 178 175
[20] 180 169 173 182 183 184 181 180 178 178 168 171 180 174 175 182 181 188 182
[39] 189 178 186

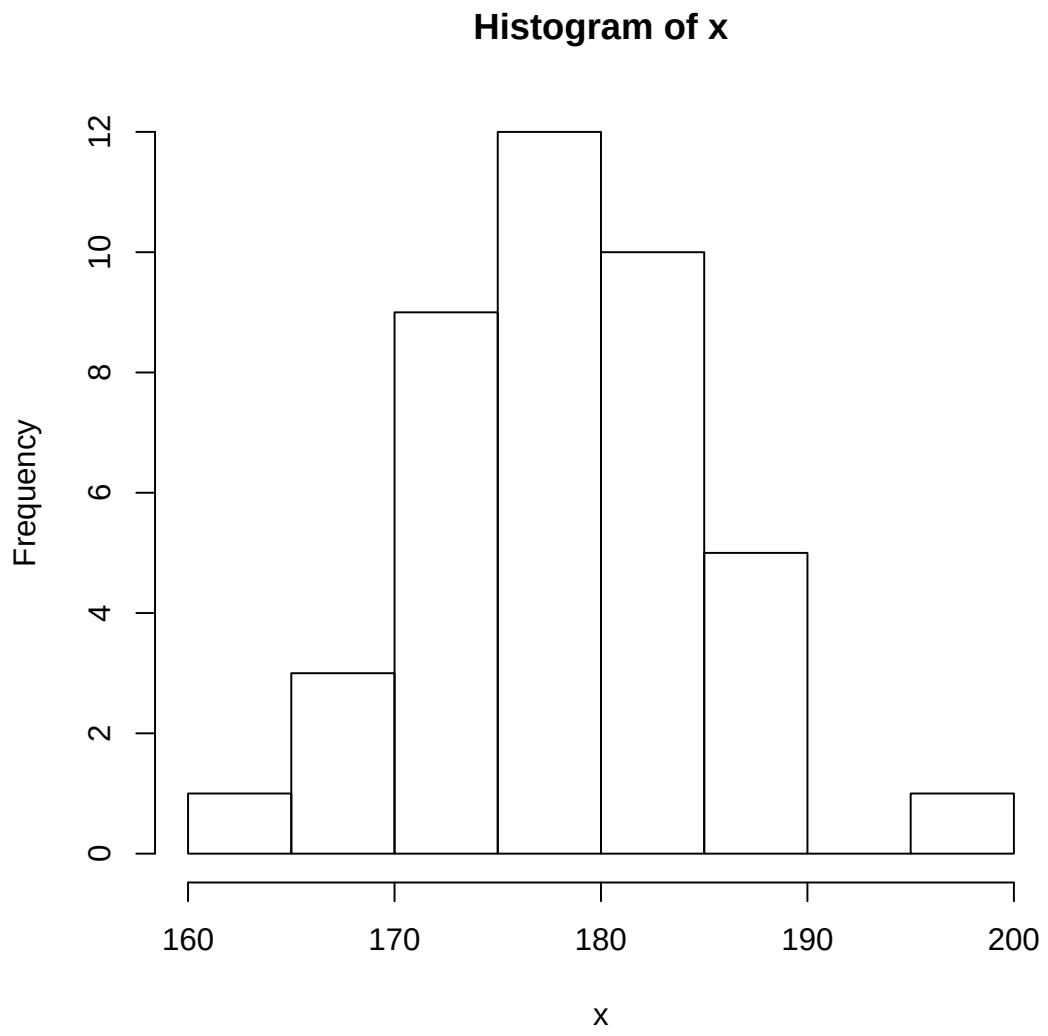
> y <- data$peso[data$sexo == "h"]
> y

 [1] 60 72 64 72 61 78 68 79 74 62 74 60 73 70 72 77 70 76 65 75 55 55 72 75 73
[26] 71 66 71 79 62 73 72 60 67 85 73 82 86 85 65 74

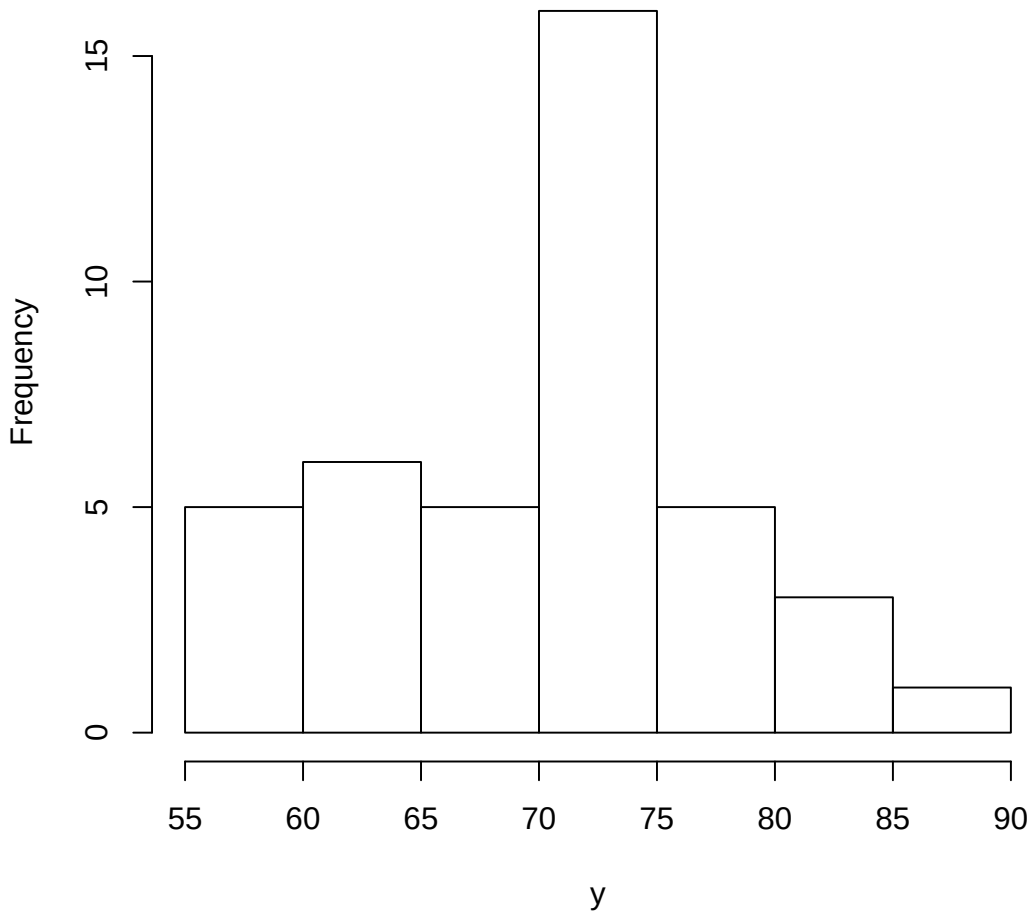
> plot(x, y)
```




```
> hist(x)
```




```
> hist(y)
```



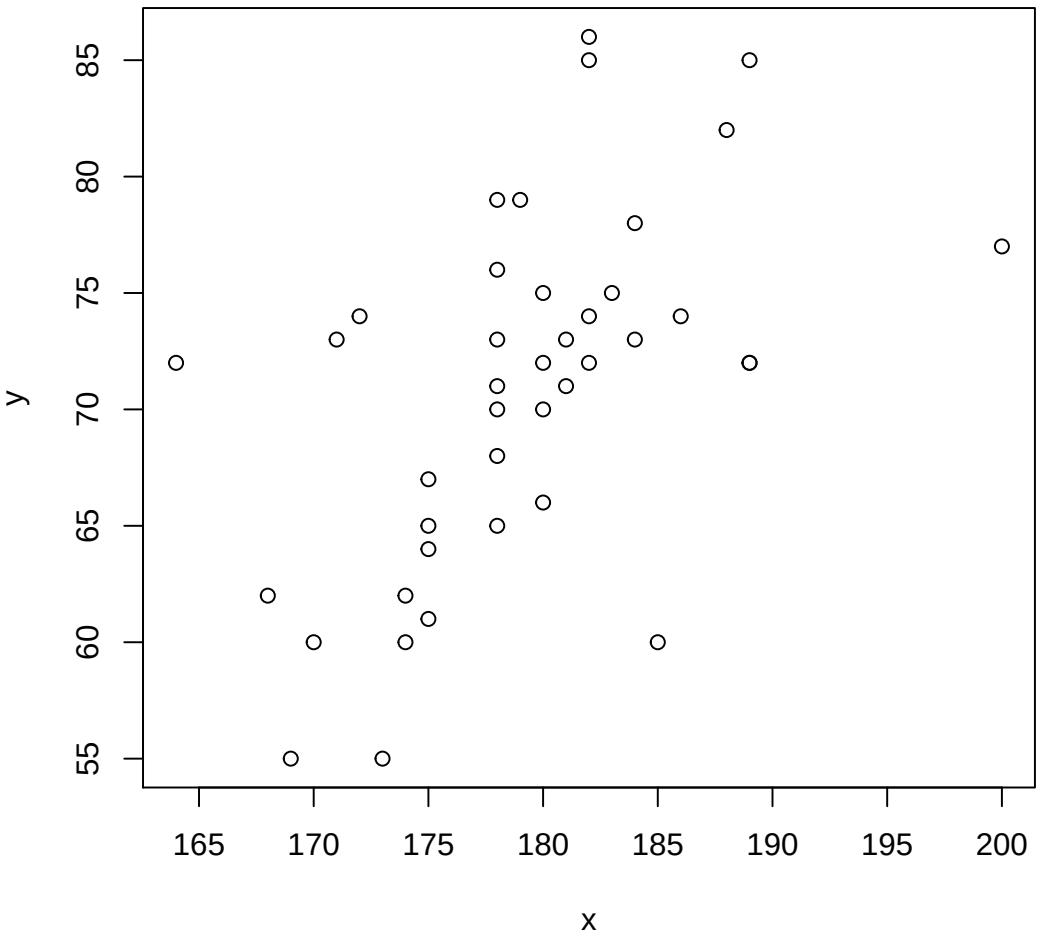

```
> par(mfrow = c(2, 2))
> x <- data$talla[data$sexo == "h"]
> x

 [1] 170 189 175 164 175 184 178 179 182 174 172 185 178 180 189 200 178 178 175
[20] 180 169 173 182 183 184 181 180 178 178 168 171 180 174 175 182 181 188 182
[39] 189 178 186

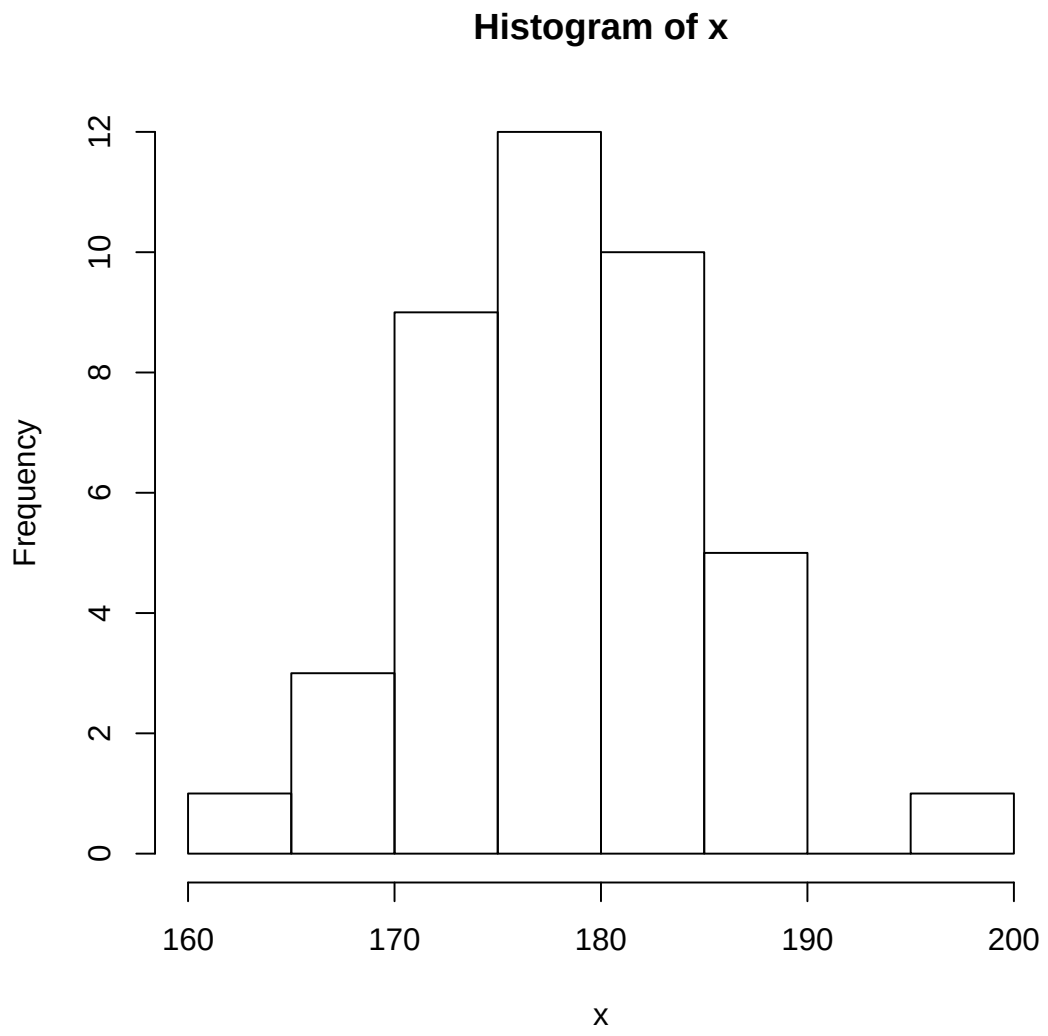
> y <- data$peso[data$sexo == "h"]
> y

 [1] 60 72 64 72 61 78 68 79 74 62 74 60 73 70 72 77 70 76 65 75 55 55 72 75 73
[26] 71 66 71 79 62 73 72 60 67 85 73 82 86 85 65 74

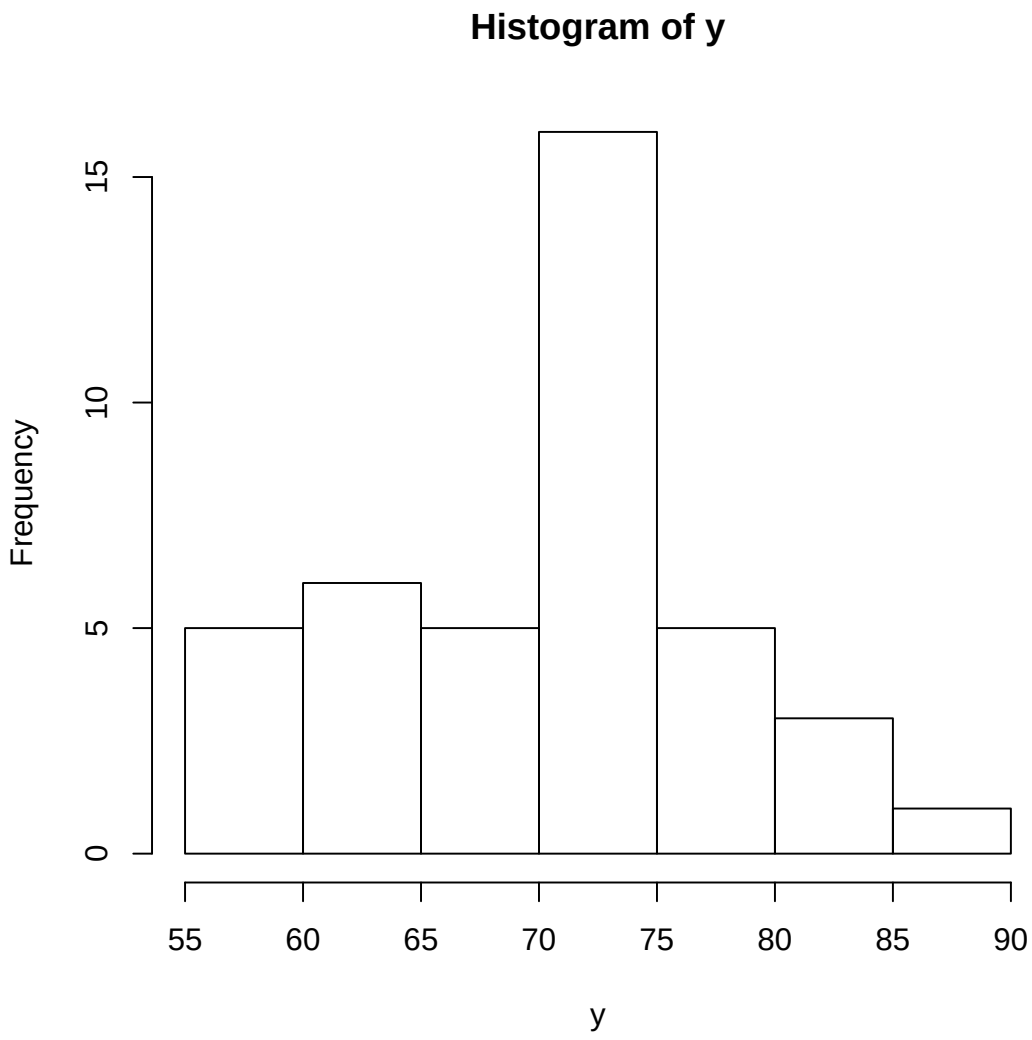
> plot(x, y)
```



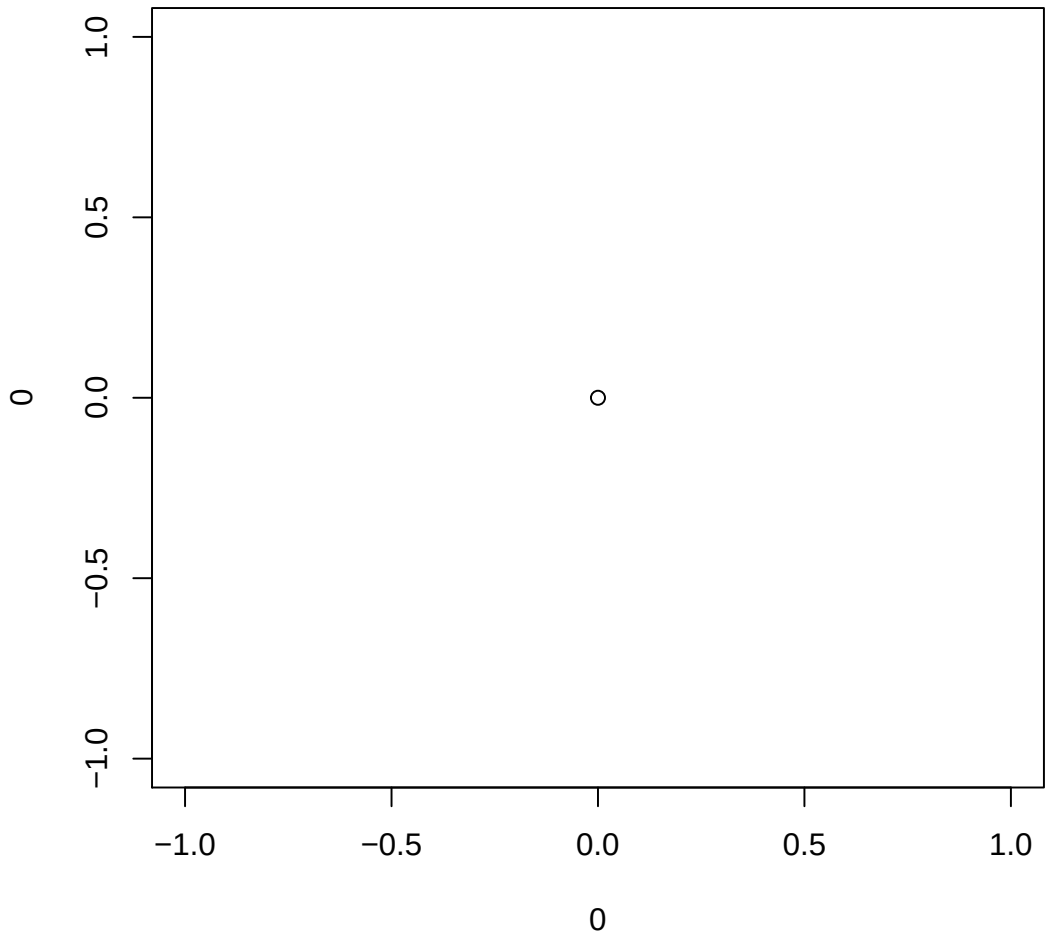

```
> hist(x)
```



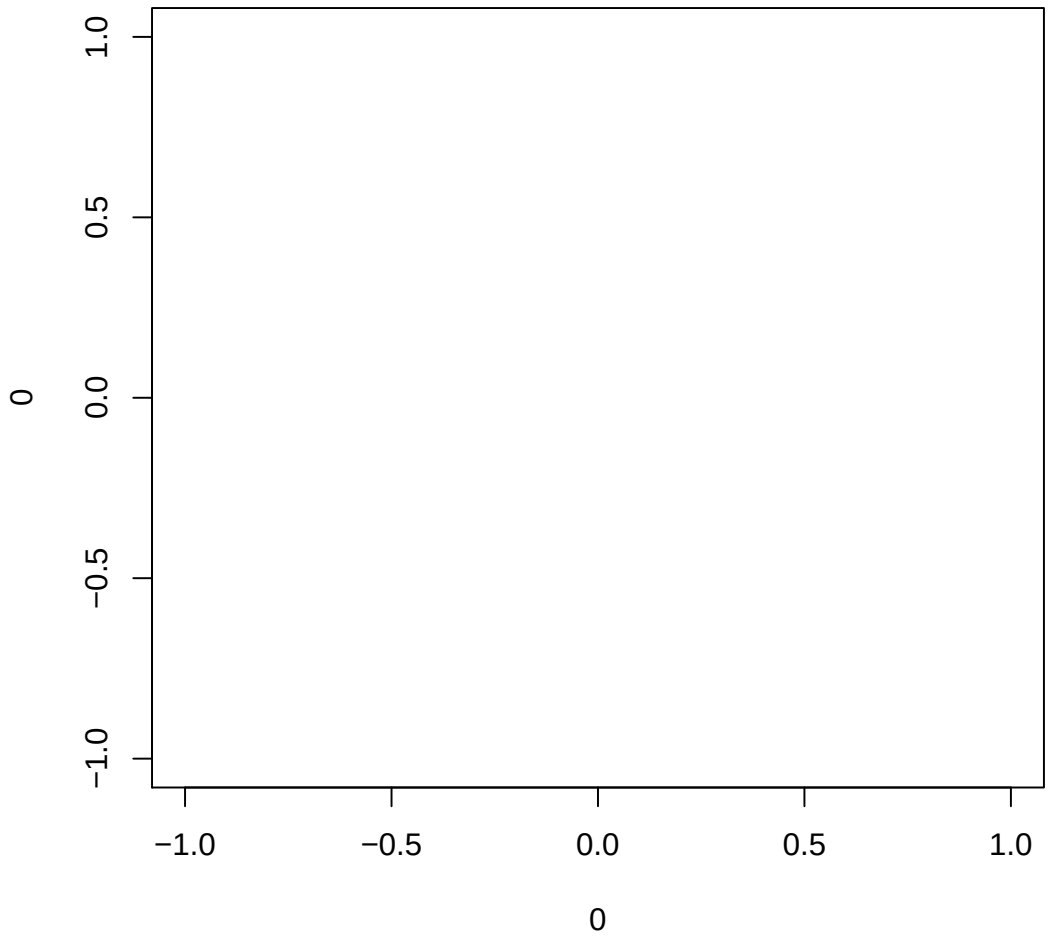

```
> hist(y)
```



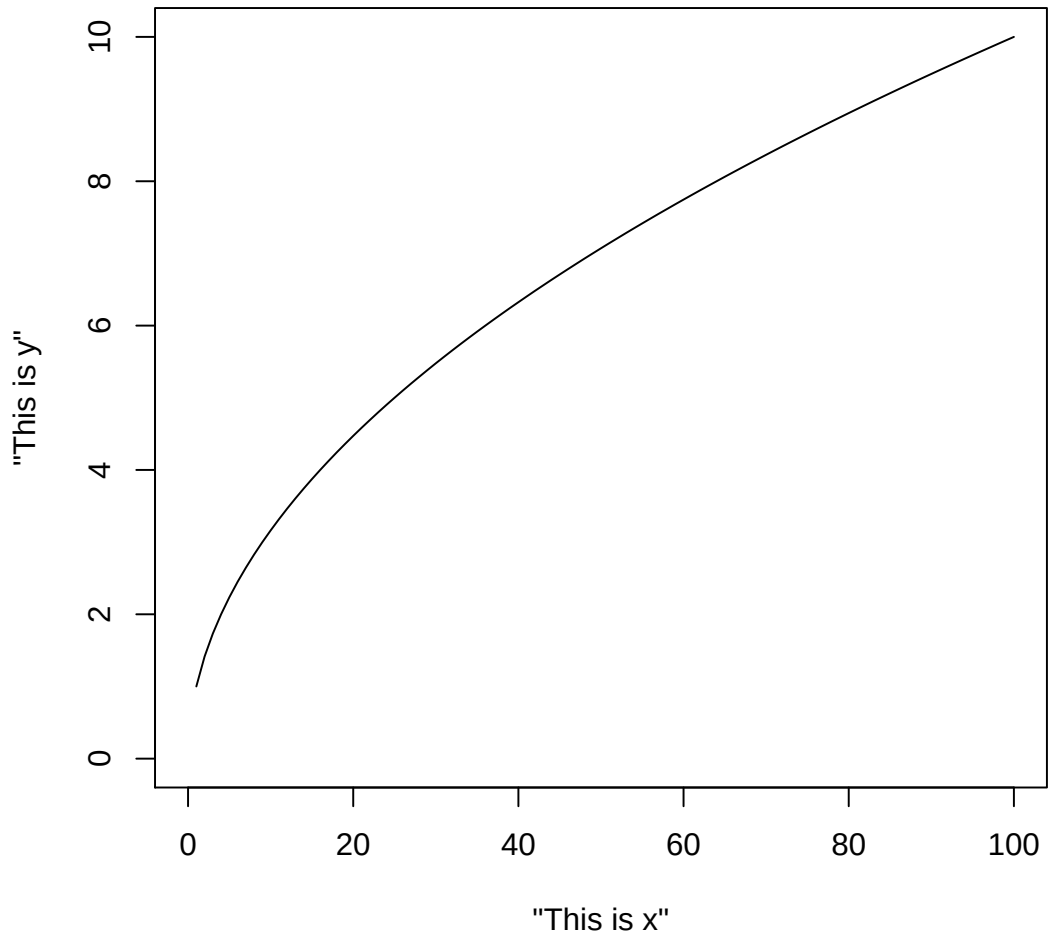

```
> plot(0,0)
```




```
> plot(0,0, type="n")
```




```
> plot('This is x','This is y', type="n", xlim=c(0,100),ylim=c(0,10))
> lines(1:100,sqrt(1:100))
> title("raiz cuadrada")
```




## Cuidado con las variables cualitativas

```
> #class(sexo)
> #class(peso)
> sitio<-c(1,1,1,1,1,1,1,1,1,0,0,0,0,0,0,0,0,0)
> sitio

 [1] 1 1 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0

> summary(sitio)

   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
    0.0     0.0     0.5     0.5     1.0     1.0

> summary(as.factor(sitio))

0 1
9 9
```

```
> sitio<-c(1,1,1,1,1,1,1,1,1,0,0,0,0,0,0,0,0,0,NA,NA,NA)
> sitio

 [1]  1  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0 NA NA NA

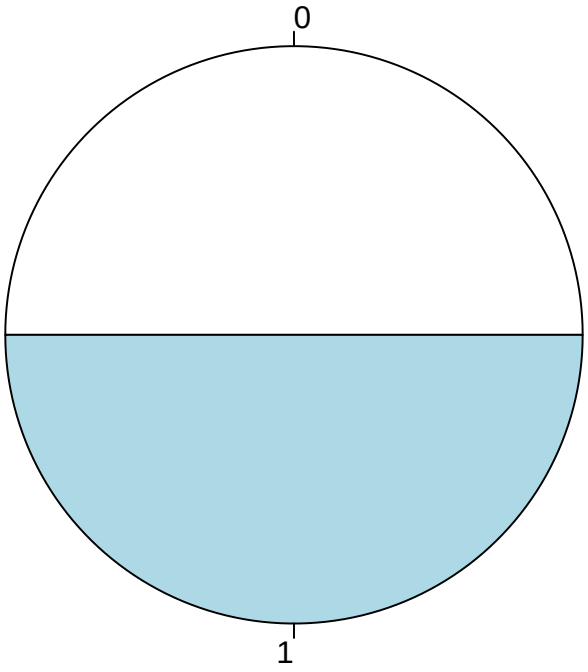
> summary(as.factor(sitio))

   0    1 NA's
   9    9    3

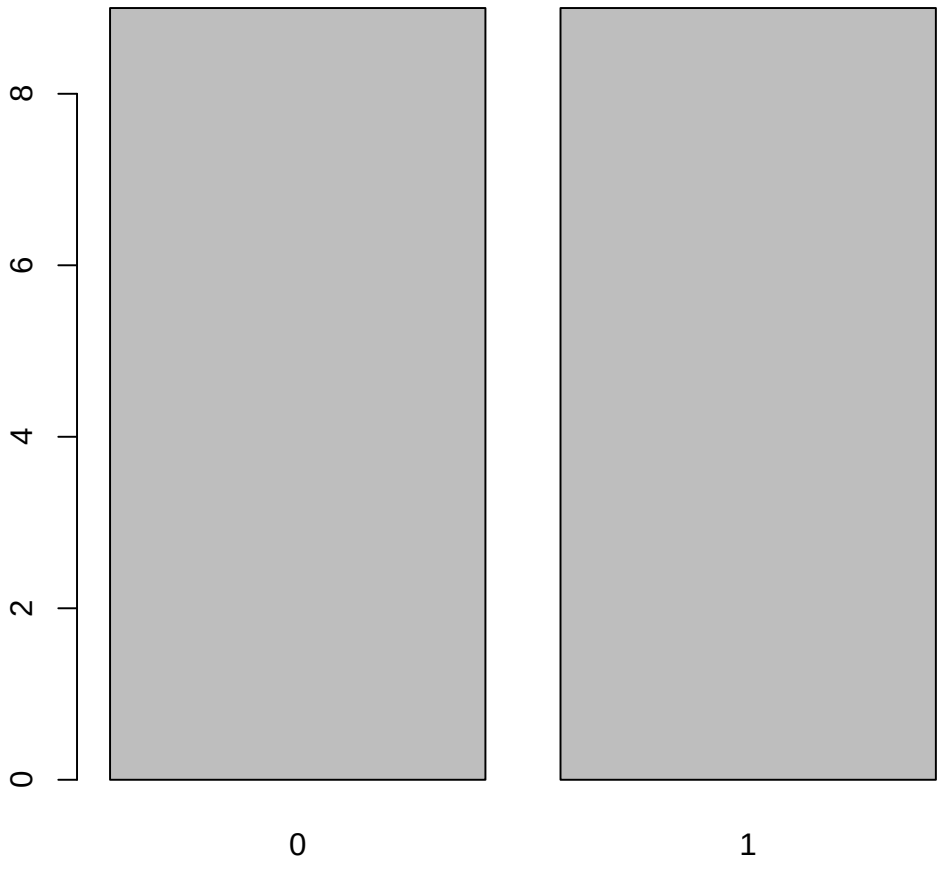
> summary(as.factor(na.omit(sitio)))

0 1
9 9

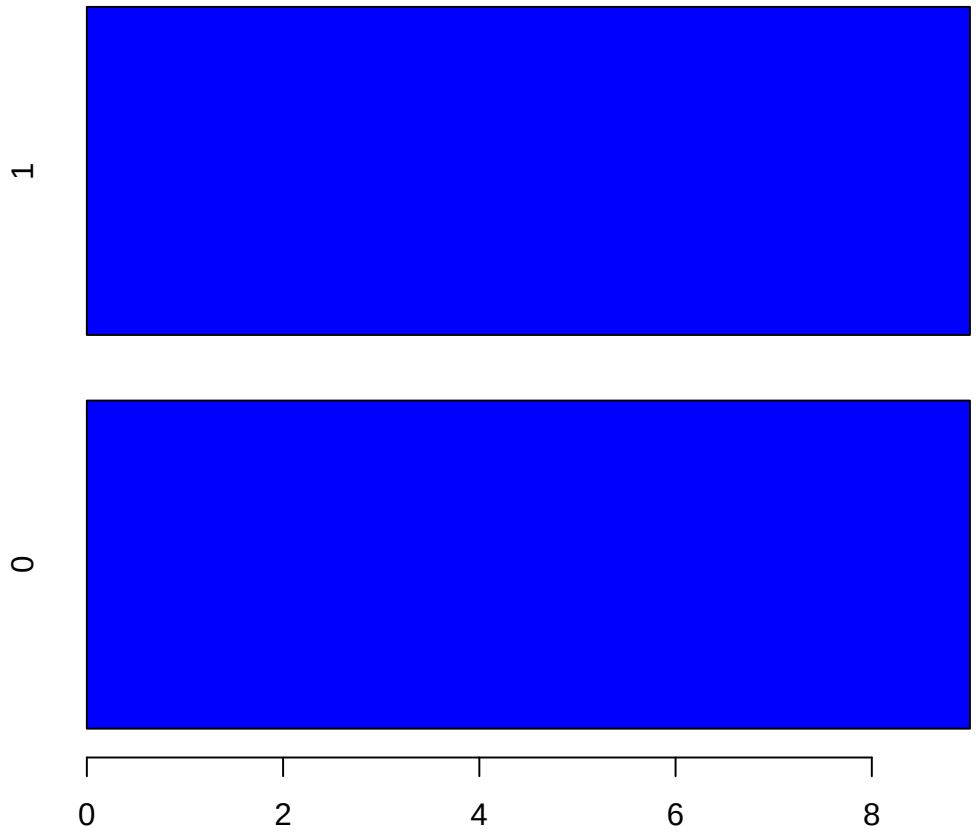
> pie(summary(as.factor(na.omit(sitio))))
```




```
> barplot(summary(as.factor(na.omit(sitio))))
```




```
> barplot(summary(as.factor(na.omit(sitio))), horiz = TRUE, col="blue")
```

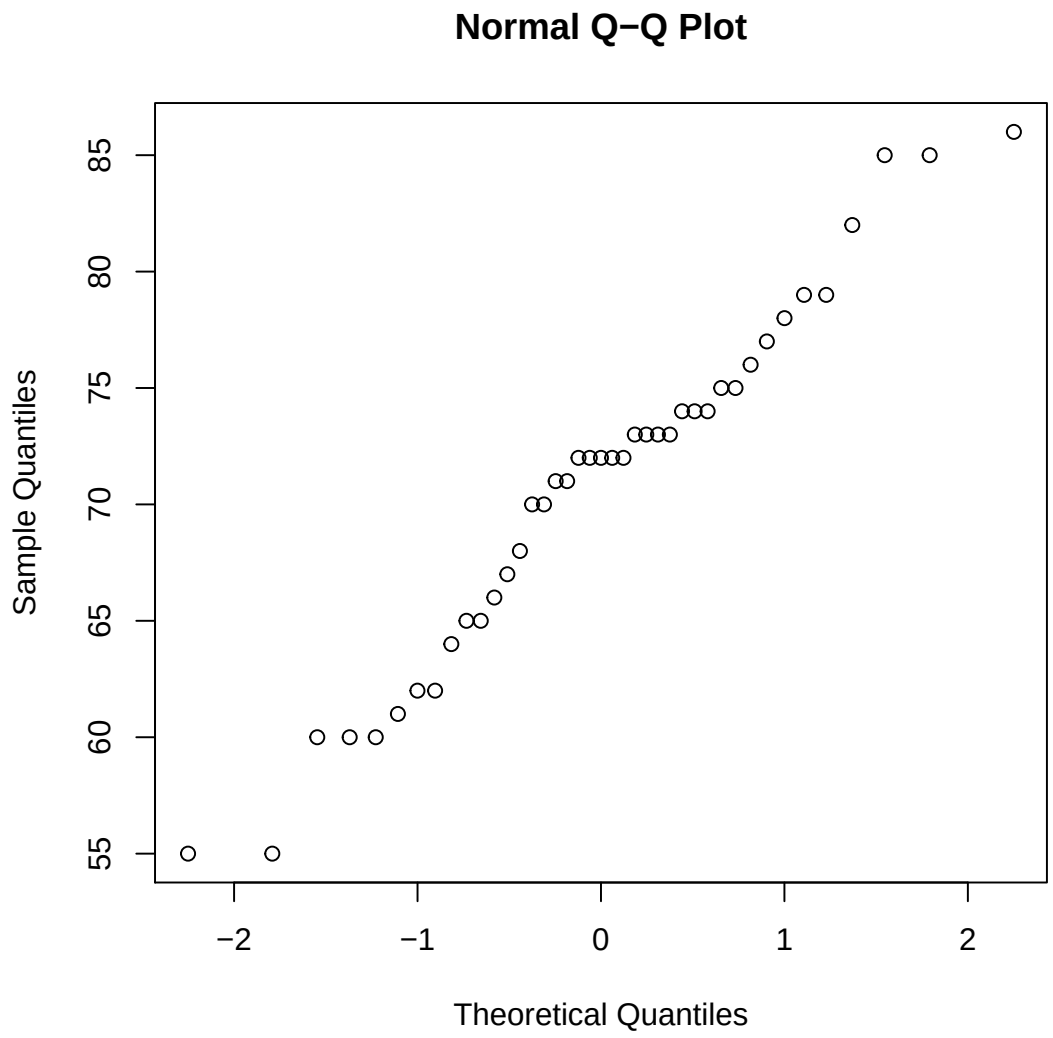



- Verificar distribución normal gráficamente: comparación de los cuartiles observados con los cuartiles teóricos bajo distribución normal. Si la relación es lineal hay indicios de normalidad:

```
> data <- read.table("data.txt", header = T)
> y <- data$peso[data$sexo == "h"]
> y

 [1] 60 72 64 72 61 78 68 79 74 62 74 60 73 70 72 77 70 76 65 75 55 55 72 75 73
[26] 71 66 71 79 62 73 72 60 67 85 73 82 86 85 65 74

> qqnorm(y)
```




# Manejo de Tablas Grandes

```
> tom2<-read.table("base-filtro3-6sept.txt",h=T) #base filtrada con base en expresion
> tom2[1:100,]
```

| | grupo | genes.filter | rep1 | rep2 | rep3 | rep4 | rep5 | rep6 | rep7 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1.1.1.2 | 238.000 | 426.000 | 238.000 | 308.000 | 405.000 | 261.000 | 611.000 |
| 2 | 1 | 1.1.1.4 | 1.991 | 3.552 | 1.447 | 2.267 | 2.672 | 1.803 | 3.569 |
| 3 | 1 | 1.1.1.8 | 376.000 | 660.000 | 207.000 | 532.000 | 406.000 | 435.000 | 882.000 |
| 4 | 1 | 1.1.1.10 | 402.000 | 627.000 | 351.000 | 508.000 | 465.000 | 730.000 | 920.000 |
| 5 | 1 | 1.1.1.11 | 295.000 | 482.000 | 188.000 | 421.000 | 215.000 | 369.000 | 517.000 |
| 6 | 1 | 1.1.1.12 | 1.797 | 2.467 | 1.116 | 1.450 | 3.406 | 2.994 | 2.841 |
| 7 | 1 | 1.1.1.14 | 628.000 | 912.000 | 439.000 | 914.000 | 564.000 | 911.000 | 1.227 |
| 8 | 1 | 1.1.1.15 | 821.000 | 1.128 | 497.000 | 1.020 | 745.000 | 827.000 | 984.000 |
| 9 | 1 | 1.1.1.16 | 418.000 | 504.000 | 333.000 | 638.000 | 224.000 | 223.000 | 292.000 |
| 10 | 1 | 1.1.1.17 | 696.000 | 1.020 | 356.000 | 636.000 | 790.000 | 895.000 | 971.000 |
| 11 | 1 | 1.1.1.19 | 1.653 | 1.980 | 1.036 | 1.682 | 2.370 | 2.694 | 2.227 |
| 12 | 1 | 1.1.2.2 | 417.000 | 781.000 | 297.000 | 443.000 | 540.000 | 393.000 | 779.000 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 1 | 1.1.2.4 | 1.339 | 2.161 | 875.000 | 1.924 | 1.717 | 1.320 | 4.405 |
| 14 | 1 | 1.1.2.5 | 357.000 | 780.000 | 279.000 | 582.000 | 526.000 | 311.000 | 932.000 |
| 15 | 1 | 1.1.2.6 | 288.000 | 498.000 | 250.000 | 360.000 | 363.000 | 246.000 | 549.000 |
| 16 | 1 | 1.1.2.7 | 510.000 | 898.000 | 300.000 | 540.000 | 617.000 | 535.000 | 1.911 |
| 17 | 1 | 1.1.2.8 | 478.000 | 796.000 | 370.000 | 539.000 | 527.000 | 989.000 | 1.013 |
| 18 | 1 | 1.1.2.9 | 461.000 | 779.000 | 279.000 | 674.000 | 396.000 | 488.000 | 604.000 |
| 19 | 1 | 1.1.2.10 | 191.000 | 312.000 | 156.000 | 215.000 | 171.000 | 214.000 | 302.000 |
| 20 | 1 | 1.1.2.11 | 244.000 | 351.000 | 207.000 | 294.000 | 319.000 | 328.000 | 398.000 |
| 21 | 1 | 1.1.2.12 | 316.000 | 500.000 | 255.000 | 417.000 | 311.000 | 258.000 | 466.000 |
| 22 | 1 | 1.1.2.14 | 534.000 | 813.000 | 488.000 | 840.000 | 309.000 | 459.000 | 488.000 |
| 23 | 1 | 1.1.2.15 | 194.000 | 255.000 | 130.000 | 180.000 | 249.000 | 200.000 | 278.000 |
| 24 | 1 | 1.1.2.16 | 546.000 | 720.000 | 379.000 | 551.000 | 663.000 | 650.000 | 806.000 |
| 25 | 1 | 1.1.2.17 | 449.000 | 614.000 | 327.000 | 419.000 | 548.000 | 546.000 | 633.000 |
| 26 | 1 | 1.1.2.20 | 811.000 | 1.260 | 610.000 | 859.000 | 1.031 | 1.424 | 1.411 |
| 27 | 1 | 1.1.2.21 | 632.000 | 696.000 | 353.000 | 489.000 | 578.000 | 820.000 | 630.000 |
| 28 | 1 | 1.1.3.4 | 743.000 | 1.270 | 456.000 | 681.000 | 674.000 | 997.000 | 1.533 |
| 29 | 1 | 1.1.3.6 | 2.877 | 4.995 | 1.807 | 2.685 | 3.524 | 1.730 | 5.435 |
| 30 | 1 | 1.1.3.7 | 217.000 | 413.000 | 193.000 | 252.000 | 282.000 | 268.000 | 381.000 |
| 31 | 1 | 1.1.3.8 | 373.000 | 925.000 | 348.000 | 721.000 | 513.000 | 576.000 | 779.000 |
| 32 | 1 | 1.1.3.9 | 2.478 | 4.749 | 1.521 | 2.460 | 2.675 | 3.198 | 4.321 |
| 33 | 1 | 1.1.3.10 | 131.000 | 182.000 | 128.000 | 130.000 | 135.000 | 170.000 | 181.000 |
| 34 | 1 | 1.1.3.11 | 167.000 | 286.000 | 139.000 | 227.000 | 203.000 | 179.000 | 215.000 |
| 35 | 1 | 1.1.3.13 | 240.000 | 318.000 | 215.000 | 290.000 | 351.000 | 316.000 | 473.000 |
| 36 | 1 | 1.1.3.14 | 290.000 | 463.000 | 224.000 | 382.000 | 265.000 | 352.000 | 394.000 |
| 37 | 1 | 1.1.3.15 | 171.000 | 246.000 | 162.000 | 171.000 | 194.000 | 194.000 | 266.000 |
| 38 | 1 | 1.1.3.16 | 702.000 | 905.000 | 425.000 | 560.000 | 757.000 | 844.000 | 1.169 |
| 39 | 1 | 1.1.3.17 | 477.000 | 522.000 | 340.000 | 408.000 | 471.000 | 498.000 | 476.000 |
| 40 | 1 | 1.1.3.19 | 531.000 | 632.000 | 247.000 | 384.000 | 577.000 | 775.000 | 768.000 |
| 41 | 1 | 1.1.3.20 | 252.000 | 364.000 | 113.000 | 254.000 | 350.000 | 391.000 | 389.000 |
| 42 | 1 | 1.1.3.21 | 173.000 | 218.000 | 132.000 | 206.000 | 172.000 | 200.000 | 218.000 |
| 43 | 1 | 1.1.4.17 | 1.230 | 1.399 | 1.294 | 1.029 | 2.583 | 439.000 | 2.874 |
| 44 | 1 | 1.1.4.18 | 2.836 | 3.209 | 1.989 | 2.512 | 3.357 | 2.751 | 4.973 |
| 45 | 1 | 1.1.4.20 | 257.000 | 267.000 | 172.000 | 231.000 | 271.000 | 290.000 | 335.000 |
| 46 | 1 | 1.1.5.2 | 175.000 | 420.000 | 163.000 | 362.000 | 343.000 | 203.000 | 625.000 |
| 47 | 1 | 1.1.5.3 | 226.000 | 278.000 | 222.000 | 408.000 | 333.000 | 203.000 | 526.000 |
| 48 | 1 | 1.1.5.7 | 2.222 | 2.995 | 1.682 | 3.003 | 3.878 | 2.880 | 5.486 |
| 49 | 1 | 1.1.5.8 | 223.000 | 447.000 | 236.000 | 311.000 | 419.000 | 355.000 | 552.000 |
| 50 | 1 | 1.1.6.1 | 100.000 | 206.000 | 87.000 | 132.000 | 227.000 | 112.000 | 291.000 |
| 51 | 1 | 1.1.6.4 | 237.000 | 650.000 | 279.000 | 411.000 | 470.000 | 430.000 | 690.000 |
| 52 | 1 | 1.1.6.6 | 666.000 | 990.000 | 423.000 | 1.360 | 1.636 | 1.193 | 2.508 |
| 53 | 1 | 1.1.6.7 | 395.000 | 618.000 | 319.000 | 459.000 | 523.000 | 502.000 | 388.000 |
| 54 | 1 | 1.1.6.9 | 1.235 | 1.661 | 556.000 | 1.000 | 656.000 | 1.766 | 1.975 |
| 55 | 1 | 1.1.6.10 | 120.000 | 175.000 | 99.000 | 134.000 | 215.000 | 210.000 | 239.000 |
| 56 | 1 | 1.1.6.11 | 142.000 | 242.000 | 123.000 | 155.000 | 254.000 | 201.000 | 260.000 |
| 57 | 1 | 1.1.6.12 | 369.000 | 444.000 | 307.000 | 304.000 | 524.000 | 619.000 | 725.000 |
| 58 | 1 | 1.1.6.13 | 348.000 | 533.000 | 262.000 | 374.000 | 454.000 | 427.000 | 346.000 |
| 59 | 1 | 1.1.6.14 | 369.000 | 522.000 | 249.000 | 395.000 | 457.000 | 455.000 | 631.000 |
| 60 | 1 | 1.1.6.16 | 1.401 | 1.352 | 1.035 | 1.398 | 3.000 | 2.089 | 3.825 |
| 61 | 1 | 1.1.6.17 | 268.000 | 317.000 | 200.000 | 244.000 | 332.000 | 254.000 | 370.000 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 62 | 1 | 1.1.6.18 | 1.022 | 1.455 | 499.000 | 751.000 | 1.254 | 1.201 | 1.768 |
| 63 | 1 | 1.1.6.20 | 9.777 | 9.863 | 11.040 | 8.307 | 13.126 | 11.209 | 9.726 |
| 64 | 1 | 1.1.6.21 | 548.000 | 507.000 | 350.000 | 371.000 | 856.000 | 607.000 | 583.000 |
| 65 | 1 | 1.1.7.1 | 1.075 | 1.996 | 513.000 | 1.329 | 1.622 | 1.288 | 2.652 |
| 66 | 1 | 1.1.7.2 | 1.120 | 1.841 | 627.000 | 1.488 | 1.789 | 1.498 | 2.677 |
| 67 | 1 | 1.1.7.3 | 419.000 | 980.000 | 368.000 | 477.000 | 571.000 | 571.000 | 847.000 |
| 68 | 1 | 1.1.7.4 | 555.000 | 1.210 | 475.000 | 827.000 | 851.000 | 772.000 | 1.336 |
| 69 | 1 | 1.1.7.5 | 6.338 | 12.896 | 3.456 | 5.964 | 9.350 | 6.744 | 12.759 |
| 70 | 1 | 1.1.7.6 | 230.000 | 401.000 | 193.000 | 281.000 | 307.000 | 277.000 | 352.000 |
| 71 | 1 | 1.1.7.7 | 136.000 | 211.000 | 111.000 | 154.000 | 176.000 | 154.000 | 190.000 |
| 72 | 1 | 1.1.7.8 | 7.156 | 9.327 | 4.639 | 7.166 | 8.628 | 9.084 | 12.111 |
| 73 | 1 | 1.1.7.9 | 1.503 | 3.641 | 1.247 | 2.089 | 2.870 | 2.347 | 2.581 |
| 74 | 1 | 1.1.7.10 | 362.000 | 723.000 | 288.000 | 418.000 | 569.000 | 475.000 | 785.000 |
| 75 | 1 | 1.1.7.11 | 412.000 | 664.000 | 305.000 | 407.000 | 451.000 | 383.000 | 465.000 |
| 76 | 1 | 1.1.7.12 | 2.644 | 3.958 | 1.365 | 2.447 | 4.279 | 5.282 | 4.882 |
| 77 | 1 | 1.1.7.13 | 434.000 | 799.000 | 404.000 | 488.000 | 651.000 | 572.000 | 846.000 |
| 78 | 1 | 1.1.7.14 | 1.437 | 2.119 | 910.000 | 1.099 | 1.626 | 1.704 | 2.266 |
| 79 | 1 | 1.1.7.15 | 783.000 | 719.000 | 624.000 | 1.158 | 995.000 | 1.140 | 1.370 |
| 80 | 1 | 1.1.7.16 | 489.000 | 661.000 | 463.000 | 424.000 | 1.038 | 624.000 | 932.000 |
| 81 | 1 | 1.1.7.17 | 614.000 | 705.000 | 381.000 | 528.000 | 867.000 | 757.000 | 739.000 |
| 82 | 1 | 1.1.7.19 | 700.000 | 681.000 | 600.000 | 482.000 | 1.222 | 1.255 | 1.576 |
| 83 | 1 | 1.1.7.20 | 454.000 | 659.000 | 345.000 | 335.000 | 582.000 | 591.000 | 583.000 |
| 84 | 1 | 1.1.8.1 | 186.000 | 477.000 | 153.000 | 340.000 | 590.000 | 331.000 | 788.000 |
| 85 | 1 | 1.1.8.2 | 720.000 | 915.000 | 588.000 | 1.071 | 1.301 | 1.143 | 1.962 |
| 86 | 1 | 1.1.8.4 | 222.000 | 811.000 | 427.000 | 618.000 | 991.000 | 1.135 | 1.523 |
| 87 | 1 | 1.1.8.7 | 512.000 | 915.000 | 361.000 | 646.000 | 666.000 | 716.000 | 1.018 |
| 88 | 1 | 1.1.8.8 | 156.000 | 295.000 | 166.000 | 225.000 | 161.000 | 191.000 | 291.000 |
| 89 | 1 | 1.1.8.9 | 99.000 | 165.000 | 105.000 | 143.000 | 151.000 | 111.000 | 211.000 |
| 90 | 1 | 1.1.8.11 | 317.000 | 583.000 | 295.000 | 382.000 | 536.000 | 670.000 | 843.000 |
| 91 | 1 | 1.1.8.12 | 6.312 | 12.044 | 8.662 | 6.690 | 15.844 | 12.568 | 18.545 |
| 92 | 1 | 1.1.8.13 | 435.000 | 709.000 | 420.000 | 457.000 | 566.000 | 566.000 | 812.000 |
| 93 | 1 | 1.1.8.14 | 315.000 | 549.000 | 263.000 | 338.000 | 325.000 | 440.000 | 425.000 |
| 94 | 1 | 1.1.8.15 | 250.000 | 424.000 | 252.000 | 346.000 | 224.000 | 254.000 | 295.000 |
| 95 | 1 | 1.1.8.16 | 731.000 | 2.935 | 1.140 | 1.343 | 2.400 | 2.509 | 3.439 |
| 96 | 1 | 1.1.8.18 | 9.064 | 9.988 | 4.206 | 5.501 | 8.512 | 7.923 | 10.851 |
| 97 | 1 | 1.1.8.19 | 515.000 | 605.000 | 308.000 | 371.000 | 425.000 | 506.000 | 561.000 |
| 98 | 1 | 1.1.8.20 | 137.000 | 248.000 | 130.000 | 149.000 | 182.000 | 157.000 | 176.000 |
| 99 | 1 | 1.1.8.21 | 1.972 | 2.793 | 1.036 | 1.319 | 2.831 | 3.183 | 3.162 |
| 100 | 1 | 1.1.9.4 | 1.716 | 2.819 | 1.068 | 2.272 | 1.890 | 2.579 | 3.925 |

| | rep8 | media | desv | cv | mediana | logrep1 | logrep2 | logrep3 |
|---|---|---|---|---|---|---|---|---|
| 1 | 313.000 | 350.000 | 127.0905 | 36.3116 | 310.5 | 2.38 | 2.63 | 2.38 |
| 2 | 1.274 | 2.321.875 | 881.2560 | 37.9545 | 2.129.0 | 3.30 | 3.55 | 3.16 |
| 3 | 330.000 | 478.500 | 211.1316 | 44.1236 | 420.5 | 2.58 | 2.82 | 2.32 |
| 4 | 426.000 | 553.625 | 193.0928 | 34.8779 | 486.5 | 2.60 | 2.80 | 2.55 |
| 5 | 203.000 | 336.250 | 130.0030 | 38.6626 | 332.0 | 2.47 | 2.68 | 2.27 |
| 6 | 1.090 | 2.145.125 | 900.3981 | 41.9742 | 2.132.0 | 3.25 | 3.39 | 3.05 |
| 7 | 493.000 | 761.000 | 271.9958 | 35.7419 | 769.5 | 2.80 | 2.96 | 2.64 |
| 8 | 411.000 | 804.125 | 249.8654 | 31.0729 | 824.0 | 2.91 | 3.05 | 2.70 |
| 9 | 141.000 | 346.625 | 164.9813 | 47.5965 | 312.5 | 2.62 | 2.70 | 2.52 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10 | 466.000 | 728.750 | 236.8114 | 32.4956 | 743.0 | 2.84 | 3.01 | 2.55 |
| 11 | 1.011 | 1.831.625 | 606.2312 | 33.0980 | 1.831.0 | 3.22 | 3.30 | 3.02 |
| 12 | 312.000 | 495.250 | 191.3716 | 38.6414 | 430.0 | 2.62 | 2.89 | 2.47 |
| 13 | 1.560 | 1.912.625 | 1.081.8821 | 56.5653 | 1.638.5 | 3.13 | 3.33 | 2.94 |
| 14 | 326.000 | 511.625 | 241.0186 | 47.1085 | 441.5 | 2.55 | 2.89 | 2.45 |
| 15 | 205.000 | 344.875 | 123.7791 | 35.8910 | 324.0 | 2.46 | 2.70 | 2.40 |
| 16 | 446.000 | 719.625 | 510.3184 | 70.9145 | 537.5 | 2.71 | 2.95 | 2.48 |
| 17 | 424.000 | 642.000 | 254.6718 | 39.6685 | 533.0 | 2.68 | 2.90 | 2.57 |
| 18 | 261.000 | 492.750 | 183.9858 | 37.3386 | 474.5 | 2.66 | 2.89 | 2.45 |
| 19 | 138.000 | 212.375 | 64.1938 | 30.2266 | 202.5 | 2.28 | 2.49 | 2.19 |
| 20 | 181.000 | 290.250 | 74.2308 | 25.5748 | 306.5 | 2.39 | 2.55 | 2.32 |
| 21 | 204.000 | 340.875 | 107.7437 | 31.6080 | 313.5 | 2.50 | 2.70 | 2.41 |
| 22 | 212.000 | 517.875 | 218.2930 | 42.1517 | 488.0 | 2.73 | 2.91 | 2.69 |
| 23 | 130.000 | 202.000 | 55.6956 | 27.5721 | 197.0 | 2.29 | 2.41 | 2.11 |
| 24 | 327.000 | 580.250 | 164.2609 | 28.3086 | 600.5 | 2.74 | 2.86 | 2.58 |
| 25 | 264.000 | 475.000 | 133.5729 | 28.1206 | 497.5 | 2.65 | 2.79 | 2.51 |
| 26 | 547.000 | 994.125 | 344.3198 | 34.6355 | 945.0 | 2.91 | 3.10 | 2.79 |
| 27 | 319.000 | 564.625 | 170.0016 | 30.1088 | 604.0 | 2.80 | 2.84 | 2.55 |
| 28 | 675.000 | 878.625 | 361.5028 | 41.1442 | 712.0 | 2.87 | 3.10 | 2.66 |
| 29 | 1.903 | 3.119.500 | 1.435.4440 | 46.0152 | 2.781.0 | 3.46 | 3.70 | 3.26 |
| 30 | 179.000 | 273.125 | 84.6698 | 31.0004 | 260.0 | 2.34 | 2.62 | 2.29 |
| 31 | 415.000 | 581.250 | 209.3860 | 36.0234 | 544.5 | 2.57 | 2.97 | 2.54 |
| 32 | 1.888 | 2.911.250 | 1.125.9236 | 38.6749 | 2.576.5 | 3.39 | 3.68 | 3.18 |
| 33 | 104.000 | 145.125 | 28.7374 | 19.8018 | 133.0 | 2.12 | 2.26 | 2.11 |
| 34 | 92.000 | 188.500 | 58.8169 | 31.2026 | 191.0 | 2.22 | 2.46 | 2.14 |
| 35 | 177.000 | 297.500 | 91.8959 | 30.8894 | 303.0 | 2.38 | 2.50 | 2.33 |
| 36 | 171.000 | 317.625 | 97.1669 | 30.5917 | 321.0 | 2.46 | 2.67 | 2.35 |
| 37 | 119.000 | 190.375 | 47.0408 | 24.7096 | 182.5 | 2.23 | 2.39 | 2.21 |
| 38 | 428.000 | 723.750 | 253.7354 | 35.0584 | 729.5 | 2.85 | 2.96 | 2.63 |
| 39 | 199.000 | 423.875 | 107.3970 | 25.3370 | 473.5 | 2.68 | 2.72 | 2.53 |
| 40 | 320.000 | 529.250 | 198.1282 | 37.4357 | 554.0 | 2.73 | 2.80 | 2.39 |
| 41 | 184.000 | 287.125 | 103.0374 | 35.8859 | 302.0 | 2.40 | 2.56 | 2.05 |
| 42 | 100.000 | 177.375 | 42.6378 | 24.0382 | 186.5 | 2.24 | 2.34 | 2.12 |
| 43 | 917.000 | 1.470.625 | 833.8251 | 56.6987 | 1.262.0 | 3.09 | 3.15 | 3.11 |
| 44 | 1.748 | 2.921.875 | 995.1092 | 34.0572 | 2.793.5 | 3.45 | 3.51 | 3.30 |
| 45 | 144.000 | 245.875 | 62.2769 | 25.3287 | 262.0 | 2.41 | 2.43 | 2.24 |
| 46 | 242.000 | 316.625 | 156.1473 | 49.3162 | 292.5 | 2.24 | 2.62 | 2.21 |
| 47 | 229.000 | 303.125 | 113.5435 | 37.4576 | 253.5 | 2.35 | 2.44 | 2.35 |
| 48 | 2.221 | 3.045.875 | 1.189.1129 | 39.0401 | 2.937.5 | 3.35 | 3.48 | 3.23 |
| 49 | 220.000 | 345.375 | 120.9332 | 35.0150 | 333.0 | 2.35 | 2.65 | 2.37 |
| 50 | 134.000 | 161.125 | 72.1594 | 44.7847 | 133.0 | 2.00 | 2.31 | 1.94 |
| 51 | 319.000 | 435.750 | 164.7802 | 37.8153 | 420.5 | 2.37 | 2.81 | 2.45 |
| 52 | 885.000 | 1.207.625 | 650.0938 | 53.8324 | 1.091.5 | 2.82 | 3.00 | 2.63 |
| 53 | 351.000 | 444.375 | 99.9399 | 22.4900 | 427.0 | 2.60 | 2.79 | 2.50 |
| 54 | 729.000 | 1.197.250 | 548.6580 | 45.8265 | 1.117.5 | 3.09 | 3.22 | 2.75 |
| 55 | 128.000 | 165.000 | 51.8404 | 31.4184 | 154.5 | 2.08 | 2.24 | 2.00 |
| 56 | 122.000 | 187.375 | 59.0495 | 31.5141 | 178.0 | 2.15 | 2.38 | 2.09 |
| 57 | 220.000 | 439.000 | 173.1869 | 39.4503 | 406.5 | 2.57 | 2.65 | 2.49 |
| 58 | 247.000 | 373.875 | 96.0825 | 25.6991 | 361.0 | 2.54 | 2.73 | 2.42 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 59 | 276.000 | 419.250 | 125.7648 | 29.9976 | 425.0 | 2.57 | 2.72 | 2.40 |
| 60 | 1.137 | 1.904.625 | 1.005.9024 | 52.8137 | 1.399.5 | 3.15 | 3.13 | 3.01 |
| 61 | 142.000 | 265.875 | 73.8114 | 27.7617 | 261.0 | 2.43 | 2.50 | 2.30 |
| 62 | 691.000 | 1.080.125 | 424.1585 | 39.2694 | 1.111.5 | 3.01 | 3.16 | 2.70 |
| 63 | 2.751 | 9.474.875 | 3.062.8402 | 32.3259 | 9.820.0 | 3.99 | 3.99 | 4.04 |
| 64 | 251.000 | 509.125 | 188.1879 | 36.9630 | 527.5 | 2.74 | 2.71 | 2.54 |
| 65 | 984.000 | 1.432.375 | 659.7244 | 46.0581 | 1.308.5 | 3.03 | 3.30 | 2.71 |
| 66 | 1.036 | 1.509.500 | 621.7926 | 41.1920 | 1.493.0 | 3.05 | 3.27 | 2.80 |
| 67 | 347.000 | 572.500 | 228.8992 | 39.9824 | 524.0 | 2.62 | 2.99 | 2.57 |
| 68 | 494.000 | 815.000 | 320.0437 | 39.2692 | 799.5 | 2.74 | 3.08 | 2.68 |
| 69 | 3.316 | 7.602.875 | 3.746.4764 | 49.2771 | 6.541.0 | 3.80 | 4.11 | 3.54 |
| 70 | 159.000 | 275.000 | 80.2443 | 29.1797 | 279.0 | 2.36 | 2.60 | 2.29 |
| 71 | 76.000 | 151.000 | 43.4478 | 28.7734 | 154.0 | 2.13 | 2.32 | 2.05 |
| 72 | 3.883 | 7.749.250 | 2.656.0332 | 34.2747 | 7.897.0 | 3.85 | 3.97 | 3.67 |
| 73 | 791.000 | 2.133.625 | 929.5564 | 43.5670 | 2.218.0 | 3.18 | 3.56 | 3.10 |
| 74 | 308.000 | 491.000 | 186.4204 | 37.9675 | 446.5 | 2.56 | 2.86 | 2.46 |
| 75 | 191.000 | 409.750 | 135.7253 | 33.1239 | 409.5 | 2.61 | 2.82 | 2.48 |
| 76 | 2.009 | 3.358.250 | 1.432.4883 | 42.6558 | 3.301.0 | 3.42 | 3.60 | 3.14 |
| 77 | 297.000 | 561.375 | 193.4247 | 34.4555 | 530.0 | 2.64 | 2.90 | 2.61 |
| 78 | 698.000 | 1.482.375 | 558.1856 | 37.6548 | 1.531.5 | 3.16 | 3.33 | 2.96 |
| 79 | 507.000 | 912.000 | 300.0029 | 32.8951 | 889.0 | 2.89 | 2.86 | 2.80 |
| 80 | 362.000 | 624.125 | 245.0711 | 39.2663 | 556.5 | 2.69 | 2.82 | 2.67 |
| 81 | 278.000 | 608.625 | 200.9669 | 33.0198 | 659.5 | 2.79 | 2.85 | 2.58 |
| 82 | 577.000 | 886.625 | 403.9568 | 45.5612 | 690.5 | 2.85 | 2.83 | 2.78 |
| 83 | 252.000 | 475.125 | 149.8070 | 31.5300 | 518.0 | 2.66 | 2.82 | 2.54 |
| 84 | 287.000 | 394.000 | 213.8825 | 54.2849 | 335.5 | 2.27 | 2.68 | 2.18 |
| 85 | 709.000 | 1.051.125 | 440.8879 | 41.9444 | 993.0 | 2.86 | 2.96 | 2.77 |
| 86 | 564.000 | 786.375 | 419.5412 | 53.3513 | 714.5 | 2.35 | 2.91 | 2.63 |
| 87 | 430.000 | 658.000 | 227.0085 | 34.4998 | 656.0 | 2.71 | 2.96 | 2.56 |
| 88 | 121.000 | 200.750 | 64.2111 | 31.9856 | 178.5 | 2.19 | 2.47 | 2.22 |
| 89 | 86.000 | 133.875 | 41.6771 | 31.1314 | 127.0 | 2.00 | 2.22 | 2.02 |
| 90 | 295.000 | 490.125 | 201.9253 | 41.1987 | 459.0 | 2.50 | 2.77 | 2.47 |
| 91 | 4.744 | 10.676.125 | 4.902.7395 | 45.9225 | 10.353.0 | 3.80 | 4.08 | 3.94 |
| 92 | 302.000 | 533.375 | 165.8329 | 31.0912 | 511.5 | 2.64 | 2.85 | 2.62 |
| 93 | 152.000 | 350.875 | 120.7636 | 34.4178 | 331.5 | 2.50 | 2.74 | 2.42 |
| 94 | 135.000 | 272.500 | 85.6805 | 31.4424 | 253.0 | 2.40 | 2.63 | 2.40 |
| 95 | 1.351 | 1.981.000 | 968.3528 | 48.8820 | 1.875.5 | 2.86 | 3.47 | 3.06 |
| 96 | 3.425 | 7.433.750 | 2.738.2336 | 36.8352 | 8.217.5 | 3.96 | 4.00 | 3.62 |
| 97 | 120.000 | 426.375 | 158.1915 | 37.1015 | 465.5 | 2.71 | 2.78 | 2.49 |
| 98 | 86.000 | 158.125 | 47.0423 | 29.7501 | 153.0 | 2.14 | 2.39 | 2.11 |
| 99 | 1.082 | 2.172.250 | 931.0783 | 42.8624 | 2.382.5 | 3.29 | 3.45 | 3.02 |
| 100 | 1.227 | 2.187.000 | 930.8036 | 42.5608 | 2.081.0 | 3.23 | 3.45 | 3.03 |

| | logrep4 | logrep5 | logrep6 | logrep7 | logrep8 | medialog | desvlog | cvlog |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.49 | 2.61 | 2.42 | 2.79 | 2.50 | 2.522099 | 0.1433 | 5.6823 |
| 2 | 3.36 | 3.43 | 3.26 | 3.55 | 3.11 | 3.338252 | 0.1662 | 4.9784 |
| 3 | 2.73 | 2.61 | 2.64 | 2.95 | 2.52 | 2.643451 | 0.1919 | 7.2595 |
| 4 | 2.71 | 2.67 | 2.86 | 2.96 | 2.63 | 2.722080 | 0.1419 | 5.2138 |
| 5 | 2.62 | 2.33 | 2.57 | 2.71 | 2.31 | 2.496470 | 0.1757 | 7.0360 |
| 6 | 3.16 | 3.53 | 3.48 | 3.45 | 3.04 | 3.294393 | 0.1967 | 5.9693 |

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| 7 | 2.96 | 2.75 | 2.96 | 3.09 | 2.69 | 2.856732 | 0.1573 | 5.5080 |
| 8 | 3.01 | 2.87 | 2.92 | 2.99 | 2.61 | 2.883513 | 0.1540 | 5.3423 |
| 9 | 2.80 | 2.35 | 2.35 | 2.47 | 2.15 | 2.495503 | 0.2133 | 8.5490 |
| 10 | 2.80 | 2.90 | 2.95 | 2.99 | 2.67 | 2.838896 | 0.1603 | 5.6481 |
| 11 | 3.23 | 3.37 | 3.43 | 3.35 | 3.00 | 3.239218 | 0.1584 | 4.8909 |
| 12 | 2.65 | 2.73 | 2.59 | 2.89 | 2.49 | 2.668053 | 0.1608 | 6.0286 |
| 13 | 3.28 | 3.23 | 3.12 | 3.64 | 3.19 | 3.235008 | 0.2042 | 6.3134 |
| 14 | 2.76 | 2.72 | 2.49 | 2.97 | 2.51 | 2.668959 | 0.1966 | 7.3680 |
| 15 | 2.56 | 2.56 | 2.39 | 2.74 | 2.31 | 2.514129 | 0.1516 | 6.0295 |
| 16 | 2.73 | 2.79 | 2.73 | 3.28 | 2.65 | 2.789950 | 0.2389 | 8.5637 |
| 17 | 2.73 | 2.72 | 3.00 | 3.01 | 2.63 | 2.778764 | 0.1673 | 6.0190 |
| 18 | 2.83 | 2.60 | 2.69 | 2.78 | 2.42 | 2.664162 | 0.1717 | 6.4463 |
| 19 | 2.33 | 2.23 | 2.33 | 2.48 | 2.14 | 2.310506 | 0.1271 | 5.5015 |
| 20 | 2.47 | 2.50 | 2.52 | 2.60 | 2.26 | 2.449280 | 0.1183 | 4.8305 |
| 21 | 2.62 | 2.49 | 2.41 | 2.67 | 2.31 | 2.513466 | 0.1382 | 5.4998 |
| 22 | 2.92 | 2.49 | 2.66 | 2.69 | 2.33 | 2.677107 | 0.1987 | 7.4236 |
| 23 | 2.26 | 2.40 | 2.30 | 2.44 | 2.11 | 2.289847 | 0.1264 | 5.5219 |
| 24 | 2.74 | 2.82 | 2.81 | 2.91 | 2.51 | 2.746203 | 0.1363 | 4.9617 |
| 25 | 2.62 | 2.74 | 2.74 | 2.80 | 2.42 | 2.659520 | 0.1353 | 5.0858 |
| 26 | 2.93 | 3.01 | 3.15 | 3.15 | 2.74 | 2.972875 | 0.1593 | 5.3588 |
| 27 | 2.69 | 2.76 | 2.91 | 2.80 | 2.50 | 2.732410 | 0.1431 | 5.2360 |
| 28 | 2.83 | 2.83 | 3.00 | 3.19 | 2.83 | 2.913638 | 0.1711 | 5.8708 |
| 29 | 3.43 | 3.55 | 3.24 | 3.74 | 3.28 | 3.455387 | 0.1942 | 5.6213 |
| 30 | 2.40 | 2.45 | 2.43 | 2.58 | 2.25 | 2.418941 | 0.1302 | 5.3811 |
| 31 | 2.86 | 2.71 | 2.76 | 2.89 | 2.62 | 2.739686 | 0.1567 | 5.7197 |
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| 34 | 2.36 | 2.31 | 2.25 | 2.33 | 1.96 | 2.254337 | 0.1502 | 6.6622 |
| 35 | 2.46 | 2.55 | 2.50 | 2.67 | 2.25 | 2.455663 | 0.1332 | 5.4257 |
| 36 | 2.58 | 2.42 | 2.55 | 2.60 | 2.23 | 2.482321 | 0.1434 | 5.7771 |
| 37 | 2.23 | 2.29 | 2.29 | 2.42 | 2.08 | 2.267809 | 0.1092 | 4.8136 |
| 38 | 2.75 | 2.88 | 2.93 | 3.07 | 2.63 | 2.835532 | 0.1563 | 5.5133 |
| 39 | 2.61 | 2.67 | 2.70 | 2.68 | 2.30 | 2.610630 | 0.1391 | 5.3277 |
| 40 | 2.58 | 2.76 | 2.89 | 2.89 | 2.51 | 2.692979 | 0.1813 | 6.7325 |
| 41 | 2.40 | 2.54 | 2.59 | 2.59 | 2.26 | 2.426428 | 0.1900 | 7.8318 |
| 42 | 2.31 | 2.24 | 2.30 | 2.34 | 2.00 | 2.235745 | 0.1197 | 5.3543 |
| 43 | 3.01 | 3.41 | 2.64 | 3.46 | 2.96 | 3.104440 | 0.2575 | 8.2939 |
| 44 | 3.40 | 3.53 | 3.44 | 3.70 | 3.24 | 3.445292 | 0.1405 | 4.0776 |
| 45 | 2.36 | 2.43 | 2.46 | 2.53 | 2.16 | 2.376795 | 0.1218 | 5.1252 |
| 46 | 2.56 | 2.54 | 2.31 | 2.80 | 2.38 | 2.457459 | 0.2044 | 8.3163 |
| 47 | 2.61 | 2.52 | 2.31 | 2.72 | 2.36 | 2.458241 | 0.1475 | 6.0015 |
| 48 | 3.48 | 3.59 | 3.46 | 3.74 | 3.35 | 3.457541 | 0.1584 | 4.5807 |
| 49 | 2.49 | 2.62 | 2.55 | 2.74 | 2.34 | 2.515136 | 0.1516 | 6.0260 |
| 50 | 2.12 | 2.36 | 2.05 | 2.46 | 2.13 | 2.171275 | 0.1861 | 8.5732 |
| 51 | 2.61 | 2.67 | 2.63 | 2.84 | 2.50 | 2.611914 | 0.1654 | 6.3340 |
| 52 | 3.13 | 3.21 | 3.08 | 3.40 | 2.95 | 3.026960 | 0.2380 | 7.8643 |
| 53 | 2.66 | 2.72 | 2.70 | 2.59 | 2.55 | 2.638317 | 0.0965 | 3.6558 |
| 54 | 3.00 | 2.82 | 3.25 | 3.30 | 2.86 | 3.034913 | 0.2114 | 6.9668 |
| 55 | 2.13 | 2.33 | 2.32 | 2.38 | 2.11 | 2.198153 | 0.1396 | 6.3507 |

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56     2.19    2.40    2.30    2.41    2.09 2.253213  0.1401 6.2170
57     2.48    2.72    2.79    2.86    2.34 2.612275  0.1747 6.6884
58     2.57    2.66    2.63    2.54    2.39 2.559842  0.1141 4.4587
59     2.60    2.66    2.66    2.80    2.44 2.604545  0.1355 5.2039
60     3.15    3.48    3.32    3.58    3.06 3.234164  0.2049 6.3357
61     2.39    2.52    2.40    2.57    2.15 2.408009  0.1335 5.5449
62     2.88    3.10    3.08    3.25    2.84 3.001357  0.1837 6.1205
63     3.92    4.12    4.05    3.99    3.44 3.942719  0.2114 5.3628
64     2.57    2.93    2.78    2.77    2.40 2.679779  0.1670 6.2300
65     3.12    3.21    3.11    3.42    2.99 3.112718  0.2153 6.9159
66     3.17    3.25    3.18    3.43    3.02 3.144409  0.1907 6.0636
67     2.68    2.76    2.76    2.93    2.54 2.729911  0.1630 5.9712
68     2.92    2.93    2.89    3.13    2.69 2.882295  0.1690 5.8631
69     3.78    3.97    3.83    4.11    3.52 3.831585  0.2264 5.9099
70     2.45    2.49    2.44    2.55    2.20 2.422087  0.1334 5.5087
71     2.19    2.25    2.19    2.28    1.88 2.160408  0.1423 6.5860
72     3.86    3.94    3.96    4.08    3.59 3.864081  0.1639 4.2413
73     3.32    3.46    3.37    3.41    2.90 3.286543  0.2164 6.5849
74     2.62    2.76    2.68    2.89    2.49 2.664205  0.1627 6.1087
75     2.61    2.65    2.58    2.67    2.28 2.589603  0.1566 6.0479
76     3.39    3.63    3.72    3.69    3.30 3.486153  0.2073 5.9464
77     2.69    2.81    2.76    2.93    2.47 2.725743  0.1549 5.6846
78     3.04    3.21    3.23    3.36    2.84 3.140667  0.1793 5.7079
79     3.06    3.00    3.06    3.14    2.71 2.938230  0.1494 5.0849
80     2.63    3.02    2.80    2.97    2.56 2.767745  0.1630 5.8879
81     2.72    2.94    2.88    2.87    2.44 2.758715  0.1688 6.1199
82     2.68    3.09    3.10    3.20    2.76 2.910486  0.1893 6.5034
83     2.53    2.76    2.77    2.77    2.40 2.655298  0.1511 5.6887
84     2.53    2.77    2.52    2.90    2.46 2.538661  0.2409 9.4890
85     3.03    3.11    3.06    3.29    2.85 2.991699  0.1689 5.6468
86     2.79    3.00    3.05    3.18    2.75 2.832730  0.2646 9.3423
87     2.81    2.82    2.85    3.01    2.63 2.794754  0.1547 5.5339
88     2.35    2.21    2.28    2.46    2.08 2.283722  0.1365 5.9749
89     2.16    2.18    2.05    2.32    1.93 2.109091  0.1311 6.2138
90     2.58    2.73    2.83    2.93    2.47 2.658688  0.1764 6.6354
91     3.83    4.20    4.10    4.27    3.68 3.985936  0.2090 5.2443
92     2.66    2.75    2.75    2.91    2.48 2.708437  0.1370 5.0566
93     2.53    2.51    2.64    2.63    2.18 2.519040  0.1691 6.7129
94     2.54    2.35    2.40    2.47    2.13 2.415128  0.1460 6.0471
95     3.13    3.38    3.40    3.54    3.13 3.245413  0.2342 7.2167
96     3.74    3.93    3.90    4.04    3.53 3.840020  0.1847 4.8102
97     2.57    2.63    2.70    2.75    2.08 2.589021  0.2277 8.7960
98     2.17    2.26    2.20    2.25    1.93 2.181786  0.1328 6.0873
99     3.12    3.45    3.50    3.50    3.03 3.295694  0.2102 6.3791
100    3.36    3.28    3.41    3.59    3.09 3.305024  0.1880 5.6879
    respdicotoma  media3 media4  media5  media6 dicotoma1 dicotoma2
1              2  7.0473 1.3612 18.1419 0.95421         0         0
2              2 13.2418 1.4945 36.7253 1.25521         0         0
3              2  7.8216 1.3827 20.4647 1.00428         0         0
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| 7 | 2 | 9.1298 | 1.4189 | 24.3894 | 1.08728 | 0 | 0 |
| 8 | 2 | 9.2991 | 1.4233 | 24.8973 | 1.09729 | 0 | 0 |
| 9 | 2 | 7.0246 | 1.3564 | 18.0737 | 0.94294 | 0 | 0 |
| 10 | 2 | 8.9990 | 1.4160 | 23.9969 | 1.08056 | 0 | 0 |
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| 14 | 2 | 7.9980 | 1.3871 | 20.9941 | 1.01452 | 0 | 0 |
| 15 | 2 | 7.0127 | 1.3598 | 18.0382 | 0.95085 | 0 | 0 |
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| 17 | 2 | 8.6267 | 1.4059 | 22.8801 | 1.05763 | 0 | 0 |
| 18 | 2 | 7.8985 | 1.3863 | 20.6954 | 1.01260 | 0 | 0 |
| 19 | 2 | 5.9662 | 1.3220 | 14.8987 | 0.86129 | 0 | 0 |
| 20 | 2 | 6.6210 | 1.3480 | 16.8630 | 0.92308 | 0 | 0 |
| 21 | 2 | 6.9855 | 1.3596 | 17.9565 | 0.95057 | 0 | 0 |
| 22 | 2 | 8.0305 | 1.3885 | 21.0914 | 1.01778 | 0 | 0 |
| 23 | 2 | 5.8675 | 1.3181 | 14.6024 | 0.85179 | 0 | 0 |
| 24 | 2 | 8.3407 | 1.4004 | 22.0222 | 1.04501 | 0 | 0 |
| 25 | 2 | 7.8025 | 1.3855 | 20.4074 | 1.01074 | 0 | 0 |
| 26 | 2 | 9.9804 | 1.4379 | 26.9411 | 1.13007 | 0 | 0 |
| 27 | 2 | 8.2652 | 1.3980 | 21.7956 | 1.03963 | 0 | 0 |
| 28 | 2 | 9.5778 | 1.4283 | 25.7335 | 1.10845 | 0 | 0 |
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| 37 | 2 | 5.7527 | 1.3138 | 14.2580 | 0.84158 | 0 | 0 |
| 38 | 2 | 8.9783 | 1.4154 | 23.9350 | 1.07929 | 0 | 0 |
| 39 | 2 | 7.5118 | 1.3769 | 19.5355 | 0.99095 | 0 | 0 |
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| 42 | 1 | 5.6186 | 1.3076 | 13.8559 | 0.82654 | 1 | 0 |
| 43 | 2 | 11.3719 | 1.4588 | 31.1158 | 1.17671 | 0 | 0 |
| 44 | 2 | 14.2962 | 1.5103 | 39.8886 | 1.28945 | 0 | 0 |
| 45 | 2 | 6.2648 | 1.3345 | 15.7943 | 0.89122 | 0 | 0 |
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| 47 | 2 | 6.7175 | 1.3496 | 17.1525 | 0.92696 | 0 | 0 |
| 48 | 2 | 14.4956 | 1.5121 | 40.4869 | 1.29330 | 0 | 0 |
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| 50 | 1 | 5.4415 | 1.2949 | 13.3246 | 0.79570 | 1 | 1 |
| 51 | 2 | 7.5813 | 1.3772 | 19.7440 | 0.99147 | 0 | 0 |
| 52 | 2 | 10.6490 | 1.4466 | 28.9471 | 1.14947 | 0 | 0 |

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| 53 | 2 | 7.6310 | 1.3818 | 19.8931 | 1.00220 | 0 | 0 |
| 54 | 2 | 10.6185 | 1.4478 | 28.8554 | 1.15230 | 0 | 0 |
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| 57 | 2 | 7.6001 | 1.3772 | 19.8004 | 0.99162 | 0 | 0 |
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| 59 | 2 | 7.4844 | 1.3759 | 19.4532 | 0.98846 | 0 | 0 |
| 60 | 2 | 12.3957 | 1.4788 | 34.1870 | 1.22092 | 0 | 0 |
| 61 | 2 | 6.4302 | 1.3404 | 16.2907 | 0.90505 | 0 | 0 |
| 62 | 2 | 10.2603 | 1.4425 | 27.7808 | 1.14033 | 0 | 0 |
| 63 | 2 | 21.1604 | 1.5798 | 60.4813 | 1.43656 | 0 | 0 |
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| 65 | 2 | 11.2725 | 1.4601 | 30.8174 | 1.17958 | 0 | 0 |
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| 68 | 2 | 9.3408 | 1.4231 | 25.0225 | 1.09683 | 0 | 0 |
| 69 | 2 | 19.6634 | 1.5648 | 55.9903 | 1.40526 | 0 | 0 |
| 70 | 2 | 6.5030 | 1.3430 | 16.5089 | 0.91124 | 0 | 0 |
| 71 | 1 | 5.3251 | 1.2927 | 12.9752 | 0.79042 | 1 | 1 |
| 72 | 2 | 19.7888 | 1.5692 | 56.3665 | 1.41450 | 0 | 0 |
| 73 | 2 | 12.8738 | 1.4868 | 35.6213 | 1.23830 | 0 | 0 |
| 74 | 2 | 7.8891 | 1.3863 | 20.6673 | 1.01262 | 0 | 0 |
| 75 | 2 | 7.4274 | 1.3732 | 19.2823 | 0.98233 | 0 | 0 |
| 76 | 2 | 14.9751 | 1.5163 | 41.9254 | 1.30226 | 0 | 0 |
| 77 | 2 | 8.2493 | 1.3969 | 21.7479 | 1.03702 | 0 | 0 |
| 78 | 2 | 11.4021 | 1.4644 | 31.2064 | 1.18922 | 0 | 0 |
| 79 | 2 | 9.6976 | 1.4323 | 26.0928 | 1.11747 | 0 | 0 |
| 80 | 2 | 8.5459 | 1.4040 | 22.6377 | 1.05337 | 0 | 0 |
| 81 | 2 | 8.4745 | 1.4025 | 22.4236 | 1.04988 | 0 | 0 |
| 82 | 2 | 9.6068 | 1.4278 | 25.8205 | 1.10728 | 0 | 0 |
| 83 | 2 | 7.8031 | 1.3847 | 20.4094 | 1.00905 | 0 | 0 |
| 84 | 2 | 7.3310 | 1.3642 | 18.9931 | 0.96118 | 0 | 0 |
| 85 | 2 | 10.1676 | 1.4409 | 27.5028 | 1.13686 | 0 | 0 |
| 86 | 2 | 9.2302 | 1.4149 | 24.6905 | 1.07823 | 0 | 0 |
| 87 | 2 | 8.6978 | 1.4086 | 23.0934 | 1.06377 | 0 | 0 |
| 88 | 2 | 5.8553 | 1.3169 | 14.5660 | 0.84896 | 0 | 0 |
| 89 | 1 | 5.1156 | 1.2824 | 12.3469 | 0.76513 | 1 | 1 |
| 90 | 2 | 7.8844 | 1.3853 | 20.6532 | 1.01041 | 0 | 0 |
| 91 | 2 | 22.0194 | 1.5855 | 63.0581 | 1.44851 | 0 | 0 |
| 92 | 2 | 8.1098 | 1.3939 | 21.3294 | 1.03021 | 0 | 0 |
| 93 | 2 | 7.0532 | 1.3606 | 18.1595 | 0.95292 | 0 | 0 |
| 94 | 2 | 6.4832 | 1.3417 | 16.4496 | 0.90818 | 0 | 0 |
| 95 | 2 | 12.5592 | 1.4806 | 34.6776 | 1.22467 | 0 | 0 |
| 96 | 2 | 19.5165 | 1.5659 | 55.5496 | 1.40767 | 0 | 0 |
| 97 | 2 | 7.5266 | 1.3731 | 19.5797 | 0.98209 | 0 | 0 |
| 98 | 1 | 5.4075 | 1.2970 | 13.2226 | 0.80079 | 1 | 1 |
| 99 | 2 | 12.9510 | 1.4882 | 35.8530 | 1.24131 | 0 | 0 |
| 100 | 2 | 12.9802 | 1.4896 | 35.9407 | 1.24437 | 0 | 0 |

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[16] "logrep2"      "logrep3"      "logrep4"      "logrep5"      "logrep6"
[21] "logrep7"      "logrep8"      "medialog"     "desvlog"      "cvlog"
[26] "respdicotoma" "media3"       "media4"       "media5"       "media6"
[31] "dicotoma1"    "dicotoma2"    "clasificador"
```

```
> attach(tom2)
> genesR<-read.table("genes-resist.txt",h=T) #lista de todos los genes antes del filtro
> genesR[1:100,]
```

```
    genes.ori resistance
1     1.1.1.1          0
2     1.1.1.2          0
3     1.1.1.3          0
4     1.1.1.4          0
5     1.1.1.5          0
6     1.1.1.6          0
7     1.1.1.7          0
8     1.1.1.8          0
9     1.1.1.9          0
10   1.1.1.10          0
11   1.1.1.11          0
12   1.1.1.12          0
13   1.1.1.13          0
14   1.1.1.14          0
15   1.1.1.15          0
16   1.1.1.16          0
17   1.1.1.17          0
18   1.1.1.18          0
19   1.1.1.19          0
20   1.1.1.20          0
21   1.1.1.21          0
22    1.1.2.1          0
23    1.1.2.2          0
24    1.1.2.3          0
25    1.1.2.4          0
26    1.1.2.5          0
27    1.1.2.6          0
28    1.1.2.7          0
29    1.1.2.8          0
30    1.1.2.9          0
31   1.1.2.10          0
32   1.1.2.11          0
```

```
33   1.1.2.12          0
34   1.1.2.13          0
35   1.1.2.14          0
36   1.1.2.15          0
37   1.1.2.16          0
38   1.1.2.17          0
39   1.1.2.18          0
40   1.1.2.19          0
41   1.1.2.20          0
42   1.1.2.21          0
43    1.1.3.1          0
44    1.1.3.2          0
45    1.1.3.3          0
46    1.1.3.4          0
47    1.1.3.5          0
48    1.1.3.6          0
49    1.1.3.7          0
50    1.1.3.8          0
51    1.1.3.9          0
52   1.1.3.10          0
53   1.1.3.11          0
54   1.1.3.12          0
55   1.1.3.13          0
56   1.1.3.14          0
57   1.1.3.15          0
58   1.1.3.16          0
59   1.1.3.17          0
60   1.1.3.18          0
61   1.1.3.19          0
62   1.1.3.20          0
63   1.1.3.21          0
64    1.1.4.1          0
65    1.1.4.2          0
66    1.1.4.3          0
67    1.1.4.4          0
68    1.1.4.5          0
69    1.1.4.6          0
70    1.1.4.7          0
71    1.1.4.8          0
72    1.1.4.9          0
73   1.1.4.10          0
74   1.1.4.11          0
75   1.1.4.12          0
76   1.1.4.13          0
77   1.1.4.14          0
78   1.1.4.15          0
79   1.1.4.16          0
80   1.1.4.17          0
81   1.1.4.18          0
```

```
82   1.1.4.19          0
83   1.1.4.20          0
84   1.1.4.21          0
85    1.1.5.1          0
86    1.1.5.2          0
87    1.1.5.3          0
88    1.1.5.4          0
89    1.1.5.5          0
90    1.1.5.6          0
91    1.1.5.7          0
92    1.1.5.8          0
93    1.1.5.9          0
94   1.1.5.10          0
95   1.1.5.11          0
96   1.1.5.12          0
97   1.1.5.13          0
98   1.1.5.14          0
99   1.1.5.15          0
100  1.1.5.16          0
```

```
> dim(genesR)
```

```
[1] 13440     2
```

```
> names(genesR)
```

```
[1] "genes.ori"  "resistance"
```

```
> attach(genesR)
> genes.resistance<-genes.ori[resistance==1] #solamente los genes de resistencia
> genes.resistance
```

```
  [1] 1.1.6.21  1.1.14.19 1.1.18.12 1.1.20.5  1.2.9.8   1.2.11.10 1.2.13.1
  [8] 1.2.14.8  1.2.16.1  1.3.3.17  1.3.5.4   1.3.10.17 1.3.15.8  1.3.18.21
 [15] 1.3.20.12 1.4.14.5  1.4.15.10 1.4.16.1  1.4.17.18 1.4.20.9  2.1.4.14
 [22] 2.1.12.14 2.1.13.17 2.1.13.18 2.1.13.21 2.1.14.4  2.1.16.2  2.2.2.15
 [29] 2.2.3.17  2.2.16.8  2.3.6.13  2.3.9.1   2.3.13.14 2.3.19.16 2.4.1.10
 [36] 2.4.2.15  2.4.3.12  2.4.6.16  2.4.6.21  2.4.7.9   2.4.10.20 2.4.13.18
 [43] 2.4.15.21 2.4.17.3  2.4.18.3  3.1.6.21  3.1.16.7  3.2.6.10  3.2.10.9
 [50] 3.2.12.12 3.2.13.21 3.2.14.13 3.2.15.5  3.3.6.21  3.3.9.1   3.3.10.19
 [57] 3.3.11.4  3.3.14.16 3.3.14.19 3.3.16.6  3.3.16.16 3.3.20.13 3.4.10.20
 [64] 3.4.10.21 3.4.12.3  3.4.16.17 3.4.17.5  4.1.2.6   4.1.14.4  4.1.14.5
 [71] 4.1.14.9  4.1.16.3  4.1.16.5  4.1.16.6  4.1.17.2  4.1.19.3  4.2.13.21
 [78] 4.2.14.9  4.2.17.9  4.3.1.20  4.3.10.14 4.3.10.20 4.3.15.4  4.3.16.2
 [85] 4.3.17.4  4.3.19.16 4.3.20.3  4.4.16.18 5.1.3.3   5.1.5.9   5.1.12.18
 [92] 5.1.19.16 5.1.20.18 5.1.20.19 5.2.3.20  5.2.3.21  5.2.9.3   5.2.12.12
 [99] 5.2.16.4  5.2.20.14 5.2.20.17 5.3.11.10 5.3.13.4  5.3.13.18 5.3.16.1
[106] 5.3.19.5  5.4.3.21  5.4.11.18 5.4.13.3  5.4.14.19 5.4.15.14 5.4.19.2
[113] 6.1.3.3   6.1.12.21 6.2.1.12  6.2.14.19 6.2.15.3  6.2.16.7  6.2.16.12
[120] 6.2.18.1  6.3.2.5   6.3.11.14 6.3.19.21 6.4.1.10  6.4.4.14  6.4.11.6
```

```
[127] 6.4.16.9  6.4.19.20 7.1.9.19  7.1.12.18 7.1.16.10 7.1.18.2  7.2.2.13
[134] 7.2.3.16  7.2.15.14 7.2.20.7  7.2.20.8  7.3.4.16  7.3.9.5   7.3.9.8
[141] 7.3.11.7  7.3.14.3  7.3.15.2  7.3.16.4  7.3.19.10 7.4.5.6   7.4.7.7
[148] 7.4.16.6  7.4.17.14 7.4.19.19 7.4.19.21 8.1.11.1  8.1.13.15 8.1.18.4
[155] 8.2.4.3   8.2.7.7   8.2.10.9  8.2.13.13 8.2.15.5  8.2.16.8  8.2.16.9
[162] 8.2.17.7  8.2.18.4  8.2.19.19 8.3.14.10 8.3.17.8  8.3.19.19 8.3.20.16
[169] 8.4.7.7   8.4.11.17 8.4.13.15 8.4.16.4  8.4.17.9  8.4.19.19
13440 Levels: 1.1.10.1 1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 ... 8.4.9.9
```

```
> indres<-which(genes.ori%in%genes.resistance) # ind genes de resistencia en nueva base
> indres
```

```
  [1]   126   292   369   404   596   640   673   701   736   899   928  1046
 [13]  1142  1218  1251  1538  1564  1576  1614  1668  1757  1925  1949  1950
 [25]  1953  1957  1997  2136  2159  2423  2638  2689  2786  2914  2950  2976
 [37]  2994  3061  3066  3075  3149  3210  3255  3279  3300  3486  3682  3895
 [49]  3978  4023  4053  4066  4079  4326  4369  4408  4414  4489  4492  4521
 [61]  4531  4612  4829  4830  4854  4952  4961  5067  5317  5318  5322  5358
 [73]  5360  5361  5378  5421  5733  5742  5805  5900  6083  6089  6178  6197
 [85]  6220  6274  6282  6633  6765  6813  6969  7114  7137  7138  7202  7203
 [97]  7311  7383  7459  7553  7556  7780  7816  7830  7876  7943  8043  8208
[109]  8235  8272  8288  8360  8445  8652  8832  9112  9117  9142  9147  9178
[121]  9266  9464  9639  9670  9737  9876  9984 10058 10267 10329 10405 10439
[133] 10534 10558 10808 10906 10907 10999 11093 11096 11137 11196 11216 11239
[145] 11308 11430 11473 11661 11690 11737 11739 11971 12027 12121 12246 12313
[157] 12378 12445 12479 12503 12504 12523 12541 12577 12883 12944 12997 13015
[169] 13153 13247 13287 13339 13365 13417
```

```
> genesres<-na.omit(unique(genes.ori[indres]))
> genesres
```

```
  [1] 1.1.6.21  1.1.14.19 1.1.18.12 1.1.20.5  1.2.9.8   1.2.11.10 1.2.13.1
  [8] 1.2.14.8  1.2.16.1  1.3.3.17  1.3.5.4   1.3.10.17 1.3.15.8  1.3.18.21
 [15] 1.3.20.12 1.4.14.5  1.4.15.10 1.4.16.1  1.4.17.18 1.4.20.9  2.1.4.14
 [22] 2.1.12.14 2.1.13.17 2.1.13.18 2.1.13.21 2.1.14.4  2.1.16.2  2.2.2.15
 [29] 2.2.3.17  2.2.16.8  2.3.6.13  2.3.9.1   2.3.13.14 2.3.19.16 2.4.1.10
 [36] 2.4.2.15  2.4.3.12  2.4.6.16  2.4.6.21  2.4.7.9   2.4.10.20 2.4.13.18
 [43] 2.4.15.21 2.4.17.3  2.4.18.3  3.1.6.21  3.1.16.7  3.2.6.10  3.2.10.9
 [50] 3.2.12.12 3.2.13.21 3.2.14.13 3.2.15.5  3.3.6.21  3.3.9.1   3.3.10.19
 [57] 3.3.11.4  3.3.14.16 3.3.14.19 3.3.16.6  3.3.16.16 3.3.20.13 3.4.10.20
 [64] 3.4.10.21 3.4.12.3  3.4.16.17 3.4.17.5  4.1.2.6   4.1.14.4  4.1.14.5
 [71] 4.1.14.9  4.1.16.3  4.1.16.5  4.1.16.6  4.1.17.2  4.1.19.3  4.2.13.21
 [78] 4.2.14.9  4.2.17.9  4.3.1.20  4.3.10.14 4.3.10.20 4.3.15.4  4.3.16.2
 [85] 4.3.17.4  4.3.19.16 4.3.20.3  4.4.16.18 5.1.3.3   5.1.5.9   5.1.12.18
 [92] 5.1.19.16 5.1.20.18 5.1.20.19 5.2.3.20  5.2.3.21  5.2.9.3   5.2.12.12
 [99] 5.2.16.4  5.2.20.14 5.2.20.17 5.3.11.10 5.3.13.4  5.3.13.18 5.3.16.1
[106] 5.3.19.5  5.4.3.21  5.4.11.18 5.4.13.3  5.4.14.19 5.4.15.14 5.4.19.2
[113] 6.1.3.3   6.1.12.21 6.2.1.12  6.2.14.19 6.2.15.3  6.2.16.7  6.2.16.12
[120] 6.2.18.1  6.3.2.5   6.3.11.14 6.3.19.21 6.4.1.10  6.4.4.14  6.4.11.6
[127] 6.4.16.9  6.4.19.20 7.1.9.19  7.1.12.18 7.1.16.10 7.1.18.2  7.2.2.13
```

```
[134] 7.2.3.16  7.2.15.14 7.2.20.7  7.2.20.8  7.3.4.16  7.3.9.5   7.3.9.8
[141] 7.3.11.7  7.3.14.3  7.3.15.2  7.3.16.4  7.3.19.10 7.4.5.6   7.4.7.7
[148] 7.4.16.6  7.4.17.14 7.4.19.19 7.4.19.21 8.1.11.1  8.1.13.15 8.1.18.4
[155] 8.2.4.3   8.2.7.7   8.2.10.9  8.2.13.13 8.2.15.5  8.2.16.8  8.2.16.9
[162] 8.2.17.7  8.2.18.4  8.2.19.19 8.3.14.10 8.3.17.8  8.3.19.19 8.3.20.16
[169] 8.4.7.7   8.4.11.17 8.4.13.15 8.4.16.4  8.4.17.9  8.4.19.19
13440 Levels: 1.1.10.1 1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 ... 8.4.9.9
```

```
> length(genesres)
```

```
[1] 174
```

- Crear una variable indicadora para una tabla original

```
> gg<-tom2$genes.filter
> gg[1:100]
```

```
  [1] 1.1.1.2  1.1.1.4  1.1.1.8  1.1.1.10 1.1.1.11 1.1.1.12 1.1.1.14 1.1.1.15
  [9] 1.1.1.16 1.1.1.17 1.1.1.19 1.1.2.2  1.1.2.4  1.1.2.5  1.1.2.6  1.1.2.7
 [17] 1.1.2.8  1.1.2.9  1.1.2.10 1.1.2.11 1.1.2.12 1.1.2.14 1.1.2.15 1.1.2.16
 [25] 1.1.2.17 1.1.2.20 1.1.2.21 1.1.3.4  1.1.3.6  1.1.3.7  1.1.3.8  1.1.3.9
 [33] 1.1.3.10 1.1.3.11 1.1.3.13 1.1.3.14 1.1.3.15 1.1.3.16 1.1.3.17 1.1.3.19
 [41] 1.1.3.20 1.1.3.21 1.1.4.17 1.1.4.18 1.1.4.20 1.1.5.2  1.1.5.3  1.1.5.7
 [49] 1.1.5.8  1.1.6.1  1.1.6.4  1.1.6.6  1.1.6.7  1.1.6.9  1.1.6.10 1.1.6.11
 [57] 1.1.6.12 1.1.6.13 1.1.6.14 1.1.6.16 1.1.6.17 1.1.6.18 1.1.6.20 1.1.6.21
 [65] 1.1.7.1  1.1.7.2  1.1.7.3  1.1.7.4  1.1.7.5  1.1.7.6  1.1.7.7  1.1.7.8
 [73] 1.1.7.9  1.1.7.10 1.1.7.11 1.1.7.12 1.1.7.13 1.1.7.14 1.1.7.15 1.1.7.16
 [81] 1.1.7.17 1.1.7.19 1.1.7.20 1.1.8.1  1.1.8.2  1.1.8.4  1.1.8.7  1.1.8.8
 [89] 1.1.8.9  1.1.8.11 1.1.8.12 1.1.8.13 1.1.8.14 1.1.8.15 1.1.8.16 1.1.8.18
 [97] 1.1.8.19 1.1.8.20 1.1.8.21 1.1.9.4
7816 Levels: 1.1.10.1 1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 ... 8.4.9.8
```

```
> names(gg)
```

```
NULL
```

```
> enfermos<-gg[tom2$dicotoma2==1]#enfermos son genes predichos de resist
> enfermos[1:100]
```

```
  [1] 1.1.3.10  1.1.6.1   1.1.6.10  1.1.7.7   1.1.8.9   1.1.8.20  1.1.14.2
  [8] 1.1.14.8  1.1.14.19 1.1.15.14 1.1.18.19 1.1.19.19 1.1.20.3  1.1.20.16
 [15] 1.2.2.14  1.2.3.16  1.2.6.9   1.2.9.12  1.2.10.6  1.2.11.17 1.2.13.1
 [22] 1.2.13.20 1.2.14.5  1.2.17.13 1.2.17.18 1.2.17.21 1.2.19.5  1.2.19.8
 [29] 1.2.20.10 1.2.20.16 1.3.3.21  1.3.5.8   1.3.6.9   1.3.8.1   1.3.8.3
 [36] 1.3.8.9   1.3.8.12  1.3.9.6   1.3.12.15 1.3.15.1  1.3.15.10 1.3.17.5
 [43] 1.3.17.10 1.3.17.13 1.3.18.7  1.3.19.12 1.3.20.8  1.4.2.4   1.4.2.16
 [50] 1.4.3.16  1.4.3.21  1.4.6.13  1.4.7.10  1.4.8.8   1.4.9.20  1.4.13.3
 [57] 1.4.15.13 1.4.18.13 1.4.19.18 1.4.20.18 2.1.1.14  2.1.2.16  2.1.5.1
 [64] 2.1.5.6   2.1.5.14  2.1.6.8   2.1.6.21  2.1.7.20  2.1.8.15  2.1.10.15
 [71] 2.1.10.16 2.1.12.11 2.1.12.18 2.1.13.13 2.1.14.5  2.1.15.1  2.1.15.15
```

```
 [78] 2.1.16.17 2.1.20.2  2.1.20.17 2.2.1.17  2.2.2.7   2.2.2.14  2.2.3.16
 [85] 2.2.3.18  2.2.6.15  2.2.7.16  2.2.7.19  2.2.8.8   2.2.8.19  2.2.10.19
 [92] 2.2.14.1  2.2.15.20 2.2.18.7  2.2.18.9  2.2.18.11 2.3.1.19  2.3.2.13
 [99] 2.3.3.9   2.3.3.12
7816 Levels: 1.1.10.1 1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 ... 8.4.9.8
```

```
> names(enfermos)
```

```
NULL
```

```
> annot<-read.table("annot.txt",h=T)
> annot[1:100,]
```

```
  [1] 1.1.10.1  1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 1.1.10.14 1.1.10.15
  [8] 1.1.10.16 1.1.10.17 1.1.10.18 1.1.10.19 1.1.10.2  1.1.10.20 1.1.10.21
 [15] 1.1.10.3  1.1.10.4  1.1.10.5  1.1.10.6  1.1.10.7  1.1.10.8  1.1.10.9
 [22] 1.1.1.1   1.1.1.10  1.1.1.11  1.1.11.1  1.1.11.10 1.1.11.11 1.1.11.12
 [29] 1.1.11.13 1.1.11.14 1.1.11.15 1.1.11.16 1.1.11.17 1.1.11.18 1.1.11.19
 [36] 1.1.1.12  1.1.11.2  1.1.11.20 1.1.11.21 1.1.1.13  1.1.11.3  1.1.1.14
 [43] 1.1.11.4  1.1.1.15  1.1.11.5  1.1.1.16  1.1.11.6  1.1.1.17  1.1.11.7
 [50] 1.1.1.18  1.1.11.8  1.1.1.19  1.1.11.9  1.1.1.2   1.1.1.20  1.1.1.21
 [57] 1.1.12.1  1.1.12.10 1.1.12.11 1.1.12.12 1.1.12.13 1.1.12.14 1.1.12.15
 [64] 1.1.12.16 1.1.12.17 1.1.12.18 1.1.12.19 1.1.12.2  1.1.12.20 1.1.12.21
 [71] 1.1.12.3  1.1.12.4  1.1.12.5  1.1.12.6  1.1.12.7  1.1.12.8  1.1.12.9
 [78] 1.1.1.3   1.1.13.1  1.1.13.10 1.1.13.11 1.1.13.12 1.1.13.13 1.1.13.14
 [85] 1.1.13.15 1.1.13.16 1.1.13.17 1.1.13.18 1.1.13.19 1.1.13.2  1.1.13.20
 [92] 1.1.13.21 1.1.13.3  1.1.13.4  1.1.13.5  1.1.13.6  1.1.13.7  1.1.13.8
 [99] 1.1.13.9  1.1.1.4
13440 Levels: 1.1.10.1 1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 ... 8.4.9.9
```

```
> names(annot)
```

```
[1] "annot"
```

```
> annot2<-annot$annot
> annot2[1:100]
```

```
  [1] 1.1.10.1  1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 1.1.10.14 1.1.10.15
  [8] 1.1.10.16 1.1.10.17 1.1.10.18 1.1.10.19 1.1.10.2  1.1.10.20 1.1.10.21
 [15] 1.1.10.3  1.1.10.4  1.1.10.5  1.1.10.6  1.1.10.7  1.1.10.8  1.1.10.9
 [22] 1.1.1.1   1.1.1.10  1.1.1.11  1.1.11.1  1.1.11.10 1.1.11.11 1.1.11.12
 [29] 1.1.11.13 1.1.11.14 1.1.11.15 1.1.11.16 1.1.11.17 1.1.11.18 1.1.11.19
 [36] 1.1.1.12  1.1.11.2  1.1.11.20 1.1.11.21 1.1.1.13  1.1.11.3  1.1.1.14
 [43] 1.1.11.4  1.1.1.15  1.1.11.5  1.1.1.16  1.1.11.6  1.1.1.17  1.1.11.7
 [50] 1.1.1.18  1.1.11.8  1.1.1.19  1.1.11.9  1.1.1.2   1.1.1.20  1.1.1.21
 [57] 1.1.12.1  1.1.12.10 1.1.12.11 1.1.12.12 1.1.12.13 1.1.12.14 1.1.12.15
 [64] 1.1.12.16 1.1.12.17 1.1.12.18 1.1.12.19 1.1.12.2  1.1.12.20 1.1.12.21
 [71] 1.1.12.3  1.1.12.4  1.1.12.5  1.1.12.6  1.1.12.7  1.1.12.8  1.1.12.9
 [78] 1.1.1.3   1.1.13.1  1.1.13.10 1.1.13.11 1.1.13.12 1.1.13.13 1.1.13.14
 [85] 1.1.13.15 1.1.13.16 1.1.13.17 1.1.13.18 1.1.13.19 1.1.13.2  1.1.13.20
 [92] 1.1.13.21 1.1.13.3  1.1.13.4  1.1.13.5  1.1.13.6  1.1.13.7  1.1.13.8
 [99] 1.1.13.9  1.1.1.4
13440 Levels: 1.1.10.1 1.1.10.10 1.1.10.11 1.1.10.12 1.1.10.13 ... 8.4.9.9
```

```
> ind<-which(annot2%in%enfermos)
> ind[1:100]

  [1]  111  112  127  197  219  237  244  273  274  333  334  372  387  395  434
 [16]  449  495  507  533  587  592  596  643  646  649  655  674  697  764  771
 [31]  773  819  851  860  956  957 1000 1014 1038 1045 1082 1118 1166 1187 1209
 [46] 1212 1223 1229 1247 1341 1375 1441 1468 1489 1508 1516 1529 1535 1589 1607
 [61] 1646 1660 1675 1676 1710 1727 1734 1751 1785 1791 1797 1821 1906 1909 1926
 [76] 1982 1987 1998 2014 2015 2021 2035 2050 2095 2131 2184 2215 2271 2287 2289
 [91] 2338 2351 2361 2363 2423 2444 2447 2468 2477 2504

> vec<-rep(0, length(annot2))
> vec[1:120]

  [1] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 [38] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 [75] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
[112] 0 0 0 0 0 0 0 0 0

> vec[ind]=1
> predenfermos<-cbind(annot2,vec)
> names(predenfermos)

NULL

> predenfermos[1:10,]

      annot2 vec
 [1,]      1   0
 [2,]      2   0
 [3,]      3   0
 [4,]      4   0
 [5,]      5   0
 [6,]      6   0
 [7,]      7   0
 [8,]      8   0
 [9,]      9   0
[10,]     10   0

> write.table(predenfermos,"predenfermos.csv")
```