

# HW4\_sliang

Liang Shi

10/11/2020

## Problem 2

```
set.seed(1256)
theta <- as.matrix(c(1,2),nrow=2)
X <- cbind(1,rep(1:10,10))
h <- X%%theta+rnorm(100,0,0.2)

tol <- 0.00001
alpha <- 0.01
theta_ <- matrix(c(0,0), nrow=2)
theta_h <- matrix(c(1,2), nrow=2)
while(abs(theta_h[1] - theta_[1] > tol) & abs(theta_h[2] - theta_[2] > tol)){
  theta_ <- theta_h
  theta_h[1] <- theta_h[1] - alpha * mean(X %% theta_h - h)
  theta_h[2] <- theta_h[2] - alpha * mean((X %% theta_h - h) * X[,2])
}
print(theta_h)

##           [,1]
## [1,] 0.9997817
## [2,] 1.9989402

lm(h~0+X)

##
## Call:
## lm(formula = h ~ 0 + X)
##
## Coefficients:
##      X1      X2
## 0.9696  2.0016
```

## Problem 3

### Part a

```
ind <- function(beta0,beta1){
  X <- cbind(1,rep(1:10,10))
  h <- X%%theta+rnorm(100,0,0.2)
  tol <- 1e-7
  alpha <- 1e-9
  theta_ <- matrix(c(0,0), nrow=2)
```

```

theta_h <- matrix(c(beta0,beta1), nrow=2)
while(abs(theta_h[1] - theta_[1] > tol) & abs(theta_h[2] - theta_[2] > tol)){
  theta_ <- theta_h
  theta_h[1] <- theta_h[1] - alpha * mean(X %*% theta_h - h)
  theta_h[2] <- theta_h[2] - alpha * mean((X %*% theta_h - h) * X[,2])
}
return (theta_h)
}

bs = cbind(runif(n=10000, min = 0, max = 1),
  runif(n=10000, min = 0, max = 1))

beta_final = sapply(c(1:10000),function(no){ind(bs[no,][1],
  bs[no,][2])})

beta_final[1,]

```

```

##      [1] 0.2373127793 0.3817944337 0.7520844143 0.8783686006 0.0770801564
##      [6] 0.8001547102 0.3643486157 0.4045632937 0.6854807010 0.5295523333
##     [11] 0.1861112800 0.8778606087 0.5535636452 0.8601298963 0.9620790488
##     [16] 0.0704109340 0.9867108828 0.6986372773 0.3119018673 0.0850226006
##     [21] 0.2661823674 0.2513505262 0.3726431177 0.3507949393 0.8137372763
##     [26] 0.1490412082 0.5877056527 0.8789697619 0.6117267045 0.6396373773
##     [31] 0.0996947709 0.0819301704 0.2207298025 0.9995280700 0.4869577750
##     [36] 0.7235939215 0.7393766240 0.0317879850 0.4106583510 0.9809513634
##     [41] 0.5542821577 0.8391047632 0.6189958802 0.9220087219 0.1411083878
##     [46] 0.3902498604 0.7820027495 0.8588210057 0.4309505877 0.1600111996
##     [51] 0.8484727668 0.7257763718 0.3557478670 0.4101770709 0.2134623037
##     [56] 0.4821180588 0.1622593362 0.1198805473 0.1389594551 0.0067033766
##     [61] 0.9073851800 0.2354061902 0.7834804895 0.4052610956 0.8895080576
##     [66] 0.0278811445 0.1693070307 0.9725557337 0.3056601829 0.2038234127
##     [71] 0.3348636993 0.9227251099 0.6352722609 0.2498991127 0.6204312508
##     [76] 0.3079328463 0.7593578418 0.1707564306 0.1956684632 0.8777114851
##     [81] 0.4223583175 0.6173342047 0.7995239538 0.4087033706 0.6670223936
##     [86] 0.8265606908 0.6159512622 0.2670307194 0.9656404094 0.2409846758
##     [91] 0.1866586432 0.9462419982 0.2158943515 0.3066849371 0.7059885434
##     [96] 0.9261397114 0.1417587489 0.3690806696 0.1659028030 0.4415915070
##    [101] 0.9678719414 0.8240549160 0.9733918658 0.4698633598 0.1869553777
##    [106] 0.1130050416 0.6891296609 0.1764166896 0.7598038571 0.0396854632
##    [111] 0.5789666237 0.7417264554 0.2190921631 0.5863827438 0.0591120697
##    [116] 0.7150761571 0.3498056206 0.5910649871 0.5563415878 0.1227567274
##    [121] 0.1774572249 0.3444853571 0.1494893566 0.7019594833 0.4154283243
##    [126] 0.7805389521 0.4621890956 0.8860846188 0.4240862592 0.9635031795
##    [131] 0.0378591621 0.2298999728 0.6548428333 0.5535254685 0.2654033267
##    [136] 0.9889522811 0.9002394034 0.8737832805 0.6297573332 0.9080153984
##    [141] 0.3350084931 0.8546312037 0.5092509240 0.7616607588 0.2740794113
##    [146] 0.0481524279 0.0876824223 0.4931355286 0.7763124013 0.4366468227
##    [151] 0.7831811483 0.5778119182 0.6424356634 0.9643245098 0.8219247613
##    [156] 0.5043406710 0.5445860329 0.5024684830 0.8846209215 0.0738096664
##    [161] 0.8450774345 0.2520957984 0.1599481736 0.3541947334 0.2219847854
##    [166] 0.7534923949 0.2512929294 0.2053705689 0.3296350571 0.6260427337
##    [171] 0.4260400922 0.0212245823 0.6521613241 0.0550928551 0.2497863430
##    [176] 0.8258661716 0.7636157721 0.0356896809 0.4173405899 0.1615386276
##    [181] 0.3954300692 0.2790796088 0.2656797987 0.7119515620 0.0516594913

```

```

## [186] 0.8296959127 0.7160407356 0.2483851303 0.0294767285 0.8104633080
## [191] 0.3473927890 0.4472761316 0.7913852073 0.5444687167 0.0932647082
## [196] 0.7234763893 0.9167843598 0.2537095600 0.2625969904 0.5243768817
## [201] 0.3607910707 0.4331160120 0.0166493048 0.1961419905 0.7600977053
## [206] 0.6645985477 0.1830074451 0.5756849472 0.4207249751 0.9882260670
## [211] 0.9103762185 0.1454164968 0.5897539251 0.5981490303 0.6943192908
## [216] 0.4832718240 0.2101277220 0.8400744568 0.0224545715 0.9879671722
## [221] 0.3206428398 0.6828602223 0.7863340840 0.1895048359 0.6122509129
## [226] 0.9940987769 0.7005277052 0.4024856825 0.9370536417 0.1543421003
## [231] 0.4520491325 0.7652220730 0.6424804723 0.3328516294 0.8239731561
## [236] 0.8061948852 0.6466939235 0.8156504431 0.6583182217 0.3450225653
## [241] 0.9736308755 0.8639794840 0.8961357021 0.4535876463 0.7459063870
## [246] 0.2185640987 0.0719185400 0.0412176967 0.5986754537 0.1503238314
## [251] 0.2803511476 0.0646227331 0.9630430907 0.6903003396 0.7226092620
## [256] 0.5121270345 0.1902408075 0.3102854542 0.1708728399 0.3453695488
## [261] 0.8796889468 0.4952245647 0.2845568032 0.1324425992 0.0025893236
## [266] 0.3656875358 0.9072126224 0.6422144414 0.9836393705 0.7618040689
## [271] 0.6634672745 0.4068145088 0.8527176814 0.7199772034 0.3628507068
## [276] 0.0463887732 0.5890511608 0.3745459195 0.1558233560 0.5890399202
## [281] 0.3823056225 0.5410744509 0.1757742602 0.8370032545 0.5440644978
## [286] 0.7013680223 0.6878608914 0.2757339980 0.4264939392 0.2167768997
## [291] 0.8026667859 0.0891061765 0.8900730227 0.6134605274 0.4196241178
## [296] 0.1079818308 0.7607582805 0.7436469329 0.5666199989 0.5265478023
## [301] 0.7394721333 0.3276435814 0.2699276247 0.5357849491 0.9583501892
## [306] 0.6682101797 0.4636588124 0.4082445405 0.0383284417 0.2551735070
## [311] 0.9863637533 0.0371126065 0.4863671555 0.8698482688 0.0018210647
## [316] 0.2590592711 0.0889070718 0.1364935453 0.8055136974 0.5247350211
## [321] 0.9477890389 0.9411862340 0.5816574243 0.8714652105 0.0404560852
## [326] 0.7569223885 0.9950705496 0.4973825320 0.3164108750 0.4389808323
## [331] 0.2127662545 0.9667019051 0.4489983694 0.1659488358 0.7391792507
## [336] 0.9556556253 0.4284590084 0.8284106733 0.0266184081 0.1533596922
## [341] 0.9015084602 0.5146426818 0.1530109360 0.2612093953 0.3204578393
## [346] 0.2487338725 0.0735309226 0.8685170597 0.0045556833 0.0531539470
## [351] 0.5456483643 0.8521478431 0.9929571678 0.0789189374 0.5879133765
## [356] 0.3272048814 0.5191039428 0.1096035427 0.4570975895 0.8006790465
## [361] 0.8795373247 0.6245969666 0.2376121896 0.7001714114 0.5304141531
## [366] 0.1869200172 0.8391293120 0.6227646071 0.2333980385 0.1641701912
## [371] 0.5980191349 0.8340203638 0.1240676055 0.3508668304 0.6496947831
## [376] 0.2076068494 0.5683885359 0.4443996627 0.6866197026 0.0274460993
## [381] 0.8073669674 0.6225862641 0.4929169368 0.5154741761 0.6986661557
## [386] 0.0979122487 0.9916367349 0.0233921606 0.7913021024 0.4691268178
## [391] 0.7607771513 0.3771555562 0.4157057149 0.7738538963 0.9251061000
## [396] 0.6788362446 0.9092650216 0.0116966585 0.5355138250 0.4571910950
## [401] 0.1955565228 0.5829877355 0.4869487511 0.3642345191 0.0828421281
## [406] 0.7352189079 0.6220669519 0.0817208950 0.4430813997 0.4732707582
## [411] 0.2739656713 0.0900454532 0.0324854818 0.5399152253 0.8154154860
## [416] 0.7029177710 0.6133947168 0.1172359816 0.5467438235 0.9587948175
## [421] 0.0358181247 0.4469102875 0.8888116602 0.6590122888 0.2563068656
## [426] 0.4617354783 0.4202346871 0.0264481807 0.0141810760 0.2121904432
## [431] 0.0243871424 0.0808075643 0.2702570091 0.2158295872 0.8048378254
## [436] 0.2310686394 0.9998037953 0.8569861041 0.0303453525 0.5997701473
## [441] 0.6859582065 0.8804848656 0.1612687615 0.6389118033 0.5813280894
## [446] 0.2510321664 0.8066692961 0.7261055603 0.7699011117 0.4297301232
## [451] 0.2549033403 0.6092506502 0.8563284752 0.5580394848 0.4131097912

```

```

## [456] 0.5206682913 0.8109603422 0.6625117613 0.3261221736 0.4233657950
## [461] 0.2771654813 0.2069023110 0.9449547263 0.1416765402 0.7142821709
## [466] 0.9331263305 0.6689298141 0.4686603123 0.5457302833 0.4650211970
## [471] 0.9988246829 0.7754060517 0.7371001636 0.4310900450 0.5385261021
## [476] 0.5101535602 0.1745430415 0.7605392373 0.0708080056 0.9423092053
## [481] 0.9167761088 0.7625734766 0.9623116360 0.0982384099 0.2642766305
## [486] 0.2216682057 0.1277951882 0.8313448026 0.5281708770 0.9163927238
## [491] 0.4917376598 0.5312564675 0.6829654922 0.6189605664 0.2789776657
## [496] 0.2674991150 0.6623726992 0.2457774109 0.4755675471 0.6463758407
## [501] 0.0982542417 0.8279863796 0.6042158405 0.1788950523 0.0367112748
## [506] 0.0346107402 0.9267253711 0.9269141686 0.5466251247 0.4446024024
## [511] 0.1110842502 0.5865528759 0.9686864928 0.0470779828 0.4314501007
## [516] 0.4836025395 0.6904669009 0.6516533092 0.1435326133 0.6662800271
## [521] 0.7535517230 0.1998587339 0.6954173464 0.9237108111 0.3366277005
## [526] 0.1121734497 0.4544440487 0.9373402033 0.3014496069 0.8084658863
## [531] 0.5308260159 0.1601714231 0.3156743929 0.2002579064 0.2495548042
## [536] 0.8727323704 0.0053682007 0.2707310709 0.0256508364 0.4250247471
## [541] 0.0256265640 0.2134241174 0.0775174262 0.0488342637 0.6285720029
## [546] 0.4529987414 0.9249869712 0.6062815709 0.9058049494 0.6241565884
## [551] 0.3298494235 0.7175854673 0.4639717470 0.9276951034 0.5340037479
## [556] 0.3944759494 0.1535671230 0.6123074981 0.7231406210 0.7000996761
## [561] 0.5354004313 0.6871264383 0.7793030262 0.7382911432 0.0508569657
## [566] 0.8216154017 0.6548863740 0.7304896864 0.6885237590 0.4442406853
## [571] 0.6001209614 0.7480391437 0.8154759275 0.4016923345 0.7218387028
## [576] 0.6305057042 0.7716632639 0.8933299007 0.1840646854 0.1937251294
## [581] 0.6281612792 0.1500660178 0.7806726846 0.9521220511 0.8235058273
## [586] 0.4721872185 0.1899425120 0.6528281063 0.5044910022 0.6991910547
## [591] 0.9740701966 0.6068418532 0.8403313004 0.2095079768 0.0512766356
## [596] 0.3331042363 0.6063383622 0.3230473268 0.5502671599 0.1417520461
## [601] 0.6912063116 0.2251998541 0.3277512146 0.6810143448 0.9558442773
## [606] 0.2339833266 0.1051864084 0.2649162086 0.3560054855 0.7682137283
## [611] 0.5547527830 0.4176852619 0.3792032058 0.1013964110 0.8843584841
## [616] 0.6874963590 0.8870698572 0.2329134115 0.5424808363 0.0692636437
## [621] 0.6095388369 0.0652174090 0.2935364014 0.9400614238 0.1554817082
## [626] 0.0616268635 0.4823961084 0.9067235037 0.1620401148 0.8902688793
## [631] 0.9999670358 0.0946172667 0.0010215181 0.4460818001 0.4268037857
## [636] 0.8363137374 0.7756997114 0.0084410710 0.2226461266 0.6964641702
## [641] 0.2091029633 0.4177082592 0.0559394078 0.0238853836 0.6638909499
## [646] 0.5493975569 0.0231526811 0.7624928572 0.6539117750 0.4602431660
## [651] 0.7478527345 0.9928293346 0.6798383339 0.9726614640 0.1522918952
## [656] 0.4825103937 0.6827083777 0.4698742039 0.4773882563 0.1070599878
## [661] 0.0729445358 0.3588253885 0.0090895277 0.2269856601 0.4169415871
## [666] 0.7897939706 0.7223020689 0.1801161627 0.2782264645 0.5602477965
## [671] 0.6679552718 0.5587746625 0.3309423984 0.4534764648 0.4625890684
## [676] 0.4573216150 0.6362003761 0.8220506493 0.7188535323 0.1316519101
## [681] 0.3585436606 0.1511380733 0.8768209396 0.3482870862 0.8100108756
## [686] 0.8541093852 0.2125907979 0.1390709088 0.9996663038 0.6748092389
## [691] 0.6893324722 0.6962826501 0.4017442855 0.4122668284 0.1801716924
## [696] 0.6992035040 0.7451814295 0.5141877140 0.7491647691 0.8110963915
## [701] 0.0170708656 0.6566776516 0.3347619762 0.8756785259 0.5739337441
## [706] 0.9030399842 0.7703132970 0.9792492129 0.7572455804 0.3834600822
## [711] 0.2164795330 0.4507837499 0.2306309075 0.8088692967 0.1469157915
## [716] 0.3928386464 0.0440354962 0.2503514501 0.9696020808 0.2709151812
## [721] 0.0838540932 0.1885092558 0.5295194234 0.2447069545 0.9325665496

```

##	[726]	0.8836289437	0.5469744350	0.1504119217	0.2921905950	0.8371845145
##	[731]	0.0158031581	0.5962799291	0.8938627350	0.2295298556	0.0544832104
##	[736]	0.5056415364	0.9629196799	0.2602070286	0.4273022434	0.5354538352
##	[741]	0.2448591945	0.7617947765	0.2633709166	0.0441723225	0.6465393948
##	[746]	0.1664560690	0.0728445726	0.3931602487	0.1481510797	0.1856187220
##	[751]	0.5734463243	0.7946802272	0.2996830728	0.5803151444	0.5781514141
##	[756]	0.8328281019	0.9982470392	0.9221125587	0.5871007054	0.3130538120
##	[761]	0.6622515326	0.1589827936	0.9647481548	0.3802685201	0.1289849746
##	[766]	0.5329923780	0.3277791181	0.9695947700	0.4691026150	0.6893232683
##	[771]	0.6616432968	0.6912129863	0.3323623689	0.9535354609	0.9110051516
##	[776]	0.9609485033	0.6091028908	0.1104678242	0.6542915623	0.0092835918
##	[781]	0.1879525636	0.9502597800	0.4407782511	0.7519747032	0.8659507435
##	[786]	0.9405929730	0.6255436417	0.5457280868	0.7693752352	0.5581112208
##	[791]	0.5537947730	0.7679108269	0.2906723098	0.6758075156	0.7266422789
##	[796]	0.3869179569	0.8138717278	0.5979663944	0.6799153818	0.2155945154
##	[801]	0.0966250044	0.9705554089	0.8798319530	0.9524686014	0.8843503912
##	[806]	0.2566998339	0.2594690990	0.2740129750	0.0271288540	0.1012458707
##	[811]	0.0222343735	0.5726718544	0.0229666236	0.4808508685	0.2627103556
##	[816]	0.9887312583	0.2801738676	0.4129289814	0.9757612281	0.0182730654
##	[821]	0.9773818745	0.2419217235	0.4348415562	0.8955774144	0.6158616853
##	[826]	0.6836952829	0.9567237893	0.9761550029	0.8126905628	0.7677217228
##	[831]	0.9403045225	0.8881693405	0.8820495708	0.9950322816	0.0272174793
##	[836]	0.9007765719	0.2119108481	0.6104620581	0.4678006043	0.3914664760
##	[841]	0.0490246660	0.4075873043	0.8755812677	0.3334650135	0.4611051103
##	[846]	0.1424502086	0.7441051039	0.5839188534	0.1741134209	0.3038315914
##	[851]	0.8022373173	0.1012856096	0.1862298342	0.2341865776	0.4632049926
##	[856]	0.6918133597	0.2593151661	0.9615221979	0.1913395898	0.5649582363
##	[861]	0.1600371053	0.6582793385	0.7883975328	0.5106645405	0.1153956275
##	[866]	0.9611467503	0.0113412758	0.7546121626	0.0767267016	0.2906882894
##	[871]	0.1137987520	0.8112169700	0.5625863208	0.4847402909	0.9057657760
##	[876]	0.5041991755	0.3715034561	0.0634977368	0.0520325957	0.0666945050
##	[881]	0.6280953789	0.9482518028	0.1529646674	0.8487537354	0.6917244137
##	[886]	0.3644940424	0.7238426831	0.8211543106	0.7250321493	0.5066448705
##	[891]	0.8143762271	0.2269981721	0.4263096353	0.5743075461	0.0707306817
##	[896]	0.5240469845	0.9596949507	0.6889150224	0.7570029522	0.0057221825
##	[901]	0.6988495619	0.7062709927	0.4881519395	0.8570220265	0.9857913528
##	[906]	0.8081129121	0.7091433457	0.1035137093	0.3351509733	0.6666207559
##	[911]	0.6124791865	0.2221393903	0.7987690011	0.3643910390	0.9070410086
##	[916]	0.2776241246	0.2580790289	0.8591021386	0.6480984554	0.0319912265
##	[921]	0.5611625371	0.5994535756	0.2972207397	0.8724670294	0.8509407121
##	[926]	0.0627244138	0.9612556742	0.1833084609	0.0491647123	0.9654048477
##	[931]	0.0341526679	0.6461255713	0.7301751038	0.9643147569	0.4900544176
##	[936]	0.9398220411	0.8359948759	0.4630664773	0.4973477158	0.0513168224
##	[941]	0.3505428022	0.3131465228	0.1210454350	0.6851702367	0.7846986771
##	[946]	0.0546466197	0.9552404086	0.7118559697	0.2344981722	0.4514769694
##	[951]	0.4617986079	0.0457326762	0.7025724590	0.7956587504	0.2383851709
##	[956]	0.0123614470	0.3171820106	0.8215315366	0.5338515154	0.7465430487
##	[961]	0.6165546123	0.1556819616	0.9158892977	0.5287628133	0.5277042083
##	[966]	0.6308488894	0.1435387424	0.7075973065	0.1379181353	0.9179580221
##	[971]	0.2600110452	0.3956819078	0.7670377275	0.0532380353	0.2982050028
##	[976]	0.1130613294	0.5213844406	0.5529614852	0.9967782002	0.0541584948
##	[981]	0.1079907657	0.7928895007	0.2465018002	0.5728617355	0.7202578579
##	[986]	0.4190867824	0.0991735866	0.1823328268	0.5971082993	0.7962371668
##	[991]	0.3115219073	0.6515554749	0.8759511586	0.5606940544	0.8246508868

```

## [996] 0.6556060705 0.6749678705 0.7454122718 0.0786422794 0.3680545480
## [1001] 0.9894738367 0.3245372184 0.6032517353 0.7715015632 0.8484624311
## [1006] 0.7678265409 0.4266384283 0.5707816482 0.0208064402 0.8384560662
## [1011] 0.5983703994 0.5545717221 0.0052850827 0.0780277628 0.4218206275
## [1016] 0.5615986473 0.0221595494 0.0165845055 0.4110067555 0.9597036156
## [1021] 0.2078006677 0.9743140059 0.3455223180 0.2514889364 0.3856189722
## [1026] 0.4980435296 0.0592686623 0.7925634310 0.9276467302 0.3808359656
## [1031] 0.3570913369 0.1609016296 0.4121658720 0.7018403056 0.2652308628
## [1036] 0.2981264566 0.6403050595 0.0703581205 0.9600046007 0.3922619264
## [1041] 0.8219211338 0.9964455229 0.5288491721 0.6492006989 0.9150564698
## [1046] 0.7116507928 0.9566858995 0.2179332733 0.4351551227 0.2597766972
## [1051] 0.7214743834 0.9529641136 0.0536338226 0.2101506706 0.2351781343
## [1056] 0.5995330603 0.1445126507 0.5150163181 0.2730144531 0.5483278283
## [1061] 0.5773157576 0.8273662627 0.2848403304 0.3137492463 0.2951245378
## [1066] 0.4626092125 0.4677475567 0.7519015025 0.5074375465 0.5149118775
## [1071] 0.6762186128 0.8509053589 0.3252602166 0.8146827858 0.5271894015
## [1076] 0.0570244558 0.7033127549 0.8559458356 0.6824014734 0.4363282181
## [1081] 0.0988224002 0.9034520750 0.4160717686 0.4486057352 0.5567153773
## [1086] 0.0535491836 0.3185796320 0.0828700805 0.8835842202 0.4335699082
## [1091] 0.2948624630 0.7380991731 0.3758259973 0.0044229155 0.5367361234
## [1096] 0.2079662732 0.6646245366 0.0424429772 0.7354066868 0.5405497077
## [1101] 0.5728091887 0.7346341236 0.6764486095 0.9381886568 0.6254867521
## [1106] 0.6113640050 0.5133338094 0.4090035136 0.0286753443 0.6648662372
## [1111] 0.5915632844 0.6349562867 0.3348984476 0.1414016651 0.5485867565
## [1116] 0.9702573215 0.0575632387 0.9324475208 0.0236586943 0.3761381039
## [1121] 0.3413996868 0.8484720336 0.3964980418 0.6702431495 0.0046679744
## [1126] 0.2750787316 0.8103715118 0.5724754724 0.9035274506 0.0447462068
## [1131] 0.4651157633 0.5430951316 0.4731427099 0.4694498519 0.5180280341
## [1136] 0.9223651292 0.8062872732 0.8767192700 0.3370759851 0.0929874624
## [1141] 0.7137864021 0.8296265567 0.8734482378 0.9321694538 0.8978609994
## [1146] 0.9222216987 0.8842887878 0.1982706501 0.6590459495 0.3722759610
## [1151] 0.9269958339 0.3443482845 0.6878966693 0.8075352214 0.3763452707
## [1156] 0.1160486783 0.1205995572 0.2509598526 0.1326162615 0.9002612880
## [1161] 0.4106585988 0.3956680562 0.0715800352 0.4491582559 0.0590301365
## [1166] 0.5277549706 0.0842364115 0.1751094069 0.3980415103 0.5475366862
## [1171] 0.1979042465 0.4239087251 0.3417819119 0.5440940365 0.6588034561
## [1176] 0.3102560365 0.2999692036 0.3989324100 0.5726386114 0.8170730595
## [1181] 0.1591057526 0.6041237609 0.8133748093 0.2229040872 0.3278904368
## [1186] 0.6340679955 0.9640969425 0.4313447340 0.5194928166 0.0072798409
## [1191] 0.7515256389 0.3090596751 0.2622529171 0.6891334413 0.3211663172
## [1196] 0.1507327372 0.4436142505 0.8344500060 0.5158517731 0.5933304236
## [1201] 0.6644448360 0.6569251821 0.0840832281 0.1816963190 0.0596110625
## [1206] 0.5494601369 0.6647913848 0.9655658243 0.8182303443 0.9271348924
## [1211] 0.2262059022 0.3951089091 0.8155372202 0.9896792481 0.0769702553
## [1216] 0.0630681177 0.1172900530 0.3445251653 0.0655274547 0.0810617175
## [1221] 0.1798435983 0.3516679215 0.7470506507 0.1358539085 0.0671683777
## [1226] 0.4146593871 0.9206216731 0.5815441405 0.5253429362 0.6750164404
## [1231] 0.6237337851 0.5536740535 0.0441019303 0.8760867324 0.7974465052
## [1236] 0.8445662347 0.6574983867 0.9362467254 0.0400088525 0.5844763172
## [1241] 0.1584532305 0.1394083527 0.5142408535 0.2236037637 0.0104823591
## [1246] 0.0401390390 0.7726974004 0.9926319488 0.3664116668 0.0352083691
## [1251] 0.5061230196 0.0622564037 0.3821867218 0.3835359110 0.4101995732
## [1256] 0.6032860932 0.2391461519 0.7041317073 0.4391311093 0.0765474299
## [1261] 0.7756666432 0.3927073271 0.8054972386 0.0870984644 0.4652406257

```

```

## [1266] 0.9815335362 0.7590276461 0.4679013244 0.6565815215 0.4895458774
## [1271] 0.5233727582 0.9123369641 0.5494401596 0.7881277965 0.2007455037
## [1276] 0.5835104767 0.7501187958 0.0595425663 0.1505335028 0.6688686932
## [1281] 0.7000025806 0.1442247201 0.5106326992 0.1309790021 0.9015341534
## [1286] 0.4365132047 0.8518884813 0.3495404810 0.4677284580 0.4086049436
## [1291] 0.5041015947 0.9340159104 0.2929050563 0.8821930912 0.2411591692
## [1296] 0.7586789211 0.9134595202 0.4189289239 0.1349407491 0.3188518471
## [1301] 0.5620380243 0.3863111527 0.9966461653 0.1346813023 0.1562177103
## [1306] 0.8216014264 0.6723474267 0.3904419169 0.4007202459 0.3054711126
## [1311] 0.8634970099 0.2973197341 0.5473004182 0.6430208000 0.1169905646
## [1316] 0.1659200076 0.4169339028 0.4782900538 0.8354857504 0.8186788787
## [1321] 0.9812746349 0.4866983558 0.0255474958 0.8823641802 0.5142456572
## [1326] 0.1474639494 0.1429431515 0.9744250212 0.5947222643 0.6998793182
## [1331] 0.7394917166 0.8169188443 0.1688307195 0.2590706033 0.8741001748
## [1336] 0.9874724179 0.8619419522 0.7465096589 0.8640816402 0.3639231587
## [1341] 0.2759761824 0.0098503643 0.6258985362 0.1066329496 0.5999146560
## [1346] 0.7301619088 0.8514231373 0.1190791393 0.8679327061 0.5474668690
## [1351] 0.4569493289 0.0488393847 0.8506250381 0.2751002435 0.6189524399
## [1356] 0.3803860992 0.6974825540 0.7502434775 0.9603698092 0.7142329150
## [1361] 0.0152469649 0.2753800531 0.7604695275 0.8115453290 0.9050542091
## [1366] 0.9803112349 0.3110547941 0.8874631700 0.8347568623 0.4862593648
## [1371] 0.2603159830 0.5902222825 0.1671736124 0.4189926661 0.9198569422
## [1376] 0.2272025488 0.0321379491 0.4057615152 0.2393913071 0.9842246630
## [1381] 0.7189684822 0.1604650125 0.5417046491 0.9755676592 0.9922140584
## [1386] 0.5207723464 0.7429009436 0.9201554355 0.6978090139 0.2300204394
## [1391] 0.3051552477 0.9862765772 0.5046200046 0.4920926655 0.6716731726
## [1396] 0.5480497792 0.2636785110 0.5411994709 0.4528397421 0.4874559478
## [1401] 0.7500577617 0.2049565119 0.2451346654 0.0373085380 0.4714662168
## [1406] 0.5748945493 0.3712807904 0.0511319785 0.3942727878 0.1726753579
## [1411] 0.4695569718 0.0815918006 0.6173563345 0.3339805984 0.2662550465
## [1416] 0.9857404090 0.0891647001 0.7285699824 0.5986301673 0.8722326848
## [1421] 0.2995806716 0.2526487895 0.2346309646 0.8213871504 0.9201822270
## [1426] 0.3324470648 0.6396552893 0.1608759528 0.5515704460 0.4121263228
## [1431] 0.1472966403 0.1201765069 0.6063437506 0.8959487759 0.9500504989
## [1436] 0.5965442905 0.3625648961 0.2630432793 0.3187167305 0.7615110180
## [1441] 0.8764116192 0.5408793415 0.6592720314 0.3990829183 0.3955504483
## [1446] 0.7854901291 0.8954183185 0.4609702881 0.9007772253 0.1300159335
## [1451] 0.2645639025 0.9466678634 0.1138536480 0.2114756921 0.1905016798
## [1456] 0.1000221146 0.8786353654 0.9017664420 0.9498683620 0.5387817652
## [1461] 0.1661157175 0.7342318266 0.6745721567 0.2524484688 0.7339308341
## [1466] 0.4494858280 0.1715924237 0.2789928185 0.7240998044 0.5269731391
## [1471] 0.8489931271 0.2912938592 0.4524042322 0.3958941561 0.0560762043
## [1476] 0.1024850847 0.5092397841 0.0502080281 0.6127546565 0.1819946510
## [1481] 0.8841051135 0.6454855705 0.1483243104 0.6657030324 0.2353461845
## [1486] 0.6589912782 0.4425590602 0.7468514189 0.7626046989 0.9815138179
## [1491] 0.4942109393 0.4840548234 0.8476489319 0.4803628090 0.2260731866
## [1496] 0.1080860885 0.5554300884 0.5140080647 0.5899132323 0.4785682601
## [1501] 0.4136701790 0.8076157746 0.5355315086 0.3218384826 0.0715353386
## [1506] 0.5997602593 0.3643678813 0.2466995679 0.5541899554 0.7452366050
## [1511] 0.4732536251 0.5667567779 0.9800560621 0.9849801528 0.9618128167
## [1516] 0.2907992827 0.3296046535 0.2855677462 0.8969166393 0.7513045293
## [1521] 0.6671920758 0.5872078840 0.1175430830 0.9238439996 0.8473771146
## [1526] 0.1204390239 0.0952910538 0.6775266132 0.6475543296 0.4994278873
## [1531] 0.8046707835 0.5930855032 0.8615667252 0.5709035470 0.6839018633

```

```

## [1536] 0.9963267894 0.9607119014 0.5706025455 0.4974240797 0.2174199581
## [1541] 0.5460816219 0.8784064869 0.8677451546 0.4096910081 0.2834552598
## [1546] 0.4085328033 0.9571380799 0.3005951219 0.1341873115 0.8143299759
## [1551] 0.4285459111 0.5295730415 0.0329811877 0.1125674734 0.5098676461
## [1556] 0.0414472395 0.9182542295 0.5990887130 0.5280429496 0.8452617409
## [1561] 0.2003664048 0.4987962063 0.7363320230 0.5386725782 0.4195333486
## [1566] 0.0089422939 0.3946523028 0.3974735151 0.6868416494 0.4087671555
## [1571] 0.0680605889 0.5714950745 0.2167015210 0.3397612436 0.5777172925
## [1576] 0.8387259996 0.7547483171 0.9709152625 0.5031681257 0.7930920166
## [1581] 0.2271195393 0.5503640806 0.6635935341 0.0605402965 0.8852462664
## [1586] 0.0448005557 0.9777157308 0.8876351588 0.3356688893 0.8763300935
## [1591] 0.3886644088 0.2657018585 0.0879766924 0.5773335749 0.8806160178
## [1596] 0.5158571767 0.5831938170 0.4157185569 0.4114587852 0.5974223265
## [1601] 0.1786469467 0.1701766120 0.0270719513 0.7237152688 0.4255891569
## [1606] 0.6686517316 0.2085817331 0.6491638154 0.0703760056 0.3270511448
## [1611] 0.4124953637 0.2874184623 0.0455578022 0.2311600600 0.5966673960
## [1616] 0.3313752907 0.0963858325 0.6085496638 0.7928789450 0.1641749197
## [1621] 0.4474000789 0.8266372135 0.5639777826 0.7478763179 0.8111520641
## [1626] 0.4078086877 0.9921880226 0.1734955385 0.1397057230 0.7156575123
## [1631] 0.0595163185 0.0040899221 0.9551282246 0.1648605180 0.2958495833
## [1636] 0.8095702590 0.5628564044 0.9317555684 0.1103402572 0.6847051733
## [1641] 0.1297502650 0.9228476570 0.9901199874 0.0868822512 0.4251710724
## [1646] 0.3793456708 0.9141129006 0.8627392989 0.5093342168 0.8421714657
## [1651] 0.8600251967 0.1610259142 0.9725643037 0.8471286565 0.0577246392
## [1656] 0.2067071774 0.7783696440 0.9321495219 0.7073815570 0.4404180708
## [1661] 0.2083764220 0.6540910443 0.3367596468 0.3606012191 0.7611480960
## [1666] 0.6857491437 0.9115612345 0.0701993902 0.5275108321 0.7641384470
## [1671] 0.1040151704 0.2248084983 0.4801789227 0.3838646625 0.9820596399
## [1676] 0.6571590661 0.7514875933 0.5393148246 0.5018762551 0.5879192001
## [1681] 0.7842587948 0.9472468146 0.3805072480 0.1588481450 0.5805230176
## [1686] 0.6441099066 0.2972517152 0.0257967837 0.7831398357 0.9656541931
## [1691] 0.9819134912 0.1836052873 0.9081966684 0.6079248477 0.7336619016
## [1696] 0.3474990030 0.9974826444 0.1265447076 0.8505187538 0.9088707113
## [1701] 0.5358849953 0.4119220255 0.9648029251 0.6368303543 0.6326704143
## [1706] 0.7137909717 0.8736014560 0.2247523848 0.4120885862 0.5087743400
## [1711] 0.6957213714 0.6991840932 0.1134725461 0.7376088617 0.9892674737
## [1716] 0.5257334262 0.6445268295 0.3504046876 0.4720035398 0.0639694898
## [1721] 0.8601541521 0.6989220187 0.8406455353 0.5408019259 0.2397561859
## [1726] 0.1054506941 0.4448640099 0.9338170789 0.0130897390 0.3749129002
## [1731] 0.2323768917 0.9036841610 0.3421406183 0.1475075866 0.7693233116
## [1736] 0.0251512067 0.1591051099 0.2375882062 0.0436470849 0.9585629783
## [1741] 0.4843318616 0.9745471928 0.4139193300 0.0412028946 0.2181435036
## [1746] 0.0164510425 0.4953999383 0.5878229001 0.2066139570 0.9241495421
## [1751] 0.6059115892 0.0811111352 0.6356641675 0.6109295656 0.5668879691
## [1756] 0.8726413257 0.0136542368 0.5018579641 0.5885806157 0.9594113276
## [1761] 0.4977866664 0.9128911724 0.0476227507 0.3171867300 0.3819295898
## [1766] 0.5159464878 0.5546574343 0.0246101023 0.5029267835 0.9097023908
## [1771] 0.1963950184 0.1476124453 0.5567427206 0.9368151735 0.2631992339
## [1776] 0.4542685807 0.5812827158 0.7456735803 0.0133004530 0.4450819105
## [1781] 0.3026435068 0.4217110127 0.0918348740 0.7971260723 0.3898946560
## [1786] 0.2552333946 0.7765481473 0.9242468166 0.7988445748 0.6626394116
## [1791] 0.4459811063 0.8468348430 0.1420810568 0.9853841502 0.3929783814
## [1796] 0.0485980458 0.7256115621 0.6595553322 0.4422808780 0.2846148714
## [1801] 0.1790575126 0.5906953899 0.9111607136 0.7107668419 0.1619878420

```



##	[1806]	0.3169671339	0.9362225227	0.9860100560	0.0531778270	0.4617860934
##	[1811]	0.4198137129	0.6229432797	0.5078159629	0.1325085575	0.1232744227
##	[1816]	0.3544265529	0.4286289664	0.1761869031	0.4650998260	0.3362811731
##	[1821]	0.8809725443	0.6761461324	0.9991612038	0.1871860713	0.6898812940
##	[1826]	0.8597585793	0.4587270373	0.3686291139	0.7746276673	0.3021685822
##	[1831]	0.3699093986	0.1979209100	0.3981161157	0.9002277586	0.9883975264
##	[1836]	0.3498223224	0.5934466651	0.6198833600	0.6352017216	0.2996127590
##	[1841]	0.8837412203	0.3683349617	0.2845612479	0.8463466434	0.5807383207
##	[1846]	0.8147503463	0.5716731589	0.9264535547	0.4458897595	0.0710140836
##	[1851]	0.7724465548	0.7612894591	0.5316118598	0.4578249198	0.6585208234
##	[1856]	0.4073552419	0.4141883589	0.8689369422	0.0056276535	0.1184453039
##	[1861]	0.9275739141	0.9854070473	0.7117793804	0.3914205664	0.0433037632
##	[1866]	0.0836862138	0.5653261091	0.2412421448	0.0413594542	0.9328582304
##	[1871]	0.3175816929	0.7404389408	0.2796729286	0.3549737377	0.9304077307
##	[1876]	0.6626325979	0.0101468763	0.3833148969	0.0768940971	0.3288089890
##	[1881]	0.0819335685	0.9123370391	0.7922738658	0.2922105812	0.0685955163
##	[1886]	0.4401036239	0.4277967851	0.5270630913	0.0368181254	0.1392532156
##	[1891]	0.9953505764	0.3295262458	0.0917607236	0.4858697856	0.7511774931
##	[1896]	0.6642693406	0.2415306182	0.6055096357	0.7767268350	0.8598771209
##	[1901]	0.9009914068	0.8260606979	0.9968706854	0.1855935518	0.5812430380
##	[1906]	0.3323771049	0.7277051973	0.1853558756	0.0645427247	0.3599459932
##	[1911]	0.9752892703	0.0611787911	0.4234933147	0.7450031318	0.1308288552
##	[1916]	0.8380471977	0.7887886139	0.3942384728	0.9770785972	0.3455824328
##	[1921]	0.1945135280	0.0987778720	0.8202266336	0.1950368750	0.5857121302
##	[1926]	0.3797391656	0.5048600924	0.8136680668	0.1140079142	0.6648577647
##	[1931]	0.6488147269	0.6155001166	0.0972759819	0.9200939651	0.5889265268
##	[1936]	0.2773542577	0.3907907807	0.9690318714	0.1425151358	0.7009841166
##	[1941]	0.3518051380	0.8792249735	0.6880043301	0.6753099607	0.9754963038
##	[1946]	0.9190098284	0.7653038501	0.0077484822	0.3857589792	0.0065822462
##	[1951]	0.6445953680	0.2429938955	0.5423471924	0.7914326653	0.5041635521
##	[1956]	0.5203012700	0.2175580335	0.1207686533	0.2439012395	0.6535976080
##	[1961]	0.0831828746	0.4091184250	0.5933624255	0.1792290041	0.6266770457
##	[1966]	0.8201155254	0.8793787370	0.7210948146	0.9656930467	0.7747418439
##	[1971]	0.8120908639	0.2512748771	0.2389009534	0.0782138809	0.1237715632
##	[1976]	0.7931133409	0.5321472342	0.1054740043	0.4324546610	0.7373867443
##	[1981]	0.0008829747	0.4736312204	0.1893208537	0.0816344153	0.6493497534
##	[1986]	0.6898897776	0.1906514578	0.2032464772	0.5356211938	0.1623311492
##	[1991]	0.2429335386	0.0985390978	0.6450677095	0.9338335183	0.7623308351
##	[1996]	0.5270162906	0.1384910891	0.1174019338	0.2856116549	0.3665946217
##	[2001]	0.1102640910	0.7205008238	0.2967128366	0.0069030726	0.0883886431
##	[2006]	0.1376556837	0.0051903324	0.3426075817	0.7132461501	0.7093188018
##	[2011]	0.7916902464	0.8183931797	0.9148613363	0.2121070701	0.7187089374
##	[2016]	0.5489259432	0.6037868945	0.4438953355	0.3226697370	0.6356813531
##	[2021]	0.8231345680	0.9702885783	0.9339602211	0.8634558424	0.2824298283
##	[2026]	0.1083395364	0.6289718615	0.3520139525	0.1108449518	0.8197020843
##	[2031]	0.5257849232	0.6004413862	0.2094452806	0.3925597377	0.9366243370
##	[2036]	0.6922742892	0.8613871204	0.9421246010	0.6961172481	0.5764694351
##	[2041]	0.9014642572	0.8365266715	0.9009857261	0.8152958988	0.8199899966
##	[2046]	0.5643904717	0.0256331732	0.7423655787	0.7802882888	0.5701415794
##	[2051]	0.1991874894	0.8435477553	0.3715727510	0.6757286051	0.5505914967
##	[2056]	0.1983217175	0.3258285518	0.5243814569	0.7390797717	0.3380810165
##	[2061]	0.0649822416	0.9230697951	0.4891500781	0.3849699086	0.7605234529
##	[2066]	0.2027007873	0.1098497240	0.3572029251	0.7157340953	0.8498885882
##	[2071]	0.3923970917	0.4526519030	0.2882162011	0.7405357220	0.4192367205

```

## [2076] 0.9515859488 0.7006483122 0.4671362734 0.5456762179 0.7840081342
## [2081] 0.3609555389 0.4109718278 0.7761515403 0.0577112369 0.5185464584
## [2086] 0.4976022332 0.4231467630 0.3339607631 0.7050127338 0.8125968110
## [2091] 0.4907127472 0.8287907221 0.5312655690 0.7180464012 0.7385904122
## [2096] 0.5249253528 0.7210635532 0.5092042599 0.2380287220 0.2454399982
## [2101] 0.3272413453 0.6342090021 0.6566757412 0.7382431773 0.4872448341
## [2106] 0.3657028881 0.8812629955 0.3260722672 0.8702378800 0.6938862109
## [2111] 0.0049088303 0.5880164971 0.0386821952 0.9352041150 0.9530351145
## [2116] 0.8551547751 0.6656562817 0.7184076876 0.6613072651 0.1726469483
## [2121] 0.5932482137 0.4656918063 0.5294038467 0.4786781295 0.6448649842
## [2126] 0.6927263823 0.5275664420 0.8354363974 0.0664496888 0.8340901123
## [2131] 0.2408438535 0.9606254706 0.1422830438 0.0078645927 0.9227156884
## [2136] 0.2301133681 0.1579590827 0.7149021758 0.4875600750 0.3756894316
## [2141] 0.5006613386 0.3944801065 0.4441340267 0.9794605414 0.7731875167
## [2146] 0.3677909389 0.7742603437 0.0777791950 0.8822934336 0.8503757745
## [2151] 0.5607104544 0.8813827269 0.6361557429 0.3697823717 0.0607255461
## [2156] 0.3110362195 0.2124022475 0.1588238880 0.7104018934 0.0252352670
## [2161] 0.7692438612 0.5637618819 0.8500802264 0.0218754592 0.7554226769
## [2166] 0.7543729333 0.3520564322 0.2744597982 0.4670698289 0.8153996562
## [2171] 0.5602257134 0.0163330255 0.7973996797 0.4422045739 0.0810683116
## [2176] 0.8827163197 0.1139294408 0.3802455398 0.0941403712 0.5489108748
## [2181] 0.6512819613 0.9202186327 0.6435509197 0.1316298014 0.5691832081
## [2186] 0.2684588147 0.1618211029 0.7622896021 0.0227982434 0.0585330685
## [2191] 0.9104451139 0.3394750347 0.0786361845 0.9510710500 0.4830687611
## [2196] 0.8186809890 0.5247036828 0.3801842694 0.9828456983 0.9771165695
## [2201] 0.1047359109 0.9646959442 0.7677025784 0.9188678197 0.5546202077
## [2206] 0.0252642516 0.2409000482 0.5182206444 0.0124359640 0.7664506268
## [2211] 0.1347654337 0.2706435055 0.0505011151 0.6087414344 0.5981199832
## [2216] 0.7741797123 0.9296750200 0.4901001121 0.8465486782 0.7683153034
## [2221] 0.3625563313 0.6431810511 0.7058349408 0.7503770379 0.8220658080
## [2226] 0.3923211889 0.6842177316 0.8819569717 0.1178014711 0.9769102513
## [2231] 0.5002827661 0.1859252319 0.6018222530 0.6335298036 0.2623792648
## [2236] 0.4735189582 0.6237889076 0.7112409089 0.1088396606 0.3133745831
## [2241] 0.2439103706 0.4782437523 0.8470230079 0.8238668792 0.7116372001
## [2246] 0.7009709578 0.4907219164 0.1287867278 0.6302981814 0.9895069528
## [2251] 0.7162414979 0.8636409348 0.5656455311 0.7540373617 0.2539525077
## [2256] 0.3357793076 0.9382816056 0.1759132871 0.4533352330 0.0315542293
## [2261] 0.3681595566 0.6583800011 0.6523459195 0.8225595595 0.3285423113
## [2266] 0.4209373093 0.3057993274 0.9874884439 0.0130941602 0.3000756785
## [2271] 0.2978798435 0.5716705883 0.4820414999 0.3014807284 0.2935953737
## [2276] 0.0656788283 0.3019978886 0.9749140878 0.5336822733 0.4041898066
## [2281] 0.4775233440 0.5571256439 0.1433297804 0.9954408741 0.6051050991
## [2286] 0.3933318729 0.9304478620 0.2662617007 0.8062308749 0.9363642677
## [2291] 0.7921563046 0.7886477427 0.6896685820 0.8299147598 0.8617264860
## [2296] 0.6206121880 0.7945674952 0.6049684411 0.2668203645 0.3907712333
## [2301] 0.5070272112 0.1750227549 0.0278195228 0.6131987067 0.6364836190
## [2306] 0.7681703149 0.1421914450 0.7930320038 0.2294904831 0.9418214374
## [2311] 0.7610443636 0.0666654866 0.1677412498 0.6983014847 0.4968835189
## [2316] 0.9122801377 0.1368551520 0.5451541968 0.3399233486 0.8884059563
## [2321] 0.5140230191 0.2542514506 0.0794144090 0.3368945960 0.1970668420
## [2326] 0.3770067535 0.1287343854 0.1526593400 0.3563078330 0.6403143185
## [2331] 0.6108618494 0.5133030754 0.8479950774 0.7624250512 0.4875715290
## [2336] 0.6756042368 0.0846190198 0.7700990999 0.5867017125 0.3674741256
## [2341] 0.9191186863 0.3086275623 0.8288564588 0.0646358356 0.3189023530

```

## [2346] 0.2389043231 0.3349391665 0.3530162147 0.0553459909 0.4581590323  
 ## [2351] 0.6522009662 0.8735726004 0.9501476881 0.6906343542 0.9148308896  
 ## [2356] 0.1353631844 0.1869228989 0.3408945018 0.1402682989 0.1214576394  
 ## [2361] 0.3439879167 0.3821419341 0.8129984010 0.6609569123 0.3406709210  
 ## [2366] 0.6716711064 0.6355676774 0.0403896927 0.8849662205 0.8974352544  
 ## [2371] 0.9302099296 0.4827076858 0.9687002586 0.5560430896 0.0256658008  
 ## [2376] 0.9313152740 0.3238042061 0.2705520205 0.4640685683 0.2715473645  
 ## [2381] 0.0251530378 0.5513996326 0.0730842389 0.9618373200 0.3280815911  
 ## [2386] 0.1904488026 0.3160963628 0.2471107053 0.7819860126 0.2723512592  
 ## [2391] 0.1670622832 0.0199774913 0.6855174826 0.6669516680 0.2770879934  
 ## [2396] 0.4052125352 0.0543789013 0.9175761868 0.0629879162 0.6681488556  
 ## [2401] 0.9477370789 0.6384718822 0.2429758657 0.6574916607 0.8876596118  
 ## [2406] 0.4012516964 0.6487269526 0.5041721349 0.2341069501 0.7739902570  
 ## [2411] 0.0858512364 0.8851536017 0.8418250884 0.7860163060 0.8559647700  
 ## [2416] 0.7967845676 0.5906742162 0.4074880775 0.4414570859 0.8412308830  
 ## [2421] 0.0104953342 0.6848840509 0.2433163933 0.1733214571 0.7142130367  
 ## [2426] 0.0582076549 0.0811824126 0.4679750794 0.7693411806 0.2439123595  
 ## [2431] 0.8266666549 0.8409759862 0.4259453664 0.4965620363 0.6055863111  
 ## [2436] 0.4079653776 0.8579566422 0.8542541302 0.6396036110 0.4390471454  
 ## [2441] 0.3262359324 0.5577750371 0.8166667287 0.5533691997 0.6460104316  
 ## [2446] 0.6092837021 0.7476527296 0.0941899664 0.0308104361 0.0548642424  
 ## [2451] 0.6690388000 0.5387097923 0.2021444710 0.6128667942 0.9872288108  
 ## [2456] 0.4651103776 0.1508274259 0.1976294572 0.5090184821 0.3210384219  
 ## [2461] 0.4992058859 0.5124832807 0.1153269746 0.7654807676 0.9101821729  
 ## [2466] 0.2563484535 0.9597516406 0.0583511666 0.4430436986 0.4207387764  
 ## [2471] 0.4275935692 0.1401335880 0.5181416970 0.5917641729 0.8426719897  
 ## [2476] 0.4866609848 0.2278245307 0.2592572666 0.2728470984 0.6812222119  
 ## [2481] 0.9023942360 0.5373900422 0.0884421718 0.3882818406 0.2302127460  
 ## [2486] 0.1737206793 0.2961600577 0.0649614979 0.4583844057 0.4301394890  
 ## [2491] 0.8628293704 0.2003899668 0.8554752784 0.3244584758 0.6460051898  
 ## [2496] 0.2967862778 0.9818300158 0.0983665015 0.0912483560 0.2164516489  
 ## [2501] 0.6201536915 0.1147876701 0.8865065707 0.1789944319 0.7622554246  
 ## [2506] 0.2060086162 0.0752931766 0.8412187510 0.4335202571 0.3908110904  
 ## [2511] 0.2907592615 0.3194549548 0.1886110501 0.2568124374 0.6807696303  
 ## [2516] 0.6914861575 0.9951044250 0.0939570326 0.2475862488 0.1604970988  
 ## [2521] 0.2198384350 0.8985884940 0.7532871920 0.5197226927 0.1577057789  
 ## [2526] 0.9879416439 0.5820989386 0.3613853428 0.4296783246 0.5748723626  
 ## [2531] 0.0660115176 0.3500543323 0.6185561725 0.7850624954 0.3578878011  
 ## [2536] 0.5849208394 0.3900116642 0.3433763520 0.9973037927 0.5230280442  
 ## [2541] 0.6414535966 0.3594529412 0.6964403911 0.4746331023 0.8153141647  
 ## [2546] 0.0670070037 0.1888405620 0.3156586003 0.0276439357 0.9708405849  
 ## [2551] 0.2757569211 0.4426589930 0.4247066194 0.8353348857 0.5765734907  
 ## [2556] 0.0095809750 0.7011931265 0.9620862969 0.5768254786 0.4956430297  
 ## [2561] 0.4563343010 0.8428867075 0.0024990567 0.8988546516 0.9415263098  
 ## [2566] 0.8795595489 0.1567265642 0.1514232859 0.5121281457 0.4323912519  
 ## [2571] 0.6101001260 0.3275526098 0.1663813555 0.1212573951 0.7732944861  
 ## [2576] 0.3203430313 0.9573748143 0.8885184800 0.7051256626 0.3009934848  
 ## [2581] 0.1289099950 0.4532850172 0.6121590303 0.6007842944 0.7368789064  
 ## [2586] 0.3442103128 0.6248794818 0.7865671550 0.0174258215 0.8580789727  
 ## [2591] 0.6059252714 0.2324568035 0.6499326575 0.8937213262 0.6152182014  
 ## [2596] 0.7514224603 0.2744507616 0.2289464930 0.6125895088 0.8120277144  
 ## [2601] 0.8057150569 0.2060189642 0.2487873395 0.7938919622 0.5604144990  
 ## [2606] 0.7187596209 0.8605236090 0.4007850883 0.9235614864 0.7854002042  
 ## [2611] 0.6640342718 0.4979830397 0.7336151655 0.6834952086 0.0970644806

```

## [2616] 0.9585100643 0.2730773153 0.7373882064 0.1784390117 0.8779613075
## [2621] 0.7568749951 0.0421923885 0.0987048688 0.5181334747 0.4052989012
## [2626] 0.2074884758 0.5748625781 0.9015307291 0.3257707893 0.7149519918
## [2631] 0.8804500000 0.2272581900 0.1872135921 0.5641019209 0.7368135500
## [2636] 0.4962118980 0.0522503943 0.8985701704 0.2021327203 0.0340124671
## [2641] 0.0274910837 0.7643858214 0.1555534009 0.3124056421 0.7790587410
## [2646] 0.1989922138 0.3985361504 0.3848465836 0.7725655559 0.0877706291
## [2651] 0.4149975123 0.4367611657 0.0325421798 0.3753395534 0.9289906686
## [2656] 0.8253345293 0.4928852888 0.6619968927 0.5321625597 0.8106878006
## [2661] 0.7772920467 0.5306757913 0.0585065590 0.1274800043 0.9047800649
## [2666] 0.8059598663 0.2973995454 0.3917376361 0.0642654905 0.3624077240
## [2671] 0.1818011328 0.1048378582 0.5751096141 0.8135161392 0.5079800932
## [2676] 0.4426608829 0.9419795089 0.8625277248 0.1159114008 0.9389260299
## [2681] 0.6586352100 0.1904388588 0.1961853029 0.9964591724 0.7137921326
## [2686] 0.7283771169 0.5439983285 0.9619714944 0.9961072317 0.2601932603
## [2691] 0.0066626462 0.2192493167 0.2946310010 0.0866370387 0.0571847945
## [2696] 0.3824660007 0.1707344465 0.2969882601 0.6260183184 0.4081190541
## [2701] 0.3821007566 0.4186810093 0.5549948831 0.5281345352 0.7673017956
## [2706] 0.6900435030 0.4913430498 0.4322185031 0.8047605895 0.3087909098
## [2711] 0.3446267382 0.4916893080 0.4033053711 0.5161333730 0.2753429154
## [2716] 0.1517276580 0.3903121152 0.5996368466 0.3947328379 0.3184744962
## [2721] 0.8982311673 0.8098113887 0.1996660537 0.9634547390 0.4210214986
## [2726] 0.7230235077 0.8074232712 0.7065933457 0.3322246073 0.9798013283
## [2731] 0.4920481636 0.2812305280 0.2556831908 0.3040698475 0.8848842300
## [2736] 0.8793655713 0.8766802139 0.5400768348 0.1718825703 0.0861158909
## [2741] 0.8629640028 0.1456045448 0.8458569658 0.0564792657 0.1236500238
## [2746] 0.1558981550 0.0459770421 0.2626088194 0.3325476413 0.3019652073
## [2751] 0.5597732040 0.1762113925 0.3306401121 0.8945205524 0.7125359694
## [2756] 0.8495906411 0.4049099423 0.4911202354 0.0118538407 0.4230774913
## [2761] 0.7020004063 0.3121140113 0.2588656798 0.8207251834 0.3451568742
## [2766] 0.3328273276 0.6055318090 0.4434254050 0.7546111647 0.1774956670
## [2771] 0.9143250628 0.7548656860 0.4668400492 0.8018473400 0.1894868980
## [2776] 0.3828885999 0.7871796051 0.3909628133 0.8653282912 0.4799336550
## [2781] 0.7721215914 0.6352656560 0.6026780476 0.1600428890 0.9999108550
## [2786] 0.7344546899 0.7519748744 0.8062937685 0.5175854564 0.0009497755
## [2791] 0.1344437680 0.7920091064 0.2289073337 0.8877458954 0.9449938803
## [2796] 0.0263002904 0.6129715253 0.1920573379 0.5138459858 0.9899817365
## [2801] 0.2180465214 0.1585559467 0.3761564739 0.9956010207 0.9412323545
## [2806] 0.4486732630 0.3907564269 0.6345732102 0.3339800287 0.2386127583
## [2811] 0.5788749331 0.8794364475 0.9481176685 0.0313527462 0.5753372110
## [2816] 0.8429605306 0.6958718061 0.2609442054 0.6539410120 0.0419907359
## [2821] 0.6945855399 0.9198793122 0.2492906974 0.0492946603 0.2651165396
## [2826] 0.3446727063 0.9424266303 0.6372520358 0.9236207929 0.0062126159
## [2831] 0.8420822275 0.7663095445 0.7466185663 0.2532460294 0.0658285154
## [2836] 0.5694967488 0.1712052005 0.4737936348 0.6774125187 0.0132753087
## [2841] 0.2960987728 0.8531776354 0.6096791316 0.2869361920 0.5934359651
## [2846] 0.5285669085 0.2812623115 0.7181613190 0.3767043043 0.5437849968
## [2851] 0.7174016368 0.5138537570 0.2794741128 0.3774723600 0.5810109583
## [2856] 0.4811475926 0.0436616472 0.3656800963 0.5203149401 0.4930032582
## [2861] 0.6832045951 0.4106829863 0.6216314094 0.5584043288 0.9772567175
## [2866] 0.1490862741 0.9952452687 0.5699589466 0.1855599553 0.2773374667
## [2871] 0.5896739046 0.1217943741 0.1178285983 0.8494872134 0.0952789053
## [2876] 0.7607159137 0.5067751768 0.4690021279 0.4557887245 0.8195244690
## [2881] 0.4684623853 0.4743848881 0.4501682669 0.1550625126 0.3838010569

```

```

## [2886] 0.1133177820 0.9921745175 0.2761959895 0.7749145517 0.5079946991
## [2891] 0.9755375085 0.0576768263 0.4954249792 0.2265356313 0.7243878281
## [2896] 0.8580465167 0.3502167829 0.8059421293 0.3939201287 0.5336357311
## [2901] 0.9433498577 0.0077586472 0.2726967625 0.5064082069 0.3165652166
## [2906] 0.6711995181 0.1048494755 0.0172360644 0.0507055295 0.9972926518
## [2911] 0.4524960856 0.1043173074 0.3318807248 0.3833270124 0.7590817962
## [2916] 0.4801003102 0.8817227947 0.0816266217 0.6586786906 0.9672484027
## [2921] 0.1120983719 0.3610376441 0.4339041196 0.1127305905 0.2174858872
## [2926] 0.8339581448 0.2342851440 0.1554415695 0.6605257958 0.0745522699
## [2931] 0.1038309852 0.2947181731 0.2102871955 0.1918037579 0.8408656253
## [2936] 0.7602080901 0.0774857230 0.0460409684 0.8883996012 0.4910332517
## [2941] 0.0927648861 0.0432382145 0.1422761829 0.1758168124 0.8954165262
## [2946] 0.2019798556 0.4063092700 0.4811262881 0.7123951029 0.4428431844
## [2951] 0.9746709207 0.1829999155 0.4083906063 0.2228551099 0.4213359810
## [2956] 0.9932790207 0.0870175881 0.5097313917 0.0590393983 0.7081214557
## [2961] 0.8482880344 0.9626896538 0.5203086355 0.5869523878 0.2535050597
## [2966] 0.9934613563 0.8248893412 0.0574127187 0.5761074807 0.2990751285
## [2971] 0.8437441741 0.7053350322 0.1250213718 0.4628471654 0.0169559146
## [2976] 0.9797472631 0.3879139206 0.3581104260 0.4546066930 0.4300239271
## [2981] 0.1422622832 0.7472241463 0.8831527973 0.1152400094 0.3960795477
## [2986] 0.6025826001 0.7818474829 0.2433857230 0.4524175732 0.0323547230
## [2991] 0.2536515398 0.5708307201 0.4443745181 0.7268456965 0.5113712238
## [2996] 0.5050010227 0.5564187709 0.3000405265 0.9955228399 0.6839944789
## [3001] 0.7309655385 0.5793024371 0.5356671607 0.0376516201 0.9308619468
## [3006] 0.0488035545 0.0920747605 0.8858163243 0.8260118117 0.3093141237
## [3011] 0.1356786078 0.6169604481 0.6809169241 0.9121313654 0.2592084782
## [3016] 0.1482558143 0.6479235990 0.5434258645 0.0132654212 0.3496125529
## [3021] 0.2788840941 0.9321975660 0.3643470714 0.6777390938 0.4234740590
## [3026] 0.4183783835 0.9473918629 0.7554181225 0.0253526760 0.1575928277
## [3031] 0.0380844024 0.4170339912 0.9075729174 0.8322567814 0.2072547775
## [3036] 0.5017500237 0.4093457867 0.6075002058 0.0665687972 0.8033236262
## [3041] 0.5592248435 0.9040494629 0.7440883639 0.2700895218 0.5287234377
## [3046] 0.3033406845 0.3368786164 0.9409883972 0.5267042539 0.7521792066
## [3051] 0.1943009191 0.5138509581 0.3767793304 0.0619037511 0.0872173541
## [3056] 0.7903469071 0.9726695891 0.9691103689 0.3675177072 0.2526756269
## [3061] 0.0932287565 0.6730627023 0.7129850847 0.7415431374 0.2562560105
## [3066] 0.7735876076 0.3360347277 0.4933327010 0.1793704300 0.4397296427
## [3071] 0.5459179047 0.9274316789 0.1771121419 0.1476307338 0.4503192715
## [3076] 0.7585606891 0.3667100969 0.7345169650 0.5075946787 0.6663753099
## [3081] 0.9824265052 0.4720368779 0.8539965049 0.5984487708 0.3832535422
## [3086] 0.2137380705 0.4053919852 0.9882568267 0.3775327330 0.5954324925
## [3091] 0.6769784599 0.9980113472 0.3377678917 0.9118639587 0.0429772432
## [3096] 0.2489253109 0.6389270832 0.9030509331 0.6027424886 0.8243840028
## [3101] 0.8432602645 0.0106167061 0.4718544282 0.5611721071 0.4537614346
## [3106] 0.3773423027 0.7901535257 0.5186811640 0.8954940586 0.5329150121
## [3111] 0.6556198200 0.9119176060 0.5014932760 0.8991452644 0.5612672841
## [3116] 0.9580305107 0.0172920447 0.3261380686 0.7572716406 0.5520402883
## [3121] 0.2480148437 0.5057772410 0.7512425090 0.5690510402 0.6212996836
## [3126] 0.1186345044 0.1360839654 0.7568117082 0.7458875715 0.3182665763
## [3131] 0.3878706893 0.8316598872 0.9576025370 0.8318334145 0.5414234849
## [3136] 0.9156441075 0.2651695085 0.5350079554 0.2518632484 0.9273302359
## [3141] 0.4824959815 0.6037443301 0.2672142804 0.6051449799 0.3687341095
## [3146] 0.8077422222 0.5694436767 0.0153415077 0.8210058439 0.1945844157
## [3151] 0.1416174545 0.1236051429 0.5647210287 0.0003886523 0.0788985658

```

```

## [3156] 0.8101284713 0.3992790524 0.8102882543 0.9311823915 0.8968329124
## [3161] 0.9130743301 0.9815901889 0.0503533086 0.9094693395 0.5902594940
## [3166] 0.7125076027 0.5496079171 0.1486168146 0.7252651115 0.6320005242
## [3171] 0.8700692511 0.8130595136 0.2720238002 0.0827472723 0.7151992230
## [3176] 0.2962475108 0.8990566911 0.0501291676 0.5468858680 0.2924986542
## [3181] 0.5839940043 0.5502419725 0.4864779644 0.5696506255 0.9333318857
## [3186] 0.2303556575 0.7373299021 0.4651282989 0.6172573595 0.5603455119
## [3191] 0.1999760825 0.0418980239 0.8787558646 0.6205013612 0.0860493178
## [3196] 0.3021928460 0.8838736878 0.2645962187 0.2186744500 0.9749728712
## [3201] 0.0697154594 0.8986890619 0.7524226257 0.6099946512 0.5402886738
## [3206] 0.5338485470 0.3960689607 0.3493667638 0.2840289287 0.0524230574
## [3211] 0.9073244267 0.2807932866 0.6413934290 0.3325864969 0.1790783686
## [3216] 0.3463322974 0.3209043140 0.7054051222 0.2271774522 0.6216985880
## [3221] 0.3313954890 0.2125708758 0.9741152746 0.2498905665 0.5638302471
## [3226] 0.3056112181 0.7759552446 0.1868371453 0.1308471851 0.7687018837
## [3231] 0.1145096675 0.1584592742 0.6804589065 0.4157385589 0.7706382843
## [3236] 0.5180537830 0.8961131603 0.2730596284 0.7212360898 0.9405192682
## [3241] 0.2097130002 0.4948501921 0.0131541971 0.1947096174 0.0984552021
## [3246] 0.4689777557 0.6923955214 0.7053861681 0.6471253016 0.3758173747
## [3251] 0.0558953914 0.8736278246 0.5263776814 0.4260191310 0.0265120341
## [3256] 0.3929816816 0.6873928780 0.5826436136 0.8769549547 0.0283274377
## [3261] 0.4001545754 0.9062800564 0.1912511376 0.9108131181 0.5261265679
## [3266] 0.5963171728 0.4491088378 0.4700742685 0.0907765344 0.7450693526
## [3271] 0.0373665624 0.8867510618 0.7414397263 0.2730676738 0.6583269823
## [3276] 0.4906345845 0.4547723084 0.0045201523 0.8815698987 0.7463253164
## [3281] 0.9244611364 0.0337553825 0.8268259387 0.9940317281 0.4561484840
## [3286] 0.0423374255 0.5265451757 0.8303746430 0.0719569112 0.3985508236
## [3291] 0.7254300902 0.5810483708 0.1198715223 0.1394102771 0.3797425159
## [3296] 0.6817347623 0.4693945575 0.2799304319 0.8745078613 0.8684286377
## [3301] 0.5436748422 0.0579877379 0.0923824499 0.9518705170 0.7742991717
## [3306] 0.8713630214 0.1873501208 0.0352561776 0.9615640689 0.3321493279
## [3311] 0.8086540579 0.4682462509 0.4574505635 0.4235926835 0.9644033207
## [3316] 0.4077415649 0.7966333295 0.6030799007 0.4195391134 0.8669326284
## [3321] 0.4411479830 0.5072762500 0.0773640973 0.5394307458 0.2004608158
## [3326] 0.5537413803 0.1789088046 0.4135752135 0.9558928613 0.5101553775
## [3331] 0.2290534868 0.9938592765 0.5672298233 0.6358280003 0.8486510078
## [3336] 0.7972967787 0.0772424717 0.3767250281 0.0826153128 0.5385687588
## [3341] 0.1754389482 0.6301652378 0.5301239427 0.8450948303 0.0400605531
## [3346] 0.1024358699 0.6634874558 0.9510062379 0.0366551967 0.3791106001
## [3351] 0.9759392401 0.9358535327 0.9609950680 0.1982491505 0.3555449596
## [3356] 0.6293965715 0.1382154115 0.8295935267 0.6251695977 0.7481401078
## [3361] 0.5499043101 0.7583190971 0.5372186477 0.4385768322 0.3854682075
## [3366] 0.0169829444 0.7208191190 0.3435566936 0.1164263340 0.4262154010
## [3371] 0.3815274059 0.8517819830 0.9780254299 0.3972391543 0.7429228368
## [3376] 0.9952659497 0.3542085193 0.3078249889 0.0306792636 0.4819433448
## [3381] 0.4131440894 0.0693053699 0.9157326078 0.0530846674 0.8007985765
## [3386] 0.6268786652 0.1085188243 0.1944187572 0.8042646494 0.3803966596
## [3391] 0.2644118305 0.0334305876 0.1649393832 0.7145030517 0.7101197396
## [3396] 0.3365807535 0.3523872152 0.7507162718 0.2318711140 0.1263299570
## [3401] 0.6406233979 0.8901314568 0.3642478416 0.1432037855 0.9678708495
## [3406] 0.0309104901 0.1892945191 0.8116579889 0.1717890694 0.3630115441
## [3411] 0.8921917678 0.7198242268 0.4705449221 0.7919633169 0.1853241007
## [3416] 0.1764094975 0.1208286936 0.6674622939 0.8089296737 0.3148209862
## [3421] 0.0679919908 0.9904039511 0.7001361663 0.6435307990 0.9617072247

```

```

## [3426] 0.9685681672 0.5174870665 0.7455234081 0.7168993138 0.9426448360
## [3431] 0.0830784887 0.2147403691 0.9762484370 0.9731050106 0.0236373889
## [3436] 0.3653737450 0.5604930352 0.1482693360 0.5166239378 0.9958725761
## [3441] 0.3902936303 0.2527247668 0.9741624233 0.8928030941 0.8121836370
## [3446] 0.2252595091 0.3800988753 0.6298452957 0.3103346573 0.3840749988
## [3451] 0.2510603404 0.9243644822 0.5213337926 0.1977602481 0.8517202101
## [3456] 0.4604887906 0.8955578912 0.1704399297 0.4510682439 0.7593886737
## [3461] 0.1927625285 0.0123111594 0.1161686405 0.6088262002 0.1191643456
## [3466] 0.9474274562 0.9404345558 0.1313698213 0.4469234445 0.5194483633
## [3471] 0.7563354700 0.8580617993 0.2186650099 0.5744080266 0.1693792924
## [3476] 0.4343739028 0.4529873311 0.6038092688 0.9693169326 0.5627614713
## [3481] 0.3806148174 0.1921551806 0.3107901215 0.1827612353 0.2169308651
## [3486] 0.6656652379 0.6603891730 0.7636427267 0.7676358796 0.1661796413
## [3491] 0.8679464816 0.3295964284 0.4084054752 0.8040886738 0.8947375741
## [3496] 0.1208064980 0.8319114697 0.7913027005 0.9331119101 0.2084471635
## [3501] 0.7567268898 0.0128224244 0.6983155638 0.2504394557 0.9902064304
## [3506] 0.3001363644 0.5144935033 0.4327595832 0.8647402249 0.4194006848
## [3511] 0.9594155135 0.9718202398 0.6520482310 0.2546921539 0.8736911764
## [3516] 0.7679769316 0.2136219400 0.1959446483 0.2539931000 0.6175688988
## [3521] 0.9998266577 0.5938969572 0.0417367486 0.7169843484 0.3018448163
## [3526] 0.1658268697 0.4506494932 0.3390896272 0.3091900584 0.9988573102
## [3531] 0.0982042510 0.8800059411 0.9911402835 0.7202102272 0.9273004305
## [3536] 0.9279541126 0.0124058020 0.4502398827 0.8374790533 0.9476538597
## [3541] 0.8499593557 0.4611288688 0.7391338512 0.7995235119 0.5711898755
## [3546] 0.9088669866 0.0868162642 0.8199064456 0.2900543743 0.7149179434
## [3551] 0.8582781230 0.8267698465 0.3947190653 0.3601447143 0.0293036128
## [3556] 0.5065635606 0.4628648467 0.5707830971 0.9848867119 0.9944305786
## [3561] 0.4044574068 0.6404968041 0.1649019626 0.0397663541 0.6065854668
## [3566] 0.2532037375 0.0409420974 0.9400003404 0.5503319733 0.1047847655
## [3571] 0.3367143131 0.9527873333 0.2624245485 0.6350665711 0.3646670253
## [3576] 0.3093300038 0.5401183043 0.6271919401 0.9181921144 0.1077089541
## [3581] 0.6234557414 0.7667524661 0.6184355581 0.7409641216 0.8418432154
## [3586] 0.8785062675 0.5287201698 0.6651576651 0.5090230074 0.7496923318
## [3591] 0.0831150333 0.3431949296 0.5416266771 0.7146315532 0.2064414810
## [3596] 0.1485508531 0.8745480983 0.2300706280 0.6950620168 0.6374316716
## [3601] 0.0859140945 0.3992444036 0.4858835203 0.2157696133 0.1139562189
## [3606] 0.3688498607 0.9732243019 0.2539441190 0.0314265754 0.0600191061
## [3611] 0.4036237305 0.3238914030 0.6605536456 0.1797837077 0.2257775929
## [3616] 0.1958863722 0.2612417258 0.1715654207 0.7168937627 0.3752132983
## [3621] 0.3150287172 0.6777920281 0.4809792291 0.5068739787 0.9762814752
## [3626] 0.2111177915 0.8103124252 0.3960622925 0.7461803925 0.3997511861
## [3631] 0.0241229855 0.9206299213 0.1511722414 0.0153673648 0.1088536487
## [3636] 0.6614166630 0.3301111364 0.8190927042 0.1214697853 0.0596597506
## [3641] 0.3555580415 0.3684575767 0.6022752577 0.0238913722 0.7650898835
## [3646] 0.6181796517 0.5821533507 0.7114029130 0.9661943857 0.7763321190
## [3651] 0.9499700585 0.5452186316 0.9324647706 0.4135461506 0.4030091058
## [3656] 0.0358243689 0.3644772743 0.4330169113 0.6735901694 0.3363679230
## [3661] 0.6566972592 0.3283282555 0.8810036227 0.5886215731 0.0122923586
## [3666] 0.1863852994 0.2871294006 0.7704876359 0.0023679037 0.4477629361
## [3671] 0.4239157121 0.5305755388 0.1327214610 0.6939686443 0.8071521781
## [3676] 0.0703062893 0.6373183713 0.7634000425 0.3945456864 0.6237496844
## [3681] 0.5143620930 0.5610729834 0.3240468065 0.4533556529 0.8280865862
## [3686] 0.8112254674 0.4304874433 0.2116972259 0.0605229701 0.9623568166
## [3691] 0.8731577703 0.9556924253 0.5762366581 0.8146092914 0.0197656119

```

```

## [3696] 0.7557117913 0.0525443309 0.7457378476 0.1711346624 0.6346358081
## [3701] 0.2674240050 0.1533210292 0.6587522532 0.0024634818 0.2805697641
## [3706] 0.4952178261 0.0202935996 0.5454745389 0.3281434871 0.0893455306
## [3711] 0.2876582685 0.1256376374 0.7679803787 0.3735006091 0.1863671740
## [3716] 0.0356062924 0.6126300667 0.7124205744 0.9893381058 0.9204639464
## [3721] 0.0809713986 0.6695267119 0.2489068770 0.9280379647 0.8562657228
## [3726] 0.3280684826 0.1935961074 0.2415016205 0.8142668029 0.6316194551
## [3731] 0.6095551460 0.0553829457 0.5846724727 0.3989151621 0.4691502836
## [3736] 0.2909750211 0.5172021883 0.2321360207 0.0030843145 0.4926401788
## [3741] 0.3904952582 0.3674025173 0.1798329753 0.8400791826 0.6059470405
## [3746] 0.4163919487 0.7796981674 0.2625163161 0.9444993981 0.7474065898
## [3751] 0.4006529612 0.1903823269 0.0961358150 0.9320468554 0.6049279700
## [3756] 0.2733591783 0.1997669279 0.6155038650 0.7835197825 0.8592444422
## [3761] 0.5577541483 0.6190679142 0.8943534280 0.9275051771 0.1392163662
## [3766] 0.7535825588 0.8809589185 0.4647741279 0.2489514546 0.1898941148
## [3771] 0.1759228275 0.7190530019 0.9341218277 0.5973303935 0.8846205996
## [3776] 0.3820957941 0.8791237861 0.7639158299 0.9092389175 0.2218120059
## [3781] 0.9718856501 0.4990625759 0.3204455494 0.6567484399 0.9789316946
## [3786] 0.5896614578 0.8576951323 0.0619732444 0.0351137608 0.8344235517
## [3791] 0.2182881710 0.7847734002 0.6898315826 0.5226537372 0.9849907209
## [3796] 0.9202288925 0.7979262632 0.3717079781 0.7033144375 0.2027373005
## [3801] 0.0560135103 0.2645438921 0.9856687679 0.9859409020 0.8752040567
## [3806] 0.1700842883 0.5921189442 0.2259090353 0.5643107498 0.8152724486
## [3811] 0.2083662245 0.3463805841 0.1138976677 0.7831786549 0.1564030279
## [3816] 0.0248653093 0.9985407777 0.7278195916 0.8569413253 0.7733104390
## [3821] 0.2871526309 0.9573281227 0.5201355626 0.7607217363 0.4057239098
## [3826] 0.1326176581 0.7309852782 0.7512020398 0.0211352738 0.4127802862
## [3831] 0.9606141344 0.1593187414 0.0031830587 0.5592889462 0.2311912482
## [3836] 0.6050200134 0.0287571861 0.7773063935 0.0019743922 0.4039548992
## [3841] 0.0223088178 0.2602835776 0.0691776456 0.9742373614 0.7272664707
## [3846] 0.3802404607 0.7783852114 0.4781112214 0.4259261177 0.7995830724
## [3851] 0.0971612473 0.3303281944 0.8099832976 0.1412062337 0.0560983225
## [3856] 0.0907933999 0.3269093499 0.0461418842 0.7059545298 0.8432140814
## [3861] 0.0657787153 0.6047692621 0.7303871642 0.7909604327 0.0761261236
## [3866] 0.0250791988 0.4595574243 0.3105227853 0.6396545510 0.1512710832
## [3871] 0.2254229138 0.3407785978 0.2143933002 0.1324599650 0.7756065946
## [3876] 0.1654650190 0.7526255179 0.4571334544 0.0432753580 0.6754453098
## [3881] 0.5063619875 0.5509602946 0.5856164172 0.7357346824 0.5388174040
## [3886] 0.7776621572 0.4112189757 0.2405686210 0.3590369232 0.1908007553
## [3891] 0.0055211110 0.4192793396 0.4685290204 0.4990528984 0.6037643430
## [3896] 0.7670735961 0.1210072182 0.5464138611 0.8842224600 0.4178788568
## [3901] 0.6149535174 0.5508892288 0.3172413646 0.3961726386 0.6804262230
## [3906] 0.3430944968 0.0155359298 0.3301233543 0.3083134048 0.6967474976
## [3911] 0.9869536844 0.9903314314 0.4379258908 0.5032187049 0.4254011262
## [3916] 0.1220583063 0.3443735323 0.7057517675 0.2910249388 0.1102503032
## [3921] 0.1849345682 0.8502393597 0.5277652289 0.7015146399 0.4036264296
## [3926] 0.0231487630 0.2487936759 0.3097947381 0.7203064787 0.0318927499
## [3931] 0.9702123879 0.9747887589 0.5794357250 0.0138390395 0.2988596394
## [3936] 0.7703533703 0.9245025687 0.4905364486 0.8414014012 0.9756455061
## [3941] 0.5466114661 0.1886053856 0.2767057301 0.1759319762 0.0691564712
## [3946] 0.6903966975 0.5244203113 0.9292441464 0.6683860949 0.6041717340
## [3951] 0.6857161858 0.3048371787 0.8380513017 0.9867190132 0.1293646349
## [3956] 0.6427347576 0.7008903419 0.7840293641 0.0411387629 0.6940502193
## [3961] 0.1438004445 0.9090506009 0.1139934218 0.2277974602 0.5026373514

```



```

## [3966] 0.2650329725 0.8063009186 0.0328098614 0.4044698052 0.2469425644
## [3971] 0.5291145036 0.8100628338 0.3088552769 0.7079526147 0.1777029089
## [3976] 0.3180589270 0.3159629779 0.9993858163 0.8191695948 0.9526855874
## [3981] 0.2560690486 0.5804397303 0.4328855477 0.3533084838 0.4547673706
## [3986] 0.6475248316 0.0495904881 0.5048778083 0.2202948310 0.7059509377
## [3991] 0.0685863722 0.5982724378 0.4494614822 0.7700185655 0.8849275394
## [3996] 0.3504353447 0.0738187054 0.8321244768 0.4082946729 0.3574090595
## [4001] 0.3868700092 0.4827671922 0.9391205680 0.1695997863 0.7234406021
## [4006] 0.9996033916 0.3265916520 0.3765335692 0.1524542366 0.2609369743
## [4011] 0.6084365043 0.7132191053 0.0813927305 0.7925572102 0.1787087218
## [4016] 0.3823844561 0.8383216400 0.7461427756 0.3542511901 0.0086802074
## [4021] 0.9230774230 0.2634715548 0.2305838546 0.6054701830 0.1870459664
## [4026] 0.1882418469 0.5841884120 0.9640707801 0.1510788999 0.3347308844
## [4031] 0.4453741211 0.0883567551 0.5112026439 0.9189223137 0.3228144724
## [4036] 0.7736080192 0.3857281321 0.6536617339 0.8201058473 0.3638405868
## [4041] 0.3671421427 0.0508581689 0.1480103108 0.4518674128 0.2470637959
## [4046] 0.3563857592 0.7489381883 0.6243759921 0.9533160647 0.2553407975
## [4051] 0.0753620886 0.0816142805 0.4771543999 0.4555590441 0.8644163349
## [4056] 0.6766617160 0.3400930404 0.9319377942 0.8995040318 0.3347630433
## [4061] 0.5795512491 0.7793131639 0.4251318194 0.6299517931 0.8970859439
## [4066] 0.7953848800 0.0441359674 0.3161447171 0.4710233901 0.8218438732
## [4071] 0.1225363769 0.6178894235 0.7212898840 0.7781016631 0.3521190961
## [4076] 0.6084062548 0.1448136266 0.7589698570 0.8903062246 0.8602271836
## [4081] 0.1200185331 0.5811555239 0.8617400152 0.5094928418 0.1167693629
## [4086] 0.8904784580 0.2175773751 0.0699026152 0.6209812266 0.5015129291
## [4091] 0.0205906889 0.8032854431 0.3834383177 0.2067772744 0.5850346978
## [4096] 0.0360513798 0.4404332121 0.1242457614 0.5057307659 0.8616490158
## [4101] 0.7990815418 0.3420404590 0.6893203170 0.0639190914 0.7221856258
## [4106] 0.9135804242 0.8275463918 0.2853171722 0.5099587931 0.8722057242
## [4111] 0.9764678949 0.8062359936 0.5202969565 0.3721056390 0.1951833834
## [4116] 0.0909381058 0.4086147739 0.4866368844 0.8814075552 0.3607642742
## [4121] 0.5824833361 0.3520901541 0.5915985998 0.8506439443 0.6510502646
## [4126] 0.5296296028 0.2928972872 0.9698286733 0.5278708964 0.1490103514
## [4131] 0.0062791961 0.5956530994 0.5390702663 0.5926660411 0.7725984149
## [4136] 0.7527744682 0.7563545133 0.5148126808 0.3384065723 0.6674379556
## [4141] 0.6556249347 0.9372272417 0.8470454166 0.5096321924 0.8351082762
## [4146] 0.0132936537 0.4816531697 0.4548317066 0.0970629016 0.6113769182
## [4151] 0.2051964181 0.5152147612 0.3815955056 0.8745479277 0.5967679893
## [4156] 0.8497927809 0.6959852630 0.3103497124 0.7403961631 0.8839962875
## [4161] 0.1006312816 0.5698365433 0.3256549111 0.1831218942 0.3651617245
## [4166] 0.2006034354 0.2519335848 0.4989067432 0.2246515548 0.6251249129
## [4171] 0.1435268452 0.1319208316 0.1426570448 0.8199923695 0.1204431038
## [4176] 0.7300453157 0.3757161610 0.6789642358 0.0003480350 0.0618639813
## [4181] 0.1308812021 0.8273357143 0.0691443549 0.1552145454 0.9721303680
## [4186] 0.0030984392 0.9823344716 0.7141730286 0.2181880083 0.3835871894
## [4191] 0.1878495673 0.4969329700 0.6938095163 0.8880820922 0.2869432851
## [4196] 0.5788560154 0.1019366738 0.3240134255 0.4923536575 0.6085984675
## [4201] 0.5869664301 0.5807359767 0.1102942580 0.1886340034 0.2000227300
## [4206] 0.5044154972 0.9944910437 0.7107269194 0.2753908333 0.0381758419
## [4211] 0.6325062536 0.3010230128 0.4624678068 0.5709970332 0.3392888443
## [4216] 0.0759018915 0.7393522606 0.5347638414 0.5701725865 0.6537861781
## [4221] 0.2018263999 0.9925073733 0.2266174385 0.8987431894 0.1078584400
## [4226] 0.1541431055 0.5934653253 0.2066774273 0.1300974124 0.0310146706
## [4231] 0.4693716115 0.0550598604 0.8847617348 0.3950621412 0.2987734118

```

```

## [4236] 0.9317128298 0.3020476206 0.4544892865 0.7428271472 0.0704730239
## [4241] 0.1033990737 0.5275000733 0.4934678578 0.8852199304 0.9889667223
## [4246] 0.8156199461 0.4600374418 0.1215444504 0.8295216657 0.0083056426
## [4251] 0.9381041407 0.6236903681 0.3734834356 0.4632017791 0.4065939492
## [4256] 0.5697534095 0.3102236486 0.2359844979 0.6602361100 0.1968421395
## [4261] 0.3973578222 0.4885094662 0.0477946312 0.0061866761 0.8891231992
## [4266] 0.3106491288 0.4456799088 0.1163266644 0.2738145036 0.0122889638
## [4271] 0.9218517177 0.1462895696 0.2755911007 0.0406317998 0.4971525354
## [4276] 0.9006026886 0.5070187214 0.7830545744 0.6820540351 0.2827432903
## [4281] 0.6653126839 0.6271924753 0.1468733385 0.9352196742 0.4614726141
## [4286] 0.2856594607 0.4022540020 0.1465886910 0.4720637386 0.5691753588
## [4291] 0.7447366801 0.2729343390 0.0414478234 0.7389314772 0.8284866682
## [4296] 0.2332885401 0.8755324677 0.5586419618 0.7648670561 0.6813271534
## [4301] 0.7506390150 0.5959366479 0.2730194120 0.7649896943 0.9895097485
## [4306] 0.1272310078 0.7894235717 0.7782641066 0.7582361152 0.6567137659
## [4311] 0.2443425579 0.5518070581 0.4677520082 0.9670087529 0.9236103999
## [4316] 0.8570207693 0.9065963900 0.7409397294 0.9354354058 0.7050627728
## [4321] 0.6686051459 0.7062850893 0.2179029822 0.2299153067 0.3613224981
## [4326] 0.9108976799 0.2004762214 0.3018338222 0.7419741207 0.7449757899
## [4331] 0.2167173121 0.7446589947 0.1893612897 0.7745090725 0.2237281702
## [4336] 0.2985041734 0.2562309611 0.7380178359 0.9273391317 0.9813529748
## [4341] 0.8250417780 0.7915907842 0.5176181090 0.0555697095 0.9164763105
## [4346] 0.1396681021 0.5076760302 0.0091909565 0.8692595711 0.2926860092
## [4351] 0.3361958980 0.7520514538 0.0219064788 0.9807265325 0.6165090110
## [4356] 0.8600100657 0.4782990409 0.5292960465 0.5020261122 0.4679612273
## [4361] 0.8260702899 0.1395715941 0.3226688450 0.5263465293 0.9781771429
## [4366] 0.4946342359 0.1127554469 0.6512998653 0.5586835842 0.4159310651
## [4371] 0.1913494470 0.5245520972 0.5481600208 0.4324469215 0.5785971061
## [4376] 0.3967941802 0.5216300296 0.9146289743 0.1943873323 0.9134055319
## [4381] 0.6175192277 0.4255767490 0.7640803084 0.7010421045 0.6455429088
## [4386] 0.7982510791 0.4140114588 0.4939086453 0.0993624144 0.8564763097
## [4391] 0.3373497004 0.4075891844 0.4823444511 0.1922578712 0.9092124168
## [4396] 0.6893971230 0.8813521386 0.4083672779 0.2305033386 0.6778007462
## [4401] 0.8928188815 0.1217040585 0.7563027797 0.5450435046 0.7821723621
## [4406] 0.9386826258 0.1657252650 0.8600436315 0.5075879709 0.5184689830
## [4411] 0.6284493606 0.5121579594 0.3649615791 0.4413379143 0.9803849246
## [4416] 0.3502671870 0.9233887114 0.7977138011 0.8006871115 0.3313447029
## [4421] 0.4983538374 0.8667247368 0.0921817338 0.0443786758 0.3678943368
## [4426] 0.3531148701 0.9532376552 0.5901568111 0.5031964730 0.1885141282
## [4431] 0.3244944058 0.0376845284 0.9362821090 0.8832218829 0.5364792997
## [4436] 0.2818626153 0.0046804889 0.6590338978 0.6267298471 0.0822717893
## [4441] 0.9079590728 0.2092496069 0.3016328551 0.2161584431 0.3586068525
## [4446] 0.6071862179 0.8046251382 0.6353439812 0.3618101595 0.8999767722
## [4451] 0.1814041512 0.7802827562 0.5142464105 0.8694654463 0.6677911241
## [4456] 0.1500909684 0.3787007550 0.4757789943 0.6288514671 0.1828299762
## [4461] 0.7825808021 0.2696812598 0.7401447765 0.4370587603 0.1609612777
## [4466] 0.4681870579 0.4069289710 0.3499827161 0.1962850160 0.2556509223
## [4471] 0.3516509041 0.7177282064 0.0437806541 0.2130037697 0.1261694960
## [4476] 0.4839128917 0.8511408351 0.7794714649 0.3204432391 0.4300175916
## [4481] 0.8562233957 0.4184302812 0.8285115141 0.4633023764 0.4840615840
## [4486] 0.9148685681 0.4809489815 0.5897876575 0.2778454139 0.1086245252
## [4491] 0.8777073981 0.6251774363 0.6885157920 0.0787272941 0.8663782827
## [4496] 0.2027129824 0.0055631216 0.6184756032 0.4251547893 0.4676995192
## [4501] 0.7382223156 0.6191723545 0.1472185198 0.6588344753 0.1792525419

```

```

## [4506] 0.8199311466 0.0955881205 0.6229904482 0.8863083118 0.3226014946
## [4511] 0.5396830783 0.4792876307 0.2717510782 0.7520154498 0.7522685512
## [4516] 0.6128148040 0.1018347381 0.6823120660 0.6564831810 0.7120397816
## [4521] 0.0541259743 0.1632091372 0.2600597265 0.6387337225 0.9902852290
## [4526] 0.0157011051 0.5979266845 0.2447976186 0.9239714009 0.4334072983
## [4531] 0.7706058487 0.4969184416 0.0908245137 0.3606983294 0.7105234243
## [4536] 0.4771983315 0.7712518406 0.0389109169 0.7801826461 0.3159909613
## [4541] 0.7778813025 0.3609465303 0.2757676620 0.3515580873 0.4304329248
## [4546] 0.7477159513 0.6721792920 0.4738809383 0.0254286362 0.5921310939
## [4551] 0.3912847123 0.7326626041 0.7205360770 0.8356271492 0.8052712177
## [4556] 0.6806408395 0.7868066771 0.8713575968 0.7720601045 0.4951050928
## [4561] 0.7200892521 0.5661409045 0.1745992706 0.2311401367 0.4466863756
## [4566] 0.4073156243 0.8035201525 0.5071693124 0.7757179561 0.1025105578
## [4571] 0.1497752049 0.2032485058 0.6405272919 0.5706808189 0.8495170958
## [4576] 0.9849638018 0.3864402844 0.9944029055 0.1432445895 0.2971247880
## [4581] 0.8823810796 0.4671613979 0.3513815085 0.9919187943 0.2247928618
## [4586] 0.0835452476 0.8199531622 0.1234390273 0.3239423218 0.8619052238
## [4591] 0.1539273345 0.5275166882 0.9698972551 0.4854410239 0.6729091844
## [4596] 0.0715292104 0.8007916395 0.7726491759 0.2242222407 0.7984555496
## [4601] 0.2916130369 0.1498528845 0.6793778055 0.0872958714 0.9116268620
## [4606] 0.8531811205 0.9411811304 0.9267710963 0.9928676582 0.4872793028
## [4611] 0.0253142286 0.3780423058 0.9330974304 0.7736208176 0.8353959711
## [4616] 0.1269108116 0.6964079699 0.7094418127 0.9102431208 0.3704978958
## [4621] 0.0236049521 0.7133410592 0.2491319692 0.1127651088 0.8216121594
## [4626] 0.3806569064 0.1870593108 0.2386296813 0.5101354142 0.9060338444
## [4631] 0.0438300202 0.8895268124 0.7314836871 0.7079917664 0.3510380480
## [4636] 0.6057034891 0.0193120263 0.6040760200 0.0033250801 0.1418937331
## [4641] 0.8732495355 0.6167526426 0.0678701722 0.4186356548 0.4368145199
## [4646] 0.0696743344 0.3039650176 0.2426533136 0.4949430339 0.4563494499
## [4651] 0.2232946792 0.8967593849 0.4809156133 0.9102347009 0.6709241893
## [4656] 0.1000807072 0.8102643431 0.7166820331 0.5564949001 0.7894979672
## [4661] 0.7801243826 0.1875547856 0.2254398932 0.5341414448 0.4605917981
## [4666] 0.4235050628 0.5850124232 0.3812776466 0.4241900832 0.9481226999
## [4671] 0.9754217912 0.8455520902 0.1704890467 0.0796977623 0.5653991536
## [4676] 0.0686499850 0.4563820654 0.9906351445 0.2901503076 0.5481684919
## [4681] 0.5060121617 0.5294903721 0.8489667346 0.0098173446 0.7896124258
## [4686] 0.7980717862 0.7090936499 0.8089729417 0.6322693333 0.1558714665
## [4691] 0.2544474489 0.3310557035 0.2387204290 0.6602951060 0.0689818920
## [4696] 0.9762349431 0.9279861733 0.7259262610 0.8517034200 0.6017218579
## [4701] 0.9276415124 0.1119345765 0.5550740259 0.5431534136 0.9840830073
## [4706] 0.7993730793 0.3039228529 0.9708923414 0.1605575538 0.8274581788
## [4711] 0.1980586483 0.3573420219 0.9217756370 0.9234215163 0.2284587875
## [4716] 0.7853123023 0.4817063703 0.1502999510 0.8174074126 0.4633249826
## [4721] 0.0515306230 0.9532300268 0.3872768514 0.1233524567 0.2487200870
## [4726] 0.0401184533 0.1699922108 0.5364912098 0.8437716148 0.7281338069
## [4731] 0.9521371825 0.5863917123 0.0154367447 0.8008954264 0.6171727683
## [4736] 0.2428243622 0.8280557443 0.7198343969 0.3304152484 0.9352436687
## [4741] 0.5694327849 0.0550928185 0.0113703440 0.5863890069 0.6142171170
## [4746] 0.0654325000 0.7231234670 0.9697839352 0.4405896695 0.0816070526
## [4751] 0.4166654394 0.2945547434 0.0545276940 0.9705376800 0.5520263435
## [4756] 0.7130756558 0.1940930483 0.3466145642 0.0155378262 0.8024847760
## [4761] 0.8708568534 0.7611557293 0.5295245459 0.6807122362 0.8207998480
## [4766] 0.0756476884 0.1005541344 0.6712608487 0.5866311064 0.0787210671
## [4771] 0.9582110490 0.1703030255 0.1119189670 0.7118006959 0.3536456245

```

```

## [4776] 0.9623765183 0.8480260469 0.4686337613 0.7974514426 0.9032019507
## [4781] 0.1528410290 0.2159186093 0.7371879245 0.0795665206 0.7537715698
## [4786] 0.2178592074 0.8649208725 0.4775415686 0.6859092009 0.1704739237
## [4791] 0.9279585726 0.2337638018 0.5485482589 0.8829366705 0.9681383352
## [4796] 0.2400549295 0.2248568633 0.3872533964 0.1706174305 0.9271653207
## [4801] 0.6044974554 0.5897934039 0.3795877788 0.1463015565 0.9968627200
## [4806] 0.0461158908 0.9339406268 0.3816098079 0.7704623537 0.1269186026
## [4811] 0.4221773940 0.3938095362 0.9789477349 0.5097514388 0.9647808733
## [4816] 0.5726439179 0.8576467960 0.3011608536 0.7138490590 0.4445479165
## [4821] 0.5437022854 0.2965794395 0.3443837787 0.2737505676 0.2759612777
## [4826] 0.0630311404 0.5472120793 0.7066742587 0.9693114199 0.5801445729
## [4831] 0.5763792112 0.3175713620 0.6333503648 0.6836907793 0.7971682893
## [4836] 0.1961657356 0.5513435609 0.7423946906 0.0234478210 0.2527936465
## [4841] 0.4977409926 0.6728545026 0.0662167073 0.3076069853 0.8598336068
## [4846] 0.6656472483 0.6093525345 0.6721245352 0.5757300925 0.4851775305
## [4851] 0.3346328472 0.3856029625 0.7498618022 0.9666214306 0.7179172150
## [4856] 0.8793152278 0.7450861522 0.7606139186 0.4422082604 0.2532107262
## [4861] 0.9902219785 0.5607976515 0.3472757038 0.9071252101 0.7069518856
## [4866] 0.9163008221 0.8798615502 0.3786113371 0.2876728762 0.7663835490
## [4871] 0.2947642554 0.7690328586 0.9726319316 0.0559088444 0.9466793390
## [4876] 0.8356703116 0.1482253196 0.2432471908 0.3224002227 0.7485939185
## [4881] 0.7289130205 0.0279897456 0.5780165334 0.1146720649 0.5730366881
## [4886] 0.0842713821 0.7628876261 0.0987351793 0.9445650359 0.1704723234
## [4891] 0.9234237254 0.4405722744 0.8137442335 0.3431570323 0.4437831211
## [4896] 0.1385326068 0.5892293265 0.8482291644 0.2348620824 0.3415704065
## [4901] 0.1884111370 0.7506606834 0.6840738935 0.5212769139 0.4007890013
## [4906] 0.1015468590 0.3211942342 0.7598002441 0.2538031534 0.5570314647
## [4911] 0.4253301626 0.2971929290 0.8935491712 0.6598079701 0.0758371635
## [4916] 0.4826420459 0.5155948242 0.7221910613 0.4990781977 0.2583182606
## [4921] 0.0247771139 0.0654839547 0.9592073813 0.5178891633 0.8484881879
## [4926] 0.8216484924 0.5443431590 0.5433354042 0.7346494974 0.1929804877
## [4931] 0.4189549800 0.7893860880 0.8672898681 0.6690166743 0.2603082931
## [4936] 0.3575236375 0.0644215934 0.9344002490 0.7063002461 0.7119349563
## [4941] 0.1605142077 0.6686522956 0.9827298192 0.1755965424 0.5822521055
## [4946] 0.4219868011 0.6916155916 0.9598350870 0.3775159288 0.0098030851
## [4951] 0.7637272302 0.5790531144 0.1619496748 0.8210911768 0.3513805108
## [4956] 0.0891603608 0.2276646649 0.1960279738 0.8003050088 0.9749471122
## [4961] 0.7827708164 0.2439976735 0.6000107714 0.2851307516 0.3744400720
## [4966] 0.4102349339 0.1631825611 0.0658679162 0.2304582099 0.1195787636
## [4971] 0.1687356837 0.7060175384 0.8858753662 0.8821890745 0.2293793224
## [4976] 0.8520401313 0.2277749322 0.5265529406 0.4746647357 0.3556312807
## [4981] 0.4889493495 0.6551382483 0.2345321134 0.4972805506 0.8985311711
## [4986] 0.2616525939 0.8387752598 0.3616933876 0.9675779134 0.3058578646
## [4991] 0.3028068073 0.1035341184 0.1330742455 0.5974880663 0.4490575452
## [4996] 0.9745805490 0.8749478865 0.2763563692 0.8296351355 0.5448218108
## [5001] 0.6529898139 0.9380459665 0.2497449474 0.5508092413 0.4350025682
## [5006] 0.8162133118 0.9453684268 0.7778456987 0.7089862443 0.4259099289
## [5011] 0.8945781781 0.3428626099 0.8786906561 0.7417694195 0.2626723460
## [5016] 0.6086258005 0.5963092424 0.8399296029 0.0946828234 0.0464008732
## [5021] 0.4943710254 0.1190679031 0.9595827842 0.6678809362 0.1736277795
## [5026] 0.0678120722 0.0419414853 0.5249106592 0.6648532842 0.0961458730
## [5031] 0.0310971228 0.3535006910 0.5256041936 0.5522065433 0.0569840004
## [5036] 0.5568842378 0.5953520931 0.3062002229 0.7190824387 0.2022266297
## [5041] 0.9742732005 0.5474935062 0.6500471839 0.1076424782 0.6031026465

```

```

## [5046] 0.8688392394 0.4307860227 0.3152970771 0.6019077954 0.9366034954
## [5051] 0.9993084765 0.7060349861 0.0139919616 0.9300857063 0.3782014730
## [5056] 0.5882074863 0.8261859636 0.0898412535 0.5281392182 0.2969546363
## [5061] 0.1648228191 0.6652056361 0.3262776019 0.7092351015 0.3444498014
## [5066] 0.3123711247 0.3927218831 0.8732606398 0.1550655086 0.5863449260
## [5071] 0.2495691354 0.5594807163 0.2759588304 0.2515605546 0.6796622658
## [5076] 0.6693605563 0.6780978874 0.6517948778 0.5581288637 0.6317815635
## [5081] 0.9885582379 0.7893299668 0.2921289691 0.9322613157 0.4645684454
## [5086] 0.0172086597 0.2453145971 0.7901841778 0.0195776552 0.5659987882
## [5091] 0.5134240002 0.7012748611 0.4269480631 0.4158815653 0.1682465649
## [5096] 0.9535989991 0.7822532541 0.5715601016 0.8892537661 0.4896117995
## [5101] 0.3765512581 0.1205186441 0.3596238396 0.5720604004 0.7643582803
## [5106] 0.7083732454 0.4281079016 0.1394768702 0.1590826605 0.7067623111
## [5111] 0.5386764238 0.3866644067 0.9026382338 0.3428183203 0.3704270198
## [5116] 0.2858454395 0.9631656641 0.2701428693 0.5682898335 0.0988987786
## [5121] 0.5289693440 0.8902648010 0.1181255320 0.3883893880 0.5704681990
## [5126] 0.4264577015 0.1715282756 0.3337160177 0.2497475441 0.1538446422
## [5131] 0.1503383413 0.8534875435 0.9745761842 0.5927308472 0.3288011870
## [5136] 0.3788010830 0.5530831268 0.4491935553 0.8748457880 0.5103456689
## [5141] 0.8960366156 0.3966641230 0.1438496011 0.8195603525 0.1695348251
## [5146] 0.3816799701 0.7067005185 0.3158516713 0.5050855293 0.4183403154
## [5151] 0.6042367032 0.9183352802 0.1508234371 0.9279404381 0.2042106568
## [5156] 0.9729972366 0.9072532381 0.3085746357 0.5166266875 0.9578897097
## [5161] 0.6408476083 0.2272198901 0.2579521591 0.2221217881 0.3275387514
## [5166] 0.4691100001 0.5346850049 0.7678467447 0.4769429540 0.2431613530
## [5171] 0.5327450189 0.8038404255 0.8333049503 0.0818498717 0.0198022025
## [5176] 0.0265809919 0.1908213563 0.9155361407 0.0668411284 0.2404449508
## [5181] 0.7050650245 0.0358986607 0.7854596108 0.0448324335 0.6443416022
## [5186] 0.1672869912 0.6423567217 0.2230225268 0.7134488457 0.1343130570
## [5191] 0.9121316314 0.5753655208 0.1955807110 0.3090503403 0.1762763714
## [5196] 0.4891776839 0.1326440876 0.9952229274 0.4271320519 0.3681909824
## [5201] 0.1744530964 0.0919752039 0.8984216330 0.0728933277 0.4089022137
## [5206] 0.0778540407 0.7227574415 0.3778058975 0.5656275875 0.5202752989
## [5211] 0.8517282942 0.9168400607 0.5790338250 0.7325204818 0.8697267493
## [5216] 0.3354508594 0.9567564222 0.6297945872 0.7258174067 0.8170450468
## [5221] 0.8807978509 0.6397255176 0.9862534012 0.4811896461 0.4043335223
## [5226] 0.2685349790 0.9366184203 0.7847968019 0.8409021652 0.2956526758
## [5231] 0.8004273550 0.0432164843 0.3458956323 0.5532459938 0.1342747886
## [5236] 0.6724820378 0.1557851337 0.5634591694 0.3809086200 0.4861179994
## [5241] 0.6586572172 0.9142608726 0.3326644135 0.9127503020 0.6658951725
## [5246] 0.2608677634 0.4531356193 0.7232258841 0.3455666750 0.4741212574
## [5251] 0.7704552246 0.2330226760 0.5290689265 0.0184203519 0.4454529767
## [5256] 0.7663845657 0.3410484547 0.3823347749 0.6310191902 0.9888907090
## [5261] 0.6268506271 0.5783073517 0.4326733060 0.4090956941 0.4469992858
## [5266] 0.7767479734 0.7193016331 0.2946071000 0.7002682054 0.3774015123
## [5271] 0.9316168471 0.9333371697 0.1518353803 0.9553241005 0.7287180306
## [5276] 0.5470422816 0.9319222187 0.0987425517 0.0186261488 0.6414253714
## [5281] 0.3205235525 0.1900100777 0.6412818234 0.4253077348 0.5631106944
## [5286] 0.4808273213 0.6625888680 0.0145185110 0.2466933513 0.5500709697
## [5291] 0.2540793124 0.9312837510 0.2461115232 0.5770932783 0.1780471908
## [5296] 0.0401843654 0.6357008013 0.9267046146 0.8579580140 0.8695826340
## [5301] 0.5217065629 0.5982657241 0.3626046770 0.7044277415 0.5938145622
## [5306] 0.1765054815 0.3813831606 0.5164643555 0.3624535655 0.6298933080
## [5311] 0.8596180486 0.7131850381 0.8251873235 0.9918855354 0.4564695296

```

```

## [5316] 0.1033141446 0.9118271065 0.6745727149 0.3185266301 0.7870120435
## [5321] 0.0134487580 0.5903431652 0.5767132992 0.8133473764 0.2519330933
## [5326] 0.6308015638 0.5718661093 0.6664976514 0.5469193624 0.7454795624
## [5331] 0.4511667200 0.8578764834 0.2187667958 0.0770017340 0.5890000400
## [5336] 0.1359232899 0.3129160279 0.0026052252 0.6999133148 0.6520940429
## [5341] 0.9547691401 0.7040361801 0.4698516558 0.3783286114 0.5514910511
## [5346] 0.4197634846 0.0053222966 0.0744944511 0.9350201240 0.5744880636
## [5351] 0.2431161832 0.7798973506 0.1186058506 0.4671871395 0.6884296514
## [5356] 0.6849244530 0.4284090935 0.2974440854 0.4308254887 0.7001953317
## [5361] 0.0530889866 0.8857937475 0.3829400560 0.9102950987 0.0138978300
## [5366] 0.7599258459 0.1865335233 0.9869392252 0.8198958760 0.2068025421
## [5371] 0.1691957511 0.3481605909 0.9499738809 0.1602978534 0.1587584303
## [5376] 0.6138317776 0.9920070125 0.8092895700 0.2594800438 0.8241837979
## [5381] 0.0737605832 0.5156464410 0.9338678753 0.8810652706 0.1467829632
## [5386] 0.6031035900 0.5143088187 0.3040966132 0.1165867931 0.3280790982
## [5391] 0.7485993591 0.6703380523 0.0810591414 0.8924664150 0.1426874514
## [5396] 0.7151813459 0.1496841138 0.5723009521 0.1031199459 0.5549266280
## [5401] 0.6848619956 0.7670798280 0.9647462631 0.2411112210 0.3901245382
## [5406] 0.4305578576 0.3089703725 0.0539492324 0.4009264103 0.9489407584
## [5411] 0.2492171351 0.6528318884 0.1105515611 0.9082635827 0.2549546080
## [5416] 0.0854071405 0.6301287542 0.9064523651 0.9302359823 0.5833633812
## [5421] 0.6867669387 0.9653796258 0.1371722128 0.2340519196 0.4409430520
## [5426] 0.3566348424 0.3783659670 0.8997220691 0.9415201601 0.3957891915
## [5431] 0.8748075240 0.0605210715 0.6876540155 0.6382236421 0.9861214307
## [5436] 0.6969342198 0.8099639561 0.4609945050 0.0003600176 0.9448285055
## [5441] 0.0218735492 0.6397089437 0.6452917217 0.7001479550 0.6108379468
## [5446] 0.8076286942 0.5475435934 0.9168038058 0.1536019718 0.9481815788
## [5451] 0.2824404651 0.6202427393 0.6351752335 0.2462284850 0.7932288505
## [5456] 0.1175287075 0.4901450710 0.5126670665 0.5105589348 0.5912777668
## [5461] 0.1693533201 0.7793339756 0.9022224257 0.9248520707 0.1673435160
## [5466] 0.4791943909 0.6785572542 0.3209971033 0.1604819994 0.5289189492
## [5471] 0.2087659225 0.1143174663 0.6199652461 0.4721120354 0.7469934279
## [5476] 0.1820910694 0.0912322824 0.1062404249 0.7102555776 0.1314560550
## [5481] 0.0049093933 0.8143446657 0.9528183369 0.4072316907 0.3146418862
## [5486] 0.3124600884 0.5142510010 0.6490431008 0.1325947167 0.9802933911
## [5491] 0.2205189464 0.5008595250 0.7359555069 0.7894799567 0.4697640767
## [5496] 0.0549226653 0.0896946333 0.5730286241 0.2832979357 0.2879450985
## [5501] 0.2808500193 0.0931398276 0.2790400843 0.5555147932 0.7862877283
## [5506] 0.9207492773 0.1422406628 0.7197330124 0.6143490106 0.0422280928
## [5511] 0.4002722559 0.0318738068 0.9242474241 0.1167876657 0.9711883216
## [5516] 0.6104390774 0.6807518178 0.2673003678 0.7064276382 0.6504640590
## [5521] 0.7713284865 0.0304184099 0.9426966284 0.9653270748 0.4000984795
## [5526] 0.7032054984 0.3590212028 0.9196701769 0.2476788960 0.1675023685
## [5531] 0.8068431656 0.1464619345 0.5623529340 0.9715661004 0.9223698298
## [5536] 0.1413142672 0.2119776044 0.9326972421 0.7785462519 0.8997974121
## [5541] 0.5702460793 0.0599113403 0.7217069200 0.7196477356 0.4940665799
## [5546] 0.8679122121 0.4977237878 0.2549956325 0.7023531404 0.0267252932
## [5551] 0.9368260935 0.9444823199 0.0471640192 0.8770523138 0.2386906916
## [5556] 0.4942706047 0.9722808118 0.0505131683 0.7275854081 0.8883175915
## [5561] 0.3255212132 0.2470923854 0.8068111189 0.5100911836 0.8420148604
## [5566] 0.6300118771 0.5114539275 0.0972502075 0.5140875864 0.5717796293
## [5571] 0.8717709052 0.1536857260 0.5705329285 0.4276890029 0.0165623873
## [5576] 0.4569497797 0.3575642581 0.6492951274 0.3348600211 0.9336810642
## [5581] 0.0835817934 0.2367756072 0.1066152941 0.5090921344 0.5545678494

```

```

## [5586] 0.5539450821 0.9079881456 0.3443983735 0.4276076551 0.3762429001
## [5591] 0.7423760518 0.6614404913 0.6285621556 0.4094803791 0.8923233600
## [5596] 0.6097291255 0.1921752792 0.5762310403 0.1045652059 0.0924945814
## [5601] 0.5157504146 0.7654829711 0.5334418794 0.9179321430 0.6217670610
## [5606] 0.5735063441 0.2988833451 0.4885382208 0.4262257301 0.0864565129
## [5611] 0.1974250208 0.4112076432 0.7200862801 0.0971528764 0.6210009085
## [5616] 0.2134144512 0.1542279480 0.7909713720 0.0106852813 0.6612858860
## [5621] 0.4171802164 0.0994785905 0.7149843731 0.8071357908 0.9876429730
## [5626] 0.1243619005 0.3386752085 0.3844293917 0.7708435234 0.1445102658
## [5631] 0.1787102830 0.2083620950 0.2588893383 0.0302868164 0.8652894953
## [5636] 0.9856110343 0.0888887193 0.4622546207 0.4978875110 0.3000026190
## [5641] 0.1875045145 0.2683343421 0.8191036295 0.7527251515 0.3063977937
## [5646] 0.6596939713 0.6804438255 0.5556482803 0.8835838511 0.3686158276
## [5651] 0.5090675558 0.7899641681 0.6568988562 0.4382545651 0.6468469477
## [5656] 0.6950233755 0.0143208696 0.4925126170 0.2980054120 0.9342103119
## [5661] 0.4536881448 0.6094638271 0.8187508608 0.5300825977 0.5480460302
## [5666] 0.8825188031 0.5995724557 0.7185915599 0.7767786727 0.6805102221
## [5671] 0.0761921842 0.6375621337 0.7868978681 0.3568699956 0.5141177799
## [5676] 0.6360179156 0.4188917955 0.5513719433 0.0115888173 0.2367303828
## [5681] 0.7699701387 0.2236609378 0.6806179624 0.8291108153 0.6571292617
## [5686] 0.8733960657 0.2775017200 0.5168353769 0.0248022810 0.1418373941
## [5691] 0.4604560617 0.5017234813 0.0690123699 0.8411553503 0.2391605404
## [5696] 0.1235248484 0.5653756329 0.6636386389 0.4551316167 0.4363359612
## [5701] 0.0823777514 0.3780932358 0.5800755153 0.6550180951 0.2293849438
## [5706] 0.3500082150 0.6962371048 0.3449105540 0.0809513169 0.0641998705
## [5711] 0.1902364683 0.7104422368 0.7060196083 0.7024302299 0.0636828700
## [5716] 0.7633922549 0.6661833825 0.8589188256 0.8159443412 0.7805016781
## [5721] 0.2431483653 0.6323332844 0.3252973862 0.9653207883 0.2018888749
## [5726] 0.0269223129 0.1589265309 0.4358253307 0.2417852918 0.4231220182
## [5731] 0.2222000470 0.0764049244 0.8464165620 0.9347937217 0.3292298133
## [5736] 0.2333804642 0.7951411794 0.7784447762 0.2208901652 0.3873480101
## [5741] 0.7996683974 0.8961933358 0.5897692940 0.9202912761 0.9717232917
## [5746] 0.7516800684 0.0433883658 0.8880346513 0.8288874548 0.1717997801
## [5751] 0.5316561145 0.0093571317 0.9686273372 0.4998453682 0.3304849600
## [5756] 0.1085522263 0.5345642135 0.1377859660 0.3196506072 0.3865887893
## [5761] 0.2037348461 0.0838657970 0.3304209121 0.6942853214 0.5694419743
## [5766] 0.4818074770 0.8102331848 0.0304535268 0.4977590589 0.9235674223
## [5771] 0.7619101964 0.8932301268 0.6580342831 0.5611126973 0.7284362802
## [5776] 0.9023333826 0.9497479774 0.7820287059 0.2050395634 0.2334245703
## [5781] 0.1902019172 0.5957178089 0.2689385693 0.9167584735 0.6075184204
## [5786] 0.8858857493 0.4204102882 0.7945476481 0.7855541762 0.0980715025
## [5791] 0.1407501867 0.2791894504 0.0815095215 0.2272274211 0.6185787443
## [5796] 0.6046270250 0.2841142038 0.9150146258 0.6530048057 0.2870278238
## [5801] 0.4922799825 0.8637538041 0.5006888818 0.2010123597 0.4465169639
## [5806] 0.4963262745 0.4718492388 0.5214360248 0.0288493750 0.0057178994
## [5811] 0.6889959833 0.0419379487 0.9259210956 0.4335179292 0.2918913922
## [5816] 0.5869167980 0.3821709155 0.2997311737 0.4982858249 0.0144019878
## [5821] 0.3968829369 0.0244691299 0.0809355147 0.0178193130 0.9033036723
## [5826] 0.5407471424 0.6209123862 0.2834961540 0.0587185902 0.1595418009
## [5831] 0.1152766884 0.0867367350 0.9963597001 0.4990603925 0.0989118803
## [5836] 0.8562021358 0.7402460959 0.1785976482 0.9157750682 0.5041094473
## [5841] 0.2175368191 0.9601153597 0.4143183265 0.8235323938 0.5211954687
## [5846] 0.7337401087 0.4084824320 0.8165554751 0.7863155765 0.2592648496
## [5851] 0.9690372748 0.2736607492 0.6833788059 0.6845025362 0.4486669129

```

```

## [5856] 0.6308711173 0.9151985033 0.2848805384 0.6570171060 0.0714380395
## [5861] 0.4089709829 0.8409713637 0.5871978700 0.1735133772 0.6323879514
## [5866] 0.7979213068 0.8559737405 0.4665143370 0.0286328838 0.4736966633
## [5871] 0.1221799531 0.3981417635 0.8524584278 0.6082910873 0.8426495463
## [5876] 0.3008394976 0.7970675424 0.9621258080 0.7114104248 0.3897569730
## [5881] 0.2998528776 0.8000439030 0.9246304805 0.0891424277 0.1314200597
## [5886] 0.7712581617 0.8388872510 0.6554546614 0.5249299156 0.4042105600
## [5891] 0.1350244007 0.3665313779 0.8544976458 0.0149201516 0.2459240763
## [5896] 0.6202735415 0.1761564176 0.7062479675 0.8692994561 0.1850539313
## [5901] 0.8966025004 0.3572989469 0.7408754877 0.3887555048 0.0412454554
## [5906] 0.5547300276 0.0780818765 0.2047371035 0.4574914367 0.8189958411
## [5911] 0.0789974601 0.2844389660 0.5887816618 0.9096128907 0.5430816481
## [5916] 0.5828003326 0.8414703793 0.9642273266 0.0347218537 0.4722466864
## [5921] 0.6795896398 0.3130039761 0.6188954518 0.4732487571 0.8654722500
## [5926] 0.4936526054 0.6300279651 0.0175959313 0.8002669542 0.4591411154
## [5931] 0.9457683485 0.7229451986 0.8383919916 0.3700777550 0.0144151794
## [5936] 0.4655622779 0.8718980042 0.4917150376 0.6506861007 0.9165583884
## [5941] 0.3739389916 0.0795546286 0.9290540383 0.5926742925 0.5303155586
## [5946] 0.7504504178 0.0846072766 0.0089268933 0.8378571105 0.3963036110
## [5951] 0.1548248601 0.2248236839 0.5901906745 0.9756609670 0.6521779751
## [5956] 0.4142844835 0.9623215497 0.8083813266 0.0864800344 0.0910959753
## [5961] 0.9254418767 0.7963967440 0.5079713033 0.5259437629 0.3487748268
## [5966] 0.2082157931 0.6382733652 0.1398504158 0.1769066105 0.2360085752
## [5971] 0.4226635923 0.0059028617 0.0845176335 0.3622848336 0.6040202791
## [5976] 0.6405840380 0.0239554687 0.6391310513 0.8129962395 0.1107779733
## [5981] 0.8742137484 0.7459629246 0.7492641402 0.2763933312 0.8924186794
## [5986] 0.4033671799 0.4939521168 0.8222718973 0.4548416439 0.0280007704
## [5991] 0.0865974166 0.3496446532 0.4943018055 0.3981172846 0.2170386642
## [5996] 0.0854585665 0.5918142634 0.9983443133 0.5603161773 0.1845109958
## [6001] 0.8457947627 0.6429080182 0.8977184572 0.7374114919 0.4668190871
## [6006] 0.0402992888 0.6586581324 0.6437811830 0.4008925813 0.8569179412
## [6011] 0.5881890481 0.5683474285 0.8547160360 0.9361991000 0.5987841003
## [6016] 0.7951589485 0.4072004473 0.6494937684 0.6630269735 0.0014137738
## [6021] 0.1708319661 0.9994091797 0.5917530727 0.2960068705 0.8797464615
## [6026] 0.2687560674 0.9992270128 0.9742263683 0.1325223063 0.0296961987
## [6031] 0.4417166850 0.6781467380 0.8545117567 0.9610976054 0.9127328487
## [6036] 0.1632962707 0.3715152552 0.5379862781 0.8094154104 0.1757386773
## [6041] 0.1253261988 0.8878718876 0.0633807775 0.8208437054 0.9649830013
## [6046] 0.7069213681 0.5753500318 0.8190599851 0.9382360712 0.1336648534
## [6051] 0.4837941307 0.6068496498 0.0321829291 0.3664245490 0.9090952086
## [6056] 0.3651220116 0.2268899756 0.4712875248 0.9202613340 0.6627173386
## [6061] 0.6885200609 0.8529987216 0.0965471964 0.9420173179 0.7394094951
## [6066] 0.5109818610 0.4877538617 0.8689998624 0.2052330532 0.0529860773
## [6071] 0.1360244167 0.0517280369 0.2753426032 0.4434748306 0.2119549049
## [6076] 0.5679790012 0.2494541255 0.4902969722 0.8522364378 0.9195709833
## [6081] 0.7975136078 0.0937700893 0.7670351718 0.8681386537 0.7080136623
## [6086] 0.0105281037 0.0257749360 0.7683267588 0.9326390406 0.9109433114
## [6091] 0.8069698700 0.5566234288 0.8011035929 0.5665786003 0.0471619592
## [6096] 0.8442351295 0.8163989463 0.6795608911 0.1550351434 0.8403604970
## [6101] 0.7243391334 0.4543564872 0.0981030899 0.3903529651 0.8607432177
## [6106] 0.0315585996 0.4211485775 0.9097612950 0.3782917572 0.6518230085
## [6111] 0.4535478148 0.3620405386 0.1988355917 0.7282988908 0.7549473694
## [6116] 0.8298901569 0.2509073236 0.7399856953 0.4208316684 0.4846366297
## [6121] 0.0441553624 0.7552302766 0.7695877012 0.6345616532 0.3103934745

```



```

## [6126] 0.9130845314 0.2867323913 0.7277903958 0.8526240145 0.4742962673
## [6131] 0.5015062634 0.8134745743 0.1100427381 0.7826348514 0.4019691648
## [6136] 0.6354363954 0.7403363436 0.5596319847 0.0394683263 0.0087898391
## [6141] 0.5936973854 0.8147430355 0.1739481864 0.5030235987 0.8521450084
## [6146] 0.4697692941 0.9318785802 0.6104807120 0.9702282841 0.6869464695
## [6151] 0.6732547965 0.8053251525 0.6786970848 0.4202410998 0.2680128664
## [6156] 0.6747161074 0.9979521246 0.0447670481 0.4966026637 0.3869808564
## [6161] 0.4112151582 0.7768809910 0.5018693070 0.2639748157 0.6590135759
## [6166] 0.8895663423 0.7668696861 0.7306035997 0.7882273095 0.7273401278
## [6171] 0.3982424241 0.2208184798 0.9851377864 0.3563973655 0.1130301344
## [6176] 0.0396444718 0.6162937923 0.8448948924 0.3445400949 0.4461298108
## [6181] 0.4176987112 0.8941522268 0.0391592751 0.3102052747 0.8872830178
## [6186] 0.1877979064 0.8957182863 0.5216960514 0.4583578889 0.1046328835
## [6191] 0.4568277885 0.1911777807 0.5226335783 0.5523892816 0.8313242231
## [6196] 0.0985884668 0.1365789708 0.2744516764 0.1324624840 0.6130460030
## [6201] 0.0560019372 0.3566561713 0.2962817728 0.5149536917 0.8723363832
## [6206] 0.5844507289 0.4142439301 0.8192870014 0.8537538937 0.0863740613
## [6211] 0.4998334058 0.6173900947 0.1716665156 0.6562599728 0.4027579318
## [6216] 0.7724285254 0.7580426459 0.2381085875 0.6740574869 0.9589081667
## [6221] 0.4326156685 0.0432940186 0.2711249879 0.5494415512 0.4428678196
## [6226] 0.3480943752 0.8923740265 0.1649996868 0.7399385343 0.0924772808
## [6231] 0.0953602905 0.2196287430 0.8463768281 0.7644222922 0.7269277331
## [6236] 0.2276795422 0.1720366446 0.9169497362 0.3242758710 0.1838526096
## [6241] 0.1717263816 0.5074075653 0.5623739245 0.5083355756 0.6309683913
## [6246] 0.9111866105 0.9159031743 0.6935311540 0.1332376932 0.2837351116
## [6251] 0.9718142736 0.6964935075 0.3452495817 0.4808817381 0.6384041767
## [6256] 0.7660321463 0.0310327283 0.9181494710 0.9628674047 0.8119499734
## [6261] 0.4579093101 0.2188470772 0.7861056568 0.8628716807 0.9086693300
## [6266] 0.2250459417 0.0589494816 0.8483949204 0.6380656370 0.8841427142
## [6271] 0.0727776476 0.7470017235 0.1489233623 0.2110123155 0.4828330381
## [6276] 0.1657840044 0.1724256697 0.7473555909 0.9676590473 0.3367043056
## [6281] 0.0584427675 0.6465715604 0.5102069750 0.2511159577 0.3080138568
## [6286] 0.0490946183 0.7533733611 0.9323302056 0.6547010504 0.8017054732
## [6291] 0.9947494292 0.5230357955 0.4253730802 0.3312704928 0.8653093423
## [6296] 0.8599473294 0.9055865424 0.6379233953 0.4358113363 0.2165573934
## [6301] 0.8835961661 0.5778568028 0.8324215355 0.5368566586 0.1228439028
## [6306] 0.8872540830 0.8454336154 0.0151305376 0.3411159943 0.1941680753
## [6311] 0.3778326570 0.9346607878 0.5382658314 0.5481478422 0.1022148639
## [6316] 0.6735919513 0.8640575686 0.7258259707 0.7047154339 0.2136981904
## [6321] 0.2111610448 0.7290051152 0.2870521818 0.1008445812 0.1965562399
## [6326] 0.9870185897 0.8778487074 0.2637017666 0.1967463199 0.3820486301
## [6331] 0.7165212678 0.0593745941 0.5841612540 0.8751800010 0.6537364289
## [6336] 0.6990888905 0.8386034190 0.9551201309 0.8767586280 0.1816189303
## [6341] 0.3688185444 0.4651913880 0.1643798263 0.2508490484 0.9857527106
## [6346] 0.5577519120 0.4716693311 0.5499450806 0.3409564704 0.1040072823
## [6351] 0.6630304007 0.1201204021 0.7087082111 0.4689420013 0.8097468710
## [6356] 0.9741255640 0.1037223463 0.7994427913 0.2017870202 0.3634577879
## [6361] 0.2533070694 0.3301719053 0.5961576366 0.6223169769 0.4437627741
## [6366] 0.5202422037 0.0222534596 0.1991934272 0.9846025166 0.3262497409
## [6371] 0.6038870025 0.6880318797 0.8534565276 0.4686794442 0.4056125503
## [6376] 0.7496931774 0.4044744139 0.9821762006 0.7937162811 0.6193842947
## [6381] 0.2570181385 0.3245299719 0.9580990421 0.5440051258 0.4990626664
## [6386] 0.8098287485 0.8722023170 0.2915169661 0.4720368409 0.0245118685
## [6391] 0.6246964677 0.0914419170 0.2007088079 0.2837760689 0.9944576919

```

```

## [6396] 0.4916897182 0.5844754494 0.4498662671 0.5602877222 0.2541140466
## [6401] 0.5165060719 0.7021088339 0.3750472557 0.1645671997 0.4793809930
## [6406] 0.7855857774 0.2140981656 0.6658308191 0.5387369676 0.8813532447
## [6411] 0.8560382033 0.4923327877 0.6648885897 0.8891035345 0.3704584965
## [6416] 0.7055906058 0.5303393631 0.9745491384 0.8783172500 0.0476668361
## [6421] 0.9852883934 0.5640352515 0.6145793143 0.7366648176 0.0904458743
## [6426] 0.1961691701 0.5106939142 0.4744229553 0.3097845317 0.1764788096
## [6431] 0.7964153852 0.0269267082 0.2999859010 0.3493076017 0.1073669142
## [6436] 0.9757345822 0.5202309210 0.8044525945 0.6940407846 0.1406693861
## [6441] 0.6593521882 0.1962530663 0.5904329386 0.2905791885 0.0857174683
## [6446] 0.0229398769 0.0463810409 0.1184422058 0.7863282050 0.4949279339
## [6451] 0.6051539202 0.2007958157 0.3009787900 0.1206226844 0.0673679854
## [6456] 0.8358944958 0.6173000139 0.6053041230 0.7529398380 0.9689063996
## [6461] 0.6137585091 0.2972863211 0.2136766447 0.1616975277 0.4439156236
## [6466] 0.3676858421 0.8794334373 0.4763545021 0.4901658194 0.5792664054
## [6471] 0.3148157476 0.5462317423 0.7236624144 0.2713075485 0.0009937371
## [6476] 0.4659126136 0.2786353839 0.1371201688 0.9355798873 0.8442179628
## [6481] 0.4251727189 0.6760828766 0.7088950754 0.1804171657 0.7789411976
## [6486] 0.5013864669 0.5758435062 0.6447943154 0.3949050437 0.0444234880
## [6491] 0.1303497309 0.3961582011 0.8033636208 0.9604041207 0.0849366860
## [6496] 0.7412912910 0.0007556596 0.2369903577 0.5080486772 0.4108121097
## [6501] 0.4422037934 0.2178218593 0.3086915018 0.0166042034 0.4456898874
## [6506] 0.1966277800 0.9417660280 0.5357740019 0.0932271705 0.6332217643
## [6511] 0.9003852769 0.5203336662 0.9531015644 0.7132415876 0.1272968773
## [6516] 0.4875055426 0.5998289323 0.7334523115 0.6948293488 0.0784622823
## [6521] 0.0868519702 0.7617588404 0.1032324410 0.7924094881 0.4510704202
## [6526] 0.0789876574 0.3659650942 0.0464877615 0.9127163524 0.9337609404
## [6531] 0.1004359840 0.9162932031 0.9847602433 0.1872441067 0.3345434148
## [6536] 0.3929763403 0.7291512823 0.6739827966 0.2222026527 0.7762119901
## [6541] 0.3911454375 0.2940915952 0.1023883473 0.2301079786 0.7826780765
## [6546] 0.3923089221 0.6457437205 0.5763549315 0.4295421275 0.5673374260
## [6551] 0.1137847832 0.6568370490 0.4611357344 0.8847816850 0.4447289178
## [6556] 0.4005945464 0.9294445743 0.3183363120 0.3523369239 0.6330687283
## [6561] 0.4821416489 0.4996150606 0.3616193831 0.0050102762 0.1400766142
## [6566] 0.2795989378 0.1344139006 0.5220364551 0.5314963888 0.5779539640
## [6571] 0.4491394627 0.8646808189 0.4187147052 0.9326664581 0.5324177836
## [6576] 0.6576687278 0.2423612201 0.0498767470 0.9884530827 0.1310400209
## [6581] 0.0464731254 0.2979110553 0.9564026838 0.7383559357 0.9028178775
## [6586] 0.7148809635 0.6880161212 0.9147827989 0.3478992911 0.0866868470
## [6591] 0.3745688253 0.2745477766 0.7710663755 0.6357448319 0.9807680750
## [6596] 0.0446002355 0.7494165219 0.8994471932 0.3478506703 0.0394430834
## [6601] 0.5259132268 0.5639944827 0.6291222897 0.6648404141 0.9652519824
## [6606] 0.8868000235 0.8631480147 0.9185717475 0.7825713052 0.7771932928
## [6611] 0.2555634181 0.9954938439 0.6684275320 0.2770712713 0.8067571967
## [6616] 0.1980112485 0.9690822693 0.8944501145 0.2014566258 0.1940494521
## [6621] 0.1077940967 0.9234857185 0.2656439109 0.4009497399 0.3481745770
## [6626] 0.3924396193 0.1998481435 0.2839852961 0.2424391973 0.9014941413
## [6631] 0.4290829714 0.4936538568 0.0631897474 0.8288824270 0.5637977817
## [6636] 0.9406182335 0.1229186551 0.6238815681 0.3509336386 0.7493325681
## [6641] 0.0353414558 0.0837779158 0.0341118176 0.4312358242 0.7354932973
## [6646] 0.8870210735 0.5048693986 0.0204213990 0.7337114038 0.2365342379
## [6651] 0.2952776874 0.9022255769 0.0654591220 0.6265246303 0.5319378467
## [6656] 0.4817008742 0.7009788136 0.5644898585 0.4552704749 0.6677423050
## [6661] 0.2363554333 0.9909149249 0.8647281062 0.6271929399 0.6907246525

```

```

## [6666] 0.1706298038 0.2432313877 0.9275154231 0.2017109458 0.3734918336
## [6671] 0.0052546062 0.9664016701 0.1657846849 0.6697283120 0.3585774816
## [6676] 0.2683997469 0.2745277160 0.3303769404 0.2511683541 0.6008140115
## [6681] 0.5190553509 0.6312640529 0.1588978137 0.4713660548 0.2025710475
## [6686] 0.9830617889 0.5174793613 0.7700513869 0.4297325641 0.1159828525
## [6691] 0.5042999730 0.1082860572 0.0118561288 0.8097601833 0.1269206829
## [6696] 0.0736736667 0.7231319304 0.0016271743 0.8797077457 0.7948185890
## [6701] 0.9344623827 0.8224909005 0.3710569217 0.1240927393 0.6127955313
## [6706] 0.2407141858 0.1663305646 0.6392924078 0.5997760786 0.2563983719
## [6711] 0.1309588504 0.7057878185 0.3588710194 0.2569951304 0.0369644807
## [6716] 0.8502942716 0.7610365772 0.1425091607 0.9663780042 0.1596728276
## [6721] 0.1636486494 0.1100079707 0.1556595132 0.8736741980 0.8517252409
## [6726] 0.7359630676 0.3624794510 0.7191610868 0.5657106185 0.3811695520
## [6731] 0.1202295981 0.8341595767 0.2646180298 0.9507378766 0.9613268926
## [6736] 0.5036970945 0.0626739016 0.9695642167 0.6618185784 0.0527185900
## [6741] 0.9048272734 0.4996645195 0.0034120037 0.0019873453 0.0547984647
## [6746] 0.6403330600 0.7246725805 0.5030102710 0.3698054915 0.6700795086
## [6751] 0.3202279600 0.0372474427 0.5466125584 0.0782860788 0.6928630440
## [6756] 0.0085350594 0.7750858715 0.7655069124 0.1662511151 0.8558831198
## [6761] 0.3926485477 0.2146185824 0.7381778724 0.4573037207 0.8195622948
## [6766] 0.0980515126 0.9806923985 0.0112800125 0.8131423812 0.0730216831
## [6771] 0.4821009565 0.8519085584 0.4846751823 0.4645885969 0.8865380132
## [6776] 0.8103046207 0.0801853794 0.5577119353 0.6174119592 0.9841517095
## [6781] 0.2155428125 0.1541924580 0.8268184669 0.7842879087 0.3173980163
## [6786] 0.9407936698 0.7405081266 0.4778163874 0.3032001954 0.7726216581
## [6791] 0.5957372774 0.5532089535 0.5665533264 0.9943959772 0.0108868804
## [6796] 0.3270733078 0.8531622349 0.8214492011 0.1935710134 0.2134449561
## [6801] 0.6411100291 0.6528744143 0.7699589651 0.9397584590 0.6621948222
## [6806] 0.3107912949 0.7473821155 0.1494578720 0.3334909910 0.5160541387
## [6811] 0.4293839849 0.1358900569 0.5186469590 0.4946558098 0.0224363418
## [6816] 0.7075504278 0.5207227842 0.4904240621 0.5126616721 0.6568925257
## [6821] 0.8590474537 0.4690200188 0.6226765273 0.3555079190 0.2711714402
## [6826] 0.1650471644 0.5792887013 0.1644397260 0.2782090693 0.1070327629
## [6831] 0.9586989110 0.4356428799 0.3978833330 0.6818302119 0.8367983511
## [6836] 0.9836784012 0.5510243385 0.6794695558 0.3504907859 0.7147942010
## [6841] 0.2760675129 0.4412517301 0.4306889180 0.5665843166 0.8122549457
## [6846] 0.0220948209 0.9831553932 0.4530597097 0.4611210985 0.7418437989
## [6851] 0.5841441363 0.7789318794 0.7867190197 0.4121611831 0.4941308535
## [6856] 0.4995817601 0.1798033807 0.9005133268 0.4855888970 0.3661858446
## [6861] 0.7265571903 0.1809052886 0.3854001252 0.3719280240 0.1857138008
## [6866] 0.3896845622 0.0002610064 0.9529160864 0.5077282381 0.8751720618
## [6871] 0.3604535361 0.7346658131 0.5318940734 0.2824258379 0.9503567124
## [6876] 0.9826414256 0.4613929523 0.8280986509 0.7114790878 0.2797027111
## [6881] 0.1719412672 0.4656455531 0.3938529757 0.0187321979 0.8015796806
## [6886] 0.8750526192 0.7627275413 0.9342642372 0.0928506454 0.3120571468
## [6891] 0.4920563735 0.1842692562 0.2645023705 0.6340129248 0.3474207271
## [6896] 0.9273488447 0.0413882856 0.7600378506 0.4644620919 0.0433613334
## [6901] 0.6361654858 0.9829449963 0.1326192794 0.2713140559 0.2462497873
## [6906] 0.0390752314 0.8010358132 0.5105350489 0.9967270994 0.7660623594
## [6911] 0.3662539208 0.9141249113 0.7264611102 0.3925992674 0.0555469233
## [6916] 0.6054747447 0.7363391605 0.8557508689 0.6353499444 0.7843652926
## [6921] 0.5525057982 0.8777791038 0.0591626547 0.0473176181 0.1060112603
## [6926] 0.8161826392 0.7336015356 0.9167818869 0.6237206516 0.7559259607
## [6931] 0.0856523997 0.9151311354 0.2785841773 0.4134232249 0.8327403340

```

```

## [6936] 0.9050945829 0.7841549009 0.7281464349 0.1595605750 0.2732515730
## [6941] 0.8876090981 0.7694120703 0.2295364351 0.9152587245 0.3469639599
## [6946] 0.3391673819 0.7486962329 0.5284715430 0.0032518195 0.4822907220
## [6951] 0.6755873545 0.4617641428 0.1921864383 0.0168558162 0.9441373523
## [6956] 0.1610931557 0.6925324784 0.1302338361 0.7191875338 0.4561151310
## [6961] 0.6108772277 0.6449862292 0.2067377080 0.7527962752 0.8550040585
## [6966] 0.9553410771 0.9487926980 0.4438487091 0.9767120501 0.0684949126
## [6971] 0.9276330438 0.5857736723 0.5943613278 0.2763791575 0.5965636902
## [6976] 0.7187821631 0.0321908506 0.5835004526 0.5687220191 0.9197049331
## [6981] 0.9671494409 0.3335982700 0.3004209112 0.4371615010 0.1268219336
## [6986] 0.4312745076 0.7367766313 0.5554680288 0.1276013962 0.4348687962
## [6991] 0.5960922553 0.5082697194 0.6782300844 0.4270437809 0.5802269476
## [6996] 0.2075973927 0.6199689803 0.5214380041 0.5234372644 0.7951630250
## [7001] 0.5723810111 0.1255353418 0.8916796466 0.3933085807 0.9686836480
## [7006] 0.5069768667 0.3106053951 0.6391643736 0.5417251206 0.3968605232
## [7011] 0.7988083047 0.6116507829 0.3180477531 0.2382933572 0.0029480268
## [7016] 0.4514105765 0.5874880816 0.3681751011 0.6342791111 0.1187746842
## [7021] 0.8250001218 0.8659661717 0.9816252394 0.7214013239 0.6757758609
## [7026] 0.9098294074 0.5958025162 0.1977455791 0.3032361594 0.5657430327
## [7031] 0.4050354424 0.9946254123 0.3689794228 0.3606766188 0.7786266805
## [7036] 0.5174119491 0.4610089829 0.2155974959 0.6670303048 0.2944357968
## [7041] 0.4416447467 0.7853700927 0.3618549648 0.2565244658 0.8079433290
## [7046] 0.7154626978 0.4465434627 0.7008644826 0.5429283704 0.5880643578
## [7051] 0.6370602174 0.7843882402 0.0060004347 0.8011382648 0.1489548165
## [7056] 0.0466343524 0.7517796989 0.9182270419 0.2205037348 0.0992300893
## [7061] 0.8620696201 0.9697541174 0.8600843113 0.4240579840 0.5805219805
## [7066] 0.9758581090 0.9853518667 0.2526558705 0.4631857063 0.0139867674
## [7071] 0.4903697344 0.8270326235 0.6516624876 0.9368445322 0.8818976703
## [7076] 0.1111568628 0.6916426169 0.3088895894 0.3538508444 0.6538253507
## [7081] 0.3843748035 0.0398111450 0.9776289033 0.1941465518 0.5804422881
## [7086] 0.0508966307 0.6738443262 0.5866039691 0.5884732429 0.4784877651
## [7091] 0.5644757634 0.9003737387 0.0726752393 0.6924653220 0.6366306022
## [7096] 0.8608634114 0.9888545334 0.5253170511 0.6328188120 0.8066202919
## [7101] 0.7366784709 0.7501772956 0.9666031776 0.4742527775 0.5169558596
## [7106] 0.1540567279 0.7262053495 0.4560766903 0.3672649740 0.1394908011
## [7111] 0.0744347930 0.0787767339 0.9375914334 0.8762849420 0.9248118407
## [7116] 0.2506554208 0.6037988914 0.1086147045 0.0712132658 0.5600605138
## [7121] 0.2718087911 0.9358342505 0.8917014993 0.1154571624 0.7775689471
## [7126] 0.1962000275 0.2927249314 0.1713043088 0.0148562150 0.3687747902
## [7131] 0.3501558118 0.1618233719 0.5811561465 0.3911742918 0.8751444119
## [7136] 0.7130481333 0.3776473413 0.3426674498 0.6428422729 0.9742563371
## [7141] 0.4463515123 0.9255843062 0.6103514792 0.3782488392 0.3225239899
## [7146] 0.8178429713 0.3246912802 0.6201457391 0.1736884350 0.2725275188
## [7151] 0.6461828646 0.3715528911 0.3381726002 0.3087565417 0.1636168609
## [7156] 0.6403296318 0.1510399494 0.7562534028 0.8522439824 0.2335731056
## [7161] 0.7505688776 0.0122659758 0.0722228232 0.0425673329 0.9114053011
## [7166] 0.1474531464 0.4361510518 0.2730437989 0.7608161989 0.0511728297
## [7171] 0.8019100262 0.0656265935 0.9248494469 0.2577986845 0.3697957373
## [7176] 0.8853051879 0.7190332570 0.5207013724 0.7402843255 0.4982362445
## [7181] 0.6965596784 0.6898872011 0.3664395725 0.7245473217 0.1742639227
## [7186] 0.5159689498 0.9394069284 0.5483243825 0.5995790680 0.8715885803
## [7191] 0.9079929266 0.5704676981 0.3874569040 0.4266389547 0.2178897455
## [7196] 0.4070630202 0.6589788763 0.1882360151 0.7695171520 0.8644441761
## [7201] 0.8932173616 0.7639723800 0.3790435440 0.7221840189 0.8604649274

```

```

## [7206] 0.4524849385 0.1611023601 0.5123909829 0.0968324371 0.1844067870
## [7211] 0.2746184321 0.8041417976 0.0776415851 0.5568655537 0.2766974709
## [7216] 0.1576292065 0.7316070497 0.2528874340 0.8577916948 0.4323901851
## [7221] 0.5534459125 0.4397910477 0.3695459893 0.3640338544 0.1646168586
## [7226] 0.4355200197 0.0097829411 0.4223994605 0.0128203620 0.7903627367
## [7231] 0.5416578149 0.7638915799 0.9663391366 0.3465188426 0.1252891326
## [7236] 0.0887208339 0.3538238007 0.5911801593 0.3128637286 0.5108121830
## [7241] 0.1596966880 0.0665858078 0.9760690138 0.6932720734 0.2833821583
## [7246] 0.7068683844 0.6354976148 0.5781188807 0.2557643190 0.6003731739
## [7251] 0.6543514776 0.9577061079 0.1262587829 0.7533302556 0.8108883633
## [7256] 0.2817054867 0.0358053032 0.5658804395 0.3171890809 0.9068120789
## [7261] 0.6442390715 0.2139736281 0.0641277996 0.8264124372 0.5981315319
## [7266] 0.4527909449 0.7186299743 0.5216359804 0.7238442653 0.5263983420
## [7271] 0.9840051606 0.2543365647 0.8045578559 0.6880874719 0.8178846716
## [7276] 0.5235155869 0.3534934855 0.3374877530 0.0956059885 0.4119765608
## [7281] 0.3197826220 0.1089484073 0.0306018380 0.1769439743 0.5254474113
## [7286] 0.8007526678 0.3489450928 0.6548580826 0.6995512730 0.8219061182
## [7291] 0.9270278485 0.7453586068 0.7505721611 0.0306740297 0.8024885901
## [7296] 0.6294027365 0.0334940794 0.3927361888 0.5333999750 0.1736700845
## [7301] 0.0165548424 0.4061744187 0.3289729975 0.5924529086 0.9926974898
## [7306] 0.5844306390 0.2454221946 0.7461790783 0.2192126837 0.6441442122
## [7311] 0.0202062735 0.5457524632 0.6885204733 0.0747639363 0.2693907665
## [7316] 0.3492203895 0.1921962819 0.7897961073 0.3997934782 0.9467712552
## [7321] 0.5263865730 0.2714597318 0.1687862176 0.2280604124 0.3071931026
## [7326] 0.6841397183 0.0242533402 0.3623744989 0.8287056020 0.2930196562
## [7331] 0.6146582190 0.5277311497 0.4799505058 0.6991868049 0.8205170471
## [7336] 0.4079804635 0.4196230342 0.5827236658 0.5832221843 0.6814684593
## [7341] 0.7794334983 0.9888805802 0.2754283361 0.1111429839 0.0151005614
## [7346] 0.6541179550 0.7612893082 0.2383918757 0.8141361057 0.1338621503
## [7351] 0.5196074308 0.0876835528 0.1428586877 0.5401080714 0.1644879923
## [7356] 0.0452084303 0.1891167741 0.2639830726 0.0094847727 0.1810209883
## [7361] 0.5132514432 0.8496898153 0.4476344701 0.7332048752 0.8327152590
## [7366] 0.5515416890 0.8032185656 0.6224591714 0.3217796999 0.7800258105
## [7371] 0.8393257122 0.8600659327 0.6780818366 0.7129129688 0.1224261236
## [7376] 0.1209162576 0.8923836605 0.0698306166 0.4186014342 0.7693057421
## [7381] 0.6796054221 0.6267299626 0.0718184510 0.8750926785 0.5354428928
## [7386] 0.0938741272 0.8974196055 0.2749401009 0.7063942203 0.9432119289
## [7391] 0.1209346227 0.6663008946 0.4597871852 0.0523429411 0.0599824246
## [7396] 0.8258708486 0.6028421428 0.9519544719 0.8954445000 0.8751894248
## [7401] 0.3053153557 0.1789443316 0.2396191623 0.7033227700 0.4579769266
## [7406] 0.9357915147 0.7992601117 0.2437147574 0.2181457299 0.8263351863
## [7411] 0.3693227857 0.7431037686 0.5990081305 0.5977196124 0.4214101156
## [7416] 0.5434185313 0.9257843299 0.1481642248 0.5515576881 0.0483583368
## [7421] 0.7687110495 0.5961106349 0.4249721217 0.5763367013 0.1514408645
## [7426] 0.5383750377 0.2361484818 0.1212503063 0.5560296439 0.6134665292
## [7431] 0.2486383744 0.2979709738 0.3180205610 0.9344475660 0.9605290186
## [7436] 0.6397987610 0.3336732768 0.0665181584 0.9681755401 0.5832666266
## [7441] 0.0559375483 0.8224476290 0.2232781970 0.4721545096 0.0440700061
## [7446] 0.0563885695 0.5266787476 0.2671933708 0.6203774296 0.5345565557
## [7451] 0.2260572882 0.1928541752 0.2298841925 0.9594290490 0.8622889475
## [7456] 0.1863923816 0.1690426187 0.6775913758 0.1899918962 0.5586474144
## [7461] 0.8932099851 0.4832045696 0.3895005808 0.3912134166 0.9797353280
## [7466] 0.8283914729 0.0643446731 0.2738122890 0.9065558779 0.1034650737
## [7471] 0.5286670664 0.2436991330 0.2886209468 0.3315674659 0.9364791189

```

```

## [7476] 0.7089357486 0.9003774122 0.4091612385 0.2225347816 0.5072153970
## [7481] 0.7351362729 0.7046601374 0.2554407919 0.6596315861 0.3354009198
## [7486] 0.0727441170 0.6123520037 0.3951424044 0.6060390683 0.9438455973
## [7491] 0.4060660987 0.6718731693 0.9678700095 0.8080881792 0.1724861796
## [7496] 0.1932871409 0.5768402231 0.5397205867 0.3456491836 0.3062548244
## [7501] 0.0384362027 0.0900079155 0.0604099296 0.4475320366 0.4291358778
## [7506] 0.6655853961 0.9195577165 0.0803461251 0.3380185066 0.3055019686
## [7511] 0.1620440462 0.9707147950 0.6038988616 0.7562120764 0.0008793217
## [7516] 0.9468012602 0.7059824946 0.6096322855 0.0152056967 0.5352088755
## [7521] 0.4502574590 0.1415288410 0.7498087928 0.8154982362 0.3268795666
## [7526] 0.4342134768 0.1705117268 0.6444575553 0.7085720259 0.4624994591
## [7531] 0.9754346710 0.0108445887 0.3820253834 0.6316504623 0.4680556528
## [7536] 0.7587899422 0.5049215861 0.0349065512 0.5040171506 0.1694720959
## [7541] 0.9123404584 0.9691253553 0.6821456366 0.6347340374 0.0926111317
## [7546] 0.5073879683 0.6121213244 0.1285379313 0.5932317146 0.4618022906
## [7551] 0.9331887983 0.7216337953 0.0290121705 0.2183631170 0.2849328225
## [7556] 0.5931694770 0.0580984448 0.0197504135 0.2974650572 0.4671458316
## [7561] 0.5397706531 0.7143095668 0.1647029876 0.4463055786 0.2892476427
## [7566] 0.5810160724 0.4371016520 0.9242433108 0.5557584002 0.8451647053
## [7571] 0.9972518365 0.8475497546 0.8622337059 0.6374975855 0.1702942246
## [7576] 0.6040979607 0.1655669353 0.8706425639 0.8833655201 0.8630595407
## [7581] 0.6041052858 0.5028441628 0.3989905038 0.4827409469 0.4870962760
## [7586] 0.1339212635 0.6150253375 0.3220804685 0.9287241972 0.0084614287
## [7591] 0.0258782778 0.2727497963 0.8218086765 0.5996369475 0.6490497601
## [7596] 0.8729867529 0.2694366669 0.5008626439 0.2501802124 0.5590327341
## [7601] 0.7256621468 0.7544640996 0.5256086612 0.5340498143 0.2926539291
## [7606] 0.6643681383 0.1366158156 0.0857071361 0.3482582811 0.3261809524
## [7611] 0.4535692433 0.0297675723 0.4582635794 0.6830534117 0.0871664559
## [7616] 0.3094185355 0.9874535975 0.0094426995 0.1543384420 0.5020655775
## [7621] 0.1243455075 0.8983787853 0.9904511131 0.2224009320 0.7068227702
## [7626] 0.3405358478 0.2404613990 0.9569916536 0.1880009158 0.7515014915
## [7631] 0.1897562930 0.3428608722 0.6690559456 0.2162936706 0.9421332487
## [7636] 0.4482088149 0.3181592104 0.0598446415 0.4863611004 0.8042593729
## [7641] 0.5229569966 0.7236666294 0.4310485093 0.9773847499 0.1368104718
## [7646] 0.3046555970 0.2773172215 0.1937887899 0.2188235817 0.7447240375
## [7651] 0.2252885469 0.7321442246 0.9862874218 0.9566548853 0.3332136808
## [7656] 0.2835939208 0.9890221103 0.4838730374 0.7982551823 0.9616661040
## [7661] 0.9057688399 0.6109230462 0.8522639547 0.9447311436 0.2341291243
## [7666] 0.1417769808 0.2916717581 0.5972672834 0.9698148784 0.2010025792
## [7671] 0.6182873800 0.1505652508 0.0360935054 0.4427296280 0.4074413259
## [7676] 0.3204270432 0.6431123176 0.6358196377 0.4786059894 0.9846197279
## [7681] 0.3750028508 0.1515110594 0.4710352821 0.0651190515 0.8642337684
## [7686] 0.8347291106 0.1497304355 0.0494784781 0.9996719149 0.2782435305
## [7691] 0.2706457127 0.2990109022 0.3836363994 0.7155621179 0.7217974213
## [7696] 0.7767618898 0.3420298793 0.0655818646 0.0013599233 0.6442995218
## [7701] 0.8090199146 0.5324149255 0.6395488071 0.9333854783 0.9775372271
## [7706] 0.2980081144 0.4031063925 0.1546028837 0.3230386708 0.3087922227
## [7711] 0.7280031365 0.2639661990 0.6800127592 0.2173154844 0.3014352865
## [7716] 0.5817130038 0.8591718817 0.1692939653 0.6685618677 0.5743362972
## [7721] 0.7442423422 0.2137996380 0.4127548980 0.0368444543 0.6674313307
## [7726] 0.4216201273 0.2605852075 0.9902734631 0.3570442895 0.2364672636
## [7731] 0.7785231177 0.9964372063 0.5574991985 0.5149988744 0.6881814452
## [7736] 0.0062682825 0.8562776879 0.2710048881 0.7779196736 0.6898764165
## [7741] 0.0384397025 0.1369926991 0.8618304083 0.9845831290 0.1048177923

```

```

## [7746] 0.2332972097 0.6322784464 0.0462313395 0.1211828677 0.2225683080
## [7751] 0.3827585028 0.8512147686 0.3755185201 0.6678020609 0.4677140451
## [7756] 0.2966906631 0.3156087305 0.7914667567 0.7800178252 0.5737756179
## [7761] 0.7663646154 0.5641484834 0.1063165844 0.8024271713 0.9657751573
## [7766] 0.5447563974 0.6324322075 0.0069785006 0.4607900197 0.4643406164
## [7771] 0.2145627163 0.3913460451 0.8144124932 0.3939683134 0.9137823475
## [7776] 0.2495048821 0.0163553002 0.1581211306 0.5880470922 0.1577136039
## [7781] 0.0878032070 0.1660092036 0.9102428587 0.2023181364 0.8211311986
## [7786] 0.0499668925 0.4032529692 0.1645687604 0.2943819531 0.1346196533
## [7791] 0.5382799801 0.7504308647 0.0987341311 0.4096358085 0.5227228601
## [7796] 0.2428115371 0.6489896886 0.3933373999 0.1654140561 0.9473092755
## [7801] 0.2595458941 0.4880814257 0.3788393729 0.0619743062 0.6256349103
## [7806] 0.1742326219 0.5849866461 0.2803467502 0.1446445372 0.4749999834
## [7811] 0.9240426836 0.4536113672 0.5892117996 0.1653731488 0.5201187183
## [7816] 0.1316541393 0.8281623057 0.0649422042 0.6516341538 0.5185143049
## [7821] 0.5345129249 0.6807900606 0.7471396959 0.8316564239 0.2904074134
## [7826] 0.4901749087 0.9237085471 0.5559127248 0.9013232882 0.2360495749
## [7831] 0.0951916200 0.7548115170 0.8710326418 0.9250891604 0.9955205539
## [7836] 0.8904734512 0.6794922993 0.8813514614 0.5269082048 0.7516758735
## [7841] 0.8631620440 0.8375308355 0.6262153224 0.4842933717 0.6052792380
## [7846] 0.3923141712 0.1221251346 0.9977839727 0.9003429732 0.4098902061
## [7851] 0.3585947966 0.4513079955 0.6884580873 0.8876308005 0.1071282951
## [7856] 0.1337669481 0.8893199002 0.5726065644 0.7361568438 0.1432339652
## [7861] 0.0229810390 0.3000549273 0.2657056902 0.0151169423 0.0719161179
## [7866] 0.4511591048 0.4521593631 0.2337337681 0.3580983175 0.3339261847
## [7871] 0.9249208580 0.5754435613 0.5106656135 0.8585906855 0.3496339940
## [7876] 0.9707172096 0.1465138207 0.3393502635 0.5026813949 0.4211533709
## [7881] 0.1393389406 0.6864690537 0.1533581023 0.9687920154 0.8431792062
## [7886] 0.3785606088 0.6126084401 0.3351368046 0.7672281298 0.0878354351
## [7891] 0.3924411014 0.8014114710 0.3461950219 0.9713619957 0.4331531090
## [7896] 0.7965930343 0.7688550943 0.2117739807 0.8978714240 0.5744008416
## [7901] 0.8497612208 0.4883411901 0.8890762991 0.5269045027 0.5106793313
## [7906] 0.8539548016 0.5214070912 0.4734722303 0.2731009321 0.6971847690
## [7911] 0.0410152553 0.1602067587 0.6021461561 0.1224483045 0.5892023504
## [7916] 0.1755755300 0.3156942651 0.2621843665 0.1566755784 0.4891320154
## [7921] 0.7719600368 0.3934015152 0.3926002049 0.5749317271 0.5357598681
## [7926] 0.1845774733 0.0534514625 0.3173699249 0.1980225171 0.8469586380
## [7931] 0.3278268996 0.5242326623 0.6019527039 0.6303599567 0.7863736367
## [7936] 0.6436466931 0.0084834546 0.1189812273 0.4540195474 0.6236785097
## [7941] 0.8016275617 0.3789449823 0.6629543708 0.2801978928 0.3756809196
## [7946] 0.9590335225 0.1733452703 0.7366472418 0.7823271713 0.9327668319
## [7951] 0.5575273415 0.4813463374 0.2675377667 0.2235301200 0.2392291282
## [7956] 0.7439405393 0.0421852624 0.6137495602 0.0124386204 0.4350963240
## [7961] 0.6307528229 0.9875194352 0.6343583812 0.9185753958 0.8177093796
## [7966] 0.6412362440 0.5654242980 0.3668586885 0.9809317269 0.7667134741
## [7971] 0.2311708098 0.4957342893 0.2337969403 0.8461200333 0.4880996373
## [7976] 0.3217995699 0.0073860908 0.2928051585 0.2333400327 0.8184324855
## [7981] 0.8140749660 0.6971042514 0.6256431915 0.4437610596 0.8566194517
## [7986] 0.3771213509 0.7717360838 0.9325421005 0.3707392584 0.4415204203
## [7991] 0.2385670199 0.7245551222 0.8807341276 0.5615341822 0.6832097432
## [7996] 0.7786991602 0.3987769156 0.1666122314 0.5953845733 0.3675564099
## [8001] 0.1990755242 0.5477175949 0.1217597647 0.9736910425 0.1939330282
## [8006] 0.8840085689 0.9819957479 0.9012423075 0.4041519403 0.9044698706
## [8011] 0.5088665407 0.3966978722 0.9595903723 0.9515824651 0.3197938604

```

```

## [8016] 0.9687698093 0.8484977121 0.6161670564 0.8263460257 0.5960154201
## [8021] 0.0989365107 0.0395213129 0.8919622275 0.7909653587 0.3368782515
## [8026] 0.5509497448 0.3486532800 0.4988170774 0.2426716927 0.8231162633
## [8031] 0.6848044518 0.5365043139 0.5722245181 0.1578870918 0.8299005466
## [8036] 0.9135904921 0.8465011455 0.3853794310 0.9887359320 0.4819583716
## [8041] 0.4038219611 0.0371327697 0.6488985197 0.8815533681 0.7585053640
## [8046] 0.6082688335 0.3377930663 0.3194216178 0.3867978267 0.6006670202
## [8051] 0.2298926392 0.0663897793 0.0741923108 0.1690255854 0.9047625232
## [8056] 0.0578829373 0.9613663924 0.9662820564 0.5203273358 0.8457249569
## [8061] 0.4141176567 0.5512204970 0.7712710594 0.4220320406 0.8550618720
## [8066] 0.0395065353 0.0832630460 0.1370585128 0.2924951212 0.2977895389
## [8071] 0.0882022581 0.0217470417 0.8499303734 0.0115413121 0.8659720539
## [8076] 0.6424889320 0.8085580257 0.7754739222 0.8825437616 0.9741803529
## [8081] 0.6016201716 0.9424398827 0.6745882560 0.7443628715 0.6921429770
## [8086] 0.3959283423 0.2031146052 0.4601362967 0.9888819718 0.9642766071
## [8091] 0.6636028891 0.8935630515 0.5239720939 0.9674811211 0.3726691202
## [8096] 0.1121144061 0.8164461500 0.3710266146 0.9162817996 0.4254293928
## [8101] 0.4655727392 0.3254106550 0.2307543467 0.2902957279 0.1761200903
## [8106] 0.5991440059 0.8077120169 0.1740587125 0.3417598440 0.6348995457
## [8111] 0.4388444752 0.0681321757 0.1136025354 0.6927901373 0.0084966622
## [8116] 0.7987118968 0.5474219580 0.3907171884 0.3745338704 0.5452090270
## [8121] 0.4784470779 0.9188658970 0.8750600922 0.6956494661 0.5681123424
## [8126] 0.7434522939 0.9211250055 0.8965633328 0.2963775718 0.5831540469
## [8131] 0.3291853065 0.1632526393 0.1347188515 0.2383479058 0.9188120138
## [8136] 0.9799074959 0.8111836262 0.0587644818 0.2361123715 0.9172510008
## [8141] 0.1415223476 0.2234940027 0.6144089894 0.2118738207 0.9977694285
## [8146] 0.4577689322 0.0659999128 0.9408127433 0.9596937047 0.8512027227
## [8151] 0.2350127637 0.2463854117 0.2649443530 0.5522617688 0.1178571700
## [8156] 0.7582806825 0.6424604307 0.3105652682 0.5268094536 0.2376114432
## [8161] 0.3259654935 0.8246529327 0.4886440117 0.8842069503 0.0208822544
## [8166] 0.8100948815 0.8689746293 0.5327199882 0.8435503714 0.3883908748
## [8171] 0.4009730155 0.5055228036 0.8563360269 0.1826494960 0.4623580003
## [8176] 0.9036087673 0.7153048869 0.9926457859 0.9779026478 0.1121917874
## [8181] 0.6400125758 0.6078998714 0.6207159945 0.6029138335 0.0081920547
## [8186] 0.1890031004 0.7812622690 0.6546769291 0.5189788364 0.7066937740
## [8191] 0.8039612432 0.1102738428 0.1907607549 0.2295133809 0.4620431128
## [8196] 0.7057728739 0.9201686007 0.2143573415 0.6227599484 0.4109402317
## [8201] 0.7444889619 0.6153432313 0.1349560109 0.6897669947 0.9710031211
## [8206] 0.0229832613 0.5585378872 0.7097961659 0.0641081505 0.0788189443
## [8211] 0.3739483559 0.9776693927 0.3401952690 0.2403155941 0.3287952382
## [8216] 0.5520427968 0.1109507342 0.1730147510 0.9343198328 0.9919868872
## [8221] 0.3273307364 0.5342974243 0.0484196976 0.7592111914 0.5640147015
## [8226] 0.2847775737 0.8149500144 0.5291919206 0.7837164347 0.7402919412
## [8231] 0.6884331424 0.0387455700 0.5726934016 0.7623689301 0.9310325555
## [8236] 0.1700697901 0.0342177279 0.1266811912 0.8199608094 0.1190759410
## [8241] 0.8550468168 0.6770709227 0.3361068663 0.0818265409 0.2906099540
## [8246] 0.0149865440 0.6991914561 0.0633453129 0.1402986616 0.1175479182
## [8251] 0.6307992881 0.3463789471 0.9720776237 0.8192839731 0.5936458877
## [8256] 0.6070013289 0.4617604703 0.5158650369 0.5398543431 0.3019026633
## [8261] 0.4349070862 0.8973584238 0.4939895322 0.1238356909 0.5109151674
## [8266] 0.1552359954 0.1556958557 0.7352434641 0.3639712605 0.5913636247
## [8271] 0.1921455279 0.2364498437 0.7944566392 0.0491473126 0.1692201645
## [8276] 0.9259167829 0.5186631119 0.4824289562 0.2511588212 0.1456008454
## [8281] 0.4291542180 0.5476460353 0.7760844812 0.1575006945 0.9230617978

```



```

## [8286] 0.3706548223 0.4028113805 0.0295034587 0.1702906270 0.1720551194
## [8291] 0.0197733780 0.8545348365 0.2102083413 0.9312276218 0.4281887769
## [8296] 0.9100147863 0.4301851402 0.1755804967 0.0554771396 0.1165805896
## [8301] 0.2900309867 0.6689471715 0.4475849597 0.9895326541 0.6334077585
## [8306] 0.8883105811 0.4407659146 0.4827315171 0.6394911058 0.3901912533
## [8311] 0.2705165026 0.8853097156 0.3222642530 0.7221376156 0.8747279177
## [8316] 0.8166145312 0.9032254818 0.4996744100 0.0101827801 0.8470818700
## [8321] 0.3137953648 0.2536318029 0.8447031659 0.4069426155 0.9063794891
## [8326] 0.2322064702 0.4368761675 0.3328507078 0.6374137947 0.5476204915
## [8331] 0.8666989625 0.6977117840 0.8023217420 0.2154734186 0.7783674835
## [8336] 0.9462503696 0.4605512637 0.2033544904 0.2635356133 0.5234171998
## [8341] 0.8289436002 0.7500534471 0.3881805941 0.9175082686 0.1491437441
## [8346] 0.5617245226 0.7375632461 0.1105917983 0.0226861280 0.8607356649
## [8351] 0.9016834069 0.9949950517 0.2328185801 0.4574282107 0.0833558427
## [8356] 0.9363728823 0.4195967908 0.3636203508 0.7135713251 0.1822835298
## [8361] 0.6877425513 0.2421694189 0.8026680601 0.7324894726 0.1480204327
## [8366] 0.2427184381 0.9932845018 0.0853836614 0.4691457061 0.0289489112
## [8371] 0.2123449086 0.9833704035 0.7377511941 0.1030299273 0.2641319373
## [8376] 0.7217227432 0.1669401968 0.0920986515 0.5702425939 0.7411993564
## [8381] 0.6339541479 0.5694668139 0.4478542859 0.3762088866 0.2728911301
## [8386] 0.3379991396 0.2693473977 0.8232655426 0.0760082836 0.7853726346
## [8391] 0.8655197612 0.3694814678 0.4854193074 0.9772423747 0.3381606375
## [8396] 0.1894731372 0.4663064953 0.5305404250 0.4291655409 0.6271566432
## [8401] 0.8745048553 0.0576388232 0.8547438408 0.9161245469 0.5629904963
## [8406] 0.1458103201 0.4191261108 0.7168009488 0.0273746134 0.8266846684
## [8411] 0.7729894703 0.2812005152 0.1468585952 0.7709515876 0.4117134546
## [8416] 0.1598786866 0.9930251599 0.7118327743 0.0210214545 0.4198339690
## [8421] 0.1981192071 0.7778678473 0.0135783763 0.4011011689 0.1988000936
## [8426] 0.5226523270 0.0023182443 0.1162640588 0.6689004266 0.0449267691
## [8431] 0.1631339289 0.3223494303 0.1709797117 0.1156705346 0.6987482491
## [8436] 0.2527773726 0.7556251212 0.1241154728 0.3385751108 0.8063035477
## [8441] 0.5763259454 0.4073365076 0.2715709203 0.4787363308 0.8036232259
## [8446] 0.1784798251 0.8528198978 0.4499587621 0.9487630425 0.0035997690
## [8451] 0.5551836909 0.5413700325 0.2628691617 0.1625126079 0.5207817147
## [8456] 0.9869531961 0.1774580001 0.3797597302 0.9343518565 0.1271199260
## [8461] 0.2152101000 0.4626344831 0.2884887551 0.9123744725 0.4434644335
## [8466] 0.1203417436 0.0920169933 0.8410297974 0.0421428894 0.5092137949
## [8471] 0.7708774345 0.7335749380 0.3340543606 0.4835896023 0.8751916955
## [8476] 0.3785304323 0.6021757970 0.7706401784 0.2298728041 0.2402557530
## [8481] 0.5807049621 0.6834261358 0.8428967069 0.7684791323 0.5474683271
## [8486] 0.1772196856 0.7870212802 0.3497070667 0.1595248537 0.3685286616
## [8491] 0.1209687256 0.7911760760 0.0602650836 0.5493749985 0.7248836898
## [8496] 0.7586350391 0.8351374103 0.0493560189 0.8425698230 0.6697787085
## [8501] 0.1477436662 0.9099708983 0.2715395201 0.6632940827 0.8315664873
## [8506] 0.1354373685 0.6417619437 0.0840530220 0.1129421605 0.3125694817
## [8511] 0.8106474252 0.2933262331 0.9183793983 0.7414286757 0.7845121661
## [8516] 0.2435452099 0.9140342176 0.0392075882 0.1060382043 0.3983917986
## [8521] 0.1274049229 0.8610402252 0.6908169558 0.5404503118 0.6656176659
## [8526] 0.1979122610 0.0424529495 0.6550899937 0.9474283660 0.2210007321
## [8531] 0.3523283140 0.7273133093 0.9231068710 0.8637478239 0.3789574518
## [8536] 0.4998628171 0.9699705635 0.6299163171 0.4597690101 0.3202151115
## [8541] 0.4490986305 0.6841539408 0.5144430273 0.5737743030 0.9563914037
## [8546] 0.7572735987 0.2460835187 0.1909176270 0.8928819872 0.7729725180
## [8551] 0.4652654897 0.9349464683 0.6403889583 0.2661759485 0.1262480817

```

```

## [8556] 0.2193666285 0.7608622718 0.5010679333 0.4540564011 0.0726029502
## [8561] 0.3271242939 0.3774170391 0.0497691800 0.7618797698 0.7530035474
## [8566] 0.6396522653 0.6733204454 0.1216357312 0.3555205693 0.0586473379
## [8571] 0.0047211484 0.3929671700 0.1640991753 0.4201855645 0.8380760983
## [8576] 0.0929284791 0.5075639713 0.4898867351 0.6996087312 0.1723817020
## [8581] 0.9398629964 0.5702808672 0.0390737365 0.4094425548 0.7991072270
## [8586] 0.9188340131 0.0628259468 0.7715669439 0.3799050538 0.8292811082
## [8591] 0.1375525086 0.2091979475 0.3867744447 0.5386525960 0.7141822453
## [8596] 0.3570649437 0.7714740600 0.4037379355 0.3877012457 0.6173100693
## [8601] 0.2703691833 0.3037495388 0.0523474617 0.2717974659 0.6690600647
## [8606] 0.1518478870 0.5136505372 0.0180654144 0.6117830191 0.9463651334
## [8611] 0.9253674822 0.6774734388 0.0883331365 0.5559872749 0.5372023239
## [8616] 0.3115451452 0.8454731524 0.1395432983 0.0375048972 0.2741211044
## [8621] 0.1234509568 0.1735750757 0.4970178821 0.3060664115 0.8880237913
## [8626] 0.8980277177 0.0116508277 0.9440715390 0.7733688482 0.6997128366
## [8631] 0.8151906622 0.9758875124 0.2723981176 0.1590393742 0.9954417658
## [8636] 0.2813529001 0.0829193773 0.0276230521 0.3930738573 0.6553871460
## [8641] 0.6258442513 0.7231736007 0.8846507455 0.3171888888 0.6888282810
## [8646] 0.5966808595 0.1522632481 0.0063498304 0.4504641299 0.2533125527
## [8651] 0.8033386357 0.2358746283 0.6026790492 0.9007738287 0.9633573081
## [8656] 0.7645621932 0.6643934536 0.0002087760 0.1732780667 0.9153230180
## [8661] 0.0607584093 0.2532998444 0.5251847419 0.2717690942 0.1218404014
## [8666] 0.1307473315 0.4781609603 0.9451831667 0.6469481408 0.1865150062
## [8671] 0.1534868095 0.2734239706 0.3470111724 0.7765391350 0.1171457337
## [8676] 0.8757511784 0.1107537769 0.2147741646 0.5158414543 0.8355519268
## [8681] 0.3023823652 0.4118969773 0.2203025089 0.9126032192 0.8098217199
## [8686] 0.3889669853 0.9667923350 0.7085416059 0.2054464155 0.3104429776
## [8691] 0.4481875892 0.4720299315 0.3593063502 0.9410096373 0.3492988900
## [8696] 0.2971803790 0.2058137892 0.8830191095 0.5585093253 0.4895617649
## [8701] 0.8309795893 0.7534491727 0.4234976627 0.2186998825 0.5393692334
## [8706] 0.5488791609 0.9530424438 0.3941037026 0.0036295879 0.0197027893
## [8711] 0.8651950112 0.9409633069 0.7061202376 0.2034160415 0.8343276813
## [8716] 0.9672658807 0.1977956087 0.1568753696 0.0604156715 0.0120183482
## [8721] 0.4221836047 0.7660654352 0.0355056046 0.9533825986 0.5128222927
## [8726] 0.5367963581 0.6200178351 0.7241851680 0.5340097484 0.3485394403
## [8731] 0.0742697757 0.9723779376 0.3253895655 0.7626750321 0.7264593471
## [8736] 0.5271438205 0.1080547562 0.2920809493 0.9424187664 0.8657901456
## [8741] 0.8800053241 0.0972675216 0.0636258740 0.6841535017 0.9565945125
## [8746] 0.7217212989 0.9717962558 0.7767347910 0.4860932744 0.9676893418
## [8751] 0.2324062116 0.6715934676 0.3348453807 0.3351860912 0.5950359594
## [8756] 0.6503043443 0.3936626945 0.9990270368 0.0432914015 0.9218611549
## [8761] 0.6345723664 0.8890995176 0.1252372186 0.7608454555 0.2962898713
## [8766] 0.3365000289 0.9910788004 0.1272301549 0.5641972378 0.6083094135
## [8771] 0.5130852392 0.2414743259 0.5942361005 0.1395071208 0.5320699654
## [8776] 0.0302481700 0.9340896228 0.6936400534 0.2114717606 0.2932021948
## [8781] 0.3507201649 0.9102409125 0.6018402517 0.3154378376 0.3650057221
## [8786] 0.0569380268 0.3307993251 0.5677657210 0.4098387073 0.3145212452
## [8791] 0.0369668777 0.5265951668 0.6893433649 0.2656586707 0.4521336086
## [8796] 0.7296625277 0.9784005310 0.3577585955 0.2653673845 0.7711350384
## [8801] 0.7473477154 0.1936538877 0.9609763574 0.3966683104 0.8967299397
## [8806] 0.0957859420 0.5118880138 0.0497740424 0.8263552120 0.9824280767
## [8811] 0.9162570392 0.1285307683 0.5656991886 0.3105273856 0.7062974502
## [8816] 0.3867289884 0.0257398681 0.4845256002 0.7773875459 0.8170339501
## [8821] 0.1491666094 0.3206694187 0.1341265260 0.0608240447 0.9867455592

```

```

## [8826] 0.9744637366 0.4935919694 0.3943365498 0.6059434055 0.3694168850
## [8831] 0.3890967340 0.9265597115 0.1241190537 0.0831055997 0.4995662665
## [8836] 0.6402804732 0.8878139971 0.6687382119 0.0387333140 0.9546979845
## [8841] 0.6736683292 0.0094780048 0.8225906409 0.8236504827 0.3218789976
## [8846] 0.5059864976 0.6320532466 0.9294006516 0.2645101393 0.8360741701
## [8851] 0.2949345771 0.2685972606 0.7302241294 0.5331522344 0.0322248346
## [8856] 0.7994334903 0.2339144975 0.7800609537 0.6661777252 0.9434058437
## [8861] 0.3211919061 0.6915333610 0.1429163745 0.9729486532 0.5165485591
## [8866] 0.5911247192 0.7949513257 0.8733572653 0.7124171521 0.7568536059
## [8871] 0.2737938358 0.6928622323 0.7156026552 0.3983027582 0.0331386019
## [8876] 0.6774942821 0.9228107062 0.5595107572 0.1444748796 0.6681342566
## [8881] 0.3804445820 0.6727670539 0.7745017340 0.6941270703 0.9755713528
## [8886] 0.1590809989 0.9273417436 0.6840857689 0.8453172281 0.3384090902
## [8891] 0.6786306103 0.3915397387 0.3271562282 0.6829671925 0.1764732043
## [8896] 0.7986993401 0.9579573729 0.9004285490 0.5193257930 0.5180466212
## [8901] 0.3146906807 0.2787747692 0.6216328607 0.0528822812 0.1764855596
## [8906] 0.6546789933 0.0697696406 0.0429678641 0.4181272993 0.4324210280
## [8911] 0.1839065834 0.7197192636 0.9620912811 0.5600313227 0.6594369015
## [8916] 0.7102316884 0.8219306636 0.5832612841 0.1713010690 0.2764223196
## [8921] 0.2950852047 0.1534368008 0.2190232932 0.8281938200 0.1692223097
## [8926] 0.5698448209 0.3315164902 0.5447193364 0.4341443315 0.1043317680
## [8931] 0.3716821235 0.9887548869 0.3256123143 0.3439301241 0.5164651909
## [8936] 0.5767650869 0.8195054598 0.7241424266 0.4004498461 0.9898360160
## [8941] 0.5202980884 0.7413971212 0.2691351892 0.3962113037 0.4670198258
## [8946] 0.3475496150 0.6651472972 0.2413318084 0.6907116840 0.1500909824
## [8951] 0.9801389177 0.1346643911 0.6751075721 0.4210468990 0.4357335527
## [8956] 0.3960371330 0.6696264277 0.2679596207 0.8280677918 0.6049965302
## [8961] 0.2342581566 0.9321105953 0.1735450528 0.1396439073 0.1876996982
## [8966] 0.8145480239 0.9865044354 0.0147451549 0.7441674361 0.4362841450
## [8971] 0.6695992360 0.4013672449 0.1216991057 0.0340878966 0.2596826171
## [8976] 0.4614842435 0.6837108443 0.4835239531 0.3618407977 0.3756333524
## [8981] 0.5041526997 0.9815566314 0.0540170740 0.4439914303 0.9029539765
## [8986] 0.0217626777 0.5053773675 0.5727155714 0.0581011495 0.9012307417
## [8991] 0.2527179048 0.9990310182 0.4543390807 0.7319773584 0.7861897081
## [8996] 0.4994096731 0.0124459056 0.7285094992 0.3271613016 0.4236265240
## [9001] 0.0957507694 0.0803464474 0.9923558467 0.1649859051 0.1216182820
## [9006] 0.8820498791 0.0922497920 0.8554250565 0.0097610748 0.9980908902
## [9011] 0.0033741545 0.1520820629 0.1349222780 0.1783156066 0.1382090179
## [9016] 0.3010353622 0.2592439563 0.1380368064 0.2333252230 0.6307274647
## [9021] 0.1342529420 0.5346419979 0.9951588128 0.8592990490 0.2292158964
## [9026] 0.7465767418 0.1967643808 0.6779268656 0.4366095049 0.4703097558
## [9031] 0.3932150079 0.0707972173 0.0010338242 0.7677847643 0.8550014780
## [9036] 0.4119586355 0.4402484561 0.5876215958 0.1698929099 0.1241940882
## [9041] 0.8726871930 0.5932581530 0.8107161201 0.7301928197 0.1644060127
## [9046] 0.9791318531 0.4376795316 0.7790185293 0.7253764383 0.2035745902
## [9051] 0.5063580494 0.1300198986 0.6919247544 0.1331717457 0.2421101690
## [9056] 0.0049007779 0.4374187001 0.4711832424 0.4811369518 0.3249419010
## [9061] 0.2107499088 0.9738769828 0.1276232368 0.6761169453 0.8079833826
## [9066] 0.2039577556 0.9077903049 0.6972344883 0.8809845017 0.7592178073
## [9071] 0.7938182227 0.8602815892 0.0417043230 0.3123639114 0.2741990984
## [9076] 0.1146931573 0.7991245704 0.0196546559 0.3187384525 0.6618511188
## [9081] 0.0585404529 0.6691385149 0.0355830204 0.1400354064 0.3609461988
## [9086] 0.9380719285 0.5070813327 0.2914741267 0.6992061742 0.6643164369
## [9091] 0.1952296420 0.1107858379 0.9836958764 0.0533483939 0.8718894366

```

```

## [9096] 0.1880097920 0.9361385438 0.9867481734 0.0879176125 0.5088793335
## [9101] 0.0648020160 0.8730799077 0.4309889437 0.9909578792 0.9669110419
## [9106] 0.0675116108 0.1660785591 0.8741426443 0.5563220122 0.5161117489
## [9111] 0.8184875455 0.8459244802 0.8925048951 0.6232281163 0.6740302093
## [9116] 0.2132885024 0.9663311059 0.4181897195 0.9769353747 0.3992281643
## [9121] 0.2665088681 0.0549324581 0.1239393193 0.7430413433 0.8598427570
## [9126] 0.0675450851 0.7001072298 0.2122031704 0.7649291848 0.6544998989
## [9131] 0.0093035705 0.3714390366 0.0205535503 0.0975106674 0.7651074842
## [9136] 0.9887451453 0.4663340104 0.4976843606 0.1633350023 0.0623339166
## [9141] 0.3645440898 0.4134210438 0.0953979969 0.0417367695 0.4701846035
## [9146] 0.5894880175 0.5103955811 0.3378876646 0.3528339185 0.4629330518
## [9151] 0.4140635677 0.4809041775 0.4373994505 0.8659288073 0.9526357461
## [9156] 0.4607324370 0.1483493572 0.9233252126 0.6485574331 0.5150908415
## [9161] 0.4229968771 0.4584277735 0.6145081322 0.5525502177 0.8473102779
## [9166] 0.7360691068 0.5109078173 0.3699064950 0.3413745570 0.9263731285
## [9171] 0.6978910710 0.0393442318 0.4172713888 0.7024397884 0.7912324388
## [9176] 0.4172325015 0.2506168582 0.7917310914 0.4833794371 0.5051141246
## [9181] 0.0447794072 0.7826560375 0.1157038738 0.8572491364 0.1907157102
## [9186] 0.5002914806 0.9812904904 0.5358973229 0.1730470858 0.5262210735
## [9191] 0.6916184483 0.5378907319 0.2945616264 0.1549022721 0.1726882034
## [9196] 0.0044355791 0.9305986298 0.2505019457 0.8434979167 0.2584267153
## [9201] 0.8273411221 0.6205817030 0.0830711299 0.7576882253 0.1359014437
## [9206] 0.7880681999 0.5316776201 0.5658330433 0.4821611173 0.1165859566
## [9211] 0.7135956274 0.0395479470 0.9710294936 0.5201425548 0.1535480894
## [9216] 0.6183257185 0.3885575931 0.1999773945 0.8158656705 0.6565012188
## [9221] 0.2319823609 0.2797532621 0.2087070301 0.6663274894 0.9594739004
## [9226] 0.2136217181 0.7898256099 0.0865086548 0.1955583309 0.2365999990
## [9231] 0.2015582594 0.8903423843 0.2164691044 0.7498317257 0.1326475064
## [9236] 0.1059416222 0.9229247972 0.5871831552 0.2116736309 0.5251420281
## [9241] 0.6326912650 0.7280424500 0.3335072671 0.7175908536 0.0778294252
## [9246] 0.4969955558 0.7018004367 0.8069386445 0.6221239029 0.8115020561
## [9251] 0.4092479976 0.1822700630 0.2955437938 0.9578000450 0.5012491255
## [9256] 0.2569781518 0.6930976309 0.4539628372 0.5210789593 0.4338931168
## [9261] 0.5889831836 0.0527529353 0.7110384227 0.2398924280 0.1433393793
## [9266] 0.8964974138 0.8901002259 0.2880239731 0.5430336642 0.5788341490
## [9271] 0.4665798937 0.8595110429 0.9134142727 0.2207909368 0.9102938189
## [9276] 0.2635814062 0.1155289782 0.4187158109 0.3530265017 0.2800871306
## [9281] 0.5108280862 0.3188922984 0.9779018445 0.9056091222 0.6083115908
## [9286] 0.1186578323 0.9872221906 0.2129250351 0.7298041040 0.9799951975
## [9291] 0.5064028460 0.5516396576 0.2941796962 0.6524309592 0.5620544091
## [9296] 0.2627318073 0.8124507066 0.5332668300 0.5216225801 0.8895549404
## [9301] 0.9041877342 0.7993465501 0.8312699298 0.6907144535 0.3914645688
## [9306] 0.2235230146 0.3247333981 0.6379180008 0.9523435838 0.0851112963
## [9311] 0.9992245099 0.2571330793 0.6133802326 0.1956431133 0.4868442876
## [9316] 0.6653003839 0.2931239253 0.6614646889 0.1917480428 0.1996269917
## [9321] 0.3716589259 0.9741635239 0.7700433084 0.9281874578 0.3395090280
## [9326] 0.1964554403 0.6493277301 0.9379909806 0.3652830115 0.5352656732
## [9331] 0.0111107978 0.7862004425 0.7947841663 0.7749101065 0.8186098563
## [9336] 0.7895520505 0.1754330683 0.9400703111 0.5723509330 0.9181798764
## [9341] 0.1867507582 0.4431190197 0.0901066420 0.0133407601 0.6676770233
## [9346] 0.6911264837 0.6562397322 0.1610414757 0.0359444297 0.8171140261
## [9351] 0.1480074345 0.1542994083 0.4820856145 0.9440497928 0.4372849370
## [9356] 0.5579353864 0.0749456905 0.1094320902 0.6113871955 0.5510864328
## [9361] 0.4457869043 0.8582658878 0.9278297248 0.2207472280 0.3932239042

```

```

## [9366] 0.5005563979 0.2393054595 0.5725111272 0.3561517494 0.5302832461
## [9371] 0.8690293999 0.2488028126 0.8682165830 0.8362679222 0.8318481796
## [9376] 0.6466732214 0.1369533753 0.2266555893 0.1202066030 0.0829145047
## [9381] 0.7899928144 0.0213635394 0.2813224723 0.2332485771 0.3957058776
## [9386] 0.9961503351 0.5457803903 0.6589366970 0.0592479171 0.0475704693
## [9391] 0.3555808775 0.9255703419 0.5879485637 0.7520549533 0.7603467676
## [9396] 0.4170200322 0.1957648264 0.6179187555 0.3596845710 0.6872820016
## [9401] 0.3133976155 0.9947265475 0.1997963928 0.8616090972 0.5617044456
## [9406] 0.3495875979 0.0700642063 0.8329599589 0.7889201534 0.9462333899
## [9411] 0.7377971422 0.1822327022 0.6041236599 0.2946312111 0.4168492212
## [9416] 0.4661338178 0.4328747636 0.3121927280 0.4034259799 0.9893567213
## [9421] 0.6905032959 0.8029528565 0.7839562072 0.8506530769 0.8520111567
## [9426] 0.8154567212 0.6466445905 0.2470496353 0.6283981787 0.9648722300
## [9431] 0.8042909640 0.5919184892 0.5243764381 0.7180460586 0.5097010889
## [9436] 0.4517136076 0.5031223580 0.3244107892 0.8808147791 0.1885245755
## [9441] 0.5160018966 0.4507593414 0.1434052745 0.6238716058 0.6744150976
## [9446] 0.7037794650 0.1100191526 0.8836253172 0.7265164216 0.6967547317
## [9451] 0.4648149344 0.9934404579 0.2282949454 0.4642230583 0.0396513431
## [9456] 0.7670668026 0.6128162292 0.4928197106 0.6321150454 0.9388901463
## [9461] 0.2035416015 0.7347654441 0.6002657774 0.1218334818 0.1673714708
## [9466] 0.2587544265 0.2008115165 0.9230359322 0.2289576164 0.9304644165
## [9471] 0.6700205419 0.5061268577 0.8301081689 0.5277309374 0.2851640786
## [9476] 0.4355935795 0.1256270355 0.0889963794 0.9219643524 0.9459117479
## [9481] 0.0034940292 0.8519776898 0.9191180217 0.2425454094 0.0320753661
## [9486] 0.1172021408 0.4150124022 0.5873181510 0.6095946251 0.4059011833
## [9491] 0.1418510288 0.5185671489 0.9243266813 0.1423551251 0.2288848869
## [9496] 0.8207275400 0.1914974457 0.6003026036 0.1847087915 0.1749952441
## [9501] 0.1504873377 0.1180337316 0.9796243012 0.7733295678 0.1896353365
## [9506] 0.3061444433 0.7542189851 0.1204117122 0.2766440084 0.9965615432
## [9511] 0.6389048538 0.8254468949 0.6786660005 0.7306736218 0.8432481495
## [9516] 0.4473839223 0.6012009366 0.5566947310 0.4644876162 0.9131931720
## [9521] 0.2900099617 0.9192023357 0.8760970517 0.0511233806 0.6024402179
## [9526] 0.2335472915 0.6722579877 0.5748678270 0.2887566986 0.8982663189
## [9531] 0.5459534214 0.4149836497 0.9256455562 0.6980841004 0.3551485884
## [9536] 0.9920624615 0.2855426222 0.4972362707 0.5927751654 0.7786790593
## [9541] 0.2190750177 0.6468482266 0.8022052670 0.9845472223 0.8827944060
## [9546] 0.8428385446 0.4900179796 0.3229635552 0.4742880868 0.4712476460
## [9551] 0.9033860609 0.2432590404 0.5310776153 0.8132819369 0.8228923896
## [9556] 0.8355526144 0.7081800061 0.9246564875 0.2590202660 0.6990931190
## [9561] 0.1794333809 0.8919016928 0.0816883275 0.5005320315 0.3834269459
## [9566] 0.1453361243 0.5459183728 0.1134501504 0.3367542079 0.0320283315
## [9571] 0.0468986769 0.3136077854 0.5228866262 0.9609315856 0.7779529157
## [9576] 0.8738765213 0.8103862291 0.5981733734 0.4252041499 0.5110145026
## [9581] 0.2378061951 0.3247670612 0.8976905817 0.8672953124 0.4120396757
## [9586] 0.7053089504 0.8123270719 0.5810619898 0.4421285145 0.2218205978
## [9591] 0.4327542930 0.8527123871 0.0003771470 0.6205079030 0.3514776844
## [9596] 0.1411967693 0.5950446206 0.6523491017 0.0382842879 0.4815196940
## [9601] 0.3764968035 0.7289420250 0.6788767886 0.5094859589 0.5029765124
## [9606] 0.3594481869 0.7650323193 0.1039701734 0.9933825266 0.1285837792
## [9611] 0.5984572131 0.8973267462 0.6390605110 0.0023910701 0.5516512226
## [9616] 0.1006360946 0.0081913616 0.4150636798 0.6790359662 0.4599066190
## [9621] 0.2115048465 0.7378224609 0.7098136694 0.6074585120 0.2593096748
## [9626] 0.8953135309 0.8314295647 0.7757781454 0.0283341401 0.1009596223
## [9631] 0.6864743270 0.9263366194 0.4950931520 0.9071481978 0.5114677833

```

```

## [9636] 0.6068833434 0.1200362003 0.3994223058 0.7169245159 0.3513536421
## [9641] 0.6728005329 0.1965747373 0.5226725671 0.9151296273 0.2620678417
## [9646] 0.6913437483 0.3668865708 0.6752484670 0.3069236886 0.3368831958
## [9651] 0.7545653736 0.7142437351 0.8034066031 0.6351924758 0.4683429230
## [9656] 0.5536580903 0.1762137190 0.7507993730 0.8594694497 0.3375683052
## [9661] 0.9399157430 0.3500883510 0.2686823559 0.4933273303 0.0699766714
## [9666] 0.6390900696 0.4627365105 0.6466312206 0.9787785926 0.7849483771
## [9671] 0.2008204221 0.7761860827 0.0549167746 0.8429636760 0.0346128081
## [9676] 0.6415576509 0.3182156443 0.5191529304 0.5037508804 0.1600039712
## [9681] 0.7019061779 0.2037731735 0.1413724966 0.1096929717 0.3664315363
## [9686] 0.1170873839 0.1505402110 0.4062694312 0.3894314713 0.6808131263
## [9691] 0.2600582112 0.6887136763 0.9465576738 0.7314599808 0.2996013177
## [9696] 0.6665399130 0.5334921961 0.2112796486 0.9401404691 0.1563621978
## [9701] 0.4250670791 0.7114179724 0.5380095539 0.7886617880 0.6697751280
## [9706] 0.2210641222 0.5133857647 0.2739535253 0.0716233645 0.1556299112
## [9711] 0.0504047031 0.9506590777 0.3519067325 0.1310992456 0.3098336236
## [9716] 0.9844341614 0.0728297737 0.3833878185 0.1158497485 0.1942370789
## [9721] 0.5772507101 0.4772259184 0.2936382677 0.7682619655 0.2914760757
## [9726] 0.6406842406 0.8251996181 0.6619753131 0.5193377248 0.5420986698
## [9731] 0.1286033370 0.5744644918 0.0200530767 0.3018125154 0.2054236121
## [9736] 0.3229716904 0.4400902366 0.8730550309 0.8999733506 0.3722631247
## [9741] 0.8202655112 0.3917484559 0.4797812983 0.5730569647 0.0374839469
## [9746] 0.7117335990 0.7986239583 0.5707322175 0.2421967849 0.3876778086
## [9751] 0.6548067920 0.8552775354 0.6980131853 0.6440317770 0.1865738554
## [9756] 0.1893077019 0.7168643280 0.5110158551 0.5423564011 0.2006615683
## [9761] 0.9242322660 0.7054883919 0.9733772456 0.4217322510 0.4646504181
## [9766] 0.3994288512 0.4349363587 0.8797395179 0.0196424799 0.8331111272
## [9771] 0.3942839622 0.9602152234 0.4938077134 0.6304256809 0.5826198172
## [9776] 0.0990260781 0.4738798603 0.7999442585 0.4248152551 0.2473648521
## [9781] 0.8380410059 0.0756802642 0.0443045911 0.1948739819 0.8694546774
## [9786] 0.8112495340 0.0897416321 0.1312044091 0.7203611057 0.6326470049
## [9791] 0.2890572693 0.6146522334 0.3778101332 0.2169996435 0.2397130905
## [9796] 0.2069336936 0.6810602664 0.9116840447 0.1009862721 0.3941936335
## [9801] 0.9784643365 0.3260324742 0.6806050830 0.0035970280 0.6945877095
## [9806] 0.1954802764 0.8437615857 0.8158478316 0.3698936648 0.8361508192
## [9811] 0.4807831142 0.8942352308 0.8611360692 0.0429062316 0.7654710014
## [9816] 0.2416698441 0.7126528394 0.8293084979 0.4641845745 0.5256836594
## [9821] 0.7810775807 0.6447947339 0.4283256604 0.1671681901 0.9941750391
## [9826] 0.7167921668 0.7710732220 0.9113388838 0.1923714319 0.6183959203
## [9831] 0.9086891451 0.5536666162 0.6386481660 0.8324146094 0.1670043787
## [9836] 0.2188529169 0.7686483950 0.5823086287 0.0014051856 0.7812840302
## [9841] 0.6972371816 0.4468898414 0.0495038078 0.3990800185 0.4644173868
## [9846] 0.0368930460 0.8557536085 0.0002093223 0.7519835741 0.6216320853
## [9851] 0.9764350932 0.4638959574 0.1772111165 0.5477602650 0.1007864442
## [9856] 0.4105832805 0.6729017723 0.1287987205 0.8014135870 0.2865533350
## [9861] 0.9473355172 0.1556395168 0.1122963451 0.6131610626 0.5213725143
## [9866] 0.0159019713 0.6119352185 0.7265446573 0.9952681559 0.1577469426
## [9871] 0.5386536243 0.2159160984 0.7323067383 0.8960853539 0.3795947899
## [9876] 0.0945390238 0.0759081789 0.5949833378 0.8744897403 0.8769169157
## [9881] 0.3436138314 0.6387236443 0.4618497697 0.5403330744 0.9706891953
## [9886] 0.3467450371 0.4133367202 0.3137105317 0.1905155514 0.9954244097
## [9891] 0.2897088476 0.3104678599 0.7032852020 0.9814115132 0.7028583048
## [9896] 0.4281493472 0.3940239058 0.0120386657 0.5673211837 0.4341699742
## [9901] 0.2893568548 0.5161098353 0.6618424520 0.2960173924 0.3455605193

```

```
## [9906] 0.1847093142 0.6796113786 0.3443725378 0.0460617140 0.6892281638
## [9911] 0.7811263978 0.0506951323 0.1590886409 0.6446179368 0.0747612936
## [9916] 0.1119595966 0.1083419167 0.7978336995 0.7744686147 0.7286317138
## [9921] 0.9353298121 0.0029851392 0.0220509889 0.1221749994 0.1700185926
## [9926] 0.2375461258 0.3069223213 0.9243060386 0.0531379509 0.2927828210
## [9931] 0.1401454261 0.2587850363 0.3135390898 0.0095414069 0.7620558941
## [9936] 0.0497326535 0.0438761855 0.2030119013 0.3469581360 0.7583134803
## [9941] 0.9247411448 0.2630201689 0.9663339620 0.2232106443 0.1846848996
## [9946] 0.7487215691 0.9718427300 0.6094186186 0.1420081163 0.0998834844
## [9951] 0.3466447889 0.2299882088 0.8447117493 0.3769615371 0.8354808591
## [9956] 0.6615679342 0.7231633098 0.0630371410 0.0522675119 0.3468204864
## [9961] 0.1892778983 0.0266301849 0.1305332114 0.1405290581 0.1314575750
## [9966] 0.5931745008 0.4174862526 0.3896016292 0.6572792917 0.0634416300
## [9971] 0.2746949901 0.3717040672 0.5525978589 0.3616940446 0.2254025137
## [9976] 0.6265368833 0.9449643080 0.9253751185 0.8369849910 0.4220834971
## [9981] 0.3038711085 0.2628457606 0.9548422385 0.2646221179 0.6874891993
## [9986] 0.8650229670 0.4661162662 0.6114926570 0.1912975669 0.1995067047
## [9991] 0.8289243098 0.4984713063 0.2771736244 0.6272780411 0.8081378217
## [9996] 0.0274235822 0.3732723165 0.5041413727 0.1360358526 0.3310754588
```

## Part b

I think it might not be a good way. I think the step size is too small to get close to the true value

## Part c

I think gradient descent is a good way to solve the optimization problem. However, sometimes the start value may determine the effect of optimization. Especially when the minimum value is not the true minimum.

## Problem 4

We know that  $X'X\hat{\beta} = X'y$ , so we can use solve function to get  $\hat{\beta}$  `beta_hat = solve(t(X)%%X, t(X) %>% y)`

## Problem 5

```
set.seed(12456)
G <- matrix(sample(c(0,0.5,1),size=16000,replace=T),ncol=10)
R <- cor(G) # R: 10 * 10 correlation matrix of G
C <- kronecker(R, diag(1600)) # C is a 16000 * 16000 block diagonal matrix
id <- sample(1:16000,size=932,replace=F)
q <- sample(c(0,0.5,1),size=15068,replace=T) # vector of length 15068
A <- C[id, -id] # matrix of dimension 932 * 15068
B <- C[-id, -id] # matrix of dimension 15068 * 15068
p <- runif(932,0,1)
r <- runif(15068,0,1)
C<-NULL #save some memory space
```

## Question a

From the environment, we know that the size of A B is 107.1MB and 1.7Gb respectively. However, my mac is not powerful enough to run this code. (I tried to run it, but after 15 min wait, it's still pending).

```
# system.time(y <- p+A%%solve(B, q-r))
```

## Question b

```
# system.time(y <- p+A%%solve(B, q-r))  
# system.time(y <- p + A %% solve(B) %% (q - r))
```

## Question C

## Problem 3

## Question a

```
proportion <- function(x, mar){  
  return(apply(x, mar, sum) / apply(x, mar, length))  
}
```

## Question b

```
set.seed(12345)  
P4b_data <- matrix(rbinom(10, 1, prob = (31:40)/100), nrow = 10, ncol = 10, byrow = FALSE)
```

## Question c

```
# by column  
proportion(P4b_data, 2)  
  
## [1] 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6  
  
# by row  
proportion(P4b_data, 1)  
  
## [1] 1 1 1 1 0 0 0 0 1 1
```

We can find that columns of the data are the same. This means the probability of random variable in the generated matrix are the same.

## Question d

```
P4b_data <- matrix(0, nrow = 10, ncol = 10, byrow = F)  
prob_ = (31:40)/100  
get_coin <- function(data, prob_){  
  for (i in 1:10){  
    data[i,] <- rbinom(10, 1, prob = prob_[i])  
  }  
  return(data)  
}  
P4b_data <- get_coin(P4b_data, prob_)  
proportion(P4b_data, 2)  
  
## [1] 0.7 0.3 0.5 0.5 0.3 0.1 0.8 0.4 0.1 0.2
```



```
proportion(P4b_data, 1)
```

```
## [1] 0.2 0.3 0.4 0.3 0.4 0.6 0.3 0.3 0.5 0.6
```

## Problem 4

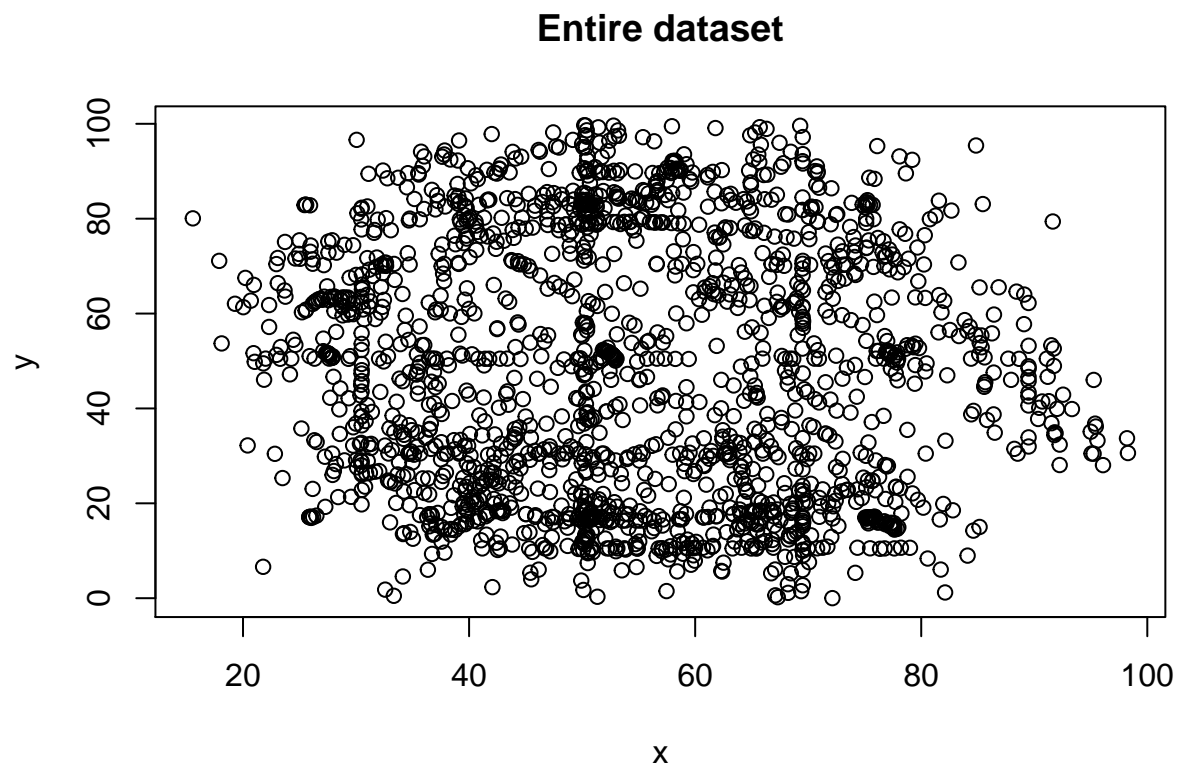
### Question a

```
df <- readRDS('HW3_data.rds')
colnames(df) <- c('Observer', 'x', 'y')

fun_plot <- function(i){
  if (i == 0)
    plot(df$x, df$y, main = "Entire dataset", xlab = "x", ylab = "y")
  else
    plot(df[which(df$Observer == i),]$x, df[which(df$Observer == i),]$y, main = paste("Observer", i), xlab = "x", ylab = "y")
}
```

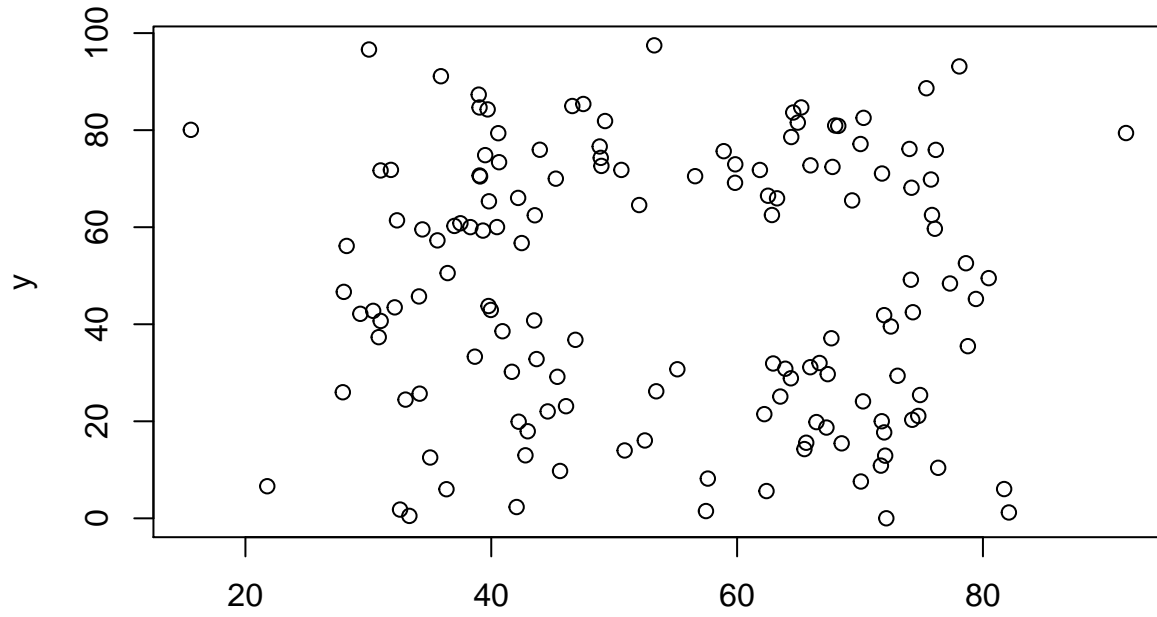
### Question b

```
fun_plot(0)
```

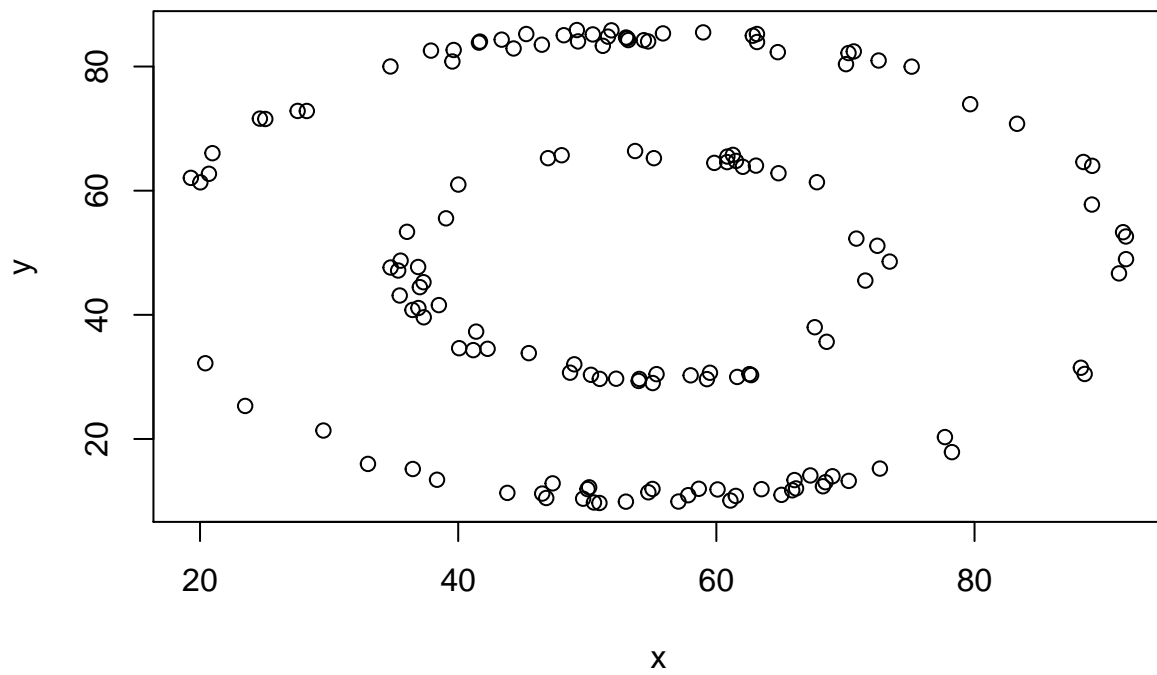


```
lapply(1:13, fun_plot)
```

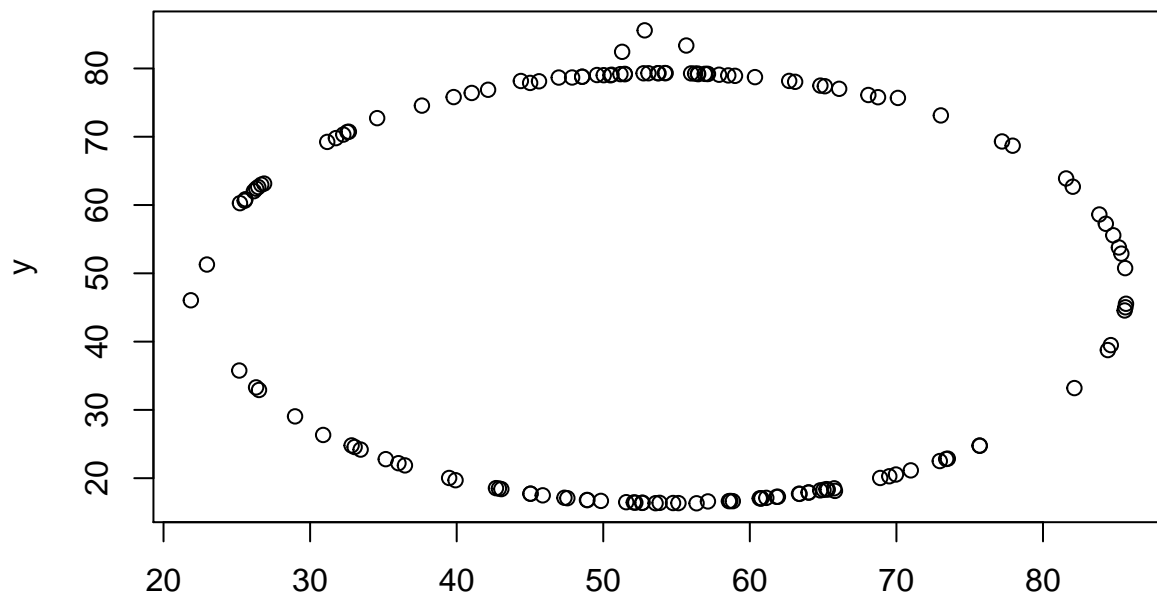
**Observer 1**



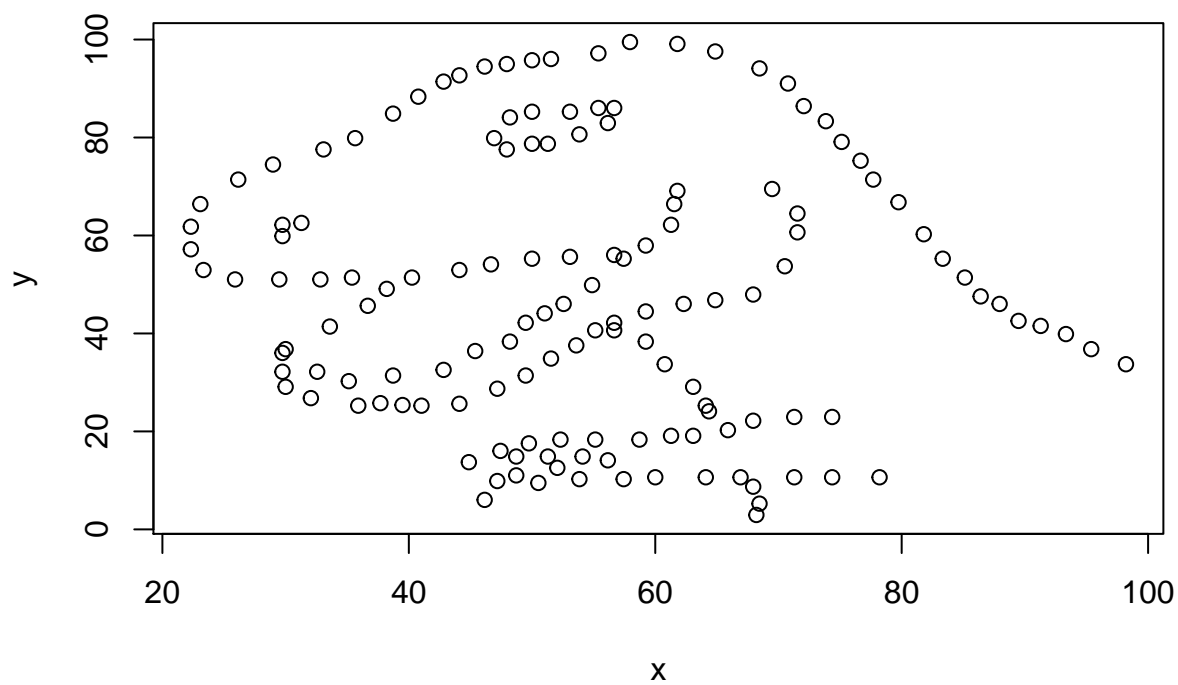
**Observer 2**



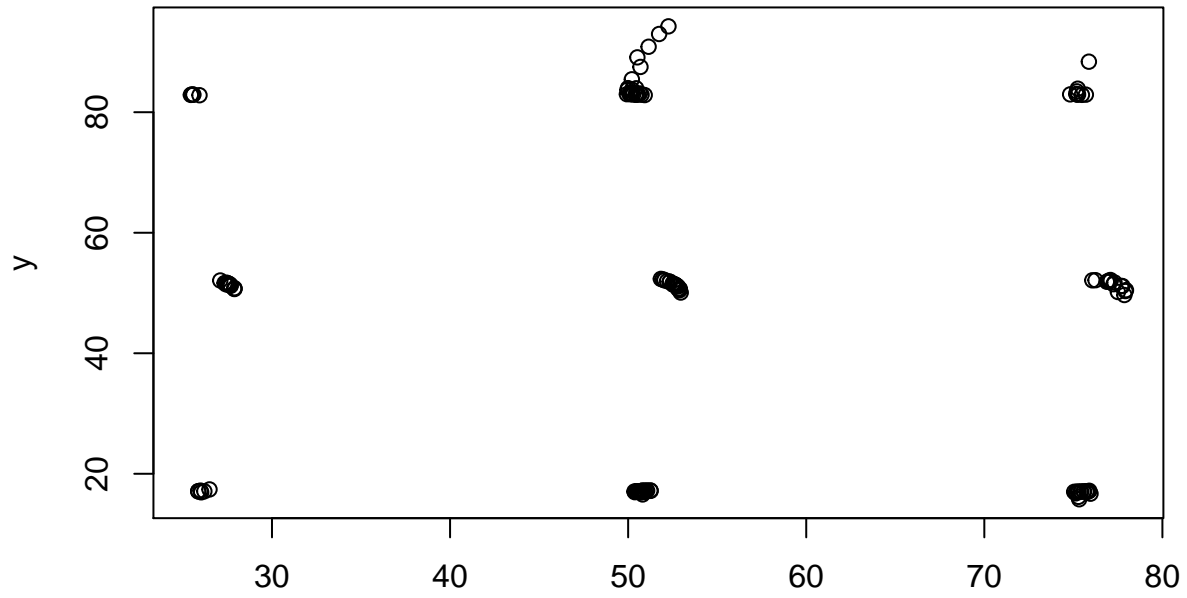
**Observer 3**



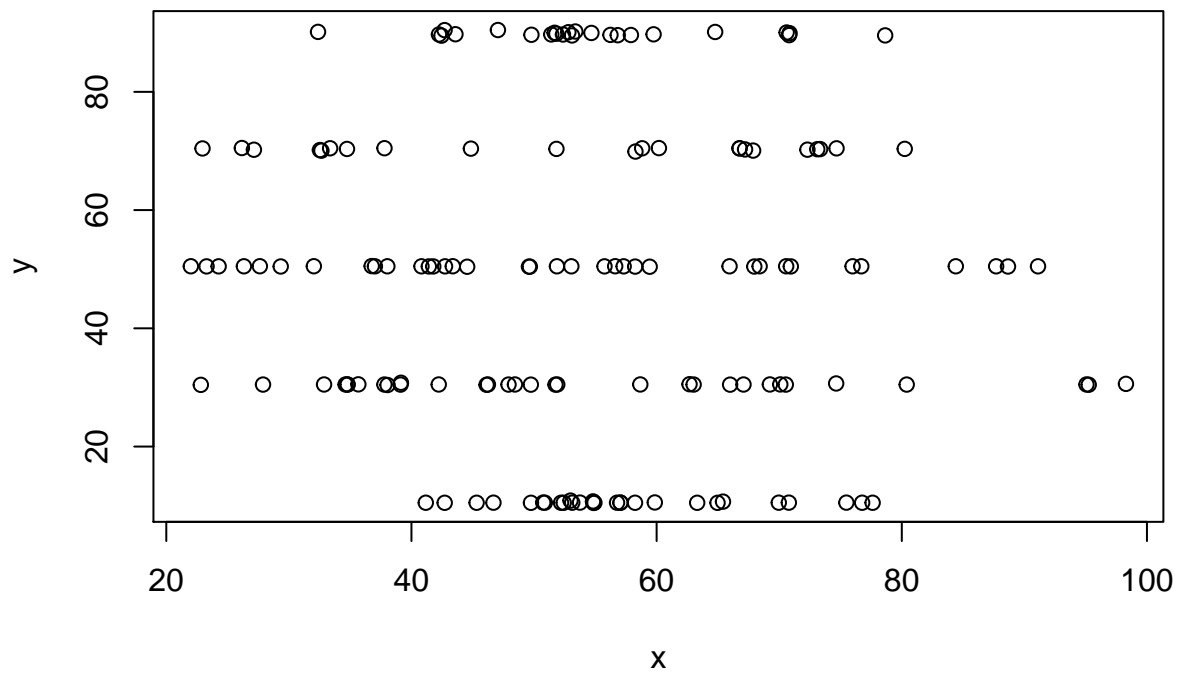
**Observer 4**



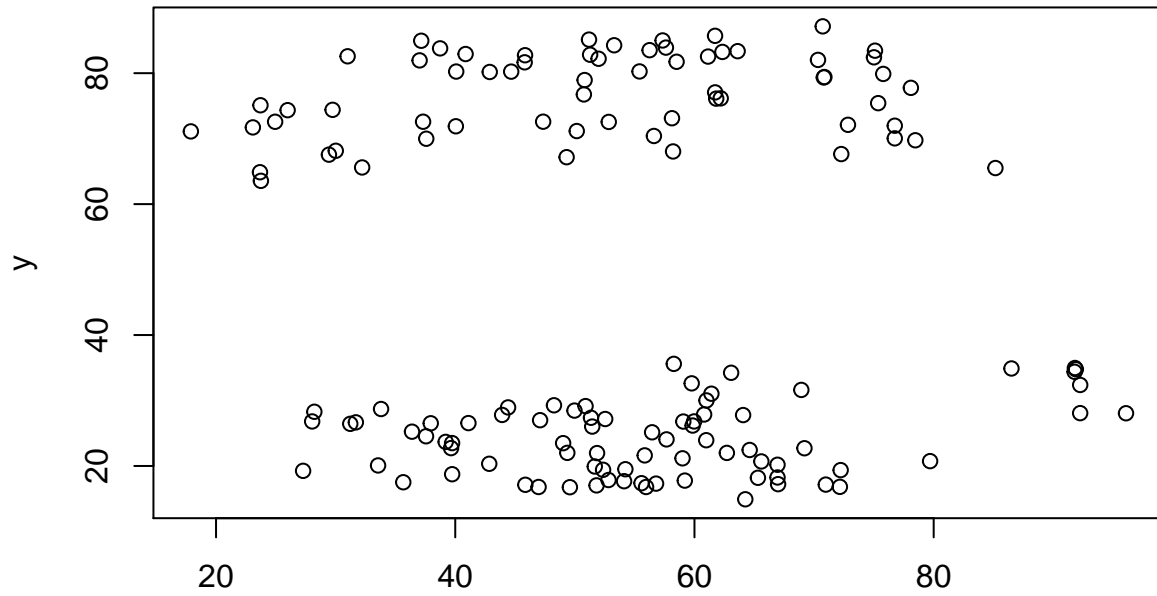
**Observer 5**



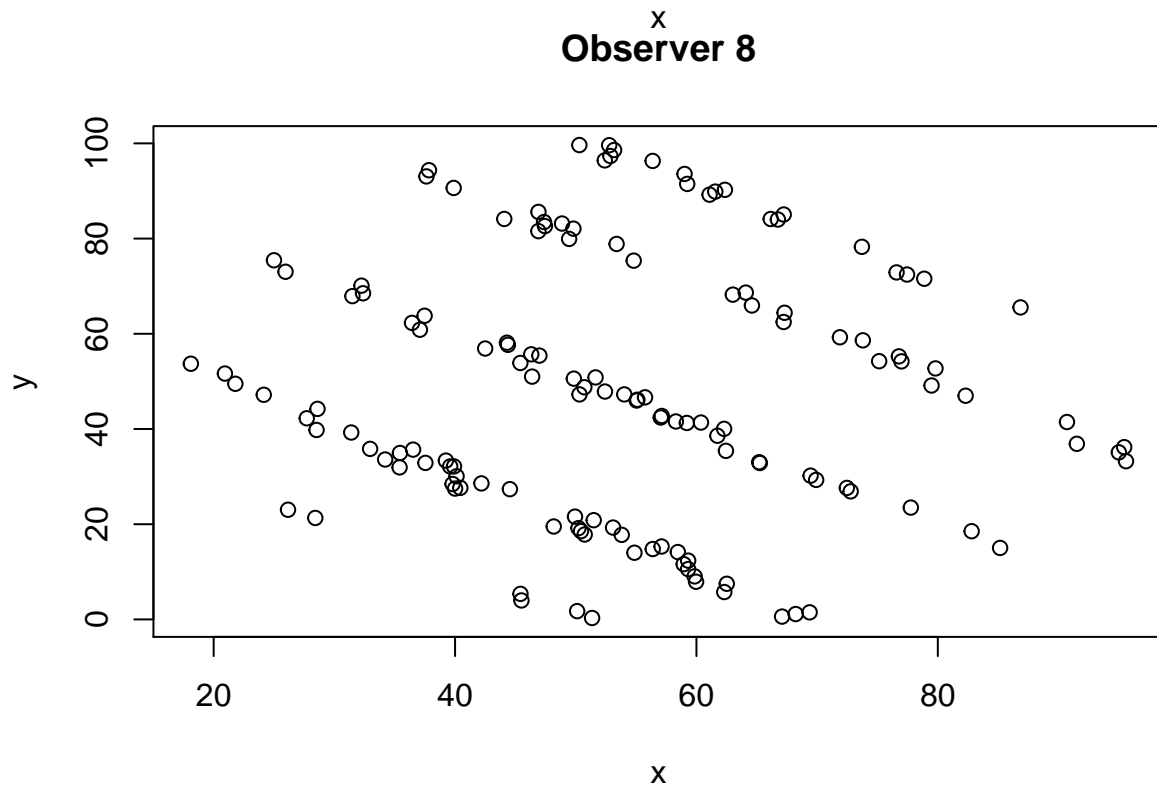
**Observer 6**



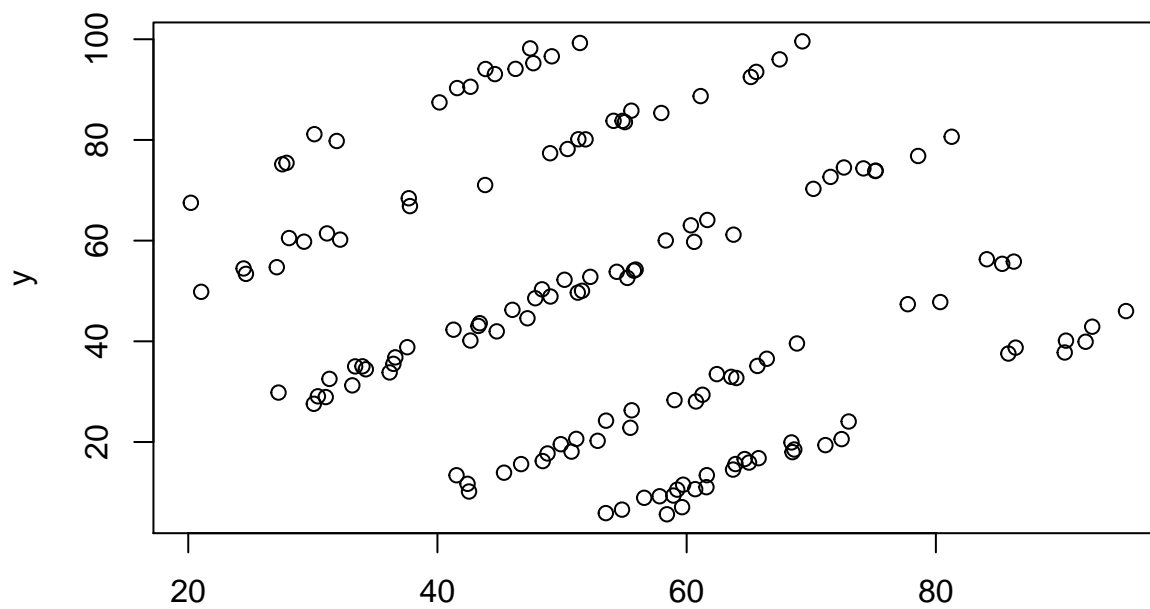
**Observer 7**



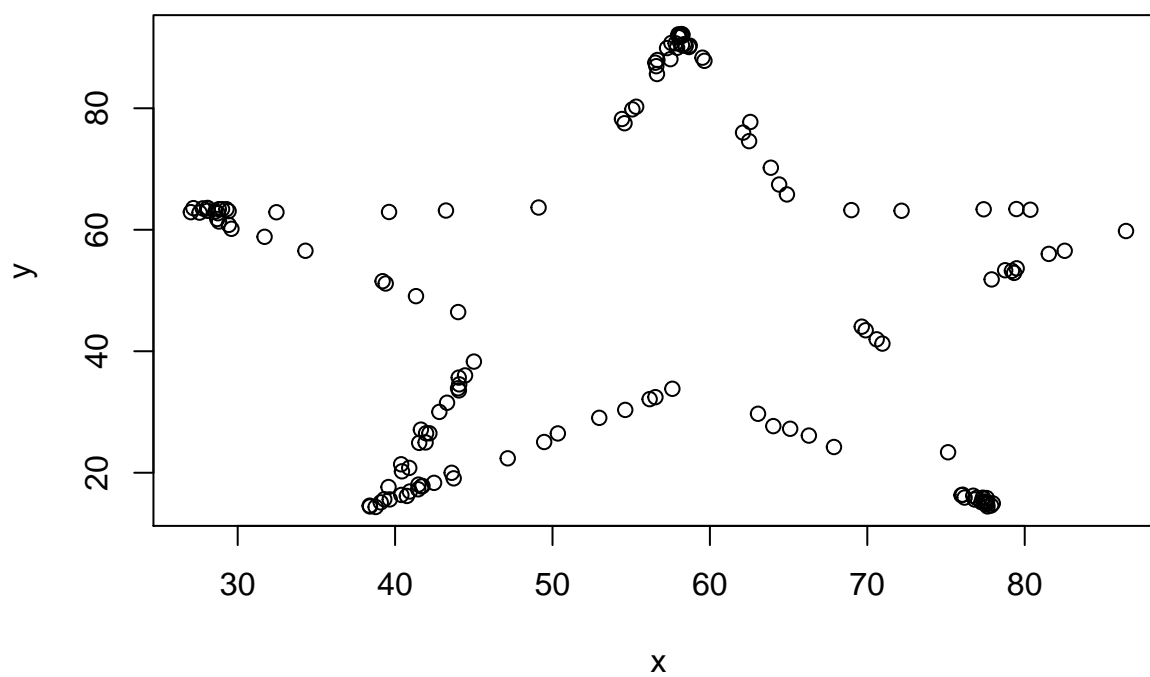
**Observer 8**



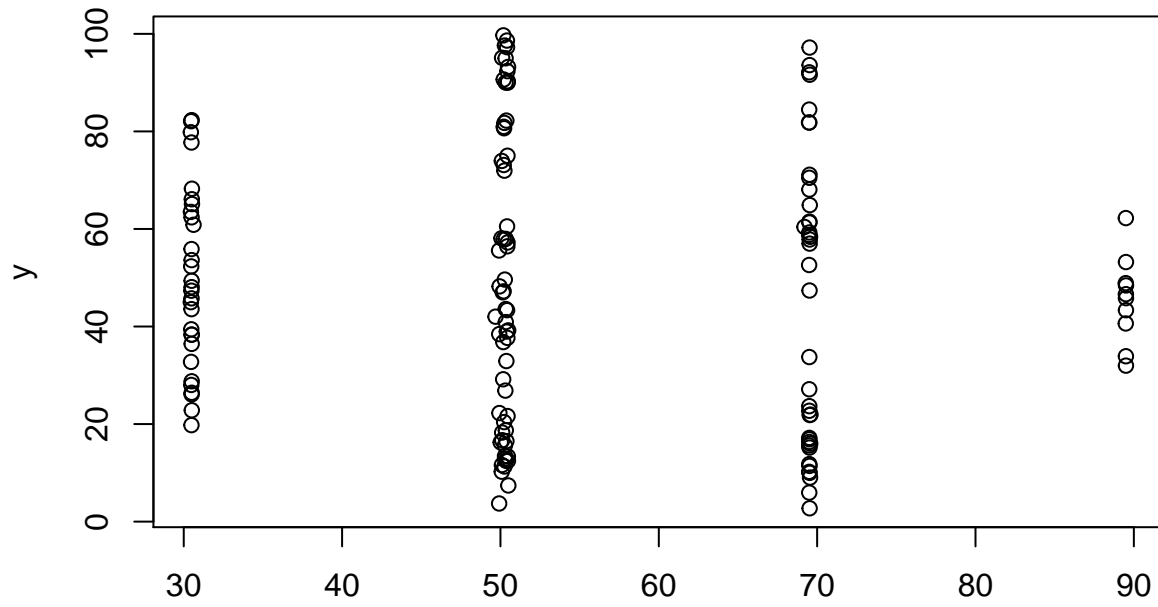
**Observer 9**



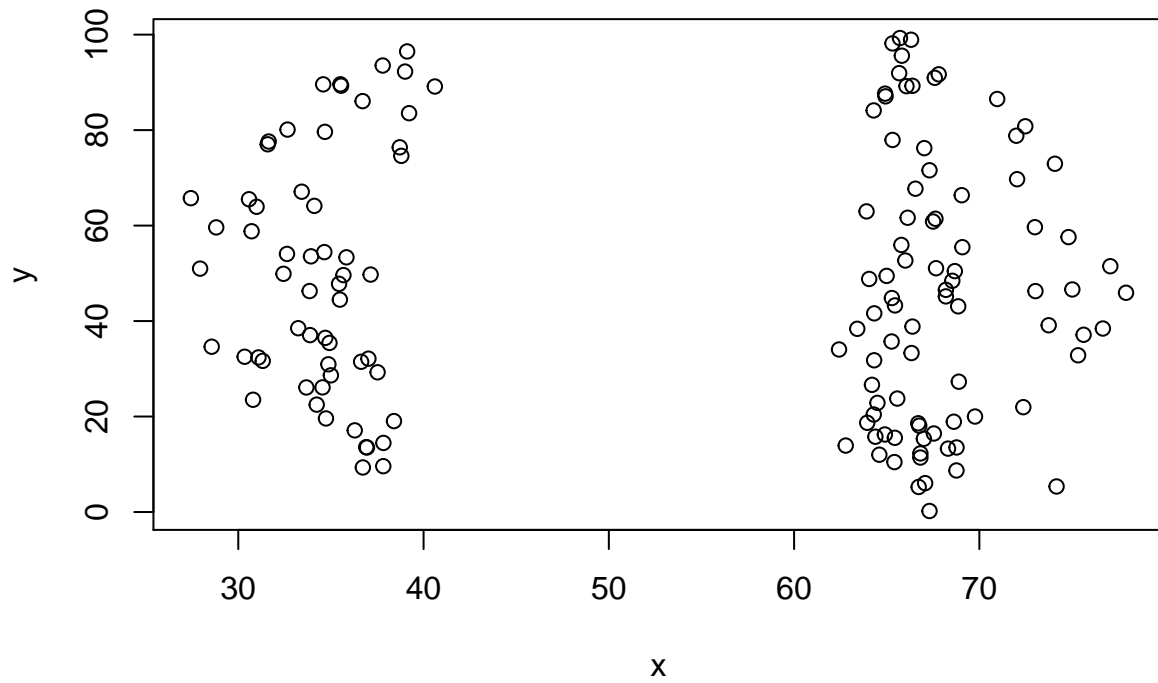
**Observer 10**



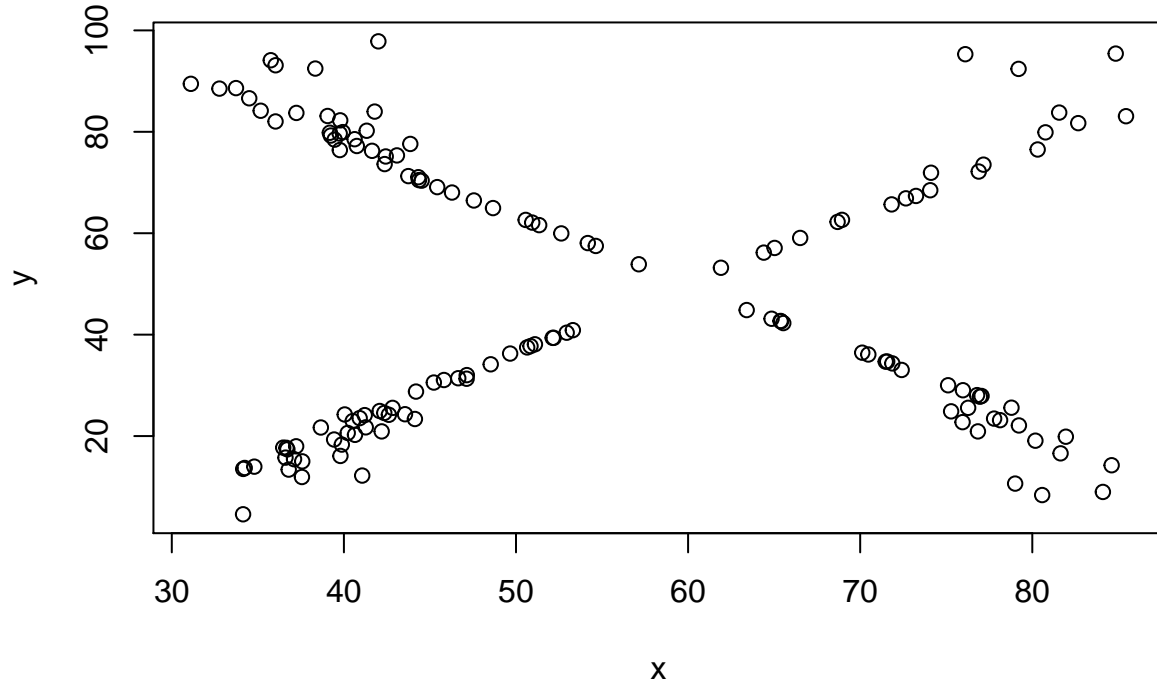
**Observer 11**



**Observer 12**



# Observer 13



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



```
## [[11]]
## NULL
##
## [[12]]
## NULL
##
## [[13]]
## NULL
```

## Problem 5

### Part a

```
library(downloader)
download("http://www.farinspace.com/wp-content/uploads/us_cities_and_states.zip",dest="us_cities_states")
unzip("us_cities_states.zip", exdir=".")
library(data.table)
states <- fread(input = "./us_cities_and_states/states.sql",skip = 23,sep = "'", sep2 = ",", header = F
```

### Part b

```
library(knitr)
library(dplyr)

##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:data.table':
##
##      between, first, last

## The following objects are masked from 'package:stats':
##
##      filter, lag

## The following objects are masked from 'package:base':
##
##      intersect, setdiff, setequal, union

cities <- fread(input = "./us_cities_and_states/cities_extended.sql",skip = 23,sep = "'", sep2 = ",", h
cities <- unique(cities)
num_city <- data.frame(table(cities$V4))
colnames(num_city) <- c("State", "# of cities")
kable(num_city)
```

State	# of cities
AK	229
AL	579
AR	605
AZ	264
CA	1239
CO	400
CT	269
DC	3

State	# of cities
DE	57
FL	524
GA	629
HI	92
IA	937
ID	266
IL	1287
IN	738
KS	634
KY	803
LA	479
MA	511
MD	430
ME	461
MI	885
MN	810
MO	942
MS	440
MT	360
NC	762
ND	373
NE	528
NH	255
NJ	579
NM	346
NV	99
NY	1612
OH	1069
OK	585
OR	379
PA	1802
PR	99
RI	70
SC	377
SD	364
TN	548
TX	1466
UT	250
VA	839
VT	288
WA	493
WI	753
WV	753
WY	176

### Part c

```
letter_count <- data.frame(matrix(NA,nrow=51, ncol=26))
getCount <- function(state, l){
  state <- tolower(state)
  dif <- gsub(l, "", state)
```

```

count <- nchar(state) - nchar(dif)
return(count)
}
for (i in 1:51){
  for(j in 1:26){
    letter_count[i,j] <- getCount(states$V2[i], letters[j])
  }
}
colnames(letter_count) <- letters
rownames(letter_count) <- states$V2
kable(letter_count)

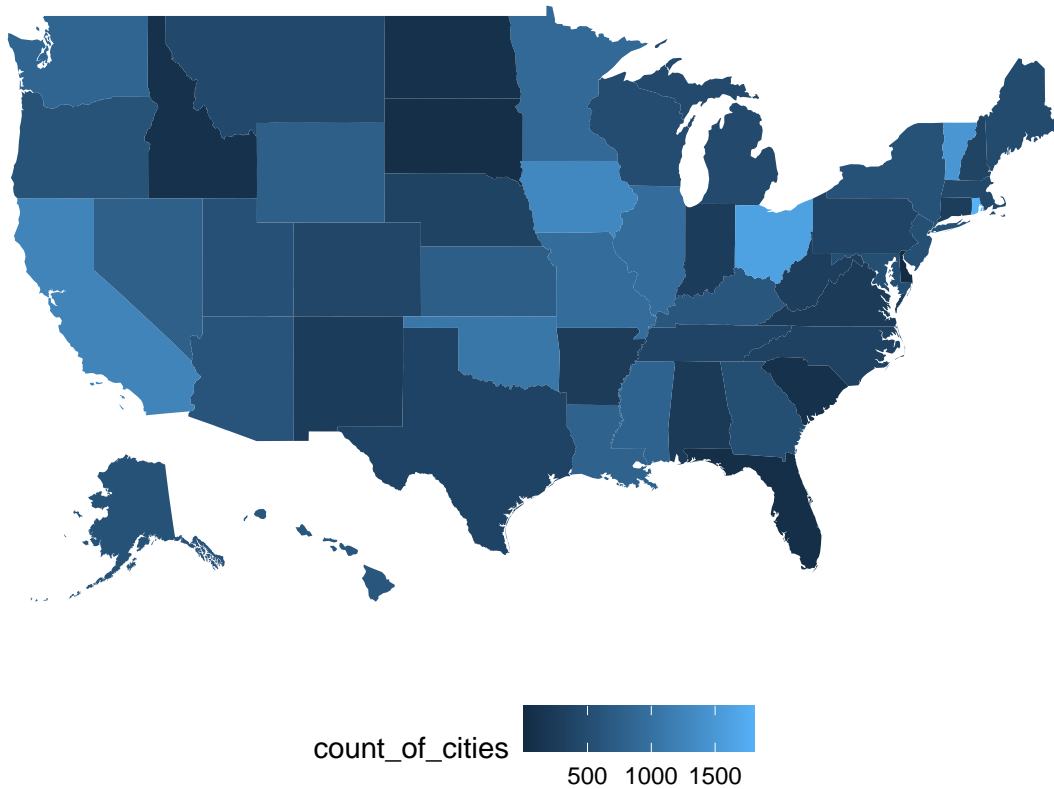
```

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
Alaska	3	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Alabama	4	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Arkansas	3	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0
Arizona	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1
California	2	0	1	0	0	1	0	0	2	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0
Colorado	1	0	1	1	0	0	0	0	0	0	0	1	0	0	3	0	0	1	0	0	0	0	0	0	0	0
Connecticut	0	0	3	0	1	0	0	0	1	0	0	0	0	2	1	0	0	0	0	2	1	0	0	0	0	0
District of Columbia	1	1	2	1	0	1	0	0	3	0	0	1	1	0	2	0	0	1	1	2	1	0	0	0	0	0
Delaware	2	0	0	1	2	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0
Florida	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0
Georgia	1	0	0	0	1	0	2	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
Hawaii	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Iowa	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Idaho	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Illinois	0	0	0	0	0	0	0	0	3	0	0	2	0	1	1	0	0	0	1	0	0	0	0	0	0	0
Indiana	2	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Kansas	2	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0
Kentucky	0	0	1	0	1	0	0	0	0	0	2	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0
Louisiana	2	0	0	0	0	0	0	0	2	0	0	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0
Massachusetts	2	0	1	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	4	2	1	0	0	0	0	0
Maryland	2	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0
Maine	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Michigan	1	0	1	0	0	0	1	1	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota	1	0	0	0	1	0	0	0	1	0	0	0	1	2	1	0	0	0	1	1	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	0	0	2	0	0	0	1	0	1	0	0	1	2	0	1	0	0	0	0	0
Mississippi	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	2	0	0	4	0	0	0	0	0	0	0
Montana	2	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	1	0	0	0	0	0	0
North Carolina	2	0	1	0	0	0	0	1	1	0	0	1	0	2	2	0	0	2	0	1	0	0	0	0	0	0
North Dakota	2	0	0	1	0	0	0	1	0	0	1	0	0	1	2	0	0	1	0	2	0	0	0	0	0	0
Nebraska	2	1	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
New Hampshire	1	0	0	0	2	0	0	2	1	0	0	0	1	1	0	1	0	1	1	0	0	0	1	0	0	0
New Jersey	0	0	0	0	3	0	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	0
New Mexico	0	0	1	0	2	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	0	0
Nevada	2	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
New York	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	1	0	1	0
Ohio	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Oklahoma	2	0	0	0	0	0	0	1	0	0	1	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0
Oregon	0	0	0	0	1	0	1	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0
Pennsylvania	2	0	0	0	1	0	0	0	1	0	0	1	0	3	0	1	0	0	1	0	0	1	0	0	1	0
Rhode Island	1	0	0	2	1	0	0	1	1	0	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0	0

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
South Carolina	2	0	1	0	0	0	0	1	1	0	0	1	0	1	2	0	0	1	1	1	1	0	0	0	0	0
South Dakota	2	0	0	1	0	0	0	1	0	0	1	0	0	0	2	0	0	0	1	2	1	0	0	0	0	0
Tennessee	0	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0
Texas	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0
Utah	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Virginia	1	0	0	0	0	0	1	0	3	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
Vermont	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	0	1	0	0	0	0
Washington	1	0	0	0	0	0	1	1	1	0	0	0	0	2	1	0	0	0	1	1	0	0	1	0	0	0
Wisconsin	0	0	1	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	2	0	0	0	1	0	0	0
West Virginia	1	0	0	0	1	0	1	0	3	0	0	0	0	1	0	0	0	1	1	1	0	1	1	0	0	0
Wyoming	0	0	0	0	0	0	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	1	0

## Part d

```
#https://cran.r-project.org/web/packages/fiftystater/vignettes/fiftystater.html
library(ggplot2)
library(fiftystater)
data("fifty_states") # this line is optional due to lazy data loading
crimes <- data.frame(state = tolower(rownames(USArrests)), USArrests)
crimes$count_of_cities <- num_city$`# of cities`[1:50]
# map_id creates the aesthetic mapping to the state name column in your data
p <- ggplot(crimes, aes(map_id = state)) +
# map points to the fifty_states shape data
geom_map(aes(fill = count_of_cities), map = fifty_states) +
expand_limits(x = fifty_states$long, y = fifty_states$lat) +
coord_map() +
scale_x_continuous(breaks = NULL) +
scale_y_continuous(breaks = NULL) +
labs(x = "", y = "") +
theme(legend.position = "bottom",
panel.background = element_blank())
p
```



## Problem 2

```
library(quantreg)
```

```
## Loading required package: SparseM
##
## Attaching package: 'SparseM'
## The following object is masked from 'package:base':
##
##      backsolve
```

```
library(quantmod)
```

```
## Loading required package: xts
## Loading required package: zoo
##
## Attaching package: 'zoo'
## The following objects are masked from 'package:base':
##
##      as.Date, as.Date.numeric
##
## Attaching package: 'xts'
## The following objects are masked from 'package:dplyr':
##
##      first, last
```

```
## The following objects are masked from 'package:data.table':
```

```
##
```

```
## first, last
```

```
## Loading required package: TTR
```

```
## Registered S3 method overwritten by 'quantmod':
```

```
## method from
```

```
## as.zoo.data.frame zoo
```

```
## Version 0.4-0 included new data defaults. See ?getSymbols.
```

```
#1)fetch data from Yahoo
```

```
#AAPL prices
```

```
apple08 <- getSymbols('AAPL', auto.assign = FALSE, from = '2008-1-1', to =  
"2008-12-31")[,6]
```

```
## 'getSymbols' currently uses auto.assign=TRUE by default, but will
```

```
## use auto.assign=FALSE in 0.5-0. You will still be able to use
```

```
## 'loadSymbols' to automatically load data. getOption("getSymbols.env")
```

```
## and getOption("getSymbols.auto.assign") will still be checked for
```

```
## alternate defaults.
```

```
##
```

```
## This message is shown once per session and may be disabled by setting
```

```
## options("getSymbols.warning4.0"=FALSE). See ?getSymbols for details.
```

```
#market proxy
```

```
rm08<-getSymbols('^ixic', auto.assign = FALSE, from = '2008-1-1', to =  
"2008-12-31")[,6]
```

```
#log returns of AAPL and market
```

```
logapple08<- na.omit(ROC(apple08)*100)
```

```
logrm08<-na.omit(ROC(rm08)*100)
```

```
#OLS for beta estimation
```

```
beta_AAPL_08<-summary(lm(logapple08~logrm08))$coefficients[2,1]
```

```
#create df from AAPL returns and market returns
```

```
df08<-cbind(logapple08,logrm08)
```

```
set.seed(666)
```

```
Boot=1000
```

```
sd.boot=rep(0,Boot)
```

```
for(i in 1:Boot){
```

```
# nonparametric bootstrap
```

```
bootdata=df08[sample(nrow(df08), size = 251, replace = TRUE),]
```

```
sd.boot[i]= coef(summary(lm(AAPL.Adjusted~IXIC.Adjusted, data = bootdata)))[2,2]
```

```
}
```

```
head(sd.boot)
```

```
## [1] 0.06861697 0.05623268 0.05940469 0.07227114 0.04946579 0.06534476
```

The problem is the formular in lm is wrong. I have already correct them.

### Problem 3

```
url_sen<-"https://www2.isye.gatech.edu/~jeffwu/wuhamadabook/data/Sensory.dat"
```

```
df_sen<-read.table(url_sen, skip=1, fill=TRUE, header=TRUE)
```

```

cur_item = 1
align_data <- function(row_){
  if (is.na(row_['X5'])){
    row_[2:6] <- row_[1:5]
    row_[1] <- cur_item
  }else{
    cur_item <- row_[1]
  }
  return(row_)
}
df_sen_align<-data.table(t(apply(df_sen, 1, align_data)))
set.seed(666)
Boot=1000
beta.boot=rep(0,Boot)
for(i in 1:Boot){
  # nonparametric bootstrap
  bootdata=df_sen_align[sample(nrow(df_sen_align), size = nrow(df_sen_align), replace = TRUE),]
  beta.boot[i]= coef(summary(lm(Item~., data = bootdata)))[2,2]
}
head(beta.boot)

## [1] 0.7970865 0.7471297 0.7815065 0.6511281 0.5847815 1.0509479

```

## Part c

```

library(parallel)
library(foreach)
library(doParallel)

## Loading required package: iterators

cores <- detectCores()

cl <- makeCluster(cores - 1)
system.time({
  para <- function(){
    bootdata=df_sen_align[sample(nrow(df_sen_align), size = nrow(df_sen_align), replace = TRUE),]
    beta.boot[i]= coef(summary(lm(Item~., data = bootdata)))[2,2]
    return(beta.boot)
  }

  Boot <- matrix(1:100, ncol = 100)
  clusterExport(cl = cl, varlist = c("Boot", "para", "df_sen_align"), envir = environment())
  beta <- t(parSapply(cl, Boot, para))
})
stopCluster(cl)

```

## Problem 3

### Part a

```

fx <- function(x){
  y <- 3^x - sin(x) + cos(5*x)
}

```

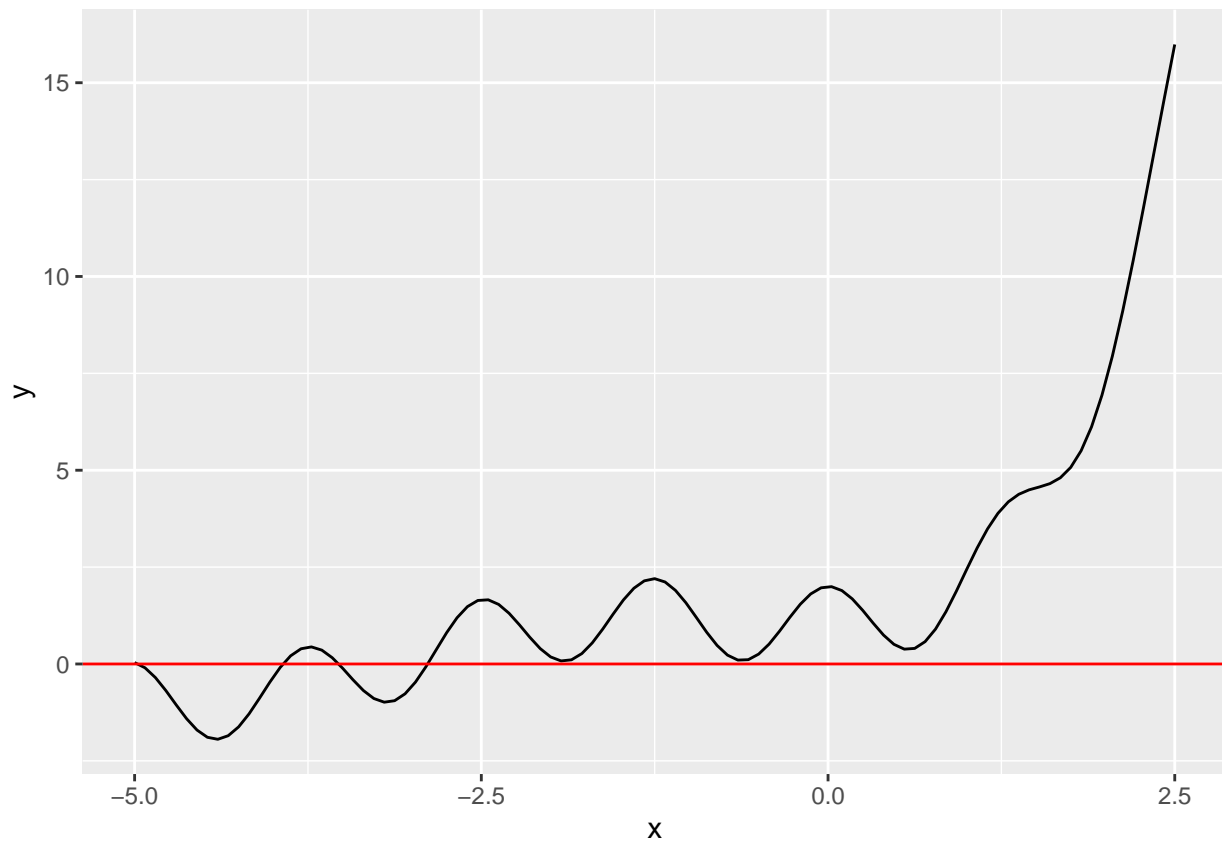
```

}

fdx <- function(x){
  y <- 3^x*log(3) - cos(x) - 5*sin(5*x)
}

ggplot(data = data.frame(x = 0,y = 0), mapping = aes(x = x)) +
  stat_function(fun = fx) +
  xlim(-5, 2.5) +
  geom_abline(intercept = 0, slope = 0, colour = "red")

```



```

iter <- function(x){
  while (abs(fx(x)-0) > 1e-6) {
    x <- x - fx(x)/fdx(x)
  }
  return(x)
}

system.time(s <- lapply(-999:0, iter))

```

```

##    user  system elapsed
##  0.020   0.000   0.021

```

## Part b

```

system.time(s <- mclapply(-999:0, iter, mc.cores = 8))

```



```
##      user  system elapsed
##    0.055   0.092   0.072
```

It seem part b cost much more time than a, I think this means for simple problems, muliti-threading does not improve efficiency.