

Optimisation sans advection

2024-08-16

Anciennes simulations

```
sim_BR <- function(beta1, beta2, alpha1, alpha2, x, y, z, n.BR) {  
  ## Setup  
  RandomFields::RFOptions(spConform=FALSE)  
  lx <- length(sx <- seq_along(x))  
  ly <- length(sy <- seq_along(y))  
  lz <- length(sz <- seq_along(z))  
  ## Model-Variogram BuhlCklu  
  modelBuhlCklu <- RandomFields::RMfbm(alpha=alpha1, var=beta1, proj=1) +  
    RandomFields::RMfbm(alpha=alpha1, var=beta1, proj=2) +  
    RandomFields::RMfbm(alpha=alpha2, var=beta2, proj=3)  
  
  ## Construct grid  
  Nxy <- lx * ly  
  N <- Nxy * lz  
  grid <- matrix(0, nrow=N, ncol=3) # (N,3)-matrix  
  
  for (i in sx)  
    for (j in seq_len(ly*lz))  
      grid[i+(j-1)*ly, 1] <- i  
  
  for (i in sy)  
    for (j in sx)  
      for(k in sz)  
        grid[j+lx*(i-1)+(k-1)*Nxy, 2] <- i  
  
  for (i in sz)  
    for (j in seq_len(Nxy))  
      grid[j+Nxy*(i-1), 3] <- i  
  
  ## Construct shifted variogram  
  Varm1 <- vapply(seq_len(N), function(n)  
    RandomFields::RFvariogram(modelBuhlCklu,  
      x=sx-grid[n,1],  
      y=sy-grid[n,2],  
      z=sz-grid[n,3]),  
    array(NA_real_, dim=c(lx, ly, lz))) ## => (lx, ly, lz, N)-array  
  
  ## Main  
  Z <- array(dim=c(lx, ly, lz, n.BR)) # 4d array  
  E <- matrix(rexp(n.BR * N), nrow=n.BR, ncol=N)  
  for (i in seq_len(n.BR)) { ## n=1
```

```

V <- 1/E[i,1]
W <- RandomFields::RFsimulate(modelBuhlCklu, x, y, z, n=1)
Y <- exp(W - W[1] - Varm1[, , 1])
Z[, , i] <- V * Y
## n in {2,...,N}
for(n in 2:N) {
  Exp <- E[i,n]
  V <- 1/Exp
  while(V > Z[N*(i-1)+n]) {
    W <- RandomFields::RFsimulate(modelBuhlCklu, x, y, z)
    Y <- exp(W - W[n] - Varm1[, , n])
    if(all(V*Y[seq_len(n-1)] < Z[(N*(i-1)+1):(N*(i-1)+(n-1))]))
      Z[, , i] <- pmax(V*Y, Z[, , i])
    Exp <- Exp + rexp(1)
    V <- 1/Exp
  }
}
}
## Return
Z
}

```

```

true_param <- c(0.4, 0.2, 1.5, 1)
ngrid <- 5
spa <- 1:ngrid
nsites <- ngrid^2 # if the grid is squared
temp <- 1:300
n.BR <- 1

# generate the simulations
# BR <- sim_BR(true_param[1] * 2, true_param[2] * 2, true_param[3], true_param[4],
#
      spa, spa, temp, n.BR)
# save_simulations(BR, ngrid, n.BR,
#
      folder = paste0("../data/simulations_BR/oldsim_", ngrid^2, "s_",
#
                        length(temp), "t/"),
#
      file = paste0("br_", ngrid^2, "s_",
#
                        length(temp), "t"), forcedind = 1)

# load the simulations
file_path <- paste0("../data/simulations_BR/oldsim_", ngrid^2, "s_",
                    length(temp), "t/br_",
                    ngrid^2, "s_", length(temp), "t_", 1, ".csv")
simu_df <- read.csv(file_path)

```

```

nsites <- ncol(simu_df)
sites_coords <- generate_grid_coords(sqrt(nsites))
dist_mat <- get_dist_mat(sites_coords,
                        latlon = FALSE) # distance matrix
df_dist <- reshape_distances(dist_mat) # reshape the distance matrix

```

Validation du modèle de Buhl séparable

Pour la simulation avec 25 sites et 300 pas de temps et un quantile de 0.9 on obtient une bonne estimation des paramètres du modèle de Buhl séparable avec WLSE.

En revanche, pour une simulation avec 49 sites et 300 pas de temps avec un quantile de 0.9 on obtient une mauvaise estimation notamment pour le paramètre β_1 et le choix du quantile a un impact sur l'estimation des paramètres mais aucune valeur de quantile ne permet une bonne estimation de tous les paramètres.

```
sites_coords <- generate_grid_coords(sqrt(nsites))
h_vect <- get_lag_vectors(sites_coords, true_param,
                        hmax = sqrt(17), tau_vect = 0:10)

hmax <- sqrt(17)
q <- 0.9
chispa <- spatial_chi_alldist(df_dist, simu_df, quantile = q,
                            hmax = hmax)
spa_estim <- get_estimate_variospa(chispa, weights = "exp", summary = FALSE)
print(spa_estim)
```

```
## [1] 0.3724744 1.5253168
```

```
q <- 0.9
tmax <- 10
chitemp <- temporal_chi(simu_df, tmax = tmax, quantile = q)
temp_estim <- get_estimate_variotemp(chitemp, tmax, npoints = ncol(simu_df),
                                   weights = "exp", summary = FALSE)
print(temp_estim)
```

```
## [1] 0.1478522 0.9514819
```

```
df_result <- data.frame(beta1 = spa_estim[1],
                       alpha1 = spa_estim[2],
                       beta2 = temp_estim[1],
                       alpha2 = temp_estim[2])
colnames(df_result) <- c("beta1", "alpha1", "beta2", "alpha2")

df_valid <- get_criterion(df_result, true_param)
colnames(df_valid) <- c("estim", "rmse", "mae")
print(df_valid)
```

```
##           estim      rmse      mae
## beta1  0.3724744 0.02752561 0.02752561
## beta2  0.1478522 0.05214780 0.05214780
## alpha1 1.5253168 0.02531678 0.02531678
## alpha2 0.9514819 0.04851810 0.04851810
```

Optimisation

Get excesses

```

empirical_excesses <- function(data_rain, quantile, h_vect) {
  q <- quantile # quantile

  unique_tau <- unique(h_vect$tau) # unique temporal lags

  for (t in unique_tau) { # loop over temporal lags
    df_h_t <- h_vect[h_vect$tau == t, ] # get the dataframe for each lag

    for (i in seq_len(nrow(df_h_t))) { # loop over each pair of sites
      # get the indices of the sites
      ind_s2 <- as.numeric(as.character(df_h_t$s2[i]))
      ind_s1 <- df_h_t$s1[i]

      # get the data for the pair of sites
      rain_cp <- data_rain[, c(ind_s1, ind_s2), drop = FALSE]
      rain_cp <- na.omit(rain_cp)
      colnames(rain_cp) <- c("s1", "s2")

      Tmax <- nrow(rain_cp) # number of time steps
      rain_nolag <- rain_cp$s1[1:(Tmax - t)] # get the data without lag
      rain_lag <- rain_cp$s2[(1 + t):Tmax] # get the data with lag

      n <- length(rain_nolag) # number of observations
      # transform the data in uniform data
      rain_unif <- cbind(rank(rain_nolag) / (n + 1), rank(rain_lag) / (n + 1))
      # get the conditional excesses on s2
      cp_cond <- rain_unif[rain_unif[, 2] > q, , drop = FALSE]
      excess_count <- sum(cp_cond[, 1] > q) # number of excesses for s1 given
      # those of s2
      num_cond_excesses <- nrow(cp_cond) # number excesses for s2

      # store the number of excesses
      h_vect$N_vect[h_vect$s1 == ind_s1 & h_vect$s2 == ind_s2 & h_vect$tau == t] <- num_cond_excesses
      h_vect$n_vect[h_vect$s1 == ind_s1 & h_vect$s2 == ind_s2 & h_vect$tau == t] <- excess_count
    }
  }
  return(h_vect)
}

q <- 0.9
excesses <- empirical_excesses(simu_df, q, h_vect)
print(head(excesses))

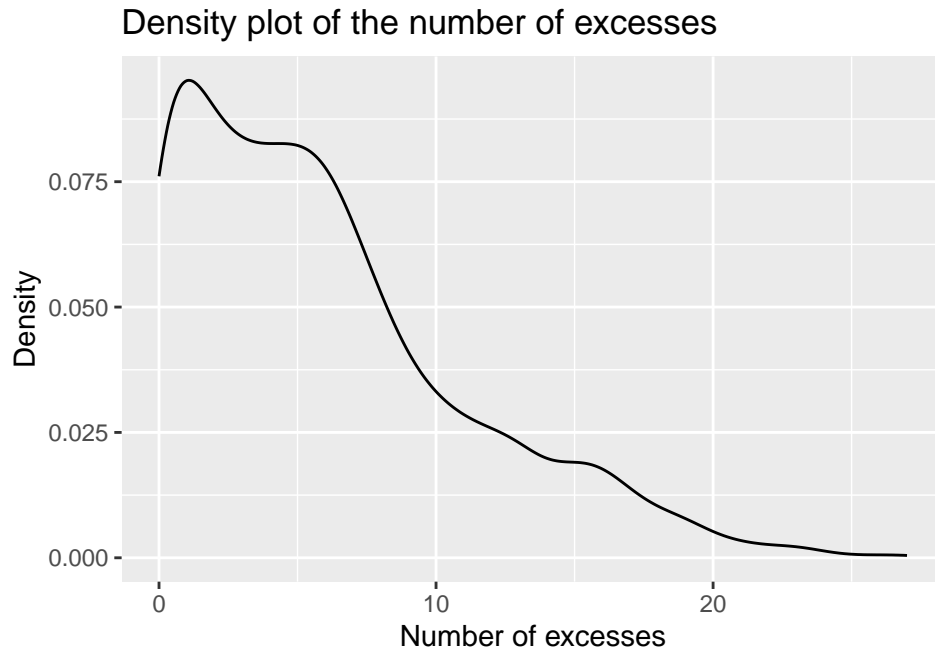
```

```

##   s1 s2 h1 h2 tau hnorm N_vect n_vect
## 1  1  2  0  1  0      1      30      22
## 2  1  2  0  1  1      1      29      21
## 3  1  2  0  1  2      1      29      21
## 4  1  2  0  1  3      1      29      21
## 5  1  2  0  1  4      1      29      20
## 6  1  2  0  1  5      1      29      19

```

```
# density plot of the number of excesses
ggplot(excesses, aes(x = n_vect)) +
  geom_density() +
  labs(title = "Density plot of the number of excesses",
       x = "Number of excesses", y = "Density")
```



Pour la simulation avec 25 sites et 300 pas de temps avec un quantile de 0.9 on obtient une bonne estimation des paramètres du modèle de Buhl séparable avec l'optimisation de la vraisemblance composite. En changeant le quantile, on garde des résultats similaires pour $q > 0.9$ et proche de 0.9. Pour $q < 0.9$, on obtient des résultats moins bons pour le paramètre α_1 .

Pour la simulation avec 49 sites et 300 pas de temps avec un quantile de 0.9 on obtient une mauvaise estimation des paramètres du modèle avec l'optimisation de la vraisemblance composite. Les alphas sont fortement sous-estimés.

Peu importe la méthode d'optimisation, on obtient des résultats similaires.

```
tau_vect <- unique(h_vect$tau)
result <- optim(par = c(true_param), fn = neg_ll,
               simu = simu_df,
               quantile = q,
               excesses = excesses,
               h_vect = h_vect, tau = tau_vect,
               locations = sites_coords,
               method = "CG",
               control = list(parscale = c(1, 1, 1, 1),
                             maxit = 10000))
```

```
## [1] 0.4 0.2 1.5 1.0
## [1] 0.401 0.200 1.500 1.000
## [1] 0.399 0.200 1.500 1.000
## [1] 0.400 0.201 1.500 1.000
```

```

## [1] 0.400 0.199 1.500 1.000
## [1] 0.400 0.200 1.501 1.000
## [1] 0.400 0.200 1.499 1.000
## [1] 0.400 0.200 1.500 1.001
## [1] 0.400 0.200 1.500 0.999
## [1] -15776.126 -19456.973 -6101.529 -6863.210
## [1] "out of bounds"
## [1] -3154.905 -3891.235 -1219.106 -1371.842
## [1] "out of bounds"
## [1] -630.6610 -778.0869 -242.6212 -273.5684
## [1] "out of bounds"
## [1] -125.81221 -155.45738 -47.32424 -53.91368
## [1] "out of bounds"
## [1] -24.842441 -30.931476 -8.264847 -9.982736
## [1] "out of bounds"
## [1] -4.6484883 -6.0262953 -0.4529694 -1.1965472
## [1] "out of bounds"
## [1] -0.6096977 -1.0452591 1.1094061 0.5606906
## [1] "out of bounds"
## [1] 0.19806047 -0.04905181 1.42188122 0.91213811
## [1] "out of bounds"
## [1] 0.3596121 0.1501896 1.4843762 0.9824276
## [1] 0.3798060 0.1750948 1.4921881 0.9912138
## [1] 0.3606121 0.1501896 1.4843762 0.9824276
## [1] 0.3586121 0.1501896 1.4843762 0.9824276
## [1] 0.3596121 0.1511896 1.4843762 0.9824276
## [1] 0.3596121 0.1491896 1.4843762 0.9824276
## [1] 0.3596121 0.1501896 1.4853762 0.9824276
## [1] 0.3596121 0.1501896 1.4833762 0.9824276
## [1] 0.3596121 0.1501896 1.4843762 0.9834276
## [1] 0.3596121 0.1501896 1.4843762 0.9814276
## [1] 0.30645924 0.09630563 1.46435553 0.96700141
## [1] 0.3330357 0.1232476 1.4743659 0.9747145
## [1] 0.3340357 0.1232476 1.4743659 0.9747145
## [1] 0.3320357 0.1232476 1.4743659 0.9747145
## [1] 0.3330357 0.1242476 1.4743659 0.9747145
## [1] 0.3330357 0.1222476 1.4743659 0.9747145
## [1] 0.3330357 0.1232476 1.4753659 0.9747145
## [1] 0.3330357 0.1232476 1.4733659 0.9747145
## [1] 0.3330357 0.1232476 1.4743659 0.9757145
## [1] 0.3330357 0.1232476 1.4743659 0.9737145
## [1] 0.3043668 0.1243150 1.4620509 0.9757453
## [1] 0.3187012 0.1237813 1.4682084 0.9752299
## [1] 0.3053668 0.1243150 1.4620509 0.9757453
## [1] 0.3033668 0.1243150 1.4620509 0.9757453
## [1] 0.3043668 0.1253150 1.4620509 0.9757453
## [1] 0.3043668 0.1233150 1.4620509 0.9757453
## [1] 0.3043668 0.1243150 1.4630509 0.9757453
## [1] 0.3043668 0.1243150 1.4610509 0.9757453
## [1] 0.3043668 0.1243150 1.4620509 0.9767453
## [1] 0.3043668 0.1243150 1.4620509 0.9747453
## [1] 0.2220619 0.1847669 1.4213998 0.9932532
## [1] 0.2879058 0.1364054 1.4539207 0.9792469
## [1] 0.2961363 0.1303602 1.4579858 0.9774961

```

```

## [1] 0.2889058 0.1364054 1.4539207 0.9792469
## [1] 0.2869058 0.1364054 1.4539207 0.9792469
## [1] 0.2879058 0.1374054 1.4539207 0.9792469
## [1] 0.2879058 0.1354054 1.4539207 0.9792469
## [1] 0.2879058 0.1364054 1.4549207 0.9792469
## [1] 0.2879058 0.1364054 1.4529207 0.9792469
## [1] 0.2879058 0.1364054 1.4539207 0.9802469
## [1] 0.2879058 0.1364054 1.4539207 0.9782469
## [1] 1751.2698 3315.0624 298.6176 851.7909
## [1] "out of bounds"
## [1] 350.48428 663.12160 60.88665 171.14158
## [1] "out of bounds"
## [1] 70.32718 132.73344 13.34047 35.01171
## [1] "out of bounds"
## [1] 14.29576 26.65581 3.83123 7.78574
## [1] "out of bounds"
## [1] 3.089477 5.440287 1.929383 2.340546
## [1] "out of bounds"
## [1] 0.848220 1.197182 1.549013 1.251507
## [1] 0.3999687 0.3485606 1.4729392 1.0336988
## [1] 0.3103184 0.1788364 1.4577244 0.9901372
## [1] 0.2923883 0.1448916 1.4546814 0.9814249
## [1] 0.2901471 0.1406485 1.4543011 0.9803359
## [1] 0.2933883 0.1448916 1.4546814 0.9814249
## [1] 0.2913883 0.1448916 1.4546814 0.9814249
## [1] 0.2923883 0.1458916 1.4546814 0.9814249
## [1] 0.2923883 0.1438916 1.4546814 0.9814249
## [1] 0.2923883 0.1448916 1.4556814 0.9814249
## [1] 0.2923883 0.1448916 1.4536814 0.9814249
## [1] 0.2923883 0.1448916 1.4546814 0.9824249
## [1] 0.2923883 0.1448916 1.4546814 0.9804249
## [1] 0.2926818 0.1469918 1.4541149 0.9820655
## [1] 0.2925351 0.1459417 1.4543982 0.9817452
## [1] 0.2936818 0.1469918 1.4541149 0.9820655
## [1] 0.2916818 0.1469918 1.4541149 0.9820655
## [1] 0.2926818 0.1479918 1.4541149 0.9820655
## [1] 0.2926818 0.1459918 1.4541149 0.9820655
## [1] 0.2926818 0.1469918 1.4551149 0.9820655
## [1] 0.2926818 0.1469918 1.4531149 0.9820655
## [1] 0.2926818 0.1469918 1.4541149 0.9830655
## [1] 0.2926818 0.1469918 1.4541149 0.9810655
## [1] 0.2912010 0.1477890 1.4521435 0.9824635
## [1] 0.2919414 0.1473904 1.4531292 0.9822645
## [1] 0.2922010 0.1477890 1.4521435 0.9824635
## [1] 0.2902010 0.1477890 1.4521435 0.9824635
## [1] 0.2912010 0.1487890 1.4521435 0.9824635
## [1] 0.2912010 0.1467890 1.4521435 0.9824635
## [1] 0.2912010 0.1477890 1.4531435 0.9824635
## [1] 0.2912010 0.1477890 1.4511435 0.9824635
## [1] 0.2912010 0.1477890 1.4521435 0.9834635
## [1] 0.2912010 0.1477890 1.4521435 0.9814635
## [1] 0.2892627 0.1466392 1.4489824 0.9823812
## [1] 0.2908134 0.1475590 1.4515113 0.9824471
## [1] 0.2910072 0.1476740 1.4518274 0.9824553

```

```

## [1] 0.2918134 0.1475590 1.4515113 0.9824471
## [1] 0.2898134 0.1475590 1.4515113 0.9824471
## [1] 0.2908134 0.1485590 1.4515113 0.9824471
## [1] 0.2908134 0.1465590 1.4515113 0.9824471
## [1] 0.2908134 0.1475590 1.4525113 0.9824471
## [1] 0.2908134 0.1475590 1.4505113 0.9824471
## [1] 0.2908134 0.1475590 1.4515113 0.9834471
## [1] 0.2908134 0.1475590 1.4515113 0.9814471
## [1] 25.440077 -16.154912 -115.702224 3.778644
## [1] "out of bounds"
## [1] 5.320666 -3.112935 -21.979236 1.541687
## [1] "out of bounds"
## [1] 1.2967839 -0.5045398 -3.2346382 1.0942950
## [1] "out of bounds"
## [1] 0.49200748 0.01713924 0.51428138 1.00481664
## [1] 0.3310522 0.1214751 1.2640653 0.9869210
## [1] 0.2988611 0.1423422 1.4140221 0.9833418
## [1] 0.2924229 0.1465157 1.4440134 0.9826260
## [1] 0.2916181 0.1470373 1.4477623 0.9825365
## [1] 0.2934229 0.1465157 1.4440134 0.9826260
## [1] 0.2914229 0.1465157 1.4440134 0.9826260
## [1] 0.2924229 0.1475157 1.4440134 0.9826260
## [1] 0.2924229 0.1455157 1.4440134 0.9826260
## [1] 0.2924229 0.1465157 1.4450134 0.9826260
## [1] 0.2924229 0.1465157 1.4430134 0.9826260
## [1] 0.2924229 0.1465157 1.4440134 0.9836260
## [1] 0.2924229 0.1465157 1.4440134 0.9816260
## [1] 0.3363500 0.1594082 1.3394985 0.9930673
## [1] 0.3012083 0.1490942 1.4231104 0.9847143
## [1] 0.2968156 0.1478049 1.4335619 0.9836701
## [1] 0.2978156 0.1478049 1.4335619 0.9836701
## [1] 0.2958156 0.1478049 1.4335619 0.9836701
## [1] 0.2968156 0.1488049 1.4335619 0.9836701
## [1] 0.2968156 0.1468049 1.4335619 0.9836701
## [1] 0.2968156 0.1478049 1.4345619 0.9836701
## [1] 0.2968156 0.1478049 1.4325619 0.9836701
## [1] 0.2968156 0.1478049 1.4335619 0.9846701
## [1] 0.2968156 0.1478049 1.4335619 0.9826701
## [1] 0.3139224 0.1412787 1.3760771 0.9858558
## [1] 0.3053690 0.1445418 1.4048195 0.9847630
## [1] 0.3149224 0.1412787 1.3760771 0.9858558
## [1] 0.3129224 0.1412787 1.3760771 0.9858558
## [1] 0.3139224 0.1422787 1.3760771 0.9858558
## [1] 0.3139224 0.1402787 1.3760771 0.9858558
## [1] 0.3139224 0.1412787 1.3770771 0.9858558
## [1] 0.3139224 0.1412787 1.3750771 0.9858558
## [1] 0.3139224 0.1412787 1.3760771 0.9868558
## [1] 0.3139224 0.1412787 1.3760771 0.9848558
## [1] 0.5189469 0.1253045 0.8095033 1.0226044
## [1] 0.3549273 0.1380839 1.2627623 0.9932055
## [1] 0.3221233 0.1406397 1.3534141 0.9873258
## [1] 0.3180228 0.1409592 1.3647456 0.9865908
## [1] 0.3231233 0.1406397 1.3534141 0.9873258
## [1] 0.3211233 0.1406397 1.3534141 0.9873258

```



```

## [1] 0.3221233 0.1416397 1.3534141 0.9873258
## [1] 0.3221233 0.1396397 1.3534141 0.9873258
## [1] 0.3221233 0.1406397 1.3544141 0.9873258
## [1] 0.3221233 0.1406397 1.3524141 0.9873258
## [1] 0.3221233 0.1406397 1.3534141 0.9883258
## [1] 0.3221233 0.1406397 1.3534141 0.9863258
## [1] 435.4304 585.8069 129.0119 194.2276
## [1] "out of bounds"
## [1] 87.34379 117.27390 26.88511 39.63538
## [1] "out of bounds"
## [1] 17.726456 23.567292 6.459752 8.716938
## [1] "out of bounds"
## [1] 3.802990 4.825970 2.374682 2.533248
## [1] "out of bounds"
## [1] 1.018297 1.077706 1.557668 1.296510
## [1] 0.461358 0.328053 1.394265 1.049163
## [1] 0.3499703 0.1781224 1.3615842 0.9996932
## [1] 0.3276927 0.1481363 1.3550481 0.9897993
## [1] 0.3232372 0.1421390 1.3537409 0.9878205
## [1] 0.3226803 0.1413894 1.3535775 0.9875731
## [1] 0.3242372 0.1421390 1.3537409 0.9878205
## [1] 0.3222372 0.1421390 1.3537409 0.9878205
## [1] 0.3232372 0.1431390 1.3537409 0.9878205
## [1] 0.3232372 0.1411390 1.3537409 0.9878205
## [1] 0.3232372 0.1421390 1.3547409 0.9878205
## [1] 0.3232372 0.1421390 1.3527409 0.9878205
## [1] 0.3232372 0.1421390 1.3537409 0.9888205
## [1] 0.3232372 0.1421390 1.3537409 0.9868205
## [1] 0.3238781 0.1424646 1.3539406 0.9880971
## [1] 0.3235577 0.1423018 1.3538408 0.9879588
## [1] 0.3248781 0.1424646 1.3539406 0.9880971
## [1] 0.3228781 0.1424646 1.3539406 0.9880971
## [1] 0.3238781 0.1434646 1.3539406 0.9880971
## [1] 0.3238781 0.1414646 1.3539406 0.9880971
## [1] 0.3238781 0.1424646 1.3549406 0.9880971
## [1] 0.3238781 0.1424646 1.3529406 0.9880971
## [1] 0.3238781 0.1424646 1.3539406 0.9890971
## [1] 0.3238781 0.1424646 1.3539406 0.9870971
## [1] 0.3246582 0.1419121 1.3541976 0.9884788
## [1] 0.3242682 0.1421884 1.3540691 0.9882879
## [1] 0.3256582 0.1419121 1.3541976 0.9884788
## [1] 0.3236582 0.1419121 1.3541976 0.9884788
## [1] 0.3246582 0.1429121 1.3541976 0.9884788
## [1] 0.3246582 0.1409121 1.3541976 0.9884788
## [1] 0.3246582 0.1419121 1.3551976 0.9884788
## [1] 0.3246582 0.1419121 1.3531976 0.9884788
## [1] 0.3246582 0.1419121 1.3541976 0.9894788
## [1] 0.3246582 0.1419121 1.3541976 0.9874788
## [1] 0.3253193 0.1399005 1.3544047 0.9892245
## [1] 0.3247904 0.1415098 1.3542390 0.9886279
## [1] 0.3247243 0.1417109 1.3542183 0.9885533
## [1] 0.3257904 0.1415098 1.3542390 0.9886279
## [1] 0.3237904 0.1415098 1.3542390 0.9886279
## [1] 0.3247904 0.1425098 1.3542390 0.9886279

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## [1] 0.3247904 0.1405098 1.3542390 0.9886279
## [1] 0.3247904 0.1415098 1.3552390 0.9886279
## [1] 0.3247904 0.1415098 1.3532390 0.9886279
## [1] 0.3247904 0.1415098 1.3542390 0.9896279
## [1] 0.3247904 0.1415098 1.3542390 0.9876279
## [1] -4.765260 -28.016420 -3.684116 40.351960
## [1] "out of bounds"
## [1] -0.6932196 -5.4900762 0.3465681 8.8612944
## [1] "out of bounds"
## [1] 0.1211884 -0.9848074 1.1527048 2.5631612
## [1] "out of bounds"
## [1] 0.28407001 -0.08375367 1.31393219 1.30353458
## [1] "out of bounds"
## [1] 0.31664633 0.09645709 1.34617766 1.05160925
## [1] 0.3231616 0.1324992 1.3526268 1.0012242
## [1] 0.3244646 0.1397077 1.3539166 0.9911472
## [1] 0.3247253 0.1411494 1.3541745 0.9891318
## [1] 0.3247578 0.1413296 1.3542068 0.9888798
## [1] 0.3257253 0.1411494 1.3541745 0.9891318
## [1] 0.3237253 0.1411494 1.3541745 0.9891318
## [1] 0.3247253 0.1421494 1.3541745 0.9891318
## [1] 0.3247253 0.1401494 1.3541745 0.9891318
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## [1] 0.3247253 0.1411494 1.3531745 0.9891318
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## [1] 0.3251296 0.1405693 1.3540304 0.9922742
## [1] 0.3249274 0.1408593 1.3541025 0.9907030
## [1] 0.3261296 0.1405693 1.3540304 0.9922742
## [1] 0.3241296 0.1405693 1.3540304 0.9922742
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## [1] 0.3251296 0.1405693 1.3540304 0.9912742
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## [1] 0.3250939 0.1398759 1.3538911 0.9936117
## [1] 0.3251117 0.1402226 1.3539607 0.9929429
## [1] 0.3260939 0.1398759 1.3538911 0.9936117
## [1] 0.3240939 0.1398759 1.3538911 0.9936117
## [1] 0.3250939 0.1408759 1.3538911 0.9936117
## [1] 0.3250939 0.1388759 1.3538911 0.9936117
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## [1] 0.3250939 0.1398759 1.3528911 0.9936117
## [1] 0.3250939 0.1398759 1.3538911 0.9946117
## [1] 0.3250939 0.1398759 1.3538911 0.9926117
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## [1] 0.3252315 0.1396492 1.3538217 0.9947028
## [1] 0.3263691 0.1394224 1.3537524 0.9957939
## [1] 0.3243691 0.1394224 1.3537524 0.9957939
## [1] 0.3253691 0.1404224 1.3537524 0.9957939
## [1] 0.3253691 0.1384224 1.3537524 0.9957939
## [1] 0.3253691 0.1394224 1.3547524 0.9957939

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## [1] 0.3253691 0.1394224 1.3527524 0.9957939
## [1] 0.3253691 0.1394224 1.3537524 0.9967939
## [1] 0.3253691 0.1394224 1.3537524 0.9947939
## [1] -4.688269 -27.927505 -6.066778 34.962330
## [1] "out of bounds"
## [1] -0.6773586 -5.4739631 -0.1303538 7.7891011
## [1] "out of bounds"
## [1] 0.1248236 -0.9832547 1.0569311 2.3544554
## [1] "out of bounds"
## [1] 0.28525999 -0.08511301 1.29438811 1.26752622
## [1] "out of bounds"
## [1] 0.31734728 0.09451533 1.34187951 1.05014039
## [1] 0.3237647 0.1304410 1.3513778 1.0066632
## [1] 0.3250482 0.1376261 1.3532774 0.9979678
## [1] 0.3253049 0.1390632 1.3536574 0.9962287
## [1] 0.3253370 0.1392428 1.3537049 0.9960113
## [1] 0.3263049 0.1390632 1.3536574 0.9962287
## [1] 0.3243049 0.1390632 1.3536574 0.9962287
## [1] 0.3253049 0.1400632 1.3536574 0.9962287
## [1] 0.3253049 0.1380632 1.3536574 0.9962287
## [1] 0.3253049 0.1390632 1.3546574 0.9962287
## [1] 0.3253049 0.1390632 1.3526574 0.9962287
## [1] 0.3253049 0.1390632 1.3536574 0.9972287
## [1] 0.3253049 0.1390632 1.3536574 0.9952287
## [1] 0.3257152 0.1382814 1.3532684 0.9994659
## [1] 0.3255100 0.1386723 1.3534629 0.9978473
## [1] 0.3267152 0.1382814 1.3532684 0.9994659
## [1] 0.3247152 0.1382814 1.3532684 0.9994659
## [1] 0.3257152 0.1392814 1.3532684 0.9994659
## [1] 0.3257152 0.1372814 1.3532684 0.9994659
## [1] 0.3257152 0.1382814 1.3542684 0.9994659
## [1] 0.3257152 0.1382814 1.3522684 0.9994659
## [1] 0.3257152 0.1382814 1.3532684 1.0004659
## [1] 0.3257152 0.1382814 1.3532684 0.9984659
## [1] 0.3261412 0.1377366 1.3529116 1.0022490
## [1] 0.3259282 0.1380090 1.3530900 1.0008575
## [1] 0.3271412 0.1377366 1.3529116 1.0022490
## [1] 0.3251412 0.1377366 1.3529116 1.0022490
## [1] 0.3261412 0.1387366 1.3529116 1.0022490
## [1] 0.3261412 0.1367366 1.3529116 1.0022490
## [1] 0.3261412 0.1377366 1.3539116 1.0022490
## [1] 0.3261412 0.1377366 1.3519116 1.0022490
## [1] 0.3261412 0.1377366 1.3529116 1.0032490
## [1] 0.3261412 0.1377366 1.3529116 1.0012490
## [1] 0.3285554 0.1261741 1.3478340 1.0339361
## [1] 0.3266240 0.1354241 1.3518961 1.0085865
## [1] 0.3263826 0.1365804 1.3524038 1.0054177
## [1] 0.3276240 0.1354241 1.3518961 1.0085865
## [1] 0.3256240 0.1354241 1.3518961 1.0085865
## [1] 0.3266240 0.1364241 1.3518961 1.0085865
## [1] 0.3266240 0.1344241 1.3518961 1.0085865
## [1] 0.3266240 0.1354241 1.3528961 1.0085865
## [1] 0.3266240 0.1354241 1.3508961 1.0085865
## [1] 0.3266240 0.1354241 1.3518961 1.0095865

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## [1] 0.3266240 0.1354241 1.3518961 1.0075865
## [1] 43.259270 67.560878 4.377705 49.899461
## [1] "out of bounds"
## [1] 8.913153 13.620515 1.957058 10.786761
## [1] "out of bounds"
## [1] 2.043930 2.832442 1.472928 2.964221
## [1] "out of bounds"
## [1] 0.6700852 0.6748278 1.3761026 1.3997134
## [1] 0.3953163 0.2433049 1.3567374 1.0868119
## [1] 0.3403625 0.1570003 1.3528643 1.0242315
## [1] 0.3293717 0.1397394 1.3520897 1.0117155
## [1] 0.3271736 0.1362872 1.3519348 1.0092123
## [1] 0.3267339 0.1355967 1.3519038 1.0087116
## [1] 0.3266790 0.1355104 1.3519000 1.0086490
## [1] 0.3277339 0.1355967 1.3519038 1.0087116
## [1] 0.3257339 0.1355967 1.3519038 1.0087116
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## [1] 0.3267652 0.1356171 1.3518902 1.0087953
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## [1] 0.3257965 0.1356374 1.3518766 1.0088790
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## [1] 0.3267965 0.1356374 1.3528766 1.0088790
## [1] 0.3267965 0.1356374 1.3508766 1.0088790
## [1] 0.3267965 0.1356374 1.3518766 1.0098790
## [1] 0.3267965 0.1356374 1.3518766 1.0078790
## [1] 0.3268974 0.1355239 1.3517354 1.0094437
## [1] 0.3268469 0.1355807 1.3518060 1.0091613
## [1] 0.3278974 0.1355239 1.3517354 1.0094437
## [1] 0.3258974 0.1355239 1.3517354 1.0094437
## [1] 0.3268974 0.1365239 1.3517354 1.0094437
## [1] 0.3268974 0.1345239 1.3517354 1.0094437
## [1] 0.3268974 0.1355239 1.3527354 1.0094437
## [1] 0.3268974 0.1355239 1.3507354 1.0094437
## [1] 0.3268974 0.1355239 1.3517354 1.0104437
## [1] 0.3268974 0.1355239 1.3517354 1.0084437
## [1] 0.3270252 0.1346531 1.3511651 1.0113383
## [1] 0.3269613 0.1350885 1.3514502 1.0103910
## [1] 0.3280252 0.1346531 1.3511651 1.0113383
## [1] 0.3260252 0.1346531 1.3511651 1.0113383
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## [1] 0.3270252 0.1346531 1.3501651 1.0113383
## [1] 0.3270252 0.1346531 1.3511651 1.0123383
## [1] 0.3270252 0.1346531 1.3511651 1.0103383
## [1] 42.444074 63.588156 4.089437 46.952060
## [1] "out of bounds"

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## [1] 8.750435 12.825354 1.898819 10.199483
## [1] "out of bounds"
## [1] 2.011707 2.672793 1.460696 2.848967
## [1] "out of bounds"
## [1] 0.6639616 0.6422811 1.3730712 1.3788641
## [1] 0.3944125 0.2361787 1.3555463 1.0848435
## [1] 0.3405027 0.1549582 1.3520413 1.0260394
## [1] 0.3297207 0.1387141 1.3513403 1.0142786
## [1] 0.3275643 0.1354653 1.3512001 1.0119264
## [1] 0.3271331 0.1348155 1.3511721 1.0114560
## [1] 0.3270792 0.1347343 1.3511686 1.0113972
## [1] 0.3281331 0.1348155 1.3511721 1.0114560
## [1] 0.3261331 0.1348155 1.3511721 1.0114560
## [1] 0.3271331 0.1358155 1.3511721 1.0114560
## [1] 0.3271331 0.1338155 1.3511721 1.0114560
## [1] 0.3271331 0.1348155 1.3521721 1.0114560
## [1] 0.3271331 0.1348155 1.3501721 1.0114560
## [1] 0.3271331 0.1348155 1.3511721 1.0124560
## [1] 0.3271331 0.1348155 1.3511721 1.0104560
## [1] 0.3271981 0.1348492 1.3511452 1.0116123
## [1] 0.3271656 0.1348323 1.3511586 1.0115341
## [1] 0.3281981 0.1348492 1.3511452 1.0116123
## [1] 0.3261981 0.1348492 1.3511452 1.0116123
## [1] 0.3271981 0.1358492 1.3511452 1.0116123
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## [1] 0.3271981 0.1348492 1.3521452 1.0116123
## [1] 0.3271981 0.1348492 1.3501452 1.0116123
## [1] 0.3271981 0.1348492 1.3511452 1.0126123
## [1] 0.3271981 0.1348492 1.3511452 1.0106123
## [1] 0.3273160 0.1347286 1.3510068 1.0121422
## [1] 0.3272570 0.1347889 1.3510760 1.0118773
## [1] 0.3283160 0.1347286 1.3510068 1.0121422
## [1] 0.3263160 0.1347286 1.3510068 1.0121422
## [1] 0.3273160 0.1357286 1.3510068 1.0121422
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## [1] 0.3273160 0.1347286 1.3500068 1.0121422
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## [1] 0.3273160 0.1347286 1.3510068 1.0111422
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## [1] 0.3274059 0.1343124 1.3507351 1.0130022
## [1] 0.3284958 0.1338962 1.3504633 1.0138621
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## [1] 0.3274958 0.1338962 1.3504633 1.0128621
## [1] 37.941690 63.845134 2.362309 45.567773
## [1] "out of bounds"
## [1] 7.850335 12.876144 1.552832 9.924644
## [1] "out of bounds"
## [1] 1.832064 2.682346 1.390937 2.796019

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## [1] "out of bounds"
## [1] 0.6284093 0.6435861 1.3585581 1.3702934
## [1] 0.3876785 0.2358342 1.3520823 1.0851484
## [1] 0.3395323 0.1542838 1.3507871 1.0281194
## [1] 0.3299031 0.1379737 1.3505281 1.0167136
## [1] 0.3279773 0.1347117 1.3504763 1.0144324
## [1] 0.3275921 0.1340593 1.3504659 1.0139762
## [1] 0.3275439 0.1339777 1.3504646 1.0139192
## [1] 0.3285921 0.1340593 1.3504659 1.0139762
## [1] 0.3265921 0.1340593 1.3504659 1.0139762
## [1] 0.3275921 0.1350593 1.3504659 1.0139762
## [1] 0.3275921 0.1330593 1.3504659 1.0139762
## [1] 0.3275921 0.1340593 1.3514659 1.0139762
## [1] 0.3275921 0.1340593 1.3494659 1.0139762
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## [1] 0.3275921 0.1340593 1.3504659 1.0129762
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## [1] 0.3276160 0.1340783 1.3504492 1.0140512
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## [1] 0.3266400 0.1340972 1.3504324 1.0141261
## [1] 0.3276400 0.1350972 1.3504324 1.0141261
## [1] 0.3276400 0.1330972 1.3504324 1.0141261
## [1] 0.3276400 0.1340972 1.3514324 1.0141261
## [1] 0.3276400 0.1340972 1.3494324 1.0141261
## [1] 0.3276400 0.1340972 1.3504324 1.0151261
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## [1] 0.3276737 0.1340508 1.3503530 1.0143799
## [1] 0.3287075 0.1340044 1.3502736 1.0146338
## [1] 0.3267075 0.1340044 1.3502736 1.0146338
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## [1] 0.3277075 0.1340044 1.3512736 1.0146338
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## [1] 0.3277651 0.1332960 1.3497000 1.0162198
## [1] 0.3277363 0.1336502 1.3499868 1.0154268
## [1] 0.3287651 0.1332960 1.3497000 1.0162198
## [1] 0.3267651 0.1332960 1.3497000 1.0162198
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## [1] 0.3277651 0.1322960 1.3497000 1.0162198
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## [1] 43.687225 58.151654 4.712442 42.151700
## [1] "out of bounds"
## [1] 8.999657 11.736968 2.022248 9.243316
## [1] "out of bounds"
## [1] 2.062144 2.454030 1.484210 2.661639
## [1] "out of bounds"
## [1] 0.6746408 0.5974428 1.3766019 1.3453036
## [1] 0.3971402 0.2261253 1.3550804 1.0820365

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## [1] 0.3416401 0.1518618 1.3507761 1.0293831
## [1] 0.3305401 0.1370091 1.3499152 1.0188524
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## [1] 0.3278206 0.1333702 1.3497043 1.0162724
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## [1] 0.3268761 0.1334445 1.3497086 1.0163251
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## [1] 0.3278761 0.1334445 1.3497086 1.0173251
## [1] 0.3278761 0.1334445 1.3497086 1.0153251
## [1] 0.3279523 0.1334646 1.3496862 1.0164613
## [1] 0.3279142 0.1334545 1.3496974 1.0163932
## [1] 0.3289523 0.1334646 1.3496862 1.0164613
## [1] 0.3269523 0.1334646 1.3496862 1.0164613
## [1] 0.3279523 0.1344646 1.3496862 1.0164613
## [1] 0.3279523 0.1324646 1.3496862 1.0164613
## [1] 0.3279523 0.1334646 1.3506862 1.0164613
## [1] 0.3279523 0.1334646 1.3486862 1.0164613
## [1] 0.3279523 0.1334646 1.3496862 1.0174613
## [1] 0.3279523 0.1334646 1.3496862 1.0154613
## [1] 0.3281188 0.1333219 1.3495662 1.0169211
## [1] 0.3280356 0.1333933 1.3496262 1.0166912
## [1] 0.3291188 0.1333219 1.3495662 1.0169211
## [1] 0.3271188 0.1333219 1.3495662 1.0169211
## [1] 0.3281188 0.1343219 1.3495662 1.0169211
## [1] 0.3281188 0.1323219 1.3495662 1.0169211
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## [1] 1.421334 2.726082 1.239016 2.718695
## [1] "out of bounds"
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## [1] 0.3721285 0.2362904 1.3447087 1.0863168
## [1] 0.3371550 0.1532973 1.3482318 1.0319042
## [1] 0.3301603 0.1366987 1.3489364 1.0210216
## [1] 0.3287613 0.1333790 1.3490774 1.0188451

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## [1] "out of bounds"
## [1] 0.7988258 3.1710022 1.0170321 2.6614336
## [1] "out of bounds"
## [1] 0.4240739 0.7380904 1.2801766 1.3540003
## [1] 0.3491235 0.2515080 1.3328056 1.0925136
## [1] 0.3341334 0.1541915 1.3433313 1.0402163
## [1] 0.3311354 0.1347282 1.3454365 1.0297568
## [1] 0.3305358 0.1308356 1.3458575 1.0276649
## [1] 0.3304159 0.1300570 1.3459417 1.0272465
## [1] 0.3304009 0.1299597 1.3459523 1.0271942
## [1] 0.3314159 0.1300570 1.3459417 1.0272465
## [1] 0.3294159 0.1300570 1.3459417 1.0272465
## [1] 0.3304159 0.1310570 1.3459417 1.0272465
## [1] 0.3304159 0.1290570 1.3459417 1.0272465
## [1] 0.3304159 0.1300570 1.3469417 1.0272465
## [1] 0.3304159 0.1300570 1.3449417 1.0272465
## [1] 0.3304159 0.1300570 1.3459417 1.0282465
## [1] 0.3304159 0.1300570 1.3459417 1.0262465
## [1] 0.3303565 0.1301538 1.3458683 1.0273820
## [1] 0.3303862 0.1301054 1.3459050 1.0273142
## [1] 0.3313565 0.1301538 1.3458683 1.0273820
## [1] 0.3293565 0.1301538 1.3458683 1.0273820
## [1] 0.3303565 0.1311538 1.3458683 1.0273820
## [1] 0.3303565 0.1291538 1.3458683 1.0273820
## [1] 0.3303565 0.1301538 1.3468683 1.0273820
## [1] 0.3303565 0.1301538 1.3448683 1.0273820
## [1] 0.3303565 0.1301538 1.3458683 1.0283820

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## [1] 0.3303565 0.1301538 1.3458683 1.0263820
## [1] 0.3300863 0.1302065 1.3456064 1.0277686
## [1] 0.3302214 0.1301802 1.3457374 1.0275753
## [1] 0.3310863 0.1302065 1.3456064 1.0277686
## [1] 0.3290863 0.1302065 1.3456064 1.0277686
## [1] 0.3300863 0.1312065 1.3456064 1.0277686
## [1] 0.3300863 0.1292065 1.3456064 1.0277686
## [1] 0.3300863 0.1302065 1.3466064 1.0277686
## [1] 0.3300863 0.1302065 1.3446064 1.0277686
## [1] 0.3300863 0.1302065 1.3456064 1.0287686
## [1] 0.3300863 0.1302065 1.3456064 1.0267686
## [1] 0.3298303 0.1299890 1.3452507 1.0283264
## [1] 0.3299583 0.1300977 1.3454286 1.0280475
## [1] 0.3309583 0.1300977 1.3454286 1.0280475
## [1] 0.3289583 0.1300977 1.3454286 1.0280475
## [1] 0.3299583 0.1310977 1.3454286 1.0280475
## [1] 0.3299583 0.1290977 1.3454286 1.0280475
## [1] 0.3299583 0.1300977 1.3464286 1.0280475
## [1] 0.3299583 0.1300977 1.3444286 1.0280475
## [1] 0.3299583 0.1300977 1.3454286 1.0290475
## [1] 0.3299583 0.1300977 1.3454286 1.0270475
## [1] 25.1820538 10.3007015 0.7777598 23.0418225
## [1] "out of bounds"
## [1] 5.300377 2.164219 1.231895 5.430802
## [1] "out of bounds"
## [1] 1.3240421 0.5369219 1.3227218 1.9085985
## [1] 0.5287751 0.2114626 1.3408872 1.2041577
## [1] 0.3697217 0.1463707 1.3445203 1.0632695
## [1] 0.3379110 0.1333523 1.3452469 1.0350919
## [1] 0.3315489 0.1307487 1.3453922 1.0294564
## [1] 0.3302764 0.1302279 1.3454213 1.0283293
## [1] 0.3300220 0.1301238 1.3454271 1.0281038
## [1] 0.3299901 0.1301108 1.3454278 1.0280757
## [1] 0.3310220 0.1301238 1.3454271 1.0281038
## [1] 0.3290220 0.1301238 1.3454271 1.0281038
## [1] 0.3300220 0.1311238 1.3454271 1.0281038
## [1] 0.3300220 0.1291238 1.3454271 1.0281038
## [1] 0.3300220 0.1301238 1.3464271 1.0281038
## [1] 0.3300220 0.1301238 1.3444271 1.0281038
## [1] 0.3300220 0.1301238 1.3454271 1.0291038
## [1] 0.3300220 0.1301238 1.3454271 1.0271038
## [1] 0.3301353 0.1301086 1.3454092 1.0282272
## [1] 0.3300786 0.1301162 1.3454182 1.0281655
## [1] 0.3311353 0.1301086 1.3454092 1.0282272
## [1] 0.3291353 0.1301086 1.3454092 1.0282272
## [1] 0.3301353 0.1311086 1.3454092 1.0282272
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## [1] 0.3301353 0.1301086 1.3464092 1.0282272
## [1] 0.3301353 0.1301086 1.3444092 1.0282272
## [1] 0.3301353 0.1301086 1.3454092 1.0292272
## [1] 0.3301353 0.1301086 1.3454092 1.0272272
## [1] 0.3304349 0.1298836 1.3453060 1.0286436
## [1] 0.3302851 0.1299961 1.3453576 1.0284354
## [1] 0.3314349 0.1298836 1.3453060 1.0286436

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## [1] 0.3294349 0.1298836 1.3453060 1.0286436
## [1] 0.3304349 0.1308836 1.3453060 1.0286436
## [1] 0.3304349 0.1288836 1.3453060 1.0286436
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## [1] 0.3304349 0.1298836 1.3453060 1.0276436
## [1] 0.3308467 0.1292047 1.3449602 1.0295998
## [1] 0.3306408 0.1295441 1.3451331 1.0291217
## [1] 0.3318467 0.1292047 1.3449602 1.0295998
## [1] 0.3298467 0.1292047 1.3449602 1.0295998
## [1] 0.3308467 0.1302047 1.3449602 1.0295998
## [1] 0.3308467 0.1282047 1.3449602 1.0295998
## [1] 0.3308467 0.1292047 1.3459602 1.0295998
## [1] 0.3308467 0.1292047 1.3439602 1.0295998
## [1] 0.3308467 0.1292047 1.3449602 1.0305998
## [1] 0.3308467 0.1292047 1.3449602 1.0285998
## [1] 12.056023 70.270100 -6.296912 38.853017
## [1] "out of bounds"
## [1] 2.6758819 14.1573837 -0.1834142 8.5942832
## [1] "out of bounds"
## [1] 0.7998538 2.9348405 1.0392853 2.5425365
## [1] "out of bounds"
## [1] 0.4246481 0.6903318 1.2838252 1.3321872
## [1] 0.3496070 0.2414301 1.3327332 1.0901173
## [1] 0.3345988 0.1516498 1.3425148 1.0417033
## [1] 0.3315971 0.1336937 1.3444711 1.0320205
## [1] 0.3309968 0.1301025 1.3448624 1.0300840
## [1] 0.3308767 0.1293842 1.3449406 1.0296967
## [1] 0.3308617 0.1292945 1.3449504 1.0296482
## [1] 0.3318767 0.1293842 1.3449406 1.0296967
## [1] 0.3298767 0.1293842 1.3449406 1.0296967
## [1] 0.3308767 0.1303842 1.3449406 1.0296967
## [1] 0.3308767 0.1283842 1.3449406 1.0296967
## [1] 0.3308767 0.1293842 1.3459406 1.0296967
## [1] 0.3308767 0.1293842 1.3439406 1.0296967
## [1] 0.3308767 0.1293842 1.3449406 1.0306967
## [1] 0.3308767 0.1293842 1.3449406 1.0286967
## [1] 0.3308250 0.1294687 1.3448724 1.0298209
## [1] 0.3308509 0.1294265 1.3449065 1.0297588
## [1] 0.3318250 0.1294687 1.3448724 1.0298209
## [1] 0.3298250 0.1294687 1.3448724 1.0298209
## [1] 0.3308250 0.1304687 1.3448724 1.0298209
## [1] 0.3308250 0.1284687 1.3448724 1.0298209
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## [1] 0.3308250 0.1294687 1.3448724 1.0288209
## [1] 0.3305873 0.1295095 1.3446280 1.0301798
## [1] 0.3307062 0.1294891 1.3447502 1.0300003
## [1] 0.3315873 0.1295095 1.3446280 1.0301798
## [1] 0.3295873 0.1295095 1.3446280 1.0301798
## [1] 0.3305873 0.1305095 1.3446280 1.0301798
## [1] 0.3305873 0.1285095 1.3446280 1.0301798

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## [1] 0.3305873 0.1295095 1.3456280 1.0301798
## [1] 0.3305873 0.1295095 1.3436280 1.0301798
## [1] 0.3305873 0.1295095 1.3446280 1.0311798
## [1] 0.3305873 0.1295095 1.3446280 1.0291798
## [1] 0.3303688 0.1293119 1.3442945 1.0307021
## [1] 0.3304780 0.1294107 1.3444613 1.0304409
## [1] 0.3314780 0.1294107 1.3444613 1.0304409
## [1] 0.3294780 0.1294107 1.3444613 1.0304409
## [1] 0.3304780 0.1304107 1.3444613 1.0304409
## [1] 0.3304780 0.1284107 1.3444613 1.0304409
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## [1] 0.3304780 0.1294107 1.3434613 1.0304409
## [1] 0.3304780 0.1294107 1.3444613 1.0314409
## [1] 0.3304780 0.1294107 1.3444613 1.0294409
## [1] 22.6915351 8.9510695 0.2476952 21.4800483
## [1] "out of bounds"
## [1] 4.802689 1.893742 1.125108 5.120362
## [1] "out of bounds"
## [1] 1.2249203 0.4822771 1.3005906 1.8484252
## [1] 0.5093665 0.1999840 1.3356871 1.1940378
## [1] 0.3662557 0.1435254 1.3427064 1.0631603
## [1] 0.3376336 0.1322336 1.3441103 1.0369848
## [1] 0.3319092 0.1299753 1.3443911 1.0317497
## [1] 0.3307643 0.1295236 1.3444472 1.0307027
## [1] 0.3305353 0.1294333 1.3444584 1.0304933
## [1] 0.3305067 0.1294220 1.3444598 1.0304671
## [1] 0.3315353 0.1294333 1.3444584 1.0304933
## [1] 0.3295353 0.1294333 1.3444584 1.0304933
## [1] 0.3305353 0.1304333 1.3444584 1.0304933
## [1] 0.3305353 0.1284333 1.3444584 1.0304933
## [1] 0.3305353 0.1294333 1.3454584 1.0304933
## [1] 0.3305353 0.1294333 1.3434584 1.0304933
## [1] 0.3305353 0.1294333 1.3444584 1.0314933
## [1] 0.3305353 0.1294333 1.3444584 1.0294933
## [1] 0.3306400 0.1294187 1.3444386 1.0306106
## [1] 0.3305876 0.1294260 1.3444485 1.0305520
## [1] 0.3316400 0.1294187 1.3444386 1.0306106
## [1] 0.3296400 0.1294187 1.3444386 1.0306106
## [1] 0.3306400 0.1304187 1.3444386 1.0306106
## [1] 0.3306400 0.1284187 1.3444386 1.0306106
## [1] 0.3306400 0.1294187 1.3454386 1.0306106
## [1] 0.3306400 0.1294187 1.3434386 1.0306106
## [1] 0.3306400 0.1294187 1.3444386 1.0316106
## [1] 0.3306400 0.1294187 1.3444386 1.0296106
## [1] 0.3309176 0.1292087 1.3443313 1.0310078
## [1] 0.3307788 0.1293137 1.3443849 1.0308092
## [1] 0.3319176 0.1292087 1.3443313 1.0310078
## [1] 0.3299176 0.1292087 1.3443313 1.0310078
## [1] 0.3309176 0.1302087 1.3443313 1.0310078
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## [1] 0.3309176 0.1292087 1.3433313 1.0310078
## [1] 0.3309176 0.1292087 1.3443313 1.0320078
## [1] 0.3309176 0.1292087 1.3443313 1.0300078

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## [1] 0.3312933 0.1285886 1.3439901 1.0319037
## [1] 0.3311055 0.1288987 1.3441607 1.0314558
## [1] 0.3322933 0.1285886 1.3439901 1.0319037
## [1] 0.3302933 0.1285886 1.3439901 1.0319037
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## [1] 0.3312933 0.1285886 1.3439901 1.0329037
## [1] 0.3312933 0.1285886 1.3439901 1.0309037
## [1] 11.879480 64.677516 -5.777045 36.039275
## [1] "out of bounds"
## [1] 2.64093065 13.03837403 -0.08021685 8.03337798
## [1] "out of bounds"
## [1] 0.7932208 2.7105457 1.0591487 2.4321986
## [1] "out of bounds"
## [1] 0.4236788 0.6449800 1.2870218 1.3119627
## [1] 0.3497704 0.2318669 1.3325965 1.0879155
## [1] 0.3349887 0.1492443 1.3417114 1.0431061
## [1] 0.3320324 0.1327198 1.3435344 1.0341442
## [1] 0.3314411 0.1294148 1.3438990 1.0323518
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## [1] 0.3313081 0.1286712 1.3439810 1.0319486
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## [1] 0.3303229 0.1287539 1.3439719 1.0319934
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## [1] 0.3322777 0.1288276 1.3439084 1.0321078
## [1] 0.3302777 0.1288276 1.3439084 1.0321078
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## [1] 0.3312777 0.1288276 1.3439084 1.0311078
## [1] 0.3310683 0.1288585 1.3436803 1.0324417
## [1] 0.331173 0.128843 1.343794 1.032275
## [1] 0.3320683 0.1288585 1.3436803 1.0324417
## [1] 0.3300683 0.1288585 1.3436803 1.0324417
## [1] 0.3310683 0.1298585 1.3436803 1.0324417
## [1] 0.3310683 0.1278585 1.3436803 1.0324417
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## [1] 0.3308813 0.1286783 1.3433668 1.0329328
## [1] 0.3309748 0.1287684 1.3435236 1.0326872
## [1] 0.3318813 0.1286783 1.3433668 1.0329328

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## [1] 0.3298813 0.1286783 1.3433668 1.0329328
## [1] 0.3308813 0.1296783 1.3433668 1.0329328
## [1] 0.3308813 0.1276783 1.3433668 1.0329328
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## [1] 0.3308813 0.1286783 1.3433668 1.0319328
## [1] 39.761034 32.131600 6.019249 25.327921
## [1] "out of bounds"
## [1] 8.216912 6.529263 2.278543 5.891930
## [1] "out of bounds"
## [1] 1.908087 1.408795 1.530402 2.004732
## [1] "out of bounds"
## [1] 0.6463225 0.3847017 1.3807739 1.2272927
## [1] 0.3939695 0.1798830 1.3508482 1.0718048
## [1] 0.3434989 0.1389193 1.3448631 1.0407072
## [1] 0.3334048 0.1307265 1.3436661 1.0344877
## [1] 0.331386 0.129088 1.343427 1.033244
## [1] 0.3309822 0.1287603 1.3433788 1.0329950
## [1] 0.3309318 0.1287193 1.3433728 1.0329639
## [1] 0.3319822 0.1287603 1.3433788 1.0329950
## [1] 0.3299822 0.1287603 1.3433788 1.0329950
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## [1] 0.3309822 0.1287603 1.3423788 1.0329950
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## [1] 0.3310911 0.1287505 1.3433750 1.0340792
## [1] 0.3310911 0.1287505 1.3433750 1.0320792
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## [1] 0.3312277 0.1286522 1.3433501 1.0332109
## [1] 0.3323643 0.1285539 1.3433253 1.0333425
## [1] 0.3303643 0.1285539 1.3433253 1.0333425
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## [1] 0.3313643 0.1285539 1.3433253 1.0343425
## [1] 0.3313643 0.1285539 1.3433253 1.0323425
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## [1] 0.3315004 0.1283384 1.3432329 1.0335930
## [1] 0.3326365 0.1281228 1.3431405 1.0338434
## [1] 0.3306365 0.1281228 1.3431405 1.0338434
## [1] 0.3316365 0.1291228 1.3431405 1.0338434
## [1] 0.3316365 0.1271228 1.3431405 1.0338434

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## [1] 0.3316365 0.1281228 1.3441405 1.0338434
## [1] 0.3316365 0.1281228 1.3421405 1.0338434
## [1] 0.3316365 0.1281228 1.3431405 1.0348434
## [1] 0.3316365 0.1281228 1.3431405 1.0328434
## [1] 10.419305 49.893735 -5.386842 31.113213
## [1] "out of bounds"
## [1] 2.349170222 10.081245144 -0.002855886 7.049717308
## [1] "out of bounds"
## [1] 0.7351432 2.1187473 1.0739413 2.2370182
## [1] "out of bounds"
## [1] 0.4123378 0.5262477 1.2893007 1.2744784
## [1] 0.3477768 0.2077478 1.3323726 1.0819704
## [1] 0.3348645 0.1440478 1.3409869 1.0434688
## [1] 0.3322821 0.1313078 1.3427098 1.0357685
## [1] 0.3317656 0.1287598 1.3430544 1.0342284
## [1] 0.3316623 0.1282502 1.3431233 1.0339204
## [1] 0.3316494 0.1281865 1.3431319 1.0338819
## [1] 0.3326623 0.1282502 1.3431233 1.0339204
## [1] 0.3306623 0.1282502 1.3431233 1.0339204
## [1] 0.3316623 0.1292502 1.3431233 1.0339204
## [1] 0.3316623 0.1272502 1.3431233 1.0339204
## [1] 0.3316623 0.1282502 1.3441233 1.0339204
## [1] 0.3316623 0.1282502 1.3421233 1.0339204
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## [1] 0.3316474 0.1282786 1.3430951 1.0339731
## [1] 0.3326325 0.1283069 1.3430670 1.0340258
## [1] 0.3306325 0.1283069 1.3430670 1.0340258
## [1] 0.3316325 0.1293069 1.3430670 1.0340258
## [1] 0.3316325 0.1273069 1.3430670 1.0340258
## [1] 0.3316325 0.1283069 1.3440670 1.0340258
## [1] 0.3316325 0.1283069 1.3420670 1.0340258
## [1] 0.3316325 0.1283069 1.3430670 1.0350258
## [1] 0.3316325 0.1283069 1.3430670 1.0330258
## [1] 0.3314768 0.1283182 1.3428575 1.0343496
## [1] 0.3315547 0.1283125 1.3429622 1.0341877
## [1] 0.3324768 0.1283182 1.3428575 1.0343496
## [1] 0.3304768 0.1283182 1.3428575 1.0343496
## [1] 0.3314768 0.1293182 1.3428575 1.0343496
## [1] 0.3314768 0.1273182 1.3428575 1.0343496
## [1] 0.3314768 0.1283182 1.3438575 1.0343496
## [1] 0.3314768 0.1283182 1.3418575 1.0343496
## [1] 0.3314768 0.1283182 1.3428575 1.0353496
## [1] 0.3314768 0.1283182 1.3428575 1.0333496
## [1] 0.3313149 0.1281258 1.3425287 1.0348772
## [1] 0.3313958 0.1282220 1.3426931 1.0346134
## [1] 0.3323149 0.1281258 1.3425287 1.0348772
## [1] 0.3303149 0.1281258 1.3425287 1.0348772
## [1] 0.3313149 0.1291258 1.3425287 1.0348772
## [1] 0.3313149 0.1271258 1.3425287 1.0348772
## [1] 0.3313149 0.1281258 1.3435287 1.0348772
## [1] 0.3313149 0.1281258 1.3415287 1.0348772
## [1] 0.3313149 0.1281258 1.3425287 1.0358772

```

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## [1] 0.3313149 0.1281258 1.3425287 1.0338772
## [1] 38.340270 31.407640 5.877356 24.142315
## [1] "out of bounds"
## [1] 7.933106 6.384029 2.249494 5.656365
## [1] "out of bounds"
## [1] 1.851673 1.379306 1.523922 1.959175
## [1] 0.6353865 0.3783619 1.3788073 1.2197367
## [1] 0.3921292 0.1781730 1.3497845 1.0718491
## [1] 0.3434778 0.1381352 1.3439799 1.0422716
## [1] 0.3337475 0.1301277 1.3428190 1.0363561
## [1] 0.3318014 0.1285262 1.3425868 1.0351730
## [1] 0.3314122 0.1282059 1.3425403 1.0349364
## [1] 0.3313635 0.1281658 1.3425345 1.0349068
## [1] 0.3324122 0.1282059 1.3425403 1.0349364
## [1] 0.3304122 0.1282059 1.3425403 1.0349364
## [1] 0.3314122 0.1292059 1.3425403 1.0349364
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## [1] 0.3314122 0.1282059 1.3415403 1.0349364
## [1] 0.3314122 0.1282059 1.3425403 1.0359364
## [1] 0.3314122 0.1282059 1.3425403 1.0339364
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## [1] 0.3325157 0.1281959 1.3425365 1.0350150
## [1] 0.3305157 0.1281959 1.3425365 1.0350150
## [1] 0.3315157 0.1291959 1.3425365 1.0350150
## [1] 0.3315157 0.1271959 1.3425365 1.0350150
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## [1] 0.3315157 0.1281959 1.3415365 1.0350150
## [1] 0.3315157 0.1281959 1.3425365 1.0360150
## [1] 0.3315157 0.1281959 1.3425365 1.0340150
## [1] 0.3317753 0.1280085 1.3424890 1.0352599
## [1] 0.3316455 0.1281022 1.3425128 1.0351375
## [1] 0.3327753 0.1280085 1.3424890 1.0352599
## [1] 0.3307753 0.1280085 1.3424890 1.0352599
## [1] 0.3317753 0.1290085 1.3424890 1.0352599
## [1] 0.3317753 0.1270085 1.3424890 1.0352599
## [1] 0.3317753 0.1280085 1.3434890 1.0352599
## [1] 0.3317753 0.1280085 1.3414890 1.0352599
## [1] 0.3317753 0.1280085 1.3424890 1.0362599
## [1] 0.3317753 0.1280085 1.3424890 1.0342599
## [1] 0.3320237 0.1276225 1.3423174 1.0357139
## [1] 0.3318995 0.1278155 1.3424032 1.0354869
## [1] 0.3330237 0.1276225 1.3423174 1.0357139
## [1] 0.3310237 0.1276225 1.3423174 1.0357139
## [1] 0.3320237 0.1286225 1.3423174 1.0357139
## [1] 0.3320237 0.1266225 1.3423174 1.0357139
## [1] 0.3320237 0.1276225 1.3433174 1.0357139
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## [1] 0.3320237 0.1276225 1.3423174 1.0367139
## [1] 0.3320237 0.1276225 1.3423174 1.0347139
## [1] 9.413665 44.676760 -5.205215 28.755948
## [1] "out of bounds"
## [1] 2.148352 9.037450 0.032811 6.579761

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## [1] "out of bounds"
## [1] 0.6952894 1.9095880 1.0804161 2.1445233
## [1] "out of bounds"
## [1] 0.4046768 0.4840156 1.2899371 1.2574758
## [1] 0.3465543 0.1989012 1.3318413 1.0800663
## [1] 0.3349298 0.1418783 1.3402222 1.0445844
## [1] 0.3326049 0.1304737 1.3418984 1.0374880
## [1] 0.3321399 0.1281928 1.3422336 1.0360687
## [1] 0.3320470 0.1277366 1.3423006 1.0357848
## [1] 0.3320353 0.1276796 1.3423090 1.0357494
## [1] 0.3330470 0.1277366 1.3423006 1.0357848
## [1] 0.3310470 0.1277366 1.3423006 1.0357848
## [1] 0.3320470 0.1287366 1.3423006 1.0357848
## [1] 0.3320470 0.1267366 1.3423006 1.0357848
## [1] 0.3320470 0.1277366 1.3433006 1.0357848
## [1] 0.3320470 0.1277366 1.3413006 1.0357848
## [1] 0.3320470 0.1277366 1.3423006 1.0367848
## [1] 0.3320470 0.1277366 1.3423006 1.0347848
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## [1] 0.3320338 0.1277620 1.3422739 1.0358345
## [1] 0.3330207 0.1277875 1.3422472 1.0358841
## [1] 0.3310207 0.1277875 1.3422472 1.0358841
## [1] 0.3320207 0.1287875 1.3422472 1.0358841
## [1] 0.3320207 0.1267875 1.3422472 1.0358841
## [1] 0.3320207 0.1277875 1.3432472 1.0358841
## [1] 0.3320207 0.1277875 1.3412472 1.0358841
## [1] 0.3320207 0.1277875 1.3422472 1.0368841
## [1] 0.3320207 0.1277875 1.3422472 1.0348841
## [1] 0.3318805 0.1277937 1.3420474 1.0361925
## [1] 0.3319506 0.1277906 1.3421473 1.0360383
## [1] 0.3328805 0.1277937 1.3420474 1.0361925
## [1] 0.3308805 0.1277937 1.3420474 1.0361925
## [1] 0.3318805 0.1287937 1.3420474 1.0361925
## [1] 0.3318805 0.1267937 1.3420474 1.0361925
## [1] 0.3318805 0.1277937 1.3430474 1.0361925
## [1] 0.3318805 0.1277937 1.3410474 1.0361925
## [1] 0.3318805 0.1277937 1.3420474 1.0371925
## [1] 0.3318805 0.1277937 1.3420474 1.0351925
## [1] 0.3317382 0.1276101 1.3417328 1.0366968
## [1] 0.3318094 0.1277019 1.3418901 1.0364447
## [1] 0.3327382 0.1276101 1.3417328 1.0366968
## [1] 0.3307382 0.1276101 1.3417328 1.0366968
## [1] 0.3317382 0.1286101 1.3417328 1.0366968
## [1] 0.3317382 0.1266101 1.3417328 1.0366968
## [1] 0.3317382 0.1276101 1.3427328 1.0366968
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## [1] 0.3317382 0.1276101 1.3417328 1.0376968
## [1] 0.3317382 0.1276101 1.3417328 1.0356968
## [1] 35.688421 29.268429 5.335897 22.735192
## [1] "out of bounds"
## [1] 7.403075 5.955774 2.140566 5.376396
## [1] "out of bounds"
## [1] 1.746006 1.293243 1.501499 1.904637
## [1] 0.6145917 0.3607367 1.3736861 1.2102848

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## [1] 0.3883089 0.1742354 1.3481234 1.0714144
## [1] 0.3430524 0.1369352 1.3430109 1.0436403
## [1] 0.3340011 0.1294751 1.3419884 1.0380855
## [1] 0.3321908 0.1279831 1.3417839 1.0369746
## [1] 0.3318287 0.1276847 1.3417430 1.0367524
## [1] 0.3317835 0.1276474 1.3417379 1.0367246
## [1] 0.3328287 0.1276847 1.3417430 1.0367524
## [1] 0.3308287 0.1276847 1.3417430 1.0367524
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## [1] 0.3318287 0.1276847 1.3407430 1.0367524
## [1] 0.3318287 0.1276847 1.3417430 1.0377524
## [1] 0.3318287 0.1276847 1.3417430 1.0357524
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## [1] 0.3318771 0.1276798 1.3417406 1.0367895
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## [1] 0.3309254 0.1276749 1.3417383 1.0368267
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## [1] 0.3319254 0.1266749 1.3417383 1.0368267
## [1] 0.3319254 0.1276749 1.3427383 1.0368267
## [1] 0.3319254 0.1276749 1.3407383 1.0368267
## [1] 0.3319254 0.1276749 1.3417383 1.0378267
## [1] 0.3319254 0.1276749 1.3417383 1.0358267
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## [1] 0.3311690 0.1274983 1.3416901 1.0370593
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## [1] 0.3321690 0.1264983 1.3416901 1.0370593
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## [1] 0.3322844 0.1273213 1.3416073 1.0372726
## [1] 0.3333999 0.1271442 1.3415245 1.0374859
## [1] 0.3313999 0.1271442 1.3415245 1.0374859
## [1] 0.3323999 0.1281442 1.3415245 1.0374859
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## [1] 0.3323999 0.1271442 1.3425245 1.0374859
## [1] 0.3323999 0.1271442 1.3405245 1.0374859
## [1] 0.3323999 0.1271442 1.3415245 1.0384859
## [1] 0.3323999 0.1271442 1.3415245 1.0364859
## [1] 8.661773 40.848149 -4.984252 26.824744
## [1] "out of bounds"
## [1] 1.99827459 8.27134526 0.07636922 6.19493756
## [1] "out of bounds"
## [1] 0.6655748 1.7559845 1.0884935 2.0689762
## [1] "out of bounds"
## [1] 0.3990349 0.4529123 1.2909183 1.2437840
## [1] 0.3457269 0.1922979 1.3314033 1.0787455
## [1] 0.3350653 0.1401750 1.3395003 1.0457378
## [1] 0.3329330 0.1297504 1.3411197 1.0391363

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## [1] 0.3325065 0.1276655 1.3414436 1.0378160
## [1] 0.3324212 0.1272485 1.3415083 1.0375519
## [1] 0.3324105 0.1271964 1.3415164 1.0375189
## [1] 0.3334212 0.1272485 1.3415083 1.0375519
## [1] 0.3314212 0.1272485 1.3415083 1.0375519
## [1] 0.3324212 0.1282485 1.3415083 1.0375519
## [1] 0.3324212 0.1262485 1.3415083 1.0375519
## [1] 0.3324212 0.1272485 1.3425083 1.0375519
## [1] 0.3324212 0.1272485 1.3405083 1.0375519
## [1] 0.3324212 0.1272485 1.3415083 1.0385519
## [1] 0.3324212 0.1272485 1.3415083 1.0365519
## [1] 0.3323974 0.1272948 1.3414576 1.0376454
## [1] 0.3324093 0.1272717 1.3414830 1.0375987
## [1] 0.3333974 0.1272948 1.3414576 1.0376454
## [1] 0.3313974 0.1272948 1.3414576 1.0376454
## [1] 0.3323974 0.1282948 1.3414576 1.0376454
## [1] 0.3323974 0.1262948 1.3414576 1.0376454
## [1] 0.3323974 0.1272948 1.3424576 1.0376454
## [1] 0.3323974 0.1272948 1.3404576 1.0376454
## [1] 0.3323974 0.1272948 1.3414576 1.0386454
## [1] 0.3323974 0.1272948 1.3414576 1.0366454
## [1] 0.3322691 0.1272975 1.3412670 1.0379381
## [1] 0.3323332 0.1272962 1.3413623 1.0377918
## [1] 0.3332691 0.1272975 1.3412670 1.0379381
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## [1] 0.3322691 0.1272975 1.3402670 1.0379381
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## [1] 0.3322064 0.1272111 1.3411180 1.0381765
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## [1] 0.3311437 0.1271247 1.3409689 1.0384149
## [1] 0.3321437 0.1281247 1.3409689 1.0384149
## [1] 0.3321437 0.1261247 1.3409689 1.0384149
## [1] 0.3321437 0.1271247 1.3419689 1.0384149
## [1] 0.3321437 0.1271247 1.3399689 1.0384149
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## [1] 0.3321437 0.1271247 1.3409689 1.0374149
## [1] 33.065118 27.061301 4.804702 21.379060
## [1] "out of bounds"
## [1] 6.878739 5.513960 2.033716 5.106544
## [1] "out of bounds"
## [1] 1.641463 1.204492 1.479518 1.852041
## [1] 0.5940075 0.3425981 1.3686788 1.2011401
## [1] 0.3845165 0.1702194 1.3465109 1.0709600
## [1] 0.3426183 0.1357436 1.3420773 1.0449240
## [1] 0.3342386 0.1288485 1.3411906 1.0397168
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## [1] 0.3322275 0.1271937 1.3409778 1.0384670
## [1] 0.3321856 0.1271592 1.3409733 1.0384410
## [1] 0.3332275 0.1271937 1.3409778 1.0384670

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## [1] 0.3312275 0.1271937 1.3409778 1.0384670
## [1] 0.3322275 0.1281937 1.3409778 1.0384670
## [1] 0.3322275 0.1261937 1.3409778 1.0384670
## [1] 0.3322275 0.1271937 1.3419778 1.0384670
## [1] 0.3322275 0.1271937 1.3399778 1.0384670
## [1] 0.3322275 0.1271937 1.3409778 1.0394670
## [1] 0.3322275 0.1271937 1.3409778 1.0374670
## [1] 0.3323176 0.1271841 1.3409723 1.0385374
## [1] 0.3322726 0.1271889 1.3409750 1.0385022
## [1] 0.3333176 0.1271841 1.3409723 1.0385374
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## [1] 0.3323176 0.1281841 1.3409723 1.0385374
## [1] 0.3323176 0.1261841 1.3409723 1.0385374
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## [1] 0.3323176 0.1271841 1.3399723 1.0385374
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## [1] 0.3323176 0.1271841 1.3409723 1.0375374
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## [1] 0.3315461 0.1270177 1.3409234 1.0387591
## [1] 0.3325461 0.1280177 1.3409234 1.0387591
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## [1] 0.3325461 0.1270177 1.3399234 1.0387591
## [1] 0.3325461 0.1270177 1.3409234 1.0397591
## [1] 0.3325461 0.1270177 1.3409234 1.0377591
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## [1] "out of bounds"
## [1] 1.8675234 7.6159935 0.1221666 5.8516903
## [1] "out of bounds"
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## [1] "out of bounds"
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## [1] 0.3352173 0.1386738 1.3388135 1.0468626
## [1] 0.3332528 0.1290875 1.3403733 1.0407026
## [1] 0.3328599 0.1271703 1.3406853 1.0394706
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## [1] 0.3327715 0.1267389 1.3407555 1.0391934
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## [1] 0.3317813 0.1267868 1.3407477 1.0392242
## [1] 0.3327813 0.1277868 1.3407477 1.0392242
## [1] 0.3327813 0.1257868 1.3407477 1.0392242

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## [1] 0.3327813 0.1267868 1.3417477 1.0392242
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## [1] 0.3327813 0.1267868 1.3407477 1.0402242
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## [1] 0.3327705 0.1268080 1.3407235 1.0392683
## [1] 0.3337596 0.1268292 1.3406994 1.0393124
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## [1] 0.3327596 0.1268292 1.3396994 1.0393124
## [1] 0.3327596 0.1268292 1.3406994 1.0403124
## [1] 0.3327596 0.1268292 1.3406994 1.0383124
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## [1] 0.3327005 0.1268292 1.3406086 1.0394512
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## [1] 0.3316414 0.1268292 1.3405178 1.0395901
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## [1] 0.332586 0.126748 1.340377 1.039815
## [1] 0.3335307 0.1266669 1.3402360 1.0400401
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## [1] 0.3325307 0.1256669 1.3402360 1.0400401
## [1] 0.3325307 0.1266669 1.3412360 1.0400401
## [1] 0.3325307 0.1266669 1.3392360 1.0400401
## [1] 0.3325307 0.1266669 1.3402360 1.0410401
## [1] 0.3325307 0.1266669 1.3402360 1.0390401
## [1] 30.644988 24.998624 4.337455 20.112816
## [1] "out of bounds"
## [1] 6.395022 5.101058 1.939680 4.854595
## [1] "out of bounds"
## [1] 1.545029 1.121545 1.460125 1.802951
## [1] 0.5750303 0.3256425 1.3642137 1.1926223
## [1] 0.3810306 0.1664620 1.3450315 1.0705565
## [1] 0.3422307 0.1346259 1.3411951 1.0461434
## [1] 0.3344707 0.1282587 1.3404278 1.0412607
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## [1] 0.3326083 0.1267306 1.3402436 1.0400889
## [1] 0.3325695 0.1266987 1.3402398 1.0400645
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## [1] 0.3326083 0.1267306 1.3402436 1.0410889
## [1] 0.3326083 0.1267306 1.3402436 1.0390889

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## [1] 0.3326924 0.1267214 1.3402375 1.0401557
## [1] 0.3326503 0.1267260 1.3402406 1.0401223
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## [1] 0.3329069 0.1265644 1.3401884 1.0413672
## [1] 0.3329069 0.1265644 1.3401884 1.0393672
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## [1] 0.3330078 0.1264132 1.3401111 1.0405582
## [1] 0.3341086 0.1262619 1.3400338 1.0407493
## [1] 0.3321086 0.1262619 1.3400338 1.0407493
## [1] 0.3331086 0.1272619 1.3400338 1.0407493
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## [1] 7.413901 34.662042 -4.516843 23.532721
## [1] "out of bounds"
## [1] 1.7492671 7.0334180 0.1686584 5.5391436
## [1] "out of bounds"
## [1] 0.6163403 1.5076931 1.1057588 1.9404282
## [1] 0.3897549 0.4025482 1.2931788 1.2206851
## [1] 0.3444379 0.1815192 1.3306628 1.0767365
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## [1] 0.3331992 0.1267040 1.3399589 1.0410372
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## [1] 0.3331177 0.1263061 1.3400264 1.0407781
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## [1] 0.3321267 0.1263503 1.3400189 1.0408069
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## [1] 0.3331168 0.1263698 1.3399959 1.0408485
## [1] 0.3341068 0.1263893 1.3399729 1.0408901
## [1] 0.3321068 0.1263893 1.3399729 1.0408901

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## [1] 0.3331068 0.1273893 1.3399729 1.0408901
## [1] 0.3331068 0.1253893 1.3399729 1.0408901
## [1] 0.3331068 0.1263893 1.3409729 1.0408901
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## [1] 0.3330521 0.1263882 1.3398864 1.0410219
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## [1] 0.3329975 0.1253871 1.3397999 1.0411536
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## [1] 0.3329975 0.1263871 1.3397999 1.0421536
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## [1] 0.3318994 0.1262347 1.3395337 1.0415783
## [1] 0.3328994 0.1272347 1.3395337 1.0415783
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## [1] 0.3328994 0.1262347 1.3385337 1.0415783
## [1] 0.3328994 0.1262347 1.3395337 1.0425783
## [1] 0.3328994 0.1262347 1.3395337 1.0405783
## [1] 28.439754 23.108033 3.935387 18.937151
## [1] "out of bounds"
## [1] 5.954270 4.722594 1.858704 4.620693
## [1] "out of bounds"
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## [1] 0.5577542 0.3100891 1.3603005 1.1847429
## [1] 0.3778704 0.1630056 1.3436871 1.0702112
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## [1] 0.3330500 0.1262847 1.3395338 1.0426875
## [1] 0.3330500 0.1262847 1.3395338 1.0406875
## [1] 0.3332517 0.1261365 1.3394848 1.0418892
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## [1] "out of bounds"
## [1] 1.6411000 6.5091238 0.2151267 5.2524926
## [1] "out of bounds"
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## [1] 0.3857470 0.3811867 1.2943677 1.2106610
## [1] 0.3439019 0.1769221 1.3303424 1.0759333
## [1] 0.3355329 0.1360692 1.3375373 1.0489877
## [1] 0.3338591 0.1278986 1.3389763 1.0435986
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## [1] 0.3333883 0.1259716 1.3391956 1.0425089

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## [1] 0.3343376 0.1259696 1.3391132 1.0426340
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## [1] 0.3322505 0.1258266 1.3388618 1.0430349
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## [1] "out of bounds"
## [1] 5.553211 4.377023 1.789329 4.403597
## [1] "out of bounds"
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## [1] 0.5420489 0.2958745 1.3568805 1.1774574
## [1] 0.3750102 0.1598362 1.3424656 1.0699194
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## [1] 0.3335808 0.1247325 1.3388123 1.0433305

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## [1] 0.3335808 0.1257325 1.3398123 1.0433305
## [1] 0.3335808 0.1257325 1.3378123 1.0433305
## [1] 0.3335808 0.1257325 1.3388123 1.0443305
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## [1] 6.373639 29.671340 -4.049048 20.768263
## [1] "out of bounds"
## [1] 1.541734 6.034646 0.261126 4.988592
## [1] "out of bounds"
## [1] 0.5753532 1.3073066 1.1231608 1.8326573
## [1] 0.3820770 0.3618388 1.2955677 1.2014705
## [1] 0.3434218 0.1727452 1.3300491 1.0752331
## [1] 0.3356907 0.1349265 1.3369454 1.0499856
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## [1] 0.3327734 0.1255475 1.3386557 1.0437242
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## [1] 0.3337564 0.1245806 1.3386142 1.0437986
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## [1] 0.3336622 0.1255752 1.3384573 1.0450361
## [1] 0.3336622 0.1255752 1.3384573 1.0430361

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## [1] 0.3335846 0.1254410 1.3382199 1.0444147
## [1] 0.3336234 0.1255081 1.3383386 1.0442254
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## [1] "out of bounds"
## [1] 5.187773 4.061441 1.729933 4.201882
## [1] "out of bounds"
## [1] 1.3044223 0.9126411 1.4165625 1.6759082
## [1] 0.5277521 0.2828810 1.3538884 1.1707134
## [1] 0.3724181 0.1569290 1.3413536 1.0696744
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## [1] 0.3336156 0.1254662 1.3382224 1.0444349
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## [1] 0.3336813 0.1254873 1.3382214 1.0444836
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## [1] 0.3337158 0.1254831 1.3392179 1.0445122
## [1] 0.3337158 0.1254831 1.3372179 1.0445122
## [1] 0.3337158 0.1254831 1.3382179 1.0455122
## [1] 0.3337158 0.1254831 1.3382179 1.0435122
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## [1] 0.3328946 0.1253507 1.3381703 1.0446957
## [1] 0.3338946 0.1263507 1.3381703 1.0446957
## [1] 0.3338946 0.1243507 1.3381703 1.0446957
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## [1] 0.3338946 0.1253507 1.3381703 1.0456957
## [1] 0.3338946 0.1253507 1.3381703 1.0436957
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## [1] 0.3339778 0.1252295 1.3381019 1.0448584
## [1] 0.3350609 0.1251083 1.3380334 1.0450211
## [1] 0.3330609 0.1251083 1.3380334 1.0450211

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## [1] 0.3340609 0.1261083 1.3380334 1.0450211
## [1] 0.3340609 0.1241083 1.3380334 1.0450211
## [1] 0.3340609 0.1251083 1.3390334 1.0450211
## [1] 0.3340609 0.1251083 1.3370334 1.0450211
## [1] 0.3340609 0.1251083 1.3380334 1.0460211
## [1] 0.3340609 0.1251083 1.3380334 1.0440211
## [1] 5.915112 27.518416 -3.820400 19.544838
## [1] "out of bounds"
## [1] 1.4502712 5.6037699 0.3063467 4.7449845
## [1] "out of bounds"
## [1] 0.557303 1.220841 1.131696 1.785014
## [1] 0.3787093 0.3442547 1.2967659 1.1930197
## [1] 0.3429906 0.1689376 1.3297799 1.0746208
## [1] 0.3358469 0.1338741 1.3363827 1.0509411
## [1] 0.3344181 0.1268614 1.3377033 1.0462051
## [1] 0.3341324 0.1254589 1.3379674 1.0452579
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## [1] 0.3340681 0.1251433 1.3380268 1.0450448
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## [1] 0.3340752 0.1251784 1.3380202 1.0440685
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## [1] 0.3340673 0.1251937 1.3380005 1.0451037
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## [1] 0.3340156 0.1252058 1.3379061 1.0452516
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## [1] 0.3329717 0.1252026 1.3378314 1.0453644
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## [1] 0.3339370 0.1251395 1.3377194 1.0455432
## [1] 0.3349023 0.1250765 1.3376073 1.0457220
## [1] 0.3329023 0.1250765 1.3376073 1.0457220
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## [1] 0.3339023 0.1240765 1.3376073 1.0457220
## [1] 0.3339023 0.1250765 1.3386073 1.0457220
## [1] 0.3339023 0.1250765 1.3366073 1.0457220

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## [1] 0.3339023 0.1250765 1.3376073 1.0467220
## [1] 0.3339023 0.1250765 1.3376073 1.0447220
## [1] 22.934825 18.363984 3.044757 15.888093
## [1] "out of bounds"
## [1] 4.854087 3.772858 1.679037 4.014196
## [1] "out of bounds"
## [1] 1.2379392 0.8546328 1.4058933 1.6394169
## [1] 0.5147097 0.2709878 1.3512645 1.1644610
## [1] 0.3700637 0.1542587 1.3403387 1.0694698
## [1] 0.3411346 0.1309129 1.3381536 1.0504716
## [1] 0.3353487 0.1262438 1.3377165 1.0466719
## [1] 0.3341916 0.1253100 1.3376291 1.0459120
## [1] 0.3339601 0.1251232 1.3376117 1.0457600
## [1] 0.3339312 0.1250998 1.3376095 1.0457410
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## [1] 0.3329601 0.1251232 1.3376117 1.0457600
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## [1] 0.3339601 0.1251232 1.3366117 1.0457600
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## [1] 0.3339601 0.1251232 1.3376117 1.0447600
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## [1] 0.3339926 0.1251192 1.3376081 1.0457872
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## [1] 0.3330251 0.1251153 1.3376046 1.0458143
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## [1] 0.3340251 0.1241153 1.3376046 1.0458143
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## [1] 0.3340251 0.1251153 1.3376046 1.0468143
## [1] 0.3340251 0.1251153 1.3376046 1.0448143
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## [1] 0.3341094 0.1250526 1.3375813 1.0459018
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## [1] 0.3331937 0.1249900 1.3375581 1.0459893
## [1] 0.3341937 0.1259900 1.3375581 1.0459893
## [1] 0.3341937 0.1239900 1.3375581 1.0459893
## [1] 0.3341937 0.1249900 1.3385581 1.0459893
## [1] 0.3341937 0.1249900 1.3365581 1.0459893
## [1] 0.3341937 0.1249900 1.3375581 1.0469893
## [1] 0.3341937 0.1249900 1.3375581 1.0449893
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## [1] 0.3342718 0.1248770 1.3374926 1.0461436
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## [1] 0.3343499 0.1247641 1.3374271 1.0452978
## [1] 5.492601 25.558391 -3.596878 18.412931
## [1] "out of bounds"

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## [1] 1.3660001 5.2114894 0.3505661 4.5196245
## [1] "out of bounds"
## [1] 0.540680 1.142109 1.140055 1.740963
## [1] 0.3756159 0.3282331 1.2979527 1.1852309
## [1] 0.3426031 0.1654579 1.3295322 1.0740844
## [1] 0.3360006 0.1329028 1.3358481 1.0518551
## [1] 0.3346801 0.1263918 1.3371113 1.0474093
## [1] 0.3344160 0.1250896 1.3373639 1.0465201
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## [1] 0.3343565 0.1247966 1.3374208 1.0463200
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## [1] 0.3333631 0.1248292 1.3374145 1.0463423
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## [1] 0.3343631 0.1238292 1.3374145 1.0463423
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## [1] 4.548670 3.508483 1.635355 3.839306
## [1] "out of bounds"
## [1] 1.1770973 0.8014821 1.3966896 1.6054301
## [1] 0.5027829 0.2600819 1.3489565 1.1586549

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## [1] 0.3679200 0.1518019 1.3394099 1.0692999
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## [1] 0.3355529 0.1258147 1.3371187 1.0478546
## [1] 0.3344740 0.1249484 1.3370424 1.0471398
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## [1] 0.3332582 0.1247752 1.3370271 1.0469968
## [1] 0.3342582 0.1257752 1.3370271 1.0469968
## [1] 0.3342582 0.1237752 1.3370271 1.0469968
## [1] 0.3342582 0.1247752 1.3380271 1.0469968
## [1] 0.3342582 0.1247752 1.3360271 1.0469968
## [1] 0.3342582 0.1247752 1.3370271 1.0479968
## [1] 0.3342582 0.1247752 1.3370271 1.0459968
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## [1] 0.3346254 0.1244382 1.3368497 1.0465077
## [1] 5.103149 23.770404 -3.379264 17.363793
## [1] "out of bounds"
## [1] 1.288330 4.853631 0.393627 4.310765
## [1] "out of bounds"
## [1] 0.5253663 1.0702768 1.1482051 1.7001592
## [1] 0.3727736 0.3136059 1.2991208 1.1780380
## [1] 0.3422550 0.1622717 1.3293039 1.0736138
## [1] 0.3361513 0.1320049 1.3353405 1.0527290
## [1] 0.3349306 0.1259515 1.3365478 1.0485520
## [1] 0.3346864 0.1247408 1.3367893 1.0477166

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## [1] 0.3346376 0.1244987 1.3368376 1.0475495
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## [1] 0.3336239 0.1245252 1.3368020 1.0476126
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## [1] 0.3346239 0.1235252 1.3368020 1.0476126
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## [1] 0.3346239 0.1245252 1.3358020 1.0476126
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## [1] 0.3335471 0.1245172 1.3366668 1.0478161
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## [1] "out of bounds"
## [1] 4.268422 3.265764 1.597775 3.676098
## [1] "out of bounds"
## [1] 1.1212775 0.7526775 1.3887286 1.5737280
## [1] 0.4918485 0.2500602 1.3469193 1.1532541
## [1] 0.3659627 0.1495368 1.3385575 1.0691594
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## [1] 0.3345416 0.1244461 1.3364704 1.0481693
## [1] 0.3345164 0.1244260 1.3364687 1.0481525
## [1] 0.3355416 0.1244461 1.3364704 1.0481693
## [1] 0.3335416 0.1244461 1.3364704 1.0481693

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## [1] 0.3345416 0.1254461 1.3364704 1.0481693
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## [1] 0.3335991 0.1244388 1.3364634 1.0482183
## [1] 0.3345991 0.1254388 1.3364634 1.0482183
## [1] 0.3345991 0.1234388 1.3364634 1.0482183
## [1] 0.3345991 0.1244388 1.3374634 1.0482183
## [1] 0.3345991 0.1244388 1.3354634 1.0482183
## [1] 0.3345991 0.1244388 1.3364634 1.0492183
## [1] 0.3345991 0.1244388 1.3364634 1.0472183
## [1] 0.3347495 0.1243264 1.3364194 1.0483774
## [1] 0.3346743 0.1243826 1.3364414 1.0482978
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## [1] 0.3337495 0.1243264 1.3364194 1.0483774
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## [1] 0.3348186 0.1242280 1.3363598 1.0485160
## [1] 0.3358877 0.1241296 1.3363001 1.0486547
## [1] 0.3338877 0.1241296 1.3363001 1.0486547
## [1] 0.3348877 0.1251296 1.3363001 1.0486547
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## [1] 0.3348877 0.1241296 1.3373001 1.0486547
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## [1] 0.3348877 0.1241296 1.3363001 1.0496547
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## [1] 4.744289 22.136989 -3.168077 16.389914
## [1] "out of bounds"
## [1] 1.2167680 4.5267015 0.4354248 4.1169065
## [1] "out of bounds"
## [1] 0.5112638 1.0046439 1.1561251 1.6623051
## [1] 0.3701629 0.3002324 1.3002651 1.1713848
## [1] 0.3419428 0.1593501 1.3290931 1.0732007
## [1] 0.3362987 0.1311737 1.3348587 1.0535639
## [1] 0.3351699 0.1255384 1.3360119 1.0496365
## [1] 0.3349442 0.1244113 1.3362425 1.0488511
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## [1] 0.3348934 0.1241577 1.3362944 1.0486743
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## [1] 0.3338990 0.1241859 1.3362886 1.0486940
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## [1] 0.3348990 0.1241859 1.3372886 1.0486940
## [1] 0.3348990 0.1241859 1.3352886 1.0486940

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## [1] 0.3348990 0.1241859 1.3362886 1.0476940
## [1] 0.3348862 0.1242106 1.3362548 1.0487538
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## [1] 0.3347890 0.1241498 1.3360319 1.0490982
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## [1] 0.3347638 0.1230975 1.3359376 1.0492493
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## [1] 18.71378 14.71528 2.48292 13.42077
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## [1] 4.010567 3.042334 1.565334 3.523554
## [1] "out of bounds"
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## [1] 0.4817959 0.2408270 1.3451134 1.1482214
## [1] 0.3641702 0.1474434 1.3377727 1.0690437
## [1] 0.3406451 0.1287667 1.3363046 1.0532081
## [1] 0.3359400 0.1250314 1.3360110 1.0500410
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## [1] 0.3347873 0.1241162 1.3359390 1.0492651
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## [1] 0.3338108 0.1241349 1.3359405 1.0492809
## [1] 0.3348108 0.1251349 1.3359405 1.0492809
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## [1] 0.3348108 0.1241349 1.3369405 1.0492809
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## [1] 0.3348108 0.1241349 1.3359405 1.0482809
## [1] 0.3348651 0.1241279 1.3359336 1.0493275
## [1] 0.3348380 0.1241314 1.3359371 1.0493042

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## [1] 0.3338651 0.1241279 1.3359336 1.0493275
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## [1] 0.3351374 0.1238373 1.3367775 1.0497421
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## [1] 0.3351374 0.1238373 1.3357775 1.0507421
## [1] 0.3351374 0.1238373 1.3357775 1.0487421
## [1] 4.414036 20.643800 -2.963602 15.484892
## [1] "out of bounds"
## [1] 1.1509172 4.2278297 0.4759016 3.9367721
## [1] "out of bounds"
## [1] 0.4982934 0.9446358 1.1638023 1.6271481
## [1] 0.3677686 0.2879970 1.3013825 1.1652233
## [1] 0.3416636 0.1566692 1.3288985 1.0728384
## [1] 0.3364427 0.1304036 1.3344017 1.0543614
## [1] 0.3353985 0.1251505 1.3355023 1.0506660
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## [1] 0.3351426 0.1238635 1.3357720 1.0497606
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## [1] 0.3351358 0.1239128 1.3367343 1.0498357
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## [1] 0.3350226 0.1238058 1.3354340 1.0513052
## [1] 0.3350226 0.1238058 1.3354340 1.0493052
## [1] 17.522665 13.684342 2.344143 12.702414
## [1] "out of bounds"
## [1] 3.772551 2.835913 1.537176 3.380727
## [1] "out of bounds"
## [1] 1.0225283 0.6662272 1.3757824 1.5163895
## [1] 0.4725238 0.2322901 1.3435037 1.1435221
## [1] 0.3625228 0.1455026 1.3370480 1.0689486
## [1] 0.3405227 0.1281451 1.3357568 1.0540339
## [1] 0.3361226 0.1246736 1.3354986 1.0510509
## [1] 0.3352426 0.1239793 1.3354469 1.0504543
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## [1] 0.3350922 0.1238371 1.3354332 1.0503571
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## [1] 0.3351178 0.1238338 1.3364299 1.0503793
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## [1] 0.3351178 0.1238338 1.3354299 1.0513793
## [1] 0.3351178 0.1238338 1.3354299 1.0493793

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## [1] 0.3352523 0.1237326 1.3353889 1.0505238
## [1] 0.3351851 0.1237832 1.3354094 1.0504515
## [1] 0.3362523 0.1237326 1.3353889 1.0505238
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## [1] 4.111004 19.279811 -2.765892 14.643432
## [1] "out of bounds"
## [1] 1.0905008 3.9548106 0.5150461 3.7693049
## [1] "out of bounds"
## [1] 0.4864001 0.8898104 1.1712338 1.5944796
## [1] 0.3655800 0.2768104 1.3024713 1.1595145
## [1] 0.3414160 0.1542104 1.3287188 1.0725215
## [1] 0.3365832 0.1296904 1.3339683 1.0551229
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## [1] 0.3353846 0.1236094 1.3362702 1.0508081
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## [1] 0.3353414 0.1236265 1.3351815 1.0509491
## [1] 0.3363096 0.1236220 1.3351233 1.0510364
## [1] 0.3343096 0.1236220 1.3351233 1.0510364

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## [1] 0.3353096 0.1226220 1.3351233 1.0510364
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## [1] 0.3352889 0.1235758 1.3350394 1.0511715
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## [1] 0.3342683 0.1235296 1.3349554 1.0513065
## [1] 0.3352683 0.1245296 1.3349554 1.0513065
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## [1] 3.551910 2.644124 1.512503 3.246690
## [1] "out of bounds"
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## [1] 0.3354852 0.1234595 1.3349117 1.0525145
## [1] 0.3354852 0.1234595 1.3349117 1.0505145
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## [1] 0.3356009 0.1232980 1.3348087 1.0507512
## [1] 3.834700 18.038240 -2.574718 13.861514
## [1] "out of bounds"
## [1] 1.0354208 3.7062865 0.5529033 3.6137037
## [1] "out of bounds"
## [1] 0.4755648 0.8398957 1.1784277 1.5641417
## [1] 0.3635937 0.2666176 1.3035325 1.1542293
## [1] 0.3411994 0.1519619 1.3285535 1.0722468
## [1] 0.3367206 0.1290308 1.3335577 1.0558503
## [1] 0.3358248 0.1244446 1.3345585 1.0525710
## [1] 0.3356457 0.1235273 1.3347587 1.0519151
## [1] 0.3356098 0.1233439 1.3347987 1.0517840
## [1] 0.3356053 0.1233209 1.3348037 1.0517676
## [1] 0.3366098 0.1233439 1.3347987 1.0517840
## [1] 0.3346098 0.1233439 1.3347987 1.0517840
## [1] 0.3356098 0.1243439 1.3347987 1.0517840
## [1] 0.3356098 0.1223439 1.3347987 1.0517840
## [1] 0.3356098 0.1233439 1.3357987 1.0517840
## [1] 0.3356098 0.1233439 1.3337987 1.0517840
## [1] 0.3356098 0.1233439 1.3347987 1.0527840
## [1] 0.3356098 0.1233439 1.3347987 1.0507840
## [1] 0.3355991 0.1233640 1.3347697 1.0518349
## [1] 0.3356045 0.1233540 1.3347842 1.0518094
## [1] 0.3365991 0.1233640 1.3347697 1.0518349
## [1] 0.3345991 0.1233640 1.3347697 1.0518349
## [1] 0.3355991 0.1243640 1.3347697 1.0518349
## [1] 0.3355991 0.1223640 1.3347697 1.0518349
## [1] 0.3355991 0.1233640 1.3357697 1.0518349
## [1] 0.3355991 0.1233640 1.3337697 1.0518349
## [1] 0.3355991 0.1233640 1.3347697 1.0528349
## [1] 0.3355991 0.1233640 1.3347697 1.0508349
## [1] 0.335539 0.123355 1.334659 1.052001
## [1] 0.3355691 0.1233595 1.3347144 1.0519178
## [1] 0.336539 0.123355 1.334659 1.052001
## [1] 0.334539 0.123355 1.334659 1.052001
## [1] 0.335539 0.124355 1.334659 1.052001
## [1] 0.335539 0.122355 1.334659 1.052001
## [1] 0.335539 0.123355 1.335659 1.052001
## [1] 0.335539 0.123355 1.333659 1.052001
## [1] 0.335539 0.123355 1.334659 1.053001
## [1] 0.335539 0.123355 1.334659 1.051001
## [1] 0.3355016 0.1232683 1.3345007 1.0522562
## [1] 0.3355203 0.1233117 1.3345799 1.0521285

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## [1] 0.3365016 0.1232683 1.3345007 1.0522562
## [1] 0.3345016 0.1232683 1.3345007 1.0522562
## [1] 0.3355016 0.1242683 1.3345007 1.0522562
## [1] 0.3355016 0.1222683 1.3345007 1.0522562
## [1] 0.3355016 0.1232683 1.3355007 1.0522562
## [1] 0.3355016 0.1232683 1.3335007 1.0522562
## [1] 0.3355016 0.1232683 1.3345007 1.0532562
## [1] 0.3355016 0.1232683 1.3345007 1.0512562
## [1] 15.388203 11.827726 2.114481 11.393283
## [1] "out of bounds"
## [1] 3.346042 2.464160 1.490497 3.120461
## [1] "out of bounds"
## [1] 0.9376097 0.5914466 1.3656999 1.4658972
## [1] 0.4559232 0.2169040 1.3407405 1.1349844
## [1] 0.3595859 0.1419954 1.3357487 1.0688018
## [1] 0.3403185 0.1270137 1.3347503 1.0555653
## [1] 0.3364650 0.1240174 1.3345506 1.0529180
## [1] 0.3356943 0.1234181 1.3345107 1.0523886
## [1] 0.3355401 0.1232983 1.3345027 1.0522827
## [1] 0.3355209 0.1232833 1.3345017 1.0522694
## [1] 0.3365401 0.1232983 1.3345027 1.0522827
## [1] 0.3345401 0.1232983 1.3345027 1.0522827
## [1] 0.3355401 0.1242983 1.3345027 1.0522827
## [1] 0.3355401 0.1222983 1.3345027 1.0522827
## [1] 0.3355401 0.1232983 1.3355027 1.0522827
## [1] 0.3355401 0.1232983 1.3335027 1.0522827
## [1] 0.3355401 0.1232983 1.3345027 1.0532827
## [1] 0.3355401 0.1232983 1.3345027 1.0512827
## [1] 0.3355858 0.1232921 1.3344963 1.0523227
## [1] 0.3355630 0.1232952 1.3344995 1.0523027
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## [1] 0.3355858 0.1242921 1.3344963 1.0523227
## [1] 0.3355858 0.1222921 1.3344963 1.0523227
## [1] 0.3355858 0.1232921 1.3354963 1.0523227
## [1] 0.3355858 0.1232921 1.3334963 1.0523227
## [1] 0.3355858 0.1232921 1.3344963 1.0533227
## [1] 0.3355858 0.1232921 1.3344963 1.0513227
## [1] 0.3357065 0.1232010 1.3344584 1.0524540
## [1] 0.3356462 0.1232465 1.3344774 1.0523884
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## [1] 0.3347065 0.1232010 1.3344584 1.0524540
## [1] 0.3357065 0.1242010 1.3344584 1.0524540
## [1] 0.3357065 0.1222010 1.3344584 1.0524540
## [1] 0.3357065 0.1232010 1.3354584 1.0524540
## [1] 0.3357065 0.1232010 1.3334584 1.0524540
## [1] 0.3357065 0.1232010 1.3344584 1.0534540
## [1] 0.3357065 0.1232010 1.3344584 1.0514540
## [1] 0.3358156 0.1230493 1.3343605 1.0526787
## [1] 0.3357611 0.1231252 1.3344095 1.0525664
## [1] 0.3368156 0.1230493 1.3343605 1.0526787
## [1] 0.3348156 0.1230493 1.3343605 1.0526787
## [1] 0.3358156 0.1240493 1.3343605 1.0526787
## [1] 0.3358156 0.1220493 1.3343605 1.0526787

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## [1] 0.3358156 0.1230493 1.3353605 1.0526787
## [1] 0.3358156 0.1230493 1.3333605 1.0526787
## [1] 0.3358156 0.1230493 1.3343605 1.0536787
## [1] 0.3358156 0.1230493 1.3343605 1.0516787
## [1] 3.586185 16.918857 -2.389432 13.136903
## [1] "out of bounds"
## [1] 0.9858896 3.4822109 0.5896020 3.4695236
## [1] "out of bounds"
## [1] 0.4658304 0.7948817 1.1854088 1.5360477
## [1] 0.3618186 0.2574158 1.3045701 1.1493525
## [1] 0.3410162 0.1499226 1.3284024 1.0720135
## [1] 0.3368558 0.1284240 1.3331689 1.0565457
## [1] 0.3360237 0.1241243 1.3341222 1.0534521
## [1] 0.3358572 0.1232643 1.3343128 1.0528334
## [1] 0.3358240 0.1230923 1.3343509 1.0527097
## [1] 0.3358198 0.1230708 1.3343557 1.0526942
## [1] 0.3368240 0.1230923 1.3343509 1.0527097
## [1] 0.3348240 0.1230923 1.3343509 1.0527097
## [1] 0.3358240 0.1240923 1.3343509 1.0527097
## [1] 0.3358240 0.1220923 1.3343509 1.0527097
## [1] 0.3358240 0.1230923 1.3353509 1.0527097
## [1] 0.3358240 0.1230923 1.3333509 1.0527097
## [1] 0.3358240 0.1230923 1.3343509 1.0537097
## [1] 0.3358240 0.1230923 1.3343509 1.0517097
## [1] 0.3358138 0.1231112 1.3343234 1.0527580
## [1] 0.3358189 0.1231018 1.3343372 1.0527338
## [1] 0.3368138 0.1231112 1.3343234 1.0527580
## [1] 0.3348138 0.1231112 1.3343234 1.0527580
## [1] 0.3358138 0.1241112 1.3343234 1.0527580
## [1] 0.3358138 0.1221112 1.3343234 1.0527580
## [1] 0.3358138 0.1231112 1.3353234 1.0527580
## [1] 0.3358138 0.1231112 1.3333234 1.0527580
## [1] 0.3358138 0.1231112 1.3343234 1.0537580
## [1] 0.3358138 0.1231112 1.3343234 1.0517580
## [1] 0.3357570 0.1231022 1.3342183 1.0529155
## [1] 0.3357854 0.1231067 1.3342708 1.0528367
## [1] 0.3367570 0.1231022 1.3342183 1.0529155
## [1] 0.3347570 0.1231022 1.3342183 1.0529155
## [1] 0.3357570 0.1241022 1.3342183 1.0529155
## [1] 0.3357570 0.1221022 1.3342183 1.0529155
## [1] 0.3357570 0.1231022 1.3352183 1.0529155
## [1] 0.3357570 0.1231022 1.3332183 1.0529155
## [1] 0.3357570 0.1231022 1.3342183 1.0539155
## [1] 0.3357570 0.1231022 1.3342183 1.0519155
## [1] 0.3357230 0.1230209 1.3340690 1.0531568
## [1] 0.3357400 0.1230616 1.3341437 1.0530361
## [1] 0.3367230 0.1230209 1.3340690 1.0531568
## [1] 0.3347230 0.1230209 1.3340690 1.0531568
## [1] 0.3357230 0.1240209 1.3340690 1.0531568
## [1] 0.3357230 0.1220209 1.3340690 1.0531568
## [1] 0.3357230 0.1230209 1.3350690 1.0531568
## [1] 0.3357230 0.1230209 1.3330690 1.0531568
## [1] 0.3357230 0.1230209 1.3340690 1.0541568
## [1] 0.3357230 0.1230209 1.3340690 1.0521568

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## [1] 14.416005 10.968504 2.014633 10.791648
## [1] "out of bounds"
## [1] 3.151779 2.292118 1.470182 3.000855
## [1] "out of bounds"
## [1] 0.8989343 0.5568403 1.3612915 1.4426965
## [1] 0.4483653 0.2097848 1.3395135 1.1310647
## [1] 0.3582515 0.1403737 1.3351579 1.0687384
## [1] 0.3402287 0.1264915 1.3342868 1.0562731
## [1] 0.3366241 0.1237151 1.3341125 1.0537801
## [1] 0.3359032 0.1231598 1.3340777 1.0532815
## [1] 0.3357591 0.1230487 1.3340707 1.0531817
## [1] 0.3357410 0.1230348 1.3340699 1.0531693
## [1] 0.3367591 0.1230487 1.3340707 1.0531817
## [1] 0.3347591 0.1230487 1.3340707 1.0531817
## [1] 0.3357591 0.1240487 1.3340707 1.0531817
## [1] 0.3357591 0.1220487 1.3340707 1.0531817
## [1] 0.3357591 0.1230487 1.3350707 1.0531817
## [1] 0.3357591 0.1230487 1.3330707 1.0531817
## [1] 0.3357591 0.1230487 1.3340707 1.0541817
## [1] 0.3357591 0.1230487 1.3340707 1.0521817
## [1] 0.3358023 0.1230428 1.3340646 1.0532198
## [1] 0.3357807 0.1230458 1.3340676 1.0532008
## [1] 0.3368023 0.1230428 1.3340646 1.0532198
## [1] 0.3348023 0.1230428 1.3340646 1.0532198
## [1] 0.3358023 0.1240428 1.3340646 1.0532198
## [1] 0.3358023 0.1220428 1.3340646 1.0532198
## [1] 0.3358023 0.1230428 1.3350646 1.0532198
## [1] 0.3358023 0.1230428 1.3330646 1.0532198
## [1] 0.3358023 0.1230428 1.3340646 1.0542198
## [1] 0.3358023 0.1230428 1.3340646 1.0522198
## [1] 0.3359167 0.1229563 1.3340281 1.0533452
## [1] 0.3358595 0.1229996 1.3340464 1.0532825
## [1] 0.3369167 0.1229563 1.3340281 1.0533452
## [1] 0.3349167 0.1229563 1.3340281 1.0533452
## [1] 0.3359167 0.1239563 1.3340281 1.0533452
## [1] 0.3359167 0.1219563 1.3340281 1.0533452
## [1] 0.3359167 0.1229563 1.3350281 1.0533452
## [1] 0.3359167 0.1229563 1.3330281 1.0533452
## [1] 0.3359167 0.1229563 1.3340281 1.0543452
## [1] 0.3359167 0.1229563 1.3340281 1.0523452
## [1] 0.3360198 0.1228135 1.3339349 1.0535588
## [1] 0.3359683 0.1228849 1.3339815 1.0534520
## [1] 0.3370198 0.1228135 1.3339349 1.0535588
## [1] 0.3350198 0.1228135 1.3339349 1.0535588
## [1] 0.3360198 0.1238135 1.3339349 1.0535588
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## [1] 0.3360198 0.1228135 1.3349349 1.0535588
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## [1] 0.3360198 0.1228135 1.3339349 1.0545588
## [1] 0.3360198 0.1228135 1.3339349 1.0525588
## [1] 3.369488 15.933294 -2.208652 12.470368
## [1] "out of bounds"
## [1] 0.9427134 3.2849096 0.6254175 3.3369206
## [1] "out of bounds"

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## [1] 0.4573585 0.7552327 1.1922314 1.5102311
## [1] 0.3602876 0.2492974 1.3055942 1.1448932
## [1] 0.3408734 0.1481103 1.3282667 1.0718256
## [1] 0.3369905 0.1278729 1.3328012 1.0572121
## [1] 0.3362140 0.1238254 1.3337081 1.0542894
## [1] 0.3360586 0.1230159 1.3338895 1.0537049
## [1] 0.3360276 0.1228540 1.3339258 1.0535880
## [1] 0.3360237 0.1228338 1.3339303 1.0535734
## [1] 0.3370276 0.1228540 1.3339258 1.0535880
## [1] 0.3350276 0.1228540 1.3339258 1.0535880
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## [1] 0.3360276 0.1218540 1.3339258 1.0535880
## [1] 0.3360276 0.1228540 1.3349258 1.0535880
## [1] 0.3360276 0.1228540 1.3329258 1.0535880
## [1] 0.3360276 0.1228540 1.3339258 1.0545880
## [1] 0.3360276 0.1228540 1.3339258 1.0525880
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## [1] 0.3360228 0.1228629 1.3339127 1.0536109
## [1] 0.3370179 0.1228717 1.3338996 1.0536338
## [1] 0.3350179 0.1228717 1.3338996 1.0536338
## [1] 0.3360179 0.1238717 1.3338996 1.0536338
## [1] 0.3360179 0.1218717 1.3338996 1.0536338
## [1] 0.3360179 0.1228717 1.3348996 1.0536338
## [1] 0.3360179 0.1228717 1.3328996 1.0536338
## [1] 0.3360179 0.1228717 1.3338996 1.0546338
## [1] 0.3360179 0.1228717 1.3338996 1.0526338
## [1] 0.3359641 0.1228628 1.3337999 1.0537831
## [1] 0.3359910 0.1228673 1.3338497 1.0537084
## [1] 0.3369641 0.1228628 1.3337999 1.0537831
## [1] 0.3349641 0.1228628 1.3337999 1.0537831
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## [1] 0.3359332 0.1227869 1.3336593 1.0540108
## [1] 0.3359487 0.1228249 1.3337296 1.0538970
## [1] 0.3369332 0.1227869 1.3336593 1.0540108
## [1] 0.3349332 0.1227869 1.3336593 1.0540108
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## [1] 0.3359332 0.1227869 1.3326593 1.0540108
## [1] 0.3359332 0.1227869 1.3336593 1.0550108
## [1] 0.3359332 0.1227869 1.3336593 1.0530108
## [1] 13.479003 10.116802 1.916141 10.214804
## [1] "out of bounds"
## [1] 2.964547 2.121590 1.450156 2.886170
## [1] "out of bounds"
## [1] 0.8616560 0.5225475 1.3569586 1.4204426
## [1] 0.4410778 0.2027390 1.3383192 1.1272972
## [1] 0.3569621 0.1387773 1.3345913 1.0686681
## [1] 0.340139 0.125985 1.333846 1.056942

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## [1] 0.3367744 0.1234265 1.3336966 1.0545971
## [1] 0.3361014 0.1229148 1.3336668 1.0541281
## [1] 0.3359669 0.1228125 1.3336608 1.0540343
## [1] 0.3359500 0.1227997 1.3336601 1.0540226
## [1] 0.3369669 0.1228125 1.3336608 1.0540343
## [1] 0.3349669 0.1228125 1.3336608 1.0540343
## [1] 0.3359669 0.1238125 1.3336608 1.0540343
## [1] 0.3359669 0.1218125 1.3336608 1.0540343
## [1] 0.3359669 0.1228125 1.3346608 1.0540343
## [1] 0.3359669 0.1228125 1.3326608 1.0540343
## [1] 0.3359669 0.1228125 1.3336608 1.0550343
## [1] 0.3359669 0.1228125 1.3336608 1.0530343
## [1] 0.3360078 0.1228069 1.3336548 1.0540706
## [1] 0.3359873 0.1228097 1.3336578 1.0540525
## [1] 0.3370078 0.1228069 1.3336548 1.0540706
## [1] 0.3350078 0.1228069 1.3336548 1.0540706
## [1] 0.3360078 0.1238069 1.3336548 1.0540706
## [1] 0.3360078 0.1218069 1.3336548 1.0540706
## [1] 0.3360078 0.1228069 1.3346548 1.0540706
## [1] 0.3360078 0.1228069 1.3326548 1.0540706
## [1] 0.3360078 0.1228069 1.3336548 1.0550706
## [1] 0.3360078 0.1228069 1.3336548 1.0530706
## [1] 0.3361165 0.1227246 1.3336198 1.0541904
## [1] 0.3360621 0.1227657 1.3336373 1.0541305
## [1] 0.3371165 0.1227246 1.3336198 1.0541904
## [1] 0.3351165 0.1227246 1.3336198 1.0541904
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## [1] 0.3361165 0.1227246 1.3346198 1.0541904
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## [1] 0.3361165 0.1227246 1.3336198 1.0531904
## [1] 0.3362140 0.1225896 1.3335307 1.0543939
## [1] 0.3361652 0.1226571 1.3335753 1.0542922
## [1] 0.3372140 0.1225896 1.3335307 1.0543939
## [1] 0.3352140 0.1225896 1.3335307 1.0543939
## [1] 0.3362140 0.1235896 1.3335307 1.0543939
## [1] 0.3362140 0.1215896 1.3335307 1.0543939
## [1] 0.3362140 0.1225896 1.3345307 1.0543939
## [1] 0.3362140 0.1225896 1.3325307 1.0543939
## [1] 0.3362140 0.1225896 1.3335307 1.0553939
## [1] 0.3362140 0.1225896 1.3335307 1.0533939
## [1] 3.194580 15.117061 -2.029606 11.868485
## [1] "out of bounds"
## [1] 0.9078873 3.1214838 0.6609033 3.2172122
## [1] "out of bounds"
## [1] 0.4505487 0.7223684 1.1990052 1.4869576
## [1] 0.3590809 0.2425454 1.3066256 1.1409067
## [1] 0.3407874 0.1465808 1.3281497 1.0716965
## [1] 0.3371287 0.1273878 1.3324545 1.0578544
## [1] 0.3363969 0.1235493 1.3333155 1.0550860
## [1] 0.3362506 0.1227815 1.3334877 1.0545323
## [1] 0.3362213 0.1226280 1.3335221 1.0544216
## [1] 0.3362177 0.1226088 1.3335264 1.0544078

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## [1] 0.3372213 0.1226280 1.3335221 1.0544216
## [1] 0.3352213 0.1226280 1.3335221 1.0544216
## [1] 0.3362213 0.1236280 1.3335221 1.0544216
## [1] 0.3362213 0.1216280 1.3335221 1.0544216
## [1] 0.3362213 0.1226280 1.3345221 1.0544216
## [1] 0.3362213 0.1226280 1.3325221 1.0544216
## [1] 0.3362213 0.1226280 1.3335221 1.0554216
## [1] 0.3362213 0.1226280 1.3335221 1.0534216
## [1] 0.3362121 0.1226447 1.3334973 1.0544649
## [1] 0.3362167 0.1226363 1.3335097 1.0544433
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## [1] 12.538666 9.212936 1.807197 9.648318
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## [1] 2.776639 1.940640 1.428056 2.773520
## [1] "out of bounds"
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## [1] 0.4337532 0.1952885 1.3370624 1.1235685
## [1] 0.3556569 0.1371102 1.3340292 1.0685701
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## [1] 0.3361485 0.1225772 1.3332716 1.0548315
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## [1] "out of bounds"
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## [1] 0.3583738 0.2378522 1.3077062 1.1375463
## [1] 0.3407940 0.1454716 1.3280588 1.0716590
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## [1] 0.3363229 0.1223566 1.3329031 1.0545878
## [1] 11.524512 8.137540 1.666290 9.064654
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## [1] 2.573961 1.725393 1.399581 2.657401
## [1] "out of bounds"
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## [1] 0.4258284 0.1864780 1.3355702 1.1196603
## [1] 0.3542240 0.1351809 1.3334366 1.0684023
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## [1] 0.3363884 0.1233720 1.3328982 1.0556417
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## [1] "out of bounds"
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## [1] "out of bounds"
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## [1] 0.3585021 0.2367918 1.3089056 1.1351770
## [1] 0.3409613 0.1450960 1.3280065 1.0717891
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## [1] 0.3355831 0.1222088 1.3327741 1.0559675
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## [1] 0.3365741 0.1222236 1.3327518 1.0570059
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## [1] "out of bounds"
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## [1] 0.4163246 0.1744310 1.3335500 1.1151452
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## [1] 0.3366615 0.1220999 1.3325164 1.0564769
## [1] 0.3366133 0.1221358 1.3325330 1.0564217

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## [1] 0.3366982 0.1220188 1.3333262 1.0568394
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## [1] 0.3366982 0.1220188 1.3323262 1.0558394
## [1] 0.3366779 0.1219746 1.3322244 1.0570075
## [1] 0.3366881 0.1219967 1.3322753 1.0569234
## [1] 0.3376779 0.1219746 1.3322244 1.0570075
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## [1] 0.3366779 0.1229746 1.3322244 1.0570075
## [1] 0.3366779 0.1209746 1.3322244 1.0570075
## [1] 0.3366779 0.1219746 1.3332244 1.0570075
## [1] 0.3366779 0.1219746 1.3312244 1.0570075
## [1] 0.3366779 0.1219746 1.3322244 1.0580075
## [1] 0.3366779 0.1219746 1.3322244 1.0560075
## [1] 8.784945 4.437238 1.147042 7.605307
## [1] "out of bounds"
## [1] 2.0263313 0.9850272 1.2951879 2.3666675
## [1] "out of bounds"
## [1] 0.6746086 0.2945851 1.3248171 1.3189395
## [1] 0.4042641 0.1564967 1.3307429 1.1093939
## [1] 0.3501952 0.1288790 1.3319281 1.0674848
## [1] 0.3393814 0.1233555 1.3321651 1.0591029
## [1] 0.3372186 0.1222508 1.3322125 1.0574266
## [1] 0.3367861 0.1220298 1.3322220 1.0570913
## [1] 0.3366996 0.1219857 1.3322239 1.0570243
## [1] 0.3366887 0.1219801 1.3322242 1.0570159
## [1] 0.3376996 0.1219857 1.3322239 1.0570243
## [1] 0.3356996 0.1219857 1.3322239 1.0570243
## [1] 0.3366996 0.1229857 1.3322239 1.0570243
## [1] 0.3366996 0.1209857 1.3322239 1.0570243
## [1] 0.3366996 0.1219857 1.3332239 1.0570243
## [1] 0.3366996 0.1219857 1.3312239 1.0570243
## [1] 0.3366996 0.1219857 1.3322239 1.0580243
## [1] 0.3366996 0.1219857 1.3322239 1.0560243
## [1] 0.3367348 0.1219805 1.3322177 1.0570576
## [1] 0.3367172 0.1219831 1.3322208 1.0570409
## [1] 0.3377348 0.1219805 1.3322177 1.0570576
## [1] 0.3357348 0.1219805 1.3322177 1.0570576
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## [1] 0.3367348 0.1209805 1.3322177 1.0570576
## [1] 0.3367348 0.1219805 1.3332177 1.0570576
## [1] 0.3367348 0.1219805 1.3312177 1.0570576
## [1] 0.3367348 0.1219805 1.3322177 1.0580576
## [1] 0.3367348 0.1219805 1.3322177 1.0560576
## [1] 0.3368313 0.1219098 1.3321833 1.0571706
## [1] 0.3367830 0.1219452 1.3322005 1.0571141
## [1] 0.3378313 0.1219098 1.3321833 1.0571706
## [1] 0.3358313 0.1219098 1.3321833 1.0571706
## [1] 0.3368313 0.1229098 1.3321833 1.0571706
## [1] 0.3368313 0.1209098 1.3321833 1.0571706
## [1] 0.3368313 0.1219098 1.3331833 1.0571706
## [1] 0.3368313 0.1219098 1.3311833 1.0571706
## [1] 0.3368313 0.1219098 1.3321833 1.0581706
## [1] 0.3368313 0.1219098 1.3321833 1.0561706

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## [1] 0.3369216 0.1217755 1.3320950 1.0573683
## [1] 0.3368764 0.1218426 1.3321392 1.0572695
## [1] 0.3379216 0.1217755 1.3320950 1.0573683
## [1] 0.3359216 0.1217755 1.3320950 1.0573683
## [1] 0.3369216 0.1227755 1.3320950 1.0573683
## [1] 0.3369216 0.1207755 1.3320950 1.0573683
## [1] 0.3369216 0.1217755 1.3330950 1.0573683
## [1] 0.3369216 0.1217755 1.3310950 1.0573683
## [1] 0.3369216 0.1217755 1.3320950 1.0583683
## [1] 0.3369216 0.1217755 1.3320950 1.0563683
## [1] 3.243832 16.553104 -1.304513 10.798434
## [1] "out of bounds"
## [1] 0.9183037 3.4080411 0.8047735 3.0055815
## [1] "out of bounds"
## [1] 0.4531980 0.7790286 1.2266307 1.4470110
## [1] 0.3601769 0.2532261 1.3110021 1.1352969
## [1] 0.3415726 0.1480656 1.3278764 1.0729540
## [1] 0.3378518 0.1270335 1.3312513 1.0604855
## [1] 0.3371076 0.1228271 1.3319263 1.0579918
## [1] 0.3369588 0.1219858 1.3320613 1.0574930
## [1] 0.3369290 0.1218175 1.3320883 1.0573933
## [1] 0.3369253 0.1217965 1.3320916 1.0573808
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## [1] 0.3359290 0.1218175 1.3320883 1.0573933
## [1] 0.3369290 0.1228175 1.3320883 1.0573933
## [1] 0.3369290 0.1208175 1.3320883 1.0573933
## [1] 0.3369290 0.1218175 1.3330883 1.0573933
## [1] 0.3369290 0.1218175 1.3310883 1.0573933
## [1] 0.3369290 0.1218175 1.3320883 1.0583933
## [1] 0.3369290 0.1218175 1.3320883 1.0563933
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## [1] 0.3369231 0.1218248 1.3320779 1.0574101
## [1] 0.3379172 0.1218320 1.3320675 1.0574269
## [1] 0.3359172 0.1218320 1.3320675 1.0574269
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## [1] 0.3369172 0.1208320 1.3320675 1.0574269
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## [1] 0.3369172 0.1218320 1.3310675 1.0574269
## [1] 0.3369172 0.1218320 1.3320675 1.0584269
## [1] 0.3369172 0.1218320 1.3320675 1.0564269
## [1] 0.3368649 0.1218274 1.3319935 1.0575300
## [1] 0.3368910 0.1218297 1.3320305 1.0574784
## [1] 0.3378649 0.1218274 1.3319935 1.0575300
## [1] 0.3358649 0.1218274 1.3319935 1.0575300
## [1] 0.3368649 0.1228274 1.3319935 1.0575300
## [1] 0.3368649 0.1208274 1.3319935 1.0575300
## [1] 0.3368649 0.1218274 1.3329935 1.0575300
## [1] 0.3368649 0.1218274 1.3309935 1.0575300
## [1] 0.3368649 0.1218274 1.3319935 1.0585300
## [1] 0.3368649 0.1218274 1.3319935 1.0565300
## [1] 0.3368449 0.1217968 1.3319027 1.0576805
## [1] 0.3368549 0.1218121 1.3319481 1.0576052
## [1] 0.3378449 0.1217968 1.3319027 1.0576805
## [1] 0.3358449 0.1217968 1.3319027 1.0576805

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## [1] 0.3368449 0.1227968 1.3319027 1.0576805
## [1] 0.3368449 0.1207968 1.3319027 1.0576805
## [1] 0.3368449 0.1217968 1.3329027 1.0576805
## [1] 0.3368449 0.1217968 1.3309027 1.0576805
## [1] 0.3368449 0.1217968 1.3319027 1.0586805
## [1] 0.3368449 0.1217968 1.3319027 1.0566805
## [1] 7.2900629 1.9289055 0.8554336 6.7371448
## [1] "out of bounds"
## [1] 1.7274885 0.4832185 1.2366089 2.1935733
## [1] "out of bounds"
## [1] 0.6149736 0.1940811 1.3128440 1.2848590
## [1] 0.3924707 0.1362537 1.3280910 1.1031162
## [1] 0.3479701 0.1246882 1.3311404 1.0667676
## [1] 0.3390700 0.1223751 1.3317502 1.0594979
## [1] 0.3372899 0.1219125 1.3318722 1.0580440
## [1] 0.3369339 0.1218199 1.3318966 1.0577532
## [1] 0.3368894 0.1218084 1.3318997 1.0577168
## [1] 0.3378894 0.1218084 1.3318997 1.0577168
## [1] 0.3358894 0.1218084 1.3318997 1.0577168
## [1] 0.3368894 0.1228084 1.3318997 1.0577168
## [1] 0.3368894 0.1208084 1.3318997 1.0577168
## [1] 0.3368894 0.1218084 1.3328997 1.0577168
## [1] 0.3368894 0.1218084 1.3308997 1.0577168
## [1] 0.3368894 0.1218084 1.3318997 1.0587168
## [1] 0.3368894 0.1218084 1.3318997 1.0567168
## [1] 0.3370962 0.1216481 1.3318310 1.0579483
## [1] 0.3369928 0.1217282 1.3318654 1.0578326
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## [1] 0.3360962 0.1216481 1.3318310 1.0579483
## [1] 0.3370962 0.1226481 1.3318310 1.0579483
## [1] 0.3370962 0.1206481 1.3318310 1.0579483
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## [1] 0.3370962 0.1216481 1.3318310 1.0569483
## [1] 0.3372026 0.1214979 1.3315539 1.0585049
## [1] 0.3371494 0.1215730 1.3316924 1.0582266
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## [1] 0.3362026 0.1214979 1.3315539 1.0585049
## [1] 0.3372026 0.1224979 1.3315539 1.0585049
## [1] 0.3372026 0.1204979 1.3315539 1.0585049
## [1] 0.3372026 0.1214979 1.3325539 1.0585049
## [1] 0.3372026 0.1214979 1.3305539 1.0585049
## [1] 0.3372026 0.1214979 1.3315539 1.0595049
## [1] 0.3372026 0.1214979 1.3315539 1.0575049
## [1] 0.3372428 0.1215725 1.3308483 1.0598561
## [1] 0.3372107 0.1215128 1.3314128 1.0587751
## [1] 0.3372066 0.1215053 1.3314833 1.0586400
## [1] 0.3382107 0.1215128 1.3314128 1.0587751
## [1] 0.3362107 0.1215128 1.3314128 1.0587751
## [1] 0.3372107 0.1225128 1.3314128 1.0587751
## [1] 0.3372107 0.1205128 1.3314128 1.0587751
## [1] 0.3372107 0.1215128 1.3324128 1.0587751
## [1] 0.3372107 0.1215128 1.3304128 1.0587751

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## [1] 0.3372107 0.1215128 1.3314128 1.0597751
## [1] 0.3372107 0.1215128 1.3314128 1.0577751
## [1] -6.314027 -15.914219 -3.288491 2.485131
## [1] "out of bounds"
## [1] -0.9930368 -3.0856336 0.4074320 1.3440462
## [1] "out of bounds"
## [1] 0.07116118 -0.51991648 1.14661660 1.11582935
## [1] "out of bounds"
## [1] 0.284000767 -0.006773056 1.294453524 1.070185981
## [1] "out of bounds"
## [1] 0.32656869 0.09585563 1.32402091 1.06105731
## [1] 0.3350823 0.1163814 1.3299344 1.0592316
## [1] 0.3367850 0.1204865 1.3311171 1.0588664
## [1] 0.3371255 0.1213075 1.3313536 1.0587934
## [1] 0.3371936 0.1214717 1.3314009 1.0587788
## [1] 0.3372022 0.1214923 1.3314068 1.0587770
## [1] 0.3381936 0.1214717 1.3314009 1.0587788
## [1] 0.3361936 0.1214717 1.3314009 1.0587788
## [1] 0.3371936 0.1224717 1.3314009 1.0587788
## [1] 0.3371936 0.1204717 1.3314009 1.0587788
## [1] 0.3371936 0.1214717 1.3324009 1.0587788
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## [1] 0.3371936 0.1214717 1.3314009 1.0577788
## [1] 0.3371919 0.1214618 1.3313876 1.0588007
## [1] 0.3371928 0.1214668 1.3313943 1.0587897
## [1] 0.3381919 0.1214618 1.3313876 1.0588007
## [1] 0.3361919 0.1214618 1.3313876 1.0588007
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## [1] 0.3371919 0.1204618 1.3313876 1.0588007
## [1] 0.3371919 0.1214618 1.3323876 1.0588007
## [1] 0.3371919 0.1214618 1.3303876 1.0588007
## [1] 0.3371919 0.1214618 1.3313876 1.0598007
## [1] 0.3371919 0.1214618 1.3313876 1.0578007
## [1] 0.3371996 0.1214521 1.3313437 1.0588857
## [1] 0.3371958 0.1214569 1.3313657 1.0588432
## [1] 0.3381996 0.1214521 1.3313437 1.0588857
## [1] 0.3361996 0.1214521 1.3313437 1.0588857
## [1] 0.3371996 0.1224521 1.3313437 1.0588857
## [1] 0.3371996 0.1204521 1.3313437 1.0588857
## [1] 0.3371996 0.1214521 1.3323437 1.0588857
## [1] 0.3371996 0.1214521 1.3303437 1.0588857
## [1] 0.3371996 0.1214521 1.3313437 1.0598857
## [1] 0.3371996 0.1214521 1.3313437 1.0578857
## [1] 0.3372260 0.1214239 1.3312583 1.0590566
## [1] 0.3372128 0.1214380 1.3313010 1.0589711
## [1] 0.3382260 0.1214239 1.3312583 1.0590566
## [1] 0.3362260 0.1214239 1.3312583 1.0590566
## [1] 0.3372260 0.1224239 1.3312583 1.0590566
## [1] 0.3372260 0.1204239 1.3312583 1.0590566
## [1] 0.3372260 0.1214239 1.3322583 1.0590566
## [1] 0.3372260 0.1214239 1.3302583 1.0590566
## [1] 0.3372260 0.1214239 1.3312583 1.0600566
## [1] 0.3372260 0.1214239 1.3312583 1.0580566

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## [1] 0.9942012 -5.1152733 -0.8860700 4.6676373
## [1] "out of bounds"
## [1] 0.4686211 -0.9259155 0.8877926 1.7807727
## [1] "out of bounds"
## [1] 0.36350504 -0.08804397 1.24256517 1.20339980
## [1] "out of bounds"
## [1] 0.34248184 0.07953034 1.31351968 1.08792522
## [1] 0.3382772 0.1130452 1.3277106 1.0648303
## [1] 0.3374363 0.1197482 1.3305488 1.0602113
## [1] 0.3372681 0.1210888 1.3311164 1.0592875
## [1] 0.3372344 0.1213569 1.3312299 1.0591028
## [1] 0.3372302 0.1213904 1.3312441 1.0590797
## [1] 0.3382302 0.1213904 1.3312441 1.0590797
## [1] 0.3362302 0.1213904 1.3312441 1.0590797
## [1] 0.3372302 0.1223904 1.3312441 1.0590797
## [1] 0.3372302 0.1203904 1.3312441 1.0590797
## [1] 0.3372302 0.1213904 1.3322441 1.0590797
## [1] 0.3372302 0.1213904 1.3302441 1.0590797
## [1] 0.3372302 0.1213904 1.3312441 1.0600797
## [1] 0.3372302 0.1213904 1.3312441 1.0580797
## [1] 0.3373403 0.1213107 1.3311484 1.0593145
## [1] 0.3372853 0.1213506 1.3311962 1.0591971
## [1] 0.3383403 0.1213107 1.3311484 1.0593145
## [1] 0.3363403 0.1213107 1.3311484 1.0593145
## [1] 0.3373403 0.1223107 1.3311484 1.0593145
## [1] 0.3373403 0.1203107 1.3311484 1.0593145
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## [1] 0.3373403 0.1213107 1.3301484 1.0593145
## [1] 0.3373403 0.1213107 1.3311484 1.0603145
## [1] 0.3373403 0.1213107 1.3311484 1.0583145
## [1] 0.3374521 0.1213005 1.3309498 1.0597545
## [1] 0.3373962 0.1213056 1.3310491 1.0595345
## [1] 0.3383962 0.1213056 1.3310491 1.0595345
## [1] 0.3363962 0.1213056 1.3310491 1.0595345
## [1] 0.3373962 0.1223056 1.3310491 1.0595345
## [1] 0.3373962 0.1203056 1.3310491 1.0595345
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## [1] 0.3373962 0.1213056 1.3300491 1.0595345
## [1] 0.3373962 0.1213056 1.3310491 1.0605345
## [1] 0.3373962 0.1213056 1.3310491 1.0585345
## [1] 0.3385574 0.1201405 1.3278999 1.0659381
## [1] 0.3376284 0.1210726 1.3304192 1.0608153
## [1] 0.3375123 0.1211891 1.3307342 1.0601749
## [1] 0.3386284 0.1210726 1.3304192 1.0608153
## [1] 0.3366284 0.1210726 1.3304192 1.0608153
## [1] 0.3376284 0.1220726 1.3304192 1.0608153
## [1] 0.3376284 0.1200726 1.3304192 1.0608153
## [1] 0.3376284 0.1210726 1.3314192 1.0608153
## [1] 0.3376284 0.1210726 1.3294192 1.0608153
## [1] 0.3376284 0.1210726 1.3304192 1.0618153
## [1] 0.3376284 0.1210726 1.3304192 1.0598153
## [1] -12.658508 -43.488350 -4.106936 -5.021239
## [1] "out of bounds"
## [1] -2.2615988 -8.6008119 0.2429482 -0.1555955

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## [1] "out of bounds"
## [1] -0.1822170 -1.6233043 1.1129250 0.8175331
## [1] "out of bounds"
## [1] 0.2336594 -0.2278028 1.2869204 1.0121588
## [1] "out of bounds"
## [1] 0.31683463 0.05129751 1.32171947 1.05108397
## [1] 0.3334697 0.1071176 1.3286793 1.0588690
## [1] 0.3367967 0.1182816 1.3300712 1.0604260
## [1] 0.3374621 0.1205144 1.3303496 1.0607374
## [1] 0.3375952 0.1209609 1.3304053 1.0607997
## [1] 0.3376118 0.1210168 1.3304123 1.0608075
## [1] 0.3385952 0.1209609 1.3304053 1.0607997
## [1] 0.3365952 0.1209609 1.3304053 1.0607997
## [1] 0.3375952 0.1219609 1.3304053 1.0607997
## [1] 0.3375952 0.1199609 1.3304053 1.0607997
## [1] 0.3375952 0.1209609 1.3314053 1.0607997
## [1] 0.3375952 0.1209609 1.3294053 1.0607997
## [1] 0.3375952 0.1209609 1.3304053 1.0617997
## [1] 0.3375952 0.1209609 1.3304053 1.0597997
## [1] 0.3376138 0.1209492 1.3304029 1.0608141
## [1] 0.3376045 0.1209551 1.3304041 1.0608069
## [1] 0.3386138 0.1209492 1.3304029 1.0608141
## [1] 0.3366138 0.1209492 1.3304029 1.0608141
## [1] 0.3376138 0.1219492 1.3304029 1.0608141
## [1] 0.3376138 0.1199492 1.3304029 1.0608141
## [1] 0.3376138 0.1209492 1.3314029 1.0608141
## [1] 0.3376138 0.1209492 1.3294029 1.0608141
## [1] 0.3376138 0.1209492 1.3304029 1.0618141
## [1] 0.3376138 0.1209492 1.3304029 1.0598141
## [1] 0.3376674 0.1209226 1.3303941 1.0608606
## [1] 0.3376406 0.1209359 1.3303985 1.0608373
## [1] 0.3386674 0.1209226 1.3303941 1.0608606
## [1] 0.3366674 0.1209226 1.3303941 1.0608606
## [1] 0.3376674 0.1219226 1.3303941 1.0608606
## [1] 0.3376674 0.1199226 1.3303941 1.0608606
## [1] 0.3376674 0.1209226 1.3313941 1.0608606
## [1] 0.3376674 0.1209226 1.3293941 1.0608606
## [1] 0.3376674 0.1209226 1.3303941 1.0618606
## [1] 0.3376674 0.1209226 1.3303941 1.0598606
## [1] 0.3377430 0.1208597 1.3303595 1.0609628
## [1] 0.3377052 0.1208912 1.3303768 1.0609117
## [1] 0.3387430 0.1208597 1.3303595 1.0609628
## [1] 0.3367430 0.1208597 1.3303595 1.0609628
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## [1] 0.3377430 0.1208597 1.3313595 1.0609628
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## [1] 0.3377430 0.1208597 1.3303595 1.0619628
## [1] 0.3377430 0.1208597 1.3303595 1.0599628
## [1] -0.4615909 2.6169216 -1.2444856 5.8023356
## [1] "out of bounds"
## [1] 0.1778762 0.6200721 0.8153904 2.0092374
## [1] "out of bounds"
## [1] 0.3057696 0.2207022 1.2273657 1.2506177

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## [1] 0.3313483 0.1408282 1.3097607 1.0988938
## [1] 0.3364641 0.1248534 1.3262397 1.0685490
## [1] 0.3374872 0.1216585 1.3295355 1.0624800
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## [1] 0.4906457 0.3273703 1.3639720 1.1341170
## [1] 0.3683638 0.1619542 1.3366636 1.0763642
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## [1] 0.3380018 0.1205688 1.3298247 1.0620779
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## [1] 0.3383643 0.1201211 1.3299824 1.0638129
## [1] 0.3383643 0.1201211 1.3279824 1.0638129

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## [1] 0.3383643 0.1201211 1.3289824 1.0648129
## [1] 0.3383643 0.1201211 1.3289824 1.0628129
## [1] 0.3384461 0.1201145 1.3288825 1.0640529
## [1] 0.3384052 0.1201178 1.3289325 1.0639329
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## [1] 0.3397615 0.1193269 1.3268608 1.0685724
## [1] 0.3386764 0.1199596 1.3285181 1.0648608
## [1] 0.3384594 0.1200862 1.3288496 1.0641185
## [1] 0.3384323 0.1201020 1.3288910 1.0640257
## [1] 0.3394594 0.1200862 1.3288496 1.0641185
## [1] 0.3374594 0.1200862 1.3288496 1.0641185
## [1] 0.3384594 0.1210862 1.3288496 1.0641185
## [1] 0.3384594 0.1190862 1.3288496 1.0641185
## [1] 0.3384594 0.1200862 1.3298496 1.0641185
## [1] 0.3384594 0.1200862 1.3278496 1.0641185
## [1] 0.3384594 0.1200862 1.3288496 1.0651185
## [1] 0.3384594 0.1200862 1.3288496 1.0631185
## [1] -6.5689658 -17.7440965 -1.9798215 -0.3962085
## [1] "out of bounds"
## [1] -1.0430256 -3.4527504 0.6671154 0.7720531
## [1] "out of bounds"
## [1] 0.06216243 -0.59448113 1.19650275 1.00570542
## [1] "out of bounds"
## [1] 0.28320003 -0.02282729 1.30238023 1.05243588
## [1] "out of bounds"
## [1] 0.32740755 0.09150348 1.32355572 1.06178198
## [1] 0.3362491 0.1143696 1.3277908 1.0636512
## [1] 0.3380174 0.1189429 1.3286378 1.0640250
## [1] 0.3383710 0.1198575 1.3288072 1.0640998
## [1] 0.3384418 0.1200404 1.3288411 1.0641148
## [1] 0.3384506 0.1200633 1.3288454 1.0641166
## [1] 0.3394418 0.1200404 1.3288411 1.0641148
## [1] 0.3374418 0.1200404 1.3288411 1.0641148
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## [1] 0.3384418 0.1200404 1.3288411 1.0651148
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## [1] 0.3384442 0.1190378 1.3288360 1.0641256
## [1] 0.3384442 0.1200378 1.3298360 1.0641256
## [1] 0.3384442 0.1200378 1.3278360 1.0641256

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## [1] 0.3384442 0.1200378 1.3288360 1.0651256
## [1] 0.3384442 0.1200378 1.3288360 1.0631256
## [1] 0.3384535 0.1200312 1.3288192 1.0641621
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## [1] 0.3394535 0.1200312 1.3288192 1.0641621
## [1] 0.3374535 0.1200312 1.3288192 1.0641621
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## [1] 0.3384633 0.1200162 1.3287962 1.0642091
## [1] 0.3394731 0.1200013 1.3287732 1.0642561
## [1] 0.3374731 0.1200013 1.3287732 1.0642561
## [1] 0.3384731 0.1210013 1.3287732 1.0642561
## [1] 0.3384731 0.1190013 1.3287732 1.0642561
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## [1] 0.3384731 0.1200013 1.3277732 1.0642561
## [1] 0.3384731 0.1200013 1.3287732 1.0652561
## [1] 0.3384731 0.1200013 1.3287732 1.0632561
## [1] 1.4165737 0.5914083 0.3671274 3.6629063
## [1] "out of bounds"
## [1] 0.5540932 0.2142827 1.1364440 1.5839862
## [1] 0.3815972 0.1388576 1.2903074 1.1682021
## [1] 0.3470979 0.1237725 1.3210800 1.0850453
## [1] 0.3401981 0.1207555 1.3272346 1.0684140
## [1] 0.3388181 0.1201521 1.3284655 1.0650877
## [1] 0.3385421 0.1200315 1.3287117 1.0644224
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## [1] 0.3384800 0.1200043 1.3287671 1.0642728
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## [1] 0.3384869 0.1210073 1.3287609 1.0642894
## [1] 0.3384869 0.1190073 1.3287609 1.0642894
## [1] 0.3384869 0.1200073 1.3297609 1.0642894
## [1] 0.3384869 0.1200073 1.3277609 1.0642894
## [1] 0.3384869 0.1200073 1.3287609 1.0652894
## [1] 0.3384869 0.1200073 1.3287609 1.0632894
## [1] 0.3385440 0.1199317 1.3286457 1.0645303
## [1] 0.3385155 0.1199695 1.3287033 1.0644098
## [1] 0.3395440 0.1199317 1.3286457 1.0645303
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## [1] 0.3385440 0.1189317 1.3286457 1.0645303
## [1] 0.3385440 0.1199317 1.3296457 1.0645303
## [1] 0.3385440 0.1199317 1.3276457 1.0645303
## [1] 0.3385440 0.1199317 1.3286457 1.0655303
## [1] 0.3385440 0.1199317 1.3286457 1.0635303
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## [1] 0.3385535 0.1198866 1.3285984 1.0646174
## [1] 0.3395535 0.1198866 1.3285984 1.0646174
## [1] 0.3375535 0.1198866 1.3285984 1.0646174
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## [1] 0.3385535 0.1208866 1.3285984 1.0646174
## [1] 0.3385535 0.1188866 1.3285984 1.0646174
## [1] 0.3385535 0.1198866 1.3295984 1.0646174
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## [1] 0.3385535 0.1198866 1.3285984 1.0656174
## [1] 0.3385535 0.1198866 1.3285984 1.0636174
## [1] 0.3391012 0.1188509 1.3270401 1.0677262
## [1] 0.3386630 0.1196795 1.3282867 1.0652392
## [1] 0.3386082 0.1197831 1.3284426 1.0649283
## [1] 0.3396630 0.1196795 1.3282867 1.0652392
## [1] 0.3376630 0.1196795 1.3282867 1.0652392
## [1] 0.3386630 0.1206795 1.3282867 1.0652392
## [1] 0.3386630 0.1186795 1.3282867 1.0652392
## [1] 0.3386630 0.1196795 1.3292867 1.0652392
## [1] 0.3386630 0.1196795 1.3272867 1.0652392
## [1] 0.3386630 0.1196795 1.3282867 1.0662392
## [1] 0.3386630 0.1196795 1.3282867 1.0642392
## [1] 13.243144 25.717249 4.118059 8.790028
## [1] "out of bounds"
## [1] 2.919559 5.239193 1.886241 2.610197
## [1] "out of bounds"
## [1] 0.8548423 1.1435823 1.4398776 1.3742307
## [1] 0.4418989 0.3244600 1.3506049 1.1270375
## [1] 0.3593102 0.1606356 1.3327504 1.0775988
## [1] 0.3427925 0.1278707 1.3291795 1.0677111
## [1] 0.3394889 0.1213177 1.3284653 1.0657335
## [1] 0.3388282 0.1200071 1.3283225 1.0653380
## [1] 0.3386961 0.1197450 1.3282939 1.0652589
## [1] 0.3386795 0.1197123 1.3282903 1.0652490
## [1] 0.3396961 0.1197450 1.3282939 1.0652589
## [1] 0.3376961 0.1197450 1.3282939 1.0652589
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## [1] 0.3386985 0.1197419 1.3282925 1.0652626
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## [1] 0.3387009 0.1197388 1.3292911 1.0652662
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## [1] 0.3387087 0.1197321 1.3282868 1.0652783
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## [1] 0.3377166 0.1197254 1.3282825 1.0652903
## [1] 0.3387166 0.1207254 1.3282825 1.0652903
## [1] 0.3387166 0.1187254 1.3282825 1.0652903
## [1] 0.3387166 0.1197254 1.3292825 1.0652903

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## [1] 0.3387166 0.1197254 1.3272825 1.0652903
## [1] 0.3387166 0.1197254 1.3282825 1.0662903
## [1] 0.3387166 0.1197254 1.3282825 1.0642903
## [1] 0.3387567 0.1197059 1.3282574 1.0653608
## [1] 0.3387366 0.1197156 1.3282700 1.0653255
## [1] 0.3397567 0.1197059 1.3282574 1.0653608
## [1] 0.3377567 0.1197059 1.3282574 1.0653608
## [1] 0.3387567 0.1207059 1.3282574 1.0653608
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## [1] 0.3387567 0.1197059 1.3292574 1.0653608
## [1] 0.3387567 0.1197059 1.3272574 1.0653608
## [1] 0.3387567 0.1197059 1.3282574 1.0663608
## [1] 0.3387567 0.1197059 1.3282574 1.0643608
## [1] -1.306084 -2.352963 -0.273435 2.573510
## [1] "out of bounds"
## [1] 0.009788632 -0.374827949 1.007918904 1.366990565
## [1] "out of bounds"
## [1] 0.27296309 0.02079911 1.26418968 1.12568672
## [1] 0.32559798 0.09992453 1.31544384 1.07742595
## [1] 0.3361250 0.1157496 1.3256947 1.0677738
## [1] 0.3382304 0.1189146 1.3277448 1.0658434
## [1] 0.3386514 0.1195476 1.3281549 1.0654573
## [1] 0.3387356 0.1196742 1.3282369 1.0653801
## [1] 0.3387525 0.1196996 1.3282533 1.0653646
## [1] 0.3387546 0.1197027 1.3282553 1.0653627
## [1] 0.3397525 0.1196996 1.3282533 1.0653646
## [1] 0.3377525 0.1196996 1.3282533 1.0653646
## [1] 0.3387525 0.1206996 1.3282533 1.0653646
## [1] 0.3387525 0.1186996 1.3282533 1.0653646
## [1] 0.3387525 0.1196996 1.3292533 1.0653646
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## [1] 0.3387476 0.1196947 1.3282449 1.0653763
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## [1] 0.3387394 0.1196933 1.3282163 1.0654247
## [1] 0.3387435 0.1196940 1.3282306 1.0654005
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## [1] 0.3387394 0.1186933 1.3282163 1.0654247
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## [1] 0.3387394 0.1196933 1.3282163 1.0644247
## [1] 0.3387475 0.1196951 1.3281758 1.0655069

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## [1] 0.3387435 0.1196942 1.3281961 1.0654658
## [1] 0.3397475 0.1196951 1.3281758 1.0655069
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## [1] 0.3387475 0.1196951 1.3281758 1.0665069
## [1] 0.3387475 0.1196951 1.3281758 1.0645069
## [1] 0.0832380 -6.0065441 0.4247662 1.5215282
## [1] "out of bounds"
## [1] 0.2876456 -1.1055528 1.1474939 1.1567112
## [1] "out of bounds"
## [1] 0.3285272 -0.1253545 1.2920394 1.0837478
## [1] "out of bounds"
## [1] 0.33670347 0.07068518 1.32094851 1.06915511
## [1] 0.3383387 0.1098931 1.3267303 1.0662366
## [1] 0.3386658 0.1177347 1.3278867 1.0656529
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## [1] 0.3387834 0.1186575 1.3281643 1.0655455
## [1] 0.3387834 0.1196575 1.3291643 1.0655455
## [1] 0.3387834 0.1196575 1.3271643 1.0655455
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## [1] 0.3387981 0.1196475 1.3281549 1.0655712
## [1] 0.3398127 0.1196374 1.3281454 1.0655970
## [1] 0.3378127 0.1196374 1.3281454 1.0655970

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## [1] 0.3388127 0.1206374 1.3281454 1.0655970
## [1] 0.3388127 0.1186374 1.3281454 1.0655970
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## [1] 0.3388127 0.1196374 1.3281454 1.0645970
## [1] -0.71981380 -0.60382835 -0.06052496 2.86656067
## [1] "out of bounds"
## [1] 0.12708739 -0.02505572 1.05041133 1.42578970
## [1] "out of bounds"
## [1] 0.29646763 0.09069881 1.27259859 1.13763551
## [1] 0.3303437 0.1138497 1.3170360 1.0800047
## [1] 0.3371189 0.1184799 1.3259235 1.0684785
## [1] 0.3384739 0.1194059 1.3277010 1.0661733
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## [1] 0.3388059 0.1196328 1.3281365 1.0656085
## [1] 0.3397991 0.1196282 1.3281276 1.0656200
## [1] 0.3377991 0.1196282 1.3281276 1.0656200
## [1] 0.3387991 0.1206282 1.3281276 1.0656200
## [1] 0.3387991 0.1186282 1.3281276 1.0656200
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## [1] 0.3387991 0.1196282 1.3271276 1.0656200
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## [1] 0.3377868 0.1196394 1.3280845 1.0656953
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## [1] 0.3387868 0.1196394 1.3280845 1.0666953
## [1] 0.3387868 0.1196394 1.3280845 1.0646953
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## [1] 0.3397849 0.1195894 1.3280075 1.0658307
## [1] 0.3377849 0.1195894 1.3280075 1.0658307
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## [1] 0.3391563 0.1190477 1.3267317 1.0683902
## [1] 0.3389706 0.1193185 1.3273696 1.0671105
## [1] 0.3399706 0.1193185 1.3273696 1.0671105
## [1] 0.3379706 0.1193185 1.3273696 1.0671105
## [1] 0.3389706 0.1203185 1.3273696 1.0671105
## [1] 0.3389706 0.1183185 1.3273696 1.0671105
## [1] 0.3389706 0.1193185 1.3283696 1.0671105
## [1] 0.3389706 0.1193185 1.3263696 1.0671105
## [1] 0.3389706 0.1193185 1.3273696 1.0681105

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## [1] 0.3389706 0.1193185 1.3273696 1.0661105
## [1] 10.869892 -2.637140 4.760805 1.022331
## [1] "out of bounds"
## [1] 2.4451550 -0.4319731 2.0140567 1.0581545
## [1] "out of bounds"
## [1] 0.760207468 0.009060221 1.464707047 1.065319268
## [1] 0.42321797 0.09726688 1.35483712 1.06675223
## [1] 0.3558201 0.1149082 1.3328631 1.0670388
## [1] 0.3423405 0.1184365 1.3284683 1.0670961
## [1] 0.3396446 0.1191421 1.3275894 1.0671076
## [1] 0.3391054 0.1192833 1.3274136 1.0671099
## [1] 0.3390380 0.1193009 1.3273916 1.0671102
## [1] 0.3401054 0.1192833 1.3274136 1.0671099
## [1] 0.3381054 0.1192833 1.3274136 1.0671099
## [1] 0.3391054 0.1202833 1.3274136 1.0671099
## [1] 0.3391054 0.1182833 1.3274136 1.0671099
## [1] 0.3391054 0.1192833 1.3284136 1.0671099
## [1] 0.3391054 0.1192833 1.3264136 1.0671099
## [1] 0.3391054 0.1192833 1.3274136 1.0681099
## [1] 0.3391054 0.1192833 1.3274136 1.0661099
## [1] 0.3392349 0.1190595 1.3274487 1.0670895
## [1] 0.3391313 0.1192385 1.3274206 1.0671058
## [1] 0.3391183 0.1192609 1.3274171 1.0671079
## [1] 0.3401313 0.1192385 1.3274206 1.0671058
## [1] 0.3381313 0.1192385 1.3274206 1.0671058
## [1] 0.3391313 0.1202385 1.3274206 1.0671058
## [1] 0.3391313 0.1182385 1.3274206 1.0671058
## [1] 0.3391313 0.1192385 1.3284206 1.0671058
## [1] 0.3391313 0.1192385 1.3264206 1.0671058
## [1] 0.3391313 0.1192385 1.3274206 1.0681058
## [1] 0.3391313 0.1192385 1.3274206 1.0661058
## [1] 0.3391603 0.1192425 1.3274248 1.0671179
## [1] 0.3391458 0.1192405 1.3274227 1.0671118
## [1] 0.3401458 0.1192405 1.3274227 1.0671118
## [1] 0.3381458 0.1192405 1.3274227 1.0671118
## [1] 0.3391458 0.1202405 1.3274227 1.0671118
## [1] 0.3391458 0.1182405 1.3274227 1.0671118
## [1] 0.3391458 0.1192405 1.3284227 1.0671118
## [1] 0.3391458 0.1192405 1.3264227 1.0671118
## [1] 0.3391458 0.1192405 1.3274227 1.0681118
## [1] 0.3391458 0.1192405 1.3274227 1.0661118
## [1] 0.3391577 0.1192436 1.3274178 1.0671297
## [1] 0.3391518 0.1192420 1.3274202 1.0671207
## [1] 0.3401518 0.1192420 1.3274202 1.0671207
## [1] 0.3381518 0.1192420 1.3274202 1.0671207
## [1] 0.3391518 0.1202420 1.3274202 1.0671207
## [1] 0.3391518 0.1182420 1.3274202 1.0671207
## [1] 0.3391518 0.1192420 1.3284202 1.0671207
## [1] 0.3391518 0.1192420 1.3264202 1.0671207
## [1] 0.3391518 0.1192420 1.3274202 1.0681207
## [1] 0.3391518 0.1192420 1.3274202 1.0661207
## [1] -0.05368939 -1.51064120 0.59995665 1.90553084
## [1] "out of bounds"
## [1] 0.2605835 -0.2067346 1.1819275 1.2348028

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## [1] "out of bounds"
## [1] 0.32343811 0.05404671 1.29832168 1.10065715
## [1] 0.336009 0.106203 1.321601 1.073828
## [1] 0.3385232 0.1166342 1.3262563 1.0684622
## [1] 0.3390261 0.1187205 1.3271874 1.0673890
## [1] 0.3391266 0.1191377 1.3273737 1.0671744
## [1] 0.3391467 0.1192212 1.3274109 1.0671315
## [1] 0.3391508 0.1192379 1.3274184 1.0671229
## [1] 0.3391513 0.1192400 1.3274193 1.0671218
## [1] 0.3401508 0.1192379 1.3274184 1.0671229
## [1] 0.3381508 0.1192379 1.3274184 1.0671229
## [1] 0.3391508 0.1202379 1.3274184 1.0671229
## [1] 0.3391508 0.1182379 1.3274184 1.0671229
## [1] 0.3391508 0.1192379 1.3284184 1.0671229
## [1] 0.3391508 0.1192379 1.3264184 1.0671229
## [1] 0.3391508 0.1192379 1.3274184 1.0681229
## [1] 0.3391508 0.1192379 1.3274184 1.0661229
## [1] 0.3391510 0.1192339 1.3274146 1.0671295
## [1] 0.3391509 0.1192359 1.3274165 1.0671262
## [1] 0.3401510 0.1192339 1.3274146 1.0671295
## [1] 0.3381510 0.1192339 1.3274146 1.0671295
## [1] 0.3391510 0.1202339 1.3274146 1.0671295
## [1] 0.3391510 0.1182339 1.3274146 1.0671295
## [1] 0.3391510 0.1192339 1.3284146 1.0671295
## [1] 0.3391510 0.1192339 1.3264146 1.0671295
## [1] 0.3391510 0.1192339 1.3274146 1.0681295
## [1] 0.3391510 0.1192339 1.3274146 1.0661295
## [1] 0.3391564 0.1192275 1.3274007 1.0671584
## [1] 0.3391537 0.1192307 1.3274077 1.0671439
## [1] 0.3401564 0.1192275 1.3274007 1.0671584
## [1] 0.3381564 0.1192275 1.3274007 1.0671584
## [1] 0.3391564 0.1202275 1.3274007 1.0671584
## [1] 0.3391564 0.1182275 1.3274007 1.0671584
## [1] 0.3391564 0.1192275 1.3284007 1.0671584
## [1] 0.3391564 0.1192275 1.3264007 1.0671584
## [1] 0.3391564 0.1192275 1.3274007 1.0681584
## [1] 0.3391564 0.1192275 1.3274007 1.0661584
## [1] 0.3391718 0.1192242 1.3273763 1.0672146
## [1] 0.3391641 0.1192258 1.3273885 1.0671865
## [1] 0.3401718 0.1192242 1.3273763 1.0672146
## [1] 0.3381718 0.1192242 1.3273763 1.0672146
## [1] 0.3391718 0.1202242 1.3273763 1.0672146
## [1] 0.3391718 0.1182242 1.3273763 1.0672146
## [1] 0.3391718 0.1192242 1.3283763 1.0672146
## [1] 0.3391718 0.1192242 1.3263763 1.0672146
## [1] 0.3391718 0.1192242 1.3273763 1.0682146
## [1] 0.3391718 0.1192242 1.3273763 1.0662146
## [1] -0.7309255 -3.6317487 0.4470441 1.3753067
## [1] "out of bounds"
## [1] 0.1251524 -0.6309704 1.1513098 1.1288330
## [1] "out of bounds"
## [1] 0.29636795 -0.03081474 1.29216297 1.07953832
## [1] "out of bounds"
## [1] 0.33061107 0.08921639 1.32033360 1.06967937

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## [1] 0.3374597 0.1132226 1.3259677 1.0677076
## [1] 0.3388294 0.1180239 1.3270945 1.0673132
## [1] 0.3391034 0.1189841 1.3273199 1.0672344
## [1] 0.3391582 0.1191762 1.3273650 1.0672186
## [1] 0.3391691 0.1192146 1.3273740 1.0672154
## [1] 0.3391705 0.1192194 1.3273751 1.0672150
## [1] 0.3401691 0.1192146 1.3273740 1.0672154
## [1] 0.3381691 0.1192146 1.3273740 1.0672154
## [1] 0.3391691 0.1202146 1.3273740 1.0672154
## [1] 0.3391691 0.1182146 1.3273740 1.0672154
## [1] 0.3391691 0.1192146 1.3283740 1.0672154
## [1] 0.3391691 0.1192146 1.3263740 1.0672154
## [1] 0.3391691 0.1192146 1.3273740 1.0682154
## [1] 0.3391691 0.1192146 1.3273740 1.0662154
## [1] 0.3391704 0.1192119 1.3273716 1.0672203
## [1] 0.3391698 0.1192133 1.3273728 1.0672179
## [1] 0.3401704 0.1192119 1.3273716 1.0672203
## [1] 0.3381704 0.1192119 1.3273716 1.0672203
## [1] 0.3391704 0.1202119 1.3273716 1.0672203
## [1] 0.3391704 0.1182119 1.3273716 1.0672203
## [1] 0.3391704 0.1192119 1.3283716 1.0672203
## [1] 0.3391704 0.1192119 1.3263716 1.0672203
## [1] 0.3391704 0.1192119 1.3273716 1.0682203
## [1] 0.3391704 0.1192119 1.3273716 1.0662203
## [1] 0.3391773 0.1192080 1.3273638 1.0672391
## [1] 0.3391739 0.1192100 1.3273677 1.0672297
## [1] 0.3401773 0.1192080 1.3273638 1.0672391
## [1] 0.3381773 0.1192080 1.3273638 1.0672391
## [1] 0.3391773 0.1202080 1.3273638 1.0672391
## [1] 0.3391773 0.1182080 1.3273638 1.0672391
## [1] 0.3391773 0.1192080 1.3283638 1.0672391
## [1] 0.3391773 0.1192080 1.3263638 1.0672391
## [1] 0.3391773 0.1192080 1.3273638 1.0682391
## [1] 0.3391773 0.1192080 1.3273638 1.0662391
## [1] 0.3391888 0.1191964 1.3273459 1.0672788
## [1] 0.3391830 0.1192022 1.3273549 1.0672589
## [1] 0.3401888 0.1191964 1.3273459 1.0672788
## [1] 0.3381888 0.1191964 1.3273459 1.0672788
## [1] 0.3391888 0.1201964 1.3273459 1.0672788
## [1] 0.3391888 0.1181964 1.3273459 1.0672788
## [1] 0.3391888 0.1191964 1.3283459 1.0672788
## [1] 0.3391888 0.1191964 1.3263459 1.0672788
## [1] 0.3391888 0.1191964 1.3273459 1.0682788
## [1] 0.3391888 0.1191964 1.3273459 1.0662788
## [1] 0.3643695 -0.2941087 0.7499432 2.1107009
## [1] "out of bounds"
## [1] 0.34422496 0.03653535 1.21186537 1.27596318
## [1] 0.3401961 0.1026642 1.3042498 1.1090156
## [1] 0.3393903 0.1158899 1.3227267 1.0756261
## [1] 0.3392291 0.1185351 1.3264221 1.0689482
## [1] 0.3391969 0.1190641 1.3271612 1.0676127
## [1] 0.3391904 0.1191699 1.3273090 1.0673455
## [1] 0.3391896 0.1191831 1.3273274 1.0673121
## [1] 0.3401904 0.1191699 1.3273090 1.0673455

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## [1] 0.3381904 0.1191699 1.3273090 1.0673455
## [1] 0.3391904 0.1201699 1.3273090 1.0673455
## [1] 0.3391904 0.1181699 1.3273090 1.0673455
## [1] 0.3391904 0.1191699 1.3283090 1.0673455
## [1] 0.3391904 0.1191699 1.3263090 1.0673455
## [1] 0.3391904 0.1191699 1.3273090 1.0683455
## [1] 0.3391904 0.1191699 1.3273090 1.0663455
## [1] 0.3395314 0.1187913 1.3261472 1.0697169
## [1] 0.3392586 0.1190942 1.3270766 1.0678198
## [1] 0.3392245 0.1191321 1.3271928 1.0675827
## [1] 0.3402586 0.1190942 1.3270766 1.0678198
## [1] 0.3382586 0.1190942 1.3270766 1.0678198
## [1] 0.3392586 0.1200942 1.3270766 1.0678198
## [1] 0.3392586 0.1180942 1.3270766 1.0678198
## [1] 0.3392586 0.1190942 1.3280766 1.0678198
## [1] 0.3392586 0.1190942 1.3260766 1.0678198
## [1] 0.3392586 0.1190942 1.3270766 1.0688198
## [1] 0.3392586 0.1190942 1.3270766 1.0668198
## [1] 0.3394898 0.1186335 1.3264465 1.0690918
## [1] 0.3393049 0.1190021 1.3269506 1.0680742
## [1] 0.3392817 0.1190481 1.3270136 1.0679470
## [1] 0.3403049 0.1190021 1.3269506 1.0680742
## [1] 0.3383049 0.1190021 1.3269506 1.0680742
## [1] 0.3393049 0.1200021 1.3269506 1.0680742
## [1] 0.3393049 0.1180021 1.3269506 1.0680742
## [1] 0.3393049 0.1190021 1.3279506 1.0680742
## [1] 0.3393049 0.1190021 1.3259506 1.0680742
## [1] 0.3393049 0.1190021 1.3269506 1.0690742
## [1] 0.3393049 0.1190021 1.3269506 1.0670742
## [1] 0.3394508 0.1188931 1.3267672 1.0685011
## [1] 0.3393778 0.1189476 1.3268589 1.0682876
## [1] 0.3404508 0.1188931 1.3267672 1.0685011
## [1] 0.3384508 0.1188931 1.3267672 1.0685011
## [1] 0.3394508 0.1188931 1.3267672 1.0685011
## [1] 0.3394508 0.1178931 1.3267672 1.0685011
## [1] 0.3394508 0.1188931 1.3277672 1.0685011
## [1] 0.3394508 0.1188931 1.3257672 1.0685011
## [1] 0.3394508 0.1188931 1.3267672 1.0695011
## [1] 0.3394508 0.1188931 1.3267672 1.0675011
## [1] 0.2626381 -4.2028188 1.1540758 0.5914211
## [1] "out of bounds"
## [1] 0.3240883 -0.7454493 1.2922289 0.9730851
## [1] "out of bounds"
## [1] 0.33637834 -0.05397535 1.31985953 1.04941787
## [1] "out of bounds"
## [1] 0.33883634 0.08431944 1.32538565 1.06468443
## [1] 0.3393279 0.1119784 1.3264909 1.0677377
## [1] 0.3394263 0.1175102 1.3267119 1.0683484
## [1] 0.3394459 0.1186165 1.3267561 1.0684705
## [1] 0.3394499 0.1188378 1.3267650 1.0684950
## [1] 0.3394506 0.1188821 1.3267667 1.0684999
## [1] 0.3394507 0.1188876 1.3267670 1.0685005
## [1] 0.3404506 0.1188821 1.3267667 1.0684999
## [1] 0.3384506 0.1188821 1.3267667 1.0684999

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## [1] 0.3394506 0.1198821 1.3267667 1.0684999
## [1] 0.3394506 0.1178821 1.3267667 1.0684999
## [1] 0.3394506 0.1188821 1.3277667 1.0684999
## [1] 0.3394506 0.1188821 1.3257667 1.0684999
## [1] 0.3394506 0.1188821 1.3267667 1.0694999
## [1] 0.3394506 0.1188821 1.3267667 1.0674999
## [1] 0.3394563 0.1188777 1.3267676 1.0685013
## [1] 0.3394535 0.1188799 1.3267672 1.0685006
## [1] 0.3404563 0.1188777 1.3267676 1.0685013
## [1] 0.3384563 0.1188777 1.3267676 1.0685013
## [1] 0.3394563 0.1198777 1.3267676 1.0685013
## [1] 0.3394563 0.1178777 1.3267676 1.0685013
## [1] 0.3394563 0.1188777 1.3277676 1.0685013
## [1] 0.3394563 0.1188777 1.3257676 1.0685013
## [1] 0.3394563 0.1188777 1.3267676 1.0695013
## [1] 0.3394563 0.1188777 1.3267676 1.0675013
## [1] 0.3394734 0.1188725 1.3267698 1.0685074
## [1] 0.3394649 0.1188751 1.3267687 1.0685043
## [1] 0.3404734 0.1188725 1.3267698 1.0685074
## [1] 0.3384734 0.1188725 1.3267698 1.0685074
## [1] 0.3394734 0.1198725 1.3267698 1.0685074
## [1] 0.3394734 0.1178725 1.3267698 1.0685074
## [1] 0.3394734 0.1188725 1.3277698 1.0685074
## [1] 0.3394734 0.1188725 1.3257698 1.0685074
## [1] 0.3394734 0.1188725 1.3267698 1.0695074
## [1] 0.3394734 0.1188725 1.3267698 1.0675074
## [1] 0.3394847 0.1188597 1.3267676 1.0685170
## [1] 0.3394790 0.1188661 1.3267687 1.0685122
## [1] 0.3404847 0.1188597 1.3267676 1.0685170
## [1] 0.3384847 0.1188597 1.3267676 1.0685170
## [1] 0.3394847 0.1198597 1.3267676 1.0685170
## [1] 0.3394847 0.1178597 1.3267676 1.0685170
## [1] 0.3394847 0.1188597 1.3277676 1.0685170
## [1] 0.3394847 0.1188597 1.3257676 1.0685170
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## [1] 0.3394847 0.1188597 1.3267676 1.0675170
## [1] 0.4962896 1.6400217 1.0260885 2.0130171
## [1] "out of bounds"
## [1] 0.3708457 0.4230921 1.2666318 1.2574170
## [1] 0.3457569 0.1797061 1.3147404 1.1062970
## [1] 0.3407392 0.1310290 1.3243621 1.0760730
## [1] 0.3397356 0.1212935 1.3262865 1.0700282
## [1] 0.3395349 0.1193464 1.3266714 1.0688193
## [1] 0.3394948 0.1189570 1.3267483 1.0685775
## [1] 0.3394867 0.1188791 1.3267637 1.0685291
## [1] 0.3394851 0.1188636 1.3267668 1.0685194
## [1] 0.3394849 0.1188616 1.3267672 1.0685182
## [1] 0.3404851 0.1188636 1.3267668 1.0685194
## [1] 0.3384851 0.1188636 1.3267668 1.0685194
## [1] 0.3394851 0.1198636 1.3267668 1.0685194
## [1] 0.3394851 0.1178636 1.3267668 1.0685194
## [1] 0.3394851 0.1188636 1.3277668 1.0685194
## [1] 0.3394851 0.1188636 1.3257668 1.0685194
## [1] 0.3394851 0.1188636 1.3267668 1.0695194

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## [1] 0.3394851 0.1188636 1.3267668 1.0675194
## [1] 0.3394836 0.1188651 1.3267646 1.0685229
## [1] 0.3394844 0.1188643 1.3267657 1.0685212
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## [1] 0.3384836 0.1188651 1.3267646 1.0685229
## [1] 0.3394836 0.1198651 1.3267646 1.0685229
## [1] 0.3394836 0.1178651 1.3267646 1.0685229
## [1] 0.3394836 0.1188651 1.3277646 1.0685229
## [1] 0.3394836 0.1188651 1.3257646 1.0685229
## [1] 0.3394836 0.1188651 1.3267646 1.0695229
## [1] 0.3394836 0.1188651 1.3267646 1.0675229
## [1] 0.3394774 0.1188645 1.3267568 1.0685335
## [1] 0.3394805 0.1188648 1.3267607 1.0685282
## [1] 0.3404774 0.1188645 1.3267568 1.0685335
## [1] 0.3384774 0.1188645 1.3267568 1.0685335
## [1] 0.3394774 0.1198645 1.3267568 1.0685335
## [1] 0.3394774 0.1178645 1.3267568 1.0685335
## [1] 0.3394774 0.1188645 1.3277568 1.0685335
## [1] 0.3394774 0.1188645 1.3257568 1.0685335
## [1] 0.3394774 0.1188645 1.3267568 1.0695335
## [1] 0.3394774 0.1188645 1.3267568 1.0675335
## [1] 0.3394758 0.1188629 1.3267481 1.0685488
## [1] 0.3394766 0.1188637 1.3267525 1.0685412
## [1] 0.3404758 0.1188629 1.3267481 1.0685488
## [1] 0.3384758 0.1188629 1.3267481 1.0685488
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## [1] 0.3394758 0.1178629 1.3267481 1.0685488
## [1] 0.3394758 0.1188629 1.3277481 1.0685488
## [1] 0.3394758 0.1188629 1.3257481 1.0685488
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## [1] 0.3394758 0.1188629 1.3267481 1.0675488
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## [1] "out of bounds"
## [1] 0.44910792 0.07339712 1.31087988 1.16388191
## [1] 0.3614022 0.1097697 1.3235744 1.0876155
## [1] 0.3438611 0.1170442 1.3261134 1.0723622
## [1] 0.3403528 0.1184992 1.3266211 1.0693115
## [1] 0.3396512 0.1187901 1.3267227 1.0687014
## [1] 0.3395108 0.1188483 1.3267430 1.0685794
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## [1] "out of bounds"
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## [1] 0.3397101 0.1186016 1.3252979 1.0695189
## [1] 0.3397101 0.1186016 1.3262979 1.0705189
## [1] 0.3397101 0.1186016 1.3262979 1.0685189
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## [1] 0.3397101 0.1196016 1.3262979 1.0695189
## [1] 0.3397101 0.1176016 1.3262979 1.0695189
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## [1] 0.3397101 0.1186016 1.3252979 1.0695189
## [1] 0.3397101 0.1186016 1.3262979 1.0705189
## [1] 0.3397101 0.1186016 1.3262979 1.0685189
## [1] 0.4178228 0.3732663 1.2845900 1.2464292
## [1] 0.3553327 0.1695346 1.3179563 1.1049010
## [1] 0.3428347 0.1287882 1.3246295 1.0765953
## [1] 0.340335 0.120639 1.325964 1.070934
## [1] 0.3398351 0.1190091 1.3262311 1.0698020
## [1] 0.3397351 0.1186831 1.3262845 1.0695755
## [1] 0.3397151 0.1186179 1.3262952 1.0695302
## [1] 0.3397111 0.1186049 1.3262973 1.0695212
## [1] 0.3397103 0.1186023 1.3262978 1.0695194
## [1] 0.3397102 0.1186018 1.3262978 1.0695190
## [1] 0.3397102 0.1186017 1.3262979 1.0695189
## [1] 0.3397101 0.1186016 1.3262979 1.0695189
## [1] 0.3397101 0.1186016 1.3262979 1.0695189
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## [1] 0.3397101 0.1186016 1.3262979 1.0695189
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## [1] 0.3397101 0.1186016 1.3262979 1.0695189
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## [1] 0.3397101 0.1186016 1.3262979 1.0695189
## [1] 0.3397101 0.1186016 1.3262979 1.0695189
## [1] 0.3397101 0.1186016 1.3262979 1.0695189
```

```
print(result$convergence) # 0 if it has converged
```

```
## [1] 0
```

```
print(result$par)
```

```
## [1] 0.3397101 0.1186016 1.3262979 1.0695189
```

```
rmse <- sqrt((result$par - true_param)^2)
df_rmse <- data.frame(estim = result$par, rmse = rmse)
rownames(df_rmse) <- c("beta1", "beta2", "alpha1", "alpha2")
print(t(df_rmse))
```

```
##          beta1      beta2    alpha1    alpha2
## estim 0.33971014 0.11860164 1.3262979 1.06951891
## rmse  0.06028986 0.08139836 0.1737021 0.06951891
```

Ajout de l'advection dans la simulation

```
sim_BR <- function(beta1, beta2, alpha1, alpha2, x, y, z, n.BR) {
  ## Setup
  RandomFields::RFOptions(spConform=FALSE)
  lx <- length(sx <- seq_along(x))
  ly <- length(sy <- seq_along(y))
  lz <- length(sz <- seq_along(z))
  ## Model-Variogram BuhlCklu
  modelBuhlCklu <- RandomFields::RMfbm(alpha=alpha1, var=beta1, proj=1) +
    RandomFields::RMfbm(alpha=alpha1, var=beta1, proj=2) +
    RandomFields::RMfbm(alpha=alpha2, var=beta2, proj=3)

  ## Construct grid
  Nxy <- lx * ly
  N <- Nxy * lz
  grid <- matrix(0, nrow=N, ncol=3) # (N,3)-matrix

  for (i in sx)
    for (j in seq_len(ly*lz))
      grid[i+(j-1)*ly, 1] <- i

  for (i in sy)
    for (j in sx)
      for (k in sz)
        grid[j+lx*(i-1)+(k-1)*Nxy, 2] <- i

  for (i in sz)
    for (j in seq_len(Nxy))
      grid[j+Nxy*(i-1), 3] <- i

  ## Construct shifted variogram
  Varm1 <- vapply(seq_len(N), function(n)
    RandomFields::RFvariogram(modelBuhlCklu,
      x=sx-grid[n,1],
```

```

    y=sy-grid[n,2],
    z=sz-grid[n,3]),
    array(NA_real_, dim=c(lx, ly, lz))) ## => (lx, ly, lz, N)-array

## Main
Z <- array(, dim=c(lx, ly, lz, n.BR)) # 4d array
E <- matrix(rexp(n.BR * N), nrow=n.BR, ncol=N)
for (i in seq_len(n.BR)) { ## n=1
  V <- 1/E[i,1]
  W <- RandomFields::RFsimulate(modelBuhlCklu, x, y, z, n=1)
  Y <- exp(W - W[1] - Varm1[, , 1])
  Z[, , i] <- V * Y
  ## n in {2,...,N}
  for(n in 2:N) {
    Exp <- E[i,n]
    V <- 1/Exp
    while(V > Z[N*(i-1)+n]) {
      W <- RandomFields::RFsimulate(modelBuhlCklu, x, y, z)
      Y <- exp(W - W[n] - Varm1[, , n])
      if(all(V*Y[seq_len(n-1)] < Z[(N*(i-1)+1):(N*(i-1)+(n-1))]))
        Z[, , i] <- pmax(V*Y, Z[, , i])
      Exp <- Exp + rexp(1)
      V <- 1/Exp
    }
  }
}
## Return
Z
}

```