Value of Information Report

Author

today

Introduction

Some text here.

Tables

\begin{footnotesize}

```r
print(cacheEnv)
```

```
## <environment: 0x8632c20>
```

```r
#library(xtable)
#options(xtable.comment = FALSE)
#options(xtable.booktabs = TRUE)
EVPI <- cbind(pEVPI)
colnames(EVPI) <- "Partial\ EVPI"
EVPI
```

```
##          Partial EVPI
## theta1      6.3337530
## theta2      5.5441183
## theta3      0.0000000
## theta4      0.0000000
## theta5     77.2268168
## theta6   1232.8520757
## theta7      7.7124340
## theta8      0.0000000
## theta9      0.0000000
## theta10    14.2919830
## theta11     0.0000000
## theta12     0.0000000
## theta13     0.4780293
## theta14   455.0707778
## theta15   520.9632985
## theta16   931.8913172
## theta17     0.0000000
## theta18     0.0000000
## theta19     0.0000000
```

```r
#if(input$format == "PDF") {
#xtable(EVPI, caption = paste("Partial EVPI values at lambda =", input$lambda))
#} else {print(EVPI)}
print(EVPI)
```

```
##          Partial EVPI
## theta1     6.3337530
## theta2     5.5441183
## theta3     0.0000000
## theta4     0.0000000
## theta5    77.2268168
## theta6  1232.8520757
## theta7     7.7124340
## theta8     0.0000000
## theta9     0.0000000
## theta10   14.2919830
## theta11    0.0000000
## theta12    0.0000000
## theta13    0.4780293
## theta14  455.0707778
## theta15  520.9632985
## theta16  931.8913172
## theta17    0.0000000
## theta18    0.0000000
## theta19    0.0000000
```

\end{footnotesize}

Figures

```
## <environment: 0x8632c20>
```

```
##           costs1   costs2
## 1     1144.9554 1675.497
## 2     1164.3006 1732.737
## 3     1066.6565 1611.727
## 4     1222.8029 2106.905
## 5     1141.9543 1682.730
## 6     1112.0814 1586.620
## 7     1234.9967 1731.021
## 8     1318.6354 1729.671
## 9     1191.0046 1830.979
## 10    1292.2706 1679.843
## 11    1529.7370 1645.530
## 12    1397.3261 1664.098
## 13    1089.1057 1658.608
## 14     988.4160 1471.997
## 15    1387.5101 1820.132
## 16    1155.1030 1722.649
## 17    1246.2557 1736.325
## 18    1293.3890 1685.546
## 19    1182.0352 1630.820
## 20    1454.7576 1894.044
## 21    1250.0721 1702.669
## 22    1138.3152 1910.948
## 23    1117.7369 1669.827
## 24    1001.6835 1500.359
```

```
## 25    1089.4109 1741.678
## 26    1118.8445 1658.876
## 27    1214.3058 1668.043
## 28    1061.4559 1545.373
## 29    1218.9306 1554.367
## 30    1207.8865 1649.229
## 31    1372.5651 1874.604
## 32    1265.1556 1728.497
## 33    1282.6147 1785.939
## 34    1048.5176 1751.039
## 35    1116.7245 1561.841
## 36    1187.3460 1712.348
## 37    1217.3568 1630.267
## 38    1160.5324 1692.959
## 39    1542.1447 2089.189
## 40    1308.5705 1751.250
## 41    1271.0411 1675.513
## 42    1187.3303 1589.626
## 43    1233.9301 1781.707
## 44    1317.2545 1814.240
## 45    1163.4932 1613.329
## 46    1154.5179 1608.349
## 47    1207.2659 1668.776
## 48    1232.1981 1696.682
## 49    1265.1392 1715.216
## 50    1194.2102 1639.217
## 51    1301.0560 1718.574
## 52    1177.4922 1673.147
## 53    1288.0900 1666.396
## 54    1075.7872 1580.996
## 55    1321.7263 1784.928
## 56    1325.9916 1745.821
## 57    1118.6180 1554.420
## 58    1107.6183 1583.290
## 59    1360.6920 1803.645
## 60    1214.2952 1619.200
## 61    1326.0716 1959.642
## 62    1236.7579 1735.127
## 63    1305.4258 1654.506
## 64    1111.3743 1766.366
## 65    1115.7940 1693.898
## 66    1168.2906 1787.146
## 67    1012.3806 1520.073
## 68    1391.5787 1711.828
## 69    1227.2305 1670.636
## 70    1460.3447 1901.910
## 71    1399.9545 1576.359
## 72    1165.8518 1596.666
## 73    1294.3992 1653.147
## 74    1112.2073 1617.448
## 75    1144.2860 1577.323
## 76    1218.3472 1783.772
## 77    1262.8269 1642.686
## 78    1167.9916 1658.463
```

```
## 79    1223.3334 1679.680
## 80    1225.4042 1610.656
## 81    1245.6786 1615.262
## 82    1192.1662 1684.170
## 83    1374.5075 1806.253
## 84    1025.8380 1522.608
## 85    1122.9751 1767.354
## 86    1407.5425 1613.589
## 87    1545.4997 1763.118
## 88    1154.1082 1705.382
## 89    1201.4353 1776.644
## 90    1112.7314 1683.287
## 91    1221.6792 1617.833
## 92    1535.9429 1817.273
## 93    1421.9918 1685.878
## 94    1154.6893 1789.655
## 95    1533.6434 1884.476
## 96    1186.9438 1689.658
## 97    1097.2175 1569.715
## 98    1161.7856 1641.129
## 99    1130.2418 1588.996
## 100   1158.5699 1632.283
## 101   1107.7015 1584.009
## 102   1392.9715 1687.942
## 103   1124.8910 1594.650
## 104   1253.4977 1663.592
## 105   1100.3042 1625.972
## 106   1427.2233 1774.836
## 107   1191.0451 1737.361
## 108   1296.6184 1711.036
## 109   1240.2474 1792.711
## 110   1401.8986 1882.351
## 111   1135.7877 1623.482
## 112   1196.4276 1674.405
## 113   1359.3680 2022.398
## 114   1244.4030 1592.101
## 115   1220.4347 1759.913
## 116   1126.2794 1645.264
## 117   1233.0672 1778.485
## 118   1208.7656 1614.556
## 119   1032.8564 1662.630
## 120   1182.4927 1624.602
## 121   1156.1843 1674.106
## 122   1330.2079 1724.128
## 123   1314.4756 1677.303
## 124   1177.9532 1727.049
## 125   1280.6490 1655.801
## 126   1374.9323 1684.257
## 127   1282.4741 1703.773
## 128   1174.9851 1640.931
## 129   1125.8755 1641.757
## 130   1118.9648 1655.358
## 131   1290.8140 1640.451
## 132   1184.2555 1630.885
```

```
## 133   1265.6969 1728.743
## 134   1052.2563 1550.546
## 135   1160.3187 1644.472
## 136   1044.0763 1554.464
## 137   1126.3343 1637.718
## 138   1110.4570 1713.096
## 139   1064.0832 1646.636
## 140   1316.6913 1655.048
## 141   1007.6402 1508.383
## 142   1044.3687 1774.429
## 143   1063.5587 1541.039
## 144   1119.0117 1681.946
## 145   1055.9180 1535.411
## 146   1073.1032 1719.016
## 147   1441.9084 1800.176
## 148   1157.7273 1764.940
## 149   1070.3826 1550.757
## 150   1030.2891 1522.125
## 151   1072.2849 1726.124
## 152   1141.4026 1613.337
## 153   1157.1276 1705.644
## 154   1142.8678 1552.403
## 155   1093.0868 1541.474
## 156   1102.6612 1578.006
## 157   1127.0987 1728.076
## 158   1144.4460 1663.960
## 159   1065.3728 1570.195
## 160   1506.8244 2033.358
## 161   1247.7684 1635.310
## 162   1113.0218 1762.465
## 163   1123.9412 1975.333
## 164   1489.5014 1685.626
## 165   1134.9706 1667.059
## 166   1843.4356 1978.332
## 167   1206.4943 1691.289
## 168   1102.8047 1548.007
## 169   1103.0998 1622.733
## 170   1160.3546 1608.432
## 171   1628.8120 1861.469
## 172   1140.5549 1699.175
## 173   1190.0003 1649.435
## 174   1160.0486 1687.686
## 175   1235.1126 1692.959
## 176   1212.8896 1733.336
## 177   1445.1201 1713.198
## 178   1227.0693 2054.172
## 179   1414.8338 1784.840
## 180   1287.8128 1739.438
## 181   1056.6387 1563.721
## 182   1338.7692 1964.733
## 183   1374.5461 1678.741
## 184   1071.2592 1534.181
## 185   1462.8673 1768.569
## 186   1193.6296 1707.399
```

```
## 187   1086.1659 1845.055
## 188   1159.2356 1586.705
## 189   1199.9541 1670.920
## 190   1047.9338 1613.545
## 191   1146.7514 1627.905
## 192   1207.1776 1713.107
## 193   1112.1404 1613.698
## 194   1172.5490 1776.156
## 195   1099.9160 1570.393
## 196   1082.5022 1522.495
## 197   1333.5281 1959.912
## 198   1151.7886 1585.756
## 199   1348.5889 1704.196
## 200   1313.7438 1629.672
## 201   1235.1093 1647.904
## 202   1218.5789 1948.108
## 203   1402.9756 1946.379
## 204   1144.2927 1596.502
## 205    948.5830 1486.862
## 206   1566.8737 2200.263
## 207   1213.7794 1621.050
## 208   1261.2059 1753.383
## 209   1155.8692 1610.768
## 210   1296.3886 1709.281
## 211   1144.5855 1678.258
## 212   1219.7624 1772.870
## 213    989.9775 1721.028
## 214   1069.4587 1564.925
## 215   1270.6803 1924.060
## 216   1330.4995 1707.345
## 217   1231.3835 1661.147
## 218   1068.1794 1554.813
## 219   1331.4743 1751.444
## 220   1419.6584 1684.052
## 221   1051.7550 1543.923
## 222   1131.7122 1645.957
## 223    988.3311 1667.391
## 224   1146.9212 1551.061
## 225   1075.3498 1602.874
## 226   1307.6362 1950.221
## 227   1095.0115 1604.926
## 228   1027.7621 1530.115
## 229   1210.0824 1577.284
## 230   1190.7509 1658.288
## 231   1046.0340 1674.584
## 232    897.9450 1422.578
## 233   1062.6458 1621.300
## 234   1300.9434 1851.848
## 235   1225.8416 1718.393
## 236   1311.3818 1751.061
## 237   1253.5921 1703.012
## 238   1061.5020 1600.600
## 239   1210.6081 1665.029
## 240   1287.1004 1692.322
```

```
## 241   1228.3192 1773.498
## 242   1383.3783 1717.648
## 243   1264.5726 1634.381
## 244   1046.0572 1594.876
## 245   1183.0412 1938.647
## 246   1000.1690 1499.727
## 247   1131.0122 1628.853
## 248   1072.8913 1694.662
## 249   1224.9227 1587.252
## 250   1260.0822 1931.235
## 251   1199.2299 1734.704
## 252   1353.7805 1691.134
## 253   1127.7293 1646.819
## 254   1162.1293 1632.458
## 255   1174.3267 1755.586
## 256   1179.2407 1904.517
## 257    950.5103 1444.786
## 258   1162.9094 1687.749
## 259   1215.2938 1668.634
## 260   1149.3436 1635.548
## 261   1267.2799 1711.419
## 262   1336.9379 1623.986
## 263   1184.1909 1696.017
## 264   1496.6981 1880.620
## 265   1601.9436 1798.904
## 266   1157.2423 1754.476
## 267   1067.9318 1684.589
## 268   1065.1065 1569.949
## 269   1196.3587 1691.451
## 270   1165.0771 1537.365
## 271   1302.3869 1609.730
## 272   1216.6980 1809.973
## 273   1182.2870 1572.888
## 274   1881.8385 2019.836
## 275   1058.7416 1700.812
## 276   1525.1839 1844.211
## 277    978.3790 1477.879
## 278   1272.4653 1682.077
## 279   1066.6216 1536.762
## 280   1173.7577 1872.871
## 281   1198.1259 1817.415
## 282   1249.0167 1690.732
## 283   1298.5626 1720.433
## 284   1072.2207 1609.150
## 285   1135.3051 1582.945
## 286   1158.9672 1592.174
## 287   1261.4535 1633.238
## 288   1041.9160 1834.535
## 289   1318.7446 1613.789
## 290   1336.6943 1716.134
## 291   1057.8061 1626.019
## 292   1400.0618 1715.608
## 293   1165.2508 1652.423
## 294   1042.9320 1544.663
```

```
## 295  1491.0012 1720.888
## 296  1332.7018 1645.627
## 297  1353.4868 1708.790
## 298  1584.5479 1724.916
## 299  1310.5644 1678.246
## 300  1183.7528 1644.825
## 301  1209.2299 1696.771
## 302  1084.5278 1594.840
## 303  1562.8672 1818.571
## 304  1311.3174 1674.323
## 305  1187.2782 1817.286
## 306  1311.7220 1654.950
## 307  1160.7742 1791.420
## 308  1153.4690 1727.633
## 309  1095.6894 1629.328
## 310  1322.6154 1734.603
## 311  1347.3345 1697.634
## 312  1237.5422 1611.976
## 313  1154.6115 1680.043
## 314  1080.8818 1595.168
## 315  1277.0716 1720.587
## 316  1382.9990 1782.277
## 317  1175.5300 1624.706
## 318  1353.8881 1699.631
## 319  1052.5275 1535.081
## 320  1061.0601 1710.266
## 321  1120.4853 1810.522
## 322  1275.8291 1650.525
## 323  1280.4158 1738.279
## 324  1009.2046 1510.059
## 325  1090.9182 1711.000
## 326  1438.2520 1760.498
## 327  1135.9809 1676.694
## 328  1153.1491 1786.815
## 329  1101.5808 1685.967
## 330  1228.7137 2028.494
## 331  1087.7866 1625.073
## 332  1063.7881 1530.905
## 333  1138.8888 1676.491
## 334  1488.7594 1760.498
## 335  1132.6949 1645.014
## 336  1441.0529 1743.256
## 337  1569.0436 1692.782
## 338  1210.0858 1762.723
## 339  1270.2399 1597.700
## 340  1177.0791 1567.630
## 341  1306.3607 1844.646
## 342  1058.4260 1565.646
## 343  1226.4226 1640.396
## 344  1255.0705 1676.385
## 345   980.2941 1469.202
## 346  1054.1924 1552.992
## 347  1370.3808 1818.170
## 348  1208.4275 1644.456
```

```
## 349   1302.5306 1737.780
## 350   1148.0486 1957.582
## 351   1374.2461 1994.632
## 352   1456.6059 1753.007
## 353   1238.7534 1681.717
## 354   1430.8118 1610.506
## 355   1278.5817 1800.183
## 356   1165.8376 1722.174
## 357   1065.1341 1603.068
## 358   1174.3806 1612.721
## 359   1006.1762 1508.669
## 360   1263.8117 1618.747
## 361    963.8947 1427.343
## 362   1421.0188 2127.567
## 363   1191.7109 1623.139
## 364   1101.9304 1583.233
## 365   1204.5909 1618.886
## 366   1387.2748 1681.808
## 367   1326.3966 1656.965
## 368   1148.7167 1767.046
## 369   1061.5488 1619.725
## 370   1077.1077 1580.663
## 371   1154.6651 1668.892
## 372   1298.8248 1707.679
## 373   1157.4822 1614.790
## 374   1244.8857 1718.675
## 375   1106.5098 1601.836
## 376   1076.5415 1658.325
## 377   1189.8539 1675.542
## 378    988.1778 1719.367
## 379   1220.0336 1757.423
## 380   1419.3496 1838.583
## 381   1077.4138 1799.578
## 382   1281.2665 1658.896
## 383   1085.2239 1634.651
## 384   1160.8209 1641.286
## 385   1317.2849 1878.586
## 386   1189.9134 1630.994
## 387    980.0230 1480.481
## 388   1252.6244 1691.126
## 389   1008.8614 1511.370
## 390   1089.6808 1613.462
## 391   1196.8614 1829.204
## 392   1165.1391 1816.637
## 393   1382.0314 1750.090
## 394   1330.9640 1655.462
## 395   1130.4556 1664.538
## 396   1042.5823 1615.393
## 397   1549.5604 1732.028
## 398   1058.1370 1744.557
## 399   1176.0064 1567.159
## 400   1297.7584 1780.717
## 401   1220.3006 1870.777
## 402   1407.0077 1908.480
```

```
## 403   1134.7184 1644.891
## 404   1104.1961 1634.165
## 405   1156.6501 1575.820
## 406   1205.0903 1703.764
## 407   1186.3631 1635.670
## 408   1108.5711 1725.422
## 409   1193.9441 1742.420
## 410   1118.0929 1595.103
## 411   1207.2778 1757.891
## 412   1272.5804 1718.288
## 413   1403.8396 1911.918
## 414   1153.2924 1592.885
## 415   1097.0633 1566.525
## 416   1287.8372 1811.424
## 417   1244.1853 1821.913
## 418   1213.9477 1809.468
## 419   1054.2893 1555.076
## 420   1532.8478 1789.107
## 421   1274.4577 1672.815
## 422   1110.9319 1648.088
## 423   1213.4157 1802.892
## 424   1025.3439 1545.623
## 425   1104.7560 1704.929
## 426   1385.2014 1911.707
## 427   1096.4672 1526.913
## 428   1122.4395 1600.960
## 429   1142.2540 1625.453
## 430   1086.5117 1714.418
## 431    996.5553 1495.374
## 432   1101.0188 1825.656
## 433   1100.9763 1541.639
## 434   1111.7113 1654.571
## 435   1297.4807 1743.957
## 436   1145.1876 1733.431
## 437   1227.1198 1764.501
## 438   1030.7653 1658.661
## 439   1089.6705 1701.304
## 440   1262.9232 1812.312
## 441   1173.1465 1688.199
## 442   1270.5382 1898.958
## 443   1225.5831 1649.889
## 444   1171.5341 1780.507
## 445   1296.1380 1716.052
## 446    951.6166 1417.251
## 447   1041.6411 1587.429
## 448   1149.5890 1669.216
## 449   1180.9805 1740.688
## 450    934.4319 1466.185
## 451   1392.7911 1863.805
## 452   1269.1304 1616.142
## 453   1104.3609 1659.160
## 454   1004.6120 1537.366
## 455   1026.5475 1549.620
## 456   1147.7669 1646.795
```

```
## 457   1225.7227 1812.696
## 458    988.6369 1488.475
## 459   1182.2296 1629.827
## 460   1257.0872 1681.305
## 461   1204.0602 1719.773
## 462   1934.6036 1852.322
## 463   1417.2088 1721.075
## 464   1161.6715 1738.578
## 465   1327.8706 1793.939
## 466   1333.2987 1727.986
## 467   1206.2539 1768.089
## 468   1305.0512 1885.243
## 469   1205.6330 1831.512
## 470   1290.5138 1797.650
## 471   1077.0118 1684.850
## 472   1039.2153 1531.119
## 473   1255.8065 1591.633
## 474   1536.8775 1618.191
## 475   1378.2816 1908.716
## 476   1134.0580 1554.106
## 477   1297.9842 1673.771
## 478   1254.6013 1659.869
## 479   1333.4895 1947.629
## 480   1077.8412 1720.840
## 481   1197.5871 1745.055
## 482   1126.0315 1585.603
## 483   1219.2538 1659.006
## 484   1073.4984 1694.798
## 485   1708.0244 1928.262
## 486   1566.6935 2255.464
## 487   1143.7861 1728.322
## 488   1033.2992 1578.999
## 489   1000.7152 1501.340
## 490   1201.3131 1720.517
## 491   1127.2059 1617.820
## 492   1414.7825 1898.821
## 493   1089.1566 1580.624
## 494   1127.3970 1643.398
## 495   1806.5360 1989.654
## 496   1077.7765 1590.662
## 497   1217.8223 1745.732
## 498   1075.8126 1591.619
## 499   1439.8511 1677.399
## 500   1063.9603 1581.297
## 501   1272.8517 1792.871
## 502   1129.1324 1708.355
## 503   1055.9956 1593.203
## 504   1180.0635 1619.398
## 505   1177.2192 1688.366
## 506   1233.6591 1862.895
## 507   1079.1009 1546.290
## 508   1278.7141 1651.293
## 509   1145.3538 1778.144
## 510   1089.6450 1599.932
```

```
## 511    900.6001 1456.814
## 512   1085.7562 1658.430
## 513   1067.9386 1628.027
## 514   1093.6845 1587.678
## 515    986.2325 1625.959
## 516   1167.3046 1760.116
## 517   1062.0483 1668.486
## 518   1274.3064 1653.102
## 519   1156.3157 1707.790
## 520   1301.5196 1706.931
## 521   1058.3561 1636.655
## 522   1216.9953 1660.742
## 523   1155.8511 1596.925
## 524   1227.7924 1699.112
## 525   1147.4452 1764.239
## 526   1035.5387 1538.957
## 527   1245.5097 1762.318
## 528   1330.6182 1941.405
## 529   1282.2129 1786.071
## 530   1306.1278 1645.832
## 531   1115.6625 1595.200
## 532   1526.0269 1877.928
## 533   1188.3800 1653.203
## 534   1155.4125 1622.656
## 535   1239.2170 1984.207
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15

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## 10   0.54647812  0.513833599
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## 14   0.90208109  1.097561069
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## 18   0.18801201  0.287204154
## 19   0.18362675  0.433564695
## 20   0.36610475  1.384142625
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## 36   0.73063161  0.540673324
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## 71   0.16626749   0.811253793
## 72   0.34740476   0.229807403
## 73   0.92536645   1.191003507
## 74   0.35756852   0.684716934
## 75   1.47945451   1.109720148
## 76   0.47173023   0.916231673
## 77   0.74595026   0.600382828
## 78   0.44743747   0.450712238
## 79   0.41060654   1.237940824
## 80   0.47913373   0.396849162
## 81   0.44660233   0.263310480
## 82   1.33990842   0.715268996
## 83   0.99967195   0.777401619
## 84   0.49983124   1.153542984
## 85   0.53394583   0.506681637
## 86   0.40720505   1.245786548
## 87   0.68818491   0.523906605
## 88   0.96407219   0.657811492
## 89   0.56292460   0.645686917
## 90   1.20026918   1.852878640
## 91   0.46503223   0.919998758
## 92   0.50023566   0.324600392
## 93   0.25064956   0.682474241
## 94   1.02491087   0.645753784
## 95   0.91756350   0.579461474
## 96   0.81795720   0.685227885
## 97   0.45513946   0.534694439
## 98   0.44007161   0.885905546
## 99   0.83322259   0.591893439
## 100  0.51077015   0.700565336
## 101  1.05677268   0.742901661
## 102  0.43980691   0.438899369
```

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## 103   0.48562170   0.770213476
## 104   0.49096306   0.516469169
## 105   0.52218955   1.285605354
## 106   0.37238322   0.442681891
## 107   0.40655769   0.657703548
## 108   0.91422785   0.845768668
## 109   0.70633467   1.110525551
## 110   0.76077657   1.065890977
## 111   0.88491169   0.437518111
## 112   0.39744088   0.789448755
## 113   0.86495125   0.775605894
## 114   0.50367704   0.705898403
## 115   0.44485630   0.845815400
## 116   0.15285302   0.411062048
## 117   0.71849525   0.813894694
## 118   0.35451137   0.605002910
## 119   0.57614463   0.433023510
## 120   0.52048146   0.597597273
## 121   0.79790186   1.165191212
## 122   1.12461109   0.732247025
## 123   0.39150033   0.561266247
## 124   0.41420788   0.642853677
## 125   0.32239640   0.492266048
## 126   0.76332743   1.485556432
## 127   0.66208576   0.762363075
## 128   0.40948519   0.546889007
## 129   0.87817873   0.721228527
## 130   0.33013188   0.676186623
## 131   0.38642980   0.435109130
## 132   0.38422561   0.957551799
## 133   0.64377294   0.642578921
## 134   0.69395256   0.889115747
## 135   0.30247077   0.241120810
## 136   1.02446954   0.762657125
## 137   0.12356520   0.382537461
## 138   0.55682534   0.707023217
## 139   0.57968334   0.503520663
## 140   0.58328692   1.019611524
## 141   0.93289387   0.550557243
## 142   0.77418514   0.846285186
## 143   1.38281212   0.629719395
## 144   0.36506662   0.263460612
## 145   1.00075759   0.713122920
## 146   1.26559329   0.976844601
## 147   0.16068273   0.693576230
## 148   0.29350203   0.363818911
## 149   1.17704391   1.108378904
## 150   0.60906388   0.583816696
## 151   0.91065875   1.187067554
## 152   0.29366785   0.093636790
## 153   0.58799816   0.427029115
## 154   0.57418753   0.379524503
## 155   1.21016569   0.359234297
## 156   0.21688713   0.316116893
```

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## 157   0.57892206   0.455719076
## 158   1.06459920   0.998913257
## 159   0.57824071   1.274794433
## 160   0.13830389   0.395244931
## 161   0.64316239   0.490794220
## 162   0.57638163   0.414190812
## 163   0.56637084   0.477659593
## 164   0.55110471   0.627484510
## 165   0.49165874   0.706946437
## 166   0.58917542   0.583136637
## 167   0.56558132   0.534366626
## 168   0.52852450   0.623415933
## 169   0.36601760   0.479586332
## 170   0.65929628   0.683328534
## 171   0.45034485   0.365261915
## 172   0.23507804   0.006753674
## 173   0.38860503   0.544385181
## 174   0.18033567   0.507726133
## 175   0.19206371   0.703521286
## 176   0.51955001   0.158769603
## 177   0.16470362   0.666516225
## 178   0.24190368   0.574219661
## 179   0.36414387   0.901449411
## 180   0.16260626   0.529984378
## 181   0.65168309   0.767654623
## 182   0.62906388   0.569539340
## 183   0.39106485   0.262665634
## 184   0.69429074   0.850572621
## 185   0.44730633   0.833163040
## 186   0.54795768   0.674251512
## 187   0.64302683   0.811892763
## 188   0.47678130   1.036229432
## 189   0.34150589   0.520462735
## 190   0.48542843   0.875016640
## 191   0.61863894   0.587671234
## 192   1.06943982   0.675735025
## 193   0.72734497   0.619212582
## 194   0.08557317   0.855843254
## 195   0.56694365   0.494252223
## 196   0.85441980   0.480282194
## 197   0.39459419   0.537908869
## 198   0.79186863   1.066860917
## 199   1.53591609   1.050679831
## 200   0.54774805   0.661962715
## 201   1.23966548   0.818293153
## 202   0.20091530   0.671135602
## 203   0.19520139   0.842952516
## 204   0.96740501   0.988070014
## 205   0.63580357   0.691556980
## 206   0.11355015   0.626748414
## 207   0.31880242   0.627616360
## 208   0.53810282   0.501908035
## 209   1.09771243   0.455048039
## 210   0.49431803   1.077079728
```

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## 211  0.61250419  0.176563110
## 212  0.10927085  0.338040513
## 213  0.34945183  0.875563107
## 214  0.64719960  1.330276821
## 215  0.66232007  0.495048822
## 216  0.73818866  0.896905855
## 217  0.52339370  0.661606314
## 218  0.35116115  0.506610340
## 219  0.33583428  0.415404326
## 220  0.38323431  0.604445990
## 221  0.24363987  1.312504059
## 222  0.68384672  0.778126944
## 223  0.58852655  0.826776874
## 224  0.89383996  0.466116325
## 225  0.39887460  0.158115147
## 226  0.46120747  0.616622141
## 227  0.19334121  0.467238394
## 228  0.35926610  0.499580386
## 229  0.33208352  0.970291402
## 230  0.80178424  0.780876492
## 231  1.34548651  1.612751654
## 232  0.88629339  1.254219220
## 233  0.56530369  0.505645664
## 234  0.50795487  0.727268282
## 235  1.09643659  1.120571819
## 236  0.41260438  0.482640453
## 237  0.91649821  1.412351365
## 238  0.47376681  0.356237828
## 239  0.57828112  1.279413425
## 240  0.81969897  0.904460859
## 241  0.44389496  0.675195614
## 242  1.00889993  1.178568396
## 243  0.65531924  0.836709367
## 244  0.59630847  0.581596129
## 245  1.00087780  0.753555304
## 246  0.78233451  0.422757679
## 247  0.90864426  0.655904132
## 248  0.67086171  0.759125550
## 249  0.35638806  0.858468676
## 250  0.63555298  0.395026466
## 251  0.77181703  1.422773818
## 252  0.62757735  0.746919705
## 253  0.43671295  0.371328463
## 254  1.28623555  1.066146221
## 255  0.58220700  0.643050248
## 256  0.43944565  0.660047071
## 257  0.60011288  0.482734323
## 258  0.77184827  1.106334355
## 259  0.41969022  0.658193019
## 260  0.54582152  0.322489047
## 261  0.38854693  0.524560233
## 262  0.31045590  0.594442274
## 263  0.96083443  0.509723364
## 264  0.19780205  0.315428263
```

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## 265   1.02527425   1.098071155
## 266   1.05164907   0.634093405
## 267   0.77163091   0.726084740
## 268   0.80729282   0.549078817
## 269   1.21915099   1.328309572
## 270   0.74194709   0.985251475
## 271   1.09269306   0.789133919
## 272   0.31955441   0.942634888
## 273   0.24981941   0.202819196
## 274   0.64727375   0.868685782
## 275   0.64407738   0.849330845
## 276   0.62405112   0.943571574
## 277   0.39098014   0.519784797
## 278   0.83015401   0.680031893
## 279   0.41270663   0.280575000
## 280   0.96124172   0.793941892
## 281   1.55916222   0.922281980
## 282   0.88987049   0.803103452
## 283   0.51944711   0.432997650
## 284   0.37400121   0.448502871
## 285   0.81095660   0.907995719
## 286   0.46858405   0.723836919
## 287   0.64952127   1.144095283
## 288   0.68861752   0.700980504
## 289   1.10450271   1.112538140
## 290   0.31699054   0.615813520
## 291   0.40762676   0.419396544
## 292   0.62470111   0.601033279
## 293   0.57249638   0.322351627
## 294   0.44712548   0.826598187
## 295   1.09062191   0.713579037
## 296   0.35452946   0.205383751
## 297   1.01507327   0.878730947
## 298   0.26851056   0.367699652
## 299   1.19034853   1.625542178
## 300   0.84944518   1.085586229
## 301   0.55038928   0.995511187
## 302   0.73827366   0.594930297
## 303   0.52291950   0.767910460
## 304   0.62445475   0.844558989
## 305   0.50901713   0.515449199
## 306   0.31625373   0.730610261
## 307   0.46809878   0.375530988
## 308   0.47807980   0.502402708
## 309   1.42189262   0.894453878
## 310   0.60913544   1.171854863
## 311   0.31213942   0.663313852
## 312   0.29924792   0.589192514
## 313   0.14604529   0.506820031
## 314   0.72944848   1.119999143
## 315   0.80734255   0.504810022
## 316   0.50554255   0.417517932
## 317   0.30904890   0.753505491
## 318   0.40099260   0.911527325
```

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## 319   0.59615698   0.553088845
## 320   0.86032689   1.040292632
## 321   0.70993942   1.399525842
## 322   0.32717776   0.334534370
## 323   0.85944807   1.042145023
## 324   0.27602949   0.802892025
## 325   0.98531138   0.965804394
## 326   0.63642626   0.159855939
## 327   0.55375840   1.158054897
## 328   0.78123994   1.183083537
## 329   0.34192497   0.506688028
## 330   0.50095100   0.776353376
## 331   1.15549875   1.284623345
## 332   0.62472787   0.698679021
## 333   0.55061627   0.466581653
## 334   0.80055055   0.573904629
## 335   0.68676106   0.501091384
## 336   0.40532612   0.858834803
## 337   0.29038421   0.048172109
## 338   0.74111793   0.510973170
## 339   0.42533065   0.715086147
## 340   0.81916015   1.025792171
## 341   0.71696573   0.622937847
## 342   0.73338622   0.924000884
## 343   0.68123924   0.802472946
## 344   0.50931790   0.438337878
## 345   0.57898307   0.422041494
## 346   0.40267895   0.368301185
## 347   0.56414145   0.495039889
## 348   0.50864629   0.216526043
## 349   0.45357027   0.817324546
## 350   0.81667765   0.359018278
## 351   0.30767388   0.259697377
## 352   0.70045446   0.527362556
## 353   0.56672077   0.073721353
## 354   0.37896220   0.660510864
## 355   0.72176400   0.638410054
## 356   0.51338494   0.408085850
## 357   0.61163935   0.188291504
## 358   0.60658100   0.383942819
## 359   0.95345443   0.377345454
## 360   0.67453466   0.675975359
## 361   0.56584951   0.818457611
## 362   0.62563957   0.615190562
## 363   1.22014087   0.889711564
## 364   0.78831929   0.369656338
## 365   0.38262208   0.570068467
## 366   0.44092835   0.610284535
## 367   0.81184787   0.448187158
## 368   1.11777719   1.043476908
## 369   0.51109555   0.736428947
## 370   0.86079495   0.727341031
## 371   0.83453990   1.027561319
## 372   0.10809634   0.591436407
```

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## 373   1.05353530   0.655947207
## 374   0.86858025   0.443407972
## 375   0.69397042   1.038305667
## 376   0.09337629   0.020353964
## 377   0.88694251   0.731113232
## 378   0.89444492   0.608151657
## 379   0.59060812   0.097923714
## 380   1.27422424   0.952032330
## 381   0.51222980   0.184028571
## 382   0.37797377   0.343112101
## 383   0.43579578   0.513187220
## 384   0.72611923   0.501032973
## 385   0.29418654   0.461670408
## 386   0.83734099   0.643883911
## 387   0.54224830   0.430156006
## 388   0.42121182   0.443015518
## 389   0.70211559   0.955795695
## 390   0.35283013   0.684210129
## 391   0.57836398   0.342183013
## 392   0.62851740   0.842172812
## 393   0.74691164   0.719080706
## 394   0.74001631   0.443150161
## 395   0.30325498   0.333351855
## 396   0.64926895   0.713512080
## 397   0.39072549   0.512755101
## 398   0.52085871   0.837048693
## 399   0.42160878   0.852108837
## 400   0.61033821   1.015178239
## 401   1.29626006   1.780054238
## 402   0.33118855   0.500549152
## 403   0.33402212   0.216081452
## 404   0.38835317   0.848949330
## 405   0.65091940   0.723141682
## 406   0.24707331   0.522264042
## 407   0.59243254   0.509323458
## 408   0.53460499   1.230843273
## 409   0.60584761   1.013037555
## 410   0.47469903   0.462979677
## 411   0.45781131   0.847154893
## 412   0.74607546   0.683307579
## 413   0.73107189   0.594008344
## 414   0.49202434   0.364977353
## 415   0.50374081   0.213520554
## 416   0.46953803   0.324989961
## 417   0.63094311   0.379309241
## 418   0.54085847   0.523079959
## 419   0.72847862   0.873588428
## 420   0.53774091   0.505922555
## 421   0.42857225   0.788862578
## 422   0.71565586   0.702821854
## 423   0.31254077   0.366018558
## 424   0.21179359   0.470167897
## 425   0.47430630   1.403811672
## 426   0.09259063   1.095228760
```

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## 427   1.03365136   0.699265303
## 428   0.20595662   0.358562602
## 429   0.54255947   0.763908550
## 430   0.32057522   1.720863421
## 431   0.69290193   0.358623668
## 432   0.73215865   0.277347998
## 433   0.54042382   0.310727113
## 434   0.44457874   0.541659365
## 435   0.97650641   0.648310407
## 436   0.29783146   0.144711908
## 437   0.75497231   0.763889357
## 438   0.45209044   0.500110263
## 439   0.80749873   1.055196646
## 440   0.32402527   0.355848758
## 441   0.30120824   0.457663756
## 442   0.87000076   0.695196023
## 443   1.16521612   1.165501672
## 444   0.53676190   0.599259010
## 445   0.64001975   0.785268326
## 446   0.76734375   0.643066499
## 447   0.92141221   1.083557421
## 448   0.99000311   0.971710869
## 449   0.41566876   0.784323767
## 450   0.82056023   0.609645753
## 451   0.23911817   0.202652289
## 452   0.29430044   0.128854543
## 453   0.71775160   0.601628987
## 454   0.71470084   1.140875711
## 455   0.10424954   0.557128736
## 456   1.06801070   1.346376973
## 457   0.22836979   0.519516259
## 458   0.46105607   0.406151144
## 459   0.36944020   0.384354973
## 460   0.77168069   1.325056822
## 461   0.27014320   0.479182619
## 462   0.38510256   1.496073935
## 463   0.32681038   0.490173911
## 464   0.66630652   0.589705717
## 465   0.76951999   0.878936734
## 466   1.03064085   0.635958743
## 467   0.61631410   0.629169480
## 468   0.35871444   0.182539075
## 469   0.65302671   0.756429134
## 470   0.43445703   1.274945305
## 471   0.39916426   0.336858518
## 472   0.25535067   0.170547869
## 473   0.43828909   0.613027299
## 474   0.58250246   0.530719118
## 475   0.67880520   0.506158540
## 476   0.16794845   1.074756135
## 477   0.19878380   0.734980771
## 478   0.30664725   0.448290361
## 479   0.38094066   0.655718459
## 480   0.45191651   0.127877328
```

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## 481   0.70092714   0.409585915
## 482   0.95020643   1.704782263
## 483   0.32863609   0.526796778
## 484   0.80322028   0.451745384
## 485   0.27577454   0.452612141
## 486   1.02418767   0.356010585
## 487   0.28116174   0.985364786
## 488   0.74257638   0.458782832
## 489   0.72143976   0.650322620
## 490   0.99784597   0.597729307
## 491   0.52408239   0.952588378
## 492   0.83062826   1.188890699
## 493   0.70478184   0.333943402
## 494   0.45054743   0.505954903
## 495   0.36676106   0.482626494
## 496   0.63347832   0.259709431
## 497   0.65922342   0.811687470
## 498   0.86713223   1.440014794
## 499   0.56374831   0.839771160
## 500   0.75831584   1.149672061
## 501   0.73876447   0.438586655
## 502   0.31754693   0.822455257
## 503   0.43580465   0.923864337
## 504   1.17231389   0.621020534
## 505   0.92703677   0.938326220
## 506   0.42330336   0.582057308
## 507   0.29052230   0.260778883
## 508   0.51787728   0.567717379
## 509   0.82529872   0.654317374
## 510   1.04731850   1.061527072
## 511   0.63909586   0.557398719
## 512   0.22332203   0.207487704
## 513   0.78391651   0.635073963
## 514   0.52544413   0.613415685
## 515   1.79521047   1.412304508
## 516   0.69610814   0.826137378
## 517   1.06594254   0.457996765
## 518   0.25767359   0.467686704
## 519   0.91680015   0.735984383
## 520   0.93353149   0.946410004
## 521   0.92362292   0.694560864
## 522   0.58433439   0.212404423
## 523   0.57422729   0.823123605
## 524   0.75096241   0.802776080
## 525   0.50563862   0.684387628
## 526   1.18218577   1.029379773
## 527   0.84453948   0.646849466
## 528   0.35239059   0.324510229
## 529   0.35423955   0.922916310
## 530   0.92924229   1.009829124
## 531   0.52353890   0.829943743
## 532   0.49475877   0.751552422
## 533   0.74290040   0.717335813
## 534   0.22709384   0.589351668
```

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## 535   1.24670336   1.467614772
## 536   0.64675924   1.507160090
## 537   0.53382066   0.313667675
## 538   0.97538707   0.657681952
## 539   0.77161501   0.544701045
## 540   0.58320818   1.625213114
## 541   0.66245672   0.605492581
## 542   0.58775362   1.051430500
## 543   0.14629095   0.555089516
## 544   0.71515897   0.851410199
## 545   0.32333980   0.421934568
## 546   0.68791732   0.248350534
## 547   1.85756918   1.586501626
## 548   1.10912475   0.488729696
## 549   0.76742678   1.122873153
## 550   0.14932790   0.845193327
## 551   0.54759046   0.585937080
## 552   0.50848313   0.573379168
## 553   1.28299985   1.389320522
## 554   0.26610730   0.543649784
## 555   0.40211210   0.295886449
## 556   0.28584839   0.462838254
## 557   0.82461744   0.817316929
## 558   0.28231811   0.191500216
## 559   0.95033239   0.956550573
## 560   0.26826046   0.501932442
## 561   0.91128200   0.475499952
## 562   0.54476247   0.695048210
## 563   1.05228502   0.721323490
## 564   0.33644672   0.640182985
## 565   0.64095169   0.234936338
## 566   0.92598043   0.834321580
## 567   1.15621407   0.778986135
## 568   0.50313156   0.640494240
## 569   0.55396901   0.020603599
## 570   0.84418945   0.645868665
## 571   0.19560229   0.475129332
## 572   0.73863463   0.357367269
## 573   0.82056865   0.648993026
## 574   0.48698128   0.683605304
## 575   0.70797410   0.626495551
## 576   0.46680874  -0.013319814
## 577   0.59487940   0.317094394
## 578   0.32807085   0.409112027
## 579   0.64346522   0.547035898
## 580   0.63390942   1.242526624
## 581   0.88197700   1.508582228
## 582   0.53000912   1.000840920
## 583   0.50985940   0.923081561
## 584   0.18601824   0.478056550
## 585   0.33012037   0.965415819
## 586   0.53196106   0.604889114
## 587   0.63618755   1.300630895
## 588   0.53718119   0.338173767
```

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## 589   0.25124302   0.679808594
## 590   0.63168497   0.518324748
## 591   0.42763048   0.566455909
## 592   0.59555435   0.610171632
## 593   0.54510100   0.760708151
## 594   0.34383976   1.015890956
## 595   0.44755107   0.363629001
## 596   0.40910124   0.494850649
## 597   0.44600213   0.547639198
## 598   0.35101452   0.249061695
## 599   1.43196285   1.384953180
## 600   0.20330267   0.765595431
## 601   0.76391308   1.293677066
## 602   0.67973139   1.710649755
## 603   0.94692503   0.954594122
## 604   0.34940882   0.850855533
## 605   0.58471001   0.422692749
## 606   0.32930709   0.452328901
## 607   0.29359635   0.424540085
## 608   0.76936527   0.718825989
## 609   0.39877253   1.001980646
## 610   0.40821739   0.093828473
## 611   0.45350895   0.759749008
## 612   0.58400308   0.847842576
## 613   0.77663264   0.688669107
## 614   0.54916178   0.496998259
## 615   0.81198906   1.000858183
## 616   0.28603899   0.483910585
## 617   0.58428142   0.334158676
## 618   1.15096284   1.451633115
## 619   1.01054880   1.184581424
## 620   1.02113357   0.452681252
## 621   0.51428474   0.573432996
## 622   0.44638315   0.540682125
## 623   1.29260187   0.807972844
## 624   1.15580402   0.826286401
## 625   0.26449573   0.431618059
## 626   0.60966482   0.844319669
## 627   0.87817904   0.953109754
## 628   0.75406281   1.582790187
## 629   0.65419346   0.507358847
## 630   0.57593644   0.448375708
## 631   1.04001557   0.311374457
## 632   1.19949330   1.154186439
## 633   0.87633652   2.111345061
## 634   0.34600974   0.484484193
## 635   1.25017745   0.704946369
## 636   0.58281103   0.410809449
## 637   0.21418125   2.067914129
## 638   0.19244683   0.269595463
## 639   0.35239186   0.397811664
## 640   0.74952066   0.370991407
## 641   0.48960326   0.674035976
## 642   0.63700048   0.369885376
```

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## 643   0.37534107   1.104308594
## 644   0.50770186   0.521918830
## 645   0.67130157   0.738325511
## 646   0.88137774   1.012155080
## 647   1.08691361   0.999918963
## 648   0.81062890   1.188878368
## 649   0.45511101   0.850834536
## 650   0.87745541   0.594250276
## 651   0.53725117   0.232733740
## 652   1.02279099   1.159805774
## 653   0.21457118   1.156115017
## 654   0.80854979   0.757060115
## 655   0.45320028   0.526491308
## 656   0.68096453   0.471944544
## 657   0.47393980   0.186024315
## 658   0.44066193   0.578567629
## 659   0.67864008   0.649026452
## 660   0.39302032   0.765807654
## 661   0.39062360   0.388124167
## 662   0.64224253   0.627926228
## 663   0.67424118   1.537070617
## 664   0.69824919   0.696871802
## 665   0.44739483   0.397211848
## 666   0.50617817   0.527032263
## 667   0.12630219   0.999631424
## 668   0.79134116   1.159138859
## 669   1.03189068   0.810206404
## 670   0.50087452   0.732530308
## 671   0.22101233   0.793188625
## 672   0.90283127   0.903565684
## 673   0.60430341   1.197280503
## 674   0.51221088   1.055097511
## 675   1.00384800   0.990517452
## 676   0.40711112   1.051668231
## 677   0.62537065   0.817759592
## 678   0.41817921   0.673392799
## 679   0.31106363   0.510430207
## 680   0.52480621   0.545653762
## 681   0.64434870   0.636429368
## 682   1.45525744   0.954793903
## 683   0.59597181   0.302542750
## 684   1.42151197   1.086063825
## 685   0.73659704   0.755111826
## 686   0.33302579   0.644402150
## 687   0.59832243   0.865572143
## 688   0.42099740   0.528020353
## 689   0.55243856   0.636347053
## 690   0.44984829   0.517489524
## 691   0.57031355   0.923002103
## 692   0.40583206   0.537088924
## 693   0.71047124   0.334944776
## 694   0.69055494   0.357302530
## 695   0.42987582   1.035719376
## 696   0.68370745   1.108162854
```

```
## 697   0.58011427   0.816434135
## 698   0.75735796   0.947172212
## 699   0.62878346   0.927711639
## 700   0.45925580   0.503673327
## 701   0.62841679   0.544293387
## 702   0.71903259   0.892023460
## 703   0.53806685   0.873156675
## 704   0.44528978   0.550651423
## 705   0.90969792   0.946525578
## 706   0.72930726   0.490239380
## 707   0.67305896   0.619499551
## 708   0.61987511   0.850091897
## 709   0.79150419   0.372362559
## 710   0.28297721   0.961848897
## 711   0.42903060   0.716004959
## 712   0.59719354   0.400541826
## 713   0.26968152   0.622620943
## 714   0.43253914   0.544434513
## 715   0.40022426   0.201213747
## 716   0.55569218   0.507596760
## 717   0.75033472   0.520772058
## 718   0.44914853   0.241182958
## 719   0.58393191   0.639070143
## 720   0.60579967   0.424895497
## 721   0.94842407   0.705430997
## 722   0.38804633   0.984194777
## 723   0.99814804   1.020530041
## 724   0.49797533   0.784681397
## 725   0.30239967   0.881383728
## 726   0.74380679   0.518111094
## 727   0.54414970   0.886854742
## 728   0.33634207   0.384488983
## 729   0.70117321   0.872899241
## 730   0.60504408   0.472104594
## 731   0.72891012   0.981803607
## 732   1.21229199   1.597596072
## 733   0.44957346   0.646794199
## 734   1.25879544   1.520563596
## 735   0.48723408   0.588452309
## 736   0.35058886   0.792952359
## 737   0.26968098   0.712849879
## 738   0.30955516   1.001591509
## 739   1.75476089   1.569510133
## 740   0.54994547   0.327610866
## 741   0.88442567   1.325144109
## 742   0.46611613   0.609489730
## 743   0.79291634   0.605946166
## 744   0.83914230   0.820174047
## 745   0.72991481   0.192813036
## 746   0.44903282   0.494236381
## 747   0.42859561   0.770584289
## 748   0.61787818   0.928098393
## 749   0.52042290   0.603481121
## 750   0.74589018   0.367340212
```
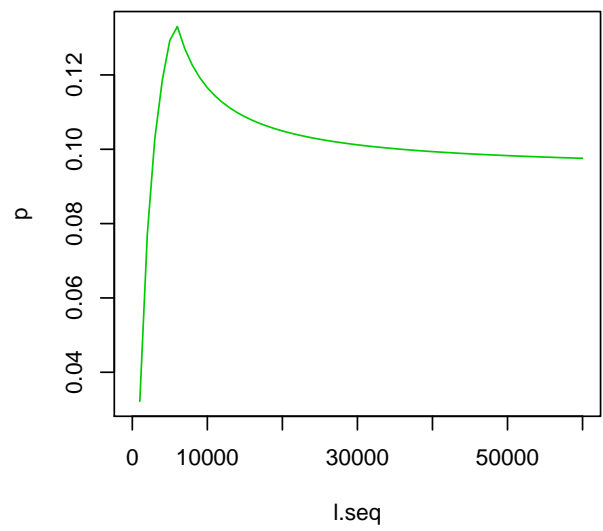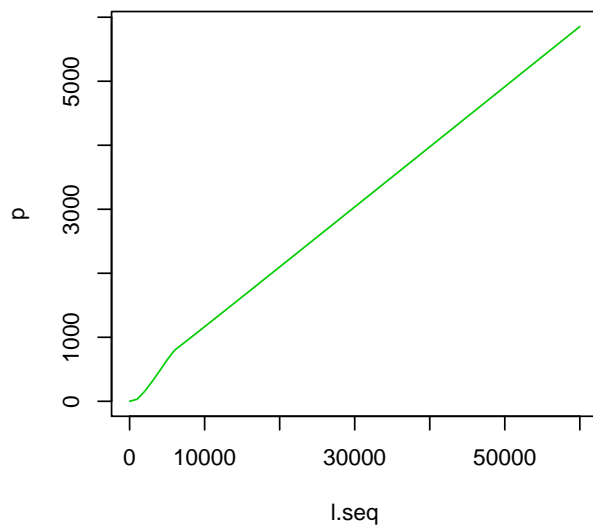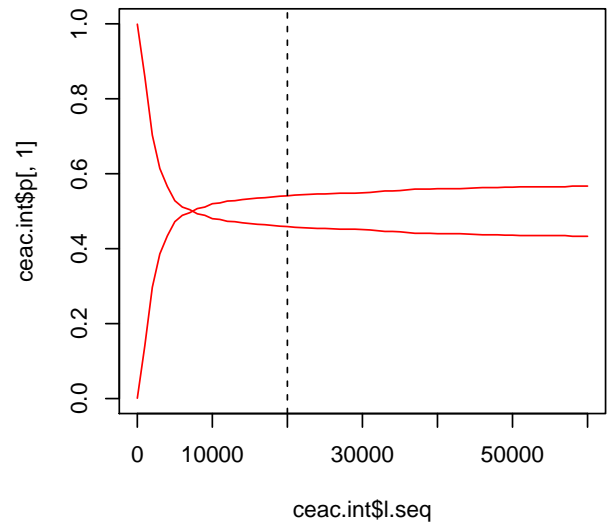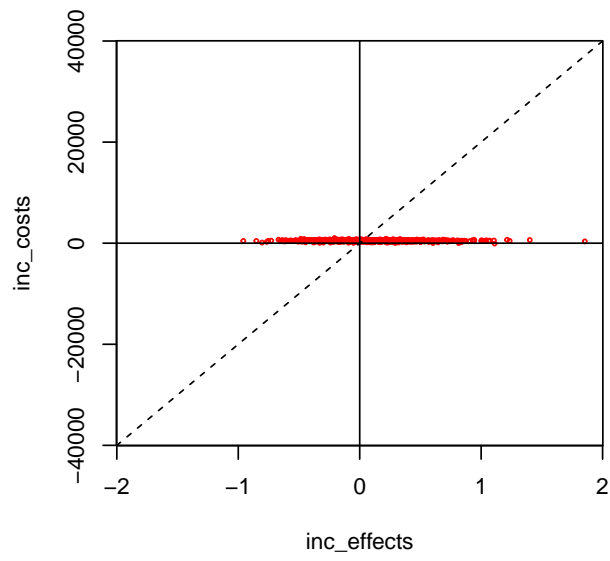
```
## 751   0.55435265   0.268501766
## 752   0.50431500   0.620675917
## 753   0.79097534   0.495399276
## 754   0.18321367   0.579672202
## 755   1.00006873   1.221564582
## 756   0.74495065   0.441110467
## 757   0.51162570   0.591531925
## 758   0.79501970   0.647888378
## 759   0.53687848   0.443878842
## 760   1.17834666   1.174725190
## 761   0.67683088   0.960863113
## 762   0.34868781   0.355837975
## 763   1.45261636   1.159898013
## 764   0.83171269   1.180879464
## 765   0.49485338   0.820602936
## 766   0.60758371   0.256502403
## 767   0.64082110   1.061708836
## 768   0.70431229   1.143580356
## 769   0.71888293   1.068308551
## 770   0.58428782   0.617252616
## 771   0.68957627   0.768845371
## 772   0.49935025   0.247993976
## 773   0.56491798   0.662583152
## 774   0.37308083   0.075258534
## 775   0.49478610   0.644496305
## 776   0.56871235   0.759413619
## 777   0.49529010   0.759351810
## 778   0.91019750   0.781915120
## 779   0.63936711   1.014082225
## 780   0.59354604   0.478910368
## 781   0.81835357   0.306968799
## 782   0.49620709   1.017629914
## 783   0.63599461   1.099462111
## 784   0.42802857   0.618537377
## 785   0.45214395   0.354297374
## 786   0.81047118   0.901169547
## 787   0.69846595   1.071069974
## 788   0.91683675   0.514226575
## 789   0.43407159   0.751791986
## 790   0.92212777   0.694519046
## 791   0.55764960   0.597009790
## 792   0.47164828   1.193186914
## 793   0.46790505   1.153147932
## 794   0.32567760   0.566532144
## 795   0.11437252   0.820319847
## 796   0.28498099   0.533090067
## 797   0.79009520   0.338303455
## 798   0.81570899   1.365805031
## 799   0.48639628   1.591848650
## 800   0.57344299   1.321018330
## 801   0.61402475   1.320612521
## 802   0.32385993   0.458806394
## 803   0.31878343   0.700945563
## 804   0.45329716   0.610077142
```

```
## 805   0.43304424   0.381188734
## 806   0.57182388   0.945379742
## 807   0.72680274   0.967148381
## 808   0.95232850   0.446383780
## 809   0.78195247   1.785604709
## 810   0.29490744   0.360260033
## 811   0.47961456   0.298596641
## 812   0.59241903   0.983249569
## 813   1.05095417   0.914144671
## 814   0.84024202   1.178623593
## 815   0.54240916   0.220640059
## 816   1.39492954   0.949071419
## 817   0.58837490   0.636069249
## 818   0.79453641   0.794031672
## 819   0.86241727   0.520884934
## 820   0.46420329   1.183031208
## 821   0.40249064   0.711047001
## 822   0.54723908   1.064846102
## 823   0.75839675   0.587593397
## 824   0.63218620   0.701280271
## 825   0.66377849   0.388189528
## 826   0.41527353   0.860659785
## 827   0.42961583   0.520157229
## 828   0.86639727   0.838105082
## 829   0.39349597   0.291079870
## 830   0.60734244   0.759187359
## 831   0.48143289   0.281357772
## 832   0.55863683   0.344338093
## 833   0.55023657   1.365337714
## 834   0.32313127   0.927889217
## 835   0.36175676   0.512070721
## 836   0.66896877   1.473764399
## 837   0.91629548   1.252857293
## 838   0.52758922   0.255536185
## 839   0.94358079   0.724111425
## 840   0.66335705   0.606795668
## 841   0.51443453   0.448264220
## 842   0.73728631   0.656642191
## 843   0.04564265   0.319263032
## 844   0.59501970   1.808767740
## 845   0.88339669   1.147487130
## 846   1.07541049   1.707698367
## 847   0.36912481   0.588242137
## 848   0.64519740   1.033756198
## 849   0.52442031   0.243890664
## 850   1.09206725   0.440516316
## 851   0.84500955   0.824157290
## 852   1.14003084   0.594331757
## 853   0.89422903   0.533404315
## 854   0.79605751   0.423435392
## 855   0.80589724   0.397849856
## 856   0.65869594   0.800178116
## 857   0.59711777   0.922565585
## 858   0.79786264   1.066906058
```
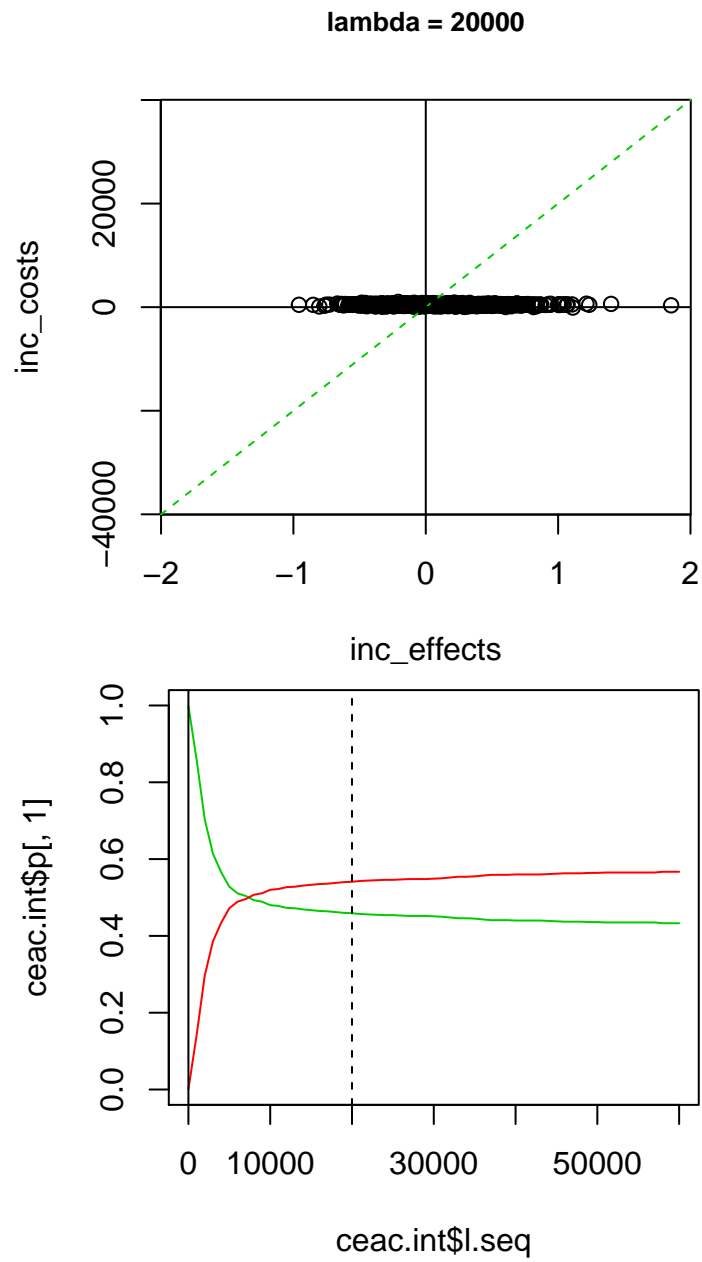
```
## 859  0.88961814  0.796428313
## 860  0.42798015  0.800924633
## 861  0.64549515  0.662485527
## 862  0.50299241  0.550019247
## 863  0.43228953  0.021694197
## 864  0.47836470  0.542286781
## 865  0.27377648  0.846322470
## 866  0.45024661  0.592907933
## 867  0.68545226  0.243705029
## 868  0.62679843  0.434808388
## 869  0.80778955  1.181381774
## 870  0.55979411  0.108832597
## 871  0.66061645  0.529881618
## 872  0.56163634  0.789831489
## 873  0.67226348  0.684014083
## 874  0.55085267  0.578684706
## 875  0.82303927  0.589928019
## 876  0.51271778  0.634733110
## 877  0.40766525  0.802414762
## 878  0.58255798  0.550579424
## 879  0.25338565  0.347823474
## 880  0.21871237  0.782906878
## 881  0.13927700  0.387276731
## 882  0.25319113  0.500477804
## 883  0.21587541  0.140105731
## 884  0.61086752  1.121463719
## 885  1.33308511  0.568322150
## 886  1.08552286  1.145091682
## 887  0.42394103  0.426224968
## 888  0.73141227  0.346976502
## 889  0.45829737  0.593066830
## 890  0.63209163  1.142452441
## 891  1.07604203  1.121485587
## 892  0.77550830  0.624183435
## 893  0.24632791  1.190223605
## 894  0.71799962  0.869564695
## 895  0.53553163  0.342921806
## 896  0.70205319  0.941849327
## 897  0.85940077  0.372309604
## 898  1.17584817  1.744301380
## 899  0.57774324  0.845287938
## 900  0.84838792  1.016955751
## 901  0.28060346  0.421594578
## 902  0.60562693  0.239892117
## 903  0.46941663  1.038463322
## 904  0.43361183  1.169271825
## 905  0.43556775  0.448453642
## 906  0.97760472  0.631922751
## 907  0.28775349  0.516269919
## 908  0.53748968  0.692268917
## 909  0.93731578  0.582181371
## 910  0.74978030  0.709141423
## 911  0.88254691  0.661415015
## 912  0.50333354  1.094775792
```

```
## 913   0.62585184   0.507514674
## 914   0.60477352   0.997491253
## 915   0.50433254   0.811450495
## 916   0.90306509   0.339013401
## 917   0.84688812   0.379072709
## 918   0.34302706   0.326350084
## 919   0.79088197   0.636468163
## 920   0.34591088   0.352199974
## 921   0.76306626   0.584862700
## 922   1.06222385   1.098056373
## 923   1.21772744   0.907908938
## 924   0.54425953   0.484955394
## 925   0.41810508   0.596014228
## 926   0.92061521   0.543858865
## 927   0.70805095   0.829947937
## 928   0.82566151   0.617451627
## 929   0.15676857   0.408823036
## 930   0.65950150   0.453856185
## 931   0.51318574   0.509783852
## 932   1.03617334   0.934718683
## 933   0.99922533   0.640170318
## 934   0.68010044   0.514957313
## 935   0.29752368   0.263696811
## 936   0.61689103   1.084229040
## 937   0.62583506   1.137522386
## 938   0.69031463   1.041720785
## 939   0.56707336   0.504296883
## 940   0.59994573   0.989629059
## 941   1.22851474   1.237257585
## 942   1.08921631   0.556968140
## 943   0.82856985   1.035267448
## 944   0.65678496   0.414889579
## 945   0.96560167   0.807883445
## 946   0.34204079   0.243156592
## 947   0.85044232   0.713928501
## 948   1.26954439   1.460558500
## 949   0.18696198   0.719835026
## 950   0.67196351   0.568414773
## 951   0.92475185   0.838889576
## 952   0.23639056   0.350166227
## 953   0.69892104   0.293417781
## 954   0.45244981   0.749416318
## 955   0.60581552   0.440244778
## 956   0.15124511   0.411246513
## 957   0.67220724   0.488974708
## 958   1.09525783   0.834656699
## 959   0.83594719   0.661092435
## 960   0.17439870   0.686767396
## 961   0.51456968   0.378396571
## 962   0.18635012   0.597784445
## 963   0.47845941   0.178527596
## 964   1.47322273   0.668703024
## 965   1.05408453   1.283949428
## 966   0.74157843   1.078585862
```

```
## 967  0.38119739  1.090823940
## 968  0.89770506  0.560990893
## 969  0.11052690  0.168898662
## 970  0.58851253  0.435188003
## 971  0.61495236  0.528271438
## 972  0.24519550  0.410550423
## 973  0.33337631  0.120117044
## 974  0.78034649  0.519683217
## 975  0.48001075  0.580990912
## 976  1.28705223  1.124178055
## 977  0.73201387  1.082610572
## 978  0.22657628  0.607118089
## 979  0.68713197  0.717372532
## 980  0.86829198  0.725586894
## 981  0.71815025  1.531307915
## 982  0.33434889  0.342325908
## 983  1.18089136  0.852197055
## 984  0.13095115  0.343854975
## 985  0.65745379  0.566231506
## 986  1.78201915  0.823907693
## 987  0.72380057  0.370480103
## 988  0.33566275  0.123847281
## 989  0.85422890  0.861473133
## 990  0.53529269  0.173007489
## 991  0.70836084  0.782411012
## 992  0.53245296  0.199155176
## 993  0.35410564  0.363735073
## 994  0.50709762  1.007212327
## 995  0.59033968  0.774579403
## 996  0.64737214  1.717809140
## 997  0.62700225  0.582743778
## 998  0.50773481  1.204920636
## 999  0.80339679  0.429615867
## 1000 1.16817956  1.533486028
```

lambda = 20000


```
##          costs1    costs2
## 1    1144.9554 1675.497
## 2    1164.3006 1732.737
## 3    1066.6565 1611.727
## 4    1222.8029 2106.905
## 5    1141.9543 1682.730
## 6    1112.0814 1586.620
## 7    1234.9967 1731.021
## 8    1318.6354 1729.671
## 9    1191.0046 1830.979
## 10   1292.2706 1679.843
## 11   1529.7370 1645.530
## 12   1397.3261 1664.098
## 13   1089.1057 1658.608
```

```
## 14     988.4160 1471.997
## 15    1387.5101 1820.132
## 16    1155.1030 1722.649
## 17    1246.2557 1736.325
## 18    1293.3890 1685.546
## 19    1182.0352 1630.820
## 20    1454.7576 1894.044
## 21    1250.0721 1702.669
## 22    1138.3152 1910.948
## 23    1117.7369 1669.827
## 24    1001.6835 1500.359
## 25    1089.4109 1741.678
## 26    1118.8445 1658.876
## 27    1214.3058 1668.043
## 28    1061.4559 1545.373
## 29    1218.9306 1554.367
## 30    1207.8865 1649.229
## 31    1372.5651 1874.604
## 32    1265.1556 1728.497
## 33    1282.6147 1785.939
## 34    1048.5176 1751.039
## 35    1116.7245 1561.841
## 36    1187.3460 1712.348
## 37    1217.3568 1630.267
## 38    1160.5324 1692.959
## 39    1542.1447 2089.189
## 40    1308.5705 1751.250
## 41    1271.0411 1675.513
## 42    1187.3303 1589.626
## 43    1233.9301 1781.707
## 44    1317.2545 1814.240
## 45    1163.4932 1613.329
## 46    1154.5179 1608.349
## 47    1207.2659 1668.776
## 48    1232.1981 1696.682
## 49    1265.1392 1715.216
## 50    1194.2102 1639.217
## 51    1301.0560 1718.574
## 52    1177.4922 1673.147
## 53    1288.0900 1666.396
## 54    1075.7872 1580.996
## 55    1321.7263 1784.928
## 56    1325.9916 1745.821
## 57    1118.6180 1554.420
## 58    1107.6183 1583.290
## 59    1360.6920 1803.645
## 60    1214.2952 1619.200
## 61    1326.0716 1959.642
## 62    1236.7579 1735.127
## 63    1305.4258 1654.506
## 64    1111.3743 1766.366
## 65    1115.7940 1693.898
## 66    1168.2906 1787.146
## 67    1012.3806 1520.073
```

```
## 68    1391.5787 1711.828
## 69    1227.2305 1670.636
## 70    1460.3447 1901.910
## 71    1399.9545 1576.359
## 72    1165.8518 1596.666
## 73    1294.3992 1653.147
## 74    1112.2073 1617.448
## 75    1144.2860 1577.323
## 76    1218.3472 1783.772
## 77    1262.8269 1642.686
## 78    1167.9916 1658.463
## 79    1223.3334 1679.680
## 80    1225.4042 1610.656
## 81    1245.6786 1615.262
## 82    1192.1662 1684.170
## 83    1374.5075 1806.253
## 84    1025.8380 1522.608
## 85    1122.9751 1767.354
## 86    1407.5425 1613.589
## 87    1545.4997 1763.118
## 88    1154.1082 1705.382
## 89    1201.4353 1776.644
## 90    1112.7314 1683.287
## 91    1221.6792 1617.833
## 92    1535.9429 1817.273
## 93    1421.9918 1685.878
## 94    1154.6893 1789.655
## 95    1533.6434 1884.476
## 96    1186.9438 1689.658
## 97    1097.2175 1569.715
## 98    1161.7856 1641.129
## 99    1130.2418 1588.996
## 100   1158.5699 1632.283
## 101   1107.7015 1584.009
## 102   1392.9715 1687.942
## 103   1124.8910 1594.650
## 104   1253.4977 1663.592
## 105   1100.3042 1625.972
## 106   1427.2233 1774.836
## 107   1191.0451 1737.361
## 108   1296.6184 1711.036
## 109   1240.2474 1792.711
## 110   1401.8986 1882.351
## 111   1135.7877 1623.482
## 112   1196.4276 1674.405
## 113   1359.3680 2022.398
## 114   1244.4030 1592.101
## 115   1220.4347 1759.913
## 116   1126.2794 1645.264
## 117   1233.0672 1778.485
## 118   1208.7656 1614.556
## 119   1032.8564 1662.630
## 120   1182.4927 1624.602
## 121   1156.1843 1674.106
```

```
## 122   1330.2079 1724.128
## 123   1314.4756 1677.303
## 124   1177.9532 1727.049
## 125   1280.6490 1655.801
## 126   1374.9323 1684.257
## 127   1282.4741 1703.773
## 128   1174.9851 1640.931
## 129   1125.8755 1641.757
## 130   1118.9648 1655.358
## 131   1290.8140 1640.451
## 132   1184.2555 1630.885
## 133   1265.6969 1728.743
## 134   1052.2563 1550.546
## 135   1160.3187 1644.472
## 136   1044.0763 1554.464
## 137   1126.3343 1637.718
## 138   1110.4570 1713.096
## 139   1064.0832 1646.636
## 140   1316.6913 1655.048
## 141   1007.6402 1508.383
## 142   1044.3687 1774.429
## 143   1063.5587 1541.039
## 144   1119.0117 1681.946
## 145   1055.9180 1535.411
## 146   1073.1032 1719.016
## 147   1441.9084 1800.176
## 148   1157.7273 1764.940
## 149   1070.3826 1550.757
## 150   1030.2891 1522.125
## 151   1072.2849 1726.124
## 152   1141.4026 1613.337
## 153   1157.1276 1705.644
## 154   1142.8678 1552.403
## 155   1093.0868 1541.474
## 156   1102.6612 1578.006
## 157   1127.0987 1728.076
## 158   1144.4460 1663.960
## 159   1065.3728 1570.195
## 160   1506.8244 2033.358
## 161   1247.7684 1635.310
## 162   1113.0218 1762.465
## 163   1123.9412 1975.333
## 164   1489.5014 1685.626
## 165   1134.9706 1667.059
## 166   1843.4356 1978.332
## 167   1206.4943 1691.289
## 168   1102.8047 1548.007
## 169   1103.0998 1622.733
## 170   1160.3546 1608.432
## 171   1628.8120 1861.469
## 172   1140.5549 1699.175
## 173   1190.0003 1649.435
## 174   1160.0486 1687.686
## 175   1235.1126 1692.959
```

```
## 176   1212.8896 1733.336
## 177   1445.1201 1713.198
## 178   1227.0693 2054.172
## 179   1414.8338 1784.840
## 180   1287.8128 1739.438
## 181   1056.6387 1563.721
## 182   1338.7692 1964.733
## 183   1374.5461 1678.741
## 184   1071.2592 1534.181
## 185   1462.8673 1768.569
## 186   1193.6296 1707.399
## 187   1086.1659 1845.055
## 188   1159.2356 1586.705
## 189   1199.9541 1670.920
## 190   1047.9338 1613.545
## 191   1146.7514 1627.905
## 192   1207.1776 1713.107
## 193   1112.1404 1613.698
## 194   1172.5490 1776.156
## 195   1099.9160 1570.393
## 196   1082.5022 1522.495
## 197   1333.5281 1959.912
## 198   1151.7886 1585.756
## 199   1348.5889 1704.196
## 200   1313.7438 1629.672
## 201   1235.1093 1647.904
## 202   1218.5789 1948.108
## 203   1402.9756 1946.379
## 204   1144.2927 1596.502
## 205    948.5830 1486.862
## 206   1566.8737 2200.263
## 207   1213.7794 1621.050
## 208   1261.2059 1753.383
## 209   1155.8692 1610.768
## 210   1296.3886 1709.281
## 211   1144.5855 1678.258
## 212   1219.7624 1772.870
## 213    989.9775 1721.028
## 214   1069.4587 1564.925
## 215   1270.6803 1924.060
## 216   1330.4995 1707.345
## 217   1231.3835 1661.147
## 218   1068.1794 1554.813
## 219   1331.4743 1751.444
## 220   1419.6584 1684.052
## 221   1051.7550 1543.923
## 222   1131.7122 1645.957
## 223    988.3311 1667.391
## 224   1146.9212 1551.061
## 225   1075.3498 1602.874
## 226   1307.6362 1950.221
## 227   1095.0115 1604.926
## 228   1027.7621 1530.115
## 229   1210.0824 1577.284
```

```
## 230   1190.7509 1658.288
## 231   1046.0340 1674.584
## 232    897.9450 1422.578
## 233   1062.6458 1621.300
## 234   1300.9434 1851.848
## 235   1225.8416 1718.393
## 236   1311.3818 1751.061
## 237   1253.5921 1703.012
## 238   1061.5020 1600.600
## 239   1210.6081 1665.029
## 240   1287.1004 1692.322
## 241   1228.3192 1773.498
## 242   1383.3783 1717.648
## 243   1264.5726 1634.381
## 244   1046.0572 1594.876
## 245   1183.0412 1938.647
## 246   1000.1690 1499.727
## 247   1131.0122 1628.853
## 248   1072.8913 1694.662
## 249   1224.9227 1587.252
## 250   1260.0822 1931.235
## 251   1199.2299 1734.704
## 252   1353.7805 1691.134
## 253   1127.7293 1646.819
## 254   1162.1293 1632.458
## 255   1174.3267 1755.586
## 256   1179.2407 1904.517
## 257    950.5103 1444.786
## 258   1162.9094 1687.749
## 259   1215.2938 1668.634
## 260   1149.3436 1635.548
## 261   1267.2799 1711.419
## 262   1336.9379 1623.986
## 263   1184.1909 1696.017
## 264   1496.6981 1880.620
## 265   1601.9436 1798.904
## 266   1157.2423 1754.476
## 267   1067.9318 1684.589
## 268   1065.1065 1569.949
## 269   1196.3587 1691.451
## 270   1165.0771 1537.365
## 271   1302.3869 1609.730
## 272   1216.6980 1809.973
## 273   1182.2870 1572.888
## 274   1881.8385 2019.836
## 275   1058.7416 1700.812
## 276   1525.1839 1844.211
## 277    978.3790 1477.879
## 278   1272.4653 1682.077
## 279   1066.6216 1536.762
## 280   1173.7577 1872.871
## 281   1198.1259 1817.415
## 282   1249.0167 1690.732
## 283   1298.5626 1720.433
```

```
## 284   1072.2207 1609.150
## 285   1135.3051 1582.945
## 286   1158.9672 1592.174
## 287   1261.4535 1633.238
## 288   1041.9160 1834.535
## 289   1318.7446 1613.789
## 290   1336.6943 1716.134
## 291   1057.8061 1626.019
## 292   1400.0618 1715.608
## 293   1165.2508 1652.423
## 294   1042.9320 1544.663
## 295   1491.0012 1720.888
## 296   1332.7018 1645.627
## 297   1353.4868 1708.790
## 298   1584.5479 1724.916
## 299   1310.5644 1678.246
## 300   1183.7528 1644.825
## 301   1209.2299 1696.771
## 302   1084.5278 1594.840
## 303   1562.8672 1818.571
## 304   1311.3174 1674.323
## 305   1187.2782 1817.286
## 306   1311.7220 1654.950
## 307   1160.7742 1791.420
## 308   1153.4690 1727.633
## 309   1095.6894 1629.328
## 310   1322.6154 1734.603
## 311   1347.3345 1697.634
## 312   1237.5422 1611.976
## 313   1154.6115 1680.043
## 314   1080.8818 1595.168
## 315   1277.0716 1720.587
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## 317   1175.5300 1624.706
## 318   1353.8881 1699.631
## 319   1052.5275 1535.081
## 320   1061.0601 1710.266
## 321   1120.4853 1810.522
## 322   1275.8291 1650.525
## 323   1280.4158 1738.279
## 324   1009.2046 1510.059
## 325   1090.9182 1711.000
## 326   1438.2520 1760.498
## 327   1135.9809 1676.694
## 328   1153.1491 1786.815
## 329   1101.5808 1685.967
## 330   1228.7137 2028.494
## 331   1087.7866 1625.073
## 332   1063.7881 1530.905
## 333   1138.8888 1676.491
## 334   1488.7594 1760.498
## 335   1132.6949 1645.014
## 336   1441.0529 1743.256
## 337   1569.0436 1692.782
```

```
## 338   1210.0858 1762.723
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## 341   1306.3607 1844.646
## 342   1058.4260 1565.646
## 343   1226.4226 1640.396
## 344   1255.0705 1676.385
## 345    980.2941 1469.202
## 346   1054.1924 1552.992
## 347   1370.3808 1818.170
## 348   1208.4275 1644.456
## 349   1302.5306 1737.780
## 350   1148.0486 1957.582
## 351   1374.2461 1994.632
## 352   1456.6059 1753.007
## 353   1238.7534 1681.717
## 354   1430.8118 1610.506
## 355   1278.5817 1800.183
## 356   1165.8376 1722.174
## 357   1065.1341 1603.068
## 358   1174.3806 1612.721
## 359   1006.1762 1508.669
## 360   1263.8117 1618.747
## 361    963.8947 1427.343
## 362   1421.0188 2127.567
## 363   1191.7109 1623.139
## 364   1101.9304 1583.233
## 365   1204.5909 1618.886
## 366   1387.2748 1681.808
## 367   1326.3966 1656.965
## 368   1148.7167 1767.046
## 369   1061.5488 1619.725
## 370   1077.1077 1580.663
## 371   1154.6651 1668.892
## 372   1298.8248 1707.679
## 373   1157.4822 1614.790
## 374   1244.8857 1718.675
## 375   1106.5098 1601.836
## 376   1076.5415 1658.325
## 377   1189.8539 1675.542
## 378    988.1778 1719.367
## 379   1220.0336 1757.423
## 380   1419.3496 1838.583
## 381   1077.4138 1799.578
## 382   1281.2665 1658.896
## 383   1085.2239 1634.651
## 384   1160.8209 1641.286
## 385   1317.2849 1878.586
## 386   1189.9134 1630.994
## 387    980.0230 1480.481
## 388   1252.6244 1691.126
## 389   1008.8614 1511.370
## 390   1089.6808 1613.462
## 391   1196.8614 1829.204
```

```
## 392   1165.1391 1816.637
## 393   1382.0314 1750.090
## 394   1330.9640 1655.462
## 395   1130.4556 1664.538
## 396   1042.5823 1615.393
## 397   1549.5604 1732.028
## 398   1058.1370 1744.557
## 399   1176.0064 1567.159
## 400   1297.7584 1780.717
## 401   1220.3006 1870.777
## 402   1407.0077 1908.480
## 403   1134.7184 1644.891
## 404   1104.1961 1634.165
## 405   1156.6501 1575.820
## 406   1205.0903 1703.764
## 407   1186.3631 1635.670
## 408   1108.5711 1725.422
## 409   1193.9441 1742.420
## 410   1118.0929 1595.103
## 411   1207.2778 1757.891
## 412   1272.5804 1718.288
## 413   1403.8396 1911.918
## 414   1153.2924 1592.885
## 415   1097.0633 1566.525
## 416   1287.8372 1811.424
## 417   1244.1853 1821.913
## 418   1213.9477 1809.468
## 419   1054.2893 1555.076
## 420   1532.8478 1789.107
## 421   1274.4577 1672.815
## 422   1110.9319 1648.088
## 423   1213.4157 1802.892
## 424   1025.3439 1545.623
## 425   1104.7560 1704.929
## 426   1385.2014 1911.707
## 427   1096.4672 1526.913
## 428   1122.4395 1600.960
## 429   1142.2540 1625.453
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## 431    996.5553 1495.374
## 432   1101.0188 1825.656
## 433   1100.9763 1541.639
## 434   1111.7113 1654.571
## 435   1297.4807 1743.957
## 436   1145.1876 1733.431
## 437   1227.1198 1764.501
## 438   1030.7653 1658.661
## 439   1089.6705 1701.304
## 440   1262.9232 1812.312
## 441   1173.1465 1688.199
## 442   1270.5382 1898.958
## 443   1225.5831 1649.889
## 444   1171.5341 1780.507
## 445   1296.1380 1716.052
```

```
## 446    951.6166 1417.251
## 447   1041.6411 1587.429
## 448   1149.5890 1669.216
## 449   1180.9805 1740.688
## 450    934.4319 1466.185
## 451   1392.7911 1863.805
## 452   1269.1304 1616.142
## 453   1104.3609 1659.160
## 454   1004.6120 1537.366
## 455   1026.5475 1549.620
## 456   1147.7669 1646.795
## 457   1225.7227 1812.696
## 458    988.6369 1488.475
## 459   1182.2296 1629.827
## 460   1257.0872 1681.305
## 461   1204.0602 1719.773
## 462   1934.6036 1852.322
## 463   1417.2088 1721.075
## 464   1161.6715 1738.578
## 465   1327.8706 1793.939
## 466   1333.2987 1727.986
## 467   1206.2539 1768.089
## 468   1305.0512 1885.243
## 469   1205.6330 1831.512
## 470   1290.5138 1797.650
## 471   1077.0118 1684.850
## 472   1039.2153 1531.119
## 473   1255.8065 1591.633
## 474   1536.8775 1618.191
## 475   1378.2816 1908.716
## 476   1134.0580 1554.106
## 477   1297.9842 1673.771
## 478   1254.6013 1659.869
## 479   1333.4895 1947.629
## 480   1077.8412 1720.840
## 481   1197.5871 1745.055
## 482   1126.0315 1585.603
## 483   1219.2538 1659.006
## 484   1073.4984 1694.798
## 485   1708.0244 1928.262
## 486   1566.6935 2255.464
## 487   1143.7861 1728.322
## 488   1033.2992 1578.999
## 489   1000.7152 1501.340
## 490   1201.3131 1720.517
## 491   1127.2059 1617.820
## 492   1414.7825 1898.821
## 493   1089.1566 1580.624
## 494   1127.3970 1643.398
## 495   1806.5360 1989.654
## 496   1077.7765 1590.662
## 497   1217.8223 1745.732
## 498   1075.8126 1591.619
## 499   1439.8511 1677.399
```

```
## 500   1063.9603 1581.297
## 501   1272.8517 1792.871
## 502   1129.1324 1708.355
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## 504   1180.0635 1619.398
## 505   1177.2192 1688.366
## 506   1233.6591 1862.895
## 507   1079.1009 1546.290
## 508   1278.7141 1651.293
## 509   1145.3538 1778.144
## 510   1089.6450 1599.932
## 511    900.6001 1456.814
## 512   1085.7562 1658.430
## 513   1067.9386 1628.027
## 514   1093.6845 1587.678
## 515    986.2325 1625.959
## 516   1167.3046 1760.116
## 517   1062.0483 1668.486
## 518   1274.3064 1653.102
## 519   1156.3157 1707.790
## 520   1301.5196 1706.931
## 521   1058.3561 1636.655
## 522   1216.9953 1660.742
## 523   1155.8511 1596.925
## 524   1227.7924 1699.112
## 525   1147.4452 1764.239
## 526   1035.5387 1538.957
## 527   1245.5097 1762.318
## 528   1330.6182 1941.405
## 529   1282.2129 1786.071
## 530   1306.1278 1645.832
## 531   1115.6625 1595.200
## 532   1526.0269 1877.928
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## 553   1143.1759 1595.121
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## 6    0.38986519 0.788784527
## 7    0.76952961 1.270745950
## 8    0.53487228 0.498341874
## 9    0.43450574 0.183683449
## 10   0.54647812 0.513833599
## 11   0.78858672 0.489727358
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## 13   0.38011363 0.974925328
## 14   0.90208109 1.097561069
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## 16   0.91992661 0.399327698
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## 18   0.18801201 0.287204154
## 19   0.18362675 0.433564695
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## 23   0.60237175 0.399135001
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## 25   0.71147832 0.990043201
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```

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## 70    0.94751636   1.057569202
## 71    0.16626749   0.811253793
## 72    0.34740476   0.229807403
## 73    0.92536645   1.191003507
## 74    0.35756852   0.684716934
## 75    1.47945451   1.109720148
## 76    0.47173023   0.916231673
## 77    0.74595026   0.600382828
## 78    0.44743747   0.450712238
## 79    0.41060654   1.237940824
## 80    0.47913373   0.396849162
## 81    0.44660233   0.263310480
## 82    1.33990842   0.715268996
## 83    0.99967195   0.777401619
## 84    0.49983124   1.153542984
## 85    0.53394583   0.506681637
## 86    0.40720505   1.245786548
## 87    0.68818491   0.523906605
## 88    0.96407219   0.657811492
## 89    0.56292460   0.645686917
## 90    1.20026918   1.852878640
## 91    0.46503223   0.919998758
```

```
## 92   0.50023566   0.324600392
## 93   0.25064956   0.682474241
## 94   1.02491087   0.645753784
## 95   0.91756350   0.579461474
## 96   0.81795720   0.685227885
## 97   0.45513946   0.534694439
## 98   0.44007161   0.885905546
## 99   0.83322259   0.591893439
## 100  0.51077015   0.700565336
## 101  1.05677268   0.742901661
## 102  0.43980691   0.438899369
## 103  0.48562170   0.770213476
## 104  0.49096306   0.516469169
## 105  0.52218955   1.285605354
## 106  0.37238322   0.442681891
## 107  0.40655769   0.657703548
## 108  0.91422785   0.845768668
## 109  0.70633467   1.110525551
## 110  0.76077657   1.065890977
## 111  0.88491169   0.437518111
## 112  0.39744088   0.789448755
## 113  0.86495125   0.775605894
## 114  0.50367704   0.705898403
## 115  0.44485630   0.845815400
## 116  0.15285302   0.411062048
## 117  0.71849525   0.813894694
## 118  0.35451137   0.605002910
## 119  0.57614463   0.433023510
## 120  0.52048146   0.597597273
## 121  0.79790186   1.165191212
## 122  1.12461109   0.732247025
## 123  0.39150033   0.561266247
## 124  0.41420788   0.642853677
## 125  0.32239640   0.492266048
## 126  0.76332743   1.485556432
## 127  0.66208576   0.762363075
## 128  0.40948519   0.546889007
## 129  0.87817873   0.721228527
## 130  0.33013188   0.676186623
## 131  0.38642980   0.435109130
## 132  0.38422561   0.957551799
## 133  0.64377294   0.642578921
## 134  0.69395256   0.889115747
## 135  0.30247077   0.241120810
## 136  1.02446954   0.762657125
## 137  0.12356520   0.382537461
## 138  0.55682534   0.707023217
## 139  0.57968334   0.503520663
## 140  0.58328692   1.019611524
## 141  0.93289387   0.550557243
## 142  0.77418514   0.846285186
## 143  1.38281212   0.629719395
## 144  0.36506662   0.263460612
## 145  1.00075759   0.713122920
```

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## 146   1.26559329   0.976844601
## 147   0.16068273   0.693576230
## 148   0.29350203   0.363818911
## 149   1.17704391   1.108378904
## 150   0.60906388   0.583816696
## 151   0.91065875   1.187067554
## 152   0.29366785   0.093636790
## 153   0.58799816   0.427029115
## 154   0.57418753   0.379524503
## 155   1.21016569   0.359234297
## 156   0.21688713   0.316116893
## 157   0.57892206   0.455719076
## 158   1.06459920   0.998913257
## 159   0.57824071   1.274794433
## 160   0.13830389   0.395244931
## 161   0.64316239   0.490794220
## 162   0.57638163   0.414190812
## 163   0.56637084   0.477659593
## 164   0.55110471   0.627484510
## 165   0.49165874   0.706946437
## 166   0.58917542   0.583136637
## 167   0.56558132   0.534366626
## 168   0.52852450   0.623415933
## 169   0.36601760   0.479586332
## 170   0.65929628   0.683328534
## 171   0.45034485   0.365261915
## 172   0.23507804   0.006753674
## 173   0.38860503   0.544385181
## 174   0.18033567   0.507726133
## 175   0.19206371   0.703521286
## 176   0.51955001   0.158769603
## 177   0.16470362   0.666516225
## 178   0.24190368   0.574219661
## 179   0.36414387   0.901449411
## 180   0.16260626   0.529984378
## 181   0.65168309   0.767654623
## 182   0.62906388   0.569539340
## 183   0.39106485   0.262665634
## 184   0.69429074   0.850572621
## 185   0.44730633   0.833163040
## 186   0.54795768   0.674251512
## 187   0.64302683   0.811892763
## 188   0.47678130   1.036229432
## 189   0.34150589   0.520462735
## 190   0.48542843   0.875016640
## 191   0.61863894   0.587671234
## 192   1.06943982   0.675735025
## 193   0.72734497   0.619212582
## 194   0.08557317   0.855843254
## 195   0.56694365   0.494252223
## 196   0.85441980   0.480282194
## 197   0.39459419   0.537908869
## 198   0.79186863   1.066860917
## 199   1.53591609   1.050679831
```

```
## 200   0.54774805   0.661962715
## 201   1.23966548   0.818293153
## 202   0.20091530   0.671135602
## 203   0.19520139   0.842952516
## 204   0.96740501   0.988070014
## 205   0.63580357   0.691556980
## 206   0.11355015   0.626748414
## 207   0.31880242   0.627616360
## 208   0.53810282   0.501908035
## 209   1.09771243   0.455048039
## 210   0.49431803   1.077079728
## 211   0.61250419   0.176563110
## 212   0.10927085   0.338040513
## 213   0.34945183   0.875563107
## 214   0.64719960   1.330276821
## 215   0.66232007   0.495048822
## 216   0.73818866   0.896905855
## 217   0.52339370   0.661606314
## 218   0.35116115   0.506610340
## 219   0.33583428   0.415404326
## 220   0.38323431   0.604445990
## 221   0.24363987   1.312504059
## 222   0.68384672   0.778126944
## 223   0.58852655   0.826776874
## 224   0.89383996   0.466116325
## 225   0.39887460   0.158115147
## 226   0.46120747   0.616622141
## 227   0.19334121   0.467238394
## 228   0.35926610   0.499580386
## 229   0.33208352   0.970291402
## 230   0.80178424   0.780876492
## 231   1.34548651   1.612751654
## 232   0.88629339   1.254219220
## 233   0.56530369   0.505645664
## 234   0.50795487   0.727268282
## 235   1.09643659   1.120571819
## 236   0.41260438   0.482640453
## 237   0.91649821   1.412351365
## 238   0.47376681   0.356237828
## 239   0.57828112   1.279413425
## 240   0.81969897   0.904460859
## 241   0.44389496   0.675195614
## 242   1.00889993   1.178568396
## 243   0.65531924   0.836709367
## 244   0.59630847   0.581596129
## 245   1.00087780   0.753555304
## 246   0.78233451   0.422757679
## 247   0.90864426   0.655904132
## 248   0.67086171   0.759125550
## 249   0.35638806   0.858468676
## 250   0.63555298   0.395026466
## 251   0.77181703   1.422773818
## 252   0.62757735   0.746919705
## 253   0.43671295   0.371328463
```

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## 254  1.28623555  1.066146221
## 255  0.58220700  0.643050248
## 256  0.43944565  0.660047071
## 257  0.60011288  0.482734323
## 258  0.77184827  1.106334355
## 259  0.41969022  0.658193019
## 260  0.54582152  0.322489047
## 261  0.38854693  0.524560233
## 262  0.31045590  0.594442274
## 263  0.96083443  0.509723364
## 264  0.19780205  0.315428263
## 265  1.02527425  1.098071155
## 266  1.05164907  0.634093405
## 267  0.77163091  0.726084740
## 268  0.80729282  0.549078817
## 269  1.21915099  1.328309572
## 270  0.74194709  0.985251475
## 271  1.09269306  0.789133919
## 272  0.31955441  0.942634888
## 273  0.24981941  0.202819196
## 274  0.64727375  0.868685782
## 275  0.64407738  0.849330845
## 276  0.62405112  0.943571574
## 277  0.39098014  0.519784797
## 278  0.83015401  0.680031893
## 279  0.41270663  0.280575000
## 280  0.96124172  0.793941892
## 281  1.55916222  0.922281980
## 282  0.88987049  0.803103452
## 283  0.51944711  0.432997650
## 284  0.37400121  0.448502871
## 285  0.81095660  0.907995719
## 286  0.46858405  0.723836919
## 287  0.64952127  1.144095283
## 288  0.68861752  0.700980504
## 289  1.10450271  1.112538140
## 290  0.31699054  0.615813520
## 291  0.40762676  0.419396544
## 292  0.62470111  0.601033279
## 293  0.57249638  0.322351627
## 294  0.44712548  0.826598187
## 295  1.09062191  0.713579037
## 296  0.35452946  0.205383751
## 297  1.01507327  0.878730947
## 298  0.26851056  0.367699652
## 299  1.19034853  1.625542178
## 300  0.84944518  1.085586229
## 301  0.55038928  0.995511187
## 302  0.73827366  0.594930297
## 303  0.52291950  0.767910460
## 304  0.62445475  0.844558989
## 305  0.50901713  0.515449199
## 306  0.31625373  0.730610261
## 307  0.46809878  0.375530988
```

```
## 308   0.47807980   0.502402708
## 309   1.42189262   0.894453878
## 310   0.60913544   1.171854863
## 311   0.31213942   0.663313852
## 312   0.29924792   0.589192514
## 313   0.14604529   0.506820031
## 314   0.72944848   1.119999143
## 315   0.80734255   0.504810022
## 316   0.50554255   0.417517932
## 317   0.30904890   0.753505491
## 318   0.40099260   0.911527325
## 319   0.59615698   0.553088845
## 320   0.86032689   1.040292632
## 321   0.70993942   1.399525842
## 322   0.32717776   0.334534370
## 323   0.85944807   1.042145023
## 324   0.27602949   0.802892025
## 325   0.98531138   0.965804394
## 326   0.63642626   0.159855939
## 327   0.55375840   1.158054897
## 328   0.78123994   1.183083537
## 329   0.34192497   0.506688028
## 330   0.50095100   0.776353376
## 331   1.15549875   1.284623345
## 332   0.62472787   0.698679021
## 333   0.55061627   0.466581653
## 334   0.80055055   0.573904629
## 335   0.68676106   0.501091384
## 336   0.40532612   0.858834803
## 337   0.29038421   0.048172109
## 338   0.74111793   0.510973170
## 339   0.42533065   0.715086147
## 340   0.81916015   1.025792171
## 341   0.71696573   0.622937847
## 342   0.73338622   0.924000884
## 343   0.68123924   0.802472946
## 344   0.50931790   0.438337878
## 345   0.57898307   0.422041494
## 346   0.40267895   0.368301185
## 347   0.56414145   0.495039889
## 348   0.50864629   0.216526043
## 349   0.45357027   0.817324546
## 350   0.81667765   0.359018278
## 351   0.30767388   0.259697377
## 352   0.70045446   0.527362556
## 353   0.56672077   0.073721353
## 354   0.37896220   0.660510864
## 355   0.72176400   0.638410054
## 356   0.51338494   0.408085850
## 357   0.61163935   0.188291504
## 358   0.60658100   0.383942819
## 359   0.95345443   0.377345454
## 360   0.67453466   0.675975359
## 361   0.56584951   0.818457611
```

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## 362   0.62563957   0.615190562
## 363   1.22014087   0.889711564
## 364   0.78831929   0.369656338
## 365   0.38262208   0.570068467
## 366   0.44092835   0.610284535
## 367   0.81184787   0.448187158
## 368   1.11777719   1.043476908
## 369   0.51109555   0.736428947
## 370   0.86079495   0.727341031
## 371   0.83453990   1.027561319
## 372   0.10809634   0.591436407
## 373   1.05353530   0.655947207
## 374   0.86858025   0.443407972
## 375   0.69397042   1.038305667
## 376   0.09337629   0.020353964
## 377   0.88694251   0.731113232
## 378   0.89444492   0.608151657
## 379   0.59060812   0.097923714
## 380   1.27422424   0.952032330
## 381   0.51222980   0.184028571
## 382   0.37797377   0.343112101
## 383   0.43579578   0.513187220
## 384   0.72611923   0.501032973
## 385   0.29418654   0.461670408
## 386   0.83734099   0.643883911
## 387   0.54224830   0.430156006
## 388   0.42121182   0.443015518
## 389   0.70211559   0.955795695
## 390   0.35283013   0.684210129
## 391   0.57836398   0.342183013
## 392   0.62851740   0.842172812
## 393   0.74691164   0.719080706
## 394   0.74001631   0.443150161
## 395   0.30325498   0.333351855
## 396   0.64926895   0.713512080
## 397   0.39072549   0.512755101
## 398   0.52085871   0.837048693
## 399   0.42160878   0.852108837
## 400   0.61033821   1.015178239
## 401   1.29626006   1.780054238
## 402   0.33118855   0.500549152
## 403   0.33402212   0.216081452
## 404   0.38835317   0.848949330
## 405   0.65091940   0.723141682
## 406   0.24707331   0.522264042
## 407   0.59243254   0.509323458
## 408   0.53460499   1.230843273
## 409   0.60584761   1.013037555
## 410   0.47469903   0.462979677
## 411   0.45781131   0.847154893
## 412   0.74607546   0.683307579
## 413   0.73107189   0.594008344
## 414   0.49202434   0.364977353
## 415   0.50374081   0.213520554
```

```
## 416  0.46953803  0.324989961
## 417  0.63094311  0.379309241
## 418  0.54085847  0.523079959
## 419  0.72847862  0.873588428
## 420  0.53774091  0.505922555
## 421  0.42857225  0.788862578
## 422  0.71565586  0.702821854
## 423  0.31254077  0.366018558
## 424  0.21179359  0.470167897
## 425  0.47430630  1.403811672
## 426  0.09259063  1.095228760
## 427  1.03365136  0.699265303
## 428  0.20595662  0.358562602
## 429  0.54255947  0.763908550
## 430  0.32057522  1.720863421
## 431  0.69290193  0.358623668
## 432  0.73215865  0.277347998
## 433  0.54042382  0.310727113
## 434  0.44457874  0.541659365
## 435  0.97650641  0.648310407
## 436  0.29783146  0.144711908
## 437  0.75497231  0.763889357
## 438  0.45209044  0.500110263
## 439  0.80749873  1.055196646
## 440  0.32402527  0.355848758
## 441  0.30120824  0.457663756
## 442  0.87000076  0.695196023
## 443  1.16521612  1.165501672
## 444  0.53676190  0.599259010
## 445  0.64001975  0.785268326
## 446  0.76734375  0.643066499
## 447  0.92141221  1.083557421
## 448  0.99000311  0.971710869
## 449  0.41566876  0.784323767
## 450  0.82056023  0.609645753
## 451  0.23911817  0.202652289
## 452  0.29430044  0.128854543
## 453  0.71775160  0.601628987
## 454  0.71470084  1.140875711
## 455  0.10424954  0.557128736
## 456  1.06801070  1.346376973
## 457  0.22836979  0.519516259
## 458  0.46105607  0.406151144
## 459  0.36944020  0.384354973
## 460  0.77168069  1.325056822
## 461  0.27014320  0.479182619
## 462  0.38510256  1.496073935
## 463  0.32681038  0.490173911
## 464  0.66630652  0.589705717
## 465  0.76951999  0.878936734
## 466  1.03064085  0.635958743
## 467  0.61631410  0.629169480
## 468  0.35871444  0.182539075
## 469  0.65302671  0.756429134
```

```
## 470  0.43445703  1.274945305
## 471  0.39916426  0.336858518
## 472  0.25535067  0.170547869
## 473  0.43828909  0.613027299
## 474  0.58250246  0.530719118
## 475  0.67880520  0.506158540
## 476  0.16794845  1.074756135
## 477  0.19878380  0.734980771
## 478  0.30664725  0.448290361
## 479  0.38094066  0.655718459
## 480  0.45191651  0.127877328
## 481  0.70092714  0.409585915
## 482  0.95020643  1.704782263
## 483  0.32863609  0.526796778
## 484  0.80322028  0.451745384
## 485  0.27577454  0.452612141
## 486  1.02418767  0.356010585
## 487  0.28116174  0.985364786
## 488  0.74257638  0.458782832
## 489  0.72143976  0.650322620
## 490  0.99784597  0.597729307
## 491  0.52408239  0.952588378
## 492  0.83062826  1.188890699
## 493  0.70478184  0.333943402
## 494  0.45054743  0.505954903
## 495  0.36676106  0.482626494
## 496  0.63347832  0.259709431
## 497  0.65922342  0.811687470
## 498  0.86713223  1.440014794
## 499  0.56374831  0.839771160
## 500  0.75831584  1.149672061
## 501  0.73876447  0.438586655
## 502  0.31754693  0.822455257
## 503  0.43580465  0.923864337
## 504  1.17231389  0.621020534
## 505  0.92703677  0.938326220
## 506  0.42330336  0.582057308
## 507  0.29052230  0.260778883
## 508  0.51787728  0.567717379
## 509  0.82529872  0.654317374
## 510  1.04731850  1.061527072
## 511  0.63909586  0.557398719
## 512  0.22332203  0.207487704
## 513  0.78391651  0.635073963
## 514  0.52544413  0.613415685
## 515  1.79521047  1.412304508
## 516  0.69610814  0.826137378
## 517  1.06594254  0.457996765
## 518  0.25767359  0.467686704
## 519  0.91680015  0.735984383
## 520  0.93353149  0.946410004
## 521  0.92362292  0.694560864
## 522  0.58433439  0.212404423
## 523  0.57422729  0.823123605
```

```
## 524   0.75096241   0.802776080
## 525   0.50563862   0.684387628
## 526   1.18218577   1.029379773
## 527   0.84453948   0.646849466
## 528   0.35239059   0.324510229
## 529   0.35423955   0.922916310
## 530   0.92924229   1.009829124
## 531   0.52353890   0.829943743
## 532   0.49475877   0.751552422
## 533   0.74290040   0.717335813
## 534   0.22709384   0.589351668
## 535   1.24670336   1.467614772
## 536   0.64675924   1.507160090
## 537   0.53382066   0.313667675
## 538   0.97538707   0.657681952
## 539   0.77161501   0.544701045
## 540   0.58320818   1.625213114
## 541   0.66245672   0.605492581
## 542   0.58775362   1.051430500
## 543   0.14629095   0.555089516
## 544   0.71515897   0.851410199
## 545   0.32333980   0.421934568
## 546   0.68791732   0.248350534
## 547   1.85756918   1.586501626
## 548   1.10912475   0.488729696
## 549   0.76742678   1.122873153
## 550   0.14932790   0.845193327
## 551   0.54759046   0.585937080
## 552   0.50848313   0.573379168
## 553   1.28299985   1.389320522
## 554   0.26610730   0.543649784
## 555   0.40211210   0.295886449
## 556   0.28584839   0.462838254
## 557   0.82461744   0.817316929
## 558   0.28231811   0.191500216
## 559   0.95033239   0.956550573
## 560   0.26826046   0.501932442
## 561   0.91128200   0.475499952
## 562   0.54476247   0.695048210
## 563   1.05228502   0.721323490
## 564   0.33644672   0.640182985
## 565   0.64095169   0.234936338
## 566   0.92598043   0.834321580
## 567   1.15621407   0.778986135
## 568   0.50313156   0.640494240
## 569   0.55396901   0.020603599
## 570   0.84418945   0.645868665
## 571   0.19560229   0.475129332
## 572   0.73863463   0.357367269
## 573   0.82056865   0.648993026
## 574   0.48698128   0.683605304
## 575   0.70797410   0.626495551
## 576   0.46680874  -0.013319814
## 577   0.59487940   0.317094394
```

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## 578   0.32807085   0.409112027
## 579   0.64346522   0.547035898
## 580   0.63390942   1.242526624
## 581   0.88197700   1.508582228
## 582   0.53000912   1.000840920
## 583   0.50985940   0.923081561
## 584   0.18601824   0.478056550
## 585   0.33012037   0.965415819
## 586   0.53196106   0.604889114
## 587   0.63618755   1.300630895
## 588   0.53718119   0.338173767
## 589   0.25124302   0.679808594
## 590   0.63168497   0.518324748
## 591   0.42763048   0.566455909
## 592   0.59555435   0.610171632
## 593   0.54510100   0.760708151
## 594   0.34383976   1.015890956
## 595   0.44755107   0.363629001
## 596   0.40910124   0.494850649
## 597   0.44600213   0.547639198
## 598   0.35101452   0.249061695
## 599   1.43196285   1.384953180
## 600   0.20330267   0.765595431
## 601   0.76391308   1.293677066
## 602   0.67973139   1.710649755
## 603   0.94692503   0.954594122
## 604   0.34940882   0.850855533
## 605   0.58471001   0.422692749
## 606   0.32930709   0.452328901
## 607   0.29359635   0.424540085
## 608   0.76936527   0.718825989
## 609   0.39877253   1.001980646
## 610   0.40821739   0.093828473
## 611   0.45350895   0.759749008
## 612   0.58400308   0.847842576
## 613   0.77663264   0.688669107
## 614   0.54916178   0.496998259
## 615   0.81198906   1.000858183
## 616   0.28603899   0.483910585
## 617   0.58428142   0.334158676
## 618   1.15096284   1.451633115
## 619   1.01054880   1.184581424
## 620   1.02113357   0.452681252
## 621   0.51428474   0.573432996
## 622   0.44638315   0.540682125
## 623   1.29260187   0.807972844
## 624   1.15580402   0.826286401
## 625   0.26449573   0.431618059
## 626   0.60966482   0.844319669
## 627   0.87817904   0.953109754
## 628   0.75406281   1.582790187
## 629   0.65419346   0.507358847
## 630   0.57593644   0.448375708
## 631   1.04001557   0.311374457
```

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## 632   1.19949330   1.154186439
## 633   0.87633652   2.111345061
## 634   0.34600974   0.484484193
## 635   1.25017745   0.704946369
## 636   0.58281103   0.410809449
## 637   0.21418125   2.067914129
## 638   0.19244683   0.269595463
## 639   0.35239186   0.397811664
## 640   0.74952066   0.370991407
## 641   0.48960326   0.674035976
## 642   0.63700048   0.369885376
## 643   0.37534107   1.104308594
## 644   0.50770186   0.521918830
## 645   0.67130157   0.738325511
## 646   0.88137774   1.012155080
## 647   1.08691361   0.999918963
## 648   0.81062890   1.188878368
## 649   0.45511101   0.850834536
## 650   0.87745541   0.594250276
## 651   0.53725117   0.232733740
## 652   1.02279099   1.159805774
## 653   0.21457118   1.156115017
## 654   0.80854979   0.757060115
## 655   0.45320028   0.526491308
## 656   0.68096453   0.471944544
## 657   0.47393980   0.186024315
## 658   0.44066193   0.578567629
## 659   0.67864008   0.649026452
## 660   0.39302032   0.765807654
## 661   0.39062360   0.388124167
## 662   0.64224253   0.627926228
## 663   0.67424118   1.537070617
## 664   0.69824919   0.696871802
## 665   0.44739483   0.397211848
## 666   0.50617817   0.527032263
## 667   0.12630219   0.999631424
## 668   0.79134116   1.159138859
## 669   1.03189068   0.810206404
## 670   0.50087452   0.732530308
## 671   0.22101233   0.793188625
## 672   0.90283127   0.903565684
## 673   0.60430341   1.197280503
## 674   0.51221088   1.055097511
## 675   1.00384800   0.990517452
## 676   0.40711112   1.051668231
## 677   0.62537065   0.817759592
## 678   0.41817921   0.673392799
## 679   0.31106363   0.510430207
## 680   0.52480621   0.545653762
## 681   0.64434870   0.636429368
## 682   1.45525744   0.954793903
## 683   0.59597181   0.302542750
## 684   1.42151197   1.086063825
## 685   0.73659704   0.755111826
```

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## 686    0.33302579    0.644402150
## 687    0.59832243    0.865572143
## 688    0.42099740    0.528020353
## 689    0.55243856    0.636347053
## 690    0.44984829    0.517489524
## 691    0.57031355    0.923002103
## 692    0.40583206    0.537088924
## 693    0.71047124    0.334944776
## 694    0.69055494    0.357302530
## 695    0.42987582    1.035719376
## 696    0.68370745    1.108162854
## 697    0.58011427    0.816434135
## 698    0.75735796    0.947172212
## 699    0.62878346    0.927711639
## 700    0.45925580    0.503673327
## 701    0.62841679    0.544293387
## 702    0.71903259    0.892023460
## 703    0.53806685    0.873156675
## 704    0.44528978    0.550651423
## 705    0.90969792    0.946525578
## 706    0.72930726    0.490239380
## 707    0.67305896    0.619499551
## 708    0.61987511    0.850091897
## 709    0.79150419    0.372362559
## 710    0.28297721    0.961848897
## 711    0.42903060    0.716004959
## 712    0.59719354    0.400541826
## 713    0.26968152    0.622620943
## 714    0.43253914    0.544434513
## 715    0.40022426    0.201213747
## 716    0.55569218    0.507596760
## 717    0.75033472    0.520772058
## 718    0.44914853    0.241182958
## 719    0.58393191    0.639070143
## 720    0.60579967    0.424895497
## 721    0.94842407    0.705430997
## 722    0.38804633    0.984194777
## 723    0.99814804    1.020530041
## 724    0.49797533    0.784681397
## 725    0.30239967    0.881383728
## 726    0.74380679    0.518111094
## 727    0.54414970    0.886854742
## 728    0.33634207    0.384488983
## 729    0.70117321    0.872899241
## 730    0.60504408    0.472104594
## 731    0.72891012    0.981803607
## 732    1.21229199    1.597596072
## 733    0.44957346    0.646794199
## 734    1.25879544    1.520563596
## 735    0.48723408    0.588452309
## 736    0.35058886    0.792952359
## 737    0.26968098    0.712849879
## 738    0.30955516    1.001591509
## 739    1.75476089    1.569510133
```

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## 740   0.54994547   0.327610866
## 741   0.88442567   1.325144109
## 742   0.46611613   0.609489730
## 743   0.79291634   0.605946166
## 744   0.83914230   0.820174047
## 745   0.72991481   0.192813036
## 746   0.44903282   0.494236381
## 747   0.42859561   0.770584289
## 748   0.61787818   0.928098393
## 749   0.52042290   0.603481121
## 750   0.74589018   0.367340212
## 751   0.55435265   0.268501766
## 752   0.50431500   0.620675917
## 753   0.79097534   0.495399276
## 754   0.18321367   0.579672202
## 755   1.00006873   1.221564582
## 756   0.74495065   0.441110467
## 757   0.51162570   0.591531925
## 758   0.79501970   0.647888378
## 759   0.53687848   0.443878842
## 760   1.17834666   1.174725190
## 761   0.67683088   0.960863113
## 762   0.34868781   0.355837975
## 763   1.45261636   1.159898013
## 764   0.83171269   1.180879464
## 765   0.49485338   0.820602936
## 766   0.60758371   0.256502403
## 767   0.64082110   1.061708836
## 768   0.70431229   1.143580356
## 769   0.71888293   1.068308551
## 770   0.58428782   0.617252616
## 771   0.68957627   0.768845371
## 772   0.49935025   0.247993976
## 773   0.56491798   0.662583152
## 774   0.37308083   0.075258534
## 775   0.49478610   0.644496305
## 776   0.56871235   0.759413619
## 777   0.49529010   0.759351810
## 778   0.91019750   0.781915120
## 779   0.63936711   1.014082225
## 780   0.59354604   0.478910368
## 781   0.81835357   0.306968799
## 782   0.49620709   1.017629914
## 783   0.63599461   1.099462111
## 784   0.42802857   0.618537377
## 785   0.45214395   0.354297374
## 786   0.81047118   0.901169547
## 787   0.69846595   1.071069974
## 788   0.91683675   0.514226575
## 789   0.43407159   0.751791986
## 790   0.92212777   0.694519046
## 791   0.55764960   0.597009790
## 792   0.47164828   1.193186914
## 793   0.46790505   1.153147932
```

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## 794  0.32567760  0.566532144
## 795  0.11437252  0.820319847
## 796  0.28498099  0.533090067
## 797  0.79009520  0.338303455
## 798  0.81570899  1.365805031
## 799  0.48639628  1.591848650
## 800  0.57344299  1.321018330
## 801  0.61402475  1.320612521
## 802  0.32385993  0.458806394
## 803  0.31878343  0.700945563
## 804  0.45329716  0.610077142
## 805  0.43304424  0.381188734
## 806  0.57182388  0.945379742
## 807  0.72680274  0.967148381
## 808  0.95232850  0.446383780
## 809  0.78195247  1.785604709
## 810  0.29490744  0.360260033
## 811  0.47961456  0.298596641
## 812  0.59241903  0.983249569
## 813  1.05095417  0.914144671
## 814  0.84024202  1.178623593
## 815  0.54240916  0.220640059
## 816  1.39492954  0.949071419
## 817  0.58837490  0.636069249
## 818  0.79453641  0.794031672
## 819  0.86241727  0.520884934
## 820  0.46420329  1.183031208
## 821  0.40249064  0.711047001
## 822  0.54723908  1.064846102
## 823  0.75839675  0.587593397
## 824  0.63218620  0.701280271
## 825  0.66377849  0.388189528
## 826  0.41527353  0.860659785
## 827  0.42961583  0.520157229
## 828  0.86639727  0.838105082
## 829  0.39349597  0.291079870
## 830  0.60734244  0.759187359
## 831  0.48143289  0.281357772
## 832  0.55863683  0.344338093
## 833  0.55023657  1.365337714
## 834  0.32313127  0.927889217
## 835  0.36175676  0.512070721
## 836  0.66896877  1.473764399
## 837  0.91629548  1.252857293
## 838  0.52758922  0.255536185
## 839  0.94358079  0.724111425
## 840  0.66335705  0.606795668
## 841  0.51443453  0.448264220
## 842  0.73728631  0.656642191
## 843  0.04564265  0.319263032
## 844  0.59501970  1.808767740
## 845  0.88339669  1.147487130
## 846  1.07541049  1.707698367
## 847  0.36912481  0.588242137
```

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## 848   0.64519740   1.033756198
## 849   0.52442031   0.243890664
## 850   1.09206725   0.440516316
## 851   0.84500955   0.824157290
## 852   1.14003084   0.594331757
## 853   0.89422903   0.533404315
## 854   0.79605751   0.423435392
## 855   0.80589724   0.397849856
## 856   0.65869594   0.800178116
## 857   0.59711777   0.922565585
## 858   0.79786264   1.066906058
## 859   0.88961814   0.796428313
## 860   0.42798015   0.800924633
## 861   0.64549515   0.662485527
## 862   0.50299241   0.550019247
## 863   0.43228953   0.021694197
## 864   0.47836470   0.542286781
## 865   0.27377648   0.846322470
## 866   0.45024661   0.592907933
## 867   0.68545226   0.243705029
## 868   0.62679843   0.434808388
## 869   0.80778955   1.181381774
## 870   0.55979411   0.108832597
## 871   0.66061645   0.529881618
## 872   0.56163634   0.789831489
## 873   0.67226348   0.684014083
## 874   0.55085267   0.578684706
## 875   0.82303927   0.589928019
## 876   0.51271778   0.634733110
## 877   0.40766525   0.802414762
## 878   0.58255798   0.550579424
## 879   0.25338565   0.347823474
## 880   0.21871237   0.782906878
## 881   0.13927700   0.387276731
## 882   0.25319113   0.500477804
## 883   0.21587541   0.140105731
## 884   0.61086752   1.121463719
## 885   1.33308511   0.568322150
## 886   1.08552286   1.145091682
## 887   0.42394103   0.426224968
## 888   0.73141227   0.346976502
## 889   0.45829737   0.593066830
## 890   0.63209163   1.142452441
## 891   1.07604203   1.121485587
## 892   0.77550830   0.624183435
## 893   0.24632791   1.190223605
## 894   0.71799962   0.869564695
## 895   0.53553163   0.342921806
## 896   0.70205319   0.941849327
## 897   0.85940077   0.372309604
## 898   1.17584817   1.744301380
## 899   0.57774324   0.845287938
## 900   0.84838792   1.016955751
## 901   0.28060346   0.421594578
```

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## 902   0.60562693   0.239892117
## 903   0.46941663   1.038463322
## 904   0.43361183   1.169271825
## 905   0.43556775   0.448453642
## 906   0.97760472   0.631922751
## 907   0.28775349   0.516269919
## 908   0.53748968   0.692268917
## 909   0.93731578   0.582181371
## 910   0.74978030   0.709141423
## 911   0.88254691   0.661415015
## 912   0.50333354   1.094775792
## 913   0.62585184   0.507514674
## 914   0.60477352   0.997491253
## 915   0.50433254   0.811450495
## 916   0.90306509   0.339013401
## 917   0.84688812   0.379072709
## 918   0.34302706   0.326350084
## 919   0.79088197   0.636468163
## 920   0.34591088   0.352199974
## 921   0.76306626   0.584862700
## 922   1.06222385   1.098056373
## 923   1.21772744   0.907908938
## 924   0.54425953   0.484955394
## 925   0.41810508   0.596014228
## 926   0.92061521   0.543858865
## 927   0.70805095   0.829947937
## 928   0.82566151   0.617451627
## 929   0.15676857   0.408823036
## 930   0.65950150   0.453856185
## 931   0.51318574   0.509783852
## 932   1.03617334   0.934718683
## 933   0.99922533   0.640170318
## 934   0.68010044   0.514957313
## 935   0.29752368   0.263696811
## 936   0.61689103   1.084229040
## 937   0.62583506   1.137522386
## 938   0.69031463   1.041720785
## 939   0.56707336   0.504296883
## 940   0.59994573   0.989629059
## 941   1.22851474   1.237257585
## 942   1.08921631   0.556968140
## 943   0.82856985   1.035267448
## 944   0.65678496   0.414889579
## 945   0.96560167   0.807883445
## 946   0.34204079   0.243156592
## 947   0.85044232   0.713928501
## 948   1.26954439   1.460558500
## 949   0.18696198   0.719835026
## 950   0.67196351   0.568414773
## 951   0.92475185   0.838889576
## 952   0.23639056   0.350166227
## 953   0.69892104   0.293417781
## 954   0.45244981   0.749416318
## 955   0.60581552   0.440244778
```

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## 956  0.15124511  0.411246513
## 957  0.67220724  0.488974708
## 958  1.09525783  0.834656699
## 959  0.83594719  0.661092435
## 960  0.17439870  0.686767396
## 961  0.51456968  0.378396571
## 962  0.18635012  0.597784445
## 963  0.47845941  0.178527596
## 964  1.47322273  0.668703024
## 965  1.05408453  1.283949428
## 966  0.74157843  1.078585862
## 967  0.38119739  1.090823940
## 968  0.89770506  0.560990893
## 969  0.11052690  0.168898662
## 970  0.58851253  0.435188003
## 971  0.61495236  0.528271438
## 972  0.24519550  0.410550423
## 973  0.33337631  0.120117044
## 974  0.78034649  0.519683217
## 975  0.48001075  0.580990912
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## 977  0.73201387  1.082610572
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## 979  0.68713197  0.717372532
## 980  0.86829198  0.725586894
## 981  0.71815025  1.531307915
## 982  0.33434889  0.342325908
## 983  1.18089136  0.852197055
## 984  0.13095115  0.343854975
## 985  0.65745379  0.566231506
## 986  1.78201915  0.823907693
## 987  0.72380057  0.370480103
## 988  0.33566275  0.123847281
## 989  0.85422890  0.861473133
## 990  0.53529269  0.173007489
## 991  0.70836084  0.782411012
## 992  0.53245296  0.199155176
## 993  0.35410564  0.363735073
## 994  0.50709762  1.007212327
## 995  0.59033968  0.774579403
## 996  0.64737214  1.717809140
## 997  0.62700225  0.582743778
## 998  0.50773481  1.204920636
## 999  0.80339679  0.429615867
## 1000 1.16817956  1.533486028
```

test.main