```
R version 4.4.0 (2024-04-24) -- "Puppy Cup"
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Platform: aarch64-apple-darwin20

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[R.app GUI 1.80 (8376) aarch64-apple-darwin20]

[History restored from /Users/alperkaragol/.Rapp.history]

> # Load necessary libraries
> library(ggplot2)
>
> # Given data
> x10 <-
c(0.7198,0.5522,0.5682,0.8188,0.6676,0.8691,0.8691,0.6299,0.4361,0.639,0.2365,0.1291,0.1191,0.998,0.1275,0.155,0.124
7,0.2304,0.3406,0.8151,0.8002,0.4253,0.6273,0.5947,0.4186,0.4107,0.6984,0.1775,0.807,0.6933,0.3168,0.3877,0.4871,0.1
317,0.2453,0.6473,0.2073,0.811,0.2437,0.1796,0.217,0.3557,0.5927,0.1553,0.1941,0.782,0.3706,0.7104,0.6755,0.7017,0.8
051,0.9154,0.5923,0.3918,0.1758,0.6668,0.5385,0.2146,0.25,0.2767,0.1839,0.1621,0.3679,0.2662,0.1767,0.2807,0.243,0.2
563,0.4258,0.5873,0.1964,0.2769,0.771,0.3372,0.6759,0.6944,0.5598,0.7565,0.9517,0.5636,0.4478,0.2488,0.859,0.3148,0.
2472,0.2188,0.3969,0.8503,0.1848,0.2128,0.2962,0.7295,0.7261,0.2954,0.5402,0.443,0.4162,0.3659,0.5317,0.726,0.5376,0
.275,0.2155,0.115,0.1009,0.1537,0.1114,0.5229,0.4748,0.1822,0.4405,0.3475,0.3289,0.4862,0.8457,0.288,0.3181,0.1087,0
.3618,0.6158,0.3459,0.2865,0.1455,0.4182,0.3153,0.8975,0.804,0.409,0.536,0.361,0.2062,0.1576,0.5556,0.2621,0.7264,0.
512,0.8978,0.9592,0.7082,0.8227,0.6943,0.882,0.6536,0.9462,0.202,0.7393,0.8026,0.5231,0.446,0.2542,0.5479,0.4962,0.8
86,0.671,0.3501,0.3522,0.2701,0.1755,0.1463,0.2924,0.1536,0.7722,0.4773,0.1261,0.4991,0.3934,0.3167,0.5859,0.9306,0.
306,0.1856,0.2598,0.5493,0.6323,0.2082,0.4001,0.3879,0.4035,0.2639,0.3883,0.8406,0.3099,0.7549,0.7648,0.5801,0.7894,
0.9681,0.6566,0.3695,0.1895,0.613,0.6523,0.1684,0.4439,0.3989,0.1033,0.2802,0.4135,0.493,0.3206,0.4312,0.6271,0.5612
,0.7104,0.6678,0.4066,0.5787,0.703,0.5063,0.2663,0.1747,0.1078,0.1,0.976,0.1342,0.6117,0.614,0.402,0.1843,0.1309,0.8
84,0.908,0.737,0.1058,0.4188,0.399,0.2699,0.3598,0.5741,0.4845,0.6251,0.4846,0.3557,0.408,0.4747,0.3012,0.4176,0.499
9,0.4512,0.6177,0.5196,0.3602,0.4503,0.6884,0.4693,0.5694,0.6905,0.5981,0.7835,0.682,0.5413,0.5612,0.422,0.9257,0.90
67,0.43,0.6977,0.6563,0.2726,0.5024,0.8421,0.2747,0.9007,0.805,0.3732,0.543,0.4449,0.1568,0.3642,0.8035,0.1095,0.674
3,0.3365,0.2301,0.1337,0.1341,0.106,0.2022,0.669,0.1622,0.6729,0.6624,0.1501,0.4178,0.3773,0.773,0.2676,0.4839,0.606
,0.3275,0.1753,0.889,0.939,0.91,0.708,0.1109,0.3605,0.589,0.4397,0.2154)
> x11 <-
c(0.1122,0.935,0.943,0.62,0.1078,0.4207,0.7474,0.4482,0.6381,0.6799,0.6698,0.7673,0.7965,0.5753,0.5212,0.3167,0.8439
,0.7281,0.4241,0.39,0.4285,0.2386,0.271,0.6992,0.4982,0.2895,0.4596,0.4866,0.4234,0.6297,0.598,0.3624,0.4474,0.1653,
0.8804,0.8338,0.2894,0.6109,0.6619,0.1576,0.2911,0.8022,0.4862,0.8886,0.8308,0.617,0.7459,0.8214,0.5483,0.4633,0.907
3,0.9039,0.759,0.8946,0.8938,0.8289,0.9003,0.9798,0.7959,0.3877,0.559,0.4432,0.2228,0.841,0.921,0.1152,0.743,0.1049,
0.2983,0.2152,0.8769,0.8995,0.1873,0.8254,0.7666,0.68,0.5411,0.7851,0.2424,0.8522,0.8598,0.1872,0.8144,0.6753,0.422,
0.5269,0.7162,0.6,0.399,0.7485,0.2419,0.3211,0.329,0.8447,0.3477,0.8829,0.5591,0.9755,0.991,0.8493,0.9687,0.8833,0.9
861,0.8715,0.995,0.3425,0.9059,0.9012,0.2978,0.7435,0.6786,0.7651,0.4911,0.8173,0.2992,0.8843,0.8647,0.4788,0.5542,0
.4774,0.6336,0.6537,0.9388,0.59,0.4831,0.2052,0.958,0.957,0.1255,0.772,0.984,0.3953,0.515,0.424,0.1419,0.702,0.68,0.
982,0.557,0.75,0.2421,0.1253,0.872,0.6902,0.1601,0.4808,0.4765,0.883,0.2382,0.5988,0.849,0.4051,0.528,0.282,0.2596,0
.1629,0.7314,0.2456,0.894,0.3418,0.8457,0.8112,0.317,0.7159,0.6347,0.6679,0.4824,0.6072,0.1539,0.8457,0.8394,0.3471,
0.4025,0.2999,0.4431,0.5101,0.9031,0.901,0.7789,0.6064,0.1299,0.2848,0.2113,0.1102,0.3483,0.7229,0.2362,0.8996,0.834
,0.1965,0.7042,0.6054,0.695,0.469,0.7531,0.54,0.3819,0.208,0.675,0.988,0.1156,0.563,0.1018,0.3753,0.9,0.6576,0.5948,
0.987,0.3871,0.3384,0.565,0.1939,0.5178,0.2786,0.3334,0.2644,0.4587,0.3246,0.5359,0.3695,0.2657,0.4064,0.386,0.3663,
0.3203,0.5057,0.3845,0.5519,0.4937,0.3387,0.5183,0.86,0.7269,0.4595,0.1448,0.1618,0.1351,0.865,0.2099,0.6746,0.102,0
.8401,0.5792,0.2029,0.2305,0.1757,0.1308,0.2897,0.8626,0.9081,0.8442,0.8602,0.9259,0.8365,0.9383,0.9241,0.8053,0.528
,0.4703,0.9799,0.9753,0.5669,0.9022,0.8568,0.3426,0.7018,0.9619,0.106,0.8182,0.7135,0.2361,0.2627,0.2043,0.1713,0.33
36,0.8726,0.908,0.7389,0.4656,0.1693,0.1865,0.1307,0.944,0.2396,0.7675,0.63,0.5775,0.3271,0.1246,0.119,0.1311,0.678,
0.1422,0.6534,0.9567,0.8769,0.9038,0.9365,0.872,0.947)
> x12 <-
c(0.9509,0.8753,0.6562,0.3691,0.9724,0.9643,0.589,0.7936,0.737,0.3001,0.5113,0.947,0.8505,0.7369,0.8136,0.8882,0.765
9,0.9184,0.8926,0.7099,0.6571,0.2015,0.6457,0.6551,0.1828,0.432,0.4347,0.1177,0.2726,0.3467,0.1348,0.3143,0.3889,0.1
477,0.22,0.286,0.12,0.1571,0.1973,0.101,0.449,0.3346,0.2595,0.1956,0.1271,0.2014,0.1725,0.5377,0.626,0.236,0.1946,0.
117,0.856,0.1027,0.1244,0.1127,0.396,0.1508,0.5864,0.4548,0.3153,0.1717,0.122,0.1935,0.315,0.6049,0.7694,0.2928,0.67
15,0.6285,0.6334,0.7355,0.8656,0.5686,0.3377,0.5142,0.8722,0.9043,0.5076,0.5526,0.6016,0.53,0.4204,0.7989,0.1796,0.5
621,0.4881,0.2259,0.251,0.2889,0.1595,0.3326,0.644,0.2783,0.1438,0.1307,0.926,0.861,0.1172,0.1045,0.3221,0.157,0.327
1,0.3937,0.1382,0.2685,0.2996,0.1116,0.1707,0.1902,0.663,0.2505,0.1456,0.1113,0.848,0.815,0.657,0.1024,0.2663,0.776,
0.2847,0.142,0.1378,0.883,0.912,0.694,0.1178,0.2898,0.788,0.4512,0.1857,0.1889,0.905,0.798,0.942,0.1101,0.3366,0.233
7,0.4723,0.5122,0.2462,0.2975,0.3716,0.1683,0.2148,0.3485,0.4139,0.8209,0.896,0.499,0.6375,0.6102,0.6686,0.4733,0.83
46,0.2353,0.5271,0.5639,0.1993,0.3458,0.376,0.2469,0.2505,0.3508,0.2,0.568,0.6441,0.195,0.4371,0.3712,0.1918,0.2687,
```

```
0.41,0.654,0.28,0.4333,0.2206,0.1721,0.1472,0.1878,0.1733,0.7791,0.3232,0.7148,0.8001,0.4152,0.4882,0.4812,0.2538,0.
3434,0.7307,0.3051,0.1064,0.269,0.3133,0.2747,0.4818,0.7383,0.2453,0.1804,0.208,0.4,0.5939,0.1878,0.3424,0.3388,0.23
53,0.2219,0.2759,0.4143,0.1568,0.2824,0.6092,0.4356,0.655,0.4052,0.4138,0.3459,0.832,0.3955,0.2541,0.1618,0.1243,0.1
12,0.695,0.2097,0.4602,0.696,0.3395,0.207,0.1502,0.1194,0.1085,0.678,0.1498,0.4431,0.583,0.2577,0.1306,0.11,0.769,0.
833,0.6,0.886,0.2905,0.579,0.2606,0.1379,0.1083,0.798,0.786,0.644,0.87,0.2587,0.171,0.882,0.149,0.2906,0.2273,0.3778
,0.1955,0.1973,0.2713,0.645,0.2979,0.1534,0.1328,0.849,0.864,0.648,0.1095,0.3115,0.9526,0.9518,0.8691,0.9691,0.8736,
0.978,0.9812,0.9025,0.7229,0.971,0.1147,0.1115,0.1273,0.1118,0.2544,0.2877,0.869,0.1947,0.732,0.6343,0.3339,0.1754,0
.1608,0.2255,0.2544,0.203,0.6492,0.6192)
> x13 <-
c(0.9655,0.9546,0.6909,0.896,0.8267,0.8236,0.7624,0.9344,0.2994,0.7574,0.7067,0.5481,0.5832,0.5988,0.5761,0.412,0.90
13,0.9478,0.7054,0.9205,0.8965,0.8801,0.9234,0.9884,0.8328,0.5043,0.9854,0.8178,0.9756,0.9065,0.7394,0.8862,0.9952,0
.8969,0.7088,0.9223,0.6048,0.8823,0.853,0.6548,0.8819,0.9913,0.7247,0.4973,0.1,0.3216,0.3723,0.2403,0.18,0.1659,0.50
17,0.2273,0.8805,0.9148,0.5448,0.8459,0.9285,0.6056,0.8984,0.9696,0.8607,0.6857,0.4916,0.1913,0.5802,0.5369,0.4113,0
.6834,0.9515,0.3858,0.3881,0.5386,0.9597,0.9566,0.5134,0.9004,0.7338,0.895,0.7409,0.9188,0.7535,0.2697,0.7683,0.4231
,0.3646,0.6128,0.9873,0.2775,0.4474,0.6635,0.9771,0.9931,0.9305,0.954,0.817,0.997,0.8602,0.9967,0.3654,0.957,0.948,0
.4517,0.7718,0.6372,0.9127,0.5659,0.9222,0.725,0.6005,0.4179,0.1375,0.1631,0.1337,0.2725,0.2052,0.6799,0.306,0.6527,
0.9283,0.6777,0.596,0.5899,0.6145,0.5591,0.9886,0.3677,0.833,0.9734,0.6594,0.4946,0.2706,0.9467,0.3921,0.9909,0.6955
,0.9088,0.9346,0.5747,0.8743,0.7816,0.9171,0.763,0.7508,0.9828,0.857,0.9723,0.9535,0.844,0.9557,0.9984,0.9239,0.5997
,0.3655,0.7548,0.8682,0.398,0.6771,0.5526,0.8567,0.4662,0.6809,0.3518,0.9748,0.9665,0.3293,0.8953,0.723,0.2423,0.678
,0.9232,0.8884,0.8861,0.8222,0.9083,0.8065,0.9119,0.9441,0.7592,0.8467,0.1981,0.9184,0.8314,0.2521,0.5406,0.4379,0.1
387,0.3179,0.7896,0.4515,0.5987,0.3456,0.7574,0.5717,0.698,0.5516,0.4535,0.6417,0.2625,0.3836,0.2356,0.5505,0.4372,0
.531,0.4647,0.3051,0.48,0.583,0.3212,0.1901,0.717,0.99,0.1019,0.651,0.1041,0.3599,0.723,0.5782,0.2498,0.1069,0.1293,
0.1291,0.756,0.1548,0.5979,0.3043,0.3298,0.2691,0.5062,0.4253,0.5349,0.4195,0.3135,0.3617,0.3099,0.9362,0.8953,0.275
6,0.7116,0.6419,0.1493,0.4811,0.8686,0.1428,0.7847,0.616,0.1619,0.4182,0.3479,0.718,0.2458,0.6689,0.515,0.4424,0.193
,0.859,0.969,0.1056,0.716,0.845,0.4672,0.531,0.4763,0.2169,0.818,0.947,0.969,0.621,0.995,0.4533,0.1349,0.8297,0.6838
,0.1549,0.4179,0.3637,0.839,0.2408,0.6328,0.8123,0.7161,0.6134,0.8423,0.7489,0.8321,0.8434,0.7088,0.6617,0.427,0.975
3,0.945,0.4604,0.8358,0.7756,0.2162,0.63,0.9468,0.281,0.9664,0.9192,0.2976)
> x14 <-
c(0.8089,0.7063,0.1119,0.5855,0.9172,0.6173,0.4251,0.4815,0.6436,0.5225,0.667,0.7556,0.4819,0.5066,0.3522,0.9591,0.9
118,0.4491,0.8655,0.8087,0.7807,0.6486,0.9372,0.3403,0.943,0.9526,0.4737,0.8861,0.7975,0.4896,0.6651,0.9576,0.6917,0
.9724,0.9983,0.8458,0.98,0.9296,0.9756,0.9559,0.9994,0.6656,0.9133,0.972,0.8727,0.8671,0.8461,0.8855,0.9059,0.994,0.
9943,0.9812,0.9831,0.9943,0.9867,0.9958,0.9979,0.9792,0.8516,0.2576,0.6437,0.6535,0.3589,0.4716,0.4023,0.9251,0.3247
,0.5269,0.1283,0.7797,0.5147,0.1912,0.229,0.1805,0.3304,0.3865,0.6198,0.9986,0.999,0.9942,0.9967,0.9841,0.998,0.9966
,0.9929,0.9836,0.6048,0.9814,0.9824,0.6644,0.9307,0.757,0.957,0.7863,0.9606,0.5869,0.5955,0.64,0.817,0.7675,0.8128,0
.7931,0.6606,0.3731,0.761,0.5424,0.3123,0.1345,0.113,0.1379,0.2079,0.1472,0.6167,0.668,0.5091,0.1799,0.1164,0.881,0.
1017,0.643,0.1032,0.373,0.669,0.5337,0.3249,0.1305,0.1213,0.118,0.2127,0.1279,0.4842,0.8077,0.5114,0.8306,0.9143,0.8
183,0.8902,0.984,0.8135,0.7363,0.4542,0.8071,0.9173,0.7947,0.7947,0.5407,0.96,0.8279,0.991,0.975,0.8625,0.9179,0.972
3,0.8257,0.9834,0.9947,0.93,0.8383,0.893,0.3101,0.4143,0.2729,0.1874,0.1676,0.9008,0.1098,0.9182,0.9938,0.969,0.9816
,0.9936,0.9527,0.9942,0.9974,0.9648,0.9328,0.3842,0.9352,0.8822,0.404,0.8008,0.5616,0.2597,0.5867,0.8946,0.997,0.996
4,0.9894,0.9897,0.9592,0.9951,0.9976,0.9778,0.961,0.8406,0.9505,0.9957,0.7946,0.9763,0.9432,0.9754,0.9764,0.998,0.58
43,0.9317,0.9895,0.8793,0.7021,0.6289,0.9725,0.6639,0.9969,0.1464,0.7095,0.4271,0.1601,0.2426,0.2415,0.2796,0.1611,0
.4271,0.582,0.467,0.1815,0.1076,0.743,0.85,0.481,0.851,0.3013,0.749,0.4972,0.1473,0.1761,0.812,0.1015,0.2817,0.818,0
.3884,0.2019,0.6719,0.4043,0.6187,0.1705,0.99,0.4795,0.1749,0.7572,0.6497,0.9624,0.97,0.9139,0.8264,0.7431,0.9164,0.
6797,0.9908,0.9575,0.9892,0.9977,0.9385,0.9827,0.9717,0.9826,0.9778,0.9967,0.1041,0.9169,0.8722,0.2361,0.5416,0.4304
,0.71,0.2428,0.9555,0.2189,0.2851,0.1496,0.6512,0.4743,0.5061,0.3488,0.334,0.3271,0.2891,0.3698,0.1345,0.7051,0.5001
,0.5825,0.385,0.3963,0.5247,0.1546,0.8724,0.8124,0.1165,0.7898,0.602,0.793)
> x15 <-
c(0.4759,0.8971,0.2731,0.3864,0.1455,0.69,0.4798,0.5633,0.3987,0.375,0.5281,0.1641,0.9436,0.9352,0.1657,0.8593,0.694
3,0.917,0.5192,0.9523,0.3204,0.3747,0.2015,0.7525,0.5214,0.6168,0.4221,0.4149,0.4683,0.1454,0.9289,0.9116,0.1389,0.8
29,0.6346,0.968,0.4736,0.9599,0.6866,0.6644,0.4256,0.8531,0.7197,0.8033,0.6964,0.6271,0.6559,0.2623,0.9535,0.935,0.2
591,0.8419,0.7162,0.1767,0.5397,0.9784,0.4104,0.4676,0.2122,0.7875,0.6236,0.6831,0.5706,0.4806,0.6484,0.1627,0.9021,
0.8275,0.1458,0.6886,0.518,0.947,0.3799,0.9448,0.1879,0.3267,0.1035,0.5597,0.3934,0.4447,0.2964,0.2858,0.4955,0.86,0
.8365,0.7038,0.844,0.5505,0.4005,0.51,0.2484,0.8436,0.2437,0.312,0.1466,0.6267,0.4533,0.4784,0.3831,0.3371,0.4259,0.
1934,0.9258,0.8777,0.1263,0.8261,0.6537,0.723,0.5334,0.9407,0.1003,0.8782,0.8282,0.561,0.7464,0.5309,0.431,0.3965,0.
9088,0.2291,0.3357,0.1191,0.6355,0.4873,0.5073,0.3542,0.3194,0.5124,0.1197,0.9086,0.8902,0.1276,0.7792,0.5924,0.733,
0.3977,0.9535,0.4352,0.977,0.9604,0.5105,0.862,0.9151,0.5193,0.8217,0.9935,0.344,0.9816,0.9634,0.4004,0.915,0.8262,0
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7515,0.8105,0.5394,0.6291,0.6934,0.5108,0.5695,0.8298,0.7173,0.837,0.8268,0.592,0.5959,0.4094,0.2439,0.2666,0.5741,0
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665,0.735,0.112,0.588,0.863,0.2824,0.711,0.5034,0.4271,0.835,0.2747,0.2696,0.632,0.1422,0.3899,0.9447,0.9966,0.9958,
0.9638,0.9596,0.9629,0.9617,0.9687,0.9971,0.9941,0.9907,0.9825,0.9879,0.9512,0.9938,0.9886,0.9735,0.9167,0.9988,0.99
94,0.9888,0.9963,0.9883,0.998,0.9983,0.9922,0.9853,0.8634,0.9979,0.9957,0.9031,0.9868,0.9522,0.9683,0.9578,0.9963,0.
663,0.6209,0.5102,0.864,0.279,0.3096,0.834,0.1297,0.4315,0.1632,0.8517,0.7305,0.2261,0.5231,0.4265,0.7709,0.2502,0.7
832,0.709,0.9942,0.9951,0.7644,0.9814,0.9282,0.9882,0.9474,0.9974,0.9954,0.9932,0.9781,0.9952,0.956,0.9918,0.9981,0.
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> x16 <-
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46,0.9829,0.9068,0.9611,0.9778,0.8729,0.9849,0.9455,0.86,0.44,0.8959,0.8755,0.4355,0.7795,0.6969,0.3697,0.5881,0.776
9,0.7821,0.998,0.9926,0.825,0.979,0.922,0.6956,0.9402,0.9914,0.982,0.9805,0.964,0.9782,0.9122,0.9695,0.9765,0.9457,0
.8404,0.864,0.592,0.1934,0.2192,0.109,0.1155,0.1579,0.1542,0.5523,0.9898,0.9083,0.9894,0.9765,0.8888,0.9754,0.9986,0
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0.9967,0.8928,0.8456,0.8318,0.9106,0.7539,0.9557,0.7984,0.9277,0.9368,0.8344,0.7867,0.3065,0.9757,0.9619,0.5057,0.91
08,0.765,0.6935,0.744,0.957,0.9595,0.9535,0.948,0.9061,0.7408,0.9234,0.9883,0.8021,0.6644,0.6001,0.9894,0.9707,0.835
4,0.9103,0.8334,0.8657,0.7722,0.9711,0.801,0.2141,0.2304,0.1615,0.1226,0.11,0.5772,0.1721,0.434,0.637,0.2033,0.1047,
0.1202,0.72,0.853,0.2042,0.973,0.2714,0.2393,0.4373,0.5501,0.6631,0.4037,0.555,0.8217,0.1372,0.785,0.2844,0.8252,0.8
225,0.402,0.6661,0.4012,0.9915,0.4793,0.7874,0.3182,0.792,0.6786,0.758,0.3249,0.2631,0.9906,0.2307,0.9011,0.4817,0.8
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8,0.9237,0.4509,0.9153,0.9572,0.5306,0.731,0.6845,0.6434,0.798,0.9719,0.989,0.4961,0.5065,0.1934,0.2147,0.2385,0.191
,0.2335,0.6721,0.3529,0.2532,0.3559,0.3159,0.2552,0.3816,0.4667,0.229,0.161,0.2838,0.6778,0.8062,0.2843,0.7177,0.526
1,0.6694,0.4303,0.5838,0.2683,0.8808,0.8673,0.3931,0.6766,0.4489,0.7119,0.4406,0.8671,0.7942,0.5261,0.73,0.7603,0.59
05,0.7199,0.9595,0.597,0.54,0.8909,0.9547,0.9866,0.8403,0.9292,0.9288,0.9573,0.969,0.9962,0.1421,0.1846,0.4873,0.327
2,0.4697,0.2874,0.9256,0.6616,0.9528,0.9723,0.8161,0.9325,0.9671,0.9079,0.9612,0.9969,0.9212,0.6725,0.9663,0.8308,0.
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> x17 <-
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6,0.7067,0.875,0.9795,0.7286,0.7339,0.1207,0.6369,0.5984,0.3499,0.1635,0.1231,0.7207,0.152,0.8564,0.2288,0.8344,0.55
91,0.6062,0.28,0.2448,0.5919,0.2568,0.8484,0.6135,0.985,0.9597,0.7312,0.7741,0.744,0.5041,0.9194,0.9856,0.8777,0.992
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915,0.9431,0.9862,0.9236,0.7573,0.9404,0.9992,0.9019,0.8628,0.6666,0.5277,0.7438,0.5014,0.4296,0.6617,0.9908,0.3933,
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8,0.756,0.952,0.1145,0.663,0.986,0.3869,0.5299,0.6086,0.5232,0.69,0.5333,0.6952,0.7922,0.4502,0.4174,0.9791,0.9655,0
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526,0.9697,0.9962,0.9949,0.9273,0.9731,0.9815,0.9518,0.9701,0.997,0.2003,0.7867,0.7018,0.4264,0.358,0.292,0.6447,0.1
953,0.769,0.4074,0.9257,0.9352,0.5151,0.8433,0.6491,0.4271,0.5819,0.9295,0.1969,0.956,0.1325,0.3211,0.3025,0.4095,0.
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> x18 <-
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6,0.1946,0.279,0.2094,0.1208,0.1583,0.309,0.3145,0.3735,0.3116,0.2,0.3523,0.2583,0.1146,0.1875,0.3213,0.3429,0.4371,
0.3536,0.2365,0.352,0.2309,0.1041,0.1663,0.3413,0.3018,0.4631,0.2992,0.2333,0.3506,0.1248,0.7199,0.7467,0.2357,0.526
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31,0.8949,0.9684,0.9698,0.9221,0.8244,0.9973,0.996,0.9802,0.99,0.9701,0.993,0.9968,0.9821,0.9706,0.8009,0.9954,0.992
2,0.8878,0.9614,0.8751,0.9439,0.9064,0.9942,0.1058,0.4359,0.4686,0.1233,0.2549,0.2309,0.697,0.1452,0.3676,0.1444,0.4
567,0.4686,0.1424,0.3207,0.2969,0.769,0.2064,0.3797,0.565,0.3132,0.2181,0.1055,0.1056,0.878,0.845,0.1023,0.372,0.191
4,0.7528,0.7331,0.3588,0.3842,0.3095,0.7511,0.243,0.7014,0.6999,0.9853,0.9911,0.8553,0.934,0.8342,0.9833,0.8714,0.99
14,0.9963,0.9877,0.9877,0.9798,0.9264,0.981,0.9988,0.9536,0.9267,0.624,0.3226,0.2113,0.1785,0.805,0.708,0.8702,0.11,
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1,0.8626,0.7795,0.6708,0.99,0.9752,0.6966,0.9198,0.84,0.3606,0.829,0.9667,0.9504,0.9041,0.9175,0.9253,0.8343,0.9201,
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.58,0.477,0.888,0.7182,0.863,0.502,0.8421,0.7258,0.4456,0.8037,0.9865,0.6006,0.6492,0.7637,0.6831,0.6721,0.8831,0.73
21,0.8664,0.8859,0.7317,0.7136,0.1721,0.8601,0.6952,0.2466,0.4135,0.2862,0.2667,0.5929,0.7804,0.7806,0.604,0.7879,0.
4871,0.4603,0.6923,0.9564,0.426,0.5885,0.606,0.2348,0.1196,0.2239,0.67,0.617,0.5506,0.691,0.6023,0.2232,0.4416,0.561
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> x19 <-
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37,0.9661,0.977,0.8274,0.8217,0.6929,0.791,0.8338,0.9857,0.191,0.7842,0.6676,0.481,0.3079,0.2212,0.4327,0.3675,0.876
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978,0.8884,0.2574,0.8206,0.7093,0.3767,0.3896,0.2105,0.871,0.4627,0.901,0.3214,0.8785,0.8847,0.3546,0.5876,0.3983,0.
8197,0.3874,0.8734,0.1977,0.1078,0.2325,0.3088,0.2432,0.4275,0.8031,0.2212,0.3466,0.5657,0.1855,0.5612,0.5388,0.4023
,0.6059,0.9033,0.3932,0.3428,0.4659,0.8522,0.8665,0.5346,0.5873,0.4104,0.891,0.7414,0.9769,0.888,0.5531,0.7571,0.883
1,0.7966,0.8795,0.9883,0.7886,0.598,0.8582,0.5108,0.7492,0.9009,0.7722,0.8732,0.9811,0.7914,0.695,0.1366,0.5857,0.47
16,0.3536,0.1432,0.1024,0.6245,0.1262,0.8277,0.5626,0.2791,0.6125,0.4815,0.5117,0.6593,0.9833,0.3995,0.4848,0.6339,0
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7,0.4082,0.939,0.9268,0.6553,0.6809,0.5817,0.2769,0.8613,0.9583,0.8818,0.9912,0.9945,0.9582,0.8994,0.845,0.9979,0.81
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25,0.1022,0.3522,0.2515,0.1863,0.3339,0.1893,0.2434,0.3478,0.8071,0.1536,0.3396,0.1953,0.3587,0.7757,0.5973,0.3762,0
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,0.1443,0.1272,0.6799,0.1463,0.6025,0.884,0.5726,0.2615,0.2671,0.127,0.1087,0.5161,0.1382,0.5345,0.4516,0.7606,0.984
3,0.8163,0.7733,0.6507,0.9618,0.7195,0.9975,0.3672,0.206,0.5531,0.1662,0.2722,0.3578,0.9668,0.142,0.3136,0.1845,0.78
19,0.3585,0.5707,0.2202,0.1656,0.8348,0.1841,0.6703,0.2118,0.5732,0.9856,0.7075,0.7939,0.5809,0.9533,0.5451,0.9975,0
.5344,0.2419,0.5868,0.3381,0.422,0.5676,0.9775,0.2928,0.3745,0.8318,0.9322,0.9972,0.924,0.9455,0.8728)
> x110 <-
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3733,0.3028,0.6757,0.3636,0.7856,0.1853,0.7476,0.684,0.239,0.354,0.3184,0.661,0.2431,0.6065,0.1516,0.7367,0.6294,0.1
483,0.3305,0.3215,0.1216,0.1995,0.4908,0.9809,0.9283,0.9717,0.9612,0.8697,0.9694,0.9881,0.9129,0.8685,0.5808,0.9495,
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7,0.1736,0.8037,0.9712,0.6186,0.7421,0.6407,0.5059,0.5612,0.9939,0.4488,0.7177,0.8587,0.6046,0.6273,0.5219,0.7774,0.
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17,0.4828,0.409,0.2967,0.3347,0.4976,0.622,0.5251,0.4309,0.1555,0.2536,0.1593,0.2361,0.2007,0.7049,0.1098,0.339,0.37
44,0.1187,0.2392,0.2257,0.1186,0.1526,0.2669,0.1628,0.6432,0.7316,0.1532,0.5398,0.4162,0.1648,0.3174,0.5381,0.7714,0
.5608,0.6506,0.6931,0.6947,0.7421,0.919,0.5508,0.6275,0.93,0.4983,0.3814,0.1773,0.1694,0.1632,0.206,0.2147,0.6062,0.
1455,0.4363,0.4942,0.1324,0.367,0.311,0.1409,0.2252,0.3677,0.6163,0.2997,0.5178,0.7187,0.6336,0.7588,0.7888,0.5035,0
.5043,0.1887,0.5831,0.6533,0.2074,0.3998,0.3638,0.1626,0.2489,0.4679,0.1468,0.806,0.134,0.1912,0.2304,0.3243,0.3078,
0.1423,0.2657,0.1257,0.813,0.1447,0.1583,0.1615,0.2774,0.2054,0.1175,0.2658,0.634,0.2161,0.1197,0.1024,0.815,0.88,0.
694,0.917,0.2713,0.1512,0.856,0.1362,0.2454,0.2589,0.3575,0.2663,0.1674,0.2323,0.8064,0.9892,0.9855,0.9342,0.8649,0.
7845,0.9242,0.8934,0.9914,0.9858,0.9405,0.965,0.9713,0.9159,0.9779,0.9822,0.9404,0.8445)
> x111 <-
c(0.9944,0.9881,0.9733,0.9826,0.9554,0.9872,0.9952,0.9688,0.9477,0.7113,0.9858,0.9869,0.8284,0.9212,0.8143,0.8924,0.
8222,0.9867,0.954,0.3369,0.3641,0.1035,0.2,0.2059,0.748,0.1301,0.2941,0.1152,0.2566,0.2697,0.1252,0.1465,0.1747,0.84
8,0.1114,0.2125,0.1448,0.727,0.1266,0.1467,0.1662,0.229,0.2007,0.1241,0.208,0.4441,0.8814,0.859,0.4739,0.7198,0.5762
,0.8411,0.4968,0.7849,0.7235,0.9892,0.9906,0.8043,0.9471,0.846,0.9685,0.8861,0.9918,0.9967,0.9814,0.9871,0.9902,0.95
24,0.9848,0.9989,0.9715,0.9275,0.4109,0.8938,0.9578,0.4754,0.7853,0.5938,0.9572,0.5634,0.9018,0.9312,0.995,0.9973,0.
9491,0.9875,0.9654,0.9571,0.9807,0.9985,0.1159,0.7735,0.5631,0.3673,0.1768,0.1162,0.4903,0.2461,0.7574,0.9639,0.7637
,0.9355,0.9358,0.7493,0.9025,0.9819,0.8834,0.8137,0.3435,0.8027,0.7717,0.3779,0.5217,0.4695,0.2845,0.3693,0.6542,0.6
714,0.9933,0.982,0.717,0.9372,0.8513,0.4373,0.847,0.9783,0.8899,0.776,0.8235,0.8642,0.7175,0.8537,0.9166,0.7681,0.65
57,0.595,0.3035,0.6211,0.3472,0.1235,0.1032,0.3462,0.66,0.9524,0.9773,0.7495,0.9717,0.9278,0.7956,0.9337,0.9977,0.85
88,0.7043,0.9392,0.6443,0.911,0.8909,0.6493,0.9045,0.995,0.7895,0.7276,0.8325,0.7919,0.7229,0.9302,0.7547,0.9003,0.9
325,0.8021,0.754,0.9669,0.9223,0.9522,0.9125,0.7376,0.9207,0.9899,0.8157,0.7186,0.5226,0.9742,0.9531,0.759,0.8244,0.
7328,0.7873,0.6402,0.9451,0.1413,0.4289,0.3432,0.3521,0.1678,0.1343,0.5507,0.2399,0.6761,0.2702,0.8069,0.7129,0.6705
,0.4391,0.258,0.9746,0.3926,0.8713,0.3118,0.6834,0.5594,0.6587,0.3907,0.2895,0.9185,0.2518,0.6521,0.1529,0.61,0.6764
,0.4054,0.31,0.1878,0.5477,0.4154,0.8673,0.1096,0.4907,0.2666,0.475,0.777,0.599,0.2296,0.932,0.6533,0.2309,0.7151,0.
6964,0.3701,0.3403,0.2951,0.1458,0.2157,0.6296,0.3449,0.8808,0.8973,0.5945,0.5771,0.3645,0.6205,0.6349,0.952,0.988,0
.4422,0.2882,0.241,0.1488,0.1216,0.1782,0.1657,0.5456,0.2911,0.1135,0.26,0.2396,0.267,0.3693,0.3205,0.2013,0.2105,0.
1518,0.6742,0.6448,0.3104,0.3131,0.1725,0.8538,0.3928,0.8106,0.1334,0.757,0.1195,0.2147,0.169,0.2849,0.6212,0.158,0.
1938,0.1883,0.5878,0.6692,0.4519,0.2532,0.2022,0.4499,0.3045,0.8881,0.2532,0.1462,0.2554)
> x112 <-
c(0.3035,0.3193,0.5087,0.2555,0.2224,0.4008,0.2476,0.6717,0.8454,0.456,0.4942,0.2305,0.894,0.5618,0.9693,0.66,0.223,
0.2364,0.1717,0.1106,0.846,0.6921,0.1145,0.7078,0.1275,0.2097,0.3739,0.3436,0.2094,0.1233,0.6463,0.4279,0.9046,0.890
2,0.5237,0.7646,0.849,0.8187,0.8672,0.9843,0.751,0.6903,0.9309,0.6111,0.8578,0.9496,0.8381,0.9249,0.99,0.8648,0.7825
,0.4836,0.9598,0.9209,0.6232,0.6149,0.5802,0.6449,0.4906,0.9189,0.504,0.5562,0.4397,0.5194,0.4663,0.6017,0.7963,0.38
45,0.6258,0.76,0.4086,0.2053,0.1731,0.907,0.976,0.1345,0.1168,0.4345,0.2643,0.188,0.3154,0.1772,0.2566,0.323,0.6157,
0.1623,0.3009,0.797,0.3566,0.1437,0.1728,0.1012,0.1126,0.1855,0.1193,0.3413,0.1971,0.8459,0.6436,0.4598,0.3426,0.278
9,0.1753,0.5605,0.8375,0.4689,0.858,0.8576,0.624,0.442,0.4591,0.9485,0.336,0.8477,0.719,0.339,0.1089,0.1678,0.712,0.
862,0.2742,0.905,0.2578,0.8335,0.3689,0.8114,0.5084,0.4168,0.5807,0.9876,0.4947,0.4572,0.964,0.5347,0.1856,0.3406,0.
885,0.955,0.6025,0.1032,0.5306,0.708,0.3501,0.881,0.1629,0.649,0.843,0.3759,0.786,0.2746,0.1133,0.6477,0.2292,0.3407
,0.1372,0.1218,0.5046,0.1741,0.5885,0.2281,0.5908,0.9189,0.5951,0.5051,0.3454,0.8105,0.4931,0.9853,0.4195,0.2148,0.5
067,0.2668,0.3491,0.4683,0.9565,0.2305,0.3699,0.969,0.4772,0.1671,0.2692,0.944,0.981,0.5088,0.1088,0.4403,0.1172,0.4
099,0.874,0.4515,0.3848,0.221,0.873,0.2526,0.9798,0.4048,0.7528,0.9702,0.7045,0.7233,0.5174,0.8711,0.7178,0.9885,0.2
57,0.1764,0.2081,0.3506,0.3355,0.4802,0.518,0.2647,0.3259,0.92,0.6772,0.2357,0.244,0.12,0.1026,0.1275,0.1508,0.4692,
0.2707,0.8407,0.6519,0.3365,0.4206,0.3999,0.1431,0.2907,0.6025,0.851,0.671,0.3662,0.2248,0.1577,0.1499,0.154,0.2407,
0.7129,0.4254,0.414,0.3982,0.4226,0.4355,0.5644,0.6659,0.314,0.5161,0.7512,0.5707,0.7161,0.7537,0.6601,0.8137,0.9035
,0.6058,0.9809,0.9048,0.9698,0.9657,0.8657,0.9752,0.9856,0.9213,0.8592,0.2662,0.6644,0.8305,0.5639,0.483,0.25,0.8694
,0.496,0.9705,0.104,0.4827,0.3059,0.223,0.1721,0.1466,0.1524,0.2356,0.4586,0.805,0.4333,0.1908,0.1438,0.1222,0.1113,
0.1324,0.1523,0.4103,0.9557,0.5623,0.8937,0.9351,0.8105,0.9366,0.9922)
> x113 <-
c(0.8763,0.6629,0.233,0.5902,0.8296,0.5054,0.4178,0.2381,0.8376,0.5596,0.9734,0.7542,0.9566,0.9964,0.8873,0.9474,0.8
356,0.9814,0.917,0.9993,0.982,0.8002,0.9761,0.9047,0.6976,0.8896,0.9933,0.8881,0.6883,0.1604,0.7484,0.96,0.5944,0.66
43,0.4986,0.501,0.5215,0.9889,0.6927,0.9514,0.98,0.8453,0.8766,0.7767,0.9048,0.8629,0.9904,0.794,0.5007,0.3444,0.207
1,0.21,0.1618,0.1637,0.2683,0.5515,0.597,0.2367,0.2049,0.1465,0.111,0.929,0.4934,0.99,0.7504,0.898,0.9855,0.9864,0.8
447,0.9204,0.9399,0.887,0.9382,0.9946,0.711,0.2813,0.2175,0.1083,0.1135,0.1088,0.1273,0.1701,0.4295,0.2089,0.6948,0.
74,0.3193,0.4158,0.3794,0.4482,0.243,0.6752)
> x1 <- c(x10,x11,x12,x13,x14,x15,x16,x17,x18,x19,x110,x111,x112,x113)
> x20 <-
c(0.1264,0.1539,0.2924,0.1999,0.545,0.1188,0.1238,0.805,0.1177,0.919,0.207,0.142,0.1369,0.4978,0.4347,0.5066,0.6911,
0.2244,0.923,0.1485,0.1612,0.1771,0.1904,0.1772,0.1396,0.1227,0.1146,0.1482,0.3236,0.2173,0.2512,0.1701,0.1324,0.139
6,0.1318,0.174,0.797,0.2418,0.7731,0.1057,0.155,0.3023,0.3222,0.7062,0.7686,0.2802,0.8746,0.1504,0.1076,0.162,0.5027
,0.2199,0.778,0.6271,0.3252,0.1638,0.13,0.1546,0.1309,0.3525,0.4307,0.2376,0.5671,0.5414,0.3579,0.2057,0.1943,0.425,
0.1736,0.1551,0.911,0.1901,0.1256,0.38,0.1149,0.3487,0.1142,0.1035,0.1115,0.96,0.1161,0.1194,0.1008,0.3175,0.1337,0.
1669,0.2424,0.1618,0.1021,0.1286,0.1722,0.2726,0.1966,0.1018,0.1022,0.107,0.1305,0.1194,0.678,0.2979,0.6252,0.7152,0
.1347,0.505,0.811,0.3117,0.1074,0.1465,0.5248,0.338,0.8003,0.4122,0.2867,0.7881,0.1545,0.5291,0.1275,0.2887,0.5442,0
.3065,0.218,0.1719,0.1051,0.1478,0.2195,0.1031,0.3421,0.1735,0.1273,0.1472,0.1757,0.1677,0.5175,0.4429,0.827,0.6429,
0.7313,0.9037,0.9836,0.2676,0.1672,0.5139,0.9146,0.6344,0.137,0.2207,0.1289,0.1908,0.1464,0.9719,0.3092,0.2436,0.819
1,0.3242,0.6967,0.9976,0.9139,0.1068,0.103,0.878,0.3233,0.8847,0.9969,0.2762,0.874,0.1398,0.4429,0.1371,0.5518,0.139
2,0.4925,0.2046,0.5288,0.1826,0.3631,0.1235,0.2792,0.979,0.4921,0.4305,0.1296,0.4632,0.9777,0.7612,0.4291,0.2221,0.2
596,0.1317,0.1502,0.1219,0.1121,0.9954,0.7372,0.8971,0.9281,0.866,0.1239,0.9047,0.8189,0.9646,0.2133,0.132,0.1764,0.
4569,0.912,0.2829,0.2376,0.1332,0.476,0.2046,0.3461,0.6307,0.2118,0.6887,0.2865,0.1516,0.807,0.2449,0.3365,0.951,0.6
413,0.239,0.6206,0.9427,0.4008,0.783,0.2267,0.224,0.1468,0.9935,0.92,0.1798,0.3444,0.5039,0.6121,0.1759,0.2962,0.390
5,0.9729,0.9307,0.1098,0.1605,0.1021,0.3202,0.956,0.3965,0.8525,0.1782,0.9949,0.1227,0.823,0.1603,0.1326,0.1107,0.46
63,0.8915,0.9971,0.2245,0.9786,0.9976,0.6752,0.9034,0.9941,0.1162,0.3744,0.999,0.1116,0.1814,0.1019,0.978,0.104,0.11
07,0.1759,0.9858,0.448,0.7447,0.8394,0.1122,0.1462,0.1473,0.132,0.7256,0.566,0.1416,0.9745,0.1005,0.7479,0.1658,0.10
53,0.884,0.708,0.2171,0.7717,0.1137,0.708,0.1348,0.2767,0.944,0.5377,0.2142)
> x21 <-
c(0.211,0.7005,0.9573,0.4981,0.801,0.3239,0.7446,0.2057,0.859,0.838,0.8837,0.122,0.1791,0.1122,0.1234,0.5443,0.2365,
0.607,0.1788,0.9374,0.9088,0.1407,0.984,0.938,0.5035,0.809,0.1645,0.1629,0.9085,0.651,0.225,0.8685,0.924,0.988,0.954
```

```
,0.4757,0.1508,0.1527,0.2636,0.2878,0.1543,0.9795,0.1279,0.8781,0.2811,0.977,0.2352,0.8515,0.9816,0.1365,0.838,0.259
6,0.2151,0.3722,0.1016,0.2302,0.1587,0.348,0.1455,0.1928,0.1711,0.88,0.904,0.1,0.1094,0.9763,0.5028,0.599,0.6784,0.9
7,0.794,0.91,0.2647,0.767,0.6248,0.3551,0.9642,0.353,0.1275,0.2618,0.7589,0.1434,0.872,0.715,0.994,0.2724,0.1911,0.5
506,0.3578,0.5411,0.1681,0.6251,0.953,0.1464,0.8244,0.2253,0.789,0.6466,0.971,0.4618,0.1094,0.8001,0.1497,0.6792,0.1
248,0.2335,0.3209,0.1369,0.131,0.72,0.1178,0.6736,0.3178,0.848,0.981,0.907,0.689,0.193,0.6994,0.881,0.1052,0.4796,0.
8967,0.853,0.1568,0.1704,0.3143,0.1047,0.1309,0.3431,0.7398,0.3591,0.1844,0.1408,0.7752,0.9869,0.65,0.8492,0.9752,0.
4065,0.1295,0.9844,0.2191,0.1872)
> x2 <- c(x20,x21)
> ks.test(x1, x2, alternative = "two.sided", exact=FALSE)

    Asymptotic two-sample Kolmogorov-Smirnov test

data:  x1 and x2
D = 0.26275, p-value < 2.2e-16
alternative hypothesis: two-sided

Warning message:
In ks.test.default(x1, x2, alternative = "two.sided", exact = FALSE) :
  p-value will be approximate in the presence of ties
> # Create data frames for plotting
> df_qty <- data.frame(AlphaMissenseScore = x1, Group = " Other Nonpolar")
> df_other <- data.frame(AlphaMissenseScore = x2, Group = " rQTY-code")
> df <- rbind(df_other, df_qty)
>
> # Density Plot
> ggplot(df, aes(x = AlphaMissenseScore, color = Group)) +
+   geom_density() +
+   labs(title = "Density Plot of AlphaMissense Scores",
+        x = "AlphaMissense Score",
+        y = "Density",
+        color = "Group") +
+   theme_minimal()
>
>
```