

[illegible]

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[illegible]

[illegible]

```
6,2.083,9.028,4.861,13.194,2.083,4.895,2.098,11.972,1.418,4.255,13.475,2.837,23.944,2.113,2.128)
> x26 <- c(31.915,0.709,0,4.965,1.418,19.149,0,0.709,10.638,0,2.817,7.042,2.098,0.699,0,0,4.895,1
.399,9.091,4.93,7.857,2.878,2.878,0.719,0,0.725,0,3.65,3.704,0,3.846,0,5.385,0.769,2.362,15.702,2
8.099,4.098,0,45.378,0.855,2.609,0.87,0.917,0.926,1.923,5.051,2.083,8.696,32.955,0,9.231,11.628,1
3.793,26.087,0,0,0,0,20,0,0,0,0,0,8.333,9.091,0,42.857,0,0,0,18.182,0,0,0,0,0,3.704,3.571,0
,1.695,0,0,3.39,0,0,0,0,0,0,3.39,0,0,0,0,0,0,0,90.476,17.188,1.538,0,0,0,1.429,0,40,0,0,1.5
15,25.758,28.788,0,0,1.515,1.562,12.5,20.635,28.125,7.937,11.111,7.143,30.909,5.357,11.667,18.644
,7.692,24.444,31.818,2.041,10.204,4.651,7.143,26.19,2,5.263,24.561,9.091,7.576,9.231,1.538,4.545,
2.985,0,0,1.562,3.125,50,58.73,0,22.581,17.544,1.786,3.509,12.5,6.25,22.222,12.727,16.667,11.321,
4.255,0,8,0,11.321,55.172,3.509,6.897,21.429,23.333,36.508,11.111,7.692,5.333,18.919,27.027,23.18
8,18.571,14.085,17.073,12.048,9.091,4.494,3.371,7.865,3.371,3.371,2.247,8.989,1.064,11.881,1.887,
8.85,0,0,11.719,8.759,0.69,6.849,0,0,0,0,0.685,0.68,0,0,10.884,0,0,0.68,0,18.367,0.68,0,0.68,6.12
2,0,13.605,0,65.306,2.041,1.361,1.361,0,0,6.081,2.027,0,0,0.676,13.514,0,5.405,12.081,3.356,0,0.6
67,0,0.667,82.667,4.667,3.333,0,0,0,0.667,4.667,30.667,0,20.667,13.333,0,0,0.667,0,0,4.667,0,0,0,
2,0,0,0,0,8,3.333,27.333,0.671,0,0.676,0,0.676,0,0,4.027,1.342,0,52.703,0,0,3.401,0.676,0,2.685,2
,0,0,0,2.667,0,0.667)
> x27 <- c(2,0.667,0,0,0.671,0,0,0,2,0,0,2,0,0,0,0.667,4,0,0.667,0,2,0,0,20,5.333,0,0,0,1.333,0,0
.667,2,0,4,0,0.667,2.013,0,1.342,0.667,0.667,0,4.667,8,2.667,1.342,1.361,6.803,2.679,4.348,7.353,
2.027,8.725,4.73,10.811,0.671,2.013,61.074,4.698,0,6.04,34.228,0,0,8.784,0,0.671,0,1.351,0,0.671,
4.027,0.671,0,1.342,0,28.188,5.369,4.027,11.333,4,4.667,0,0,2,0,0,4.667,60.667,0.667,4.667,4.667,
0,0,1.333,4.667,68,0,8,8,4,1.333,0,1.333,2,0,10.067,9.524,0.68,0,0.68,1.361,0.676,0.676,0.676,0,0
,0.676,2.041,64.626,0,2.041,26.531,0,1.361,0,0.68,0.685,2.74,0,0,0,0,2.055,2.027,0.676,2.703,0,
0.68,1.361,2.041,0.68,1.351,5.405,2.027,3.378,0.676,4.73,0,0.676,1.351,2.027,31.757,16.438,1.37,5
.479,0,0,0,0,0,3.448,0.69,3.448,0,0.685,0.685,0,1.37,0,2.041,0.68,0,28.276,1.37,0,0,0.685,20.548,
0,0,3.425,0,0,0,8.904,1.37,0,25.352,1.37,0,0,0,8.219,0,0,0.685,0,2.069,0.69,7.586,0.69,0,0,0,0,0,
0,0,0,0,0.69,18.75,0,0,11.888,0,0.699,1.399,17.483,0,0.699,0,13.986,4.196,0,0.699,11.888,4.196,3.
497,0,1.399,9.155,2.797,0,0,0,2.098,0,2.797,2.098,2.098,1.399,0,2.878,0,1.681,0.909,15.741,1.887,
0.943,0.952,0.971,4.124,3.226,0,1.205,2.817,4.286,1.515,3.279,6.78,1.754,3.509,45.614,14.815,14.8
15,3.704,40.385,38,4.444,6.977,15.385,14.286,0,5.128,0,2.381,2.381,11.905,0,4.762,0,0,2.703,0,12.
903,11.111,0,0,0,0,0,0,6.061,0)
> x28 <- c(0,5.882,0,0,0,3.077,0,0,1.471,0,0,1.449,0,1.449,0,0,1.471,1.471,2.941,0,2.941,0,0,0,0,
0,1.429,0,0,90.141,11.268,2.778,0,0,0,0,0,28.205,0,1.299,0,15.584,18.667,0,2.667,0,12.162,8.108,1
2.329,20.548,5.479,13.889,5.556,22.222,12.069,5.66,10.256,20,11.321,25.49,5.714,20,12.676,8.451,2
.778,15.094,8.621,12.903,19.355,1.562,3.125,1.562,0,4.688,1.37,2.74,35.616,54.054,1.282,15.584,29
.487,7.692,2.564,10.526,27.027,16.176,13.462,21.429,7.547,3.704,27.778,7.692,25.373,26.562,36.923
,12.698,9.375,3.125,16.176,25.974,14.286,16.471,9.412,15.116,13.953,2.273,3.297,4.211,6.25,4.211,
3.093,1.942,11.111,1.802,3.448,1.709,1.695,0,0,7.639,6.164,0.68,6.803,0,0.68,0,0,0.68,0.68,0,0,13
.605,0.68,0,0.68,0,23.81,0.68,0,0,4.082,0,12.925,0,63.265,1.361,1.37,0.69,0,0,6.897,2.069,1.379,0
,0.69,8.163,0,5.479,14.384,0.685,0.685,1.37,0.685,1.37,84.459,3.356,6.04,0,0.671,0,0,5.369,22.819
,0,16.779,14.765,0.671,0,1.342,0.671,0,6.04,0,0,0,0,0.671,0,0,12.081,2.703,31.081,0.671,0,0,0,0
,0.676,1.351,2.703,0,57.432,0.676,0,2.027,1.351,0,2.013,2.013,0,0,0,2.667,0,0,1.333,0.671,0.671
,0,0,0,0.671,0.671,1.342,0,0,2,0,0,0,2.667,2,0,1.333,0,1.333,0,0,16.667,3.333,0,0,0,4.667,0,1.333
,3.333,0,4,0,0,0.671,0.671,2.013,2.74,0,0,6.25,4.167,1.389,0.699,0,7.143,1.869,2.817,6.338,0,3.47
2,1.342,8.725,1.342,4.698,60.403,5.405,0.667,8.054,38.255,0.667,0,7.383,0,0.671,0,0,0.671,0.676,4
.027,0.671,0.671,0.676,0,34.014,8.108,2.703,8.054,2.013,1.342,0)
> x29 <- c(0,4.054,0,0,2.685,58.389,0,3.356,7.383,0,0,1.342,5.369,69.128,0,8,8.667,8.725,1.342,0,
0.671,1.333,0,8.108,12.162,0,0,1.351,2.685,0.671,0.671,2.013,0,0,1.342,1.351,66.216,0.676,2.685,2
7.027,0,2.685,0,1.342,2.013,0,0,0,0,0,4.027,2.703,1.351,0.676,0,0.68,4.082,1.361,3.401,1.361,2.
721,1.361,3.401,0,7.483,0,0,1.361,2.055,32.877,12.329,0,6.849,0.685,0,1.379,0.694,0,2.817,2.113,4
.225,0,0,0.699,0,0,0,1.37,1.37,0,29.167,2.083,0.694,0,0,25,0,0,3.472,0,0.694,0,7.639,0.704,0,18.0
56,0,0.694,0,0,4.861,0,0,2.778,0,1.389,0,3.472,1.389,0,0,0.694,0,0,0.69,0.69,0,0,1.389,16.667,0,0
,11.348,0.709,0.709,1.418,12.766,1.418,0,0,12.057,4.965,2.128,0.709,14.184,1.418,4.255,0,3.546,4.
286,2.857,0,1.429,0,2.143,0,0.714,1.439,1.439,2.174,0,0,0,1.01,2.041,12.245,2.105,0,1.053,0,3.261
,2.381,2.532,1.282,7.143,1.389,5.714,1.471,1.587,4.839,6.557,0,45.763,3.39,33.333,0,59.574,8.511,
8.511,6.818,18.919,0,2.439,0,0,5.405,7.895,0,2.778,0,0,0,13.043,0,0,0,0,14.286,0,0,0,0,0,0,0,
0,0,50,0,0,14.286,0,11.765,0,4.762,3.704,2.941,0,1.887,1.786,0,6.349,1.587,0,1.515,4.545,2.985,5.
97,0,0,2.985,0,0,0,1.493,0,0,0,0,0,2.899,0,0,66.667,11.594,0,1.429,0,0,0,0,12.857,0,1.429,0,24.28
6,11.765,0,1.449,0,8.571,10,8.451,11.268,8.955,4.545,7.812,35.556,15.686,5.882,14.286,42.857,12.5
,75,16.667,14.706,0,15.909,42.222,15.789,19.149,2.174,0,5.128,0,3.571,12.069)
> x210 <- c(3.39,4.615,24.638,48.276,9.091,13.333,12.857,28.571,22.535,16.901,16.667,17.582,7.447
,6.383,3.093,3.061,9.375,0,0,12.745,1.923,4.673,7.826,5.344,1.379,0,7.333,5.333,0,9.333,0,0.667,0
,0,0.667,0.667,0,0,14,0.671,0,1.342,0,18.121,0,0,0,4,0,16.667,0,59.333,0.667,0,0,0,0,5.405,0,0,0,
2.013,14.094,0,0.671,12.838,0,0,1.351,3.356,1.342,92,3.333,5.369,0,0,0,0,2.667,26.667,0,28,15.333
,0,0,1.333,0,0,6.667,0,0,0,0,0,0,0,4,2,39.333,0,0,0,0,0.671,0,2,3.333,0,64,0,0,2.667,0,0,6,0,
0.667,0,0,2,0,0,0,0,0,0,0,0,0,1.333,0,0,2,0,0,0,3.333,0.667,0,0.667,0,2.667,0,0,17.333,2.667,0,
0,0,2.667,0,0,0.667,0,2.667,0,0,0,0,2.667,0,0,0.667,10,3.333,0.667,0,0.671,8.054,0.847,7.273,2.63
2,5.128,3.704,10.667,0.667,1.333,6.04,2.685,9.396,1.342,4.698,63.758,3.333,0.667,2.667,40,0,0.676
,8.784,0,0,0,0,0,1.333,2.667,0,0,1.333,0,34.667,10,0.667,2.667,4,0.667,0,0,1.333,0,0,0,64.667,0,4
,6.667,0,0,1.333,3.333,74.667,0,9.333,9.333,5.333,0.667,0,0,2,0,2.667,14,0,0,0,0.667,2,0,0.667,0,
0,0,1.333,60.667,0,2.667,36.242,0,5.369,0,0.671,0.671,1.342,0,0.676,0,1.754,3.509,0,0,0.68,6.081,
```

```

1.361,0.68,0,0,4.082,0.68,0.68,0.68,4.082,0,0.685,0,9.459,0,0,0.676,2.721,31.973,7.483,1.361,2.72
1,0.68,0,1.361,0,0.68,1.361,0,3.378,0,0,0.676,0,0.671)
> x211 <- c(0,0.671,2.013,0,37.162,1.342,0,0.671,0,32.886,0,0,0,0,0,0,7.383,0,0,16.107,0,0,0,0,5.
369,0,0,0,0,1.342,0,0.671,0,0,0,0.676,0,0,0.676,0,0,0,0.685,17.123,0,0,13.793,0,0,2.759,10.345,0,
0,0,16.552,3.448,0,0.69,15.172,2.069,2.069,0,0,8.276,2.069,0,1.379,0,2.069,0,0.69,0.69,1.379,0.69
,0,0.69,0.699,0,2.703,1.493,0,6.897,1.724,0,1.818,1.961,0,2.083,3.922,1.961,0,0,4.082,0,2.128,0,1
3.043,0,0,0,2.222,80,0,14.286,0,0,0,0,5.556,0,0,0,9.091,0,0,6.667,0,11.111,0,14.286,0,0,0,0,0,0,
,0,0,0,0,16.667,0,0,0,80,0,0,10,0,0,9.091,0,0,0,0,11.765,0,0,0,12.5,3.571,3.125,0,0,9.756,4.545,0
,5.769,13.793,20.968,3.125,27.692,2.817,8.219,2.299,0,42.975,2.344,3.788,0,5.797,0.714,71.831,0,2
.098,4.196,11.111,0.69,2.759,0.685,0,0,2.055,0,5.479,3.425,0.685,0,0.685,0,0,0.68,0,0,0,0,4.054,0
,0,3.333,0,0,0,0,18.667,1.333,85.333,4,4.667,0,0,0,0,0,1.333,0,0,0,6.667,2,0,0.667,17.333,0,0,1.3
33,0,0,2,0,0,9.333,2.667,2,0,3.333,0,0,6,0,6,14,0,1.333,2,23.49,25.503,0.671,16.107,4.027,49.664,
0,0.667,0,0,5.333,0,0,0.667,0.667,0.685,0.671,4.667,24.667,12.667,0,8.667,19.333,0.667,0,0,2,3.33
3,0,4,3.333,0,0,0,0,0.667,1.333,0.667,1.333,2.667,97.333,0,5.333,2.667,6.667,1.333,11.333,3.333,1
.333,8.667,0,0,2.667,1.333)
> x212 <- c(0,0.667,76.667,16,1.333,0,8.667,0,0,44,0,32.667,0,0,0,0,6,1.333,0,0,18.667,0,0,0,1.33
3,0,0,3.333,5.333,0,0,0,14,9.333,0.667,0,0,12.667,0.667,0,2,2,2.667,0.667,0,13.333,3.333,0.667,2,
18,1.333,0.667,0.667,0,2,7.333,3.333,2,1.333,8.392,6.122,6,11.333,3.333,3.333,0,2.667,9.333,0,1.3
33,24.667,1.333,0,2,1.333,3.333,0,15.333,4,0.667,13.333,3.333,4.667,22,20.667,2,2,8,0.667,0,0,0,0
.671,1.342,90.604,0,0.671,0.671,0,0.671,7.595,1.342,11.333,0,0.667,0.671,11.409,10.738,4.698,0.66
7,0,0,0,0,0,0.667,0,0,0.667,0.667,16,0,8.667,0,22.667,0.667,0.667,0,0,0,0,0,19.333,0.667,2.667,2.
703,1.342,2.013,16.779,0.676,0,2.703,0.676,16.892,4.73,9.459,0,4.73,2.685,4,48,8.667,4.667,1.333,
1.333,1.333,0.667,0,0,0,1.333,0.667,0,0,1.333,2.013,1.351,19.595,9.459,0.676,2.041,2.041,12.925,0
.68,2.721,0,0,2.041,0,2.721,0,1.361,1.351,3.378,0,1.361,26.351,0.676,2.027,0,54.054,0.676,14.189,
2.027,0,0.676,19.595,18.919,2.027,0.676,0.676,0,0,0,0.676,0,3.378,2.027,2.027,91.216,0,0,0,0,0,0,
0,1.351,25,0.676,21.622,0.676,0,4.054,0,3.401,0,0.685,0,0,45.89,0,0,0,2.74,1.37,20.548,0,2.74,0,1
.37,0,0,2.055,10.274,17.123,29.452,2.083,3.497,0,1.399,2.817,8.511,0.709,9.353,2.985,1.562,2.381,
3.2,12.8,5.6,7.258,0,0.82,7.759,5.405,0.935,2,7.447,2.174,5.814,2.439,0,1.538,0,1.961,3.846,2.128
,15.385,9.434,3.509,74.074,0,1.818,0,5.357,57.407,11.765,0,0,0,0,0,100)
> x2 <- c(x20,x21,x22,x23,x24,x25,x26,x27,x28,x29,x210,x211,x212) #After
> wilcox.test(x2, x1, alternative = "two.sided", mu = 0, paired = TRUE, exact = FALSE, correct =
TRUE)

```

Wilcoxon signed rank test with continuity correction

data: x2 and x1

V = 1840023, p-value = 3.929e-07

alternative hypothesis: true location shift is not equal to 0

>