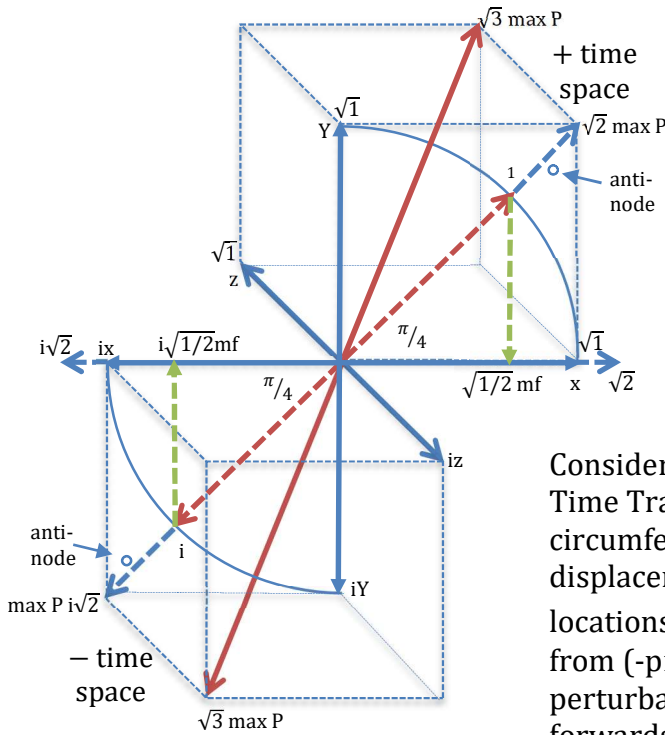


Mirrored (Time: Space) ±One Space (Im: Re axes)

Twin Vector (magnitude & direction)
Anti-Nodal t:s displacement; ±Relative Perspective
x:y:z axial square root premise

- $f'(\sqrt{x}); f'(i\sqrt{x})$ differentiable $[-\infty, +\infty]$
- $e^{i\pi} = \cos\pi + i\sin\pi = -1; [\pi, 0]$
- $A \cdot e^{j(\omega t + \theta)}$ j-operator vector $|A| \angle \theta, t = n(2\pi/\omega)$
- Peak mirrored perspective $[-\pi, 0][0, \pi]$
- Max Probability $[\sqrt{3} @ x: y: z]; [\sqrt{2} @ x: y]$
Magnitude along the $\pi/4$ direction.

Consider the 'square root (\pm One)' axial domains as the basis for the Time Trace identity waveform observed in the Halo graph from the circumferential tumbler experiment. The peak's time:space absolute displacement reaches from current time (Ho) to the prescribed (Hn) locations. The cyclical wavelength's $\sqrt{1/2}$ multiplying factor dampens from $(-\pi$ time) to the current 'now' (zero time). But, do the anti-node perturbations, identifying the λ cycles, 'link' the time:space peaks forwards or backwards across time?



A vector analog can be found in phasor electrical networks. The Im:Re Gauss plane can represent the inductance:current value as centered and cycling on the origin. The starting angle from the x-axis establishes the phase and the rotational speed (ω) corresponds to the iy-axis sinusoidal frequency. The phasor amplitude given by the Complex j-operator ($j^2 = -1 + jx0$) for $\omega = 2\pi/t$ suggests the vector components $\pm \sqrt{1/2}$ mf axial premise. The rotating complex vector $A \cdot \cos(\omega t + \theta) \Rightarrow A \cdot e^{i(\omega t + \theta)}$ yields the sinusoid time derivative $\text{Re}\{\omega A e^{i(\theta + \pi/2)} \cdot e^{i\omega t}\} \Rightarrow (A)i\omega \sim (1/2 \cos\pi)^{1/2} / \text{cycle} = i\sqrt{1/2} / \text{cycle}; \lambda \text{ mfactor} / (\text{time} \sim \text{cycle}). \{n\lambda = 2\pi r\}$

A given anti-node Twin Vector exists simultaneously in the \pm Real x-axis (Halo graph) temporal directions. The variant waveform amplitude experiences a max Probability ($\pi/4$) rotational phase shift along the Imaginary y-axis, with a corresponding value $i\sqrt{2}$. The j-operator analog provides the resulting amplitude $\{(j\sqrt{2})^2 = -2 + jx0\}$, thus validating the 'twice' \pm time:space perpetual displacement. The following derivation demonstrates the Twin Vector time:space reduction to the two-dimensional Complex plane, the anti-nodal Lambda mf and the peak amplitude.

$$\begin{aligned} \sqrt{2} &\Leftrightarrow \sqrt{2i^2} (\pm \text{diagonal}) \\ &= \sqrt{2} + i\sqrt{2} (\text{time:space MaxP}) \\ &= \sqrt{2}(i + 1) \\ &\Rightarrow (1/2)\sqrt{2} (i + 1) \text{ T: S |displacement|} \\ &= \sqrt{1/2} (i + 1) \text{ TimeTrace } \lambda \text{ mfactor} \end{aligned}$$

Complex Identity · 4D Reduction

$$\frac{1D}{2D} \Rightarrow \frac{\sqrt{1/2}}{1} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \Rightarrow \begin{matrix} \text{Im} \\ \text{Re} \end{matrix}$$

Cross Product

$$\begin{aligned} x_1 \times y_1 &= z_1 \\ x_1 \times y_i &= z_i \\ z_i \times x_1 &= y_i \\ y_1 \times z_i &= x_i \end{aligned}$$

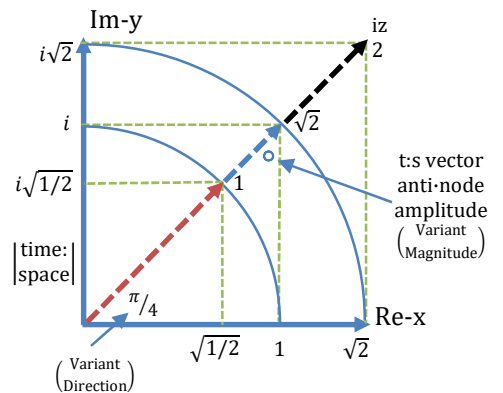
$$\lambda \text{ peak amplitude } \left(\frac{V^2}{r} \right) \sim iz^2$$

$$f'(iz^2) = 2iz$$

suggests a centripetal t:s analog

$2 \times \sigma$ anti-node amplitude

$$\left| \frac{z}{x} \right| \sim \left\{ \frac{\sqrt{2}}{\sqrt{1/2}} \right\} \Rightarrow \text{twice axial component}$$



Time:Space Perturbation
Expressed along Halo
Graph TTC identity.

(otc) physical
Column

Time
Space

RR (t:s) Halo

$U_o)50k$

4.15.9
Total H Mod
12.25.11

7 files (277)

Time Trace Nodes
45° identity (t : s)
2x standard
deviation

1/∞ (— values) 4.5 6.36 9.0 12.78 { (1/2 Pn - 1) ∏_{i=1}[∞] P_zⁿ } Pi

RTN	H0	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	H20
0	1344	1401	1400	1316	1275	1358	1355	1365	1303	1323	1351	1262	1353	1375	1345	1347	1368	1330	1306	1280	1398
1	1401	1363	1337	1376	1282	1213	1214	1359	1317	1275	1283	1331	1332	1331	1254	1311	1296	1305	1354	1370	1330
2	1301	1265	1277	1282	1300	1355	1302	1344	1317	1339	1300	1297	1344	1350	1301	1319	1304	1363	1269	1256	1283
3	1284	1324	1311	1351	1293	1334	1333	1322	1346	1243	1237	1344	1341	1293	1368	1305	1366	1327	1356	1333	1373
4	1246	1361	1317	1330	1310	1329	1338	1297	1330	1363	1254	1292	1261	1272	1257	1222	1299	1307	1279	1292	1349
5	1228	1295	1284	1390	1390	1355	1262	1329	1259	1381	1343	1317	1341	1274	1403	1254	1260	1306	1383	1303	1351
6	1263	1356	1353	1371	1327	1268	1300	1330	1336	1327	1333	1285	1309	1337	1309	1375	1284	1336	1250	1335	1300
7	1246	1329	1262	1351	1328	1293	1322	1315	1252	1325	1360	1361	1298	1346	1303	1305	1359	1342	1321	1339	1338
8	1366	1282	1252	1210	1322	1334	1334	1306	1263	1267	1360	1306	1273	1336	1263	1312	1231	1331	1313	1258	1229
9	1341	1332	1322	1366	1290	1298	1339	1348	1329	1301	1330	1297	1352	1276	1323	1313	1410	1254	1253	1331	1308
10	1380	1271	1314	1343	1320	1310	1253	1246	1268	1265	1346	1281	1290	1333	1318	1258	1293	1251	1225	1293	1281
11	1459	1304	1287	1308	1265	1345	1286	1324	1363	1303	1290	1308	1341	1306	1367	1309	1299	1390	1323	1212	1330
12	1250	1315	1328	1264	1332	1269	1371	1320	1342	1336	1346	1274	1314	1333	1323	1341	1308	1328	1256	1309	1324
13	1406	1329	1342	1337	1289	1311	1324	1307	1300	1316	1346	1347	1342	1351	1296	1350	1264	1324	1304	1303	1339
14	1415	1298	1322	1312	1202	1327	1317	1238	1285	1310	1304	1269	1329	1284	1339	1338	1357	1386	1266	1333	1295
15	1299	1268	1322	1276	1347	1308	1355	1278	1294	1331	1330	1270	1334	1316	1308	1279	1392	1308	1274	1321	1317
16	1263	1309	1323	1318	1317	1273	1304	1262	1316	1353	1230	1289	1393	1357	1316	1333	1316	1248	1292	1342	1376
17	1429	1303	1356	1320	1269	1367	1329	1246	1270	1275	1301	1328	1339	1288	1308	1313	1225	1275	1269	1322	1255
18	1399	1286	1365	1336	1321	1206	1275	1313	1311	1362	1315	1339	1335	1355	1325	1245	1246	1344	1378	1375	1322
19	1268	1329	1332	1301	1328	1316	1330	1296	1397	1345	1348	1235	1328	1270	1296	1276	1305	1384	1372	1315	1360
20	1341	1313	1377	1385	1313	1331	1341	1377	1306	1379	1339	1343	1302	1305	1311	1349	1290	1372	1343	1369	1327
21	1295	1303	1274	1322	1367	1295	1278	1293	1362	1345	1362	1385	1280	1278	1420	1314	1312	1325	1316	1329	1313
22	1384	1351	1384	1315	1281	1343	1341	1336	1293	1355	1304	1332	1310	1372	1273	1372	1414	1330	1289	1317	1334
23	1300	1260	1294	1282	1344	1256	1269	1342	1325	1346	1297	1338	1309	1290	1265	1314	1384	1359	1332	1279	1330
24	1339	1293	1288	1356	1289	1330	1390	1337	1319	1305	1347	1336	1277	1350	1332	1344	1329	1327	1364	1265	1307
25	1294	1280	1275	1281	1287	1360	1333	1238	1399	1283	1331	1314	1275	1332	1270	1307	1369	1230	1353	1352	1211
26	1251	1327	1299	1291	1347	1366	1285	1273	1315	1303	1264	1296	1328	1309	1367	1326	1305	1222	1337	1273	1264
27	1329	1320	1353	1301	1298	1301	1302	1323	1326	1283	1345	1332	1325	1340	1312	1398	1300	1314	1295	1407	1253
28	1314	1269	1327	1330	1248	1369	1352	1294	1297	1374	1274	1334	1357	1284	1348	1334	1244	1283	1308	1301	1319
29	1438	1299	1390	1374	1389	1312	1359	1339	1276	1279	1327	1285	1242	1340	1341	1344	1288	1306	1365	1370	1293
30	1244	1371	1341	1237	1358	1282	1294	1271	1292	1284	1336	1333	1366	1194	1317	1302	1323	1322	1396	1336	1285
31	1404	1321	1293	1263	1304	1308	1287	1428	1363	1340	1276	1330	1210	1324	1268	1333	1330	1389	1335	1348	1274
32	1249	1403	1256	1342	1320	1357	1345	1316	1363	1317	1280	1275	1294	1291	1327	1347	1285	1278	1333	1235	1253
33	1283	1338	1287	1263	1317	1341	1416	1359	1300	1244	1286	1374	1340	1380	1262	1323	1383	1323	1236	1341	1371
34	1240	1341	1300	1280	1354	1323	1295	1337	1287	1276	1259	1303	1322	1307	1326	1289	1321	1223	1347	1217	1330
35	1258	1324	1301	1389	1400	1306	1278	1380	1384	1298	1337	1332	1320	1288	1330	1300	1272	1269	1371	1338	1319
36	1410	1289	1260	1297	1343	1338	1328	1301	1316	1282	1392	1387	1309	1315	1281	1326	1331	1375	1324	1321	1349
37	1315	1280	1291	1282	1325	1314	1265	1312	1285	1282	1337	1338	1274	1240	1331	1274	1335	1313	1232	1259	1328
TOT	50277	50280	49996	49998	50000	50000	50001	50001	49998	50001	50000	49999	49999	50000	50003	50001	49997	49999	49999	49997	50000

Physical bias

$\pi n(1 + P_z)$

19 + 13.43 = 32.43

μ 1315.79
 $\sigma N_8 = 81.9$; $\Delta = 1379.69$
 $\sigma N_6 = 80.7$; $\Delta = 1396.5$
 $\sigma N_5 = 79.6$; $\Delta = 1395.4$; $\Delta/\mu = 1.0605$
 $\sigma N_4 = 79.6$; $\Delta = 1395.4$; $\Delta/\mu = 1.0605$
 $\sigma N_3 = 79.6$; $\Delta = 1395.4$; $\Delta/\mu = 1.0605$
 $\sigma N_2 = 79.6$; $\Delta = 1395.4$; $\Delta/\mu = 1.0605$
 $\sigma N_1 = 79.6$; $\Delta = 1395.4$; $\Delta/\mu = 1.0605$
 $\sigma N_0 = 79.6$; $\Delta = 1395.4$; $\Delta/\mu = 1.0605$

$\frac{43}{760} = 0.0566$ 760 Nodes, P_v 0.05058
 $59,840, 43V_{Hi} \mu$ 1391.63, calc) 1382.34, 1.0067
 v_i 1.0576

Probability of 6 colinear anti-nodes along 19x19 identity.

$\left(\frac{1}{38}\right)\left(\frac{40}{722}\right)^6 = 7.6 \times 10^{-10}$
 $\left(\frac{1}{38}\right)\left(\frac{40}{(19 \times 38)} \frac{(2 \times \sigma)}{pi(2pi)}\right)^6$

*Node is displaced to adjacent time nodes. Or, $i(\text{odd}) \} i$ coefficient at P_z^3 results in reverse value; but refraction not expected.

∴ cause = bias $N_2 \mu$ 1379.5 v_i 1.0484; near expected variance value for single P_+ node

*not to disregard idea of exact concavity

Halo Graph “Time Trace” Pythagorean Derivation

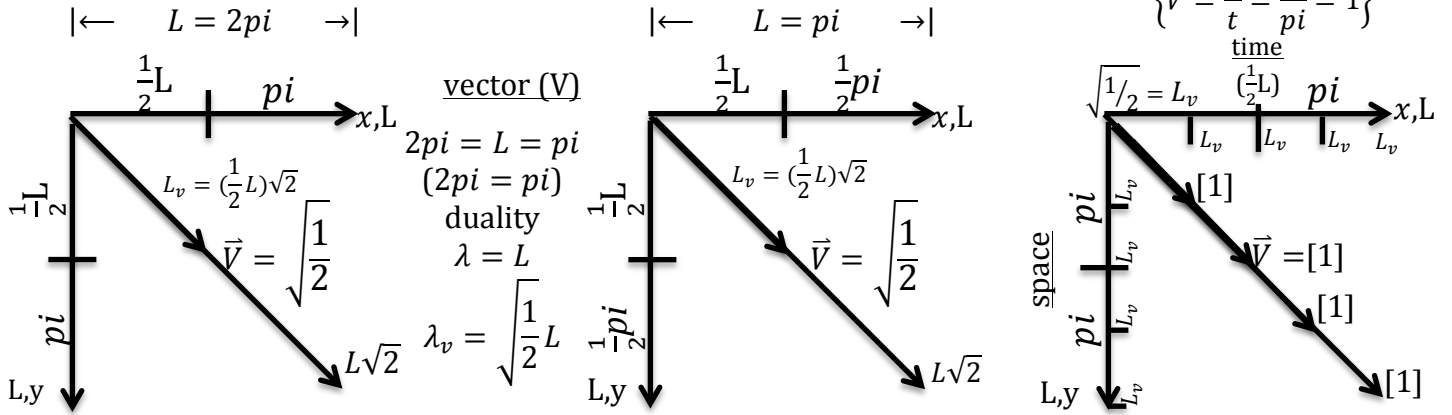
The author has conducted an extensive study of random systems in search of validation for the long-standing mathematical contention of probability invariance. The data involved with a circular random tumbler (roulette wheel) has yielded unique results. In a circulating system, the events can be tracked across time, outcome to all prior outcomes (x-axis), and across space, circumferential displacement events to all prior events (y-axis). If a principle of variant sequential probability exists, then the data should provide non-uniform results. An extant dimensional structure would need to match real world results. Further, a mathematically based physics theory would need to “predict” the variant observations. The following analysis prescribes the observed anomaly (Time Trace) contained within the “Halo” graph on pg 31 of the Probability Variance Theory manuscript.

The observed line of nodal peaks, the “Time Trace,” in the Halo graph represents a standing waveform. The following Pythagorean derivation defines the time:space axes for this vector identity as requiring the $(1/2)^{(1/2)}$ factor length corresponding to the observed anti-nodal peaks. The de Broglie expression $2\pi(r) = (n)\lambda$, (factor, $r = 1$) represents the vertical “spatial” component and the step by step distance backwards across “time” for each prior sequential outcome, defines the horizontal component. Here's the key. The circulating tumbler represents a waveform for $n=1$ leading to the isosceles identity. The $2\pi = \lambda$ circumference of the tumbler is the wavelength. The “Time Trace” corresponds to the factored $(1/2)L$ length given for both the x and y components reflected along the identity for its uniform axis and the anti-node's amplitude. Therefore, the wavelength $L = 2\pi$, for $L = 38$ elements in length is given for the circumferential waveform “string.” The tumbler's random cycles “event to event” displacement arcing across x:y, “distance and time,” results in a *scalar* analog to the waveform for *velocity and frequency*. Thus, the “Time Trace” identity, the velocity *vector*, for the given x:y components is $V = (d/t) = \pi/\pi = 1$. The frequency can be considered $f = 2V/L = 1/\pi$.

With the resultant velocity vector (identity) represented by unit “1,” the Pythagorean value for the component x:y axes is therefore of length $L_v = \sqrt{1/2}$. Each of the tumbler's cyclical events produce an x:y coordinate. For the x:y waveform $L/2 = \pi$, $V = (1/2)L(\sqrt{2}) = (L)L_v = (2\pi)L_v$. Given $(L \sim P)$ (38 elements)) for all possible outcomes, the identity reflects velocity and probabilistic events. Frequency (f) is a function of $(P \sim L \sim V)$. For the scalar components of V ; $f = 1/\pi$. The waveform $(P \sim L)$ suggests, $f = 1/(2\pi)$. However, $[1/2, 1](P \sim L)x:y$ adds to produce the resultant vectors. Thus, $V = L(f)$; $1 = [L]1/\pi$; and $1 = [2L]1/(2\pi)$; yields $\{L = \pi\}$. Therefore, the velocity vector $V = L(L_v) = \{\pi(L_v)\}$ for the x:y (π) components and all 3 sides express the nodal L_v “factor.” The first term length for the components' and the identity's string of anti-nodes is therefore $\{(\pi)L_v\}$. The waveform of peak anti-nodes are identified along $((\pi)(L_v)^n)$.

The “step by step” L_v multiplying factor's waveform cycles across the axes of $(\pi)\{time\ and\ space\}$, thereby producing the dampening scale of isosceles congruence. This produces the linear anti-nodal peaks along the observed identity. At the (L_v) factored term limit of infinity, the nodal increments (tends to zero). The variant twice standard deviation values for the anti-nodal amplitude peaks are defined by the PVT manuscript's circle:cycloid treatment. Possibly, this is a variant effect occurring naturally in *all circulating random* systems, from the atomic shell to a 26-inch roulette wheel to perhaps planetary and galactic anomalies. Further, the infinite term limit (zero *time*), applied to the Relativity gamma factor, leads to the interesting result $v = c$.

Time:Space data field Intrinsic Twin Vectors



All components $x=y$ (fractions of L) $\sim V \sim L_v$. The resultant vector (V) $L_v = L\sqrt{\frac{1}{2}} = (2pi)\sqrt{\frac{1}{2}}$ and its scaled components are synchronized with scalar (V) at location $(1/2L)=x:y=pi=V= L_v = \sqrt{1/2}$. Thus the 3 string lengths match with $2x^s$ anti-node σ amplitude along (V).

$$\vec{V} = L_v f$$

$$\vec{V} = \frac{(2pi)\sqrt{\frac{1}{2}}}{2pi}$$

$$\vec{V} = \sqrt{\frac{1}{2}} = L_v$$

$$\vec{V} = L_v f$$

$$\vec{V} = \frac{(pi)\sqrt{\frac{1}{2}}}{pi}$$

$$\vec{V} = \sqrt{\frac{1}{2}} = L_v$$

All static components $x = y = \sqrt{1/2}$ along the domain $L:L$, stems from the resultant $(x/y)=1$. Vector direction is also defined, $(pi \times 1) \cos 45 = pi\sqrt{1/2} = piL_v$.

Domain of
 $V = L \times L$
 $f = \frac{1}{L}$

Time Trace Standing Wave Form

$$L_s = \frac{V}{f_s}$$

$$L_s = \left(\frac{1}{2}L\right) \left(\sqrt{\frac{1}{2}}\right)^n ; \left(\frac{1}{2}L\right) = \frac{1}{f_s} = \frac{\lambda}{2} = pi \text{ {Sync Point}}$$

$$L_s = pi(L_v)^n ; n=0, 1, 2 \dots$$

Intuitively, random motion might be considered analogous to speed. Consider the scalar 'time:space' identity. The $\frac{1}{2}$ lambda (L) anti-node symmetry, establishes the ' $\frac{1}{2}$ cycle' wavelength. The important feature for the $x:y$ components and the velocity vectors is the necessity to maintain the 'string' count equivalence, for all elements to synchronize the 3 waveforms. The velocity scalar magnitude $\{V = d/t = pi/pi = [1]\}$ is factored by (side to side)(magnitude times the vectors) $\{x:y \text{ coordinates } (\frac{1}{2}L) [\sqrt{1/2}] = pi[L_v]\}$. And the {velocity vector $V = \sqrt{1/2}[1] = L_v$ }. Notice fractions of circumferential ($L \sim L_v$), obey the Parallelogram Law of Vector Addition, while the static scalar 'time:space' template obeys the Dot Product Cosine Rule $((pi \times \sqrt{1/2}) \cos 0)$. Across both vectors (side to side) $((\sqrt{1/2} \times 1) \cos 0)$. And, yields scalar (V) direction $(pi \times 1) \cos 45 = piL_v$.

The anti-nodal identity suggests geometrically inverse values for each of the intrinsically opposite "twin vector" component lengths. Pythagoras' Constant ($\sqrt{2}$) and the Time Trace Constant ($\frac{1}{\sqrt{2}}$) express all of the components' limit values, respective of unit '1.' The associative contrast $\{1: \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}: 1\}$ for the resultant vector's sides prescribe the scalar product unification. Standing waveform properties are therefore observed: magnitude, direction, $(\frac{1}{2}\lambda)$ anti-node amplitude, 'string' equivalence and $(x:y)$ frequency unity.

(S) Returns

Current OTC

50k sample outcomes were graphed using data from a roulette wheel. This allowed for events to be plotted in time : space

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	00
0	0	20	1	24	5	28	9	32	13	36	17	33	14	21	2	25	6	29	10	12	31	8	27	4	23	16	35	18	37	15	34	11	30	7	26	3	22	19
1	18	0	19	4	23	8	27	12	31	16	35	13	32	1	20	5	24	9	18	30	11	26	7	22	3	34	15	36	17	33	14	29	10	25	6	21	2	37
2	37	19	0	23	4	27	8	31	12	35	16	32	13	20	1	24	5	28	9	11	30	7	26	3	22	15	34	17	36	14	33	10	29	6	21	2	21	18
3	14	34	15	0	19	4	23	8	27	12	31	9	28	35	16	1	20	5	24	26	7	22	3	18	37	30	11	32	13	29	10	25	6	21	2	14	36	33
4	33	15	84	19	0	23	4	27	8	31	12	28	9	16	35	20	1	24	5	7	26	3	22	37	18	11	30	13	32	10	25	6	25	2	21	36	17	4
5	10	30	11	34	15	0	19	4	23	8	27	5	24	31	12	35	16	1	20	22	3	18	37	14	33	26	7	28	9	25	6	21	2	17	36	13	32	29
6	29	11	30	15	34	19	0	23	4	27	8	24	5	12	31	16	35	20	1	3	22	37	18	33	14	7	26	9	28	6	25	2	21	36	17	32	13	10
7	6	26	7	30	11	34	15	0	19	4	23	1	20	27	8	31	12	35	16	18	37	14	33	10	29	22	3	24	5	21	2	17	36	13	32	9	28	25
8	25	7	26	11	30	15	34	19	0	23	4	20	1	8	27	12	31	16	35	37	18	33	14	29	10	3	22	5	24	5	21	2	17	32	13	28	9	6
9	2	22	3	26	7	30	11	34	15	0	19	35	16	23	4	27	8	31	12	14	33	10	29	6	25	18	37	20	1	17	36	13	32	9	28	5	24	21
10	21	3	22	7	26	11	30	15	34	19	0	16	35	4	23	8	27	12	31	33	14	29	10	25	6	37	18	1	20	36	17	32	13	28	9	24	5	2
11	5	25	6	29	10	33	14	37	18	3	22	0	19	26	7	30	11	34	15	17	36	13	32	9	28	21	2	23	4	20	1	16	35	12	31	8	27	24
12	24	6	25	10	29	14	33	18	37	22	3	19	0	7	26	11	30	15	34	36	17	32	13	28	9	2	21	4	23	1	20	35	16	31	12	27	8	5
13	17	37	8	3	22	7	26	11	30	15	34	12	31	0	19	4	23	8	27	29	10	25	6	21	2	33	14	35	16	32	13	28	9	24	5	20	1	36
14	36	18	37	22	3	26	7	30	11	0	15	31	12	19	0	23	4	27	8	10	29	6	25	2	21	14	33	16	35	13	32	9	28	5	24	1	20	17
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16	32	14	33	18	37	22	3	26	7	30	11	27	8	15	34	19	0	23	4	6	25	2	21	36	17	10	29	12	31	9	28	5	24	1	20	35	16	13
17	9	29	10	33	14	37	18	3	22	7	26	4	23	30	11	34	15	0	19	21	2	17	36	13	32	25	6	27	8	24	5	20	1	16	35	12	31	28
18	28	10	29	14	33	18	37	22	3	26	7	23	4	11	30	15	34	19	0	2	21	36	17	32	13	6	25	8	27	5	24	1	20	35	16	31	12	9
19	26	8	27	12	31	16	35	20	1	24	5	21	2	9	28	13	32	17	36	0	19	34	15	30	11	4	23	6	25	3	22	37	18	33	14	29	10	7
20	7	27	8	31	12	35	16	1	20	5	24	2	21	28	9	32	13	36	17	19	0	15	34	11	30	23	4	25	6	22	3	18	37	14	33	10	29	25
21	30	12	31	16	35	20	1	24	5	28	9	25	6	13	32	17	36	21	2	4	23	0	19	34	15	8	27	10	29	7	26	3	22	37	18	33	14	11
22	11	31	12	35	16	1	20	5	24	9	28	6	25	32	13	36	17	2	21	23	4	19	0	15	32	27	8	29	10	26	7	23	3	18	37	14	33	30

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