

BIRTHDAY SPACINGS TEST, M= 512 N=2\*\*24 LAMBDA= 2.0000

test.dat	using bits	1 to 24	p-value=	.305642
test.dat	using bits	2 to 25	p-value=	.572974
test.dat	using bits	3 to 26	p-value=	.295652
test.dat	using bits	4 to 27	p-value=	.217241
test.dat	using bits	5 to 28	p-value=	.160245
test.dat	using bits	6 to 29	p-value=	.662905
test.dat	using bits	7 to 30	p-value=	.407728
test.dat	using bits	8 to 31	p-value=	.829508
test.dat	using bits	9 to 32	p-value=	.441803

The 9 p-values were

.305642	.572974	.295652	.217241	.160245
.662905	.407728	.829508	.441803	

A KSTEST for the 9 p-values yields .480621

OPERM5 test for file test.dat

chisquare for 99 degrees of freedom=103.575; p-value= .643419

OPERM5 test for file test.dat

chisquare for 99 degrees of freedom= 81.837; p-value= .105555

Binary rank test for test.dat

Rank test for 31x31 binary matrices:

rows from leftmost 31 bits of each 32-bit integer

rank	observed	expected	(o-e)^2/e	sum
28	225	211.4	.872538	.873
29	5052	5134.0	1.310025	2.183
30	23073	23103.0	.039078	2.222
31	11650	11551.5	.839494	3.061

chisquare= 3.061 for 3 d. of f.; p-value= .657798

Binary rank test for test.dat

Rank test for 32x32 binary matrices:

rows from leftmost 32 bits of each 32-bit integer

rank	observed	expected	(o-e)^2/e	sum
29	211	211.4	.000826	.001
30	5085	5134.0	.467861	.469
31	23239	23103.0	.800035	1.269
32	11465	11551.5	.648094	1.917

chisquare= 1.917 for 3 d. of f.; p-value= .493255

b-rank test for bits	1 to 8	p=1-exp(-SUM/2)=	.74973
b-rank test for bits	2 to 9	p=1-exp(-SUM/2)=	.77885
b-rank test for bits	3 to 10	p=1-exp(-SUM/2)=	.37892
b-rank test for bits	4 to 11	p=1-exp(-SUM/2)=	.53945
b-rank test for bits	5 to 12	p=1-exp(-SUM/2)=	.55189
b-rank test for bits	6 to 13	p=1-exp(-SUM/2)=	.33671
b-rank test for bits	7 to 14	p=1-exp(-SUM/2)=	.42644
b-rank test for bits	8 to 15	p=1-exp(-SUM/2)=	.68180
b-rank test for bits	9 to 16	p=1-exp(-SUM/2)=	.76373
b-rank test for bits	10 to 17	p=1-exp(-SUM/2)=	.28552
b-rank test for bits	11 to 18	p=1-exp(-SUM/2)=	.71905
b-rank test for bits	12 to 19	p=1-exp(-SUM/2)=	.65732
b-rank test for bits	13 to 20	p=1-exp(-SUM/2)=	.68076
b-rank test for bits	14 to 21	p=1-exp(-SUM/2)=	.08830
b-rank test for bits	15 to 22	p=1-exp(-SUM/2)=	.70441
b-rank test for bits	16 to 23	p=1-exp(-SUM/2)=	.60409
b-rank test for bits	17 to 24	p=1-exp(-SUM/2)=	.23011
b-rank test for bits	18 to 25	p=1-exp(-SUM/2)=	.98797
b-rank test for bits	19 to 26	p=1-exp(-SUM/2)=	.91102
b-rank test for bits	20 to 27	p=1-exp(-SUM/2)=	.99664
b-rank test for bits	21 to 28	p=1-exp(-SUM/2)=	.19315
b-rank test for bits	22 to 29	p=1-exp(-SUM/2)=	.61037
b-rank test for bits	23 to 30	p=1-exp(-SUM/2)=	.10204
b-rank test for bits	24 to 31	p=1-exp(-SUM/2)=	.52108
b-rank test for bits	25 to 32	p=1-exp(-SUM/2)=	.36482

TEST SUMMARY, 25 tests on 100,000 random 6x8 matrices  
 These should be 25 uniform [0,1] random variables:

.749729	.778848	.378923	.539453	.551889
.336709	.426438	.681800	.763733	.285515
.719047	.657317	.680764	.088301	.704412
.604086	.230113	.987965	.911020	.996639
.193148	.610368	.102038	.521085	.364818

brank test summary for test.dat

The KS test for those 25 supposed UNI's yields  
 KS p-value= .631787

---

No. missing words should average 141909. with sigma=428.

tst no 1:	142027 missing words,	.27 sigmas from mean,	p-value= .60832
tst no 2:	142196 missing words,	.67 sigmas from mean,	p-value= .74851
tst no 3:	141396 missing words,	-1.20 sigmas from mean,	p-value= .11519
tst no 4:	143018 missing words,	2.59 sigmas from mean,	p-value= .99521
tst no 5:	141967 missing words,	.13 sigmas from mean,	p-value= .55359
tst no 6:	141785 missing words,	-.29 sigmas from mean,	p-value= .38572
tst no 7:	141806 missing words,	-.24 sigmas from mean,	p-value= .40461
tst no 8:	142275 missing words,	.85 sigmas from mean,	p-value= .80355
tst no 9:	141250 missing words,	-1.54 sigmas from mean,	p-value= .06172
tst no 10:	141702 missing words,	-.48 sigmas from mean,	p-value= .31405
tst no 11:	141256 missing words,	-1.53 sigmas from mean,	p-value= .06345
tst no 12:	141331 missing words,	-1.35 sigmas from mean,	p-value= .08831
tst no 13:	141778 missing words,	-.31 sigmas from mean,	p-value= .37948
tst no 14:	142044 missing words,	.31 sigmas from mean,	p-value= .62349
tst no 15:	142143 missing words,	.55 sigmas from mean,	p-value= .70745
tst no 16:	141878 missing words,	-.07 sigmas from mean,	p-value= .47082
tst no 17:	141889 missing words,	-.05 sigmas from mean,	p-value= .48106
tst no 18:	142160 missing words,	.59 sigmas from mean,	p-value= .72096
tst no 19:	141498 missing words,	-.96 sigmas from mean,	p-value= .16826
tst no 20:	141934 missing words,	.06 sigmas from mean,	p-value= .52298

---

OPSO for test.dat	using bits 23 to 32	142097	.647	.7412
OPSO for test.dat	using bits 22 to 31	141233	-2.332	.0098
OPSO for test.dat	using bits 21 to 30	141891	-.063	.4748
OPSO for test.dat	using bits 20 to 29	141912	.009	.5037
OPSO for test.dat	using bits 19 to 28	141967	.199	.5788
OPSO for test.dat	using bits 18 to 27	141491	-1.443	.0746
OPSO for test.dat	using bits 17 to 26	141680	-.791	.2145
OPSO for test.dat	using bits 16 to 25	142121	.730	.7673
OPSO for test.dat	using bits 15 to 24	142088	.616	.7311
OPSO for test.dat	using bits 14 to 23	141534	-1.294	.0978
OPSO for test.dat	using bits 13 to 22	141782	-.439	.3303
OPSO for test.dat	using bits 12 to 21	142185	.951	.8291
OPSO for test.dat	using bits 11 to 20	141448	-1.591	.0558
OPSO for test.dat	using bits 10 to 19	142052	.492	.6886
OPSO for test.dat	using bits 9 to 18	141604	-1.053	.1462
OPSO for test.dat	using bits 8 to 17	141851	-.201	.4203
OPSO for test.dat	using bits 7 to 16	141921	.040	.5161
OPSO for test.dat	using bits 6 to 15	142369	1.585	.9435
OPSO for test.dat	using bits 5 to 14	141936	.092	.5366
OPSO for test.dat	using bits 4 to 13	141993	.289	.6135
OPSO for test.dat	using bits 3 to 12	141785	-.429	.3341
OPSO for test.dat	using bits 2 to 11	141981	.247	.5976
OPSO for test.dat	using bits 1 to 10	141781	-.443	.3291
QOSO for test.dat	using bits 28 to 32	141948	.131	.5521
QOSO for test.dat	using bits 27 to 31	141684	-.764	.2225
QOSO for test.dat	using bits 26 to 30	142061	.514	.6964
QOSO for test.dat	using bits 25 to 29	141469	-1.493	.0678
QOSO for test.dat	using bits 24 to 28	141860	-.167	.4336
QOSO for test.dat	using bits 23 to 27	141975	.223	.5881
QOSO for test.dat	using bits 22 to 26	141295	-2.082	.0186
QOSO for test.dat	using bits 21 to 25	141702	-.703	.2411

QOSO for test.dat	using bits 20 to 24	142203	.995	.8403
QOSO for test.dat	using bits 19 to 23	142758	2.877	.9980
QOSO for test.dat	using bits 18 to 22	141753	-.530	.2981
QOSO for test.dat	using bits 17 to 21	141334	-1.950	.0256
QOSO for test.dat	using bits 16 to 20	141599	-1.052	.1464
QOSO for test.dat	using bits 15 to 19	142379	1.592	.9443
QOSO for test.dat	using bits 14 to 18	141816	-.316	.3759
QOSO for test.dat	using bits 13 to 17	141658	-.852	.1971
QOSO for test.dat	using bits 12 to 16	141835	-.252	.4005
QOSO for test.dat	using bits 11 to 15	141956	.158	.5629
QOSO for test.dat	using bits 10 to 14	141953	.148	.5588
QOSO for test.dat	using bits 9 to 13	141616	-.994	.1600
QOSO for test.dat	using bits 8 to 12	141679	-.781	.2175
QOSO for test.dat	using bits 7 to 11	141528	-1.293	.0981
QOSO for test.dat	using bits 6 to 10	141538	-1.259	.1041
QOSO for test.dat	using bits 5 to 9	142496	1.989	.9766
QOSO for test.dat	using bits 4 to 8	141373	-1.818	.0345
QOSO for test.dat	using bits 3 to 7	142304	1.338	.9095
QOSO for test.dat	using bits 2 to 6	141572	-1.143	.1264
QOSO for test.dat	using bits 1 to 5	141416	-1.672	.0472
DNA for test.dat	using bits 31 to 32	142084	.515	.6968
DNA for test.dat	using bits 30 to 31	141685	-.662	.2541
DNA for test.dat	using bits 29 to 30	142154	.722	.7648
DNA for test.dat	using bits 28 to 29	141553	-1.051	.1466
DNA for test.dat	using bits 27 to 28	141865	-.131	.4480
DNA for test.dat	using bits 26 to 27	141627	-.833	.2025
DNA for test.dat	using bits 25 to 26	142136	.669	.7481
DNA for test.dat	using bits 24 to 25	141980	.208	.5826
DNA for test.dat	using bits 23 to 24	141855	-.160	.4363
DNA for test.dat	using bits 22 to 23	142087	.524	.6999
DNA for test.dat	using bits 21 to 22	142500	1.742	.9593
DNA for test.dat	using bits 20 to 21	141880	-.087	.4655
DNA for test.dat	using bits 19 to 20	142067	.465	.6791
DNA for test.dat	using bits 18 to 19	141982	.214	.5849
DNA for test.dat	using bits 17 to 18	141492	-1.231	.1092
DNA for test.dat	using bits 16 to 17	141963	.158	.5629
DNA for test.dat	using bits 15 to 16	141457	-1.334	.0911
DNA for test.dat	using bits 14 to 15	142268	1.058	.8550
DNA for test.dat	using bits 13 to 14	141854	-.163	.4352
DNA for test.dat	using bits 12 to 13	141893	-.048	.4808
DNA for test.dat	using bits 11 to 12	142481	1.686	.9541
DNA for test.dat	using bits 10 to 11	142164	.751	.7737
DNA for test.dat	using bits 9 to 10	142262	1.040	.8509
DNA for test.dat	using bits 8 to 9	142131	.654	.7434
DNA for test.dat	using bits 7 to 8	141790	-.352	.3624
DNA for test.dat	using bits 6 to 7	141937	.082	.5325
DNA for test.dat	using bits 5 to 6	141674	-.694	.2438
DNA for test.dat	using bits 4 to 5	141379	-1.564	.0589
DNA for test.dat	using bits 3 to 4	141684	-.665	.2531
DNA for test.dat	using bits 2 to 3	142070	.474	.6822
DNA for test.dat	using bits 1 to 2	142499	1.739	.9590

-----  
Test results for test.dat

Chi-square with  $5^5-5^4=2500$  d.of f. for sample size:2560000  
chisquare equiv normal p-value

Results fo COUNT-THE-1's in successive bytes:

byte stream for test.dat	2590.32	1.277	.899258
byte stream for test.dat	2637.51	1.945	.974092

-----  
Chi-square with  $5^5-5^4=2500$  d.of f. for sample size: 256000

chisquare equiv normal p value

Results for COUNT-THE-1's in specified bytes:

bits 1 to 8	2521.98	.311	.622044
bits 2 to 9	2536.42	.515	.696760

bits 3 to 10	2549.67	.702	.758806
bits 4 to 11	2495.80	-.059	.476332
bits 5 to 12	2460.39	-.560	.287680
bits 6 to 13	2543.27	.612	.729722
bits 7 to 14	2583.11	1.175	.880082
bits 8 to 15	2544.88	.635	.737170
bits 9 to 16	2649.05	2.108	.982482
bits 10 to 17	2565.00	.919	.821002
bits 11 to 18	2536.63	.518	.697795
bits 12 to 19	2556.69	.802	.788634
bits 13 to 20	2527.02	.382	.648832
bits 14 to 21	2408.03	-1.301	.096693
bits 15 to 22	2618.00	1.669	.952413
bits 16 to 23	2481.55	-.261	.397053
bits 17 to 24	2468.98	-.439	.330459
bits 18 to 25	2429.86	-.992	.160626
bits 19 to 26	2572.97	1.032	.848955
bits 20 to 27	2457.46	-.602	.273735
bits 21 to 28	2540.89	.578	.718479
bits 22 to 29	2399.68	-1.419	.077980
bits 23 to 30	2547.29	.669	.748177
bits 24 to 31	2447.30	-.745	.228029
bits 25 to 32	2525.97	.367	.643278

-----

CDPARK: result of ten tests on file test.dat  
 Of 12,000 tries, the average no. of successes  
 should be 3523 with sigma=21.9

Successes: 3511	z-score: -.548	p-value: .291865
Successes: 3533	z-score: .457	p-value: .676028
Successes: 3563	z-score: 1.826	p-value: .966111
Successes: 3533	z-score: .457	p-value: .676028
Successes: 3544	z-score: .959	p-value: .831196
Successes: 3548	z-score: 1.142	p-value: .873180
Successes: 3542	z-score: .868	p-value: .807188
Successes: 3541	z-score: .822	p-value: .794438
Successes: 3529	z-score: .274	p-value: .607947
Successes: 3539	z-score: .731	p-value: .767486

square size	avg. no. parked	sample sigma
100.	3538.300	12.818

KSTEST for the above 10: p= .984936

-----

This is the MINIMUM DISTANCE test  
 for random integers in the file test.dat

Sample no.	d^2	avg	equiv uni
5	.1613	.3553	.149651
10	.0028	.4990	.002812
15	.2524	.6820	.224040
20	1.2702	.7196	.721018
25	1.4483	.6910	.766732
30	.2635	.6346	.232628
35	2.1525	.7158	.885059
40	1.4327	.7726	.763058
45	.9076	.8071	.598339
50	1.0615	.8014	.655913
55	2.0420	.8667	.871557
60	1.6247	.8988	.804630
65	.3976	.8797	.329420
70	2.4309	.9225	.913110
75	.1783	.9020	.164019
80	.2332	.8926	.208915
85	.5512	.8891	.425350
90	1.4837	.9158	.774889
95	.6817	.8963	.495952

100 .1123 .8925 .106704  
 MINIMUM DISTANCE TEST for test.dat  
 Result of KS test on 20 transformed mindist^2's:  
 p-value= .382425

The 3DSPHERES test for file test.dat

sample no:	r^3=	p-value=
1	65.968	.88908
2	.354	.01174
3	57.312	.85198
4	19.803	.48320
5	22.164	.52231
6	48.677	.80261
7	28.164	.60890
8	39.382	.73092
9	28.260	.61015
10	63.111	.87800
11	17.225	.43682
12	11.327	.31447
13	1.017	.03333
14	8.348	.24289
15	29.187	.62201
16	49.501	.80796
17	70.507	.90465
18	102.844	.96755
19	97.643	.96141
20	14.375	.38070

3DSPHERES test for file test.dat p-value= .844233

RESULTS OF SQUEEZE TEST FOR test.dat  
 Table of standardized frequency counts  
 ( (obs-exp)/sqrt(exp) )^2

for j taking values <=6,7,8,...,47,>=48:

1.3	-.7	.8	-.1	1.6	1.0
-.2	-1.2	.9	-1.2	-.2	-.7
-.5	.1	.0	.2	.3	.9
.0	-1.7	1.3	-2.3	-1.5	1.6
1.9	-.1	.7	1.7	1.9	-.5
-.8	-.9	2.2	-.8	-.5	.1
.0	-.7	-.4	2.1	-.6	1.0
1.8					

Chi-square with 42 degrees of freedom: 54.306  
 z-score= 1.343 p-value= .903573

Test no. 1	p-value .085629
Test no. 2	p-value .528478
Test no. 3	p-value .483133
Test no. 4	p-value .788579
Test no. 5	p-value .971789
Test no. 6	p-value .248051
Test no. 7	p-value .837658
Test no. 8	p-value .013171
Test no. 9	p-value .577735
Test no. 10	p-value .454998

Results of the OSUM test for test.dat  
 KSTEST on the above 10 p-values: .047059

The RUNS test for file test.dat  
 Up and down runs in a sample of 10000

Run test for test.dat	:
runs up; ks test for 10 p's: .957751	
runs down; ks test for 10 p's: .542239	
Run test for test.dat	:

runs up; ks test for 10 p's: .675651  
runs down; ks test for 10 p's: .201226

-----  
Results of craps test for test.dat

No. of wins: Observed Expected

98300 98585.86

Chisq= 24.12 for 20 degrees of freedom, p= .76263

Throws Observed Expected Chisq Sum

SUMMARY FOR test.dat

p-value for no. of wins: .100531

p-value for throws/game: .762626

Test completed. File test.dat

.....  
: