TABLES FOR TESTING RANDOMNESS OF GROUPING IN A SEQUENCE OF ALTERNATIVES

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When two different kinds of objects are arranged along a line they will form two or more distinct groups of like objects. Thus, in the arrangement: *aabbbab*, there are 3 *a*'s and 4 *b*'s forming 4 groups. In general, if there are m objects of one kind and n objects of another kind, there are in all

$$C_m^{m+n} = C_n^{m+n}$$

different arrangements possible. There will be no loss of generality if we assume that $m \leq n$.

If u is defined to be the number of distinct groups of like objects in any one arrangement, then the proportion of arrangements yielding u' or less groups is[1]

$$P\{u \leq u'\} = \frac{1}{C_m^{m+n}} \sum_{u=2}^{u'} f_u , \tag{1}$$

where

$$f_u = 2C_{k-1}^{m-1} \cdot C_{k-1}^{n-1}, \quad \text{when} \quad u = 2k, \quad \text{i.e. } u \text{ is even},$$

and

$$f_u = C_{k-1}^{m-1} \cdot C_{k-2}^{n-1} + C_{k-2}^{m-1} \cdot C_{k-1}^{n-1}, \quad \text{when} \quad u = 2k - 1, \quad \text{i.e. } u \text{ is odd},$$

for $k = 1, 2, \cdots, m + 1$. For example, if $m = n = 5$, then

$$P\{u = 2\} = \frac{f_2}{C_5^{10}} = \frac{2\{C_0^4 \cdot C_0^4\}}{C_5^{10}} = \frac{1}{126},$$

$$P\{u = 3\} = \frac{f_3}{C_5^{10}} = \frac{C_1^4 \cdot C_0^4 + C_0^4 \cdot C_1^4}{C_5^{10}} = \frac{8}{252}.$$

In a random arrangement (1) is the probability of $u \leq u'$.

The following tables have been prepared for use in testing data for randomness and for testing whether two samples are from the same population. Table I gives $P\{u \leq u'\}$ to 7 decimal places for $m \leq n \leq 20$ with a range of m from 2 to 20 inclusive whereas Table II gives correct values for u_ϵ for $\epsilon = .005, .01, .025, .05, .95, .975, .99$ and $.995$, where u_ϵ is the *largest* integer, u', for which $P\{u \leq u'\} \leq \epsilon$ when $\epsilon < .50$, and is the *smallest* integer, u', for which $P\{u \leq u'\} \geq \epsilon$ when $\epsilon > .50$. This table was obtained from Table I and covers the same

[1] W. L. Stevens, "Distribution of Groups in a Sequence of Alternatives" (*Annals of Eugenics*, Vol. IX, Part I (1939) pp. 10–17).

A. Wald and J. Wolfowitz, "On a Test Whether Two Samples are from the Same Population" (*Annals of Math. Stat.*, Vol. XI, No. 2, June (1940) pp. 147–162).

range of values of m and n. Table III gives values of u_ϵ for $m = n$ from 10 to 100. These values of u_ϵ were obtained by using the normal approximation given on page 151 of the Wald-Wolfowitz paper together with a correction for continuity not given in their article—this correction improved the approximation for small values of m and n. The values of u_ϵ for $m = n = 10$ through 20 are included in Table III although they can be obtained from Table II in order to check on the adequacy of the approximation. These values obtained with the approximation check with those of Table II except for the five underscored values. It appears that the approximation will be adequate in general for $m = n \geq 20$.

To illustrate the use of these tables to test randomness of an arrangement,[2] consider a case where one might suspect nonrandomness and, more specifically, expect too few groups. The arrangement of diseased and healthy plants in a row of a field might be such a case. For example, we might have the following plant arrangement:

$$H\,H\,H\,H\,H\,H\,H\,H\,H\,H\,D\,H\,D\,D\,D\,D\,H\,H\,H\,H\,H\,H\,H\,H\,H,$$

where

$m = 5$, the number of diseased plants present,
$n = 20$, the number of healthy plants present,
$u' = 5$, the number of groups actually formed.

From Table I the probability associated with this arrangement is found to be .018,3512, which is the probability of $u \leq u'$. Since $P < .05$, we might elect to regard this as evidence of a tendency for the disease to be nonrandomly distributed among the plants in a row, knowing that if we look for an explanation of "clustering" whenever $P\{u \leq u'\} \leq .05$ we may expect to follow a false scent not more than one time in twenty in the long run.

When a control chart[3] suggests the presence of assignable causes of variation in a manufactured product flowing from a production line, an examination of various types of runs, e.g. the lengths and relative frequency of runs above and below the median of a sequence of values, may assist in diagnosing the nature of the cause. Dr. Walter A. Shewhart has given us such an instance: A sequence of observations dealing with corrosion suggested the presence of an assignable cause of variation. By the use of run charts an assignable cause of variation was tracked down in the measuring apparatus and an attempt was made to eliminate it. The original sequence examined with regard to runs above and below the median of the sequence exhibited an unexpectedly large number of runs of length 7 or more and as a result a significantly low value of

[2] W. L. Stevens (ibid).

[3] American Defense Emergency Standards Z1.1 and Z1.2 entitled "Guide for Quality Control" and "Control Chart Method of Analyzing Data" and American War Standard Z1.3 entitled "Control Chart Method of Controlling Quality During Production" (published by the American Standards Association, New York City).

u, and, if the assignable cause were not completely eliminated in the new design, we might expect too large a proportion of long runs above and below the median, and, hence, too few total runs. A sequence of 40 observations taken with the new measuring device yielded a total of 15 runs above and below the median of the sequence which is significantly fewer than would be expected to arise under a state of statistical control, since for $m = n = 20$, $P\{u \leq 15\} = .038$. This sequence is of special interest since the occurrence of too few runs suggested the assignable cause had not been entirely eliminated although no especially long runs, say of length 7 or more, occurred in this sequence, so that from the point of view of length of runs without regard to their number the assignable cause might have been judged to have been eliminated.

As an instance where too many groups would be the probable alternative to randomness consider the arrangement of occupied and unoccupied seats at a lunch counter about half an hour before the popular lunch hour begins. In such a case the critical region would be $u \geq u'$ and the appropriate probability would be $P = 1 - P\{u \leq u' - 1\}$. Such a situation was observed and yielded the following arrangement of empty and occupied seats along the lunch counter:

$$E\,O\,E\,E\,O\,E\,E\,E\,O\,E\,E\,E\,O\,E\,O\,E,$$

$$\begin{aligned} m &= 5, \\ n &= 11, \\ u' &= 11, \\ P &= 1 - .942,3077 = .057,6923; \end{aligned}$$

and though this probability is not quite significant, the arrangement observed has the maximum number of groups of empty and occupied seats for the m and n of the size observed since no two occupied seats are adjacent. However, if another customer had entered and sat either in the 5th empty seat from the left or in the 8th empty seat, the number of groups would have been increased by two and the situation would be:

$$\begin{aligned} m &= 6, \\ n &= 10, \\ u' &= 13, \\ P &= 1 - .989,5105 = .010,4895. \end{aligned}$$

This P value is significant, and for this assumed case, as well as for the actual case observed, the arrangement of E's and O's has the maximum number of groups of like objects. Certainly both of these cases exhibit too many groups to be considered random arrangements.

The use of these tables to test whether two samples constitute independent random samples from the same population[4] can be illustrated by using the data of Snedecor's Example 4.11 on page 75 of his *Statistical Methods* (3d edition)

[4] A. Wald and J. Wolfowitz (ibid) have pointed out that exceptionally small values of u' are to be regarded as evidence for rejecting this null hypothesis.

which gives daily gains in two lots of steer calves on two different rations. The daily rates of gain given for the two lots are:

I. 1.95, 2.17, 2.06, 2.11, 2.24, 2.52, 2.04, 1.95;
V. 1.82, 1.85, 1.87, 1.74, 2.04, 1.78, 1.76, 1.86.

Arranging these rates in order of magnitude, designating a calf on ration I by italics and one from V by ( ), we have

(1.74), (1.76), (1.78), (1.82), (1.85), (1.86), (1.87), *1.95*, *1.95*, (2.04), *2.04*, *2.06*, *2.11*, *2.17*, *2.24*, *2.52*.

Whence

$$m = 8,$$
$$n = 8,$$
$$u' = 4,$$
$$P = .008,8578.$$

Accordingly, at either the .05 or .01 level of significance rejection of the null hypothesis that the two samples constitute independent random samples from the same population is indicated.

For these data we note the fact that having two identical values, i.e. 2.04, in the two lots did not alter the number of groups regardless of whether they were recorded as (2.04), *2.04* or as *2.04*, (2.04). However, such duplications in general may be more bothersome, since they may yield different values of u' depending on the order in which they are considered. In such instances both possible orders should be considered.

The merit of this test is that it employs a minimum of assumptions—merely that the common population be continuous, and that the samples be drawn at random independently. Its principal defect is its lack of power. As a consequence gross disparity between the samples is generally required to render $u' \leq u_\epsilon$. Therefore, when additional assumptions are tenable, tests utilizing them should be employed.

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TABLE I

$P\{u \leq u'\}$

When m = n, the largest possible value of u′ is 2m; when m < n, the largest possible value of u′ is 2m + 1.

m = 2

n \ u′	2	3	4
2	.333,3333	.666,6667	1.
3	.200,0000	.500,0000	.900,0000
4	.133,3333	.400,0000	.800,0000
5	.095,2381	.333,3333	.714,2857
6	.071,4286	.285,7143	.642,8571
7	.055,5556	.250,0000	.583,3333
8	.044,4444	.222,2222	.533,3333
9	.036,3636	.200,0000	.490,9091
10	.030,3030	.181,8182	.454,5455
11	.025,6410	.166,6667	.423,0769
12	.021,9780	.153,8462	.395,6044
13	.019,0476	.142,8571	.371,4286
14	.016,6667	.133,3333	.350,0000
15	.014,7059	.125,0000	.330,8824
16	.013,0719	.117,6471	.313,7255
17	.011,6959	.111,1111	.298,2456
18	.010,5263	.105,2632	.284,2105
19	.009,5238	.100,0000	.271,4286
20	.008,6580	.095,2381	.259,7403

m = 3

n \ u′	2	3	4	5	6
3	.100,0000	.300,0000	.700,0000	.900,0000	1.
4	.057,1429	.200,0000	.542,8571	.800,0000	.971,4286
5	.035,7143	.142,8571	.428,5714	.714,2857	.928,5714
6	.023,8095	.107,1429	.345,2381	.642,8571	.880,9524
7	.016,6667	.083,3333	.283,3333	.583,3333	.833,3333
8	.012,1212	.066,6667	.236,3636	.533,3333	.787,8788
9	.009,0909	.054,5455	.200,0000	.490,9091	.745,4545
10	.006,9930	.045,4545	.171,3287	.454,5455	.706,2937
11	.005,4945	.038,4615	.148,3516	.423,0769	.670,3297
12	.004,3956	.032,9670	.129,6703	.395,6044	.637,3626
13	.003,5714	.028,5714	.114,2857	.371,4286	.607,1429
14	.002,9412	.025,0000	.101,4706	.350,0000	.579,4118
15	.002,4510	.022,0588	.090,6863	.330,8824	.553,9216
16	.002,0640	.019,6078	.081,5273	.313,7255	.530,4438
17	.001,7544	.017,5439	.073,6842	.298,2456	.508,7719
18	.001,5038	.015,7895	.066,9173	.284,2105	.488,7218
19	.001,2987	.014,2857	.061,0390	.271,4286	.470,1299
20	.001,1293	.012,9870	.055,9006	.259,7403	.452,8515

m = 4

n \ u′	2	3	4	5	6
4	.028,5714	.114,2857	.371,4286	.628,5714	.885,7143
5	.015,8730	.071,4286	.261,9048	.500,0000	.785,7143
6	.009,5238	.047,6190	.190,4762	.404,7619	.690,4762
7	.006,0606	.033,3333	.142,4242	.333,3333	.606,0606
8	.004,0404	.024,2424	.109,0909	.278,7879	.533,3333
9	.002,7972	.018,1818	.085,3147	.236,3636	.471,3287
10	.001,9580	.013,9860	.067,9321	.202,7972	.418,5814
11	.001,4652	.010,9890	.054,9451	.175,8242	.373,6264
12	.001,0989	.008,7912	.045,0549	.153,8462	.335,1648
13	.000,8403	.007,1429	.037,3950	.135,7143	.302,1008
14	.000,6536	.005,8824	.031,3725	.120,5882	.273,5294
15	.000,5160	.004,9020	.026,5738	.107,8431	.248,7100
16	.000,4128	.004,1280	.022,7038	.097,0072	.227,0382
17	.000,3342	.003,5088	.019,5489	.087,7193	.208,0200
18	.000,2734	.003,0075	.016,9515	.079,6992	.191,2509
19	.000,2259	.002,5974	.014,7939	.072,7273	.176,3975
20	.000,1882	.002,2546	.012,9870	.066,6250	.163,1846

m = 4

n \ u′	7	8
4	.971,4286	1.
5	.928,5714	.992,0635
6	.880,9524	.976,1905
7	.833,3333	.954,5455
8	.787,8788	.929,2929
9	.745,4545	.902,0979
10	.706,2937	.874,1259
11	.670,3297	.846,1538
12	.637,3626	.818,6813
13	.607,1429	.792,0168
14	.579,4118	.766,3399
15	.553,9216	.741,7441
16	.530,4438	.718,2663
17	.508,7719	.695,9064
18	.488,7218	.674,6411
19	.470,1299	.654,4325
20	.452,8515	.635,2343

TABLE I (*Continued*)

$n = 5$

n \ u'	2	3	4	5	6
5	.007,9365	.039,6825	.166,6667	.357,1429	.642,8571
6	.004,3290	.023,8095	.110,3896	.261,9048	.521,6450
7	.002,5253	.015,1515	.075,7576	.196,9697	.424,2424
8	.001,5540	.010,1010	.053,6131	.151,5152	.347,3193
9	.000,9990	.006,9930	.038,9610	.118,8811	.286,7133
10	.000,6660	.004,9950	.028,9710	.094,9051	.238,7612
11	.000,4579	.003,6630	.021,9780	.076,9231	.200,5494
12	.000,3232	.002,7472	.016,9683	.063,1868	.169,8449
13	.000,2334	.002,1008	.013,3053	.052,5210	.144,9580
14	.000,1720	.001,6340	.010,5779	.044,1176	.124,6130
15	.000,1290	.001,2900	.008,5139	.037,4097	.107,8431
16	.000,0983	.001,0320	.006,9291	.031,9917	.093,9112
17	.000,0759	.000,8354	.005,6960	.027,5689	.082,2511
18	.000,0594	.000,6835	.004,7252	.023,9234	.072,4241
19	.000,0471	.000,5647	.003,9526	.020,8922	.064,0881
20	.000,0376	.000,4705	.003,3314	.018,3512	.056,9735

$n = 6$

n \ u'	2	3	4	5	6
6	.002,1645	.012,9870	.067,0996	.175,3247	.391,7749
7	.001,1655	.007,5758	.042,5408	.121,2121	.296,0373
8	.000,6660	.004,6620	.027,9720	.086,2471	.226,1072
9	.000,3996	.002,9970	.018,9810	.062,9371	.174,8252
10	.000,2498	.001,9980	.013,2368	.046,9530	.136,8631
11	.000,1616	.001,3736	.009,4538	.035,7143	.108,4357
12	.000,1077	.000,9696	.006,8951	.027,6341	.086,8886
13	.000,0737	.000,7003	.005,1231	.021,7087	.070,3597
14	.000,0516	.000,5160	.003,8700	.017,2859	.057,5335
15	.000,0369	.000,3870	.002,9670	.013,9319	.047,4716
16	.000,0268	.000,2949	.002,3052	.011,3519	.039,4971
17	.000,0198	.000,2278	.001,8128	.009,3415	.033,1154
18	.000,0149	.000,1783	.001,4414	.007,7565	.027,9652
19	.000,0113	.000,1412	.001,1575	.006,4935	.023,7719
20	.000,0087	.000,1129	.000,9382	.005,4771	.020,3318

$n = 5$

n \ u'	7	8	9	10
5	.833,3333	.960,3175	.992,0635	1.
6	.738,0952	.911,2554	.976,1905	.997,8355
7	.651,5152	.853,5354	.954,5455	.992,4242
8	.575,7576	.793,3178	.929,2929	.983,6830
9	.510,4895	.734,2657	.902,0979	.972,0280
10	.454,5454	.678,3217	.874,1259	.958,0420
11	.406,5934	.626,3736	.846,1538	.942,3077
12	.365,3846	.578,7007	.818,6813	.925,3394
13	.329,8319	.535,2474	.792,0168	.907,5630
14	.299,0196	.496,7860	.766,3399	.889,3189
15	.272,1878	.460,0103	.741,7441	.870,8720
16	.248,7100	.427,5886	.718,2662	.852,4252
17	.228,0702	.398,1924	.695,9064	.834,1308
18	.209,8428	.371,5118	.674,6411	.816,1015
19	.193,6759	.347,2614	.654,4325	.798,4190
20	.179,2772	.325,1835	.635,2343	.781,1406

$n = 6$

n \ u'	7	8	9	10	11	12
6	.608,2251	.824,6753	.932,9004	.987,0130	.997,8355	1.
7	.500,0000	.733,1002	.878,7879	.966,2005	.992,4242	.999,4172
8	.412,5874	.645,6876	.820,5128	.937,0629	.983,6830	.997,6690
9	.342,6573	.566,4336	.762,2378	.902,0979	.972,0280	.994,4056
10	.286,7133	.496,5035	.706,2937	.863,6364	.958,0420	.989,5105
11	.241,7582	.435,6820	.653,8462	.823,5294	.942,3077	.983,0317
12	.205,3975	.383,1610	.605,3652	.783,1286	.925,3394	.975,1131
13	.175,7703	.337,9404	.560,9244	.743,3658	.907,5630	.965,9443
14	.151,4448	.299,0196	.520,3818	.704,8504	.889,3189	.955,7276
15	.131,3209	.265,4799	.483,4881	.667,9567	.870,8720	.944,6594
16	.114,5511	.236,5137	.449,9484	.632,8924	.852,4252	.932,9205
17	.100,4785	.211,4278	.419,4577	.599,7504	.834,1308	.920,6712
18	.088,5910	.189,6342	.391,7204	.568,5459	.816,1015	.908,0508
19	.078,4867	.170,6381	.366,4596	.539,2434	.798,4190	.895,1779
20	.069,8475	.154,0242	.343,4218	.511,7752	.781,1406	.882,1526

TABLE I (*Continued*)

$n = 7$

n \ u'	2	3	4	5	6
7	.000,5828	.004,0793	.025,0583	.077,5058	.208,6247
8	.000,3108	.002,3310	.015,3846	.051,2821	.149,1841
9	.000,1748	.001,3986	.009,7902	.034,9650	.108,3916
10	.000,1028	.000,8741	.006,4274	.024,4755	.080,0082
11	.000,0628	.000,5656	.004,3363	.017,5339	.059,9548
12	.000,0397	.000,3771	.002,9967	.012,8205	.045,5664
13	.000,0258	.000,2580	.002,1156	.009,5459	.035,0877
14	.000,0172	.000,1806	.001,5222	.007,2239	.027,3478
15	.000,0117	.000,1290	.001,1141	.005,5470	.021,5546
16	.000,0082	.000,0938	.000,8280	.004,3156	.017,1645
17	.000,0058	.000,0693	.000,6241	.003,3978	.013,7993
18	.000,0042	.000,0520	.000,4764	.002,7044	.011,1920
19	.000,0030	.000,0395	.000,3679	.002,1739	.009,1517
20	.000,0023	.000,0304	.000,2872	.001,7635	.007,5403

$n = 7$

n \ u'	12	13	14
7	.995,9207	.999,4172	1.
8	.987,8788	.997,6690	.999,8446
9	.974,8252	.994,4056	.999,3007
10	.957,1164	.989,5105	.998,1489
11	.935,5204	.983,0317	.996,2293
12	.910,9312	.975,1131	.993,4508
13	.884,2105	.965,9443	.989,7833
14	.856,1146	.955,7276	.985,2825
15	.827,2704	.944,6594	.979,8762
16	.798,1783	.932,9205	.973,7515
17	.769,2254	.920,6712	.966,9464
18	.740,7031	.908,0508	.959,5423
19	.712,8246	.895,1779	.951,6206
20	.685,7403	.882,1526	.943,2567

$n = 7$

n \ u'	7	8	9	10	11
7	.383,4499	.616,5501	.791,3753	.922,4942	.974,9417
8	.296,0373	.513,5975	.703,9627	.867,1329	.948,7179
9	.230,7692	.426,5734	.622,3776	.805,9441	.916,0839
10	.181,8182	.354,5866	.548,9510	.743,3155	.879,3706
11	.144,7964	.295,6259	.484,1629	.682,1267	.840,4977
12	.116,5156	.247,4994	.427,6016	.624,0772	.800,9050
13	.094,6852	.208,2043	.378,4830	.570,0464	.761,6099
14	.077,6574	.176,0406	.335,9133	.520,3818	.723,2972
15	.064,2415	.149,6153	.299,0196	.475,1032	.686,4035
16	.053,5698	.127,8079	.267,0044	.434,0402	.651,1868
17	.045,0038	.109,7242	.239,1651	.396,9212	.617,7796
18	.038,0695	.094,6536	.214,8949	.363,4283	.586,2284
19	.032,4111	.082,0310	.193,6759	.333,2320	.556,5217
20	.027,7592	.071,4064	.175,0684	.306,0099	.528,6105

$n = 8$

n \ u'	2	3	4	5	6
8	.000,1554	.001,2432	.008,8578	.031,7016	.100,2331
9	.000,0823	.000,6993	.005,3065	.020,2797	.068,6549
10	.000,0457	.000,4114	.003,2908	.013,3690	.047,9227
11	.000,0265	.000,2514	.002,1037	.009,0498	.034,0557
12	.000,0159	.000,1588	.001,3813	.006,2713	.024,6090
13	.000,0098	.000,1032	.000,9288	.004,4376	.018,0599
14	.000,0063	.000,0688	.000,6380	.003,1992	.013,4440
15	.000,0041	.000,0469	.000,4467	.002,3454	.010,1404
16	.000,0027	.000,0326	.000,3182	.001,7458	.007,7420
17	.000,0018	.000,0231	.000,2302	.001,3175	.005,9774
18	.000,0013	.000,0166	.000,1690	.001,0069	.004,6631
19	.000,0009	.000,0122	.000,1257	.000,7784	.003,6728
20	.000,0006	.000,0090	.000,0946	.000,6081	.002,9188

TABLE I (*Continued*)

$n = 8$

n \ u'	7	8	9	10	11
8	.214,4522	.404,8174	.595,1826	.785,5478	.899,7669
9	.157,3427	.318,5932	.500,0000	.701,5631	.842,6573
10	.117,0300	.251,4055	.419,3747	.620,9379	.782,1884
11	.088,2353	.199,3729	.352,1870	.546,6778	.721,7195
12	.067,3970	.159,0855	.296,6182	.479,9952	.663,3722
13	.052,1156	.127,7950	.250,7740	.421,0526	.608,3591
14	.040,7637	.103,3712	.212,9343	.369,4530	.557,2755
15	.032,2263	.084,1930	.181,6305	.324,5390	.510,3199
16	.025,7305	.069,0369	.155,6472	.285,5639	.467,4474
17	.020,7337	.056,9771	.133,9944	.251,7856	.428,4724
18	.016,8504	.047,3188	.115,8727	.222,5120	.393,1350
19	.013,8036	.039,5324	.100,6385	.197,1217	.361,1432
20	.011,3915	.033,2151	.087,7741	.175,0684	.332,1982

$n = 9$

n \ u'	2	3	4	5	6
9	.000,0411	.000,3702	.003,0029	.012,2172	.044,4673
10	.000,0217	.000,2057	.001,7645	.007,6100	.029,4334
11	.000,0119	.000,1191	.001,0717	.004,8821	.019,8657
12	.000,0068	.000,0714	.000,6702	.003,2151	.013,6937
13	.000,0040	.000,0442	.000,4302	.002,1672	.009,5975
14	.000,0024	.000,0281	.000,2827	.001,4917	.006,5368
15	.000,0015	.000,0184	.000,1897	.001,0463	.004,9438
16	.000,0010	.000,0122	.000,1297	.000,7465	.003,6246
17	.000,0006	.000,0083	.000,0903	.000,5409	.002,6916
18	.000,0004	.000,0058	.000,0638	.000,3975	.002,0225
19	.000,0003	.000,0041	.000,0458	.000,2959	.001,5364
20	.000,0002	.000,0029	.000,0333	.000,2230	.001,1791

$n = 8$

n \ u'	12	13	14	15	16
8	.968,2984	.991,1422	.998,7568	.999,8446	1.
9	.939,4076	.979,7203	.995,8453	.999,3007	.999,9589
10	.903,1263	.963,5952	.990,4703	.998,1489	.999,7943
11	.861,7528	.943,4389	.982,3371	.996,2293	.999,4046
12	.817,4089	.920,1000	.971,4456	.993,4508	.998,6902
13	.771,8266	.894,4272	.957,9979	.989,7833	.997,5674
14	.726,3158	.867,1827	.942,3117	.985,2425	.995,9752
15	.681,8100	.839,0093	.924,7543	.979,8762	.993,8754
16	.638,9375	.810,4276	.905,6999	.973,7515	.991,2505
17	.598,0917	.781,8459	.885,5022	.966,9464	.988,1007
18	.559,4924	.753,5760	.864,4810	.959,5423	.984,4394
19	.523,2350	.725,8498	.842,9161	.951,6206	.980,2899
20	.489,3281	.698,8345	.821,0466	.943,2587	.975,6823

$n = 9$

n \ u'	7	8	9	10	11
9	.108,9675	.237,9679	.399,2184	.600,7816	.762,0321
10	.076,7174	.178,5598	.318,5932	.509,5477	.681,4068
11	.054,8940	.134,9131	.254,9417	.429,9833	.605,0250
12	.039,8905	.102,7626	.204,9297	.362,1100	.535,0083
13	.029,4118	.078,9474	.165,6347	.304,9536	.472,1362
14	.021,9814	.061,1792	.134,6749	.257,1679	.416,4087
15	.016,6363	.047,8163	.110,1763	.217,3577	.367,4115
16	.012,7388	.037,6828	.090,6888	.184,2289	.324,5330
17	.009,8606	.029,9339	.075,0988	.156,6466	.287,1229
18	.007,7099	.023,9597	.062,5530	.133,6459	.254,5038
19	.006,0849	.019,3169	.052,3969	.114,4218	.226,0667
20	.004,8444	.015,6810	.044,1269	.098,3096	.201,2567

TABLE I (*Continued*)

$n = 9$

n' \ u	12	13	14	15	16
9	.891,0325	.955,5327	.987,7828	.996,9971	.999,6298
10	.834,1705	.923,2826	.974,2038	.992,3900	.998,6252
11	.773,0650	.885,0917	.955,1084	.985,1155	.996,5468
12	.711,0502	.843,0817	.931,1026	.975,1131	.993,0766
13	.650,4644	.799,0712	.903,0960	.962,5387	.988,0141
14	.592,7985	.754,4892	.872,0824	.947,6780	.981,2761
15	.538,9016	.710,3917	.839,0093	.930,8790	.972,8766
16	.489,1695	.667,5192	.804,7113	.912,5050	.962,9021
17	.443,6946	.626,3616	.769,8856	.892,9062	.951,4874
18	.402,3771	.587,2186	.735,0919	.872,4027	.938,7948
19	.365,0025	.550,2503	.700,7642	.851,2780	.924,9991
20	.331,2952	.515,5164	.667,2279	.829,7760	.910,2760

$n = 9$

n' \ u	17	18
9	.999,9589	1..
10	.999,7943	.999,9892
11	.999,4046	.999,9405
12	.998,6902	.999,8129
13	.997,5674	.999,5577
14	.995,9752	.999,1251
15	.993,8754	.998,4688
16	.991,2505	.997,5501
17	.988,1007	.996,3387
18	.984,4394	.994,8131
19	.980,2899	.992,9607
20	.975,6823	.990,7760

$n = 10$

n' \ u	2	3	4	5	6
10	.000,0108	.000,1083	.000,9851	.004,4924	.018,5217
11	.000,0057	.000,0595	.000,5699	.002,7387	.011,9246
12	.000,0031	.000,0340	.000,3402	.001,7181	.007,8420
13	.000,0017	.000,0201	.000,2089	.001,1057	.005,2593
14	.000,0010	.000,0122	.000,1315	.000,7281	.003,5916
15	.000,0006	.000,0076	.000,0847	.000,4895	.002,4939
16	.000,0004	.000,0049	.000,0557	.000,3353	.001,7586
17	.000,0002	.000,0032	.000,0373	.000,2336	.0012578
18	.000,0002	.000,0021	.000,0255	.000,1654	.000,9115
19	.000,0001	.000,0014	.000,0176	.000,1187	.000,6687
20	.000,0001	.000,0010	.000,0124	.000,0864	.000,4962

$n = 10$

n' \ u	7	8	9	10	11
10	.051,2565	.127,6386	.242,2113	.414,0704	.585,9296
11	.034,8893	.092,0457	.184,9250	.334,9607	.500,0000
12	.024,1724	.067,0398	.142,0576	.270,6597	.424,9821
13	.017,0279	.049,3337	.109,9071	.218,9393	.360,6811
14	.012,1820	.036,6806	.085,6777	.177,5474	.306,1650
15	.008,8413	.027,5493	.067,3038	.144,4744	.260,2302
16	.006,5028	.020,8935	.053,2728	.118,0313	.221,6449
17	.004,8423	.015,9941	.042,4797	.096,8449	.189,2657
18	.003,6475	.012,3527	.034,1158	.079,8184	.162,0831
19	.002,7769	.009,6211	.027,5869	.066,0851	.139,2318
20	.002,1353	.007,5536	.022,4538	.054,9634	.119,9827

$n = 10$

n' \ u	12	13	14	15	16
10	.757,7887	.872,3614	.948,7432	.981,4783	.995,5076
11	.680,0429	.815,0750	.915,0085	.965,1107	.989,6064
12	.605,0250	.755,0607	.875,0893	.943,6771	.980,4205
13	.535,1326	.695,0464	.830,7309	.917,9567	.967,7999
14	.471,5305	.636,8959	.783,8875	.888,8814	.951,8778
15	.414,5713	.581,7741	.736,1152	.857,3832	.932,9789
16	.364,1136	.530,3271	.688,6257	.824,3101	.911,5359
17	.319,7420	.482,8375	.642,3087	.790,3890	.888,0244
18	.280,9098	.439,3454	.597,7810	.756,2166	.862,9182
19	.247,0268	.399,7365	.555,4405	.722,2661	.836,6609
20	.217,5115	.363,8048	.515,5164	.688,9010	.809,6510

TABLE I (*Continued*)

$n = 10$

n'	17	18	19	20
10	.999,0149	.999,8917	.999,9892	1.
11	.997,2613	.999,5577	.999,9405	.999,9972
12	.994,1993	.998,7922	.999,8129	.999,9830
13	.989,6064	.997,3944	.999,5577	.999,9423
14	.983,3760	.995,1878	.999,1251	.999,8542
15	.975,5014	.992,0380	.998,4688	.999,6938
16	.966,0520	.987,8584	.997,5501	.999,4346
17	.955,1487	.982,6087	.996,3387	.999,0508
18	.942,9443	.976,2885	.994,8131	.998,5180
19	.929,6066	.968,9298	.992,9607	.997,8154
20	.915,3073	.960,5885	.990,7760	.996,9253

$n = 11$

n'	12	13	14	15	16
11	.590,0214	.740,0572	.865,0869	.936,5325	.977,3586
12	.507,1756	.665,0393	.808,5517	.900,8097	.959,3862
13	.433,4692	.593,2831	.748,7549	.859,8062	.935,9556
14	.369,0039	.526,6523	.688,3430	.815,3856	.907,7803
15	.313,6559	.466,0183	.629,2637	.769,1883	.875,7976
16	.266,4962	.411,6032	.572,8332	.722,5468	.841,0015
17	.226,5446	.363,2382	.519,8576	.676,4811	.804,3369
18	.192,8141	.320,5187	.470,7594	.631,7315	.766,6415
19	.164,3340	.282,9585	.425,6872	.588,8056	.728,6214
20	.140,4323	.250,0211	.384,6040	.548,0260	.690,8486

$n = 11$

n'	2	3	4	5	6
11	.000,0028	.000,0312	.000,3147	.001,5905	.007,3317
12	.000,0015	.000,0170	.000,1797	.000,9526	.004,6136
13	.000,0008	.000,0096	.000,1058	.000,5865	.002,9662
14	.000,0004	.000,0056	.000,0639	.000,3702	.001,9451
15	.000,0003	.000,0034	.000,0396	.000,2389	.001,2990
16	.000,0002	.000,0021	.000,0251	.000,1574	.000,8822
17	.000,0001	.000,0013	.000,0162	.000,1056	.000,6085
18	.000,0001	.000,0008	.000,0107	.000,0721	.000,4259
19	.000,0000	.000,0005	.000,0071	.000,0500	.000,3020
20	.000,0000	.000,0004	.000,0049	.000,0351	.000,2169

$n = 11$

n'	17	18	19	20	21
11	.992,6683	.998,4095	.999,6853	.999,9688	.999,9972
12	.985,0134	.995,9965	.999,0474	.999,8610	.999,9830
13	.974,0303	.9918779	.997,8270	.999,5898	.999,9423
14	.959,7523	.985,7383	.995,8440	.999,0521	.999,8542
15	.942,4283	.977,4095	.992,9567	.998,1390	.999,6938
16	.922,4391	.966,8596	.989,0699	.996,7475	.999,4346
17	.900,2288	.954,1680	.984,1342	.994,7889	.999,0508
18	.876,2559	.939,4949	.978,1410	.992,1941	.998,5180
19	.850,9602	.923,0528	.971,1144	.988,9151	.997,8154
20	.824,7448	.905,0825	.963,1042	.984,9243	.996,9253

$n = 11$

n'	7	8	9	10	11
11	.022,6414	.063,4675	.134,9131	.259,9428	.409,9786
12	.014,9866	.044,2748	.099,1903	.201,6992	.334,9607
13	.010,1052	.031,2578	.073,5631	.156,8515	.273,4554
14	.006,9323	.022,3314	.055,0545	.122,4256	.223,4823
15	.004,8324	.016,1395	.041,5803	.095,9954	.183,0596
16	.003,4190	.011,7946	.031,6866	.075,6585	.150,4106
17	.002,4526	.008,7113	.024,3580	.059,9542	.124,0275
18	.001,7820	.006,4992	.018,8817	.047,7741	.102,6697
19	.001,3103	.004,8954	.014,7542	.038,2809	.085,3343
20	.000,9742	.003,7208	.011,6173	.030,8434	.071,2182

$n = 11$

n'	22
11	1.
12	.999,9993
13	.999,9952
14	.999,9825
15	.999,9529
16	.999,8953
17	.999,7966
18	.999,6423
19	.999,4174
20	.999,1074

TABLE I (*Continued*)

$n = 12$

n \ u'	2	3	4	5	6
12	.000,0007	.000,0089	.000,0984	.000,5458	.002,7831
13	.000,0004	.000,0048	.000,0556	.000,3221	.001,7182
14	.000,0002	.000,0027	.000,0323	.000,1952	.001,0836
15	.000,0001	.000,0016	.000,0193	.000,1211	.000,6970
16	.000,0001	.000,0009	.000,0118	.000,0769	.000,4565
17	.000,0000	.000,0006	.000,0073	.000,0497	.000,3041
18	.000,0000	.000,0003	.000,0047	.000,0328	.000,2057
19	.000,0000	.000,0002	.000,0030	.000,0220	.000,1412
20	.000,0000	.000,0001	.000,0020	.000,0150	.000,0983

$n = 12$

n \ u'	7	8	9	10	11
12	.009,4950	.029,6307	.069,9020	.150,4447	.263,2045
13	.006,1391	.020,0998	.049,7664	.112,5897	.206,8246
14	.004,0450	.013,8175	.035,8056	.084,6682	.162,8483
15	.002,7123	.009,6222	.026,0331	.064,0373	.128,6445
16	.001,8486	.006,7842	.019,1233	.048,7369	.102,0415
17	.001,2791	.004,8401	.014,1876	.037,3340	.081,3120
18	.000,8976	.003,4920	.010,6267	.028,7876	.065,1096
19	.000,6381	.002,5463	.008,0322	.022,3434	.052,3969
20	.000,4593	.001,8755	.006,1241	.017,4538	.042,3791

$n = 12$

n \ u'	12	13	14	15	16
12	.421,0682	.578,9318	.736,7955	.849,5553	.930,0980
13	.347,5488	.500,0000	.664,1782	.793,1754	.893,6927
14	.285,9820	.429,6379	.593,8181	.734,5403	.851,8105
15	.235,0563	.368,0711	.527,6888	.675,9052	.806,2054
16	.193,2517	.314,8652	.466,8820	.618,8989	.758,5062
17	.159,0836	.269,2601	.411,8414	.564,6072	.710,0983
18	.131,2154	.230,3743	.362,5861	.513,6853	.662,0863
19	.108,4967	.197,3213	.318,8709	.466,4668	.615,3029
20	.089,9637	.169,2714	.280,3023	.423,0562	.570,3420

$n = 12$

n \ u'	17	18	19	20	21
12	.970,3693	.990,5050	.997,2169	.999,4542	.999,9016
13	.950,2336	.981,6453	.993,8609	.998,5145	.999,6779
14	.925,1043	.969,0806	.988,6257	.996,7694	.999,2125
15	.895,7868	.952,7931	.981,2963	.993,9643	.998,3982
16	.863,2117	.933,0154	.971,7952	.989,8925	.997,1314
17	.828,3099	.910,1487	.960,1613	.984,4098	.995,3216
18	.791,9371	.884,6877	.946,5215	.977,4383	.992,8968
19	.754,8369	.857,1617	.931,0630	.968,9611	.989,8051
20	.717,6275	.828,0922	.914,0089	.959,0129	.986,0153

$n = 12$

n \ u'	22	23	24
12	.999,9911	.999,9993	1.
13	.999,9571	.999,9952	.999,9998
14	.999,8640	.999,9825	.999,9987
15	.999,6650	.999,9529	.999,9948
16	.999,3030	.999,8953	.999,9850
17	.998,7164	.999,7966	.999,9649
18	.997,8435	.999,6423	.999,9285
19	.996,6268	.999,4174	.999,8685
20	.995,0161	.999,1074	.999,7768

$n = 13$

n \ u'	2	3	4	5	6
13	.000,0002	.000,0025	.000,0302	.000,1825	.001,0201
14	.000,0001	.000,0013	.000,0169	.000,1063	.000,6196
15	.000,0001	.000,0007	.000,0097	.000,0636	.000,3844
16	.000,0000	.000,0004	.000,0057	.000,0389	.000,2431
17	.000,0000	.000,0003	.000,0035	.000,0243	.000,1566
18	.000,0000	.000,0002	.000,0021	.000,0155	.000,1025
19	.000,0000	.000,0001	.000,0013	.000,0100	.000,0682
20	.000,0000	.000,0001	.000,0009	.000,0066	.000,0460

TABLE I (*Continued*)

$n = 13$

n_{12}'	7	8	9	10	11
13	.003,8123	.013,1194	.034,0605	.081,1780	.156,5660
14	.002,4162	.008,6899	.023,5900	.058,8796	.118,8720
15	.001,5607	.005,8382	.016,5321	.042,9993	.090,6403
16	.001,0260	.003,9760	.011,7198	.031,6825	.069,4665
17	.000,6856	.002,7431	.008,4011	.023,4462	.053,5364
18	.000,4652	.001,9158	.006,0864	.017,5103	.041,5003
19	.000,3201	.001,3537	.004,4545	.013,1753	.032,3612
20	.000,2232	.000,9671	.003,2917	.009,9865	.025,3845

$n = 13$

n_{12}'	12	13	14	15	16
13	.277,1867	.417,9109	.582,0891	.722,8133	.843,4340
14	.220,5061	.347,5488	.505,6463	.652,4512	.787,9634
15	.175,3354	.288,2822	.436,4787	.584,6951	.729,8867
16	.139,5590	.238,8967	.375,1477	.521,1738	.671,3720
17	.111,3096	.197,9694	.321,5399	.462,7634	.614,0742
18	.089,0234	.164,2684	.275,1557	.409,8046	.559,1630
19	.071,4307	.136,5466	.235,3056	.362,2814	.507,3967
20	.057,5196	.113,7560	.201,2349	.319,9562	.459,2082

$n = 13$

n_{12}'	17	18	19	20	21
13	.918,8220	.965,9395	.986,8806	.996,1877	.998,9799
14	.881,1280	.944,6493	.976,4100	.992,0943	.997,5838
15	.838,7805	.918,1821	.962,2942	.985,8206	.995,2312
16	.793,4081	.887,2820	.944,6493	.977,0996	.991,7022
17	.746,4711	.852,8615	.923,7885	.965,8193	.986,8347
18	.699,1865	.815,8728	.900,1462	.952,0067	.980,5300
19	.652,5120	.777,2204	.874,2159	.935,8003	.972,7510
20	.607,1635	.737,7122	.846,5029	.917,4183	.963,5133

$n = 13$

n_{12}'	22	23	24	25	26
13	.999,8175	.999,9698	.999,9975	.999,9998	1.
14	.999,4659	.999,8937	.999,9870	.999,9987	.999,9999
15	.998,7601	.999,7226	.999,9559	.999,9948	.999,9996
16	.997,5432	.999,4017	.999,8845	.999,9850	.999,9985
17	.995,6611	.998,8707	.999,7461	.999,9649	.999,9953
18	.992,9766	.998,0683	.999,5084	.999,9285	.999,9885
19	.989,3787	.996,9368	.999,1355	.999,8685	.999,9753
20	.984,7879	.995,4252	.998,5900	.999,7768	.999,9527

$n = 14$

n_{12}'	2	3	4	5	6
14	.000,0000	.000,0007	.000,0095	.000,0597	.000,3630
15	.000,0000	.000,0004	.000,0051	.000,0344	.000,2174
16	.000,0000	.000,0002	.000,0029	.000,0203	.000,1330
17	.000,0000	.000,0001	.000,0017	.000,0123	.000,0829
18	.000,0000	.000,0001	.000,0010	.000,0076	.000,0526
19	.000,0000	.000,0000	.000,0006	.000,0048	.000,0339
20	.000,0000	.000,0000	.000,0004	.000,0030	.000,0222

$n = 14$

n_{12}'	7	8	9	10	11
14	.001,4751	.005,5531	.015,7478	.041,2348	.087,1113
15	.000,9191	.003,6036	.010,6505	.029,1065	.064,1731
16	.000,5835	.002,3732	.007,2948	.020,7174	.047,5626
17	.000,3770	.001,5849	.005,0577	.014,8721	.035,4823
18	.000,2476	.001,0726	.003,5478	.010,7670	.026,6493
19	.000,1651	.000,7351	.002,5165	.007,8606	.020,1520
20	.000,1116	.000,5098	.001,8039	.005,7858	.015,3423

TABLE I (*Continued*)

$n = 14$

n' \ u	12	13	14	15	16
14	.169,6891	.279,7927	.426,5976	.573,4024	.720,2073
15	.130,6149	.224,7409	.357,6246	.500,0000	.651,8671
16	.100,7161	.180,4463	.298,5652	.433,5581	.585,4252
17	.077,8803	.145,0107	.248,6504	.374,4987	.522,5555
18	.060,4353	.116,7453	.206,8412	.322,6788	.464,2682
19	.047,0863	.094,2213	.172,0314	.277,6309	.411,0197
20	.036,8445	.076,2651	.143,1607	.238,7258	.363,9605

$n = 14$

n' \ u	17	18	19	20	21	22
14	.830,3109	.912,8587	.958,7652	.984,2522	.994,4469	.998,5248
15	.775,2591	.874,9219	.935,8269	.972,7391	.989,3495	.996,7320
16	.718,3090	.832,2093	.908,1428	.957,3590	.981,9671	.993,7790
17	.661,3588	.786,2817	.876,5039	.938,1942	.972,1239	.989,3972
18	.605,8375	.738,5681	.841,8030	.915,5423	.959,7858	.983,3824
19	.552,7452	.690,3024	.804,9334	.889,8453	.945,0380	.975,6062
20	.502,7244	.642,4884	.766,7231	.861,6246	.928,0556	.966,0162

$n = 14$

n' \ u	23	24	25	26	27	28
14	.999,6370	.999,9403	.999,9909	.999,9993	.999,9999	1.
15	.999,0809	.999,8131	.999,9656	.999,9961	.999,9996	.999,99999
16	.998,0742	.999,5385	.999,9046	.999,9859	.999,9985	.999,9999
17	.996,4635	.999,0331	.999,7826	.999,9610	.999,9953	.999,9995
18	.994,1081	.998,2033	.999,5684	.999,9097	.999,9885	.999,9986
19	.990,8904	.996,9535	.999,2272	.999,8166	.999,9753	.999,9963
20	.986,7220	.995,1925	.998,7219	.999,6631	.999,9527	.999,9916

$n = 15$

n' \ u	2	3	4	5	6
15	.000,0000	.000,0002	.000,0027	.000,0131	.000,1259
16	.000,0000	.000,0001	.000,0015	.000,0109	.000,0745
17	.000,0000	.000,0001	.000,0008	.000,0064	.000,0450
18	.000,0000	.000,0000	.000,0005	.000,0038	.000,0277
19	.000,0000	.000,0000	.000,0003	.000,0023	.000,0173
20	.000,0000	.000,0000	.000,0002	.000,0014	.000,0110

$n = 15$

n' \ u	7	8	9	10	11
15	.000,5630	.002,2613	.006,9592	.019,3785	.045,7170
16	.000,3395	.001,4416	.004,6103	.013,7030	.032,7977
17	.000,2123	.000,9329	.003,0948	.009,5355	.023,7050
18	.000,1351	.000,6124	.002,1040	.006,6980	.017,2643
19	.000,0873	.000,4074	.001,4477	.004,7484	.012,6703
20	.000,0573	.000,2745	.001,0076	.003,3967	.009,3695

$n = 15$

n' \ u	12	13	14	15	16
15	.097,3940	.174,9095	.291,1827	.424,0564	.575,9336
16	.072,8057	.136,1517	.236,1717	.357,6246	.504,5928
17	.054,6203	.106,1457	.191,1627	.300,4703	.439,2736
18	.041,1534	.082,9593	.154,6265	.251,8892	.380,5976
19	.031,1546	.065,0425	.125,1165	.210,9365	.328,6325
20	.023,7043	.051,1792	.101,3509	.176,6085	.283,0953

TABLE I (*Continued*)

$n = 15$

n \ u'	17	18	19	20	21
15	.708,8173	.825,0905	.902,6060	.954,2830	.980,1215
16	.642,3754	.770,9725	.863,8483	.930,5283	.967,2023
17	.576,0765	.714,7113	.820,9525	.901,9511	.950,5323
18	.517,3504	.658,1253	.775,4377	.869,2877	.930,2901
19	.461,0404	.602,6434	.728,5128	.833,4039	.906,5276
20	.409,5455	.549,3124	.681,3118	.795,1935	.880,6049

$n = 15$

n \ u'	22	23	24	25	26
15	.993,0408	.997,7387	.999,4470	.999,8741	.999,9809
16	.987,2063	.995,3897	.998,6962	.999,6605	.999,9361
17	.978,8713	.991,7526	.997,3736	.999,2472	.999,8327
18	.967,8301	.986,6001	.995,2870	.998,5446	.999,6305
19	.954,0286	.979,7746	.992,2575	.997,4587	.999,2792
20	.937,5457	.971,1926	.988,1337	.995,8984	.998,7219

$n = 15$

n \ u'	27	28	29	30
15	.999,9973	.999,9998	.999,9999	1.
16	.999,9891	.999,9988	.999,9999	1.
17	.999,9679	.999,9956	.999,9995	1.
18	.999,9228	.999,9871	.999,9986	.999,9999
19	.999,8393	.999,9686	.999,9963	.999,9996
20	.999,6993	.999,9332	.999,9916	.999,9988

$n = 16$

n \ u'	2	3	4	5	6
16	.000,0000	.000,0001	.000,0008	.000,0060	.000,0427
17	.000,0000	.000,0000	.000,0004	.000,0034	.000,0250
18	.000,0000	.000,0000	.000,0002	.000,0020	.000,0149
19	.000,0000	.000,0000	.000,0001	.000,0012	.000,0091
20	.000,0000	.000,0000	.000,0001	.000,0007	.000,0056

$n = 16$

n \ u'	7	8	9	10	11
16	.000,2017	.000,8905	.002,9571	.009,1566	.022,7957
17	.000,1222	.000,5590	.001,9238	.006,1821	.015,9762
18	.000,0754	.000,3562	.001,2687	.004,2167	.011,2921
19	.000,0473	.000,2302	.000,8475	.002,9051	.008,0492
20	.000,0302	.000,1509	.000,5732	.002,0211	.005,7858

$n = 16$

n \ u'	12	13	14	15	16
16	.052,8017	.102,8117	.186,1617	.293,3260	.431,1087
17	.038,4600	.077,8067	.146,5073	.239,7439	.365,9287
18	.028,1549	.059,0702	.115,2798	.195,5792	.309,1455
19	.020,7242	.045,0178	.090,7885	.159,4445	.260,3267
20	.015,3423	.034,4554	.071,6196	.130,0205	.218,7595

TABLE I (*Continued*)

$m = 16$

n \ u'	17	18	19	20	21
16	.568,8313	.706,6740	.813,8383	.897,1883	.947,1983
17	.500,0000	.641,9579	.750,2561	.858,3998	.922,1933
18	.436,9076	.578,8655	.705,0503	.815,4620	.892,7501
19	.380,1245	.518,8376	.649,8444	.769,7200	.859,6266
20	.329,6833	.462,7919	.595,9004	.722,4357	.823,6640

$m = 16$

n \ u'	22	23	24	25	26
16	.977,2043	.990,8433	.997,0429	.999,1095	.999,7983
17	.963,4136	.984,0238	.994,2437	.998,0762	.999,4956
18	.945,7478	.974,6555	.989,9854	.996,3729	.998,9279
19	.924,3594	.962,6106	.984,0099	.993,8179	.997,9789
20	.899,5852	.947,8986	.976,1338	.990,2514	.996,5258

$m = 16$

n \ u'	27	28	29	30	31	32
16	.999,9573	.999,9940	.999,9992	.999,9999	1.	1.
17	.999,8778	.999,9786	.999,9966	.999,9997	1.	1.
18	.999,7140	.999,9408	.999,9894	.999,9986	.999,9999	1.
19	.999,4192	.999,8624	.999,9732	.999,9958	.999,9996	1.
20	.998,9391	.999,7188	.999,9415	.999,9893	.999,9988	.999,9999

$m = 17$

n \ u'	2	3	4	5	6
17	.000,0000	.000,0000	.000,0002	.000,0019	.000,0142
18	.000,0000	.000,0000	.000,0001	.000,0011	.000,0083
19	.000,0000	.000,0000	.000,0001	.000,0006	.000,0049
20	.000,0000	.000,0000	.000,0000	.000,0004	.000,0029

$m = 17$

n \ u'	7	8	9	10	11
17	.000,0718	.000,3406	.001,2141	.004,0520	.010,8662
18	.000,0430	.000,2109	.000,7773	.002,6865	.007,4596
19	.000,0262	.000,1325	.000,5046	.001,8001	.005,1685
20	.000,0163	.000,0845	.000,3318	.001,2189	.003,6139

$m = 17$

n \ u'	12	13	14	15	16
17	.027,2181	.057,1966	.112,1570	.190,6720	.302,8363
18	.019,3731	.042,2073	.085,8902	.151,4145	.249,4781
19	.013,8746	.031,3856	.065,8689	.120,2125	.204,9038
20	.010,0005	.023,3061	.050,6268	.095,5108	.167,9944

$m = 17$

n \ u'	17	18	19	20	21
17	.429,0211	.570,9789	.697,1637	.809,3280	.887,8430
18	.365,9287	.503,8306	.634,0713	.756,6508	.848,6855
19	.310,7679	.441,7747	.572,7816	.702,1711	.806,6826
20	.263,1290	.385,4450	.514,5563	.647,4428	.760,3963

TABLE I (*Continued*)

$m = 17$

n \ u'	22	23	24	25	26
17	.942,8034	.972,7819	.989,1338	.995,9471	.998,7859
18	.917,2300	.957,7927	.981,6197	.992,5404	.997,5044
19	.887,1980	.939,0714	.971,4081	.987,5764	.995,4361
20	.853,4169	.916,8400	.958,3533	.980,8396	.992,3711

$m = 17$

n \ u'	27	28	29	30	31
17	.999,6594	.999,9282	.999,9858	.999,9981	.999,9998
18	.999,2227	.999,8101	.999,9570	.999,9929	.999,9989
19	.998,4590	.999,5751	.999,8940	.999,9795	.999,9965
20	.997,2498	.999,1604	.999,7745	.999,9499	.999,9909

$m = 17$

n \ u'	32	33	34
17	1.	1.	1.
18	.999,9999	1.	1.
19	.999,9996	1.	1.
20	.999,9986	.999,9999	1.

$m = 18$

n \ u'	2	3	4	5	6
18	.000,0000	.000,0000	.000,0001	.000,0006	.000,0047
19	.000,0000	.000,0000	.000,0000	.000,0003	.000,0027
20	.000,0000	.000,0000	.000,0000	.000,0002	.000,0016

$m = 18$

n \ u'	7	8	9	10	11
18	.000,0250	.000,1269	.000,4836	.001,7319	.004,9776
19	.000,0148	.000,0776	.000,3053	.001,1295	.003,3548
20	.000,0090	.000,0482	.000,1954	.000,7448	.002,2833

$m = 18$

n \ u'	12	13	14	15	16
18	.013,4163	.030,2938	.064,0488	.117,0923	.200,4463
19	.009,3549	.021,8551	.047,8555	.090,5705	.160,6125
20	.006,5691	.015,8550	.035,8553	.070,1416	.128,5099

$m = 18$

n \ u'	17	18	19	20	21
18	.304,6389	.434,8796	.565,1204	.695,3611	.799,5537
19	.252,5426	.372,9273	.500,0000	.633,7607	.747,4574
20	.208,7664	.318,2070	.439,8077	.573,5684	.693,9531

$m = 18$

n \ u'	22	23	24	25	26
18	.882,9077	.935,9512	.969,7062	.986,5837	.995,0224
19	.843,7651	.909,4295	.954,0017	.978,1449	.991,1451
20	.800,9617	.878,7861	.934,5013	.967,0019	.985,5736

$m = 18$

n \ u'	27	28	29	30	31
18	.998,2681	.999,5164	.999,8731	.999,9750	.999,9954
19	.996,6452	.998,9530	.999,6947	.999,9302	.999,9852
20	.994,1452	.997,9914	.999,3651	.999,8360	.999,9616

$m = 18$

n \ u'	32	33	34	35	36
18	.999,9994	.999,9999	1.	1.	1.
19	.999,9977	.999,9997	1.	1.	1.
20	.999,9930	.999,9989	.999,9999	.999,99999	1.

TABLE I (*Concluded*)

$n = 19$

n \ u'	2	3	4	5	6
19	.000,0000	.000,0000	.000,0000	.000,0002	.000,0015
20	.000,0000	.000,0000	.000,0000	.000,0001	.000,0009

$n = 19$

n \ u'	7	8	9	10	11
19	.000,0086	.000,0462	.000,1875	.000,7174	.002,2009
20	.000,0050	.000,0280	.000,1169	.000,4611	.001,4591

$n = 19$

n \ u'	12	13	14	15	16
19	.006,3548	.015,3550	.034,8553	.068,2844	.125,5915
20	.004,3501	.010,8549	.025,4705	.051,5699	.098,1013

$n = 19$

n \ u'	17	18	19	20	21
19	.204,3888	.312,7350	.433,1196	.566,8804	.687,2650
20	.164,9901	.260,9611	.372,9273	.503,2583	.627,0727

$n = 19$

n \ u'	22	23	24	25	26
19	.795,6112	.874,4085	.931,7156	.965,1447	.984,6450
20	.744,3706	.835,0099	.904,8070	.948,4301	.975,5734

$n = 19$

n \ u'	27	28	29	30	31
19	.993,6452	.997,7991	.999,2826	.999,8125	.999,9538
20	.989,1451	.995,8908	.998,5409	.999,5734	.999,8831

$n = 19$

n \ u'	32	33	34	35	36
19	.999,9914	.999,9985	.999,9998	.999,9999	1.
20	.999,9749	.999,9950	.999,9993	.999,9999	1.

$n = 20$

n \ u'	2	3	4	5	6
20	.000,0000	.000,0000	.000,0000	.000,0001	.000,0005

$n = 20$

n \ u'	7	8	9	10	11
20	.000,0029	.000,0165	.000,0710	.000,2890	.000,9429

$n = 20$

n \ u'	12	13	14	15	16
20	.002,9046	.007,4821	.018,1627	.037,9982	.074,8356

$n = 20$

n \ u'	17	18	19	20	21
20	.130,0916	.212,9756	.314,2754	.438,0928	.561,9072

$n = 20$

n \ u'	22	23	24	25	26
20	.685,7216	.787,0244	.869,9084	.925,1644	.962,0018

$n = 20$

n \ u'	27	28	29	30	31
20	.981,8373	.992,5179	.997,0954	.999,0571	.999,7110

$n = 20$

n \ u'	32	33	34	35	36
20	.999,9290	.999,9835	.999,9971	.999,9995	.999,9999

$n = 20$

n \ u'	37	38	39	40
20	1.	1.	1.	1.

TABLE II

Significance Levels of u

When $\varepsilon < .50$, u_ε is the largest integer, u', for which $P\{u \leq u'\} \leq \varepsilon$; when $\varepsilon > .50$, u is the smallest integer, u', for which $P\{u \leq u'\} \geq \varepsilon$.

$m = 2$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
2					4	4	4	4
3					5	5	5	5
4					5	5	5	5
5					5	5	5	5
6					5	5	5	5
7					5	5	5	5
8				2	5	5	5	5
9				2	5	5	5	5
10				2	5	5	5	5
11				2	5	5	5	5
12			2	2	5	5	5	5
13			2	2	5	5	5	5
14			2	2	5	5	5	5
15			2	2	5	5	5	5
16			2	2	5	5	5	5
17			2	2	5	5	5	5
18			2	2	5	5	5	5
19		2	2	2	5	5	5	5
20		2	2	2	5	5	5	5

$m = 3$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
3					6	6	6	6
4					6	7	7	7
5				2	7	7	7	7
6			2	2	7	7	7	7
7			2	2	7	7	7	7
8			2	2	7	7	7	7
9		2	2	2	7	7	7	7
10		2	2	3	7	7	7	7
11		2	2	3	7	7	7	7
12	2	2	2	3	7	7	7	7
13	2	2	2	3	7	7	7	7
14	2	2	2	3	7	7	7	7
15	2	2	3	3	7	7	7	7
16	2	2	3	3	7	7	7	7
17	2	2	3	3	7	7	7	7
18	2	2	3	3	7	7	7	7
19	2	2	3	3	7	7	7	7
20	2	2	3	3	7	7	7	7

$m = 4$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
4				2	7	8	8	8
5			2	2	8	8	8	9
6		2	2	3	8	8	9	9
7		2	2	3	8	9	9	9
8	2	2	3	3	9	9	9	9
9	2	2	3	3	9	9	9	9
10	2	2	3	3	9	9	9	9
11	2	2	3	3	9	9	9	9
12	2	3	3	4	9	9	9	9
13	2	3	3	4	9	9	9	9
14	2	3	3	4	9	9	9	9
15	3	3	3	4	9	9	9	9
16	3	3	4	4	9	9	9	9
17	3	3	4	4	9	9	9	9
18	3	3	4	4	9	9	9	9
19	3	3	4	4	9	9	9	9
20	3	3	4	4	9	9	9	9

$m = 5$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
5		2	2	3	8	9	9	10
6	2	2	3	3	9	9	10	10
7	2	2	3	3	9	10	10	11
8	2	2	3	3	10	10	11	11
9	2	3	3	4	10	11	11	11
10	3	3	3	4	10	11	11	11
11	3	3	4	4	11	11	11	11
12	3	3	4	4	11	11	11	11
13	3	3	4	4	11	11	11	11
14	3	3	4	5	11	11	11	11
15	3	4	4	5	11	11	11	11
16	3	4	4	5	11	11	11	11
17	3	4	4	5	11	11	11	11
18	4	4	5	5	11	11	11	11
19	4	4	5	5	11	11	11	11
20	4	4	5	5	11	11	11	11

TABLE II (*Continued*)

$m = 6$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
6	2	2	3	3	10	10	11	11
7	2	3	3	4	10	11	11	12
8	3	3	3	4	11	11	12	12
9	3	3	4	4	11	12	12	13
10	3	3	4	5	11	12	13	13
11	3	4	4	5	12	12	13	13
12	3	4	4	5	12	12	13	13
13	3	4	5	5	12	13	13	13
14	4	4	5	5	12	13	13	13
15	4	4	5	6	13	13	13	13
16	4	4	5	6	13	13	13	13
17	4	5	5	6	13	13	13	13
18	4	5	5	6	13	13	13	13
19	4	5	6	6	13	13	13	13
20	4	5	6	6	13	13	13	13

$m = 7$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
7	3	3	3	4	11	12	12	12
8	3	3	4	4	12	12	13	13
9	3	4	4	5	12	13	13	14
10	3	4	5	5	12	13	14	14
11	4	4	5	5	13	13	14	14
12	4	4	5	6	13	13	14	15
13	4	5	5	6	13	14	15	15
14	4	5	5	6	13	14	15	15
15	4	5	6	6	14	14	15	15
16	5	5	6	6	14	15	15	15
17	5	5	6	7	14	15	15	15
18	5	5	6	7	14	15	15	15
19	5	6	6	7	14	15	15	15
20	5	6	6	7	14	15	15	15

$m = 8$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
8	3	4	4	5	12	13	13	14
9	3	4	5	5	13	13	14	14
10	4	4	5	6	13	14	14	15
11	4	5	5	6	14	14	15	15
12	4	5	6	6	14	15	15	16
13	5	5	6	6	14	15	16	16
14	5	5	6	7	15	15	16	16
15	5	5	6	7	15	15	16	17
16	5	6	6	7	15	16	16	17
17	5	6	7	7	15	16	17	17
18	6	6	7	8	15	16	17	17
19	6	6	7	8	15	16	17	17
20	6	6	7	8	16	16	17	17

$m = 9$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
9	4	4	5	6	13	14	15	15
10	4	5	5	6	14	15	15	16
11	5	5	6	6	14	15	16	16
12	5	5	6	7	15	15	16	17
13	5	6	6	7	15	16	17	17
14	5	6	7	7	16	16	17	17
15	6	6	7	8	16	17	17	18
16	6	6	7	8	16	17	17	18
17	6	7	7	8	16	17	18	18
18	6	7	8	8	17	17	18	19
19	6	7	8	8	17	17	18	19
20	7	7	8	9	17	17	18	19

TABLE II (*Continued*)

$m = 10$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
10	5	5	6	6	15	15	16	16
11	5	5	6	7	15	16	17	17
12	5	6	7	7	16	16	17	18
13	5	6	7	8	16	17	18	18
14	6	6	7	8	16	17	18	18
15	6	7	7	8	17	17	18	19
16	6	7	8	8	17	18	19	19
17	7	7	8	9	17	18	19	19
18	7	7	8	9	18	18	19	20
19	7	8	8	9	18	19	19	20
20	7	8	9	9	18	19	19	20

$m = 11$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
11	5	6	7	7	16	16	17	18
12	6	6	7	8	16	17	18	18
13	6	6	7	8	17	18	18	19
14	6	7	8	8	17	18	19	19
15	7	7	8	9	18	18	19	20
16	7	7	8	9	18	19	20	20
17	7	8	9	9	18	19	20	21
18	7	8	9	10	19	19	20	21
19	8	8	9	10	19	20	21	21
20	8	8	9	10	19	20	21	21

$m = 12$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
12	6	7	7	8	17	18	18	19
13	6	7	8	9	17	18	19	20
14	7	7	8	9	18	19	20	20
15	7	8	8	9	18	19	20	21
16	7	8	9	10	19	20	21	21
17	8	8	9	10	19	20	21	21
18	8	8	9	10	20	20	21	22
19	8	9	10	10	20	21	22	22
20	8	9	10	11	20	21	22	22

$m = 13$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
13	7	7	8	9	18	19	20	20
14	7	8	9	9	19	19	20	21
15	7	8	9	10	19	20	21	21
16	8	8	9	10	20	20	21	22
17	8	9	10	10	20	21	22	22
18	8	9	10	11	20	21	22	23
19	9	9	10	11	21	22	23	23
20	9	10	10	11	21	22	23	23

TABLE II (*Concluded*)

$n = 14$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
14	7	8	9	10	19	20	21	22
15	8	8	9	10	20	21	22	22
16	8	9	10	11	20	21	22	23
17	8	9	10	11	21	22	23	23
18	9	9	10	11	21	22	23	24
19	9	10	11	12	22	22	23	24
20	9	10	11	12	22	23	24	24

$n = 15$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
15	8	9	10	11	20	21	22	23
16	9	9	10	11	21	22	23	23
17	9	10	11	11	21	22	23	24
18	9	10	11	12	22	23	24	24
19	10	10	11	12	22	23	24	25
20	10	11	12	12	23	24	25	25

$n = 16$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
16	9	10	11	11	22	22	23	24
17	9	10	11	12	22	23	24	25
18	10	10	11	12	23	24	25	25
19	10	11	12	13	23	24	25	26
20	10	11	12	13	24	24	25	26

$n = 17$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
17	10	10	11	12	23	24	25	25
18	10	11	12	13	23	24	25	26
19	10	11	12	13	24	25	26	26
20	11	11	13	13	24	25	26	27

$n = 18$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
18	11	11	12	13	24	25	26	26
19	11	12	13	14	24	25	26	27
20	11	12	13	14	25	26	27	28

$n = 19$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
19	11	12	13	14	25	26	27	28
20	12	12	13	14	26	26	28	28

$n = 20$

n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
19								
20	12	13	14	15	26	27	28	29

TABLE III

Significance Levels of u

$$P\{u \leq u_\varepsilon\} = \varepsilon$$

For definition of u_ε, see note to Table II.

m=n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
10	4	5	6	6	15	15	16	17
11	5	6	7	7	16	16	17	18
12	6	6	7	8	17	18	19	19
13	7	7	8	9	18	19	20	20
14	7	8	9	10	19	20	21	22
15	8	9	10	11	20	21	22	23
16	9	10	11	11	22	22	23	24
17	10	10	11	12	23	24	25	25
18	10	11	12	13	24	25	26	27
19	11	12	13	14	25	26	27	28
20	12	13	14	15	26	27	28	29
21	13	14	15	16	27	28	29	30
22	14	14	16	17	28	29	31	31
23	14	15	16	17	30	31	32	33
24	15	16	17	18	31	32	33	34
25	16	17	18	19	32	33	34	35
26	17	18	19	20	33	34	35	36
27	18	19	20	21	34	35	36	37
28	18	19	21	22	35	36	38	39
29	19	20	22	23	36	37	39	40
30	20	21	22	24	37	39	40	41
31	21	22	23	25	38	40	41	42
32	22	23	24	25	40	41	42	43
33	23	24	25	26	41	42	43	44
34	23	24	26	27	42	43	45	46
35	24	25	27	28	43	44	45	47
36	25	26	28	29	44	45	47	48
37	26	27	29	30	45	46	48	49
38	27	28	30	31	46	47	49	50
39	28	29	30	32	47	49	50	51
40	29	30	31	33	48	50	51	52
41	29	31	32	34	49	51	52	54
42	30	31	33	35	50	52	54	55
43	31	32	34	35	52	53	55	56
44	32	33	35	36	53	54	56	57
45	33	34	36	37	54	55	57	58
46	34	35	37	38	55	56	58	59
47	35	36	38	39	56	57	59	60
48	35	37	38	40	57	59	60	62
49	36	38	39	41	58	60	61	63
50	37	38	40	42	59	61	63	64
51	38	39	41	43	60	62	64	65
52	39	40	42	44	61	63	65	66
53	40	41	43	45	62	64	66	67
54	41	42	44	45	64	65	67	68
55	42	43	45	46	65	66	68	69

m=n	$u_{.005}$	$u_{.01}$	$u_{.025}$	$u_{.05}$	$u_{.95}$	$u_{.975}$	$u_{.99}$	$u_{.995}$
56	42	44	46	47	66	67	69	71
57	43	45	47	48	67	68	70	72
58	44	46	47	49	68	70	71	73
59	45	46	48	50	69	71	73	74
60	46	47	49	51	70	72	74	75
61	47	48	50	52	71	73	75	76
62	48	49	51	53	72	74	76	77
63	49	50	52	54	73	75	77	78
64	49	51	53	55	74	76	78	80
65	50	52	54	56	75	77	79	81
66	51	53	55	57	76	78	80	82
67	52	54	56	58	77	79	81	83
68	53	54	57	58	79	80	83	84
69	54	55	58	59	80	81	84	85
70	55	56	58	60	81	83	85	86
71	56	57	59	61	82	84	86	87
72	57	58	60	62	83	85	87	88
73	57	59	61	63	84	86	88	90
74	58	60	62	64	85	87	89	91
75	59	61	63	65	86	88	90	92
76	60	62	64	66	87	89	91	93
77	61	63	65	67	88	90	92	94
78	62	64	66	68	89	91	93	95
79	63	64	67	69	90	92	95	96
80	64	65	68	70	91	93	96	97
81	65	66	69	71	92	94	97	98
82	66	67	69	71	94	96	98	99
83	66	68	70	72	95	97	99	101
84	67	69	71	73	96	98	100	102
85	68	70	72	74	97	99	101	103
86	69	71	73	75	98	100	102	104
87	70	72	74	76	99	101	103	105
88	71	73	75	77	100	102	104	106
89	72	74	76	78	101	103	105	107
90	73	74	77	79	102	104	107	108
91	74	75	78	80	103	105	108	109
92	75	76	79	81	104	106	109	110
93	75	77	80	82	105	107	110	112
94	76	78	81	83	106	108	111	113
95	77	79	82	84	107	109	112	114
96	78	80	82	85	108	111	113	115
97	79	81	83	86	109	112	114	116
98	80	82	84	87	110	113	115	117
99	81	83	85	87	112	114	116	118
100	82	84	86	88	113	115	117	119