UNIVERSITY OF PUNE

FOR PEONS

Statement showing the work done at the ..... Examination/s held in October/November/March/April 20 at the ..... Centre

(Place of Examination : .....)

[*Note* : This statement should be accompanied by an abstract for Peons.]

Sr. No.	Name of the Servant	Designation	Date		Date		Date		Date		Date		Date		Date		Date		Total No. of turns	Rate per turn Rs.	Amount paid Rs.	Signature of the Peon
			M	E	M	E	M	E	M	E	M	E	M	E	M	E	M	E				

M—Morning
E—Evening

_____
Signature of the Principal of the College
where the examination was held

_____
Signature of the Senior Supervisor
_____ Examination
October/November/March/April 20
_____ Centre

P.U.P.—10,000-06-2013 (203) [5]

Payment Register Page No. ..... Voucher No. .....

Cheque No. .....

THE REGISTRAR, UNIVERSITY OF PUNE ..... Dr.

To

(Name of Stationery Store-Clerk) .....

(in block letters)

at the ..... College

.....

	Rs.	P.
To* amount due to me as stationery Store-Clerk for the examinations held at the above college centre during the First/Second Half of 200	150	00
Total ..	150	00

PAYMENT RECEIVED

To be stamped and signed in advance

Revenue Stamp for Payment over Rs. 5000/-

Signature : .....

Date : .....

Address : .....

.....

.....

I certify that Shri. ..... worked as a stationery Store-clerk is indicated above. He may be paid the remuneration as claimed above.

.....

(Signature of the Principal)

..... College

Seal of the College

Checked

Dy. Registrar (Exam.)

PASSED FOR Rs. ..... P .....

Rs. .....

.....

Date : .....

A. R. (Finance) Dy. F.O. Registrar

* The stationery store-clerk will be paid Rs. 150/- per person.

P.U.P.—10,000-8-2012 (289) [2\exam]

[To be sent to Registrar immediately
after the receipt of the Parcel]

University of Pune

[Examiners are requested to sign and forward this form to the University Registrar, Pune-7, as soon as they receive the Parcel of Answer-Books.]

the senior Supervisor,
RECEIVED from _____ Centre _____
the Office of the University Registrar,

in a sealed Parcel No.* _____ Answer-Books in _____

Paper _____ Section _____ at the _____ Examination and

certify that the contents of the parcels are all right.

Place : _____ Signature : _____

Date : _____ 201 .

N.B. : - Examiners are instructed to open the sealed parcels immediately on their receipt and to report to the Registrar within a week thereof whether the contents of the paercels are all right.

*Put the total number of Answer-Books received in the Bundle.

P.U.P -10,000-12-2012 (649\exam}[3]

[To be sent to Registrar immediately
after the receipt of the Parcel]

University of Pune

[Examiners are requested to sign and forward this form to the University Registrar, Pune-7, as soon as they receive the Parcel of Answer-Books.]

the senior Supervisor,
RECEIVED from _____ Centre _____
the Office of the University Registrar,

in a sealed Parcel No.* _____ Answer-Books in _____

Paper _____ Section _____ at the _____ Examination and

certify that the contents of the parcels are all right.

Place : _____ Signature : _____

Date : _____ 201 .

N.B. : - Examiners are instructed to open the sealed parcels immediately on their receipt and to report to the Registrar within a week thereof whether the contents of the paercels are all right.

*Put the total number of Answer-Books received in the Bundle.

P.U.P -10,000-1-2013 (649\exam}[3]

UNIVERSITY OF PUNE

ADMIT

Name of the Junior Supervisor : .....

Name of the Examianation : .....

Place of the Examination : .....

	Whole Days	Half Days
Date of the Examination	.....	.....
	.....	.....
	.....	.....
	.....	.....

Signature of the
Senior Supervisor .....

INSTRUCTIONS TO JUNIOR SUPERVISORS

1. Supervisors shall be in attendance at the place of the examination at least thirty minutes before the setting of the first paper and fifteen minutes before the setting of each subsequent paper.
2. In distributing question papers, junior supervisors shall begin to hand over the papers from the last candidate in the respective blocks.
3. When a paper is divided into two section, two answer-books, one for each section shall be supplied to the candidates, and only one when it is not so divided. Additional answer-books shall be given only when the book previously given for the whole paper or section is written in. Any required number of additional answer - books may be given according to the needs of the candidate. Supervisors shall take particular care to collect all answer-bookes whether used or unused, and shall see that no candidate is allowed to retain with him any blank answer-book after the warning bell is rung.
4. While the examination is going on, junior supervisors shall carefully look after the block of candidates of which they are assigned.
5. Supervisors shall use the almost vigilance to prevent copying or communication by candidates with one another or with any other person.

6. Junior Supervisors :
   (I) shall not engage in conversation with candidates during the examination and they shall not read what candidates write;
   (II) shall not give any kind of explanation connected with the question set;
   (III) shall not do any private or office work during the hours of supervision nor shall they, on any account, admit outsiders to the place of the examination;
   (IV) shall not keep with them any spare copies of question papers after they have been deliivered to the candidates;
   (V) shall see that no copy of the question paper is given to any one who is not a candidate appearing for the examination;
   (VI) shall see that all the candidates are given the proper question papers in accordance with the subjects they have offered for the examination;
   (VII) shall not allow any exchange of writing materials, stencils, mathematical instruments, etc, when the examination is in progress.
7. One hour after the setting of the question paper, junior supervisors shall go round the block they are in charge of and see that the candidates have made all the entries correctly on the front page of each answer-book supplied and have written correctly and legibly their seat number, the subject and the number of the section of each answer-book, Whenever any additional book or books are supplied to candidates they shall also see that all the entries on the front page are properly and correctly made.
8. Junior Supervisors should not allow the candidates to charge their seats. They should ensure themselves that the candidates write their seat numbers legibly and accurately on the answer-books are supplied to candidates they shall also see that all the entries on the answer-books and the supplemlents, for, careless writing of wrong seat numbers result in unnecessary complications leading to assinging marks to different seat numbers.

   The Junior Supervisors may refer to list of the names of candidates if they have any doubt or difficulty of the identity of the candidate/s.
9. They shall see that no candidate in their blcok leaves the examination hall without giving back his answer-book or answer-books, as the case may be, whether blank or written in.
10. Supervisors shall note down the numbers of such candidates as have given up their answer-books befroe the ringging of the warning bell at the end of examination.
11. Candidtes who give up their answer-books before the ringing of the warning bell shall be allowed to leave the hall. But after that, no candidate shall be allwoed to leave it till the close of examination.
12. Junior Supervisors should see that answer-books, original as well as supplements, that they will supply to the candidates for writing answers are initialled and dated by them at the proper place.
13. At the ringing of the final bell, the junior supervisors shall go to each candidate and collect from him all his answer-books. In doing so the junior supervisors shall begin collecting the answer-books, from the last seat in their blocks and when the collection work is over shall arrange them in two bundles according to sections and in their serial order. They shall deliver the bundles personally together with their reports, to the Senior Supervisors, and shall not leave the place of the examination without their permission.

14. Supervisors shall put down their number of the block allotted to them on the reports supplied to them and whenever their blocks are changed, they shall take a note of their new block and write down the number of the new block on the reports.

15. Junior Supervisors shall make three copies of the reports for each paper which has to be answered in one and the same language. Separate reports should be prepared for each subject when there are more than one allotted to one supervisor. Two of these shall be packed with the bundled containing the respective section of the answer-books. The third copy of each reports shall be handed over separately to the Senior Supervisor of being sent to the University Office.

16. Supervisors shall carry out all instructions which may be given to them by their Senior Supervisors in regard to their work not covered by these rules.

17. Special books containing squared paper shall be given to candidates for answering questions on graphs.

18. Remuneration will only be paid if the work of the supervisors is satisfactory. Deductions may be made from the remuneration for remisseness in duty noticed or failure to observe any of the foregoing instruction issued by the Senior Supervisor under 15 above.

INSTRUCTIONS TO CANDIDATES

(for the information of the Junior Supervisors)

1. Candidates who are not in their seats by the time notified will not, as a rule, be admitted to the examination. The Senior supervisor may, however, at his discretion, admit those who give him a satisfactory reason for the delay.

2. Smoking is prohibited in the examination hall.

3. A warning bell will be given ten minutes before the close of the examination; at the second bell you must stop writing, and be ready to hand over your answer-books to the supervisor. You must not leave your seat until all your answer-books are collected by the supervisor.

(A) While entering the examination hall

1. Make sure that you are not in possession of any material such as books, note-books, scribbled notes which may tempt to copy or use as a reminder.

2. *Do not* take with you any answer-book or supplement written in or blank while leaving the examination hall.

3. *Do not* speak or communicate in any way with any other candidate in the examination hall while the examination is going on.

4. *Do not* disobey any instruction/s issued to you by the Senior or the Junior Supervisor.

5. *Do not* behave in a rude or disobedient manner.
   Failure to observe the insturctions may result in expelling the candidate instantly and punishing the misconduct of breach of rules by excluding him from any University or *College Examination or Course for a specified period or permanently.*

(B) While writing in the examination hall

1. Write on both sides.
2. Do not write your name or any part of your answer-book or disclose your identity in any other maner.
3. Do not write anything on the question paper or the blotting paper.
4. If you want anything, apply to your Supervisor, but do not leave your Seat on any account.
5. If you suspect that there is some error in the body of the question paper, bring it immediately to the notice of the Senior Supervisor so as to enable him to rectify it after making the necessary enquiries. In case the Senior Supervisor so as to enable him to rectify if after making the necessary enquiries. In case the Senior Supervisor is unable to rectify the error while the paper is in progress, you should bring the suspected error to the University within one week of the date on which the paper in question has been set.
6. Write your answers in a legible hand. Answers written in an illlegible and undecipherable hand are liable to be unassessed.
7. In case a part of the answer to a question is written on a page not immediately succeeding the page on which the main body of the answer is written, the fact must be clearly indicated at the end of complete answer, otherwise the part of the answer is liable to remain unassessed.
8. You will not be permitted to leave the examination hall until half an hour after the question papers are distributed.
9. Exchange of writing materials, stencils, mathematical instruments etc, is strictly prohibited.
10. Do not write answers in wrong sections as there is a risk of these being not examined.

(C) While handing over the answer-books

1. Make sure that you have completely and correctly, written your seat number and other datails on the cover page of the answer-book/s and supplement/s.
2. All answer-books and supplements supplied to you must be handed over to the Supervisors intact whether written in or blank.

Ganeshkhind,

Pune-411007 **University Registrar**

P.U.P.—10,000-12-2012 (650) [2\exam]

पुणे विद्यापीठ

विद्यार्थ्यांना विशेष सूचना

परीक्षादालनात पेपर लिहिताना

१. उत्तरपत्रिकेच्या दोन्ही बाजूंस लिहा.

२. उत्तरपत्रिकेच्या कोणत्याही भागात आपले नाव लिहू नका अथवा इतर कोणत्याही मार्गाने आपली ओळख पटेल असे करू नका.

३. प्रश्नपत्रिका अथवा टीपकागदावर काहीही लिहू नका.

४. आपल्याला काही पाहिजे असेल तर पर्यवेक्षकाकडे मागणी करा. कोणत्याही परिस्थितीत आपली जागा सोडू नका.

५. आपल्याला प्रश्नपत्रिकेत काही चूक आहे असे वाटत असल्यास वरिष्ठ पर्यवेक्षकाच्या ताबडतोब लक्षात आणून द्या.

६. सुवाच्च अक्षरात उत्तरे लिहा, न वाचता येण्यासारखे अक्षर असेल तर उत्तरपत्रिका न तपासण्याची शक्यता आहे.

७. प्रश्नपत्रिका वाटल्यावर अर्धा तास परीक्षादालन सोडता येणार नाही. तसेच परिक्षा हॉल मध्ये मोबाईल आणण्यास सक्त मनाई आहे.

८. लिहिलेला मजकूर, गणितासाठी आवश्यक असलेली साधने इ. देवघेव करण्यास सक्त मनाई आहे.

९. चुकीच्या विभागामध्ये उत्तरे लिहू नका, कारण अशी उत्तरे न तपासली जाण्याची शक्यता आहे.

१०. परिक्षा दालनामध्ये (मोबाईल) फोन घेवून येण्यास सक्त मनाई आहे.

उत्तरपत्रिका परत करताना

१. उत्तरपत्रिकेच्या आणि पुरवण्यांच्या मुखपृष्ठावरील परीक्षा -क्रमांक आणि इतर माहिती संपूर्ण बरोबर लिहिल्याची खात्री करा.

२. पुरविलेल्या सर्व उत्तरपत्रिका आणि पुरवण्या, लिहिलेल्या अथवा कोऱ्या, जोडून पर्यवेक्षकाकडे द्याव्यात.

पु.वि.मु.-५,०००-१२-२०१२ (६५१/१) (३)

(TO BE EXHIBITED ON EACH BLOCK)

University of Pune

INSTRUCTIONS TO CANDIDATES

WHILE ENTERING THE EXAMINATION HALL :

1. Make sure that you are not in possession of any material such as books, note-books, scribbled notes which may tempt you to copy OR use as a reminder. Read the instructions given on the answer-book carefully.

2. DO NOT take with you any answer-book or supplement written in or blank while leaving the Examination Hall.

3. **DO NOT speak OR communicate in any way with any other candidate in the examination hall while the examination is going on.**

4. **DO NOT disobey any instruction/s issued to you by the Senior OR the Junior Supervisor.**

5. **DO NOT behave in a rude OR disobedient manner.**

6. **DO NOT carry Mobile phone in Examination Hall. It is strictly prohibited.**

Failure to observe the instruction may result in EXPELLING the candidate instantly and PUNISHING the misconduct or breach of rules by EXCLUDING him from any University or College EXAMINATION OR COURSE FOR A SPECIFIED PERIOD OR PERMANENTLY.

P.U.P.-5,000-12-12 (651//exam) [3]

UNIVERSITY OF PUNE

Logarithmic and Other Tables

(For Examination Purposes)

[Note : **The junior supervisors are requested to collect the logtables from the candidates soon after the paper is over.]**

USEFUL CONSTANTS

I. Mathematical Constants :

$\pi = 3.14159$, $\sqrt{\pi} = 1.77245$, $\log_{10} \pi = 0.49715$,

$1/\pi = 0.31831$, $e = 2.71828$, $\log_{10} e = 0.43429$,

$\log 10 = 2.30259$, $\sqrt{e} = 1.64872$, $1/e = 0.36788$.

Euler's Constant (γ) = 0.57722,

1 Radian = 57°.29578.

II. Physical Constants :

Velocity of light (c) = 2.9977×10^{10} cm. / sec.

Constant of gravitation (G) = 6.67×10^{-8} dynes. cm^2 / gm^2.

Planck's constant (h) = 6.62×10^{-27} ergs. sec.

Charge on electron (e) = 4.80×10^{-10} e.s.u.

= 1.60×10^{-20} e.m.u.

Mass of electron at rest (m) = 9.11×10^{-28} gm.

Speciffic charge (e/m) = 5.27×10^{17} e.s.u. / gm.

= 1.76×10^{7} e.m.u. / gm.

Boltzmann's constant (k) = 1.38×10^{-16} ergs / deg.

Avogadro's number (N) = 6.02×10^{28}.

———————

LOGARITHMS

	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
10	0000	0043	0086	0128	0170	0212	0253	0294	0334	0374	5 4	9 8	13 12	17 16	21 20	26 24	30 28	34 32	38 36
11	0414	0453	0492	0531	0569	0607	0645	0682	0719	0755	4 4	8 7	12 11	16 15	20 18	23 22	27 26	31 29	35 33
12	0792	0808	0864	0899	0934	0969	1004	1038	1072	1106	3 3	7 7	11 10	14 14	18 17	21 20	25 24	23 27	32 31
13	1139	1173	1206	1239	1271	1303	1335	1367	1399	1430	3 3	6 7	10 10	13 13	16 16	19 19	23 22	26 25	29 29
14	1461	1492	1523	1553	1584	1614	1644	1673	1703	1732	3 3	6 6	9 9	12 12	15 14	19 17	22 20	25 23	28 26
15	1761	1790	1818	1847	1875	1903	1931	1959	1987	2014	3 3	6 6	9 8	11 11	14 14	17 17	20 19	23 22	26 25
16	2041	2068	2095	2122	2148	2175	2201	2227	2253	2279	3 3	6 5	8 8	11 10	14 13	16 16	19 18	22 21	24 23
17	2304	2330	2355	2380	2405	2430	2455	2480	2504	2529	3 3	5 5	8 8	10 10	13 12	15 15	18 17	20 20	23 22
18	2553	2577	2601	2625	2648	2672	2695	2718	2742	2765	2 2	5 4	7 7	9 9	12 11	14 14	17 16	19 18	21 21
19	2788	2810	2833	2856	2878	2900	2923	2945	2967	2989	2 2	4 4	7 6	9 8	11 11	13 13	16 15	18 17	20 19
20	3010	3032	3054	3075	3096	3118	3139	3160	3181	3201	2	4	6	8	11	13	15	17	19
21	3222	3243	3263	3284	3304	3324	3345	3365	3385	3404	2	4	6	8	10	12	14	16	18
22	3424	3444	3464	3483	3502	3522	3541	3560	3579	3598	2	4	6	8	10	12	14	15	17
23	3617	3636	3655	3674	3692	3711	3729	3747	3766	3784	2	4	6	7	9	11	13	15	17
24	3802	3820	3838	3856	3874	3892	3909	3927	3945	3962	2	4	5	7	9	11	12	14	16
25	3979	3997	4014	4031	4048	4065	4082	4099	4116	4133	2	3	5	7	9	10	12	14	15
26	4150	4166	4183	4200	4216	4232	4249	4265	4281	4298	2	3	5	7	8	10	11	13	15
27	4314	4330	4346	4362	4378	4393	4409	4425	4440	4456	2	3	5	6	8	9	11	13	14
28	4472	4487	4502	4518	4533	4548	4564	4579	4594	4609	2	3	5	6	8	9	11	12	14
29	4624	4639	4654	4669	4683	4698	4713	4728	4742	4757	1	3	4	6	7	9	10	12	13
30	4771	4786	4800	4814	4829	4843	4857	4871	4886	4900	1	3	4	6	7	9	10	11	13
31	4914	4928	4942	4955	4969	4983	4997	5011	5024	5038	1	3	4	6	7	8	10	11	12
32	5051	5065	5079	5092	5105	5119	5132	5145	5159	5172	1	3	4	5	7	8	9	11	12
33	5185	5198	5211	5224	5237	5250	5263	5276	5289	5302	1	3	4	5	6	8	9	10	12
34	5315	5328	5340	5353	5366	5378	5391	5403	5416	5428	1	3	4	5	6	8	9	10	11
35	5441	5453	5465	5478	5490	5502	5514	5527	5539	5551	1	2	4	5	6	7	9	10	11
36	5563	5575	5587	5599	5611	5623	5635	5647	5658	5670	1	2	4	5	6	7	8	10	11
37	5682	5694	5705	5717	5729	5740	5752	5763	5775	5786	1	2	3	5	6	7	8	9	10
38	5798	5809	5821	5832	5843	5855	5866	5877	5888	5899	1	2	3	5	6	7	8	9	10
39	5911	5922	5933	5944	5955	5966	5977	5988	5999	6010	1	2	3	4	5	7	8	9	10
40	6021	6031	6042	6053	6064	6075	6085	6096	6107	6117	1	2	3	4	5	6	8	9	10
41	6128	6138	6149	6160	6170	6180	6191	6201	6212	6222	1	2	3	4	5	6	7	8	9
42	6232	6243	6253	6263	6274	6284	6294	6304	6314	6325	1	2	3	4	5	6	7	8	9
43	6335	6345	6355	6365	6375	6385	6395	6405	6415	6425	1	2	3	4	5	6	7	8	9
44	6435	6444	6454	6464	6474	6484	6493	6503	6513	6522	1	2	3	4	5	6	7	8	9
45	6532	6542	6551	6561	6571	6580	6590	6599	6609	6618	1	2	3	4	5	6	7	8	9
46	6628	6637	6646	6656	6665	6675	6684	6693	6702	6712	1	2	3	4	5	6	7	7	8
47	6721	6730	6739	6749	6758	6767	6776	6785	6794	6803	1	2	3	4	5	5	6	7	8
48	6812	6821	6830	6839	6848	6857	6866	6875	6884	6893	1	2	3	4	4	5	6	7	8
49	6902	6911	6920	6928	6937	6946	6955	6964	6972	6981	1	2	3	4	4	5	6	7	8

LOGARITHMS—*Contd.*

	0	1	2	3	4	5	6	7	8	9	1 2 3	4 5 6	7 8 9
50	6990	6998	7007	7016	7024	7033	7042	7050	7059	7067	1 2 3	3 4 5	6 7 8
51	7076	7084	7093	7101	7110	7118	7126	7135	7143	7152	1 2 3	3 4 5	6 7 8
52	7160	7168	7177	7185	7193	7202	7210	7218	7226	7235	1 2 2	3 4 5	6 7 7
53	7243	7251	7259	7267	7275	7284	7292	7300	7308	7316	1 2 2	3 4 5	6 6 7
54	7324	7332	7340	7348	7356	7364	7372	7380	7388	7396	1 2 2	3 4 5	6 6 7
55	7404	7412	7419	7427	7435	7443	7451	7459	7466	7474	1 2 2	3 4 5	5 6 7
56	7482	7490	7497	7505	7513	7520	7528	7536	7543	7551	1 2 2	3 4 5	5 6 7
57	7559	7566	7574	7582	7589	7597	7604	7612	7619	7627	1 2 2	3 4 5	5 6 7
58	7634	7642	7649	7657	7664	7672	7679	7686	7694	7701	1 1 2	3 4 4	5 6 7
59	7709	7716	7723	7731	7738	7745	7752	7760	7767	7774	1 1 2	3 4 4	5 6 7
60	7782	7789	7796	7803	7810	7818	7825	7832	7839	7846	1 1 2	3 4 4	5 6 6
61	7853	7860	7868	7875	7882	7889	7896	7903	7910	7917	1 1 2	3 4 4	5 6 6
62	7924	7931	7938	7945	7952	7959	7966	7973	7980	7987	1 1 2	3 3 4	5 6 6
63	7993	8000	8007	8014	8021	8028	8035	8041	8048	8055	1 1 2	3 3 4	5 5 6
64	8062	8069	8075	8082	8089	8096	8102	8109	8116	8122	1 1 2	3 3 4	5 5 6
65	8129	8136	8142	8149	8156	8162	8169	8176	8182	8189	1 1 2	3 3 4	5 5 6
66	8195	8202	8209	8215	8222	8228	8235	8241	8248	8254	1 1 2	3 3 4	5 5 6
67	8261	8267	8274	8280	8287	8293	8299	8306	8312	8319	1 1 2	3 3 4	5 5 6
68	8325	8331	8338	8344	8351	8357	8363	8370	8376	8382	1 1 2	3 3 4	4 5 6
69	8388	8395	8401	8407	8414	8420	8426	8432	8439	8443	1 1 2	2 3 4	4 5 6
70	8451	8457	8463	8470	8476	8482	8488	8494	8500	8506	1 1 2	2 3 4	4 5 6
71	8513	8519	8525	8531	8537	8543	8549	8555	8561	8567	1 1 2	2 3 4	4 5 5
72	8573	8579	8585	8591	8597	8603	8609	8615	8621	8627	1 1 2	2 3 4	4 5 5
73	8633	8639	8645	8651	8657	8663	8669	8675	8681	8686	1 1 2	2 3 4	4 5 5
74	8692	8698	8704	8710	8716	8722	8727	8733	8739	8745	1 1 2	2 3 4	4 5 5
75	8751	8756	8762	8768	8774	8779	8785	8791	8797	8802	1 1 2	2 3 3	4 5 5
76	8808	8814	8820	8825	8831	8837	8842	8848	8854	8859	1 1 2	2 3 3	4 5 5
77	8865	8871	8876	8882	8887	8893	8899	8904	8910	8915	1 1 2	2 3 3	4 4 5
78	8921	8927	8932	8938	8943	8949	8954	8960	8965	8971	1 1 2	2 3 3	4 4 5
79	8976	8982	8987	8993	8998	9004	9009	9015	9020	9025	1 1 2	2 3 3	4 4 5
80	9031	9036	9042	9047	9053	9058	9063	9069	9074	9079	1 1 2	2 3 3	4 4 5
81	9085	9090	9096	9101	9106	9112	9117	9122	9128	9133	1 1 2	2 3 3	4 4 5
82	9138	9143	9149	9154	9159	9165	9170	9175	9180	9186	1 1 2	2 3 3	4 4 5
83	9191	9196	9201	9206	9212	9217	9222	9227	9232	9238	1 1 2	2 3 3	4 4 5
84	9243	9248	9253	9258	9263	9269	9274	9279	9284	9289	1 1 2	2 3 3	4 4 5
85	9294	9299	9304	9309	9315	9320	9325	9330	9335	9340	1 1 2	2 3 3	4 4 5
86	9345	9350	9355	9360	9365	9370	9375	9380	9385	9390	1 1 2	2 3 3	4 4 5
87	9395	9400	9405	9410	9415	9420	9425	9430	9435	9440	0 1 1	2 2 3	3 4 4
88	9445	9450	9455	9460	9465	9469	9474	9479	9484	9489	0 1 1	2 2 3	3 4 4
89	9494	9499	9504	9509	9513	9518	9523	9528	9533	9538	0 1 1	2 2 3	3 4 4
90	9542	9547	9552	9557	9562	9566	9571	9576	9581	9586	0 1 1	2 2 3	3 4 4
91	9590	9595	9600	9605	9609	9614	9619	9624	9628	9633	0 1 1	2 2 3	3 4 4
92	9638	9643	9647	9652	9657	9661	9666	9671	9675	9680	0 1 1	2 2 3	3 4 4
93	9685	9689	9694	9699	9703	9708	9713	9717	9722	9727	0 1 1	2 2 3	3 4 4
94	9731	9736	9741	9745	9750	9754	9759	9763	9768	9773	0 1 1	2 2 3	3 4 4
95	9777	9782	9786	9791	9795	9800	9805	9809	9814	9818	0 1 1	2 2 3	3 4 4
96	9823	9827	9832	9836	9841	9845	9850	9854	9859	9863	0 1 1	2 2 3	3 4 4
97	9868	9872	9877	9881	9886	9890	9894	9899	9903	9908	0 1 1	2 2 3	3 4 4
98	9912	9917	9921	9926	9930	9934	9939	9943	9948	9952	0 1 1	2 2 3	3 4 4
99	9956	9961	9965	9969	9974	9978	9983	9987	9991	9996	0 1 1	2 2 3	3 3 4

ANTILOGARITHMS

	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
.00	1000	1002	1005	1007	1009	1012	1014	1016	1019	1021	0	0	1	1	1	1	2	2	2
.01	1023	1026	1028	1030	1033	1035	1038	1040	1042	1045	0	0	1	1	1	1	2	2	2
.02	1047	1050	1052	1054	1057	1059	1062	1064	1067	1069	0	0	1	1	1	1	2	2	2
.03	1072	1074	1076	1079	1081	1084	1086	1089	1091	1094	0	0	1	1	1	1	2	2	2
.04	1096	1099	1102	1104	1107	1109	1112	1114	1117	1119	0	1	1	1	1	2	2	2	2
.05	1122	1125	1127	1130	1132	1135	1138	1140	1143	1146	0	1	1	1	1	2	2	2	2
.06	1148	1151	1153	1156	1159	1161	1164	1167	1169	1172	0	1	1	1	1	2	2	2	2
.07	1175	1178	1180	1183	1186	1189	1191	1194	1197	1199	0	1	1	1	1	2	2	2	2
.08	1202	1205	1208	1211	1213	1216	1219	1222	1225	1227	0	1	1	1	1	2	2	2	3
.09	1230	1233	1236	1239	1242	1245	1247	1250	1253	1256	0	1	1	1	1	2	2	2	3
.10	1259	1262	1265	1268	1271	1274	1276	1279	1282	1285	0	1	1	1	1	2	2	2	3
.11	1288	1291	1294	1297	1300	1303	1306	1309	1312	1315	0	1	1	1	2	2	2	2	3
.12	1318	1321	1324	1327	1330	1334	1337	1340	1343	1346	0	1	1	1	2	2	2	2	3
.13	1349	1352	1355	1358	1361	1365	1368	1371	1374	1377	0	1	1	1	2	2	2	3	3
.14	1380	1384	1387	1390	1393	1396	1400	1403	1406	1409	0	1	1	1	2	2	2	3	3
.15	1413	1416	1419	1422	1426	1429	1432	1435	1439	1442	0	1	1	1	2	2	2	3	3
.16	1445	1449	1452	1455	1459	1462	1466	1469	1472	1476	0	1	1	1	2	2	2	3	3
.17	1479	1483	1486	1489	1493	1496	1500	1503	1507	1510	0	1	1	1	2	2	2	3	3
.18	1514	1517	1521	1524	1528	1531	1535	1538	1542	1545	0	1	1	1	2	2	2	3	3
.19	1549	1552	1556	1560	1563	1567	1570	1574	1578	1581	0	1	1	1	2	2	3	3	3
.20	1585	1589	1592	1596	1600	1603	1607	1611	1614	1618	0	1	1	1	2	2	3	3	3
.21	1622	1626	1629	1633	1637	1641	1644	1648	1652	1656	0	1	1	2	2	2	3	3	3
.22	1660	1663	1667	1671	1675	1679	1683	1687	1690	1694	0	1	1	2	2	2	3	3	3
.23	1698	1702	1706	1710	1714	1718	1722	1726	1730	1734	0	1	1	2	2	2	3	3	4
.24	1738	1742	1746	1750	1754	1758	1762	1766	1770	1774	0	1	1	2	2	2	3	3	4
.25	1778	1782	1786	1791	1795	1799	1803	1807	1811	1816	0	1	1	2	2	2	3	3	4
.26	1820	1824	1828	1832	1837	1841	1845	1849	1854	1858	0	1	1	2	2	3	3	3	4
.27	1862	1866	1871	1875	1879	1884	1888	1892	1897	1901	0	1	1	2	2	3	3	3	4
.28	1905	1910	1914	1919	1923	1928	1932	1936	1941	1945	0	1	1	2	2	3	3	4	4
.29	1950	1954	1959	1963	1968	1972	1977	1982	1986	1991	0	1	1	2	2	3	3	4	4
.30	1995	2000	2004	2009	2014	2018	2023	2028	2032	2037	0	1	1	2	2	3	3	4	4
.31	2042	2046	2051	2056	2061	2065	2070	2075	2080	2084	0	1	1	2	2	3	3	4	4
.32	2089	2094	2099	2104	2109	2113	2118	2123	2128	2133	0	1	1	2	2	3	3	4	4
.33	2138	2143	2148	2153	2158	2163	2168	2173	2178	2183	0	1	1	2	2	3	3	4	4
.34	2188	2193	2198	2203	2208	2213	2218	2223	2228	2234	1	1	2	2	3	3	4	4	5
.35	2239	2244	2249	2254	2259	2265	2270	2275	2280	2286	1	1	2	2	3	3	4	4	5
.36	2291	2296	2301	2307	2312	2317	2323	2328	2333	2339	1	1	2	2	3	3	4	4	5
.37	2344	2350	2355	2360	2366	2371	2377	2382	2388	2393	1	1	2	2	3	3	4	4	5
.38	2399	2404	2410	2415	2421	2427	2432	2438	2443	2449	1	1	2	2	3	3	4	4	5
.39	2455	2460	2466	2472	2477	2483	2489	2495	2500	2506	1	1	2	2	3	3	4	5	5
.40	2512	2518	2523	2529	2535	2541	2547	2553	2559	2564	1	1	2	2	3	4	4	5	5
.41	2570	2576	2582	2588	2594	2600	2606	2612	2618	2624	1	1	2	2	3	4	4	5	5
.42	2630	2636	2642	2649	2655	2661	2667	2673	2679	2685	1	1	2	2	3	4	4	5	6
.43	2692	2698	2704	2710	2716	2723	2729	2735	2742	2748	1	1	2	3	3	4	4	5	6
.44	2754	2761	2767	2773	2780	2786	2793	2799	2805	2812	1	1	2	3	3	4	4	5	6
.45	2818	2825	2831	2838	2844	2851	2858	2864	2871	2877	1	1	2	3	3	4	5	5	6
.46	2884	2891	2897	2904	2911	2917	2924	2931	2938	2944	1	1	2	3	3	4	5	5	6
.47	2951	2958	2965	2972	2979	2985	2992	2999	3006	3013	1	1	2	3	3	4	5	5	6
.48	3020	3027	3034	3041	3048	3055	3062	3069	3076	3083	1	1	2	3	4	4	5	6	6
.49	3090	3097	3105	3112	3119	3126	3133	3141	3148	3155	1	1	2	3	4	4	5	6	6

ANTILOGARITHMS—*Contd.*

	0	1	2	3	4	5	6	7	8	9	1 2 3	4 5 6	7 8 9
.50	3162	3170	3177	3184	3192	3199	3206	3214	3221	3228	1 1 2	3 4 4	5 6 7
.51	3236	3243	3251	3258	3266	3273	3281	3289	3296	3304	1 2 2	3 4 5	5 6 7
.52	3311	3319	3327	3334	3342	3350	3357	3365	3373	3381	1 2 2	3 4 5	5 6 7
.53	3388	3396	3404	3412	3420	3428	3436	3443	3451	3459	1 2 2	3 4 5	6 6 7
.54	3467	3475	3483	3491	3499	3508	3516	3524	3532	3540	1 2 2	3 4 5	6 6 7
.55	3548	3556	3565	3573	3581	3589	3597	3606	3614	3622	1 2 2	3 4 5	6 7 7
.56	3631	3639	3648	3656	3664	3673	3681	3690	3698	3707	1 2 3	3 4 5	6 7 8
.57	3715	3724	3733	3741	3750	3758	3767	3776	3784	3793	1 2 3	3 4 5	6 7 8
.58	3802	3811	3819	3828	3837	3846	3855	3864	3873	3882	1 2 3	4 4 5	6 7 8
.59	3890	3899	3908	3917	3926	3936	3945	3954	3963	3972	1 2 3	4 5 5	6 7 8
.60	3981	3990	3999	4009	4018	4027	4036	4046	4055	4064	1 2 3	4 5 6	6 7 8
.61	4074	4083	4093	4102	4111	4121	4130	4140	4150	4159	1 2 3	4 5 6	7 8 9
.62	4169	4178	4188	4198	4207	4217	4227	4236	4246	4256	1 2 3	4 5 6	7 8 9
.63	4266	4276	4285	4295	4305	4315	4325	4335	4345	4355	1 2 3	4 5 6	7 8 9
.64	4365	4375	4385	4395	4406	4416	4426	4436	4446	4457	1 2 3	4 5 6	7 8 9
.65	4467	4477	4487	4498	4508	4519	4529	4539	4550	4560	1 2 3	4 5 6	7 8 9
.66	4571	4581	4592	4603	4613	4624	4634	4645	4656	4667	1 2 3	4 5 6	7 9 10
.67	4677	4688	4699	4710	4721	4732	4742	4753	4764	4775	1 2 3	4 5 7	8 9 10
.68	4786	4797	4808	4819	4831	4842	4853	4864	4875	4887	1 2 3	4 6 7	8 9 10
.69	4898	4909	4920	4932	4943	4955	4966	4977	4989	5000	1 2 3	5 6 7	8 9 10
.70	5012	5023	5035	5047	5058	5070	5082	5093	5105	5117	1 2 4	5 6 7	8 9 11
.71	5129	5140	5152	5164	5176	5188	5200	5212	5224	5236	1 2 4	5 6 7	8 10 11
.72	5248	5260	5272	5284	5297	5309	5321	5333	5346	5358	1 2 4	5 6 7	9 10 11
73	5370	5383	5395	5408	5420	5433	5445	5458	5470	5483	1 3 4	5 6 8	9 10 11
.74	5495	5508	5521	5534	5546	5559	5572	5585	5598	5610	1 3 4	5 6 8	9 10 12
.75	5623	5636	5649	5662	5675	5689	5702	5715	5728	5741	1 3 4	5 7 8	9 10 12
.76	5754	5768	5781	5794	5808	5821	5834	5848	5861	5875	1 3 4	5 7 8	9 11 12
.77	5888	5902	5916	5929	5943	5957	5970	5984	5998	6012	1 3 4	5 7 8	10 11 12
.78	6026	6039	6053	6067	6081	6095	6109	6124	6138	6152	1 3 4	6 7 8	10 11 13
.79	6166	6180	6194	6209	6223	6237	6252	6266	6281	6295	1 3 4	6 7 9	10 11 13
.80	6310	6324	6339	6353	6368	6383	6397	6412	6427	6442	1 3 4	6 7 9	10 12 13
.81	6457	6471	6486	6501	6516	6531	6546	6561	6577	6592	2 3 5	6 8 9	11 12 14
.82	6607	6622	6637	6653	6668	6683	6699	6714	6730	6745	2 3 5	6 8 9	11 12 14
.83	6761	6776	6792	6808	6823	6839	6855	6871	6887	6902	2 3 5	6 8 9	11 13 14
.84	6918	6934	6950	6966	6982	6998	7015	7031	7047	7063	2 3 5	6 8 10	11 13 15
.85	7079	7096	7112	7129	7145	7161	7178	7194	7211	7228	2 3 5	7 8 10	12 13 15
.86	7244	7261	7278	7295	7311	7328	7345	7362	7379	7396	2 3 5	7 8 10	12 13 15
.87	7413	7430	7447	7464	7482	7499	7516	7534	7551	7568	2 3 5	7 9 10	12 14 16
.88	7586	7603	7621	7638	7656	7674	7691	7709	7727	7745	2 4 5	7 9 11	12 14 16
.89	7762	7780	7798	7816	7834	7852	7870	7889	7907	7925	2 4 5	7 9 11	13 14 16
.90	7943	7962	7980	7998	8017	8035	8054	8072	8091	8110	2 4 6	7 9 11	13 15 17
.91	8128	8147	8166	8185	8204	8222	8241	8260	8279	8299	2 4 6	8 9 11	13 15 17
.92	8318	8337	8356	8375	8395	8414	8433	8453	8472	8492	2 4 6	8 10 12	14 15 17
.93	8511	8531	8551	8570	8590	8610	8630	8650	8670	8690	2 4 6	8 10 12	14 16 18
.94	8710	8730	8750	8770	8790	8810	8831	8851	8872	8892	2 4 6	8 10 12	14 16 18
.95	8913	8933	8954	8974	8995	9016	9036	9057	9078	9099	2 4 6	8 10 12	15 17 19
.96	9120	9141	9162	9183	9204	9226	9247	9268	9290	9311	2 4 6	8 11 13	15 17 19
.97	9333	9354	9376	9397	9419	9441	9462	9484	9506	9528	2 4 7	9 11 13	15 17 20
.98	9550	9572	9594	9616	9638	9661	9683	9705	9727	9750	2 4 7	9 11 13	16 18 20
.99	9772	9795	9817	9840	9863	9886	9908	9931	9954	9977	2 5 7	9 11 14	16 18 20

NATURAL SINES

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	1	2	3	4	5
0	.0000	0017	0035	0052	0070	0087	0105	0122	0140	0157	3	6	9	12	15
1	.0175	0192	0200	0227	0244	0602	0279	0297	0314	0332	3	6	9	12	15
2	.0349	0366	0384	0401	0419	0436	0454	0471	0488	0506	3	6	9	12	15
3	.0523	0541	0558	0576	0593	0610	0628	0645	0663	0680	3	6	9	12	15
4	.0698	0715	0732	0750	0767	0785	0802	0819	0837	0854	3	6	9	12	15
5	.0872	0889	0906	0924	0941	0958	0976	0993	1011	1028	3	6	9	12	14
6	.1045	1063	1080	1097	1115	1132	1149	1167	1184	1201	3	6	9	12	14
7	.1219	1236	1253	1271	1288	1305	1323	1340	1357	1374	3	6	9	12	14
8	.1392	1409	1426	1444	1461	1478	1495	1513	1530	1547	3	6	9	12	14
9	.1564	1582	1599	1616	1633	1650	1668	1685	1702	1719	3	6	9	12	14
10	.1736	1754	1771	1788	1805	1822	1840	1857	1874	1891	3	6	9	12	14
11	.1908	1945	1942	1959	1977	1994	2011	2028	2045	2062	3	6	9	11	14
12	.2079	2096	2113	2130	2147	2164	2181	2198	2215	2232	3	6	9	11	14
13	.2250	2267	2284	2300	2317	2334	2351	2368	2385	2402	3	6	8	11	14
14	.2419	2436	2453	2470	2487	2504	2521	2538	2554	2571	3	6	8	11	14
15	.2588	2605	2622	2639	2656	2672	2689	2706	2723	2740	3	6	8	11	14
16	.2756	2773	2790	2807	2823	2840	2857	2874	2890	2907	3	6	8	11	14
17	.2924	2940	2957	2974	2990	3007	3024	3040	3057	3074	3	6	8	11	14
18	.3090	3107	3123	3140	3156	3173	3190	3206	3223	3239	3	6	8	11	14
19	.3256	3272	3289	3305	3322	3338	3355	3371	3387	3404	3	5	8	11	14
20	.3420	3437	3453	3469	3486	3502	3518	3535	3551	3567	3	5	8	11	14
21	.3584	3600	3616	3633	3649	3665	3681	3697	3714	3730	3	5	8	11	14
22	.3746	3762	3778	3795	3811	3827	3843	3859	3875	3891	3	5	8	11	14
23	.3907	3923	3939	3955	3971	3987	4003	4019	4035	4051	3	5	8	11	14
24	.4067	4083	4099	4115	4131	4147	4163	4179	4195	4210	3	5	8	11	13
25	.4226	4242	4258	4274	4289	4305	4321	4337	4352	4368	3	5	8	11	13
26	.4384	4399	4415	4431	4446	4462	4478	4493	4509	4524	3	5	8	10	13
27	.4540	4555	4571	4586	4602	4617	4633	4648	4664	4679	3	5	8	10	13
28	.4695	4710	4726	4741	4756	4772	4787	4802	4818	4833	3	5	8	10	13
29	.4848	4863	4879	4894	4909	4924	4939	4955	4970	4985	3	5	8	10	13
30	.5000	5015	5030	5045	5060	5075	5090	5105	5120	5135	3	5	8	10	13
31	.5150	5165	5180	5195	5210	5225	5240	5255	5270	5284	2	5	7	10	12
32	.5299	5314	5329	5344	5358	5373	5388	5402	5417	5432	2	5	7	10	12
33	.5446	5461	5476	5490	5505	5519	5534	5548	5563	5577	2	5	7	10	12
34	.5592	5606	5621	5635	5650	5664	5678	5693	5707	5721	2	5	7	10	12
35	.5736	5750	5764	5779	5793	5807	5821	5835	5850	5864	2	5	7	10	12
36	.5878	5892	5906	5920	5934	5948	5962	5976	5990	6004	2	5	7	9	12
37	.6018	6032	6046	6060	6074	6088	6101	6115	6129	6143	2	5	7	9	12
38	.6157	6170	6184	6198	6211	6225	6239	6252	6266	6280	2	5	7	9	11
39	.6293	6307	6320	6334	6347	6361	6374	6388	6401	6414	2	4	7	9	11
40	.6428	6441	6455	6468	6481	6494	6508	6521	6534	6547	2	4	7	9	11
41	.6561	6574	6587	6600	6613	6626	6639	6652	6665	6678	2	4	7	9	11
42	.6691	6704	6717	6730	6743	6756	6769	6782	6794	6807	2	4	6	9	11
43	.6820	6833	6845	6858	6871	6884	6896	6909	6921	6934	2	4	6	8	11
44	.6947	6959	6972	6984	6997	7009	7022	7034	7046	7059	2	4	6	8	10

NATURAL SINES—*Contd.*

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	**1**	**2**	**3**	**4**	**5**
45	.7071	7083	7096	7108	7120	7133	7145	7157	7169	7181	2	4	6	8	10
46	.7193	7206	7218	7230	7242	7254	7266	7278	7290	7302	2	4	6	8	10
47	.7314	7325	7337	7349	7361	7373	7385	7396	7408	7420	2	4	6	8	10
48	.7431	7443	7455	7466	7478	7490	7501	7513	7524	7536	2	4	6	8	10
49	.7547	7558	7570	7581	7593	7604	7615	7627	7638	7649	2	4	6	8	9
50	.7660	7672	7683	7604	7705	7716	7727	7738	7749	7760	2	4	6	7	9
51	.7771	7782	7793	7804	7815	7826	7837	7848	7859	7869	2	4	5	7	9
52	.7880	7891	7902	7912	7923	7934	7944	7955	7965	7976	2	4	5	7	9
53	.7986	7997	8007	8018	8028	8039	8049	8059	8070	8080	2	3	5	7	9
54	.8090	8100	8111	8121	8131	8141	8151	8161	8171	8181	2	3	5	7	8
55	.8192	8202	8211	8221	8231	8241	8251	8261	8271	8281	2	3	5	7	8
56	.8290	8300	8310	8320	8329	8339	8348	8358	8368	8377	2	3	5	6	8
57	.8387	8396	8406	8415	8425	8434	8443	8453	8462	8471	2	3	5	6	8
58	.8480	8490	8499	8508	8517	8526	8536	8545	8554	8563	2	3	5	6	8
59	.8572	8581	8590	8599	8607	8616	8625	8634	8643	8652	1	3	4	6	7
60	.8660	8669	8678	8686	8695	8704	8712	8721	8729	8738	1	3	4	6	7
61	.8746	8755	8763	8771	8780	8788	8796	8805	8813	8821	1	3	4	6	7
62	.8829	8838	8846	8854	8862	8870	8878	8886	8804	8902	1	3	4	5	7
63	.8910	8918	8926	8934	8942	8949	8957	8965	8973	8980	1	3	4	5	6
64	.8988	8996	9003	9011	9018	9026	9033	9041	9048	9056	1	3	4	5	6
65	.9063	9070	9078	9085	9092	9100	9107	9114	9121	9128	1	2	4	5	6
66	.9135	9143	9150	9157	9164	9171	9178	9184	9191	9198	1	2	3	5	6
67	.9205	9212	9219	9225	9232	9239	9245	9252	9259	9265	1	2	3	4	6
68	.9272	9278	9285	9291	9298	9304	9311	9317	9323	9330	1	2	3	4	5
69	.9336	9342	9348	9354	9361	9367	9373	9379	9385	9391	1	2	3	4	5
70	.9397	9403	9409	9415	9421	9426	9432	9438	9444	9449	1	2	3	4	5
71	.9455	9461	9466	9472	9478	9483	9489	9494	9500	9505	1	2	3	4	5
72	.9511	9516	9521	9527	9532	9537	9542	9548	9553	9558	1	2	3	3	4
73	.9563	9568	9573	9578	9583	9588	9593	9598	9603	9608	1	2	2	3	4
74	.9613	9617	9622	9627	9632	9636	9641	9646	9650	9655	1	2	2	3	4
75	.9659	9664	9668	9673	9677	9681	9686	9690	9694	9699	1	1	2	3	4
76	.9703	9707	9711	9715	9720	9724	9728	9732	9736	9740	1	1	2	3	3
77	.9744	9748	9751	9755	9759	9763	9767	9770	9774	9778	1	1	2	3	3
78	.9781	9785	9789	9792	9796	9799	9803	9806	9810	9813	1	1	2	2	3
79	.9816	9820	9823	9826	9829	9833	9836	9839	9842	9845	1	1	2	2	3
80	.9848	9851	9854	9857	9860	9863	9866	9869	9871	9874	0	1	1	2	2
81	.9877	9880	9882	9885	9888	9890	9893	9895	9898	9900	0	1	1	2	2
82	.9903	9905	9907	9910	9912	9914	9917	9919	9921	9923	0	1	1	2	2
83	.9925	9928	9930	9932	9934	9936	9938	9940	9942	9943	0	1	1	1	2
84	.9945	9947	9949	9951	9952	9954	9956	9957	9959	9960	0	1	1	1	2
85	.9962	9963	9965	9966	9968	9969	9971	9972	9973	9974	0	0	1	1	1
86	.9976	9977	9978	9979	9980	9981	9982	9983	9984	9985	0	0	1	1	1
87	.9986	9987	9988	9989	9990	9990	9991	9992	9993	9993	0	0	0	1	1
88	.9994	9995	9995	9996	9996	9997	9997	9997	9998	9998	0	0	0	0	0
89	.9998	9999	9999	9999	9999	1.000	1.000	1.000	1.000	1.000	0	0	0	0	0
90	1.000														

NATURAL TANGENTS

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	1	2	3	4	5
0	.0000	0017	0035	0052	0070	0087	0105	0122	0140	0157	3	6	9	12	15
1	.0175	0192	0209	0227	0244	0262	0279	0297	0314	0332	3	6	9	12	15
2	.0349	0367	0384	0402	0419	0437	0454	0472	0489	0507	3	6	9	12	15
3	.0524	0542	0559	0577	0594	0612	0629	0647	0664	0682	3	6	9	12	15
4	.0699	0717	0734	0752	0769	0787	0805	0822	0840	0857	3	6	9	12	15
5	.0875	0892	0910	0928	0945	0963	0981	0998	1016	1033	3	6	9	12	15
6	.1051	1069	1086	1104	1122	1139	1157	1175	1192	1210	3	6	9	12	15
7	.1228	1246	1263	1281	1299	1317	1334	1352	1370	1388	3	6	9	12	15
8	.1405	1423	1441	1459	1477	1495	1512	1530	1548	1566	3	6	9	12	15
9	.1584	1602	1620	1638	1655	1673	1691	1709	1727	1745	3	6	9	12	15
10	.1763	1781	1799	1817	1835	1853	1871	1890	1908	1926	3	6	9	12	15
11	.1944	1962	1980	1998	2016	2035	2053	2071	2089	2107	3	6	9	12	15
12	.2126	2144	2162	2180	2199	2217	2235	2254	2272	2290	3	6	9	12	15
13	.2309	2327	2345	2364	2382	2401	2419	2438	2456	2475	3	6	9	12	15
14	.2493	2512	2530	2549	2568	2586	2605	2623	2642	2661	3	6	9	12	16
15	.2679	2698	2717	2736	2754	2773	2792	2811	2830	2849	3	6	9	13	16
16	.2867	2886	2905	2924	2943	2962	2981	3000	3019	3038	3	6	9	13	16
17	.3057	3076	3096	3115	3134	3153	3172	3191	3211	3230	3	6	10	13	16
18	.3249	3269	3288	3307	3327	3346	3365	3385	3404	3424	3	6	10	13	16
19	.3443	3463	3482	3502	3522	3541	3561	3581	3600	3620	3	7	10	13	16
20	.3640	3659	3679	3699	3719	3739	3759	3779	3799	3819	3	7	10	13	17
21	.3839	3859	3879	3899	3919	3939	3959	3979	4000	4020	3	7	10	13	17
22	.4040	4061	4081	4101	4122	4142	4163	4183	4204	4224	3	7	10	14	17
23	.4245	4265	4286	4307	4327	4348	4369	4390	4411	4431	3	7	10	14	17
24	.4452	4473	4494	4515	4536	4557	4578	4599	4621	4642	4	7	11	14	18
25	.4663	4684	4706	4727	4748	4770	4791	4813	4834	4856	4	7	11	14	18
26	.4877	4899	4921	4942	4964	4986	5008	5029	5051	5073	4	7	11	15	18
27	.5095	5117	5139	5161	5184	5206	5228	5250	5272	5295	4	7	11	15	18
28	.5317	5340	5362	5384	5407	5430	5452	5475	5498	5520	4	8	11	15	19
29	.5543	5566	5589	5612	5635	5638	5681	5704	5727	5750	4	8	12	15	19
30	.5774	5797	5820	5844	5867	5890	5914	5938	5961	5985	4	8	12	16	20
31	.6009	6032	6056	6080	6104	6128	6152	6176	6200	6224	4	8	12	16	20
32	.6249	6273	6297	6322	6346	6371	6395	6420	6445	6469	4	8	12	16	20
33	.6494	6519	6544	6569	6594	6619	6644	6669	6694	6720	4	8	13	17	21
34	.6745	6771	6796	6822	6847	6873	6899	6924	6950	6976	4	9	13	17	21
35	.7002	7028	7054	7080	7107	7133	7159	7186	7212	7239	4	9	13	18	22
36	.7265	7292	7319	7346	7373	7400	7427	7454	7481	7508	5	9	14	18	23
37	.7536	7563	7590	7618	7646	7673	7701	7729	7757	7785	5	9	14	18	23
38	.7813	7841	7869	7898	7926	7954	7983	8012	8040	8069	5	9	14	19	24
39	.8098	8127	8156	8185	8214	8243	8273	8302	8332	8361	5	10	15	20	24
40	.8391	8421	8451	8481	8511	8541	8571	8601	8632	8662	5	10	15	20	25
41	.8693	8724	8754	8785	8816	8847	8878	8910	8941	8972	5	10	16	21	26
42	.9004	9036	9067	9099	9131	9163	9195	9228	9260	9293	5	11	16	21	27
43	.9325	9358	9391	9424	9457	9490	9523	9556	9590	9623	6	11	17	22	28
44	.9657	9691	9725	9759	9793	9827	9861	9896	9930	9965	6	11	17	23	29

NATURAL TANGENTS—*Contd.*

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	**1**	**2**	**3**	**4**	**5**
45	1.0000	0035	0070	0105	0141	0176	0212	0247	0283	0319	6	12	18	24	30
46	1.0355	0392	0428	0464	0501	0538	0575	0612	0649	0686	6	12	18	25	31
47	1.0724	0761	0799	0837	0875	0913	0951	0990	1028	1067	6	13	19	25	32
48	1.1106	1145	1184	1224	1263	1303	1343	1383	1423	1463	7	13	20	27	33
49	1.1504	1544	1585	1626	1667	1708	1750	1792	1833	1875	7	14	21	28	34
50	1.1918	1960	2002	2045	2088	2131	2174	2218	2261	2305	7	14	22	29	36
51	1.2349	2393	2437	2482	2527	2572	2617	2662	2708	2753	8	15	23	30	38
52	1.2799	2846	2892	2938	2985	3032	3079	3127	3175	3222	8	16	24	31	39
53	1.3270	3319	3367	3416	3465	3514	3564	3613	3663	3713	8	16	25	33	41
54	1.3764	3814	3865	3916	3968	4019	4071	4124	4176	4229	9	17	26	34	43
55	1.4281	4335	4388	4442	4496	4550	4605	4659	4715	4770	9	18	27	36	45
56	1.4826	4882	4938	4994	5051	5108	5166	5224	5282	5340	10	19	29	38	48
57	1.5399	5458	5517	5577	5637	5697	5757	5818	5880	5941	10	20	30	40	50
58	1.6003	6066	6128	6191	6255	6319	6383	6447	6512	6577	11	21	32	43	53
59	1.6643	6709	6775	6842	6909	6977	7045	7113	7182	7251	11	23	34	45	56
60	1.7321	7391	7461	7532	7603	7675	7747	7820	7893	7966	12	24	36	48	60
61	1.8040	8115	8190	8265	8341	8418	8495	8572	8650	8728	13	26	38	51	64
62	1.8807	8887	8967	9047	9128	9210	9292	9375	9458	9542	14	27	41	55	68
63	1.9626	9711	9797	9883	9970	2.0057	2.0145	2.0233	2.0323	2.0413	15	29	44	58	73
64	2.0503	0594	0686	0778	0872	0965	1060	1155	1251	1348	16	31	47	63	78
65	2.1445	1543	1642	1742	1842	1943	2045	2148	2251	2355	17	34	51	68	85
66	2.2460	2566	2673	2781	2889	2998	3109	3220	3332	3445	18	37	55	73	92
67	2.3559	3673	3789	3906	4023	4142	4262	4383	4504	4627	20	40	60	79	99
68	2.4751	4876	5002	5129	5257	5386	5517	5649	5782	5916	22	43	65	87	108
69	2.6051	6187	6325	6464	6605	6746	6889	7034	7179	7326	24	47	71	95	119
70	2.7475	7625	7776	7929	8083	8239	8397	8556	8716	8878	26	52	78	104	131
71	2.9042	9208	9375	9544	9714	9887	3.0061	3.0237	3.0415	3.0595	29	58	87	116	145
72	3.0777	0961	1146	1334	1524	1716	1910	2106	2305	2506	32	64	96	129	162
73	3.2709	2914	3122	3332	3544	3759	3977	4197	4420	4646	36	72	108	144	180
74	3.4874	5105	5339	5576	5816	6059	6305	6554	6806	7062	41	81	122	163	204
75	3.7321	7583	7848	8118	8391	8667	8947	9232	9520	9812	46	93	139	186	232
76	4.0108	0408	0713	1022	1335	1653	1976	2303	2635	2972	53	107	160	213	267
77	4.3315	3662	4015	4374	4737	5107	5483	5864	6252	6646					
78	4.7046	7453	7867	8288	8716	9152	9594	5.0045	5.0504	5.0970	Mean differences cease				
79	5.1446	1929	2422	2924	3435	3955	4486	5026	5578	6140	to be sufficiently accurate.				
80	5.6713	7297	7894	8502	9124	9758	6.0405	6.1066	6.1742	6.2432					
81	6.3138	3859	4596	5350	6122	6912	7720	8548	9395	7.0264					
82	7.1154	2066	3002	3962	4947	5958	6996	8062	9158	8.0285					
83	8.1443	2636	3863	5126	6427	7769	9152	9.0579	9.2052	9.3572					
84	9.5144	9.677	9.845	10.02	10.20	10.39	10.58	10.78	10.99	11.20					
85	11.43	11.66	11.91	12.16	12.43	12.71	13.00	13.30	13.62	13.95					
86	14.30	14.67	15.06	15.46	15.89	16.35	16.83	17.34	17.89	18.46					
87	19.08	19.74	20.45	21.20	22.02	22.90	23.86	24.90	26.03	27.27					
88	28.64	30.14	31.82	33.69	35.80	38.19	40.92	44.07	47.74	52.08					
89	57.29	63.66	71.62	81.85	95.49	114.6	143.2	191.0	286.5	573.0					
90	∞														

RECIPROCALS OF NUMBERS FROM 1 TO 10

(Numbers in different columns to be substracted, not added)

	0	1	2	3	4	5	6	7	8	9	Mean Differences		
											1 2 3	4 5 6	7 8 9
1.0	1.000	9901	9804	9709	9615	9524	9434	9346	9259	9174			
1.1	.9091	9009	8929	8550	8772	8696	8621	8547	8475	8403			
1.2	.8333	8264	8197	8130	8065	8000	7937	7874	7813	7752			
1.3	.7692	7634	7576	7519	7463	7407	7353	7299	7246	7194			
1.4	.7143	7092	7042	6993	6944	6897	6849	6803	6757	6711	5 10 14	19 24 29	33 38 43
1.5	.6667	6623	6579	6336	6494	6452	6410	6369	6329	6289	4 8 13	17 21 25	29 33 38
1.6	.6250	6211	6173	6135	6098	6061	6024	5988	5952	5917	4 7 11	15 18 22	26 29 33
1.7	.5882	5848	5814	5780	5747	5714	5682	5630	5618	5587	3 6 10	13 16 20	23 26 29
1.8	.5556	5525	5495	5464	5435	5405	5376	5348	5319	5291	3 6 9	12 15 17	20 23 26
1.9	.5263	5236	5208	5181	5155	5128	5102	5076	5051	5025	3 5 8	11 13 16	18 21 24
2.0	.5000	4975	4950	4926	4902	4878	4854	4831	4808	4785	2 5 7	10 12 14	17 19 21
2.1	.4762	4739	4717	4695	4673	4651	4630	4608	4587	4566	2 4 7	9 11 13	15 17 20
2.2	.4545	4525	4505	4484	4464	4444	4425	4405	4386	4367	2 4 6	8 10 12	14 16 18
2.3	.4348	4329	4310	4292	4274	4255	4237	4219	4202	4184	2 4 5	7 9 11	13 14 16
2.4	.4167	4149	4132	4115	4098	4082	4065	4049	4032	4016	2 3 5	7 8 10	12 13 15
2.5	.4000	3984	3968	3953	3937	3922	3906	3891	3876	3861	2 3 5	6 8 9	11 12 14
2.6	.3846	3831	3817	3802	3758	3774	3759	3745	3731	3717	1 3 4	6 7 8	10 11 13
2.7	.3704	3690	3676	3663	3650	3636	3623	3610	3597	3584	1 3 4	5 7 8	9 11 12
2.8	.3571	3559	3546	3534	3521	3509	3497	3484	3472	3460	1 2 4	5 6 7	9 10 11
2.9	.3448	3436	3425	3413	3401	3390	3378	3367	3356	3344	1 2 3	5 6 7	8 9 10
3.0	.3333	3322	3311	3300	3289	3279	3268	3257	3247	3236	1 2 3	4 5 6	7 9 10
3.1	.3226	3215	3205	3195	3185	3175	3165	3155	3145	3135	1 2 3	4 5 6	7 8 9
3.2	.3125	3115	3206	3096	3086	3077	3067	3058	3049	3040	1 2 3	4 5 6	7 8 9
3.3	.3030	3021	3012	3003	2994	2985	2976	2967	2959	2950	1 2 3	4 4 5	6 7 8
3.4	.2941	2933	2924	2915	2907	2899	2890	2882	2874	2865	1 2 3	3 4 5	6 7 8
3.5	.2857	2849	2841	2833	2825	2817	2809	2801	2793	2786	1 2 2	3 4 5	6 6 7
3.6	.2778	2770	2762	2755	2747	2740	2732	2725	2717	2710	1 2 2	3 4 5	5 6 7
3.7	.2703	2695	2688	2681	2674	2667	2660	2653	2646	2639	1 1 2	3 4 4	5 6 6
3.8	.2632	2625	2618	2611	2604	2597	2591	2584	2577	2571	1 1 2	3 3 4	5 5 6
3.9	.2564	2558	2551	2545	2538	2532	2525	2519	2513	2506	1 1 2	3 3 4	4 5 6
4.0	.2500	2494	2488	2481	2475	2469	2463	2457	2451	2445	1 1 2	2 3 4	4 5 5
4.1	.2439	2433	2427	2421	2415	2410	2404	2398	2392	2387	1 1 2	2 3 3	4 5 5
4.2	.2381	2375	2370	2364	2358	2353	2347	2342	2336	2331	1 1 2	2 3 3	4 4 5
4.3	.2326	2320	2315	2309	2304	2299	2294	2288	2283	2278	1 1 2	2 3 3	4 4 5
4.4	.2273	2268	2262	2257	2252	2247	2242	2237	2232	2227	1 1 2	2 3 3	4 4 5
4.5	.2222	2217	2212	2208	2203	2198	2293	2188	2183	2279	0 1 1	2 2 3	3 4 4
4.6	.2174	2169	2165	2160	2155	2152	2146	2141	2137	2132	0 1 1	2 2 3	3 4 4
4.7	.2128	2123	2119	2114	2110	2105	2101	2096	2092	2088	0 1 1	2 2 3	3 4 4
4.8	.2083	2079	2075	2070	2066	2064	2058	2053	2049	2045	0 1 1	2 2 3	3 3 4
4.9	.2041	2037	2033	2048	2024	2020	2016	2012	2008	2004	0 1 1	2 2 2	3 3 4
5.0	.2000	1996	1992	1988	1984	1980	1976	1972	1969	1965	0 1 1	2 2 2	3 3 4
5.1	.1961	1957	1953	1949	1946	1942	1938	1934	1931	1927	0 1 1	2 2 2	3 3 3
5.2	.1923	1919	1916	1912	1908	1905	1901	1898	1894	1890	0 1 1	1 2 2	3 3 3
5.3	.1887	1883	1880	1876	1873	1869	1866	1862	1859	1855	0 1 1	1 2 2	2 3 3
5.4	.1852	1843	1845	1842	1834	1833	1832	1828	1825	1801	0 1 1	1 2 2	2 3 3

RECIPROCALS OF NUMBERS FROM 1 TO 10

(Numbers in different columns to be substracted, not added)

	0	1	2	3	4	5	6	7	8	9	Mean Differences								
											1	2	3	4	5	6	7	8	9
5.5	.1818	1815	1812	1808	1805	1802	1799	1795	1792	1789	0	1	1	1	2	2	2	3	3
5.6	.1786	1783	1779	1776	1773	1770	1767	1764	1761	1757	0	1	1	1	2	2	2	3	3
5.7	.1754	1751	1748	1745	1742	1739	1736	1733	1730	1727	0	1	1	1	1	2	2	2	3
5.8	.1724	1721	1718	1715	1712	1709	1706	1704	1701	1698	0	1	1	1	1	2	2	2	3
5.9	.1695	1692	1689	1686	1684	1681	1678	1675	1672	1669	0	1	1	1	1	2	2	2	3
6.0	.1667	1664	1661	1658	1656	1653	1650	1647	1645	1642	0	1	1	1	1	2	2	2	3
6.1	.1639	1637	1634	1631	1629	1626	1623	1621	1618	1616	0	1	1	1	1	2	2	2	2
6.2	.1613	1610	1608	1605	1603	1600	1597	1595	1592	1590	0	1	1	1	1	2	2	2	2
6.3	.1587	1585	1582	1580	1577	1575	1572	1570	1567	1565	0	0	1	1	1	1	2	2	2
6.4	.1562	1560	1558	1555	1553	1550	1548	1546	1543	1541	0	0	1	1	1	1	2	2	2
6.5	.1538	1536	1534	1531	1529	1527	1524	1522	1520	1517	0	0	1	1	1	1	2	2	2
6.6	.1515	1513	1511	1508	1506	1504	1502	1499	1497	1495	0	0	1	1	1	1	2	2	2
6.7	.1493	1490	1488	1486	1484	1481	1479	1477	1475	1473	0	0	1	1	1	1	2	2	2
6.8	.1471	1468	1466	1464	1462	1460	1458	1456	1453	1451	0	0	1	1	1	1	2	2	2
6.9	.1449	1447	1445	1443	1441	1439	1437	1435	1433	1431	0	0	1	1	1	1	2	2	2
7.0	.1429	1427	1425	1422	1420	1418	1416	1414	1412	1410	0	0	1	1	1	1	1	2	2
7.1	.1408	1406	1404	1403	1401	1399	1397	1395	1393	1391	0	0	1	1	1	1	1	2	2
7.2	.1389	1387	1385	1383	1381	1379	1377	1376	1374	1372	0	0	1	1	1	1	1	2	2
7.3	.1370	1368	1366	1364	1362	1361	1359	1357	1355	1353	0	0	1	1	1	1	1	2	2
7.4	.1351	1350	1348	1346	1344	1342	1340	1339	1337	1335	0	0	1	1	1	1	1	1	2
7.5	.1333	1332	1330	1328	1326	1325	1323	1321	1319	1318	0	0	1	1	1	1	1	1	2
7.6	.1316	1314	1312	1311	1309	1307	1305	1304	1302	1300	0	0	1	1	1	1	1	1	2
7.7	.1299	1297	1295	1294	1292	1290	1289	1287	1285	1284	0	0	0	1	1	1	1	1	1
7.8	.1282	1280	1279	1277	1276	1274	1272	1271	1269	1267	0	0	0	1	1	1	1	1	1
7.9	.1266	1264	1263	1261	1259	1258	1256	1255	1253	1252	0	0	0	1	1	1	1	1	1
8.0	.1250	1248	1247	1245	1244	1242	1241	1239	1238	1236	0	0	0	1	1	1	1	1	1
8.1	.1235	1233	1232	1230	1229	1227	1225	1224	1222	1221	0	0	0	1	1	1	1	1	1
8.2	.1220	1218	1217	1215	1214	1212	1211	1209	1208	1206	0	0	0	1	1	1	1	1	1
8.3	.1205	1203	1202	1200	1199	1198	1196	1195	1193	1192	0	0	0	1	1	1	1	1	1
8.4	.1190	1189	1188	1186	1185	1183	1182	1181	1179	1178	0	0	0	1	1	1	1	1	1
8.5	.1176	1175	1174	1172	1171	1170	1168	1167	1166	1164	0	0	0	1	1	1	1	1	1
8.6	.1163	1161	1160	1159	1157	1156	1155	1153	1152	1151	0	0	0	1	1	1	1	1	1
8.7	.1149	1148	1147	1145	1144	1143	1142	1140	1139	1138	0	0	0	1	1	1	1	1	1
8.8	.1136	1135	1134	1133	1131	1130	1129	1127	1126	1125	0	0	0	1	1	1	1	1	1
8.9	.1124	1122	1121	1120	1119	1117	1116	1115	1114	1112	0	0	0	1	1	1	1	1	1
9.0	.1111	1110	1109	1107	1106	1105	1104	1103	1101	1100	0	0	0	1	1	1	1	1	1
9.1	.1099	1098	1096	1095	1094	1093	1092	1090	1089	1088	0	0	0	0	1	1	1	1	1
9.2	.1087	1086	1085	1083	1082	1081	1080	1079	1078	1076	0	0	0	0	1	1	1	1	1
9.3	.1075	1074	1073	1072	1071	1070	1068	1067	1066	1065	0	0	0	0	1	1	1	1	1
9.4	.1064	1063	1062	1060	1059	1058	1057	1056	1055	1054	0	0	0	0	1	1	1	1	1
9.5	.1053	1052	1050	1049	1048	1047	1046	1045	1044	1043	0	0	0	0	1	1	1	1	1
9.6	.1042	1041	1039	1038	1037	1036	1035	1034	1033	1032	0	0	0	0	1	1	1	1	1
9.7	.1031	1030	1029	1028	1027	1026	1025	1024	1022	1021	0	0	0	0	1	1	1	1	1
9.8	.1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	0	0	0	0	1	1	1	1	1
9.9	.1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	0	0	0	0	0	1	1	1	1

Printed & Published by : **Dr. D. D. Deshmukh, Registrar,**
University of Pune, Ganeshkhind, Pune-411 007.
Printed at : The Pune University Press, Ganeshkhind, Pune-411007.
[40,000–1–2010 (858 / Ganesh~1/Ganesh) [2]]

TABLE 1 : THE NORMAL PROBABILITY INTEGRAL

∞		0	1	2	3	4	5	6	7	8	9
0.0	0.	50000	49601	49292	48803	48405	48006	47608	472I0	46812	46414
0.1		46017	45620	45224	44828	44433	44038	43644	43251	42858	42465
0.2		42074	41683	41294	40905	40517	40129	39743	39358	38974	38591
0.3		38209	37828	37448	37070	36693	36317	35942	35569	35197	34827
0.4		34458	34090	33724	33360	32997	32636	32276	31918	31561	31207
0.5		30854	30503	30153	29806	29460	29116	28774	28434	28096	27760
0.6		27425	27093	26763	26435	26109	25785	25463	25143	24825	24510
0.7		24196	23885	23576	23270	22965	22663	22363	22065	21770	21476
0.8		21186	20897	20611	20327	20045	19766	19489	19215	18943	18673
0.9		18406	18141	17879	17619	17361	17106	16853	16602	16354	16109
1.0		15866	15625	15386	15151	14917	14686	14457	14231	14007	13786
1.1		13567	13350	13136	12924	12714	12507	12302	12100	11900	11702
1.2		11507	11314	11123	10935	I0749	10565	10383	10204	10027	**98525**
1.3	0.0	96800	95098	93418	91759	90123	88508	86915	85343	83793	82264
1.4		80757	79270	77804	76359	74934	73529	72145	70781	69437	68112
1.5		66807	65522	64255	63008	61780	60571	59380	58208	57053	55917
1.6		54799	53699	52616	51551	50503	49471	48457	47460	46479	45514
1.7		44565	43633	42716	41815	40930	40059	39204	38364	37538	36727
1.8		35930	35148	34380	33625	32884	32157	31443	30742	30054	29379
1.9		28717	28067	27429	26803	26190	25588	24998	24419	23852	23295
2.0		22750	22216	21692	21178	20675	20182	19699	19226	18763	18309
2.1		17864	17429	17003	16586	16177	15778	15386	15003	14629	14262
2.2		13903	13553	13209	12874	12545	12224	11911	11604	11304	11011
2.3		10724	10444	10170	**99031**	**96419**	**93867**	**91375**	**88940**	**86563**	**84242**
2.4	0.0^2	81975	79763	77603	75494	73436	71428	69469	67557	6569I	63872
2.5		62097	60366	58677	57031	55426	53861	52336	50849	49400	47988
2.6		46612	45271	43965	42692	41453	40246	39070	37926	36811	35726
2.7		34670	33642	32641	31667	30720	29798	28901	28028	27179	26354
2.8		25551	24771	24012	23274	22557	21860	21182	20524	19884	19262
2.9		18658	18071	17502	16948	16411	15889	15382	14890	14412	13949
3.0		13499	13062	12639	12228	11829	11442	11067	10703	10350	10008
3.1	0.0^3	96760	93544	90426	87403	84474	81635	78885	76219	73638	71136
3.2		68714	66367	64095	61895	59765	57703	55706	53774	51904	50094
3.3		48342	46648	45009	43423	41889	40406	38971	37584	36243	34946
3.4		33693	32481	31311	30179	29086	28029	27009	26023	25071	24151
3.5		23263	22405	21577	20778	20006	19262	18543	17849	I7180	I6534
3.6		15911	15310	14730	14171	13632	13112	12611	12128	11662	11213
3.7		I0780	10363	**99611**	**95740**	**92010**	**884I7**	**84957**	**8I624**	**78414**	**75324**
3.8	0.0^4	72348	69483	66726	64072	61517	59059	56694	54418	52228	50122
3.9		48096	46148	44274	42473	40741	39076	37475	35936	34458	33037
4.0		31671	30359	29099	27888	26726	25609	24536	23507	22518	21569
4.1		20658	19783	18944	18138	17365	16624	15912	15230	14575	13948
4.2		13346	12769	12215	11685	11176	10689	10221	**97736**	**93447**	**89337**
4.3	0.0^5	85399	81627	78015	74555	71241	68069	65031	62123	59340	56675
4.4		54125	51685	49350	47117	44979	42935	40980	39110	37322	35612
4.5		33977	32414	30920	29492	28127	26823	25577	24386	23249	22162
4.6		21125	20133	19187	18283	17420	16597	158I0	15060	14344	13660
4.7		13008	12386	11792	11226	10686	10171	**96796**	**92113**	**87648**	**83391**
4.8	0.0^6	79333	75465	71779	68267	64920	61731	58693	55799	53043	50418
4.9		47918	45538	43272	41115	39061	37107	35247	33476	31792	30190

For notes, see page 46.

TABLE 2 : DISTRIBUTION OF *t*
Probability

n	.9	.8	.7	.6	.5	.4	.3	.2	.1	.05	.02	.01	.001
1	.158	.325	.510	.727	1.000	1.376	1.963	3.078	6.314	12.706	31.821	63.657	636.619
2	.142	.289	.445	.6I7	.8I6	1.061	1.386	1.886	2.920	4.303	6.965	9.925	31.598
3	.137	.277	.424	.584	.765	.978	1.250	1.886	2.353	3.182	4.541	5.841	I2.924
4	.134	.271	.414	.569	.741	.941	1.190	1.533	2.132	2.776	3.747	4.604	8.610
5	.132	.267	408	.559	.727	.920	1.156	1.476	2.015	2.571	3.365	4.032	6.869
6	.131	.265	.404	.553	.718	.906	1.134	1.440	1.943	2.447	3.143	3.707	5.959
7	.130	.263	.402	.549	.711	.896	1.119	1.415	1.895	2.365	2.998	3.499	5.408
8	.130	.262	399	.546	.706	.889	1.108	1.397	1.860	2.306	2.896	3.355	5.041
9	.129	.261	.398	.543	.703	.883	1.100	1.383	1.833	2.262	2.821	3.250	4.781
I0	.129	.260	.397	.542	.700	.879	1.093	1.372	1.812	2.228	2.764	3.169	4.587
11	.129	.260	.396	.540	.697	.876	1.088	1.363	1.796	2.201	2.718	3.106	4.437
12	.128	.259	.395	.539	.695	.873	1.083	1.356	1.782	2.179	2.681	3.055	4.318
13	.128	.259	.394	.538	.694	.870	1.079	1.350	1.771	2.160	2.650	3.012	4.221
14	.128	.258	.393	.537	.692	.868	1.076	1.345	1.76I	2.145	2.624	2.977	4.140
15	.128	.258	.393	.536	.691	.866	1.074	1.341	1.753	2.131	2.602	2.947	4.073
16	.128	.258	.392	.535	.690	.865	1.071	1.337	1.746	2.120	2.583	2.921	4.015
17	.128	.257	.392	.534	.689	.863	1.069	1.333	1.740	2.110	2.567	2.898	3.965
18	.127	.257	.392	.534	.688	.862	1.067	1.330	1.734	2.101	2.552	2.878	3.922
19	.127	.257	.391	.533	.688	.861	1.066	1.328	1.729	2.093	2.539	2.861	3.883
20	.127	.257	.391	.533	.687	.860	1.064	1.325	1.725	2.086	2.528	2.845	3.850
21	.127	.257	.391	.532	.686	.859	1.063	I.323	1.721	2.080	2.518	2.83I	3.819
22	.127	.256	.390	.532	.686	.858	1.06I	1.32I	1.717	2.074	2.508	2.8I9	3.792
23	.127	.256	.390	.532	.685	.858	1.060	1.3I9	1.714	2.069	2.500	2.807	3.767
24	.127	.256	.390	.531	.685	.857	1.059	1.3I8	1.711	2.064	2.492	2.797	3.745
25	.127	.256	.390	.531	.684	.856	1.058	1.316	1.708	2.060	2.485	2.787	3.725
26	.127	.256	.390	.531	.684	.856	1.058	1.3I5	1.706	2.056	2.479	2.779	3.707
27	.127	.256	.389	.531	.684	.855	1.057	1.314	1.703	2.052	2.473	2.771	3.690
28	.127	.256	.389	.530	.683	.855	1.056	1.313	1.701	2.048	2.467	2.763	3.674
29	.127	.256	.389	.530	.683	.854	1.055	1.311	1.699	2.045	2.462	2.756	3.659
30	.127	.256	.389	.530	.683	.854	1.055	1.310	1.697	2.042	2.457	2.75	3.646
40	.126	.255	.388	.529	.681	.851	1.050	1.303	1.684	2.021	2.423	2.704	3.551
60	.126	.254	.387	.527	.679	.848	1.046	1.296	1.671	2.000	2.390	2.660	3.460
120	.126	.254	.386	.526	.677	.845	1.041	1.289	1.658	1.980	2.358	2.617	3.373
∞	.126	.253	.385	.524	.674	.842	1.036	1.282	1.645	1.960	2.326	2.576	3.291

For notes, see page 46.

TABLE 3 : DISTRIBUTION OF χ^2

Probability

n	.99	0.98	.95	.90	.80	.70	.50	.30	.20	.10	.05	.02	.01	.001
I	0.0^3157	0.0^3628	0.00393	0.0158	0.0642	0.148	0.455	1.074	1.642	2.706	3.841	5.412	6.635	10.827
2	.0201	0.0404	.103	.211	0.446	.713	1.386	2.408	3.2I9	4.605	5.991	7.824	9.210	13.815
3	0.115	.185	.352	.584	1.005	1.424	2.366	3.665	4.642	6.251	7.815	9.837	11.345	16.266
4	.297	.429	.711	1.064	1.649	2.195	3.357	4.878	5.989	7.779	9.488	11.668	13.277	18.467
5	.554	.752	1.145	1.610	2.343	3.000	4.35I	6.064	7.289	9.236	11.070	13.388	15.086	20.515
6	.872	1.134	1.635	2.204	3.070	3.828	5.348	7.231	8.558	10.645	12.592	15.033	16.812	22.457
7	1.239	I.564	2.167	2.833	3.822	4.671	6.346	8.383	9.803	12.017	14.057	16.622	18.475	24.322
8	1.646	2.032	2.733	3.490	4.594	5.527	7.344	9.524	11.003	13.362	15.507	18.168	20.090	26.125
9	2.088	2.532	3.325	4.168	5.380	6.393	8.343	10.656	12.242	14.684	16919	19.679	21.666	27.877
10	2.558	3.059	3.940	4.865	6.179	7.267	9.342	11.781	13.442	15.987	18.307	21.161	23.209	29.588
11	3.053	3.609	4.575	5.578	6.989	8.I48	10.341	12.899	14.631	17.275	19.675	22.618	24.725	31.264
12	3.571	4.178	5.226	6.304	7.807	9.034	11.340	14.011	15.812	18.549	21.026	24.034	26.217	32.909
13	4.107	4.765	5.892	7.042	8.634	9.926	12.340	15.119	16.985	19.8I2	22.362	25.472	27.688	34.528
14	4.660	5.368	6.571	7.790	9.467	10.821	13.339	16.222	18.151	21.064	23.685	26.873	29.141	36.123
15	5.229	5.985	7.261	8.547	10.307	11.721	14.339	17.322	19.311	22.307	24.996	28.259	30.578	37.697
16	5.812	6.614	7.962	9.312	11.152	12.624	15.338	I8.418	20.465	23.542	26.296	29.633	32.000	39.252
17	6.408	7.255	8.672	10.085	12.002	13.531	16.338	19.511	21.615	24.769	27.587	30.995	33.409	40.790
18	7.015	7.906	9.390	10.865	12.857	14.44	17.338	20.601	22.760	25.989	28.859	32.346	34.805	42.312
19	7.633	8.567	I0.117	11.651	13.7I6	I5.352	18.338	21.689	23.900	27.204	30.144	33.687	36.191	43.820
20	8.260	9.237	10.851	12.443	14.578	16.266	19.337	22.775	25.038	28.412	31.410	35.020	37.566	45.315
21	8.897	9.915	11.591	13.240	15.445	17.182	20.337	23.858	26.171	29.615	32.671	36.343	38.932	46.797
22	9.542	10.600	12.338	14.041	16.314	18.101	21.337	24.939	27.301	30.813	33.924	37.659	40.289	48.268
23	10.196	11.293	13.091	14.848	17.187	19.021	22.337	26.018	28.429	32.007	35.172	38.968	41.638	49.728
24	10.856	11.992	13.848	15.659	18.062	19.943	23.337	27.096	29.553	33.196	36.415	40.270	42.980	51.179
25	11.524	12.697	14.611	16.473	18.940	20.867	24.337	28.172	30.675	34.382	37.652	41.566	44.314	52.620
26	12.198	13.409	15.379	17.292	19.820	21.792	25.336	29.246	31.795	35.563	38.885	42.856	45.642	54.052
27	12.879	14.125	16.151	18.114	20.703	22.719	26.336	30.319	32.912	36.741	40.113	44.140	46.963	55.476
28	13.565	14.847	16.928	18.939	21.588	23.647	27.336	31.391	34.027	37.916	41.337	45.419	48.278	56.893
29	14.256	15.574	17.708	19.786	22.475	24.577	28.336	32.461	35.139	39.087	42.557	46.693	49.588	58.302
30	14.953	16.306	18.493	20.599	23.364	25.508	29.336	33.530	36.250	40.256	43.773	47.962	50.892	59.703
32	16.362	17.783	20.072	22.271	25.148	27.373	31.336	35.665	38.466	42.585	46.194	50.487	53.486	62.487
34	17.789	19.275	21.664	23.952	26.938	29.242	33.336	37.795	40.676	44.903	48.602	52.995	56.061	65.247
36	19.233	20.783	23.269	25.643	28.735	31.115	35.336	39.922	42.879	47.212	50.999	55.489	58.619	67.985
38	20.691	22.304	24.884	27.343	30.537	32.992	37.335	42.045	45.076	49.513	53.384	57.969	61.162	70.703
40	22.164	23.838	26.509	29.051	32.345	34.872	39.335	44.165	47.269	51.805	55.759	60.435	63.691	73.402
42	23.650	25.383	28.144	30.765	34.157	36.755	41.335	46.282	49.456	54.090	58.124	62.892	66.206	76.084
44	25.148	26.939	29.787	32.487	35.974	38.641	43.335	48.396	51.639	56.369	60.481	65.337	68.710	78.750
46	26.657	28.504	31.439	34.215	37.795	40.529	45.335	50.507	53.818	58.641	62.830	67.771	71.201	81.400
48	28.177	30.080	33.098	35.949	39.621	42.420	47.335	52.616	55.993	60.907	65.171	70.197	73.683	84.037
50	29.707	31.664	34.764	37.689	41.449	44.313	49.335	54.723	58.164	63.167	67.505	72.613	76.154	86.661
52	31.246	33.256	36.437	39.433	43.281	46.209	51.335	56.827	60.332	65.422	69.832	75.021	78.616	89.272
54	32.793	34.856	38.116	41.183	45.117	48.106	53.335	58.930	62.496	67.673	72.153	77.422	81.069	91.872
56	34.350	36.464	39.801	42.937	46.955	50.005	55.335	61.031	64.658	69.919	74.468	79.815	83.513	94.461
58	35.913	38.078	41.492	44.696	48.797	51.906	57.335	63.129	66.816	72.160	76.778	82.201	85.950	97.039
60	37.485	39.699	43.188	46.459	50.641	53.809	59.335	65.227	68.972	74.397	79.082	84.580	88.379	99.607
62	39.063	41.327	44.889	48.226	52.487	55.714	61.335	67.322	71.125	76.630	81.381	86.953	90.802	102.166
64	40.649	42.960	46.595	49.996	54.336	57.620	63.335	69.416	73.276	78.860	83.675	89.320	93.217	104.716
66	42.240	44.599	48.305	51.770	56.188	59.527	65.335	71.508	75.424	81.085	85.965	91.681	95.626	107.258
68	43.838	46.244	50.020	53.548	58.042	61.436	67.335	73.600	77.571	83.308	88.250	94.037	98.028	109.791
70	45.442	47.893	51.739	55.329	59.898	63.346	69.334	75.689	79.715	85.527	90.531	96.388	100.425	112.317

For odd values of *n* between 30 and 70 the mean of the tabular values for *n*–1 and *n*+1 may be taken. For larger values of *n*, the expression $\sqrt{2x^2} - \sqrt{2n-1}$ may be used as a normal deviate with unit variance, remembering that the probability for χ^2 corresponds with that of a single tail of the normal curve. (For fuller formulae, see Introduction.)

For notes, see page 47.

TABLE 4 : VARIANCE RATIO—*contd.*
5 per cent. Points of e^{2z}

$n_2 \backslash n_1$	1	2	3	4	5	6	8	12	24	∞
1	161.4	199.5	215.7	224.6	230.2	234.0	238.9	243.9	249.0	254.3
2	18.51	19.00	19.16	19.25	19.30	19.33	19.37	19.41	19.45	19.50
3	10.13	9.55	9.28	9.12	9.01	8.94	8.84	8.74	8.64	8.53
4	7.71	6.94	6.59	6.39	6.26	6.16	6.04	5.91	5.77	5.63
5	6.61	5.79	5.41	5.19	5.05	4.95	4.82	4.68	4.53	4.36
6	5.99	5.14	4.76	4.53	4.39	4.28	4.15	4.00	3.84	3.67
7	5.59	4.74	4.35	4.12	3.97	3.87	3.73	3.57	3.41	3.23
8	5.32	4.46	4.07	3.84	3.69	3.58	3.44	3.28	3.12	2.93
9	5.12	4.26	3.86	3.63	3.48	3.37	3.23	3.07	2.90	2.71
10	4.96	4.10	3.71	3.48	3.33	3.22	3.07	2.91	2.74	2.54
11	4.84	3.98	3.59	3.36	3.20	3.09	2.95	2.79	2.61	2.40
12	4.75	3.88	3.49	3.26	3.11	3.00	2.85	2.69	2.50	2.30
13	4.67	3.80	3.41	3.18	3.02	2.92	2.77	2.60	2.42	2.21
14	4.60	3.74	3.34	3.11	2.96	2.85	2.70	2.53	2.35	2.13
15	4.54	3.68	3.29	3.06	2.90	2.79	2.64	2.48	2.29	2.07
16	4.49	3.63	3.24	3.01	2.85	2.74	2.59	2.42	2.24	2.01
17	4.45	3.59	3.20	2.96	2.81	2.70	2.55	2.38	2.19	1.96
18	4.41	3.55	3.16	2.93	2.77	2.66	2.51	2.34	2.15	1.92
19	4.38	3.52	3.13	2.90	2.74	2.63	2.48	2.31	2.11	1.88
20	4.35	3.49	3.10	2.87	2.71	2.60	2.45	2.28	2.08	1.84
21	4.32	3.47	3.07	2.84	2.68	2.57	2.42	2.25	2.05	1.81
22	4.30	3.44	3.05	2.82	2.66	2.55	2.40	2.23	2.03	1.78
23	4.28	3.42	3.03	2.80	2.64	2.53	2.38	2.20	2.00	1.76
24	4.26	3.40	3.01	2.78	2.62	2.51	2.36	2.18	1.98	1.73
25	4.24	3.38	2.99	2.76	2.60	2.49	2.34	2.16	1.96	1.71
26	4.22	3.37	2.98	2.74	2.59	2.47	2.32	2.15	1.95	1.69
27	4.21	3.35	2.96	2.73	2.57	2.46	2.30	2.13	1.93	1.67
28	4.20	3.34	2.95	2.71	2.56	2.44	2.29	2.12	1.91	1.65
29	4.18	3.33	2.93	2.70	2.54	2.43	2.28	2.10	1.90	1.64
30	4.17	3.32	2.92	2.69	2.53	2.42	2.27	2.09	1.89	1.62
40	4.08	3.23	2.84	2.61	2.45	2.34	2.18	2.00	1.79	1.51
60	4.00	3.15	2.76	2.52	2.37	2.25	2.10	1.92	1.70	1.39
120	3.92	3.07	2.68	2.45	2.29	2.17	2.02	1.83	1.61	1.25
∞	3.84	2.99	2.60	2.37	2.21	2.10	1.94	1.75	1.52	1.00

Lower 5 per cent. points are found by interchange of n_1 and n_2, i.e. n_1 must always correspond with the greater mean square.

For notes, see page 47.

TABLE 5 : VARIANCE RATIO—*contd.*
1 per cent. Points of e^{2z}

$n_2 \backslash n_1$	1	2	3	4	5	6	8	12	24	∞
1	4052	4999	5403	5625	5764	5859	5982	6106	6234	6366
2	98.50	99.00	99.17	99.25	99.30	99.33	99.37	99.42	99.46	99.50
3	34.12	30.82	29.46	28.71	28.24	27.91	27.49	27.05	26.6	26.12
4	21.20	18.00	16.69	15.98	15.52	15.21	14.80	14.37	13.93	13.46
5	16.26	13.27	12.06	11.39	10.97	10.67	10.29	9.89	9.47	9.02
6	13.74	10.92	9.78	9.15	8.75	8.47	8.10	7.72	7.31	6.88
7	12.25	9.55	8.45	7.85	7.46	7.19	6.84	6.47	6.07	5.65
8	11.26	8.65	7.59	7.01	6.63	6.37	6.03	5.67	5.28	4.86
9	10.56	8.02	6.99	6.42	6.06	5.80	5.47	5.11	4.73	4.31
10	10.04	7.56	6.55	5.99	5.64	5.39	5.06	4.71	4.33	3.91
11	9.65	7.20	6.22	5.67	5.32	5.07	4.74	4.40	4.02	3.60
12	9.33	6.93	5.95	5.41	5.06	4.82	4.50	4.16	3.78	3.36
13	9.07	6.70	5.74	5.20	4.86	4.62	4.30	3.96	3.59	3.16
14	8.86	6.51	5.56	5.03	4.69	4.46	4.14	3.80	3.43	3.00
15	8.68	6.36	5.42	4.89	4.56	4.32	4.00	3.67	3.29	2.87
16	8.53	6.23	5.29	4.77	4.44	4.20	3.89	3.55	3.18	2.75
17	8.40	6.11	5.18	4.67	4.34	4.10	3.79	3.45	3.08	2.65
18	8.28	6.01	5.09	4.58	4.25	4.01	3.71	3.37	3.00	2.57
19	8.18	5.93	5.01	4.50	4.17	3.94	3.63	3.30	2.92	2.49
20	8.10	5.85	4.94	4.43	4.10	3.87	3.56	3.23	2.86	2.42
21	8.02	5.78	4.87	4.37	4.04	3.81	3.51	3.17	2.80	2.36
22	7.94	5.72	4.82	4.31	3.99	3.76	3.45	3.12	2.75	2.31
23	7.88	5.66	4.76	4.26	3.94	3.71	3.41	3.07	2.70	2.26
24	7.82	5.61	4.72	4.22	3.90	3.67	3.36	3.03	2.66	2.21
25	7.77	5.57	4.68	4.18	3.86	3.63	3.32	2.99	2.62	2.17
26	7.72	5.53	4.64	4.14	3.82	3.59	3.29	2.96	2.58	2.13
27	7.68	5.49	4.60	4.11	3.78	3.56	3.26	2.93	2.55	2.10
28	7.64	5.45	4.57	4.07	3.75	3.53	3.23	2.90	2.52	2.06
29	7.60	5.42	4.54	4.04	3.73	3.50	3.20	2.87	2.49	2.03
30	7.56	5.39	4.51	4.02	3.70	3.47	3.17	2.84	2.47	2.01
40	7.31	5.18	4.31	3.83	3.51	3.29	2.99	2.66	2.29	1.80
60	7.08	4.08	4.13	3.65	3.34	3.12	2.82	2.50	2.12	1.60
120	6.85	4.70	3.95	3.48	3.17	2.96	2.66	2.34	1.95	1.38
∞	6.64	4.60	3.78	3.32	3.02	2.80	2.51	2.18	1.79	1.00

Lower 1 per cent points are found by interchange of n_1 and n_2, i.e. n_1 must always correspond with the greater mean square.

For notes, see page 48.

TABLE 6 : Transformation of *r* to *z* (Interclass)

z	.00	.01	.02	.03	.04	.05	.06	. 07	.08	.09	Mean Diff.
.0	.0000	.0100	.0200	.0300	.9400	.0500	.0599	.0699	.0798	.0898	100
.1	.0997	.1096	.1194	.1293	.1391	.1489	.1586	.1684	.1781	.1877	98
.2	.1974	.2070	.2165	.2260	.2355	.2449	.2543	.2636	.2729	.2821	94
.3	.2913	.3004	.3095	.3185	.3275	.3364	.3452	.3540	.3627	.3714	89
.4	.3800	.3885	.3969	.4053	.4136	.4219	.4301	.4382	.4462	.4542	82
.5	.4621	.4699	.4777	.4854	.4930	.5005	.5080	.5154	.5227	.5299	75
.6	.5370	.5441	.5511	.5580	.5649	.5717	.5784	.5850	.5915	.5980	68
.7	.6044	.6107	.6169	.6231	.6291	.6351	.6411	.6469	.6527	.6584	60
.8	.6640	.6696	.6751	.6805	.6858	.6911	.6963	.7014	.7064	.7114	53
.9	.7163	.7211	.7259	.7306	.7352	.7398	.7443	.7487	.7531	.7574	46
1.0	.7616	.7658	.7699	.7739	.7779	.7818	.7857	.7895	.7932	.7969	39
1.1	.8005	.8041	.8076	.8110	.8144	.8178	.8210	.8243	.8275	.8306	33
1.2	.8337	.8367	.8397	.8426	.8455	.8483	.8511	.8538	.8565	.8591	28
1.3	.8617	.8643	.8668	.8692	.8717	.8741	.8764	.8787	.8810	.8832	24
1.4	.8854	.8875	.8896	.8917	.8937	.8957	.8977	.8996	.9015	.9033	20
1.5	.9051	.9069	.9087	.9104	.9121	.9138	.9154	.9170	.9186	.9201	17
1.6	.9217	.9232	.9246	.9261	.9275	.9289	.9302	.9316	.9329	.9341	14
1.7	.9354	.9366	.9379	.9391	.9402	.9414	.9425	.9436	.9447	.9458	12
1.8	.94681	.94783	.94884	.94983	.95080	.95175	.95268	95359	.95445	.95537	95
1.9	.95624	.95709	.95792	.95873	.95953	.96032	.96109	.96185	.96259	.96331	79
2.0	.96403	.96473	.96541	.96609	.96675	.96739	.96803	.96865	.96926	.96986	65
2.1	.97045	.97103	.97159	.97215	.97269	.97323	.97375	.97426	.97477	.97526	53
2.2	.97574	.97622	.97668	.97714	.97759	.97803	.97846	.97888	.97929	.97970	44
2.3	.98010	.98049	.98087	.98124	.98161	.98197	.98233	.98267	.98301	.98335	36
2.4	.98367	.98399	.98431	.98462	.98492	.98522	.98551	.98579	.98607	.98635	30
2.5	.98661	.98688	.98714	.98739	.98764	.98788	.98812	.98835	.98858	.98881	24
2.6	.98903	.98924	.98945	.98966	.98987	.99007	.99026	.99045	.99064	.99083	20
2.7	.99101	.99118	.99136	.99153	.99170	.99186	.99202	.99218	.99233	.99248	16
2.8	.99263	.99278	.99292	.99306	.99320	.99333	.99346	.99359	.99372	.99384	13
2.9	.99396	.99408	.99420	.99431	.99443	.99454	.99464	.99475	.99485	.99485	11
	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
3	.99505	.99595	.99668	.99728	.99777	.99818	.99851	.99878	.99900	.99918	—
4	.99933	.99945	.99955	.99963	.99970	.99975	.99980	.99983	.99986	.99989	—

For notes, see page 48.

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i\,!$, OF THE POISSON DISTRIBUTION

i	*m*										*i*
	0.1	*0.2*	*0.3*	*0.4*	*0.5*	*0.6*	*0.7*	*0.8*	*0.9*	*1.0*	
0	.904837	.818731	.740818	.670320	.606531	.548812	.496585	.449329	.406570	.367879	*0*
1	.090484	.163746	.222245	.268128	.303265	.329287	.347610	.359463	.365913	.367879	*1*
2	.004524	.016375	.033337	.053626	.075816	.098786	.121663	.143785	.164661	.183940	*2*
3	.000151	.001092	.003334	.007150	.012636	.019757	.028388	.038343	.049398	.061313	*3*
4	.000004	.000055	.000250	.000715	.001580	.002964	.004968	.007669	.011115	.015328	*4*
5	—	.000002	.000015	.000057	.000158	.000356	.000696	.001227	.002001	.003066	*5*
6	—	—	.000001	.000004	.000013	.000036	.000081	.000164	.000300	.000511	*6*
7	—	—	—	—	.000001	.000003	.000008	.000019	.000039	.000073	*7*
8	—	—	—	—	—	—	.000001	.000002	.000004	.000009	*8*
9	—	—	—	—	—	—	—	—	—	.000001	*9*
	1.1	*1.2*	*1.3*	*1.4*	*1.5*	*1.6*	*1.7*	*1.8*	*1.9*	*2.0*	
0	.332871	.301194	.272532	.246597	.223130	.201897	.182684	.165299	.149569	.135335	*0*
1	.366158	.361433	.354291	.345236	.334695	.323034	.310562	.297538	.284180	.270671	*1*
2	.201387	.216860	.230289	.241665	.251021	.258428	.263978	.267784	.269971	.270671	*2*
3	.073842	.086744	.099792	.112777	.125510	.137828	.149587	.160671	.170982	.180447	*3*
4	.020307	.026023	.032432	.039472	.047067	.055131	.063575	.072302	.081216	.090224	*4*
5	.004467	.006246	.008432	.011052	.014120	.017642	.021615	.026029	.030862	.036089	*5*
6	.000819	.001249	.001827	.002579	.003530	.004705	.006124	.007809	.009773	.012030	*6*
7	.000129	.000214	.000339	.000516	.000756	.001075	.001487	.002008	.002653	.003437	*7*
8	.000018	.000032	.000055	.000090	.000142	.000215	.000316	.000452	.000630	.000859	*8*
9	.000002	.000004	.000008	.000014	.000024	.000038	.000060	.000090	.000133	.000191	*9*
10	—	.000001	.000001	.000002	.000004	.000006	.000010	.000016	.000025	.000038	*10*
11	—	—	—	—	—	.000001	.000002	.000003	.000004	.000007	*11*
12	—	—	—	—	—	—	—	—	.000001	.000001	*12*
	2.1	*2.2*	*2.3*	*2.4*	*2.5*	*2.6*	*2.7*	*2.8*	*2.9*	*3.0*	
0	.122456	.110803	.100259	.090718	.082085	.074274	.067206	.060810	.055023	.049787	*0*
1	.257159	.243767	.230595	.217723	.205212	.193111	.181455	.170268	.159567	.149361	*1*
2	.270016	.268144	.265185	.261268	.256516	.251045	.244964	.238375	.231373	.224042	*2*
3	.189012	.196639	.203308	.209014	.213763	.217572	.220468	.222484	.223660	.224042	*3*
4	.099231	.108151	.116902	.125409	.133602	.141422	.148816	.155739	.162154	.168031	*4*
5	.041677	.047587	.053775	.060196	.066801	.073539	.080360	.087214	.094049	.100819	*5*
6	.014587	.017448	.020614	.024078	.027834	.031867	.036162	.040700	.045457	.050409	*6*
7	.004376	.005484	.006773	.008255	.009941	.011836	.013948	.016280	.018832	.021604	*7*
8	.001149	.001508	.001947	.002477	.003106	.003847	.004708	.005698	.006827	.008102	*8*
9	.000268	.000369	.000498	.000660	.000863	.001111	.001412	.001773	.002200	.002701	*9*
10	.000056	.000081	.000114	.000158	.000216	.000289	.000381	.000496	.000638	.000810	*10*
11	.000011	.000016	.000024	.000035	.000049	.000068	.000094	.000126	.000168	.000221	*11*
12	.000002	.000003	.000005	.000007	.000010	.000015	.000021	.000029	.000041	.000055	*12*
13	—	.000001	.000001	.000001	.000002	.000003	.000004	.000006	.000009	.000013	*13*
14	—	—	—	—	—	.000001	.000001	.000001	.000002	.000003	*14*
15	—	—	—	—	—	—	—	—	—	.000001	*15*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	3.1	*3.2*	*3.3*	*3.4*	*3.5*	*3.6*	*3.7*	*3.8*	*3.9*	*4.0*	
0	.045049	.040762	.036889	.033373	.030197	.027324	.024724	.022371	.020242	.018316	*0*
1	.139653	.130439	.121714	.113469	.105691	.098365	.091477	.085009	.078943	.073263	*1*
2	.216461	.208702	.200829	.192898	.184959	.177058	.169233	.161517	.153940	.146525	*2*
3	.223677	.222616	.220912	.218617	.215785	.212469	.208720	.204588	.200122	.195367	*3*
4	.173350	.178093	.182252	.185825	.188812	.191222	.193066	.194359	.195119	.195367	*4*
5	.107477	.113979	.120286	.126361	.132169	.137680	.142869	.147713	.152193	.156293	*5*
6	.055530	.060789	.066158	.071604	.077098	.082608	.088102	.093551	.098925	.104196	*6*
7	.024592	.027789	.031189	.034779	.038549	.042484	.046568	.050785	.055115	.059540	*7*
8	.009529	.011116	.012865	.014781	.016865	.019118	.021538	.024123	.026869	.029770	*8*
9	.003282	.003952	.004717	.005584	.006559	.007647	.008854	.010185	.011643	.013231	*9*
10	.001018	.001265	.001557	.001899	.002296	.002753	.003276	.003870	.004541	.005292	*10*
11	.000287	.000368	.000467	.000587	.000730	.000901	.001102	.001337	.001610	.001925	*11*
12	.000074	.000098	.000128	.000166	.000213	.000270	.000340	.000423	.000523	.000642	*12*
13	.000018	.000024	.000033	.000043	.000057	.000075	.000097	.000124	.000157	.000197	*13*
14	.000004	.000006	.000008	.000011	.000014	.000019	.000026	.000034	.000044	.000056	*14*
15	.000001	.000001	.000002	.000002	.000003	.000005	.000006	.000009	.000011	.000015	*15*
16	—	—	—	.000001	.000001	.000001	.000001	.000002	.000003	.000004	*16*
17	—	—	—	—	—	—	—	—	.000001	.000001	*17*
	4.1	*4.2*	*4.3*	*4.4*	*4.5*	*4.6*	*4.7*	*4.8*	*4.9*	*5.0*	
0	.016573	.014996	.013569	.012277	.011109	.010052	.009095	.008230	.007447	.006738	*0*
1	.067948	.062981	.058345	.054020	.049990	.046238	.042748	.039503	.036488	.033690	*1*
2	.139293	.132261	.125441	.118845	.112479	.106348	.100457	.094807	.089396	.084224	*2*
3	.190368	.185165	.179799	.174305	.168718	.163068	.157383	.151691	.146014	.140374	*3*
4	.195127	.194424	.193284	.191736	.189808	.187528	.184925	.182029	.178867	.175467	*4*
5	.160004	.163316	.166224	.168728	.170827	.172525	.173830	.174748	.175290	.175467	*5*
6	.109336	.114321	.119127	.123734	.128120	.132270	.136167	.139798	.143153	.146223	*6*
7	.064040	.068593	.073178	.077775	.082363	.086920	.091426	.095862	.100207	.104445	*7*
8	.032820	.036011	.039333	.042776	.046329	.049979	.053731	.057517	.061377	.065278	*8*
9	.014951	.016805	.018793	.020913	.023165	.025545	.028050	.303676	.033416	.036266	*9*
10	.006130	.007058	.008081	.009202	.010424	.011751	.013184	.014724	.016374	.018133	*10*
11	.002285	.002695	.003159	.003681	.004264	.004914	.005633	.006425	.007294	.008242	*11*
12	.000781	.000943	.001132	.001350	.001599	.001884	.002206	.002570	.002978	.003434	*12*
13	.000246	.000305	.000374	.000457	.000554	.000667	.000798	.000949	.001123	.001321	*13*
14	.000072	.000091	.000115	.000144	.000178	.000219	.000268	.000325	.000393	.000472	*14*
15	.000020	.000026	.000033	.000042	.000053	.000067	.000084	.000104	.000128	.000157	*15*
16	.000005	.000007	.000009	.000012	.000015	.000019	.000025	.000031	.000039	.000049	*16*
17	.000001	.000902	.000002	.000003	.000004	.000005	.000007	.000009	.000011	.000014	*17*
18	—	—	.000001	.000001	.000001	.000001	.000002	.000002	.000003	.000004	*18*
19	—	—	—	—	—	—	—	.000001	.000001	.000001	*19*
	5.1	*5.2*	*5.3*	*5.4*	*5.5*	*5.6*	*5.7*	*5.8*	*5.9*	*6.0*	
0	.006097	.005517	.004992	.004517	.004087	.003698	.003346	.003028	.002739	.002479	*0*
1	.031093	.028686	.026455	.024390	.022477	.020708	.019072	.017560	.016163	.014873	*1*
2	.079288	.074584	.070107	.065852	.061812	.057982	.054355	.050923	.047680	.044618	*2*
3	.134790	.129279	.123856	.118533	.113323	.108234	.103275	.098452	.093771	.089235	*3*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	5.1	*5.2*	*5.3*	*5.4*	*5.5*	*5.6*	*5.7*	*5.8*	*5.9*	*6.0*	
4	.171857	.168063	.164109	.160020	.155819	.151528	.147167	.142755	.138312	.133853	*4*
5	.175294	.174785	.173955	.172821	.171401	.169711	.167770	.165596	.163208	.160623	*5*
6	.149000	.151480	.153660	.155539	.157117	.158397	.159382	.160076	.160488	.160623	*6*
7	.108557	.112528	.116343	.119987	.123449	.126717	.129782	.132635	.135268	.137677	*7*
8	.069205	.073143	.077077	.080991	.084871	.088702	.092470	.096160	.099760	.103258	*8*
9	.039216	.042261	.045390	.048595	.051866	.055192	.058564	.061970	.065398	.068838	*9*
10	.020000	.021976	.024057	.026241	.028526	.030908	.033382	.035943	.038585	.041303	*10*
11	.009273	.010388	.011591	.012882	.014263	.015735	.017298	.018952	.020696	.022529	*11*
12	.003941	.004502	.005119	.005797	.006537	.007343	.008216	.009160	.010175	.011264	*12*
13	.001546	.001801	.002087	.002408	.002766	.003163	.003603	.004087	.004618	.005199	*13*
14	.000563	.000669	.000790	.000929	.001087	.001265	.001467	.001693	.001946	.002228	*14*
15	.000191	.000232	.000279	.000334	.000398	.000472	.000557	.000655	.000766	.000891	*15*
16	.000061	.000075	.000092	.000113	.000137	.000165	.000199	.000237	.000282	.000334	*16*
17	.000018	.000023	.000029	.000036	.000044	.000054	.000067	.000081	.000098	.000118	*17*
18	.000005	.000007	.000008	.000011	.000014	.000017	.000021	.000026	.000032	.000039	*18*
19	.000001	.000002	.000002	.000003	.000004	.000005	.000006	.000008	.000010	.000012	*19*
20	—	—	.000001	.000001	.000001	.000001	.000002	.000002	.000003	.000004	*20*
21	—	—	—	—	—	—	—	.000001	.000001	.000001	*21*
	6.1	*6.2*	*6.3*	*6.4*	*6.5*	*6.6*	*6.7*	*6.8*	*6.9*	*7.0*	
0	.002243	.002029	.001836	.001662	.001503	.001360	.001231	.001114	.001008	.000912	*0*
1	.013682	.012582	.011569	.010634	.009772	.008978	.008247	.007574	.006954	.006383	*1*
2	.041729	.039006	.036441	.034029	.031760	.029629	.027628	.025751	.023990	.022341	*2*
3	.084848	.080612	.076527	.072595	.068814	.065183	.061702	.058368	.055178	.052129	*3*
4	.129393	.124948	.120530	.116151	.111822	.107553	.103351	.099225	.095182	.091226	*4*
5	.157860	.154936	.151868	.148674	.145369	.141969	.138490	.134946	.131351	.127717	*5*
6	.160491	.160100	.159461	.158585	.157483	.156166	.154648	.152939	.151053	.149003	*6*
7	.139856	.141803	.143515	.144992	.146234	.147243	.148020	.148569	.148895	.149003	*7*
8	.106640	.109897	.113018	.115994	.118815	.121475	.123967	.126284	.128422	.130377	*8*
9	.072278	.075707	.079113	.082484	.085811	.089082	.092236	.095415	.098457	.101405	*9*
10	.044090	.046938	.049841	.052790	.055777	.058794	.061832	.064882	.067935	.070983	*10*
11	.024450	.026456	.028545	.030714	.032959	.035276	.037661	.040109	.042614	.045171	*11*
12	.012429	.013669	.014986	.016381	.017853	.019402	.021028	.022728	.024503	.026350	*12*
13	.005832	.006519	.007263	.008064	.008926	.009850	.010837	.011889	.013005	.014188	*13*
14	.002541	.002887	.003268	.003687	.004144	.004644	.005186	.005774	.006410	.007094	*14*
15	.001033	.001193	.001373	.001573	.001796	.002043	.002317	.002618	.002949	.003311	*15*
16	.000394	.000462	.000540	.000629	.000730	.000843	.000970	.001113	.001272	.001448	*16*
17	.000141	.000169	.000200	.000237	.000219	.000327	.000382	.000445	.000516	.000596	*17*
18	.000048	.000058	.000070	.000084	.000101	.000120	.000142	.000168	.000198	.000232	*18*
19	.000015	.000019	.000023	.000028	.000034	.000042	.000050	.000060	.000072	.000085	*19*
20	.000005	.000006	.000007	.000009	.000011	.000014	.000017	.000020	.000025	.000030	*20*
21	.000001	.000002	.000002	.000003	.000003	.000004	.000005	.000007	.000008	.000010	*21*
22	—	—	.000001	.000001	.000001	.000001	.000002	.000002	.000003	.000003	*22*
23	—	—	—	—	—	—	—	.000001	.000001	.000001	*23*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	7.1	*7.2*	*7.3*	*7.4*	*7.5*	*7.6*	*7.7*	*7.8*	*7.9*	*8.0*	
0	.000825	.000747	.000676	.000611	.000553	.000500	.000453	.000410	.000371	.000335	*0*
1	.005858	.005375	.004931	.004523	.004148	.003803	.003487	.003196	.002929	.002684	*1*
2	.020797	.019352	.018000	.016736	.015555	.014453	.013424	.012464	.011569	.010735	*2*
3	.049219	.046444	.043799	.041282	.038889	.036614	.034455	.032407	.030465	.028626	*3*
4	.087364	.083598	.079934	.076372	.072916	.069567	.066326	.063193	.060169	.057252	*4*
5	.124057	.120382	.116703	.113031	.109375	.105742	.102142	.098581	.095067	.091604	*5*
6	.146800	.144458	.141989	.139405	.136718	.133940	.131082	.128156	.125171	.122138	*6*
7	.148897	.148586	.148074	.147371	.146484	.145421	.144191	.142802	.141264	.139587	*7*
8	.132146	.133727	.135118	.136318	.137329	.138150	.136783	.139232	.139499	.139587	*8*
9	.104249	.106982	.109596	.112084	.114440	.116660	.118737	.120668	.122449	.124077	*9*
10	.074017	.077027	.080005	.082942	.085830	.088661	.091427	.094121	.096735	.099262	*10*
11	.047774	.050418	.053094	.055797	.058521	.061257	.063999	.066740	.069473	.072190	*11*
12	.028267	.030251	.032299	.034408	.036575	.038796	.041066	.043381	.045736	.048127	*12*
13	.015438	.016754	.018137	.019586	.021101	.022681	.024324	.026029	.027794	.029616	*13*
14	.007829	.008616	.009457	.010353	.011304	.012312	.013378	.014502	.015684	.016924	*14*
15	.003706	.004136	.004603	.005107	.005652	.006238	.006867	.007541	.008260	.009026	*15*
16	.001644	.001861	.002100	.002362	.002649	.002963	.003305	.003676	.004078	.004513	*16*
17	.000687	.000788	.000902	.001028	.001169	.001325	.001497	.001687	.001895	.002124	*17*
18	.000271	.000315	.000366	.000423	.000487	.000559	.000640	.000731	.000832	.000944	*18*
19	.000101	.000119	.000141	.000165	.000192	.000224	.000259	.000300	.000346	.000397	*19*
20	.000036	.000043	.000051	.000061	.000072	.000085	.000100	.000117	.000137	.000159	*20*
21	.000012	.000015	.000018	.000021	.000026	.000031	.000037	.000043	.000051	.000061	*21*
22	.000004	.000005	.000006	.000007	.000009	.000011	.000013	.000015	.000018	.000022	*22*
23	.000001	.000002	.000002	.000002	.000003	.000004	000004	.000005	.000006	.000008	*23*
24	—	—	.000001	.000001	.000001	.000001	000001	.000002	.000002	.000003	*24*
25	—	—	—	—	—	—	—	.000001	.000001	.000001	*25*
	8.1	*8.2*	*8.3*	*8.4*	*8.5*	*8.6*	*8.7*	*8.8*	*8.9*	*9.0*	
0	.000304	.000275	.000249	.000225	.000203	.000184	.000167	.000151	.000136	.000123	*0*
1	.002459	.002252	.002063	.001889	.001729	.001583	.001449	.001326	.001214	.001111	*1*
2	.009958	.009234	.008560	.007933	.007350	.006808	.006304	.005836	.005402	.004998	*2*
3	.026885	.025239	.023683	.022213	.020826	.019517	.018283	.017120	.016025	.014994	*3*
4	.054443	.051740	.049142	.046648	.044255	.041961	.039765	.037664	.035656	.033737	*4*
5	.088198	.084854	.081576	.078368	.075233	.072174	.069192	.066289	.063467	.060727	*5*
6	.119067	.115967	.112847	.109716	.106581	.103449	.100328	.097224	.094143	.091090	*6*
7	.137778	.135848	.133805	.131659	.129419	.127094	.124693	.122224	.119696	.117116	*7*
8	.139500	.139244	.138823	.138242	.137508	.136626	.135604	.134446	.133161	.131756	*8*
9	.125550	.126866	.128025	.129026	.129869	.130554	.131084	.131459	.131682	.131756	*9*
10	.101696	.104031	.106261	.108382	.110388	.112277	.114043	.115684	.117197	.118580	*10*
11	.074885	.077550	.080179	.082764	.085300	.087780	.090197	.092547	.094823	.097020	*11*
12	.050547	.052993	.055457	.057935	.060421	.062909	.065393	.067868	.070327	.072765	*12*
13	.031495	.033426	.035407	.037435	.039506	.041617	.043763	.045941	.048147	.050376	*13*
14	.018222	.019578	.020991	.022461	.023986	.025565	.027196	.028877	.030608	.032384	*14*
15	.009840	.010703	.011615	.012578	.013592	.014657	.015773	.016941	.018161	.019431	*15*
16	.004981	.005485	.006025	.006604	.007221	.007878	.008577	.009318	.010102	.010930	*16*
17	.002373	.002646	.002942	.003263	.003610	.003985	.004389	.004823	.005289	.005786	*17*
18	.001068	.001205	.001356	.001523	.001705	.001904	.002121	.002358	.002615	.002893	*18*
19	.000455	.000520	.000593	.000673	.000763	.000862	.000971	.001092	.001225	.001370	*19*
20	.000184	.000213	.000246	.000283	.000324	.000371	.000423	.000481	.000545	.000617	*20*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	8.1	*8.2*	*8.3*	*8.4*	*8.5*	*8.6*	*8.7*	*8.8*	*8.9*	*9.0*	
21	.000071	.000083	.000097	.000113	.000131	.000152	.000175	.000201	.000231	.000264	*21*
22	.000026	.000031	.000037	.000043	.000051	.000059	.000069	.000081	.000093	.000108	*22*
23	.000009	.000011	.000013	.000016	.000019	.000022	.000026	.000031	.000036	.000042	*23*
24	.000003	.000004	.000005	.000006	.000007	.000008	.000009	.000011	.000013	.000016	*24*
25	.000001	.000001	.000002	.000002	.000002	.000003	.000003	.000004	.000005	.000006	*25*
26	—	—	—	.000001	.000001	.000001	.000001	.000001	.000002	.000002	*26*
27	—	—	—	—	—	—	—	—	.000001	.000001	*27*
	9.1	*9.2*	*9.3*	*9.4*	*9.5*	*9.6*	*9.7*	*9.8*	*9.9*	*9.0*	
0	.000112	.000101	.000091	.000083	.000075	.000068	.000061	.000055	.000050	.000045	*0*
1	.001016	.000930	.000850	.000778	.000711	.000650	.000594	.000543	.000497	.000454	*1*
2	.004624	.004276	.003954	.003655	.003378	.003121	.002883	.002663	.002459	.002270	*2*
3	.014025	.013113	.012256	.011452	.010696	.009987	.009322	.008698	.008114	.007567	*3*
4	.031906	.030160	.028496	.026911	.025403	.023969	.022606	.021311	.020082	.018917	*4*
5	.058069	.055494	.053002	.050593	.048266	.046020	.043855	.041770	.039763	.037883	*5*
6	.088072	.085091	.082154	.079262	.076421	.073632	.070899	.068224	.065609	.063055	*6*
7	.114493	.111834	.109147	.106438	.103714	.100981	.098246	.095514	.092790	.090079	*7*
8	.130236	.128609	.126883	.125065	.123160	.121178	.119123	.117004	.114827	.112599	*8*
9	.131683	.131467	.131113	.130623	.130003	.129256	.128388	.127405	.126310	.125110	*9*
10	.119832	.120950	.121935	.122786	.123502	.124086	.124537	.124857	.125047	.125110	*10*
11	.099133	.101158	.103090	.104926	.106661	.108293	.109819	.111236	.112542	.113736	*11*
12	.075176	.077555	.079895	.082192	.084440	.086634	.088770	.090843	.092847	.094780	*12*
13	.052623	.054885	.057156	.059431	.061706	.063976	.066236	.068481	.070707	.072908	*13*
14	.034205	.036067	.037968	.039904	.041872	.043869	.045892	.047937	.050000	.052077	*14*
15	.020751	.022121	.023540	.025006	.026519	.028076	.029677	.031319	.033000	.034718	*15*
16	.011802	.012720	.013683	.014691	.015746	.016846	.017992	.019183	.020419	.021699	*16*
17	.006318	.006884	.007485	.008123	.008799	.009513	.010266	.011058	.011891	.012764	*17*
18	.003194	.003518	.003867	.004242	.004644	.005074	.005532	.006021	.006540	.007091	*18*
19	.001530	.001704	.001893	.002099	.002322	.002563	.002824	.003105	.003408	.003732	*19*
20	.000696	.000784	.000880	.000986	.001103	.001230	.001370	.001522	.001687	.001866	*20*
21	.000302	.000343	.000390	.000442	.000499	.000563	.000633	.000710	.000795	.000889	*21*
22	.000125	.000144	.000165	.000189	.000215	.000245	.000279	.000316	.000358	.000404	*22*
23	.000049	.000057	.000067	.000077	.000089	.000102	.000118	.000135	.000154	.000176	*23*
24	.000019	.000022	.000026	.000030	.000035	.000041	.000048	.000055	.000064	.000073	*24*
25	.000007	.000008	.000010	.000011	.000013	.000016	.000018	.000022	.000025	.000029	*25*
26	.000002	.000003	.000003	.000004	.000005	.000006	.000007	.000008	.000010	.000011	*26*
27	.000001	.000001	.000001	.000001	.000002	.000002	.000002	.000003	.000004	.000004	*27*
28	—	—	—	—	.000001	.000001	.000001	.000001	.000001	.000001	*28*
29	—	—	—	—	—	—	—	—	—	.000001	*29*
	10.1	*10.2*	*10.3*	*10.4*	*10.5*	*10.6*	*10.7*	*10.8*	*10.9*	*11.0*	
0	.000041	.000037	.000034	.000030	.000028	.000025	.000023	.000020	.000018	.000017	*0*
1	.000415	.000379	.000346	.000317	.000289	.000264	.000241	.000220	.000201	.000184	*1*
2	.002095	.001934	.001784	.001646	.001518	.001400	.001291	.001190	.001097	.001010	*2*
3	.007054	.006574	.006125	.005705	.005313	.004946	.004603	.004283	.003984	.003705	*3*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	10.1	*10.2*	*10.3*	*10.4*	*10.5*	*10.6*	*10.7*	*10.8*	*10.9*	*11.0*	
4	.017811	.016764	.015773	.014834	.013946	.013107	.012313	.011564	.010856	.010189	*4*
5	.035979	.034199	.032492	.030855	.029287	.027786	.026350	.024978	.023667	.022415	*5*
6	.060565	.058139	.055777	.053482	.051252	.049089	.046991	.044960	.042995	.041095	*6*
7	.087387	.084716	.082072	.079458	.076878	.074334	.071830	.069367	.066949	.064577	*7*
8	.110326	.108013	.105668	.103296	.100902	.098493	.096072	.093646	.091218	.088794	*8*
9	.123810	.122415	.120931	.119364	.117720	.116003	.114219	.112375	.110475	.108526	*9*
10	.125048	.124863	.124559	.124139	.123606	.122963	.122215	.121365	.120418	.119378	*10*
11	.114817	.115782	.116633	.117368	.117987	.118492	.118882	.119159	.119323	.119378	*11*
12	.096637	.098415	.100110	.101719	.103239	.104667	.106003	.107243	.108386	.109430	*12*
13	.075080	.077218	.079318	.081375	.083385	.085344	.087248	.089094	.090877	.092595	*13*
14	.054165	.056259	.058355	.060450	.062539	.064618	.066683	.068730	.070754	.072753	*14*
15	.036471	.038256	.040071	.041912	.043777	.045663	.047567	.049485	.051415	.053352	*15*
16	.023022	.024388	.025795	.027243	.028729	.030252	.031810	.033403	.035026	.036680	*16*
17	.013678	.014633	.015629	.016666	.017744	.018863	.020022	.021220	.022458	.023734	*17*
18	.007675	.008292	.008943	.009629	.010351	.011108	.011902	.012732	.013600	.014504	*18*
19	.004080	.004451	.004848	.005271	.005720	.006197	.006703	.007237	.007802	.008397	*19*
20	.002060	.002270	.002497	.002741	.003003	.003285	.003586	.003908	.004252	.004618	*20*
21	.000991	.001103	.001225	.001357	.001502	.001658	.001827	.002010	.002207	.002419	*21*
22	.000455	.000511	.000573	.000642	.000717	.000799	.000889	.000987	.001093	.001210	*22*
23	.000200	.000227	.000257	.000290	.000327	.000368	.000413	.000463	.000518	.000578	*23*
24	.000084	.000096	.000110	.000126	.000143	.000163	.000184	.000208	.000235	.000265	*24*
25	.000034	.000039	.000045	.000052	.000060	.000069	.000079	.000090	.000103	.000117	*25*
26	.000013	.000015	.000018	.000021	.000024	.000028	.000032	.000037	.000043	.000049	*26*
27	.000005	.000006	.000007	.000008	.000009	.000011	.000013	.000015	.000017	.000020	*27*
28	.000002	.000002	.000003	.000003	.000004	.000004	.000005	.000006	.000007	.000008	*28*
29	.000001	.000001	.000001	.000001	.000001	.000002	.000002	.000002	.000003	.000003	29
30	—	—	—	—	—	.000001	.000001	.000001	.000001	.000001	*30*
	11.1	*11.2*	*11.3*	*11.4*	*11.5*	*11.6*	*11.7*	*11.8*	*11.9*	*12.0*	
0	.000015	.000014	.000012	.000011	.000010	.000009	.000008	.000008	.000007	.000006	*0*
1	.000168	.000153	.000140	.000128	.000116	.000106	.000097	.000089	.000081	.000074	*1*
2	.000931	.000858	.000790	.000727	.000670	.000617	.000568	.000522	.000481	.000442	*2*
3	.003445	.003202	.002976	.002764	.002568	.002385	,002214	.002055	.001907	.001770	*3*
4	.009559	.008965	.008406	.007879	.007382	.006915	.006476	.006062	.005674	.005309	*4*
5	.021221	.020082	.018997	.017963	.016979	.016043	.015153	.014307	.013504	.012741	*5*
6	.039259	.037487	.035778	.034130	.032544	.031017	.029549	.028137	.026782	.025481	*6*
7	.062253	.059979	.057755	.055584	.053465	.051400	.049388	.047432	.045530	.043682	*7*
8	.086376	.083970	.081579	.079206	.076856	.074529	.072231	.069962	.067725	.065523	*8*
9	.106531	.104496	.102427	.100328	.098204	.096060	.093900	.091728	.089548	.087364	*9*
10	.118249	.117036	.115743	.114374	.112935	.111430	109863	.108239	.106562	.104837	*10*
11	.119324	.119164	.118899	.118533	.118068	.117508	.116854	.116110	.115281	.114368	*11*
12	.110375	.111220	.111964	.112607	.113149	.113591	.113933	.114175	.114320	.114363	*12*
13	.094243	.095820	.097322	.098747	.100093	.101358	.102539	.103636	.104647	.105570	*13*
14	.074721	.076656	.078553	.080409	.082219	.083982	.085694	.087350	.088950	.090489	*14*
15	.055294	.057236	.059177	.061110	.063035	.064946	.066841	.068716	.070567	.072391	*15*
16	.038360	.040065	.041793	.043541	.045306	.047086	.048877	.050678	.052484	.054293	*16*
17	.025047	.026396	.027780	.029198	.030648	.032129	.033639	.035176	.036739	.038325	*17*
18	.015446	.016424	.017440	.018492	.019581	.020706	.021865	.023060	.024288	.025550	*18*
19	.009023	.009682	.010372	.011095	.011852	.012641	.013465	.014322	.015212	.016137	*19*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	11.1	*11.2*	*11.3*	*11.4*	*11.5*	*11.6*	*11.7*	*11.8*	*11.9*	*12.0*	
20	.005008	.005422	.005860	.006324	.006815	.007332	.007877	.008450	.009051	.009682	*20*
21	.002647	.002892	.003153	.003433	.003732	.004050	.004388	.004748	.005129	.005533	*21*
22	.001336	.001472	.001620	.001779	.001951	.002136	.002334	.002547	.002774	.003018	*22*
23	.000645	.000717	.000796	.000882	.000975	.001077	.001187	.001307	.001435	.001575	*23*
24	.000298	.000335	.000375	.000419	.000467	.000521	.000579	.000642	.000712	.000787	*24*
25	.000132	.000150	.000169	.000191	.000215	.000242	.000271	.000303	.000339	.000378	*25*
26	.000057	.000065	.000074	.000084	.000095	.000108	.000122	.000138	.000155	.000174	*26*
27	.000023	.000027	.000031	.000035	.000041	.000046	.000053	.000060	.000068	.000078	*27*
28	.000009	.000011	.000012	.000014	.000017	.000019	.000022	.000025	.000029	.000033	*28*
29	.000004	.000004	.000005	.000006	.000007	.000008	.000009	.000010	.000012	.000014	*29*
30	.000001	.000002	.000002	.000002	.000003	.000003	.000003	.000004	.000005	.000005	*30*
31	—	.000001	.000001	.000001	.000001	.000001	.000001	.000002	.000002	.000002	*31*
32	—	—	—	—	—	—	—	.000001	.000001	.000001	*32*
	12.1	*12.2*	*12.3*	*12.4*	*12.5*	*12.6*	*12.7*	*12.8*	*12.9*	*13.0*	
0	.000006	.000005	.000005	.000004	.000004	.000003	.000003	.000003	.000002	.000002	*0*
1	.000067	.000061	.000056	.000051	.000047	.000042	.000039	.000035	.000032	.000029	*1*
2	.000407	.000374	.000344	.000317	.000291	.000268	.000246	.000226	.000208	.000191	*2*
3	.001641	.001522	.001412	.001309	.001213	.001124	.001042	.000965	.000894	.000828	*3*
4	.004966	.004643	.004341	.004057	.003791	.003541	.003307	.003088	.002882	.002690	*4*
5	.012017	.011330	.010679	.010062	.009477	.008924	.008400	.007905	.007436	.006994	*5*
6	.024233	.023037	.021802	.020794	.019744	.018740	.017781	.016864	.015988	.015153	*6*
7	.041889	.040151	.038467	.036836	.035258	.033733	.032259	.030837	.029464	.028141	*7*
8	.063358	.061230	.059142	.057095	.055091	.053129	.051212	.049339	.047511	.045730	*8*
9	.085181	.083000	.080828	.078665	.076515	.074381	.072266	.070171	.068100	.066054	*9*
10	.103069	.101261	.099418	.097544	.095644	.093720	.091777	.089819	.087849	.085870	*10*
11	.113376	.112308	.111168	.109959	.108686	.107352	.105961	.104516	.103023	.101483	*11*
12	.114321	.114180	.113947	.113624	.113215	.112720	.112142	.111484	.110749	.109940	*12*
13	.106406	.107153	.107811	.108380	.108860	.109251	.109554	.109769	.109897	.109940	*13*
14	.091965	.093376	.094720	.097197	.097197	.098326	.099381	.100360	.101263	.102087	*14*
15	.074185	.075946	.077670	.079355	.080997	.082594	.084143	.085641	.087086	.088475	*15*
16	.056103	.057909	.059709	.061500	.063279	.065043	.066788	.068513	.070213	.071886	*16*
17	.039932	.041558	.043201	.044859	.046529	.048208	.049895	.051586	.053279	.054972	*17*
18	.026843	.028167	.029521	.030903	.032312	.033746	.035204	.036683	.038183	.039702	*18*
19	.017095	.018086	.019111	.020168	.021258	.022379	.023531	.024713	.025925	.027164	*19*
20	.010342	.011033	.011753	.012504	.013286	.014099	.014942	.015816	.016721	.017657	*20*
21	.005959	.006409	.006884	.007383	.007908	.008459	.009036	.009640	.010272	.010930	*21*
22	.003278	.003554	.003849	.004162	.004493	.004845	.005216	.005609	.006023	.006459	*22*
23	.001724	.001885	.002058	.002244	.002442	.002654	.002880	.003122	.003378	.003651	*23*
24	.000869	.000958	.001055	.001159	.001272	.001393	.001524	.001665	.001816	.001977	*24*
25	.000421	.000468	.000519	.000575	.000636	.000702	.000774	.000852	.000937	.001028	*25*
26	.000196	.000219	.000246	.000274	.000306	.000340	.000378	.000420	.000465	.000514	*26*
27	.000088	.000099	.000112	.000126	.000142	.000159	.000178	.000199	.000222	.000248	*27*
28	.000038	.000043	.000049	.000056	.000063	.000071	.000081	.000091	.000102	.000115	*28*
29	.000016	.000018	.000021	.000024	.000027	.000031	.000035	.000040	.000046	.000052	*29*
30	.000006	.000007	.000009	.000010	.000011	.000013	.000015	.000017	.000020	.000022	*30*
31	.000002	.000003	.000003	.000004	.000005	.000005	.000006	.000007	.000008	.000009	*31*
32	.000001	.000001	.000001	.000002	.000002	.000002	.000002	.000003	.000003	.000004	*32*
33	—	—	—	.000001	.000001	.000001	.000001	.000001	.000001	.000002	*33*
34	—	—	—	—	—	—	—	—	—	.000001	*34*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	13.1	*13.2*	*13.3*	*13.4*	*13.5*	*13.6*	*13.7*	*13.8*	*13.9*	*14.0*	
0	.000002	.000002	.000002	.000002	.000001	.000001	.000001	.000001	.000001	.000001	*0*
1	.000027	.000024	.000022	.000020	.000019	.000017	.000015	.000014	.000013	.000012	*1*
2	.000175	.000161	.000148	.000136	.000125	.000115	.000105	.000097	.000089	.000081	*2*
3	.000768	.000709	.000657	.000608	.000562	.000520	.000481	.000445	.000411	.000380	*3*
4	.002510	.002341	.002183	.002035	.001897	.001768	.001648	.001535	.001429	.001331	*4*
5	.006575	.006180	.005807	.005455	.005123	.004810	.004514	.004236	.003974	.003727	*5*
6	.014356	.013596	.012872	.012183	.011526	.010902	.010308	.009743	.009206	.008696	*6*
7	.026867	.025639	.024458	.023322	.022230	.021181	.020173	.019207	.018280	.017392	*7*
8	.043994	.042304	.040661	.039064	.037512	.036007	.034547	.033132	.031762	.030435	*8*
9	.064036	.062046	.060088	.058161	.056269	.054410	.052588	.050802	.049054	.047344	*9*
10	.083887	.081901	.079916	.077936	.075963	.073998	.072046	.070107	.068185	.066282	*10*
11	.099901	.098281	.096626	.094940	.093227	.091489	.089730	.087953	.086162	.084359	*11*
12	.109059	.108109	.107094	.106017	.104880	.103687	.102441	.101146	.099804	.098418	*12*
13	.109898	.109773	.109566	.109279	.108914	.108473	.107957	.107370	.106713	.105989	*13*
14	.102833	.103500	.104087	.104595	.105024	.105373	.105644	.105836	.105951	.105989	*14*
15	.089807	.091080	.092291	.093439	.094522	.095539	.096488	.097369	.098181	.098923	*15*
16	.073530	.075141	.076717	.078255	.079753	.081208	.082618	.083981	.085295	.086558	*16*
17	.056661	.058345	.060019	.061683	.063333	.064966	.066580	.068173	.069741	.071283	*17*
18	.041237	.042786	.044348	.045920	.047500	.049086	.050675	.052266	.053856	.055442	*18*
19	.028432	.029725	.031043	.032385	.033750	.035135	.036539	.037962	.039400	.040852	*19*
20	.018623	.019619	.020644	.021698	.022781	.023892	.025030	.026193	.027383	.028597	*20*
21	.011617	.012332	.013074	.013846	.014645	.015473	.016329	.017213	.018125	.019064	*21*
22	.006917	.007399	.007904	.008433	.008987	.009565	.010168	.010797	.011452	.012132	*22*
23	.003940	.004246	.004571	.004913	.005275	.005656	.006057	.006478	.006921	.007385	*23*
24	.002151	.002336	.002533	.002743	.002967	.003205	.003457	.003725	.004008	.004308	*24*
25	.001127	.001233	.001348	.001470	.001602	.001744	.001895	.002056	.002229	.002412	*25*
26	.000568	.000626	.000689	.000758	.000832	.000912	.000998	.001091	.001191	.001299	26
27	.000275	.000306	.000340	.000376	.000416	.000459	.000507	.000558	.000613	.000674	*27*
28	.000129	.000144	.000161	.000180	.000201	.000223	.000248	.000275	.000305	.000337	*28*
29	.000058	.000066	.000074	.000083	.000093	.000105	.000117	.000131	.000146	.000163	*29*
30	.000025	.000029	.000033	.000037	.000042	.000047	.000053	.000060	.000068	.000076	30
31	.000011	.000012	.000014	.000016	.000018	.000021	.000024	.000027	.000030	.000034	*31*
32	.000004	.000005	.000006	.000007	.000008	.000009	.000010	.000012	.000013	.000015	*32*
33	.000002	.000002	.000002	.000003	.000003	.000004	.000004	.000005	.000006	.000006	*33*
34	.000001	.000001	.000001	.000001	.000001	.000001	.000002	.000002	.000002	.000003	*34*
35	—	—	—	—	—	.000001	.000001	.000001	.000001	.000001	*35*
	14.1	*14.2*	*14.3*	*14.4*	*14.5*	*14.6*	*14.7*	*14.8*	*14.9*	*15.0*	
0	.000001	.000001	.000001	.000001	.000001	—	—	—	—	—	*0*
1	.000011	.000010	.000009	.000008	.000007	.000007	.000006	.000006	.000005	.000005	*1*
2	.000075	.000069	.000063	.000058	.000053	.000049	.000045	.000041	.000038	.000034	*2*
3	.000352	.000325	.000300	.000277	.000256	.000237	.000219	.000202	.000186	.000172	*3*
4	.001239	.001153	.001073	.000999	.000929	.000864	.000803	.000747	.000694	.000645	*4*
5	.003494	.003275	.003070	.002876	.002694	.002523	.002362	.002211	.002069	.001936	*5*
6	.008212	.007752	.007316	.006902	.006510	.006139	.005787	.005454	.005138	.004839	*6*
7	.016541	.015726	.014946	.014199	.013486	.012804	.012152	.011530	.010937	.010370	*7*
8	.029153	.027913	.026715	.025559	.024443	.023367	.022330	.021331	.020370	.019444	*8*
9	.045673	.044040	.042447	.040894	.039380	.037907	.036472	.035078	.033723	.032407	*9*
10	.064399	.062537	.060700	.058887	.057101	.055343	.053614	.051915	.050247	.048611	*10*
11	.082547	.080730	.078910	.077089	.075270	.073456	.071648	.069850	.068062	.066287	*11*

TABLE 7 : INDIVIDUAL TERMS, $e^{-m}m^i/i$!, OF THE POISSON DISTRIBUTION—*contd.*

i	*m*										*i*
	14.1	*14.2*	*14.3*	*14.4*	*14.5*	*14.6*	*14.7*	*14.8*	*14.9*	*15.0*	
12	.096993	.095530	.094034	.092507	.090951	.089371	.087769	.086148	.084510	.082859	*12*
13	.105200	.104349	.103437	.102469	.101446	.100371	.099247	.098076	.096862	.095607	*13*
14	.105951	.105839	.105654	.105396	.105069	.104672	.104209	.103681	.103089	.102436	*14*
15	.099594	.100195	.100723	.101181	.101567	.101881	.102125	.102298	.102402	.102436	*15*
16	.087768	.088923	.090021	.091063	.092045	.092967	.093827	.094626	.095361	.096034	*16*
17	.072795	.074277	.075724	.077135	.078509	.079842	.081133	.082380	.083581	.084736	*17*
18	.057023	.058596	.060158	.061708	.063243	.064761	.066259	.067735	.069187	.070613	*18*
19	.042317	.043793	.045277	.046768	.048264	.049763	.051263	.052762	.054257	.055747	*19*
20	.029834	.031093	.032373	.033673	.034992	.036327	.037678	.039044	.040422	.041810	*20*
21	.020031	.021025	.022045	.023090	.024161	.025256	.026375	.027517	.028680	.029865	*21*
22	.012838	.013570	.014329	.015114	.015924	.016761	.017623	.018511	.019424	.020362	*22*
23	.007870	.008378	.008909	.009462	.010039	.010640	.011264	.011911	.012584	.013280	*23*
24	.004624	.004957	.005308	.005677	.006065	.006472	.006899	.007345	.007812	.008300	*24*
25	.002608	.002816	.003036	.003270	.003518	.003780	.004057	.004348	.004656	.004980	*25*
26	.001414	.001538	.001670	.001811	.001962	.002123	.002294	.002475	.002668	.002873	*26*
27	.000739	.000809	.000884	.000966	.001054	.001148	.001249	.001357	.001473	.001596	*27*
28	.000372	.000410	.000452	.000497	.000546	.000598	.000656	.000717	.000784	.000855	*28*
29	.000181	.000201	.000223	.000247	.000273	.000301	.000332	.000366	.000403	.000442	*29*
30	.000085	.000095	.000106	.000118	.000132	.000147	.000163	.000181	.000200	.000221	*30*
31	.000039	.000044	.000049	.000055	.000062	.000069	.000077	.000086	.000096	.000107	*31*
32	.000017	.000019	.000022	.000025	.000028	.000032	.000035	.000040	.000045	.000050	*32*
33	.000007	.000008	.000009	.000011	.000012	.000014	.000016	.000018	.000020	.000023	*33*
34	.000003	.000003	.000004	.000005	.000005	.000006	.000007	.000008	.000009	.000010	*34*
35	.000001	.000001	.000002	.000002	.000002	.000002	.000003	.000003	.000004	.000004	*35*
36	—	.000001	.000001	.000001	.000001	.000001	.000001	.000001	.000002	.000002	*36*
37	—	—	—	—	—	—	—	.000001	.000001	.000001	*37*

TABLE 8 : FACTORIALS OF INTEGERS, THEIR LOGARITHMS; SQUARE ROOTS; AND THEIR RECIPROCALS

n	n !*	$\log_{10} n!$	$\frac{1}{n!}$ †	$\sqrt{n}$	$\frac{1}{\sqrt{n}}$	$\frac{1}{n}$
1	1	0.000 0000	1.000 000	1.000 0000	1.000 0000	1.000 0000
2	2	0.301 0300	0.500 000	1.414 2136	0.707 1068	0.500 0000
3	8	0.778 1513	.166 667	1.732 0508	.577 3503	.883 8338
4	24	1.380 2112	.416 667	2.000 0000	.500 0000	.250 0000
5	120	2.079 1812	.833 333	2.236 0680	.447 2136	.200 0000
6	720	2.857 3325	0.138 889	2.449 4897	0.408 2483	0.166 6667
7	5040	3.702 4305	.198 413	2.645 7513	.877 9645	.142 8571
8	40320	4.605 5205	.248 016	2.828 4271	.353 5534	.125 0000
9	362880	5.559 7630	.275 573	3.000 0000	.838 8338	.111 1111
10	3.62880	6.559 7630	.275 573	3.162 2777	.316 2278	.100 0000
11	3.99168	7.601 1557	0.250 521	3.316 6248	0.301 6113	0.090 9091
12	4.79002	8.680 3370	.208 768	3.464 1016	.288 6751	.083 3333
13	6.22702	9.794 2803	.160 590	3.605 5513	.277 3501	.076 9231
14	8.71783	10.940 4084	.114 707	3.741 6574	.267 2612	.071 4286
15	1.30767	12.116 4996	.764 716	3.872 9833	.258 1989	.066 6667
16	2.09228	13.320 6196	0.477 948	4.000 0000	0.250 0000	0.062 5000
17	3.55687	14.551 0685	.281 146	4.123 1056	.242 5356	.058 8235
18	6.40237	15.806 3410	.156 192	4.242 6407	.235 7023	.055 5556
19	1.21645	17.085 0946	.822 064	4.358 8989	.229 4157	.052 6316
20	2.43290	18.386 1246	.411 032	4.472 1360	.223 6068	.050 0000
21	5.10909	19.708 3439	0.195 729	4.582 5757	0.218 2179	0.047 8190
22	1.12400	21.050 7666	.889 679	4.690 4158	.213 2007	..045 4545
23	2.58520	22.412 4944	.386 817	4.795 8315	.208 5144	.043 4783
24	6.20448	23.792 7057	.161 174	4.898 9795	.204 1241	.041 6667
25	1.55112	25.190 6457	.644 695	5.000 0000	.200 0000	.030 0000
26	4.03291	26.605 6190	0.247 960	5.099 0195	0.196 1161	0.038 4615
27	1.08889	28.036 9828	.918 369	5.196 1524	.192 4501	.037 0370
28	3.04888	29.484 1408	.327 989	5.291 5026	.188 9822	.035 7143
29	8.84176	30.946 5388	.113 100	5.385 1648	.185 6953	.034 4828
30	2.65253	32.423 6601	.376 999	5.477 2256	.182 5742	.033 3333
31	8.22284	33.915 0218	0.121 613	5.567 7644	0.179 6053	0.032 2581
32	2.63131	35.420 1717	.380 039	5.656 8542	.176 7767	.031 2500
33	8.68332	36.938 6857	.115 163	5.744 5626	.174 0777	.030 3030
34	2.95233	38.470 1646	.338 716	5.830 9519	.171 4986	.029 4118
35	1.03331	40.014 2326	.967 759	5.916 0798	.169 0309	.028 5714
36	3.71993	41.570 5351	0.268 822	6.000 0000	0.166 6667	0.027 7778
37	1.37638	43.138 7369	.726 546	6.082 7625	.164 3990	.027 0270
38	5.23023	44.718 5205	.191 196	6.164 4140	.162 2214	.026 3158
39	2.03979	46.309 5851	.490 247	6.244 9980	.160 1282	.025 6410
40	8.15915	47.911 6451	.122 562	6.324 5553	.158 1139	.025 0000
41	3.34525	49.524 4289	0.298 931	6.403 1242	0.156 1738	0.024 3902
42	1.40501	51.147 6782	.711 741	6.480 7407	.154 3034	.023 8095
43	6.04153	52.781 1467	.165 521	6.557 4385	.152 4986	.023 2558
44	2.65827	54.424 5993	.376 184	6.633 2496	.150 7557	.022 7273
45	1.19622	56.077 8119	.835 965	6.708 2039	.149 0712	.022 2222
46	5.50262	57.740 5697	0.181 732	6.782 3300	0.147 4420	0.021 7391
47	2.58623	59.412 6676	.386 663	6.855 6546	.145 8650	.021 2766
48	1.24139	61.093 9088	.805 548	6.928 2032	.144 3376	.020 8333
49	6.08282	62.784 1049	.164 397	7.000 0000	.142 8571	.020 4082
50	3.04141	64.483 0749	.328 795	7.071 0678	.141 4214	.020 0000

* For $n > 9$, multiply by 10^c, where c is the characteristic of log n ! shown alongside in the next column.

† Multiply by 10^{-c}, where c is the characteristic of log n ! shown in the preceding column.

TABLE 8 *(continued)*

n	$n!$*	$\log_{10} n!$	$\frac{1}{n!}$ †	$\sqrt{n}$	$\frac{1}{\sqrt{n}}$	$\frac{1}{n}$
51	1.55112	66.190 6450	0.644 696	7.141 4284	0.140 0280	0.019 6078
52	8.06582	67.906 6484	.123 980	7.211 1026	.138 6750	.019 2308
53	4.27488	69.630 9243	.233 925	7.280 1099	.137 3606	.018 8679
54	2.30844	71.363 3180	.433 194	7.348 4692	.136 0828	.018 5185
55	1.26964	73.103 0807	.787 625	7.416 1985	.134 8400	.018 1818
56	7.10999	74.851 8687	0.140 647	7.483 3148	0.133 6306	0.017 8571
57	4.05269	76.607 7436	.246 750	7.549 8344	.132 4532	.017 5439
58	2.35056	78.371 1716	.425 430	7.615 7731	.131 3064	.017 2414
59	1.38683	80.142 0236	.721 068	7.681 1457	.130 1889	.016 9492
60	8.32099	81.920 1748	.120 178	7.745 9667	.129 0994	.016 6667
61	5.07580	83.705 5047	0.197 013	7.810 2497	0.128 0369	0.016 3934
62	3.14700	85.497 8964	.317 763	7.874 0079	.127 0001	.016 1290
63	1.98261	87.297 2369	.504 386	7.937 2539	.125 9882	.015 8730
64	1.26887	89.103 4169	.788 103	8.000 0000	.125 0000	.015 6250
65	8.24765	90.916 3303	.121 247	8.062 2577	.124 0347	.015 3846
66	5.44345	92.735 8742	0.183 707	8.124 0384	0.123 0915	0.015 1515
67	3.64711	94.561 9490	.274 190	8.185 3528	.122 1694	.014 9254
68	2.48004	96.394 4579	.403 220	8.246 2113	.121 2678	.014 7059
69	1.71122	98.233 3070	.584 377	8.306 6239	.120 3859	.014 4928
70	1.19786	100.078 4050	.834 824	8.366 6003	.119 5229	.014 2857
71	8.50479	101.929 6634	0.117 581	8.426 1498	0.118 6782	0.014 0845
72	6.12345	103.786 9959	.163 307	8.485 2814	.117 8511	.013 8889
73	4.47012	105.650 3187	.223 708	8.544 0037	.117 0411	.013 6986
74	3.30789	107.519 5505	.302 308	8.602 3253	.116 2476	.013 5135
75	2.48091	109.394 6117	.403 077	8.660 2540	.115 4701	.013 3333
76	1.88549	111.275 4253	0.530 365	8.717 7979	0.114 7079	0.013 1579
77	1.45183	113.161 9160	.688 785	8.774 9644	.113 9606	.012 9870
78	1.13243	115.054 0106	.883 058	8.831 7609	.113 2277	.012 8205
79	8.94618	116.951 6377	.111 780	8.888 1944	.112 5088	.012 6582
80	7.15695	118.854 7277	.139 724	8.944 2719	.111 8034	.012 5000
81	5.79713	120.763 2127	0.172 499	9.000 0000	0.111 1111	0.012 8457
82	4.75364	122.677 0266	.210 365	9.055 3851	.110 4315	.012 1951
83	3.94552	124.596 1047	.253 452	9.110 4336	.109 7643	.012 0482
84	3.31424	126.520 3840	.301 728	9.165 1514	.109 1089	.011 9048
85	2.81710	128.449 8029	.354 974	9.219 5445	.108 4652	.011 7647
86	2.42271	130.384 3013	0.412 761	9.273 6185	0.107 8328	0.011 6279
87	2.10776	132.323 8206	.474 438	9.327 3791	.107 2113	.011 4943
88	1.85488	134.268 3033	.539 134	9.380 8315	.106 6004	.011 3636
89	1.65080	136.217 6933	.605 769	9.433 9811	.105 9998	.011 2360
90	1.48572	138.171 9358	.673 076	9.486 8330	.105 4093	.011 1111
91	1.35200	140.130 9772	0.739 644	9.539 3920	0.104 8285	0.010 9890
92	1.24384	142.094 7650	.803 961	9.591 6630	.104 2572	.010 8696
93	1.15677	144.063 2480	.864 474	9.643 6508	.103 6952	.010 7527
94	1.08737	146.036 3758	.919 653	9.695 3597	.103 1421	.010 6383
95	1.03300	148.014 0994	.968 056	9.746 7943	.102 5978	.010 5263
96	9.91678	149.996 3707	0.100 839	9.797 9590	0.102 0621	0.010 4167
97	9.61928	151.983 1424	.103 958	9.848 8578	.101 5346	.010 3093
98	9.42689	153.974 3685	.106 080	9.899 4949	.101 0153	.010 2041
99	9.33262	155.970 0037	.107 151	9.949 8744	.100 5038	.010 1010
100	9.33262	157.970 0037	.107 151	10.000 0000	.100 0000	.010 0000

* For $n>9$, multiply by 10^c, where c is the characteristic of log n ! shown alongside in the next column.

† Multiply by 10^{-c}, where c is the characteristic of log n ! shown in the preceding column.

TABLE 9 : RANDOM NUMBERS (I)

03	47	43	73	86	36	96	47	36	61	46	98	63	71	62	33	26	16	80	45	60	11	14	10	95
97	74	24	67	62	42	81	14	57	20	42	53	32	37	32	27	07	36	07	51	24	51	79	89	73
16	76	62	27	66	56	50	26	71	07	32	90	79	78	53	13	55	38	58	59	88	97	54	14	10
12	56	85	99	26	96	96	68	27	31	05	03	72	93	15	57	12	10	14	21	88	26	49	81	76
55	59	56	35	64	38	54	82	46	22	31	62	43	09	90	06	18	44	32	53	23	83	01	30	30
16	22	77	94	39	49	54	43	54	82	17	37	93	23	78	87	35	20	96	43	84	26	34	91	64
84	42	17	53	31	57	24	55	06	88	77	04	74	47	67	21	76	33	50	25	83	92	12	06	76
63	01	63	78	59	16	95	55	67	19	98	10	50	71	75	12	86	73	58	07	44	39	52	38	79
33	21	12	34	29	78	64	56	07	82	52	42	07	44	38	15	51	00	13	42	99	66	02	79	54
57	60	86	32	44	09	47	27	96	54	49	17	46	09	62	90	52	84	77	27	08	02	73	43	28
18	18	07	92	46	44	17	16	58	09	79	83	86	19	62	06	76	50	03	10	55	23	64	05	05
26	62	38	97	75	84	16	07	44	99	83	11	46	32	24	20	14	85	88	45	10	93	72	88	71
23	42	40	64	74	82	97	77	77	81	07	45	23	14	08	32	98	94	07	72	93	85	79	10	75
52	36	28	19	95	50	92	26	11	97	00	56	76	31	38	80	22	02	53	53	86	60	42	04	53
37	85	94	35	12	83	39	50	08	30	42	34	07	96	88	54	42	06	87	98	35	85	29	48	39
70	29	17	12	13	40	33	20	38	26	13	89	51	03	74	17	76	37	13	04	07	74	21	19	30
56	62	18	37	35	96	83	50	87	75	97	12	25	93	47	70	33	24	03	54	97	77	46	44	80
99	49	57	22	77	88	42	95	45	72	16	64	36	16	00	04	43	18	66	79	94	77	24	21	90
16	08	15	04	72	33	27	14	34	09	45	59	34	68	49	12	72	07	34	45	99	27	72	95	14
31	16	93	32	43	50	27	89	87	19	20	15	37	00	49	52	85	66	60	44	38	68	88	11	80
68	34	30	13	70	55	74	30	77	40	44	22	78	84	26	04	33	46	09	52	68	07	97	6	57
74	57	25	65	76	59	29	97	68	60	71	91	38	67	54	13	58	18	24	76	15	54	55	95	52
27	42	37	86	53	48	55	90	65	72	96	57	69	36	10	96	46	92	42	45	97	60	49	04	91
00	39	68	29	61	66	37	32	20	30	77	84	57	03	29	10	45	65	04	26	11	04	96	67	24
29	94	98	94	24	68	49	69	10	82	53	75	91	93	30	34	25	20	57	27	40	48	73	51	92
16	90	82	66	59	83	62	64	11	12	67	19	00	71	74	60	47	21	29	68	02	02	37	03	31
11	27	94	75	06	06	09	19	74	66	02	94	37	34	02	76	70	90	30	86	38	45	94	30	38
35	24	10	16	20	33	32	51	26	38	79	78	45	04	91	16	92	53	56	16	02	75	50	95	98
38	23	16	36	38	42	38	97	01	50	87	75	66	81	41	40	01	74	91	62	48	51	84	08	32
31	96	25	91	47	96	44	33	49	13	34	86	82	53	91	00	52	43	48	85	27	55	26	89	62
66	67	40	67	14	64	05	71	95	86	11	05	65	09	68	76	83	20	37	90	57	16	00	11	66
14	90	84	45	11	75	73	88	05	90	52	27	41	14	86	22	98	12	22	08	07	52	74	95	80
68	05	51	18	00	33	96	02	75	19	07	60	62	93	55	59	33	82	43	90	49	37	38	44	59
20	46	78	73	90	97	51	40	14	02	04	02	33	31	08	39	54	16	49	36	47	95	93	13	30
64	19	58	97	79	15	06	15	93	20	01	90	10	75	06	40	78	78	89	62	02	67	74	17	33
05	26	93	70	60	22	35	85	15	13	92	03	51	57	77	59	56	78	06	83	52	91	05	70	74
07	97	10	88	23	09	98	42	99	64	61	71	62	99	15	06	51	29	16	93	58	05	77	09	51
68	71	86	85	85	54	87	66	47	54	73	32	08	11	12	44	95	92	63	16	29	56	24	29	48
26	99	61	65	53	58	37	78	80	70	42	10	50	67	42	32	17	55	85	74	94	44	67	16	94
14	65	52	68	75	87	59	36	22	41	26	78	63	06	55	13	08	87	01	50	15	29	39	39	43
17	53	77	58	71	71	41	61	50	72	12	41	94	96	26	44	95	27	36	99	02	96	74	30	83
90	26	59	21	19	23	52	23	33	12	96	93	02	18	39	07	02	18	36	07	25	99	32	70	23
41	23	52	55	99	31	04	49	69	96	10	47	48	45	88	13	41	43	89	20	97	17	14	49	17
60	20	50	81	69	31	99	73	68	68	35	81	33	03	76	24	30	12	48	60	18	99	10	72	34
91	25	38	05	90	94	58	28	41	36	45	37	59	03	09	90	35	57	29	12	82	62	54	65	60
34	50	57	74	37	98	80	33	00	91	09	77	93	19	82	74	94	80	04	04	45	07	31	66	49
85	22	04	39	43	73	81	53	94	79	33	62	46	86	28	08	31	54	46	31	53	94	13	38	47
09	79	13	77	48	73	82	97	22	21	05	03	27	24	83	72	89	44	05	60	35	80	39	94	88
88	75	80	18	14	22	95	75	42	49	39	32	82	22	49	02	48	07	70	37	16	04	61	67	87
90	96	23	70	00	39	00	03	06	90	55	85	78	38	36	94	37	30	69	32	90	89	00	76	33

TABLE 9 : RANDOM NUMBERS (II)

53	74	23	99	67	61	32	28	69	84	94	62	67	86	24	98	33	41	19	95	47	53	53	38	09
63	38	06	86	54	99	00	65	26	94	02	82	90	23	07	79	62	67	80	60	75	91	12	81	19
35	30	58	21	46	06	72	17	10	94	25	21	31	75	96	49	28	24	00	49	55	65	79	78	07
63	43	36	82	69	65	51	18	37	88	61	38	44	12	45	32	92	85	88	65	54	34	81	85	35
98	25	37	55	26	01	91	82	81	46	74	71	12	94	97	24	02	71	37	07	03	92	18	66	75
02	63	21	17	69	71	50	80	89	56	38	15	70	11	48	43	40	45	86	98	00	83	26	91	03
64	55	22	21	82	48	22	28	06	00	61	54	13	43	91	82	78	12	23	29	06	66	24	12	27
85	07	26	13	89	01	10	07	82	04	59	63	69	36	03	69	11	15	83	80	13	29	54	19	28
58	54	16	24	15	51	54	44	82	00	62	61	65	04	69	38	18	65	18	97	85	72	13	49	21
34	85	27	84	87	61	48	64	56	26	90	18	48	13	26	37	70	15	42	57	65	65	80	39	07
03	92	18	27	46	57	99	16	96	56	30	33	72	85	22	84	64	38	56	98	99	01	30	98	64
62	95	30	27	59	37	75	41	66	48	86	97	80	61	45	23	53	04	01	63	45	76	08	64	27
08	45	93	15	22	60	21	75	46	91	98	77	27	85	42	28	88	61	08	84	69	62	03	42	73
07	08	55	18	40	45	44	75	13	90	24	94	96	61	02	57	55	66	83	15	73	42	37	11	61
01	85	89	95	66	51	10	19	34	88	15	84	97	19	75	12	76	39	43	78	64	63	91	08	25
72	84	71	14	35	19	11	58	49	26	50	11	17	17	76	86	31	57	20	18	95	60	78	46	75
88	78	28	16	84	13	52	53	94	53	75	45	69	30	96	73	89	65	70	31	99	17	43	48	76
45	17	75	65	57	28	40	19	72	12	25	12	14	75	67	60	40	60	81	19	24	62	01	61	16
96	76	28	12	54	22	01	11	94	25	71	96	16	16	88	68	64	36	74	45	19	59	50	88	92
43	31	67	72	30	24	02	94	08	63	38	32	36	66	02	69	36	38	25	39	48	03	45	15	22
50	44	66	44	21	66	06	58	05	62	68	15	54	35	02	42	35	48	96	32	14	52	41	52	48
22	66	22	15	86	26	63	75	41	99	58	42	36	72	24	58	37	52	18	51	03	37	18	39	11
96	24	40	14	51	23	22	30	88	57	95	67	47	29	83	94	69	40	06	07	18	16	36	78	86
31	73	91	61	19	60	20	72	93	48	98	75	07	23	69	65	95	39	69	58	56	80	30	19	44
78	60	73	99	84	43	89	94	36	45	56	69	47	07	41	90	22	91	07	12	78	35	34	08	72
84	37	90	61	56	70	10	23	98	05	85	11	34	76	60	76	48	45	34	60	01	64	18	39	96
36	67	10	08	23	98	93	35	08	86	99	29	76	29	81	33	34	91	58	93	63	14	52	32	52
07	28	59	07	48	89	64	58	89	75	83	85	62	27	89	30	14	78	56	27	86	63	59	80	02
10	15	83	87	60	79	24	31	66	56	21	48	24	06	93	91	98	94	05	49	01	47	59	38	00
55	19	68	97	65	03	73	52	16	56	00	53	55	90	27	33	42	29	38	87	22	13	88	83	34
53	81	29	13	39	35	01	20	71	34	62	33	74	82	14	53	73	19	09	03	56	54	29	56	93
51	86	32	68	92	33	98	74	66	99	40	14	71	94	58	45	94	19	38	81	14	44	99	81	07
35	91	70	29	13	80	03	54	07	27	96	94	78	32	66	50	95	52	74	33	13	80	55	62	54
37	71	67	95	13	20	02	44	95	94	64	85	04	05	72	01	32	90	76	14	53	89	74	60	41
93	66	13	83	27	92	79	64	64	72	28	54	96	53	84	48	14	52	98	94	56	07	93	89	30
02	96	08	45	65	13	05	00	41	84	93	07	54	72	59	21	45	57	09	77	19	48	56	27	44
49	83	43	48	35	82	88	33	69	96	72	36	04	19	76	47	45	15	18	60	82	11	08	95	97
84	60	71	62	46	40	80	81	30	37	34	39	23	05	38	25	15	35	71	30	88	12	57	21	77
18	17	30	88	71	44	91	14	88	47	89	23	30	63	15	56	34	20	47	89	99	82	93	24	98
79	69	10	61	78	71	32	76	95	62	87	00	22	58	40	92	54	01	75	25	43	11	71	99	31
75	93	36	57	83	56	20	14	82	11	74	21	97	90	65	96	42	68	63	86	74	54	13	26	94
38	30	92	29	03	06	28	81	39	38	62	25	06	84	63	61	29	08	93	67	04	32	92	08	09
51	29	50	10	34	31	57	75	95	80	51	97	02	74	77	76	15	48	49	44	18	55	63	77	09
21	31	38	86	24	37	79	81	53	74	73	24	16	10	33	52	83	90	94	76	70	47	14	54	36
29	01	23	87	88	58	02	39	37	67	42	10	14	20	92	16	55	23	42	45	54	96	09	11	06
95	33	95	22	00	18	74	72	00	18	38	79	58	69	32	81	76	80	26	92	82	80	84	25	39
90	84	60	79	80	24	36	59	87	38	82	07	53	89	35	96	35	23	79	18	05	98	90	07	35
46	40	62	98	82	54	97	20	56	95	15	74	80	08	32	16	46	70	50	80	67	72	16	42	79
20	31	89	03	43	38	46	82	68	72	32	14	82	99	70	80	60	47	18	97	63	49	30	21	30
71	59	73	05	50	08	22	23	71	77	91	01	93	20	49	82	96	59	26	94	66	39	67	98	60

TABLE 9 : RANDOM NUMBERS (III)

22 17 68 65 84	68 95 23 92 35	87 02 22 57 51	61 09 43 95 06	58 24 81 03 47
19 36 27 59 46	13 79 93 37 55	39 77 32 77 09	85 52 05 30 62	47 83 51 62 74
16 77 23 02 77	09 61 87 25 21	28 06 24 25 93	16 71 13 59 78	23 05 47 47 25
78 43 76 71 61	20 44 90 32 64	97 67 63 99 61	46 38 03 93 22	69 81 21 99 21
03 28 28 26 08	73 37 32 04 05	69 30 16 09 05	88 69 58 28 99	35 07 44 75 47
93 22 53 64 39	07 10 63 76 35	87 03 04 79 88	08 13 13 85 51	55 34 57 72 69
78 76 58 54 74	92 38 70 96 92	52 06 79 79 45	82 63 18 27 44	69 66 92 19 09
23 68 35 26 00	99 53 93 61 28	52 70 05 48 34	56 65 05 61 86	90 92 10 70 80
15 39 25 70 99	93 86 52 77 65	15 33 59 05 28	22 87 26 07 47	86 96 98 29 06
58 71 96 30 24	18 46 23 34 27	85 13 99 24 44	49 18 09 79 49	74 16 32 23 02
57 35 27 33 72	24 53 63 94 09	41 10 76 47 91	44 04 95 49 66	39 60 04 59 81
48 50 86 54 48	22 06 34 72 52	82 21 15 65 20	33 29 94 71 11	15 91 29 12 03
61 96 48 95 03	07 16 39 33 66	98 56 10 56 79	77 21 30 27 12	90 49 22 23 02
36 93 89 41 26	29 70 83 63 51	99 74 20 52 36	87 09 41 15 09	98 60 16 03 03
18 87 00 42 31	57 90 12 02 07	23 47 37 17 31	54 08 01 88 63	39 41 88 92 10
88 56 53 27 59	33 35 72 67 47	77 34 55 45 70	08 18 27 38 90	16 95 86 70 75
09 72 95 84 29	49 41 31 06 70	42 38 06 45 18	64 84 73 31 65	52 53 37 97 15
12 96 88 17 31	65 19 69 02 83	60 75 86 90 68	24 64 19 35 51	56 61 87 39 12
85 94 57 24 16	92 09 84 38 76	22 00 27 69 85	29 81 94 78 70	21 94 47 90 12
38 64 43 59 98	98 77 87 68 07	91 51 67 62 44	40 98 05 93 78	23 32 65 41 18
53 44 09 42 72	00 41 86 79 79	68 47 22 00 20	35 55 31 51 51	00 83 63 22 55
40 76 66 26 84	57 99 99 90 37	36 63 32 08 58	37 40 13 68 97	87 64 81 07 83
02 17 79 18 05	12 59 52 57 02	22 07 00 47 08	28 14 11 30 79	20 69 22 40 98
95 17 82 06 53	31 51 10 96 46	92 06 88 07 77	56 11 50 81 69	40 23 72 51 39
35 76 22 42 92	96 11 83 44 80	34 68 35 48 77	33 42 40 90 60	73 96 53 97 86
26 29 13 56 41	85 47 04 66 08	34 72 57 59 13	82 43 80 46 15	38 26 61 70 04
77 80 20 75 82	72 82 32 99 90	63 95 73 76 63	89 73 44 99 05	48 67 26 43 18
46 40 66 44 52	91 36 74 43 53	30 82 13 54 00	78 45 63 98 35	55 03 36 67 68
37 56 08 18 09	77 53 84 46 47	31 91 18 95 58	24 16 74 11 53	44 10 13 85 57
61 65 61 68 66	37 27 47 39 19	84 83 70 07 48	53 21 40 06 71	95 06 70 88 54
93 43 69 64 07	34 18 04 52 35	56 27 09 24 86	61 85 53 83 45	19 90 70 99 00
21 96 60 21 99	11 20 99 45 18	48 13 93 55 34	18 37 79 49 90	65 97 38 20 46
95 20 47 97 97	27 37 83 28 71	00 06 41 41 74	45 89 09 39 84	51 67 11 52 49
97 86 21 78 73	10 65 81 92 59	58 76 17 14 97	04 76 62 16 17	17 95 70 45 80
69 92 06 34 13	59 71 74 17 32	27 55 10 24 19	23 71 82 13 74	63 52 52 01 41
04 31 17 21 56	33 73 99 19 87	26 72 39 27 67	53 77 57 68 93	60 61 97 22 61
61 06 98 03 91	87 14 77 43 96	43 00 65 98 50	45 60 33 01 07	98 99 46 50 47
85 93 85 86 88	72 87 08 62 40	16 06 10 89 20	23 21 34 74 97	76 38 03 29 63
21 74 32 47 45	73 96 07 94 52	09 65 90 77 47	25 76 16 19 33	53 05 70 53 30
15 69 53 82 80	79 96 23 53 10	65 39 07 16 29	45 33 02 43 70	02 87 40 41 45
02 89 08 04 49	20 21 14 86 86	87 63 93 95 17	11 29 01 95 80	35 14 97 85 33
87 18 15 89 79	85 43 01 72 73	08 61 74 51 69	89 74 39 82 15	94 51 33 41 67
98 83 71 94 22	59 97 50 99 52	08 52 85 08 40	87 80 61 65 31	91 51 80 32 44
10 08 58 21 66	72 68 49 29 31	89 85 84 46 06	59 73 19 85 23	65 09 29 75 63
47 90 56 10 08	88 02 84 27 83	42 29 72 23 19	66 56 45 65 79	20 71 53 20 25
22 85 01 68 90	49 64 92 85 44	16 40 12 89 88	50 14 49 81 06	01 82 77 45 12
67 80 43 79 33	12 83 11 41 16	25 58 19 68 70	77 02 54 00 52	53 43 37 15 26
27 62 50 96 72	79 44 61 40 15	14 53 40 65 39	27 31 58 50 28	11 39 03 34 25
33 78 80 87 15	38 30 06 38 21	14 47 47 07 26	54 96 87 53 32	40 36 40 96 76
13 13 92 66 99	47 24 49 57 74	32 25 43 62 17	10 97 11 69 84	99 63 22 32 98

TABLE 9 : RANDOM NUMBERS (IV)

10	27	53	96	23	71	50	54	36	23	54	31	04	82	98	04	14	12	15	09	26	78	25	47	47
28	41	50	61	88	64	85	27	20	18	83	36	36	05	56	39	71	65	09	62	94	76	62	11	89
34	21	42	57	02	59	19	18	97	48	80	30	03	30	98	05	24	67	70	07	84	97	50	87	46
61	81	77	23	23	82	82	11	54	08	53	28	70	58	96	44	07	39	55	43	42	34	43	39	28
61	15	18	13	54	16	86	20	26	88	90	74	80	55	09	14	53	90	51	17	52	01	63	01	59
91	76	21	64	64	44	91	13	32	97	75	31	62	66	54	84	80	32	75	77	56	08	25	70	29
00	97	79	08	06	37	30	28	59	85	53	56	68	53	40	01	74	39	59	73	30	19	99	85	48
36	46	18	34	94	75	20	80	27	77	78	91	69	16	00	08	43	18	73	68	67	69	61	34	25
88	98	99	60	50	65	95	79	42	94	93	62	40	89	96	43	56	47	71	66	46	76	29	67	02
04	37	59	87	21	05	02	03	24	17	47	97	81	56	51	92	34	86	01	82	55	51	33	12	91
63	62	06	34	41	94	21	78	55	09	72	76	45	16	94	29	95	81	83	83	79	88	01	97	30
78	47	23	53	90	34	41	92	45	71	09	23	70	70	07	13	38	92	79	43	14	85	11	47	23
87	68	62	15	43	53	14	36	59	25	54	47	33	70	15	59	24	48	40	35	50	03	42	99	36
47	60	92	10	77	88	59	53	11	52	66	25	69	07	04	48	68	64	71	06	61	65	70	22	12
56	88	87	59	41	65	28	04	67	53	95	79	88	37	31	50	41	06	94	76	81	83	17	16	33
02	57	45	86	67	73	43	07	34	48	44	26	87	93	29	77	09	61	67	84	06	69	44	77	75
31	54	14	13	17	48	62	11	90	60	68	12	93	64	28	46	24	79	16	76	14	60	25	51	01
28	50	16	43	36	28	97	85	58	99	67	22	52	76	23	24	70	36	54	54	59	28	61	71	96
63	29	62	66	50	02	63	45	52	38	67	63	47	54	75	83	24	78	43	20	92	63	13	47	48
45	65	58	26	51	76	96	56	38	72	86	57	45	71	46	44	67	76	14	55	44	88	01	62	12
39	65	36	63	70	77	45	85	50	51	74	13	39	35	22	30	53	36	02	95	49	34	88	73	61
73	71	98	16	04	29	18	94	51	23	76	51	94	84	86	79	93	96	38	63	08	58	25	58	94
72	20	56	20	11	72	65	71	08	86	79	57	95	13	91	97	48	72	66	48	09	71	17	24	89
75	17	26	99	76	89	37	20	70	01	77	31	61	95	46	26	97	05	73	51	53	33	18	72	87
37	48	60	82	29	81	30	15	39	14	48	38	75	93	29	06	87	37	78	48	45	56	00	84	47
68	08	02	80	72	83	71	46	30	49	89	17	95	88	29	02	39	56	03	46	97	74	06	56	17
14	23	98	61	67	70	52	85	01	50	01	84	02	78	43	10	62	98	19	41	18	83	99	47	99
49	08	96	21	44	25	27	99	41	28	07	41	08	34	66	19	42	74	39	91	41	96	53	78	72
78	37	06	08	43	63	61	62	42	29	39	68	95	10	96	09	24	23	00	62	56	12	80	73	16
37	21	34	17	68	68	96	83	23	56	32	84	60	15	31	44	73	67	34	77	91	15	79	74	58
14	29	09	34	04	87	83	07	55	07	76	58	30	83	64	87	29	25	58	84	86	50	60	00	25
58	43	28	06	36	49	52	83	51	14	47	56	91	29	34	05	87	31	06	95	12	45	57	09	09
10	43	67	29	70	80	62	80	03	12	10	80	21	38	84	90	56	35	03	09	43	12	74	49	14
44	38	88	39	54	86	97	37	44	22	00	95	01	31	76	17	16	29	56	63	38	78	94	49	81
90	69	56	19	51	85	39	52	85	13	07	28	37	07	61	11	16	36	27	03	78	86	72	04	95
41	47	10	25	62	97	05	31	03	61	20	26	36	31	62	68	69	86	95	44	84	95	48	46	45
91	94	14	63	19	75	89	11	47	11	31	50	34	19	09	79	57	92	36	59	14	93	87	81	40
80	06	54	18	66	09	18	94	06	19	98	40	07	17	81	22	45	44	84	11	24	62	20	42	31
67	72	77	63	48	84	08	31	55	58	24	33	45	77	58	80	45	67	93	82	75	70	16	08	24
59	40	24	13	27	79	26	88	86	30	01	31	60	10	39	53	58	47	70	93	85	81	56	39	38
05	90	35	89	95	01	61	16	96	94	50	78	13	69	36	37	68	53	37	31	71	26	35	03	71
44	43	80	69	98	46	68	05	14	82	90	78	50	05	62	77	79	13	57	44	59	60	10	39	66
61	81	31	96	82	00	57	25	60	59	46	72	60	18	77	55	66	12	62	11	08	99	55	64	57
42	88	07	10	05	24	98	65	63	21	47	21	61	88	32	27	80	30	21	60	10	92	35	36	12
77	94	30	05	39	28	10	99	00	27	12	73	73	99	12	49	99	57	94	82	96	88	57	17	91
78	83	19	76	16	94	11	68	84	26	23	54	20	86	85	23	86	66	99	07	36	37	34	92	09
87	76	59	61	81	43	63	64	61	61	65	76	36	95	90	18	48	27	45	68	27	23	65	30	72
91	43	05	96	47	55	78	99	95	24	37	55	85	78	78	01	48	41	19	10	35	19	54	07	73
84	97	77	72	73	09	62	06	65	72	87	12	49	03	60	41	15	20	76	27	50	47	02	29	16
87	41	60	76	83	44	88	96	07	80	83	05	83	38	96	73	70	66	81	90	30	56	10	48	59

TABLE 9 : RANDOM NUMBERS (V)

28	89	65	87	08	13	50	63	04	23	25	47	57	91	13	52	62	24	19	94	91	67	48	57	10
30	29	43	65	42	78	66	28	55	80	47	46	41	90	08	55	98	78	10	70	49	92	05	12	07
95	74	62	60	53	51	57	32	22	27	12	72	72	27	77	44	67	32	23	13	67	95	07	76	30
01	85	54	96	72	66	86	65	64	60	56	59	75	36	75	46	44	33	63	71	54	50	06	44	75
10	91	46	96	86	19	83	52	47	53	65	00	51	93	51	30	80	05	19	29	56	23	27	19	03
05	33	18	98	51	51	78	57	26	17	34	87	96	23	95	89	99	93	39	79	11	28	94	15	52
04	43	13	37	00	79	68	96	26	60	70	39	83	66	56	62	03	55	86	57	77	55	33	62	02
05	85	40	25	24	73	52	93	70	50	48	21	47	74	63	17	27	27	51	26	35	96	29	00	45
84	90	90	65	77	63	99	25	69	02	09	04	03	35	78	19	79	95	07	21	02	84	48	51	97
28	55	53	09	48	86	28	30	02	35	71	30	32	06	47	93	74	21	86	33	49	90	21	69	74
89	83	40	69	80	97	96	47	59	97	56	33	24	87	36	17	18	16	90	46	75	27	28	52	13
73	20	96	05	68	93	41	69	96	07	97	50	81	79	59	42	37	13	81	83	92	42	85	04	31
10	89	07	76	21	40	24	74	36	42	40	33	04	46	24	35	63	02	31	61	34	59	43	36	96
91	50	27	78	37	06	06	16	25	98	17	78	80	30	85	26	41	77	63	37	71	63	94	94	33
03	45	44	66	88	97	81	20	03	89	39	46	67	21	17	98	10	39	33	15	61	63	00	25	92
89	41	58	91	63	65	99	59	97	84	90	14	79	61	55	56	16	88	87	60	32	15	99	67	43
13	43	00	97	26	16	91	21	32	41	60	22	66	72	27	31	85	33	69	07	68	49	20	43	29
71	71	00	51	72	62	03	89	26	32	35	27	99	18	25	78	12	03	09	70	50	93	19	35	56
19	28	15	00	41	92	27	73	40	38	37	11	05	75	16	98	81	99	37	29	92	20	32	39	67
56	38	30	92	30	45	91	94	69	04	00	84	14	36	37	95	66	39	01	09	21	68	40	95	79
39	27	52	89	11	00	81	06	28	48	12	08	05	75	26	03	35	63	05	77	13	81	20	67	58
73	13	28	58	01	05	06	42	24	07	60	60	29	99	93	72	93	78	04	36	25	76	01	54	03
81	60	84	51	57	12	68	46	55	89	60	09	71	87	89	70	81	10	95	91	83	79	68	20	66
05	62	98	07	85	07	79	26	69	61	67	85	72	37	41	85	79	76	48	23	61	58	87	08	05
62	97	16	29	18	52	16	16	23	56	62	95	80	97	63	32	25	34	03	36	48	84	60	37	65
31	13	63	21	08	16	01	92	58	21	48	79	74	73	72	08	64	80	91	38	07	28	66	61	59
97	38	35	34	19	89	84	05	34	47	88	09	31	54	88	97	96	86	01	69	46	13	95	65	96
32	11	78	33	82	51	99	98	44	39	12	75	10	60	36	80	66	39	94	97	42	36	31	16	59
81	99	13	37	05	08	12	60	39	23	61	73	84	89	18	26	02	04	37	95	96	18	69	06	30
45	74	00	03	05	69	99	47	26	52	48	06	30	00	18	03	30	28	55	59	66	10	71	44	05
11	84	13	69	01	88	91	28	79	50	71	42	14	96	55	98	59	96	01	36	88	77	90	45	59
14	66	12	87	22	59	45	27	08	51	85	64	23	85	41	64	72	08	59	44	67	98	36	65	56
40	25	67	87	82	84	27	17	30	37	48	69	49	02	58	98	02	50	58	11	95	39	06	35	63
44	48	97	49	43	65	45	53	41	07	14	83	46	74	11	76	66	63	60	08	90	54	33	65	84
41	94	54	06	57	48	28	01	83	84	09	11	21	91	73	97	28	44	74	06	22	30	95	69	72
07	12	15	58	84	93	18	31	83	45	54	52	62	29	91	53	58	54	66	05	47	19	63	92	75
64	27	90	43	52	18	26	32	96	83	50	58	45	27	57	14	96	39	64	85	73	87	96	76	23
80	71	86	41	03	45	62	63	40	88	35	69	34	10	94	32	22	52	04	74	69	63	21	83	41
27	06	08	09	92	26	22	59	28	27	38	58	22	14	79	24	32	12	38	42	33	56	90	92	57
54	68	97	20	54	33	26	74	03	30	74	22	19	13	48	30	28	01	92	49	58	61	52	27	03
02	92	65	68	99	05	53	15	26	70	04	69	22	64	07	04	73	25	74	82	78	35	22	21	88
83	52	57	78	62	98	61	70	48	22	68	50	64	55	75	42	70	32	09	60	58	70	61	43	97
82	82	76	31	33	85	13	41	38	10	16	47	61	43	77	83	27	19	70	41	34	78	77	60	25
38	61	34	09	49	04	41	66	09	76	20	50	73	40	95	24	77	95	73	20	47	42	80	61	03
01	01	11	88	38	03	10	16	82	24	39	58	20	12	39	82	77	02	18	88	33	11	49	15	16
21	66	14	38	28	54	08	18	07	04	92	17	63	36	75	33	14	11	11	78	97	30	53	62	38
32	29	30	69	59	68	50	33	31	47	15	64	88	75	27	04	51	41	61	96	86	62	93	66	71
04	59	21	65	47	39	30	89	86	77	46	86	86	88	86	50	09	13	24	91	54	80	67	78	66
38	64	50	07	36	56	50	45	94	25	48	28	48	30	51	60	73	73	03	87	68	47	37	10	84
48	33	50	83	53	59	77	64	59	90	58	92	62	50	18	93	09	45	89	06	13	26	98	86	29

TABLE 9 : RANDOM NUMBERS (VI)

25 19 64 82 84	62 74 29 92 24	61 03 91 22 48	64 94 63 15 07	66 85 12 00 27
23 02 41 46 04	44 31 52 43 07	44 06 03 09 34	19 83 94 62 94	48 28 01 51 92
55 85 66 96 28	28 30 62 58 83	65 68 62 42 45	13 08 60 46 28	95 68 45 52 43
68 45 19 69 59	35 14 82 56 80	22 06 52 26 39	59 78 98 76 14	36 09 03 01 86
69 31 46 29 85	18 88 26 95 54	01 02 14 03 05	48 00 26 43 85	33 93 81 45 95
37 31 61 28 98	94 61 47 03 10	67 80 84 41 26	88 84 59 69 14	77 32 82 81 89
66 42 19 24 94	13 13 38 69 96	76 69 76 24 13	43 83 10 13 24	18 32 84 85 04
33 65 78 12 35	91 59 11 38 44	23 31 48 75 74	05 30 08 46 32	90 04 93 56 16
76 32 06 19 35	22 95 30 19 29	57 74 43 20 90	20 25 36 70 69	38 32 11 01 01
43 33 42 02 59	20 39 84 95 61	58 22 04 02 99	99 78 78 83 82	43 67 16 38 95
28 31 93 43 94	87 73 19 38 47	54 36 90 98 10	83 43 32 26 26	22 00 90 59 22
97 19 21 63 34	69 33 17 03 02	11 15 50 46 08	42 69 60 17 42	14 68 61 14 48
82 80 37 14 20	56 39 59 89 63	33 90 38 44 50	78 22 87 10 88	06 58 87 39 67
03 68 03 13 60	64 13 09 37 11	86 02 57 41 99	31 66 60 65 64	03 03 02 58 97
65 16 58 11 01	98 78 80 63 23	07 37 66 20 56	20 96 06 79 80	33 39 40 49 42
24 65 58 57 04	18 62 85 28 24	26 45 17 82 76	39 65 01 73 91	50 37 49 38 73
02 72 64 07 75	85 66 48 38 73	75 10 96 59 31	48 78 58 08 88	72 08 54 57 17
79 16 78 63 99	43 61 00 66 42	76 26 71 14 33	33 86 76 71 66	37 85 05 56 07
04 75 14 93 39	68 52 16 83 34	64 09 44 62 58	48 32 72 26 95	32 67 35 49 71
40 64 64 57 60	97 00 12 91 33	22 14 73 01 11	83 97 68 95 65	67 77 80 98 87
06 27 07 34 26	01 52 48 69 57	19 17 53 55 96	02 41 03 89 33	86 85 73 02 32
62 40 03 87 10	96 88 22 46 94	35 56 60 94 20	60 73 04 84 98	96 45 18 47 07
00 98 48 18 97	91 51 63 27 95	74 25 84 03 07	88 29 04 79 84	03 71 13 78 06
50 64 19 18 91	98 55 83 46 09	49 66 41 12 45	41 49 36 83 43	53 75 35 13 39
38 54 52 25 78	01 98 00 89 85	86 12 22 80 25	10 10 71 19 45	88 84 77 00 07
46 86 80 97 78	65 12 64 64 70	58 41 05 49 08	68 68 88 54 00	81 61 61 80 41
90 72 92 93 10	09 12 81 93 63	69 30 02 04 26	92 36 48 69 45	91 99 08 07 65
66 21 41 77 60	99 35 72 61 22	52 40 74 67 29	97 50 71 39 79	57 82 14 88 06
87 05 46 52 76	89 96 34 22 37	27 11 57 04 19	57 93 08 35 69	07 51 19 92 66
46 90 61 03 06	89 85 33 22 80	34 89 12 20 37	44 71 38 40 37	15 49 55 51 08
11 88 53 06 09	81 83 33 98 29	91 27 59 43 09	70 72 51 49 73	35 97 25 83 41
11 05 92 06 97	68 82 34 08 83	25 40 58 40 64	56 42 78 54 06	60 96 96 12 82
33 94 24 20 28	62 42 07 12 63	34 39 02 92 31	80 61 68 44 19	09 92 14 73 49
24 89 74 75 61	61 02 73 36 85	67 28 50 49 85	37 79 95 02 66	73 19 76 28 13
15 19 74 67 23	61 38 93 73 68	76 23 15 58 20	35 36 82 82 59	01 33 48 17 66
05 64 12 70 88	80 58 35 06 88	73 48 27 39 43	43 40 13 35 45	55 10 54 38 50
57 49 36 44 06	74 93 55 39 26	27 70 98 76 68	78 36 26 24 06	43 24 56 40 80
77 82 96 96 97	60 42 17 18 48	16 34 92 19 52	98 84 48 42 92	83 19 06 77 78
24 10 70 06 51	59 62 37 95 42	53 67 14 95 29	84 65 43 07 30	77 54 00 15 42
50 00 07 78 23	49 54 36 85 14	18 50 54 18 82	23 79 80 71 37	60 62 95 40 30
44 37 76 21 96	37 03 08 98 64	90 85 59 43 64	17 79 96 52 35	21 05 22 59 30
90 57 55 17 47	53 26 79 20 38	69 90 58 64 03	33 48 32 91 54	68 44 90 24 25
50 74 64 67 42	95 28 12 73 23	32 54 98 64 94	82 17 18 17 14	55 10 61 64 29
44 04 70 22 02	84 31 64 64 08	52 55 04 24 29	91 95 43 81 14	66 13 18 47 44
32 74 61 64 73	21 46 51 44 77	72 48 92 00 05	83 59 89 65 06	53 76 70 58 78
75 73 51 70 49	12 53 67 51 54	38 10 11 67 73	22 32 61 43 75	31 61 22 21 11
76 18 36 16 34	16 28 25 82 98	64 26 70 54 87	49 48 55 11 39	94 25 20 80 85
00 17 37 71 81	64 21 91 15 82	81 04 14 52 11	39 07 30 60 77	39 18 27 85 68
54 95 57 55 04	12 77 40 70 14	79 86 61 57 50	52 49 41 73 46	05 63 34 92 33
69 99 95 54 63	44 37 33 53 17	38 06 58 37 93	47 10 62 31 28	63 59 40 40 32

TABLE 10 : STATISTICAL CONSTANTS FOR CONTROL CHARTS

Number of Observations in Sample, n	Chart for Averages			Chart for Standard Deviations						Chart for Ranges						
	Factors for control limits			Factors for central line		Factors for control limits				Factors for central line		Factors for control limits				
	A	A_1	A_2	c_2	$1/c_2$	B_1	B_2	B_3	B_4	d_2	$1/d_2$	d_3	D_1	D_2	D_3	D_4
2.....	2.121	3.760	1.880	0.5642	1.7725	0	1.843	0	3.267	1.128	0.8865	0.853	0	3.686	0	3.267
3.....	1.732	2.394	1.023	0.7236	1.3820	0	1.858	0	2.568	1.693	0.5907	0.888	0	4.358	0	2.575
4.....	1.500	1.880	0.729	0.7979	1.2533	0	1.808	0	2.266	2.059	0.4857	0.880	0	4.698	0	2.282
5.....	1.342	1.596	0.577	0.8407	1.1894	0	1.756	0	2.089	2.326	0.4299	0.864	0	4.918	0	2.115
6.....	1.225	1.410	0.483	0.8686	1.1512	0.026	1.711	0.030	1.970	2.534	0.3946	0.848	0	5.078	0	2.004
7.....	1.134	1.277	0.419	0.8882	1.1259	0.105	1.672	0.118	1.882	2.704	0.3698	0.833	0.205	5.203	0.076	1.924
8.....	1.061	1.175	0.373	0.9027	1.1078	0.167	1.638	0.185	1.815	2.847	0.3512	0.820	0.387	5.307	0.136	1.864
9.....	1.000	1.094	0.337	0.9139	1.0942	0.219	1.609	0.239	1.761	2.970	0.3367	0.808	0.546	5.394	0.184	1.816
10.....	0.949	1.028	0.308	0.9227	1.0837	0.262	1.584	0.284	1.716	3.078	0.3249	0.797	0.687	5.469	0.223	1.777
11.....	0.905	0.973	0.285	0.9300	1.0753	0.299	1.561	0.321	1.679	3.173	0.3152	0.787	0.812	5.534	0.256	1.744
12.....	0.866	0.925	0.266	0.9359	1.0684	0.331	1.541	0.354	1.646	3.258	0.3069	0.778	0.924	5.592	0.284	1.716
13.....	0.832	0.884	0.249	0.9410	1.0627	0.359	1.523	0.382	1.618	3.336	0.2998	0.770	1.026	5.646	0.308	1.692
14.....	0.802	0.848	0.235	0.9453	1.0579	0.384	1.507	0.406	1.594	3.407	0.2935	0.762	1.121	5.693	0.329	1.671
15.....	0.775	0.816	0.223	0.9490	1.0537	0.406	1.492	0.428	1.572	3.472	0.2880	0.755	1.207	5.737	0.348	1.652
16.....	0.750	0.788	0.212	0.9523	1.0501	0.427	1.478	0.448	1.552	3.532	0.2831	0.749	1.285	5.779	0.364	1.636
17.....	0.728	0.762	0.203	0.9551	1.0470	0.445	1.465	0.466	1.534	3.588	0.2787	0.743	1.359	5.817	0.379	1.621
18.....	0.707	0.738	0.194	0.9576	1.0442	0.461	1.454	0.482	1.518	3.640	0.2747	0.738	1.426	5.854	0.392	1.608
19.....	0.688	0.717	0.187	0.9599	1.0418	0.477	1.443	0.497	1.503	3.689	0.2711	0.733	1.490	5.888	0.404	1.596
20.....	0.671	0.697	0.180	0.9619	1.0396	0.491	1.433	0.510	1.490	3.735	0.2677	0.729	1.548	5.922	0.414	1.586
21.....	0.655	0.679	0.173	0.9638	1.0376	0.504	1.424	0.523	1.477	3.778	0.2647	0.724	1.606	5.950	0.425	1.575
22.....	0.640	0.662	0.167	0.9655	1.0358	0.516	1.415	0.534	1.466	3.819	0.2618	0.720	1.659	5.979	0.434	1.566
23.....	0.626	0.647	0.162	0.9670	1.0342	0.527	1.407	0.545	1.455	3.858	0.2592	0.716	1.710	6.006	0.443	1.557
24.....	0.612	0.632	0.157	0.9684	1.0327	0.538	1.399	0.555	1.445	3.895	0.2567	0.712	1.759	6.031	0.452	1.548
25.....	0.600	0.619	0.153	0.9696	1.0313	0.548	1.392	0.565	1.435	3.931	0.2544	0.709	1.804	6.058	0.459	1.541
Over 25....	$\frac{3}{\sqrt{n}}$	$\frac{3}{\sqrt{n}}$	.....	.....	.....	*	* *	*	* *	.....	.....	.....	.....	.....	.....	.....

* $1-\frac{3}{\sqrt{2n}}$ * * $1+\frac{3}{\sqrt{2n}}$

TABLE 11 : CRITICAL VALUES OF *r* FOR THE SIGN TEST *

n	1%	5%	10%	25%	*n*	1%	5%	10%	25%
1					46	13	15	16	18
2					47	14	16	17	19
3				0	48	14	16	17	19
4				0	49	15	17	18	19
5			0	0	50	15	17	18	20
6		0	0	1	51	15	18	19	20
7		0	0	1	52	16	18	19	21
8	0	0	1	1	53	16	18	20	21
9	0	1	1	2	54	17	19	20	22
10	0	1	1	2	55	17	19	20	22
11	0	1	2	3	56	17	20	21	23
12	1	2	2	3	57	18	20	21	23
13	1	2	3	3	58	18	21	22	24
14	1	2	3	4	59	19	21	22	24
15	2	3	3	4	60	19	21	23	25
16	2	3	4	5	61	20	22	23	25
17	2	4	4	5	62	20	22	24	25
18	3	4	5	6	63	20	23	24	26
19	3	4	5	6	64	21	23	24	26
20	3	5	5	6	65	21	24	25	27
21	4	5	6	7	66	22	24	25	27
22	4	5	6	7	67	22	25	26	28
23	4	6	7	8	68	22	25	26	28
24	5	6	7	8	69	23	25	27	29
25	5	7	7	9	70	23	26	27	29
26	6	7	8	9	71	24	26	28	30
27	6	7	8	10	72	24	27	28	30
28	6	8	9	10	73	25	27	28	31
29	7	8	9	10	74	25	28	29	31
30	7	9	10	11	75	25	28	29	32
31	7	9	10	11	76	26	28	30	32
32	8	9	10	12	77	26	29	30	32
33	8	10	11	12	78	27	29	31	33
34	9	10	11	13	79	27	30	31	33
35	9	11	12	13	80	28	30	32	34
36	9	11	12	14	81	28	31	32	34
37	10	12	13	14	82	28	31	33	35
38	10	12	13	14	83	29	32	33	35
39	11	12	13	15	84	29	32	33	36
40	11	13	14	15	85	30	32	34	36
41	11	13	14	16	86	30	33	34	37
42	12	14	15	16	87	31	33	35	37
43	12	14	15	17	88	31	34	35	38
44	13	15	16	17	89	31	34	36	38
45	13	15	16	18	90	32	35	36	39

* For values of n larger than 90, approximate values of r may be found by taking the nearest integer less than $(n-1)/2-k\sqrt{n+1}$, where k is 1.2879, 0.9800, 0.8224, 0.5752 for the 1, 5, 10, 25% values, respectively.

Note : The values of r given in the table are the two tailed percentage points for the binomial for $p = 0.5$.

TABLE 12 : CRITICAL VALUES OF *T* IN THE WILCOXON SIGNED RANK TEST

	Level of Significance for One-Tailed Test		
	.025	.01	.005
	Level of Significance for Two-Tailed Test		
n	.05	.02	.01
6	0	—	—
7	2	0	—
8	4	2	0
9	6	3	2
10	8	5	3
11	11	7	5
12	14	10	7
13	17	13	10
14	21	16	13
15	25	20	16
16	30	24	20
17	35	28	23
18	40	33	28
19	46	38	32
20	52	43	38
21	59	49	43
22	66	56	49
23	73	62	55
24	81	69	61
25	89	77	68
*			

*For $n > 25$, T is approximately normally distributed with mean $n(n + 1)/4$ and variance $n(n + 1)(2n + 1)/24$

Note : The values of *T* given in the table are critical values associated with selected values of *n.* Any value of *T* which is less than or equal to the tabulated value is significant at the indicated level of significance.

TABLE 13 : CRITICAL VALUES OF *U* FOR THE MANN-WHITNEY TEST*

(A) Significance level 0.01 for a one-tailed test and 0.02 for a two-tailed test :

n_1 \ n_2	9	10	11	12	13	14	15	16	17	18	19	20
1												
2					0	0	0	0	0	0	1	1
3	1	1	1	2	2	2	3	3	4	4	4	5
4	3	3	4	5	5	6	7	7	8	9	9	10
5	5	6	7	8	9	10	11	12	13	14	15	16
6	7	8	9	11	12	13	15	16	18	19	20	22
7	9	11	12	14	16	17	19	21	23	24	26	28
8	11	13	15	17	20	22	24	26	28	30	32	34
9	14	16	18	21	23	26	28	31	33	36	38	40
10	16	19	22	24	27	30	33	36	38	41	44	47
11	18	22	25	28	31	34	37	41	44	47	50	53
12	21	24	28	31	35	38	42	46	49	53	56	60
13	23	27	31	35	39	43	47	51	55	59	63	67
14	26	30	34	38	43	47	51	56	60	65	69	73
15	28	33	37	42	47	51	56	61	66	70	75	80
16	31	36	41	46	51	56	61	66	71	76	82	87
17	33	38	44	49	55	60	66	71	77	82	88	93
18	36	41	47	53	59	65	70	76	82	88	94	100
19	38	44	50	56	63	69	75	82	88	94	101	107
20	40	47	53	60	67	73	80	87	93	100	107	114

TABLE 13—*Contd.*

(B) Significance level 0.05 for a one-tailed test and 0.10 for a two-tailed test :

n_1 \ n_2	9	10	11	12	13	14	15	16	17	18	19	20
1											0	0
2	1	1	1	2	2	2	3	3	3	4	4	4
3	3	4	5	5	6	7	7	8	9	9	10	11
4	6	7	8	9	10	11	12	14	15	16	17	18
5	9	11	12	13	15	16	18	19	20	22	23	25
6	12	14	16	17	19	21	23	25	26	28	30	32
7	15	17	19	21	24	26	28	30	33	35	37	39
8	18	20	23	26	28	31	33	36	39	41	44	47
9	21	24	27	30	33	36	39	42	45	48	51	54
10	24	27	31	34	37	41	44	48	51	55	58	62
11	27	31	34	38	42	46	50	54	57	61	65	69
12	30	34	38	42	47	51	55	60	64	68	72	77
13	33	37	42	47	51	56	61	65	70	75	80	84
14	36	41	46	51	56	61	66	71	77	82	87	92
15	39	44	50	55	61	66	72	77	83	88	94	100
16	42	48	54	60	65	71	77	83	89	95	101	107
17	45	51	57	64	70	77	83	89	96	102	109	115
18	48	55	61	68	75	82	88	95	102	109	116	123
19	51	58	65	72	80	87	94	101	109	116	123	130
20	54	62	69	77	84	92	100	107	115	123	130	138

TABLE 14 : CRITICAL VALUES OF *r* IN THE RUN TEST[2]

(A)

n_1 \ n_2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2											2	2	2	2	2	2	2	2	2
3					2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
4				2	2	2	3	3	3	3	3	3	3	3	4	4	4	4	4
5			2	2	3	3	3	3	3	4	4	4	4	4	4	4	5	5	5
6		2	2	3	3	3	3	4	4	4	4	5	5	5	5	5	5	6	6
7		2	2	3	3	3	4	4	5	5	5	5	5	6	6	6	6	6	6
8		2	3	3	3	4	4	5	5	5	6	6	6	6	6	7	7	7	7
9		2	3	3	4	4	5	5	5	6	6	6	7	7	7	7	8	8	8
10		2	3	3	4	5	5	5	6	6	7	7	7	7	8	8	8	8	9
11		2	3	4	4	5	5	6	6	7	7	7	8	8	8	9	9	9	9
12	2	2	3	4	4	5	6	6	7	7	7	8	8	8	9	9	9	10	10
13	2	2	3	4	5	5	6	6	7	7	8	8	9	9	9	10	10	10	10
14	2	2	3	4	5	5	6	7	7	8	8	9	9	9	10	10	10	11	11
15	2	3	3	4	5	6	6	7	7	8	8	9	9	10	10	11	11	11	12
16	2	3	4	4	5	6	6	7	8	8	9	9	10	10	11	11	11	12	12
17	2	3	4	4	5	6	7	7	8	9	9	10	10	11	11	11	12	12	13
18	2	3	4	5	5	6	7	8	8	9	9	10	10	11	11	12	12	13	13
19	2	3	4	5	6	6	7	8	8	9	10	10	11	11	12	12	13	13	13
20	2	3	4	5	6	6	7	8	9	9	10	10	11	12	12	13	13	13	14

[2]The values of *r* given in Tables 14 (A) and (B) are various critical values of *r* associated with selected values of n_1 and n_2. For the one-sample run test, any value of *r* which is equal to or less than the value shown in Table 14 (A) or equal to or greater than the value shown in Table 14 (B) is significant at the 5 per cent level. For the two-sample run test, any value of *r* which is equal to or less than the value shown in Table 14 (A) is significant at the 5 per cent level.

TABLE 14 : (B)

n_1 \ n_2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2																			
3																			
4				9	9														
5			9	10	10	11	11												
6			9	10	11	12	12	13	13	13	13								
7				11	12	13	13	14	14	14	14	15	15	15					
8				11	12	13	14	14	15	15	16	16	16	16	17	17	17	17	17
9					13	14	14	15	16	16	16	17	17	18	18	18	18	18	18
10					13	14	15	16	16	17	17	18	18	18	19	19	19	20	20
11					13	14	15	16	17	17	18	19	19	19	20	20	20	21	21
12					13	14	16	16	17	18	19	19	20	20	21	21	21	22	22
13						15	16	17	18	19	19	20	20	21	21	22	22	23	23
14						15	16	17	18	19	20	20	21	22	22	23	23	23	24
15						15	16	18	18	19	20	21	22	22	23	23	24	24	25
16							17	18	19	20	21	21	22	23	23	24	25	25	25
17							17	18	19	20	21	22	23	23	24	25	25	26	26
18							17	18	19	20	21	22	23	24	25	25	26	26	27
19							17	18	20	21	22	23	23	24	25	26	26	27	27
20							17	18	20	21	22	23	24	25	25	26	27	27	28

TABLE 15 : CRITICAL VALUES OF *D* IN THE KOLMOGOROV-SMIRNOV GOODNESS OF FIT TEST[2]

Sample Size (n)	Level of Significance for D=Maximum $\lvert F(x)-S_n(x) \rvert$				
	.20	.15	.10	.05	.01
1	.900	.925	.950	.975	.995
2	.684	.726	.776	.842	.929
3	.565	.597	.642	.708	.828
4	.494	.525	.564	.624	.733
5	.446	.474	.510	.565	.669
6	.410	.436	.470	.521	.618
7	.381	.405	.438	.485	.577
8	.358	.381	.411	.457	.543
9	.339	.360	.388	.432	.514
10	.322	.342	.368	.410	.490
11	.307	.326	.352	.391	.468
12	.295	.313	.338	.375	.430
13	.284	.302	.325	.361	.433
14	.274	.292	.314	.349	.418
15	.266	.283	.304	.338	.404
16	.258	.274	.295	.328	.392
17	.250	.266	.286	.318	.381
18	.244	.259	.278	.309	.371
19	.237	.252	.272	.301	.363
20	.231	.246	.264	.294	.356
25	.21	.22	.24	.27	.32
30	.19	.20	.22	.24	.29
35	.18	.19	.21	.23	.27
Over 35	$\frac{1.07}{\sqrt{n}}$	$\frac{1.14}{\sqrt{n}}$	$\frac{1.22}{\sqrt{n}}$	$\frac{1.36}{\sqrt{n}}$	$\frac{1.63}{\sqrt{n}}$

[2]The values of D given in the table are critical values associated with selected values of n. Any value of D which is greater than or equal to the tabulated value is significant at the indicated level of significance.

TABLE 16:

Upper percentage points of the studentized range $q_\alpha = \dfrac{\bar{x}\ \text{maximum} - \bar{x}\ \text{minimum}}{s_{\bar{x}}}$ *

$\alpha = .05$

df \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
10	3.15	3.88	4.33	4.66	4.91	5.12	5.30	5.46	5.60	5.72	5.83	5.93	6.03	6.12	6.20	6.27	6.34	6.41	6.47
11	3.11	3.82	4.26	4.58	4.82	5.03	5.20	5.35	5.49	5.61	5.71	5.81	5.90	5.98	6.06	6.14	6.20	6.27	6.33
12	3.08	3.77	4.20	4.51	4.75	4.95	5.12	5.27	5.40	5.51	5.61	5.71	5.80	5.88	5.95	6.02	6.09	6.15	6.21
13	3.06	3.73	4.15	4.46	4.69	4.88	5.05	5.19	5.32	5.43	5.53	5.63	5.71	5.79	5.86	5.93	6.00	6.06	6.11
14	3.03	3.70	4.11	4.41	4.64	4.83	4.99	5.13	5.25	5.36	5.46	5.56	5.64	5.72	5.79	5.86	5.92	5.98	6.03
15	3.01	3.67	4.08	4.37	4.59	4.78	4.94	5.08	5.20	5.31	5.40	5.49	5.57	5.65	5.72	5.79	5.85	5.91	5.96
16	3.00	3.65	4.05	4.34	4.56	4.74	4.90	5.03	5.15	5.26	5.35	5.44	5.52	5.59	5.66	5.73	5.79	5.84	5.90
17	2.98	3.62	4.02	4.31	4.52	4.70	4.86	4.99	5.11	5.21	5.31	5.39	5.47	5.55	5.61	5.68	5.74	5.79	5.84
18	2.97	3.61	4.00	4.28	4.49	4.67	4.83	4.96	5.07	5.17	5.27	5.35	5.43	5.50	5.57	5.63	5.69	5.74	5.79
19	2.96	3.59	3.98	4.26	4.47	4.64	4.79	4.92	5.04	5.14	5.23	5.32	5.39	5.46	5.53	5.59	5.65	5.70	5.75
20	2.95	3.58	3.96	4.24	4.45	4.62	4.77	4.90	5.01	5.11	5.20	5.28	5.36	5.43	5.50	5.56	5.61	5.66	5.71
24	2.92	3.53	3.90	4.17	4.37	4.54	4.68	4.81	4.92	5.01	5.10	5.18	5.25	5.32	5.38	5.44	5.50	5.55	5.59
30	2.89	3.48	3.84	4.11	4.30	4.46	4.60	4.72	4.83	4.92	5.00	5.08	5.15	5.21	5.27	5.33	5.38	5.43	5.48
40	2.86	3.44	3.79	4.04	4.23	4.39	4.52	4.63	4.74	4.82	4.90	4.98	5.05	5.11	5.17	5.22	5.27	5.32	5.36
60	2.85	3.40	3.74	3.98	4.16	4.31	4.44	4.55	4.65	4.73	4.81	4.88	4.94	5.00	5.06	5.11	5.15	5.20	5.24
120	2.80	3.36	3.69	3.92	4.10	4.24	4.36	4.47	4.56	4.64	4.71	4.78	4.84	4.90	4.95	5.00	5.04	5.09	5.13
∞	2.77	3.32	3.63	3.86	4.03	4.17	4.29	4.39	4.47	4.55	4.62	4.68	4.74	4.80	4.84	4.89	4.93	4.97	5.01

$\alpha = .01$

df \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
10	4.48	5.26	5.77	6.14	6.43	6.67	6.88	7.06	7.22	7.36	7.49	7.60	7.71	7.81	7.91	7.99	8.08	8.15	8.23
11	4.39	5.14	5.62	5.98	6.25	6.47	6.67	6.84	6.99	7.13	7.25	7.36	7.46	7.56	7.65	7.73	7.81	7.88	7.95
12	4.32	5.04	5.50	5.84	6.10	6.32	6.51	6.67	6.81	6.94	7.06	7.17	7.26	7.36	7.44	7.52	7.60	7.67	7.75
13	4.26	4.96	5.40	5.75	5.98	6.19	6.37	6.53	6.67	6.79	6.90	7.01	7.10	7.19	7.27	7.35	7.42	7.49	7.55
14	4.21	4.89	5.32	5.64	5.88	6.08	6.26	6.41	6.54	6.66	6.77	6.87	6.96	7.05	7.13	7.20	7.27	7.34	7.40
15	4.17	4.83	5.25	5.56	5.80	5.99	6.16	6.31	6.44	6.55	6.66	6.76	6.85	6.93	7.00	7.07	7.14	7.20	7.26
16	4.13	4.78	5.19	5.49	5.72	5.91	6.08	6.22	6.35	6.46	6.56	6.66	6.74	6.82	6.90	6.97	7.03	7.09	7.15
17	4.10	4.73	5.14	5.43	5.66	5.85	6.01	6.15	6.27	6.38	6.48	6.57	6.66	6.73	6.81	6.87	6.94	7.00	7.05
18	4.07	4.70	5.09	5.38	5.60	5.79	5.95	6.08	6.20	6.31	6.41	6.50	6.58	6.65	6.73	6.79	6.85	6.91	6.97
19	4.05	4.66	5.05	5.34	5.55	5.73	5.89	6.02	6.14	6.25	6.34	6.43	6.51	6.58	6.65	6.72	6.78	6.84	6.89
20	4.02	4.63	5.02	5.30	5.51	5.69	5.84	5.97	6.09	6.19	6.28	6.37	6.45	6.52	6.59	6.66	6.71	6.77	6.82
24	3.96	4.54	4.91	5.17	5.37	5.54	5.69	5.81	5.92	6.02	6.11	6.19	6.26	6.33	6.39	6.45	6.51	6.57	6.61
30	3.89	4.45	4.80	5.05	5.24	5.40	5.53	5.65	5.76	5.86	5.93	6.01	6.08	6.14	6.20	6.26	6.31	6.36	6.41
40	3.82	4.36	4.70	4.93	5.11	5.26	5.59	5.50	5.60	5.69	5.77	5.84	5.90	5.96	6.02	6.07	6.12	6.17	6.21
60	3.76	4.28	4.60	4.82	4.99	5.13	5.25	5.36	5.45	5.53	5.60	5.67	5.73	5.78	5.83	5.88	5.93	5.98	6.01
120	3.70	4.20	4.50	4.71	4.87	5.00	5.12	5.21	5.30	5.38	5.44	5.50	5.56	5.61	5.66	5.71	5.75	5.79	5.83
∞	3.64	4.12	4.40	4.60	4.76	4.88	4.99	5.08	5.16	5.23	5.29	5.35	5.40	5.45	5.49	5.53	5.57	5.61	5.64

TABLE 17 : NATURAL SINES

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	1	2	3	4	5
0	.0000	0017	0035	0052	0070	0087	0105	0122	0140	0157	3	6	9	12	15
1	.0175	0192	0200	0227	0244	0602	0279	0297	0314	0332	3	6	9	12	15
2	.0349	0366	0384	0401	0419	0436	0454	0471	0488	0506	3	6	9	12	15
3	.0523	0541	0558	0576	0593	0610	0628	0645	0663	0680	3	6	9	12	15
4	.0698	0715	0732	0750	0767	0785	0802	0819	0837	0854	3	6	9	12	15
5	.0872	0889	0906	0924	0941	0958	0976	0993	1011	1028	3	6	9	12	14
6	.1045	1063	1080	1097	1115	1132	1149	1167	1184	1201	3	6	9	12	14
7	.1219	1236	1253	1271	1288	1305	1323	1340	1357	1374	3	6	9	12	14
8	.1392	1409	1426	1444	1461	1478	1495	1513	1530	1547	3	6	9	12	14
9	.1564	1582	1599	1616	1633	1650	1668	1685	1702	1719	3	6	9	12	14
10	.1736	1754	1771	1788	1805	1822	1840	1857	1874	1891	3	6	9	12	14
11	.1908	1945	1942	1959	1977	1994	2011	2028	2045	2062	3	6	9	11	14
12	.2079	2096	2113	2130	2147	2164	2181	2198	2215	2232	3	6	9	11	14
13	.2250	2267	2284	2300	2317	2334	2351	2368	2385	2402	3	6	8	11	14
14	.2419	2436	2453	2470	2487	2504	2521	2538	2554	2571	3	6	8	11	14
15	.2588	2605	2622	2639	2656	2672	2689	2706	2723	2740	3	6	8	11	14
16	.2756	2773	2790	2807	2823	2840	2857	2874	2890	2907	3	6	8	11	14
17	.2924	2940	2957	2974	2990	3007	3024	3040	3057	3074	3	6	8	11	14
18	.3090	3107	3123	3140	3156	3173	3190	3206	3223	3239	3	6	8	11	14
19	.3256	3272	3289	3305	3322	3338	3355	3371	3387	3404	3	5	8	11	14
20	.3420	3437	3453	3469	3486	3502	3518	3535	3551	3567	3	5	8	11	14
21	.3584	3600	3616	3633	3649	3665	3681	3697	3714	3730	3	5	8	11	14
22	.3746	3762	3778	3795	3811	3827	3843	3859	3875	3891	3	5	8	11	14
23	.3907	3923	3939	3955	3971	3987	4003	4019	4035	4051	3	5	8	11	14
24	.4067	4083	4099	4115	4131	4147	4163	4179	4195	4210	3	5	8	11	13
25	.4226	4242	4258	4274	4289	4305	4321	4337	4352	4368	3	5	8	11	13
26	.4384	4399	4415	4431	4446	4462	4478	4493	4509	4524	3	5	8	10	13
27	.4540	4555	4571	4586	4602	4617	4633	4648	4664	4679	3	5	8	10	13
28	.4695	4710	4726	4741	4756	4772	4787	4802	4818	4833	3	5	8	10	13
29	.4848	4863	4879	4894	4909	4924	4939	4955	4970	4985	3	5	8	10	13
30	.5000	5015	5030	5045	5060	5075	5090	5105	5120	5135	3	5	8	10	13
31	.5150	5165	5180	5195	5210	5225	5240	5255	5270	5284	2	5	7	10	12
32	.5299	5314	5329	5344	5358	5373	5388	5402	5417	5432	2	5	7	10	12
33	.5446	5461	5476	5490	5505	5519	5534	5548	5563	5577	2	5	7	10	12
34	.5592	5606	5621	5635	5650	5664	5678	5693	5707	5721	2	5	7	10	12
35	.5736	5750	5764	5779	5793	5807	5821	5835	5850	5864	2	5	7	10	12
36	.5878	5892	5906	5920	5934	5948	5962	5976	5990	6004	2	5	7	9	12
37	.6018	6032	6046	6060	6074	6088	6101	6115	6129	6143	2	5	7	9	12
38	.6157	6170	6184	6198	6211	6225	6239	6252	6266	6280	2	5	7	9	11
39	.6293	6307	6320	6334	6347	6361	6374	6388	6401	6414	2	4	7	9	11
40	.6428	6441	6455	6468	6481	6494	6508	6521	6534	6547	2	4	7	9	11
41	.6561	6574	6587	6600	6613	6626	6639	6652	6665	6678	2	4	7	9	11
42	.6691	6704	6717	6730	6743	6756	6769	6782	6794	6807	2	4	6	9	11
43	.6820	6833	6845	6858	6871	6884	6896	6909	6921	6934	2	4	6	8	11
44	.6947	6959	6972	6984	6997	7009	7022	7034	7046	7059	2	4	6	8	10

TABLE 17 : NATURAL SINES—*Contd.*

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	1	2	3	4	5
45	.7071	7083	7096	7108	7120	7133	7145	7157	7169	7181	2	4	6	8	10
46	.7193	7206	7218	7230	7242	7254	7266	7278	7290	7302	2	4	6	8	10
47	.7314	7325	7337	7349	7361	7373	7385	7396	7408	7420	2	4	6	8	10
48	.7431	7443	7455	7466	7478	7490	7501	7513	7524	7536	2	4	6	8	10
49	.7547	7558	7570	7581	7593	7604	7615	7627	7638	7649	2	4	6	8	9
50	.7660	7672	7683	7604	7705	7716	7727	7738	7749	7760	2	4	6	7	9
51	.7771	7782	7793	7804	7815	7826	7837	7848	7859	7869	2	4	5	7	9
52	.7880	7891	7902	7912	7923	7934	7944	7955	7965	7976	2	4	5	7	9
53	.7986	7997	8007	8018	8028	8039	8049	8059	8070	8080	2	3	5	7	9
54	.8090	8100	8111	8121	8131	8141	8151	8161	8171	8181	2	3	5	7	8
55	.8192	8202	8211	8221	8231	8241	8251	8261	8271	8281	2	3	5	7	8
56	.8290	8300	8310	8320	8329	8339	8348	8358	8368	8377	2	3	5	6	8
57	.8387	8396	8406	8415	8425	8434	8443	8453	8462	8471	2	3	5	6	8
58	.8480	8490	8499	8508	8517	8526	8536	8545	8554	8563	2	3	5	6	8
59	.8572	8581	8590	8599	8607	8616	8625	8634	8643	8652	1	3	4	6	7
60	.8660	8669	8678	8686	8695	8704	8712	8721	8729	8738	1	3	4	6	7
61	.8746	8755	8763	8771	8780	8788	8796	8805	8813	8821	1	3	4	6	7
62	.8829	8838	8846	8854	8862	8870	8878	8886	8804	8902	1	3	4	5	7
63	.8910	8918	8926	8934	8942	8949	8957	8965	8973	8980	1	3	4	5	6
64	.8988	8996	9003	9011	9018	9026	9033	9041	9048	9056	1	3	4	5	6
65	.9063	9070	9078	9085	9092	9100	9107	9114	9121	9128	1	2	4	5	6
66	.9135	9143	9150	9157	9164	9171	9178	9184	9191	9198	1	2	3	5	6
67	.9205	9212	9219	9225	9232	9239	9245	9252	9259	9265	1	2	3	4	6
68	.9272	9278	9285	9291	9298	9304	9311	9317	9323	9330	1	2	3	4	5
69	.9336	9342	9348	9354	9361	9367	9373	9379	9385	9391	1	2	3	4	5
70	.9397	9403	9409	9415	9421	9426	9432	9438	9444	9449	1	2	3	4	5
71	.9455	9461	9466	9472	9478	9483	9489	9494	9500	9505	1	2	3	4	5
72	.9511	9516	9521	9527	9532	9537	9542	9548	9553	9558	1	2	3	3	4
73	.9563	9568	9573	9578	9583	9588	9593	9598	9603	9608	1	2	2	3	4
74	.9613	9617	9622	9627	9632	9636	9641	9646	9650	9655	1	2	2	3	4
75	.9659	9664	9668	9673	9677	9681	9686	9690	9694	9699	1	1	2	3	4
76	.9703	9707	9711	9715	9720	9724	9728	9732	9736	9740	1	1	2	3	3
77	.9744	9748	9751	9755	9759	9763	9767	9770	9774	9778	1	1	2	3	3
78	.9781	9785	9789	9792	9796	9799	9803	9806	9810	9813	1	1	2	2	3
79	.9816	9820	9823	9826	9829	9833	9836	9839	9842	9845	1	1	2	2	3
80	.9848	9851	9854	9857	9860	9863	9866	9869	9871	9874	0	1	1	2	2
81	.9877	9880	9882	9885	9888	9890	9893	9895	9898	9900	0	1	1	2	2
82	.9903	9905	9907	9910	9912	9914	9917	9919	9921	9923	0	1	1	2	2
83	.9925	9928	9930	9932	9934	9936	9938	9940	9942	9943	0	1	1	1	2
84	.9945	9947	9949	9951	9952	9954	9956	9957	9959	9960	0	1	1	1	2
85	.9962	9963	9965	9966	9968	9969	9971	9972	9973	9974	0	0	1	1	1
86	.9976	9977	9978	9979	9980	9981	9982	9983	9984	9985	0	0	1	1	1
87	.9986	9987	9988	9989	9990	9990	9991	9992	9993	9993	0	0	0	1	1
88	.9994	9995	9995	9996	9996	9997	9997	9997	9998	9998	0	0	0	0	0
89	.9998	9999	9999	9999	9999	1.000	1.000	1.000	1.000	1.000	0	0	0	0	0
90	1.000														

TABLE 18 : NATURAL TANGENTS

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	1	2	3	4	5
0	.0000	0017	0035	0052	0070	0087	0105	0122	0140	0157	3	6	9	12	15
1	.0175	0192	0209	0227	0244	0262	0279	0297	0314	0332	3	6	9	12	15
2	.0349	0367	0384	0402	0419	0437	0454	0472	0489	0507	3	6	9	12	15
3	.0524	0542	0559	0577	0594	0612	0629	0647	0664	0682	3	6	9	12	15
4	.0699	0717	0734	0752	0769	0787	0805	0822	0840	0857	3	6	9	12	15
5	.0875	0892	0910	0928	0945	0963	0981	0998	1016	1033	3	6	9	12	15
6	.1051	1069	1086	1104	1122	1139	1157	1175	1192	1210	3	6	9	12	15
7	.1228	1246	1263	1281	1299	1317	1334	1352	1370	1388	3	6	9	12	15
8	.1405	1423	1441	1459	1477	1495	1512	1530	1548	1566	3	6	9	12	15
9	.1584	1602	1620	1638	1655	1673	1691	1709	1727	1745	3	6	9	12	15
10	.1763	1781	1799	1817	1835	1853	1871	1890	1908	1926	3	6	9	12	15
11	.1944	1962	1980	1998	2016	2035	2053	2071	2089	2107	3	6	9	12	15
12	.2126	2144	2162	2180	2199	2217	2235	2254	2272	2290	3	6	9	12	15
13	.2309	2327	2345	2364	2382	2401	2419	2438	2456	2475	3	6	9	12	15
14	.2493	2512	2530	2549	2568	2586	2605	2623	2642	2661	3	6	9	12	16
15	.2679	2698	2717	2736	2754	2773	2792	2811	2830	2849	3	6	9	13	16
16	.2867	2886	2905	2924	2943	2962	2981	3000	3019	3038	3	6	9	13	16
17	.3057	3076	3096	3115	3134	3153	3172	3191	3211	3230	3	6	10	13	16
18	.3249	3269	3288	3307	3327	3346	3365	3385	3404	3424	3	6	10	13	16
19	.3443	3463	3482	3502	3522	3541	3561	3581	3600	3620	3	7	10	13	16
20	.3640	3659	3679	3699	3719	3739	3759	3779	3799	3819	3	7	10	13	17
21	.3839	3859	3879	3899	3919	3939	3959	3979	4000	4020	3	7	10	13	17
22	.4040	4061	4081	4101	4122	4142	4163	4183	4204	4224	3	7	10	14	17
23	.4245	4265	4286	4307	4327	4348	4369	4390	4411	4431	3	7	10	14	17
24	.4452	4473	4494	4515	4536	4557	4578	4599	4621	4642	4	7	11	14	18
25	.4663	4684	4706	4727	4748	4770	4791	4813	4834	4856	4	7	11	14	18
26	.4877	4899	4921	4942	4964	4986	5008	5029	5051	5073	4	7	11	15	18
27	.5095	5117	5139	5161	5184	5206	5228	5250	5272	5295	4	7	11	15	18
28	.5317	5340	5362	5384	5407	5430	5452	5475	5498	5520	4	8	11	15	19
29	.5543	5566	5589	5612	5635	5638	5681	5704	5727	5750	4	8	12	15	19
30	.5774	5797	5820	5844	5867	5890	5914	5938	5961	5985	4	8	12	16	20
31	.6009	6032	6056	6080	6104	6128	6152	6176	6200	6224	4	8	12	16	20
32	.6249	6273	6297	6322	6346	6371	6395	6420	6445	6469	4	8	12	16	20
33	.6494	6519	6544	6569	6594	6619	6644	6669	6694	6720	4	8	13	17	21
34	.6745	6771	6796	6822	6847	6873	6899	6924	6950	6976	4	9	13	17	21
35	.7002	7028	7054	7080	7107	7133	7159	7186	7212	7239	4	9	13	18	22
36	.7265	7292	7319	7346	7373	7400	7427	7454	7481	7508	5	9	14	18	23
37	.7536	7563	7590	7618	7646	7673	7701	7729	7757	7785	5	9	14	18	23
38	.7813	7841	7869	7898	7926	7954	7983	8012	8040	8069	5	9	14	19	24
39	.8098	8127	8156	8185	8214	8243	8273	8302	8332	8361	5	10	15	20	24
40	.8391	8421	8451	8481	8511	8541	8571	8601	8632	8662	5	10	15	20	25
41	.8693	8724	8754	8785	8816	8847	8878	8910	8941	8972	5	10	16	21	26
42	.9004	9036	9067	9099	9131	9163	9195	9228	9260	9293	5	11	16	21	27
43	.9325	9358	9391	9424	9457	9490	9523	9556	9590	9623	6	11	17	22	28
44	.9657	9691	9725	9759	9793	9827	9861	9896	9930	9965	6	11	17	23	29

TABLE 18 : NATURAL TANGENTS—*Contd.*

Degrees	0′	6′	12′	18′	24′	30′	36′	42′	48′	54′	Mean Differences				
	$0^0.0$	$0^0.1$	$0^0.2$	$0^0.3$	$0^0.4$	$0^0.5$	$0^0.6$	$0^0.7$	$0^0.8$	$0^0.9$	1	2	3	4	5
45	1.0000	0035	0070	0105	0141	0176	0212	0247	0283	0319	6	12	18	24	30
46	1.0355	0392	0428	0464	0501	0538	0575	0612	0649	0686	6	12	18	25	31
47	1.0724	0761	0799	0837	0875	0913	0951	0990	1028	1067	6	13	19	25	32
48	1.1106	1145	1184	1224	1263	1303	1343	1383	1423	1463	7	13	20	27	33
49	1.1504	1544	1585	1626	1667	1708	1750	1792	1833	1875	7	14	21	28	34
50	1.1918	1960	2002	2045	2088	2131	2174	2218	2261	2305	7	14	22	29	36
51	1.2349	2393	2437	2482	2527	2572	2617	2662	2708	2753	8	15	23	30	38
52	1.2799	2846	2892	2938	2985	3032	3079	3127	3175	3222	8	16	24	31	39
53	1.3270	3319	3367	3416	3465	3514	3564	3613	3663	3713	8	16	25	33	41
54	1.3764	3814	3865	3916	3968	4019	4071	4124	4176	4229	9	17	26	34	43
55	1.4281	4335	4388	4442	4496	4550	4605	4659	4715	4770	9	18	27	36	45
56	1.4826	4882	4938	4994	5051	5108	5166	5224	5282	5340	10	19	29	38	48
57	1.5399	5458	5517	5577	5637	5697	5757	5818	5880	5941	10	20	30	40	50
58	1.6003	6066	6128	6191	6255	6319	6383	6447	6512	6577	11	21	32	43	53
59	1.6643	6709	6775	6842	6909	6977	7045	7113	7182	7251	11	23	34	45	56
60	1.7321	7391	7461	7532	7603	7675	7747	7820	7893	7966	12	24	36	48	60
61	1.8040	8115	8190	8265	8341	8418	8495	8572	8650	8728	13	26	38	51	64
62	1.8807	8887	8967	9047	9128	9210	9292	9375	9458	9542	14	27	41	55	68
63	1.9626	9711	9797	9883	9970	2.0057	2.0145	2.0233	2.0323	2.0413	15	29	44	58	73
64	2.0503	0594	0686	0778	0872	0965	1060	1155	1251	1348	16	31	47	63	78
65	2.1445	1543	1642	1742	1842	1943	2045	2148	2251	2355	17	34	51	68	85
66	2.2460	2566	2673	2781	2889	2998	3109	3220	3332	3445	18	37	55	73	92
67	2.3559	3673	3789	3906	4023	4142	4262	4383	4504	4627	20	40	60	79	99
68	2.4751	4876	5002	5129	5257	5386	5517	5649	5782	5916	22	43	65	87	108
69	2.6051	6187	6325	6464	6605	6746	6889	7034	7179	7326	24	47	71	95	119
70	2.7475	7625	7776	7929	8083	8239	8397	8556	8716	8878	26	52	78	104	131
71	2.9042	9208	9375	9544	9714	9887	3.0061	3.0237	3.0415	3.0595	29	58	87	116	145
72	3.0777	0961	1146	1334	1524	1716	1910	2106	2305	2506	32	64	96	129	162
73	3.2709	2914	3122	3332	3544	3759	3977	4197	4420	4646	36	72	108	144	180
74	3.4874	5105	5339	5576	5816	6059	6305	6554	6806	7062	41	81	122	163	204
75	3.7321	7583	7848	8118	8391	8667	8947	9232	9520	9812	46	93	139	186	232
76	4.0108	0408	0713	1022	1335	1653	1976	2303	2635	2972	53	107	160	213	267
77	4.3315	3662	4015	4374	4737	5107	5483	5864	6252	6646					
78	4.7046	7453	7867	8288	8716	9152	9594	5.0045	5.0504	5.0970	Mean differences cease				
79	5.1446	1929	2422	2924	3435	3955	4486	5026	5578	6140	to be sufficiently accurate.				
80	5.6713	7297	7894	8502	9124	9758	6.0405	6.1066	6.1742	6.2432					
81	6.3138	3859	4596	5350	6122	6912	7720	8548	9395	7.0264					
82	7.1154	2066	3002	3962	4947	5958	6996	8062	9158	8.0285					
83	8.1443	2636	3863	5126	6427	7769	9152	9.0579	9.2052	9.3572					
84	9.5144	9.677	9.845	10.02	10.20	10.39	10.58	10.78	10.99	11.20					
85	11.43	11.66	11.91	12.16	12.43	12.71	13.00	13.30	13.62	13.95					
86	14.30	14.67	15.06	15.46	15.89	16.35	16.83	17.34	17.89	18.46					
87	19.08	19.74	20.45	21.20	22.02	22.90	23.86	24.90	26.03	27.27					
88	28.64	30.14	31.82	33.69	35.80	38.19	40.92	44.07	47.74	52.08					
89	57.29	63.66	71.62	81.85	95.49	114.6	143.2	191.0	286.5	573.0					
90	∞														

TABLE 19 : LOGARITHMS

	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
10	0000	0043	0086	0128	0170	0212	0253	0294	0334	0374	5 4	9 8	13 12	17 16	21 20	26 24	30 28	34 32	38 36
11	0414	0453	0492	0531	0569	0607	0645	0682	0719	0755	4 4	8 7	12 11	16 15	20 18	23 22	27 26	31 29	35 33
12	0792	0808	0864	0899	0934	0969	1004	1038	1072	1106	3 3	7 7	11 10	14 14	18 17	21 20	25 24	23 27	32 31
13	1139	1173	1206	1239	1271	1303	1335	1367	1399	1430	3 3	6 7	10 10	13 13	16 16	19 19	23 22	26 25	29 29
14	1461	1492	1523	1553	1584	1614	1644	1673	1703	1732	3 3	6 6	9 9	12 12	15 14	19 17	22 20	25 23	28 26
15	1761	1790	1818	1847	1875	1903	1931	1959	1987	2014	3 3	6 6	9 8	11 11	14 14	17 17	20 19	23 22	26 25
16	2041	2068	2095	2122	2148	2175	2201	2227	2253	2279	3 3	6 5	8 8	11 10	14 13	16 16	19 18	22 21	24 23
17	2304	2330	2355	2380	2405	2430	2455	2480	2504	2529	3 3	5 5	8 8	10 10	13 12	15 15	18 17	20 20	23 22
18	2553	2577	2601	2625	2648	2672	2695	2718	2742	2765	2 2	5 4	7 7	9 9	12 11	14 14	17 16	19 18	21 21
19	2788	2810	2833	2856	2878	2900	2923	2945	2967	2989	2 2	4 4	7 6	9 8	11 11	13 13	16 15	18 17	20 19
20	3010	3032	3054	3075	3096	3118	3139	3160	3181	3201	2	4	6	8	11	13	15	17	19
21	3222	3243	3263	3284	3304	3324	3345	3365	3385	3404	2	4	6	8	10	12	14	16	18
22	3424	3444	3464	3483	3502	3522	3541	3560	3579	3598	2	4	6	8	10	12	14	15	17
23	3617	3636	3655	3674	3692	3711	3729	3747	3766	3784	2	4	6	7	9	11	13	15	17
24	3802	3820	3838	3856	3874	3892	3909	3927	3945	3962	2	4	5	7	9	11	12	14	16
25	3979	3997	4014	4031	4048	4065	4082	4099	4116	4133	2	3	5	7	9	10	12	14	15
26	4150	4166	4183	4200	4216	4232	4249	4265	4281	4298	2	3	5	7	8	10	11	13	15
27	4314	4330	4346	4362	4378	4393	4409	4425	4440	4456	2	3	5	6	8	9	11	13	14
28	4472	4487	4502	4518	4533	4548	4564	4579	4594	4609	2	3	5	6	8	9	11	12	14
29	4624	4639	4654	4669	4683	4698	4713	4728	4742	4757	1	3	4	6	7	9	10	12	13
30	4771	4786	4800	4814	4829	4843	4857	4871	4886	4900	1	3	4	6	7	9	10	11	13
31	4914	4928	4942	4955	4969	4983	4997	5011	5024	5038	1	3	4	6	7	8	10	11	12
32	5051	5065	5079	5092	5105	5119	5132	5145	5159	5172	1	3	4	5	7	8	9	11	12
33	5185	5198	5211	5224	5237	5250	5263	5276	5289	5302	1	3	4	5	6	8	9	10	12
34	5315	5328	5340	5353	5366	5378	5391	5403	5416	5428	1	3	4	5	6	8	9	10	11
35	5441	5453	5465	5478	5490	5502	5514	5527	5539	5551	1	2	4	5	6	7	9	10	11
36	5563	5575	5587	5599	5611	5623	5635	5647	5658	5670	1	2	4	5	6	7	8	10	11
37	5682	5694	5705	5717	5729	5740	5752	5763	5775	5786	1	2	3	5	6	7	8	9	10
38	5798	5809	5821	5832	5843	5855	5866	5877	5888	5899	1	2	3	5	6	7	8	9	10
39	5911	5922	5933	5944	5955	5966	5977	5988	5999	6010	1	2	3	4	5	7	8	9	10
40	6021	6031	6042	6053	6064	6075	6085	6096	6107	6117	1	2	3	4	5	6	8	9	10
41	6128	6138	6149	6160	6170	6180	6191	6201	6212	6222	1	2	3	4	5	6	7	8	9
42	6232	6243	6253	6263	6274	6284	6294	6304	6314	6325	1	2	3	4	5	6	7	8	9
43	6335	6345	6355	6365	6375	6385	6395	6405	6415	6425	1	2	3	4	5	6	7	8	9
44	6435	6444	6454	6464	6474	6484	6493	6503	6513	6522	1	2	3	4	5	6	7	8	9
45	6532	6542	6551	6561	6571	6580	6590	6599	6609	6618	1	2	3	4	5	6	7	8	9
46	6628	6637	6646	6656	6665	6675	6684	6693	6702	6712	1	2	3	4	5	6	7	7	8
47	6721	6730	6739	6749	6758	6767	6776	6785	6794	6803	1	2	3	4	5	5	6	7	8
48	6812	6821	6830	6839	6848	6857	6866	6875	6884	6893	1	2	3	4	4	5	6	7	8
49	6902	6911	6920	6928	6937	6946	6955	6964	6972	6981	1	2	3	4	4	5	6	7	8

TABLE 19 : LOGARITHMS—*Contd.*

	0	1	2	3	4	5	6	7	8	9	1 2 3	4 5 6	7 8 9
50	6990	6998	7007	7016	7024	7033	7042	7050	7059	7067	1 2 3	3 4 5	6 7 8
51	7076	7084	7093	7101	7110	7118	7126	7135	7143	7152	1 2 3	3 4 5	6 7 8
52	7160	7168	7177	7185	7193	7202	7210	7218	7226	7235	1 2 2	3 4 5	6 7 7
53	7243	7251	7259	7267	7275	7284	7292	7300	7308	7316	1 2 2	3 4 5	6 6 7
54	7324	7332	7340	7348	7356	7364	7372	7380	7388	7396	1 2 2	3 4 5	6 6 7
55	7404	7412	7419	7427	7435	7443	7451	7459	7466	7474	1 2 2	3 4 5	5 6 7
56	7482	7490	7497	7505	7513	7520	7528	7536	7543	7551	1 2 2	3 4 5	5 6 7
57	7559	7566	7574	7582	7589	7597	7604	7612	7619	7627	1 2 2	3 4 5	5 6 7
58	7634	7642	7649	7657	7664	7672	7679	7686	7694	7701	1 1 2	3 4 4	5 6 7
59	7709	7716	7723	7731	7738	7745	7752	7760	7767	7774	1 1 2	3 4 4	5 6 7
60	7782	7789	7796	7803	7810	7818	7825	7832	7839	7846	1 1 2	3 4 4	5 6 6
61	7853	7860	7868	7875	7882	7889	7896	7903	7910	7917	1 1 2	3 4 4	5 6 6
62	7924	7931	7938	7945	7952	7959	7966	7973	7980	7987	1 1 2	3 3 4	5 6 6
63	7993	8000	8007	8014	8021	8028	8035	8041	8048	8055	1 1 2	3 3 4	5 5 6
64	8062	8069	8075	8082	8089	8096	8102	8109	8116	8122	1 1 2	3 3 4	5 5 6
65	8129	8136	8142	8149	8156	8162	8169	8176	8182	8189	1 1 2	3 3 4	5 5 6
66	8195	8202	8209	8215	8222	8228	8235	8241	8248	8254	1 1 2	3 3 4	5 5 6
67	8261	8267	8274	8280	8287	8293	8299	8306	8312	8319	1 1 2	3 3 4	5 5 6
68	8325	8331	8338	8344	8351	8357	8363	8370	8376	8382	1 1 2	3 3 4	4 5 6
69	8388	8395	8401	8407	8414	8420	8426	8432	8439	8443	1 1 2	2 3 4	4 5 6
70	8451	8457	8463	8470	8476	8482	8488	8494	8500	8506	1 1 2	2 3 4	4 5 6
71	8513	8519	8525	8531	8537	8543	8549	8555	8561	8567	1 1 2	2 3 4	4 5 5
72	8573	8579	8585	8591	8597	8603	8609	8615	8621	8627	1 1 2	2 3 4	4 5 5
73	8633	8639	8645	8651	8657	8663	8669	8675	8681	8686	1 1 2	2 3 4	4 5 5
74	8692	8698	8704	8710	8716	8722	8727	8733	8739	8745	1 1 2	2 3 4	4 5 5
75	8751	8756	8762	8768	8774	8779	8785	8791	8797	8802	1 1 2	2 3 3	4 5 5
76	8808	8814	8820	8825	8831	8837	8842	8848	8854	8859	1 1 2	2 3 3	4 5 5
77	8865	8871	8876	8882	8887	8893	8899	8904	8910	8915	1 1 2	2 3 3	4 4 5
78	8921	8927	8932	8938	8943	8949	8954	8960	8965	8971	1 1 2	2 3 3	4 4 5
79	8976	8982	8987	8993	8998	9004	9009	9015	9020	9025	1 1 2	2 3 3	4 4 5
80	9031	9036	9042	9047	9053	9058	9063	9069	9074	9079	1 1 2	2 3 3	4 4 5
81	9085	9090	9096	9101	9106	9112	9117	9122	9128	9133	1 1 2	2 3 3	4 4 5
82	9138	9143	9149	9154	9159	9165	9170	9175	9180	9186	1 1 2	2 3 3	4 4 5
83	9191	9196	9201	9206	9212	9217	9222	9227	9232	9238	1 1 2	2 3 3	4 4 5
84	9243	9248	9253	9258	9263	9269	9274	9279	9284	9289	1 1 2	2 3 3	4 4 5
85	9294	9299	9304	9309	9315	9320	9325	9330	9335	9340	1 1 2	2 3 3	4 4 5
86	9345	9350	9355	9360	9365	9370	9375	9380	9385	9390	1 1 2	2 3 3	4 4 5
87	9395	9400	9405	9410	9415	9420	9425	9430	9435	9440	0 1 1	2 2 3	3 4 4
88	9445	9450	9455	9460	9465	9469	9474	9479	9484	9489	0 1 1	2 2 3	3 4 4
89	9494	9499	9504	9509	9513	9518	9523	9528	9533	9538	0 1 1	2 2 3	3 4 4
90	9542	9547	9552	9557	9562	9566	9571	9576	9581	9586	0 1 1	2 2 3	3 4 4
91	9590	9595	9600	9605	9609	9614	9619	9624	9628	9633	0 1 1	2 2 3	3 4 4
92	9638	9643	9647	9652	9657	9661	9666	9671	9675	9680	0 1 1	2 2 3	3 4 4
93	9685	9689	9694	9699	9703	9708	9713	9717	9722	9727	0 1 1	2 2 3	3 4 4
94	9731	9736	9741	9745	9750	9754	9759	9763	9768	9773	0 1 1	2 2 3	3 4 4
95	9777	9782	9786	9791	9795	9800	9805	9809	9814	9818	0 1 1	2 2 3	3 4 4
96	9823	9827	9832	9836	9841	9845	9850	9854	9859	9863	0 1 1	2 2 3	3 4 4
97	9868	9872	9877	9881	9886	9890	9894	9899	9903	9908	0 1 1	2 2 3	3 4 4
98	9912	9917	9921	9926	9930	9934	9939	9943	9948	9952	0 1 1	2 2 3	3 4 4
99	9956	9961	9965	9969	9974	9978	9983	9987	9991	9996	0 1 1	2 2 3	3 3 4

TABLE 20 : ANTILOGARITHMS

	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
.00	1000	1002	1005	1007	1009	1012	1014	1016	1019	1021	0	0	1	1	1	1	2	2	2
.01	1023	1026	1028	1030	1033	1035	1038	1040	1042	1045	0	0	1	1	1	1	2	2	2
.02	1047	1050	1052	1054	1057	1059	1062	1064	1067	1069	0	0	1	1	1	1	2	2	2
.03	1072	1074	1076	1079	1081	1084	1086	1089	1091	1094	0	0	1	1	1	1	2	2	2
.04	1096	1099	1102	1104	1107	1109	1112	1114	1117	1119	0	1	1	1	1	2	2	2	2
.05	1122	1125	1127	1130	1132	1135	1138	1140	1143	1146	0	1	1	1	1	2	2	2	2
.06	1148	1151	1153	1156	1159	1161	1164	1167	1169	1172	0	1	1	1	1	2	2	2	2
.07	1175	1178	1180	1183	1186	1189	1191	1194	1197	1199	0	1	1	1	1	2	2	2	2
.08	1202	1205	1208	1211	1213	1216	1219	1222	1225	1227	0	1	1	1	1	2	2	2	3
.09	1230	1233	1236	1239	1242	1245	1247	1250	1253	1256	0	1	1	1	1	2	2	2	3
.10	1259	1262	1265	1268	1271	1274	1276	1279	1282	1285	0	1	1	1	1	2	2	2	3
.11	1288	1291	1294	1297	1300	1303	1306	1309	1312	1315	0	1	1	1	2	2	2	2	3
.12	1318	1321	1324	1327	1330	1334	1337	1340	1343	1346	0	1	1	1	2	2	2	2	3
.13	1349	1352	1355	1358	1361	1365	1368	1371	1374	1377	0	1	1	1	2	2	2	3	3
.14	1380	1384	1387	1390	1393	1396	1400	1403	1406	1409	0	1	1	1	2	2	2	3	3
.15	1413	1416	1419	1422	1426	1429	1432	1435	1439	1442	0	1	1	1	2	2	2	3	3
.16	1445	1449	1452	1455	1459	1462	1466	1469	1472	1476	0	1	1	1	2	2	2	3	3
.17	1479	1483	1486	1489	1493	1496	1500	1503	1507	1510	0	1	1	1	2	2	2	3	3
.18	1514	1517	1521	1524	1528	1531	1535	1538	1542	1545	0	1	1	1	2	2	2	3	3
.19	1549	1552	1556	1560	1563	1567	1570	1574	1578	1581	0	1	1	1	2	2	3	3	3
.20	1585	1589	1592	1596	1600	1603	1607	1611	1614	1618	0	1	1	1	2	2	3	3	3
.21	1622	1626	1629	1633	1637	1641	1644	1648	1652	1656	0	1	1	2	2	2	3	3	3
.22	1660	1663	1667	1671	1675	1679	1683	1687	1690	1694	0	1	1	2	2	2	3	3	3
.23	1698	1702	1706	1710	1714	1718	1722	1726	1730	1734	0	1	1	2	2	2	3	3	4
.24	1738	1742	1746	1750	1754	1758	1762	1766	1770	1774	0	1	1	2	2	2	3	3	4
.25	1778	1782	1786	1791	1795	1799	1803	1807	1811	1816	0	1	1	2	2	2	3	3	4
.26	1820	1824	1828	1832	1837	1841	1845	1849	1854	1858	0	1	1	2	2	3	3	3	4
.27	1862	1866	1871	1875	1879	1884	1888	1892	1897	1901	0	1	1	2	2	3	3	3	4
.28	1905	1910	1914	1919	1923	1928	1932	1936	1941	1945	0	1	1	2	2	3	3	4	4
.29	1950	1954	1959	1963	1968	1972	1977	1982	1986	1991	0	1	1	2	2	3	3	4	4
.30	1995	2000	2004	2009	2014	2018	2023	2028	2032	2037	0	1	1	2	2	3	3	4	4
.31	2042	2046	2051	2056	2061	2065	2070	2075	2080	2084	0	1	1	2	2	3	3	4	4
.32	2089	2094	2099	2104	2109	2113	2118	2123	2128	2133	0	1	1	2	2	3	3	4	4
.33	2138	2143	2148	2153	2158	2163	2168	2173	2178	2183	0	1	1	2	2	3	3	4	4
.34	2188	2193	2198	2203	2208	2213	2218	2223	2228	2234	1	1	2	2	3	3	4	4	5
.35	2239	2244	2249	2254	2259	2265	2270	2275	2280	2286	1	1	2	2	3	3	4	4	5
.36	2291	2296	2301	2307	2312	2317	2323	2328	2333	2339	1	1	2	2	3	3	4	4	5
.37	2344	2350	2355	2360	2366	2371	2377	2382	2388	2393	1	1	2	2	3	3	4	4	5
.38	2399	2404	2410	2415	2421	2427	2432	2438	2443	2449	1	1	2	2	3	3	4	4	5
.39	2455	2460	2466	2472	2477	2483	2489	2495	2500	2506	1	1	2	2	3	3	4	5	5
.40	2512	2518	2523	2529	2535	2541	2547	2553	2559	2564	1	1	2	2	3	4	4	5	5
.41	2570	2576	2582	2588	2594	2600	2606	2612	2618	2624	1	1	2	2	3	4	4	5	5
.42	2630	2636	2642	2649	2655	2661	2667	2673	2679	2685	1	1	2	2	3	4	4	5	6
.43	2692	2698	2704	2710	2716	2723	2729	2735	2742	2748	1	1	2	3	3	4	4	5	6
.44	2754	2761	2767	2773	2780	2786	2793	2799	2805	2812	1	1	2	3	3	4	4	5	6
.45	2818	2825	2831	2838	2844	2851	2858	2864	2871	2877	1	1	2	3	3	4	5	5	6
.46	2884	2891	2897	2904	2911	2917	2924	2931	2938	2944	1	1	2	3	3	4	5	5	6
.47	2951	2958	2965	2972	2979	2985	2992	2999	3006	3013	1	1	2	3	3	4	5	5	6
.48	3020	3027	3034	3041	3048	3055	3062	3069	3076	3083	1	1	2	3	4	4	5	6	6
.49	3090	3097	3105	3112	3119	3126	3133	3141	3148	3155	1	1	2	3	4	4	5	6	6

TABLE 20 : ANTILOGARITHMS—*Contd.*

	0	1	2	3	4	5	6	7	8	9	1 2 3	4 5 6	7 8 9
.50	3162	3170	3177	3184	3192	3199	3206	3214	3221	3228	1 1 2	3 4 4	5 6 7
.51	3236	3243	3251	3258	3266	3273	3281	3289	3296	3304	1 2 2	3 4 5	5 6 7
.52	3311	3319	3327	3334	3342	3350	3357	3365	3373	3381	1 2 2	3 4 5	5 6 7
.53	3388	3396	3404	3412	3420	3428	3436	3443	3451	3459	1 2 2	3 4 5	6 6 7
.54	3467	3475	3483	3491	3499	3508	3516	3524	3532	3540	1 2 2	3 4 5	6 6 7
.55	3548	3556	3565	3573	3581	3589	3597	3606	3614	3622	1 2 2	3 4 5	6 7 7
.56	3631	3639	3648	3656	3664	3673	3681	3690	3698	3707	1 2 3	3 4 5	6 7 8
.57	3715	3724	3733	3741	3750	3758	3767	3776	3784	3793	1 2 3	3 4 5	6 7 8
.58	3802	3811	3819	3828	3837	3846	3855	3864	3873	3882	1 2 3	4 4 5	6 7 8
.59	3890	3899	3908	3917	3926	3936	3945	3954	3963	3972	1 2 3	4 5 5	6 7 8
.60	3981	3990	3999	4009	4018	4027	4036	4046	4055	4064	1 2 3	4 5 6	6 7 8
.61	4074	4083	4093	4102	4111	4121	4130	4140	4150	4159	1 2 3	4 5 6	7 8 9
.62	4169	4178	4188	4198	4207	4217	4227	4236	4246	4256	1 2 3	4 5 6	7 8 9
.63	4266	4276	4285	4295	4305	4315	4325	4335	4345	4355	1 2 3	4 5 6	7 8 9
.64	4365	4375	4385	4395	4406	4416	4426	4436	4446	4457	1 2 3	4 5 6	7 8 9
.65	4467	4477	4487	4498	4508	4519	4529	4539	4550	4560	1 2 3	4 5 6	7 8 9
.66	4571	4581	4592	4603	4613	4624	4634	4645	4656	4667	1 2 3	4 5 6	7 9 10
.67	4677	4688	4699	4710	4721	4732	4742	4753	4764	4775	1 2 3	4 5 7	8 9 10
.68	4786	4797	4808	4819	4831	4842	4853	4864	4875	4887	1 2 3	4 6 7	8 9 10
.69	4898	4909	4920	4932	4943	4955	4966	4977	4989	5000	1 2 3	5 6 7	8 9 10
.70	5012	5023	5035	5047	5058	5070	5082	5093	5105	5117	1 2 4	5 6 7	8 9 11
.71	5129	5140	5152	5164	5176	5188	5200	5212	5224	5236	1 2 4	5 6 7	8 10 11
.72	5248	5260	5272	5284	5297	5309	5321	5333	5346	5358	1 2 4	5 6 7	9 10 11
73	5370	5383	5395	5408	5420	5433	5445	5458	5470	5483	1 3 4	5 6 8	9 10 11
.74	5495	5508	5521	5534	5546	5559	5572	5585	5598	5610	1 3 4	5 6 8	9 10 12
.75	5623	5636	5649	5662	5675	5689	5702	5715	5728	5741	1 3 4	5 7 8	9 10 12
.76	5754	5768	5781	5794	5808	5821	5834	5848	5861	5875	1 3 4	5 7 8	9 11 12
.77	5888	5902	5916	5929	5943	5957	5970	5984	5998	6012	1 3 4	5 7 8	10 11 12
.78	6026	6039	6053	6067	6081	6095	6109	6124	6138	6152	1 3 4	6 7 8	10 11 13
.79	6166	6180	6194	6209	6223	6237	6252	6266	6281	6295	1 3 4	6 7 9	10 11 13
.80	6310	6324	6339	6353	6368	6383	6397	6412	6427	6442	1 3 4	6 7 9	10 12 13
.81	6457	6471	6486	6501	6516	6531	6546	6561	6577	6592	2 3 5	6 8 9	11 12 14
.82	6607	6622	6637	6653	6668	6683	6699	6714	6730	6745	2 3 5	6 8 9	11 12 14
.83	6761	6776	6792	6808	6823	6839	6855	6871	6887	6902	2 3 5	6 8 9	11 13 14
.84	6918	6934	6950	6966	6982	6998	7015	7031	7047	7063	2 3 5	6 8 10	11 13 15
.85	7079	7096	7112	7129	7145	7161	7178	7194	7211	7228	2 3 5	7 8 10	12 13 15
.86	7244	7261	7278	7295	7311	7328	7345	7362	7379	7396	2 3 5	7 8 10	12 13 15
.87	7413	7430	7447	7464	7482	7499	7516	7534	7551	7568	2 3 5	7 9 10	12 14 16
.88	7586	7603	7621	7638	7656	7674	7691	7709	7727	7745	2 4 5	7 9 11	12 14 16
.89	7762	7780	7798	7816	7834	7852	7870	7889	7907	7925	2 4 5	7 9 11	13 14 16
.90	7943	7962	7980	7998	8017	8035	8054	8072	8091	8110	2 4 6	7 9 11	13 15 17
.91	8128	8147	8166	8185	8204	8222	8241	8260	8279	8299	2 4 6	8 9 11	13 15 17
.92	8318	8337	8356	8375	8395	8414	8433	8453	8472	8492	2 4 6	8 10 12	14 15 17
.93	8511	8531	8551	8570	8590	8610	8630	8650	8670	8690	2 4 6	8 10 12	14 16 18
.94	8710	8730	8750	8770	8790	8810	8831	8851	8872	8892	2 4 6	8 10 12	14 16 18
.95	8913	8933	8954	8974	8995	9016	9036	9057	9078	9099	2 4 6	8 10 12	15 17 19
.96	9120	9141	9162	9183	9204	9226	9247	9268	9290	9311	2 4 6	8 11 13	15 17 19
.97	9333	9354	9376	9397	9419	9441	9462	9484	9506	9528	2 4 7	9 11 13	15 17 20
.98	9550	9572	9594	9616	9638	9661	9683	9705	9727	9750	2 4 7	9 11 13	16 18 20
.99	9772	9795	9817	9840	9863	9886	9908	9931	9954	9977	2 5 7	9 11 14	16 18 20

TABLE 21 : BINOMIAL PROBABILITIES

p

n	*X*	.05	.10	.20	.25	.30	.40	.50	.60	.70	.75	.80	.90	.95
1	0	.9500	.9000	.8000	.7500	.7000	.6000	.5000	.4000	.3000	.2500	.2000	.1000	.0500
	1	.0500	.1000	.2000	.2500	.3000	.4000	.5000	.6000	.7000	.7500	.8000	.9000	.9500
2	0	.9025	.8100	.6400	.5625	.4900	.3600	.2500	.1600	.0900	.0625	.0400	.0100	.0025
	1	.0950	.1800	.3200	.3750	.4200	.4800	.5000	.4800	.4200	.3750	.3200	.1800	.0950
	2	.0025	.0100	.0400	.0625	.0900	.1600	.2500	.3600	.4900	.5625	.6400	.8100	.9025
3	0	.8574	.7290	.5120	.4219	.3430	.2160	.1250	.0640	.0270	.0156	.0080	.0010	.0001
	1	.1354	.2430	.3840	.4219	.4410	.4320	.3750	.2880	.1890	.1406	.0960	.0270	.0071
	2	.0071	.0270	.0960	.1406	.1890	.2880	.3750	.4320	.4410	.4219	.3840	.2430	.1354
	3	.0001	.0010	.0080	.0156	.0270	.0640	.1250	.2160	.3430	.4219	.5120	.7290	.8574
4	0	.8145	.6561	.4096	.3164	.2401	.1296	.0625	.0256	.0081	.0039	.0016	.0001	
	1	.1715	.2916	.4096	.4219	.4116	.3456	.2500	.1536	.0756	.0469	.0256	.0036	.0005
	2	.0135	.0196	.1536	.2109	.2646	.3456.	.3750	.3456	.2646	.2109	.1536	0486	.0135
	3	.0005	.0036	.0256	.0469	.0756	.1536	.2500	.3456	.4116	.4219	.4096	.2916	.1715
	4		.0001	.0016	.0039	.0081	.0256	.0625	.1296	.2401	.3164	.4096	.6561	.8145
5	0	.7738	.5905	.3277	.2373	.1681	.0778	.0313	.0102	.0024	.0010	.0003		
	1	.2036	.3281	.4096	.3955	.3602	.2592	.1562	.0768	.0284	.0146	.0064	.0004	
	2	.0214	.0729	.2048	.2637	.3087	.3456	.3125	.2304	.1323	.0879	.0512	.0081	.0011
	3	.0011	.0081	.0512	.0879	.1323	.2304	.3125	.3456	.3087	.2637	.2048	.0729	.0214
	4		.0004	.0064	.0146	.0284	.0768	.1562	.2592	.3602	.3955	.4096	.3281	.2036
	5			.0003	.0010	.0024	.0102	.0313	.0778	.1681	.2373	.3277	.5905	.7738
6	0	.7351	.5314	.2621	.1780	.1176	.0467	.0156	.0041	.0007	.0002	.0001		
	1	.2321	.3543	.3932	.3560	.3025	.1866	.0938	.0369	.0102	.0044	.0015	.0001	
	2	.0305	.0984	.2458	.2966	.3241	.3110	.2344	.1382	.0595	.0330	.0154	.0012	.0001
	3	.0021	.0146	.0819	.1318	.1852	.2765	.3125	.2765	.1852	.1318	.0819	.0146	.0021
	4	.0001	.0012	.0154	.0330	.0595	.1382	.2344	.3110	.3241	.2966	.2458	.0984	.0305
	5		.0001	.0015	.0044	.0102	.0369	.0938	.1866	.3025	.3560	.3932	.3543	.2321
	6			.0001	.0002	.0007	.0041	.0156	.0467	.1176	.1780	.2621	.5314	.7351
7	0	.6983	.4783	.2097	.1335	.0824	.0280	.0078	.0016	.0002	.0001			
	1	.2573	.3720	.3670	.3115	.2471	.1306	.0547	.0172	.0036	.0013	.0004		
	2	.0406	.1240	.2753	.3115	.3177	.2613	.1641	.0774	.0250	.0115	.0043	.0002	
	3	.0036	.0230	.1147	.1730	.2269	.2903	.2734	.1935	.0972	.0577	.0287	.0026	.0002
	4	.0002	.0026	.0287	.0577	.0972	.1935	.2734	.2903	.2269	.1730	.1147	.0230	.0036
	5		.0002	.0043	.0115	.0250	.0774	.1641	.2613	.3177	.3115	.2753	.1240	.0406
	6			.0004	.0013	.0036	.0172	.0547	.1306	.2471	.3115	.3670	.3720	.2573
	7				.0001	.0002	.0016	.0078	.0280	.0824	.1335	.2097	.4783	.6983

TABLE 21 : BINOMIAL PROBABILITIES—*Contd.*

p

n	*X*	.05	.10	.20	.25	.30	.40	.50	.60	.70	.75	.80	.90	.95
8	0	.6634	.4305	.1678	.1001	.0576	.0168	.0039	.0007	.0001				
	1	.2793	.3826	.3355	.2670	.1976	.0896	.0312	.0079	.0012	.0004	.0001		
	2	.0515	.1488	.2936	.3115	.2965	.2090	.1094	.0413	.0100	.0038	.0011		
	3	.0054	.0331	.1468	.2076	.2541	.2787	.2188	.1239	.0467	.0231	.0092	.0004	
	4	.0004	.0046	.0459	.0865	.1361	.2322	.2734	.2322	.1361	.0865	.0459	.0046	.0004
	5		.0004	.0092	.0231	.0467	.1238	.2188	.2787	.2541	.2076	.1468	.0331	.0054
	6			.0011	.0038	.0100	.0413	.1094	.2090	.2965	.3115	.2936	.1488	.0515
	7			.0001	.0004	.0012	.0079	.0312	.0896	.1976	.2670	.3355	.3826	.2793
	8					.0001	.0007	.0039	.0168	.0576	.1001	.1678	.4305	.6634
9	0	.6302	.3874	.1342	.0751	.0404	.0101	.0020	.0003					
	1	.2985	.3874	.3020	.2253	.1556	.0605	.0176	.0035	.0004	.0001			
	2	.0628	.1722	.3020	.3003	.2668	.1612	.0703	.0212	.0039	.0012	.0003		
	3	.0077	.0446	.1762	.2336	.2668	.2508	.1641	.0743	.0210	.0087	.0028	.0001	
	4	.0006	.0074	.0661	.1168	.1715	.2508	.2461	.1672	.0735	.0389	.0165	.0008	
	5		.0008	.0165	.0389	.0735	.1672	.2461	.2508	.1715	.1168	.0661	.0074	.0006
	6		.0001	.0028	.0087	.0210	.0743	.1641	.2508	.2668	.2336	.1762	.0446	.0077
	7			.0003	.0012	.0039	.0212	.0703	.1612	.2668	.3003	.3020	.1722	.0628
	8				.0001	.0004	.0035	.0176	.0605	.1556	.2253	.3020	.3874	.2985
	9						.0003	.0020	.0101	.0404	.0751	.1342	.3874	.6302
10	0	.5987	.3487	.1074	.0563	.0282	.0060	.0010	.0001					
	1	.3151	.3874	.2684	.1877	.1211	.0403	.0098	.0016	.0001				
	2	.0746	.1937	.3020	.2816	.2335	.1209	.0439	.0106	.0014	.004	.0001		
	3	.0105	.0574	.2013	.2503	.2668	.2150	.1172	.0425	.0090	.0031	.0008		
	4	.0010	.0112	.0881	.1460	.2001	.2508	.2051	.1115	.0368	.0162	.0055	.0001	
	5	.0001	.0015	.0264	.0584	.1029	.2007	.2461	.2007	.1029	.0584	.0264	.0015	.0001
	6		.0001	.0055	.0162	.0368	.1115	.2051	.2508	.2001	.1460	.0881	.0112	.0010
	7			.0008	.0031	.0090	.0425	.1172	.2150	.2668	.2503	.2013	.0574	.0105
	8			.0001	.0004	.0015	.0106	.0439	.1209	.2335	.2816	.3020	.1937	.0746
	9					.0001	.0016	.0098	.0403	.1211	.1877	.2684	.3874	.3151
	10						.0001	.0010	.0060	.0282	.0563	.1074	.3487	.5987
11	0	.5688	.3138	.0859	.0422	.0198	.0036	.0005						
	1	.3293	.3835	.2362	.1549	.0932	.0266	.0054	.0007					
	2	.0867	.2131	.2953	.2581	.1998	.0887	.0269	.0052	.0005	.0001			
	3	.0137	.0710	.2215	.2581	.2568	.1774	.0806	.0234	.0037	.0011	.0002		
	4	.0014	.0158	.1107	.1721	.2201	.2365	.1611	.0701	.0173	.0064	.0017		
	5	.0001	.0025	.0388	.0803	.1321	.2207	.2256	.1471	.0566	.0268	.0097	.0003	

TABLE 21 : BINOMIAL PROBABILITIES—*Contd.*

p

n	*X*	.05	.10	.20	.25	.30	.40	.50	.60	.70	.75	.80	.90	.95
	6		.0003	.0097	.0268	.0566	.1471	.2256	.2207	.1321	.0803	.0388	.0025	.0001
	7			.0017	.0064	.0173	.0701	.1611	.2365	.2201	.1721	.1107	.0158	.0014
	8			.0002	.0011	.0037	.0234	.0806	.1774	.2568	.2581	.2215	.0710	.0137
	9				.0001	.0005	.0052	.0269	.0887	.1998	.2581	.2953	.2131	.0867
	10						.0007	.0054	.0266	.0932	.1549	.2362	.3835	.3293
	11							.0005	.0036	.0198	.0422	.0859	.3138	.5688
12	0	.5404	.2824	.0687	.0317	.0138	.0022	.0002						
	1	.3413	.3766	.2062	.1267	.0712	.0174	.0029	.0003					
	2	.0988	.2301	.2835	.2323	.1678	.0639	.0161	.0025	.0002				
	3	.0173	.0852	.2362	.2581	.2397	.1419	.0537	.0125	.0015	.0004	.0001		
	4	.0021	.0213	.1329	.1936	.2311	.2128	.1209	.0420	.0078	.0024	.0005		
	5	.0002	.0038	.0532	.1032	.1585	.2270	.1934	.1009	.0291	.0115	.0033		
	6		.0005	.0155	.0402	.0792	.1766	.2256	.1766	.0792	.0402	.0156	.0005	
	7			.0033	.0115	.0291	.1009	.1934	.2270	.1585	.1032	.0532	.0038	.0002
	8			.0005	.0024	.0078	.0420	.1208	.2128	.2311	.1936	.1329	.0213	.0021
	9			.0001	.0004	.0015	.0125	.0537	.1419	.2397	.2581	.2362	.0852	.0173
	10					.0002	.0025	.0161	.0639	.1678	.2323	.2835	.2301	.0988
	11						.0003	.0029	.0174	.0712	.1267	.2062	.3766	.3413
	12							.0002	.0022	.0138	.0317	.0687	.2824	.5404
13	0	.5133	.2542	.0550	.0238	.0097	.0013	.0001						
	1	.3512	.3672	.1787	.1029	.0540	.0113	.0016	.0001					
	2	.1109	.2448	.2680	.2059	.1388	.0453	.0095	.0012	.0001				
	3	.0214	.0997	.2457	.2517	.2181	.1107	.0349	.0065	.0006	.0001			
	4	.0028	.0277	.1535	.2097	.2337	.1845	.0873	.0243	.0034	.0009	.0002		
	5	.0003	.0055	.0691	.1258	.1803	.2214	.1571	.0656	.0142	.0047	.0011		
	6		.0008	.0230	.0559	.1030	.1968	.2095	.1312	.0442	.0186	.0058	.0001	
	7		.0001	.0058	.0186	.0442	.1312	.2095	.1968	.1030	.0559	.0230	.0008	
	8			.0011	.0047	.0142	.0656	.1571	.2214	.1803	.1258	.0691	.0055	.0003
	9			.0002	.0009	.0034	.0243	.0873	.1845	.2337	.2097	.1535	.0277	.0028
	10				.0001	.0006	.0065	.0349	.1107	.2181	.2517	.2457	.0997	.0214
	11					.0001	.0012	.0095	.0453	.1388	.2059	.2680	.2448	.1109
	12						.0001	.0016	.0113	.0540	.1029	.1787	.3672	.3512
	13							.0001	.0013	.0097	.0238	.0550	.2542	.5133
14	0	.4877	.2288	.0440	.0178	.0068	.0008	.0001						
	1	.3593	.3559	.1539	.0832	.0407	.0073	.0009	.0001					
	2	.1229	.2570	.2501	.1802	.1134	.0317	.0056	.0006					
	3	.0259	.1142	.2501	.2402	.1943	.0845	.0222	.0033	.0002				

TABLE 21 : BINOMIAL PROBABILITIES—*Contd.*

		p											
n	*X*	.05	.10	.20	.25	.30	.40	.50	.60	.70	.75	.80	.90	.95
	4	.0037	.0349	.1720	.2202	.2290	.1549	.0611	.0136	.0014	.0003			
	5	.0004	.0078	.0860	.1468	.1963	.2066	.1222	.0408	.0066	.0018	.0003		
	6		.0013	.0322	.0734	.1262	.2066	.1833	.0918	.0232	.0082	.0020		
	7		.0002	.0092	.0280	.0618	.1574	.2095	.1574	.0618	.0280	.0092	.0002	
	8			.0020	.0082	.0232	.0918	.1833	.2066	.1262	.0734	.0322	.0013	
	9			.0003	.0018	.0066	.0408	.1222	.2066	.1963	.1468	.0860	.0078	.0004
	10				.0003	.0014	.0136	.0611	.1549	.2290	.2202	.1720	.0349	.0037
	11					.0002	.0033	.0222	.0845	.1943	.2402	.2501	.1142	.0259
	12						.0006	.0056	.0317	.1134	.1802	.2501	.2570	.1229
	13						.0001	.0009	.0073	.0407	.0832	.1539	.3559	.3593
	14							.0001	.0008	.0068	.0178	.0440	.2288	.4877
15	0	.4633	.2059	.0352	.0134	.0047	.0005							
	1	.3658	.3432	.1319	.0668	.0305	.0047	.0005						
	2	.1348	.2669	.2309	.1559	.0916	.0219	.0032	.0003					
	3	.0307	.1285	.2501	.2252	.1700	.0634	.0139	.0016	.0001				
	4	.0049	.0428	.1876	.2252	.2186	.1268	.0417	.0074	.0006	.0001			
	5	.0006	.0105	.1032	.1651	.2061	.1859	.0916	.0245	.0030	.0007	.0001		
	6		.0019	.0430	.0917	.1472	.2066	.1527	.0612	.0116	.0034	.0007		
	7		.0003	.0138	.0393	.0811	.1771	.1964	.1181	.0348	.0131	.0035		
	8			.0035	.0131	.0348	.1181	.1964	.1771	.0811	.0393	.0138	.0003	
	9			.0007	.0034	.0116	.0612	.1527	.2066	.1472	.0917	.0430	.0019	
	10			.0001	.0007	.0030	.0245	.0916	.1859	.2061	.1651	.1032	.0105	.0006
	11				.0001	.0006	.0074	.0417	.1268	.2186	.2252	.1876	.0428	.0049
	12					.0001	.0016	.0139	.0634	.1700	.2252	.2501	.1285	.0307
	13						.0003	.0032	.0219	.0916	.1559	.2309	.2669	.1348
	14							.0005	.0047	.0305	.0668	.1319	.3432	.3658
	15								.0005	.0047	.0134	.0352	.2059	.4633
20	0	.3585	.1216	.0115	.0032	.0008								
	1	.3774	.2702	.0576	.0211	.0068	.0005							
	2	.1887	.2852	.1369	.0669	.0278	.0031	.0002						
	3	.0596	.1901	.2054	.1339	.0716	.0124	.0011						
	4	.0133	.0898	.2182	.1897	.1304	.0350	.0046	.0003					
	5	.0022	.0319	.1746	.2023	.1789	.0746	.0148	.0013					
	6	.0003	.0089	.1091	.1686	.1916	.1244	.0370	.0049	.0002				
	7		.0020	.0546	.1124	.1643	.1659	.0739	.0146	.0010	.0002			
	8		.0004	.0222	.0609	.1144	.1797	.1201	.0355	.0039	.0008	.0001		
	9		.0001	.0074	.0271	.0654	.1597	.1602	.0710	.0120	.0030	.0005		

TABLE 21 : BINOMIAL PROBABILITIES—*Contd.*

		p											
n	*X*	.05	.10	.20	.25	.30	.40	.50	.60	.70	.75	.80	.90	.95
	10			.0020	.0099	.0308	.1171	.1762	.1171	.0308	.0099	.0020		
	11			.0005	.0030	.0120	.0710	.1602	.1597	.0654	.0271	.0074	.0001	
	12			.0001	.0008	.0039	.0355	.1201	.1797	.1144	.0609	.0222	.0004	
	13				.0002	.0010	.0146	.0739	.1659	.1643	.1124	.0546	.0020	
	14					.0002	.0049	.0370	.1244	.1916	.1686	.1091	.0089	.0003
	15						.0013	.0148	.0746	.1789	.2023	.1746	.0319	.0022
	16						.0003	.0046	.0350	.1304	.1897	.2182	.0898	.0133
	17							.0011	.0124	.0716	.1339	.2054	.1901	.0596
	18							.0002	.0031	.0278	.0669	.1369	.2852	.1887
	19								.0005	.0068	.0211	.0576	.2702	.3774
	20									.0008	.0032	.0115	.1216	.3585
25	0	.2774	.0718	.0038	.0008	.0001								
	1	.3650	.1994	.0236	.0063	.0014								
	2	.2305	.2659	.0708	.0251	.0074	.0004							
	3	.0930	.2265	.1358	.0641	.0243	.0019	.0001						
	4	.0269	.1384	.1867	.1175	.0572	.0071	.0004						
	5	.0060	.0646	.1960	.1645	.1030	.0199	.0016						
	6	.0010	.0239	.1633	.1828	.1472	.0442	.0053	.0002					
	7	.0001	.0072	.1108	.1654	.1712	.0800	.0143	.0009					
	8		.0018	.0623	.1241	.1651	.1200	.0322	.0031	.0001				
	9		.0004	.0294	.0781	.1336	.1511	.0609	.0088	.0004				
	10		.0001	.0118	.0417	.0916	.1612	.0974	.0212	.0013	.0002			
	11			.0040	.0189	.0536	.1465	.1328	.0434	.0042	.0007	.0001		
	12			.0012	.0074	.0268	.1139	.1550	.0760	.0115	.0025	.0003		
	13			.0003	.0025	.0115	.0760	.1550	.1139	.0268	.0074	.0012		
	14			.0001	.0007	.0042	.0434	.1328	.1465	.0536	.0189	.0040		
	15				.0002	.0013	.0212	.0974	.1612	.0916	.0417	.0118	.0001	
	16					.0004	.0088	.0609	.1511	.1336	.0781	.0294	.0004	
	17					.0001	.0031	.0322	.1200	.1651	.1241	.0623	.0018	
	18						.0009	.0143	.0800	.1712	.1654	.1108	.0072	.0002
	19						.0002	.0053	.0442	.1472	.1828	.1633	.0239	.0010
	20							.0016	.0199	.1030	.1645	.1960	.0646	.0060
	21							.0004	.0071	.0572	.1175	.1867	.1384	.0269
	22							.0001	.0019	.0243	.0641	.1358	.2265	.0930
	23								.0004	.0074	.0251	.0708	.2659	.2305
	24									.0014	.0063	.0236	.1994	.3650
	25									.0001	.0008	.0038	.0718	.2774

APPENDIX

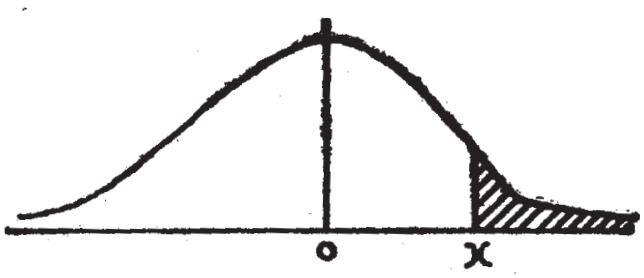
Explanation of Statistical Tables

The Normal Probability Integral

(Page 1)

$$P\ (X \geq x) = \int_{x}^{\infty} \frac{}{\sqrt{2\pi}}\ e^{-\frac{u^2}{2}}\ du$$

The table gives the above probabilities for various values of $x \geq 0$. In other words, it shows the area under the normal curve from x to ∞.



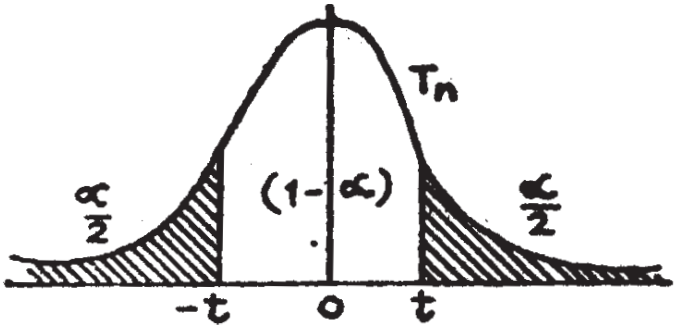
Eg. $P\ (\ X \geq 1.28) = 0.10027$ and $P\ (\ X \geq 1.29) = 0.098525$.

Distribution of *t*

(Page 2)

$$P\ (\ |\ T_n\ |\ \geq t) = 2 \int_{t}^{\infty} \frac{dt}{\sqrt{n}\ B\left(\frac{1}{2},\ \frac{n}{2}\right)\left(1 + \frac{t^2}{n}\right)^{\frac{n+1}{2}}} = \alpha.$$

The table, gives the values of t for different values of n and α.



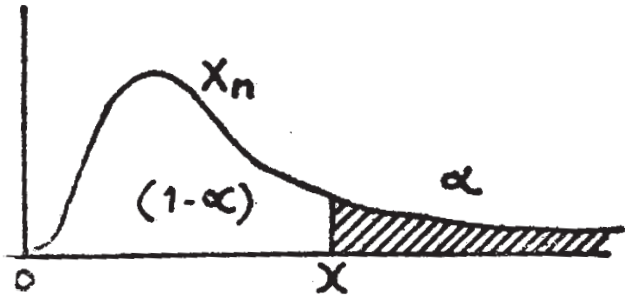
Eg. $P\ (\ |\ T_{12}\ |\ \geq 2.179) = 0.05$ and $P\ (-2.179 < T_{12} < 2.179) = 0.95$.

Distribution of χ^2

(Page 3)

$$P\ (X_n \geq x) = \int_x^\infty \frac{1}{2^{n/2}\,\mathrm{T}\ (n/2)}\ x^{n/2-1}\ \ e^{-x/2}\ dx\ =\ \alpha.$$

The table gives the values of x for different values of n and α.



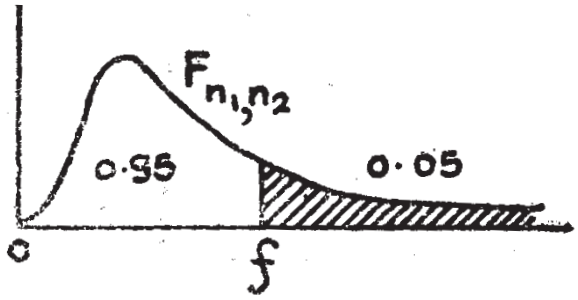
Eg. $P\ (X_{15} \geq 24.996) = 0.05$ and $P\ (X_{15} < 7.261) = 0.05$.

5% Points of e^{2z}

(Page 4)

$$P\ (F_{n1},\ _{n2}\ |\ \geq f) = \int_f^\infty \frac{\left(\frac{n_1}{n_2}\right)^{\frac{n_1}{2}}\ f\ \ \frac{n_1}{2}-1}{B\left(\frac{n_1}{2},\ \frac{n_2}{2}\right)\ \ \left(1+\frac{n_1 f}{n_2}\right)^{\frac{n_1+n_2}{2}}}\ df\ =\ 0.05.$$

The table gives the values of f for different pairs of values of n_1 and n_2



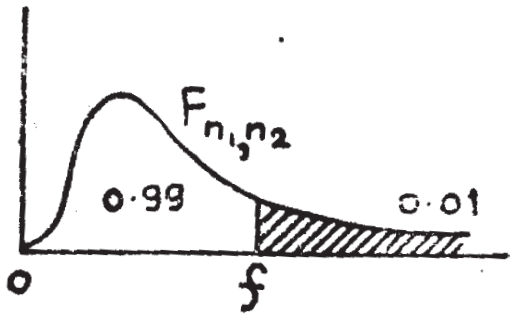
Eg. $P\ (F_{8,12} \geq 2.85) = 0.05$ and $P\ (F_{6,4} < 6.16) = 0.95$.

1% Points of e^{2z}

(Page 5)

$$P\ (F_{n1},\ _{n2} \mid \geq f) = \int_{f}^{\infty} \frac{\left(\frac{n_1}{n_2}\right)^{\frac{n_1}{2}} f^{\frac{n_1}{2}-1}}{B\left(\frac{n_1}{2}, \frac{n_2}{2}\right)\left(1+\frac{n_1 f}{n_2}\right)^{\frac{n_1+n_2}{2}}}\, df = 0.01.$$

The table gives the values of f for different pairs of values of n_1 n_2.



Eg. $P\ (F_{8,12} \geq 4.50) = 0.01$ and $P\ (F_{6,4} < 15.21) = 0.99$.

Transformation of r to z

(Page 6)

$$z = \frac{1}{2} \log \left(\frac{1+r}{1-r}\right)$$

The table gives the corresponding values of r for different values of z.

Eg. $z = 0.55 \Rightarrow r = 0.5005$ and $r = 0.7306 \Rightarrow z = 0.93$.

———————

Printed & Published by : **Dr. M. L. Jadhav, Registrar,**
University of Pune, Ganeshkhind, Pune-411 007.
Printed at : THE PUNE UNIVERSITY PRESS, GANESHKHIND, PUNE-**411 007.**
[40,000–1–2010 (859/Ganesh-1) [2]]

For Private Circulation Only

UNIVERSITY OF PUNE

STATISTICAL TABLES

For use of candidates at

B.A., B.Sc., B.Com. Examination

(Semesters I to VI)

PREFACE

It is a great pleasure to present this well complied collection of Statistical Tables covering the various topics in Statistics to the students appearing for the B.A./B.Sc./ B.Com. examination at different levels of the University of Pune.

These tables have been complied from Biometrika Tables, Fisher's Statistical Tables for Biological and Agricultural Research. 'Statistics in Research' by Ostle and Elementary Statistics' by Ingram. The explanation regarding the use of these tables alongwith some illustrative examples have also been given in the Appendix. It is hoped that the students will find these tables extremely useful in solving different types of problems in Mathematical Statistics, Statistical Inference etc.

The Pune University Press deserves sincere thanks for its kind cooperation in bringing out this booklet in the revised form in a short time.

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Budget Head-Supervision charges

Payment Register Page No. ..... C.B.F. ..... Voucher No. .....

Cash/Cheque No. ..... Date .....

THE REGISTRAR, UNIVERSITY OF PUNE ..... **Dr.**

TO

(Name of the Asstt. to the Senior Supervisor) : .....

(In Capital letters beginning with Surname)

Asstt. to the Senior Supervisor at the ..... Examination/s of April/October 20 (..... Centre).

Place of Examination : .....

	Rs.	Ps.
The amount due to me as Asstt. to the Senior Supervisor at the above Examination/s * (i) For having worked for _____ Examination on* _____ (Three Sessions) * (ii) For having worked for _____ Examination on* _____ (Two Sessions) * (iii) For having worked for _____ Examination on* _____(One Session).		
Total..		

*Date must be mentioned without fail.

Address :

.....

.....

.....

I Hereby undertake to refund any amount paid in excess of the amount due.

Signature : .....

(Asstt. to the Senior Supervisor)

PAYMENT RECEIVED

To be stamped and signed in advance.

Revenue Stamp for Payment over Rs. 5000/-

Signature : .....

(Asstt. To the senior supervisor)

Countersignature : .....

Name & signature of senior supervisor with date

[**Senior Supervisor should see that dates are filled in before the bill is countersigned.]*

(1) Bill verified as per Attendance Roll.

(2) Certified that the Asstt. to the Senior Supervisor has actually worked on the dates and sessions shown in the bill and that the remuneration due to him is paid in my presence.

.....

(Signature of the Sr. Supervisor)

* The prescribed rate of payment per Session is as per remuneration book.

P.U.P.—25,000-12-2010 (905/Exam) [5]

University of Pune

ABSTRACT FOR PEONS / JUNIOR SUPERVISORS

Name of the Examination : .....

Name of the Centre : .....

Name of the Place of Examination : .....

Sr. No.	Name of the Person & designatin	No. of days of work	Remuneration Paid Rs.	Remarks
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Certified that the remuneration due to the persons, as mentioned above, has been paid to the persons concerned in my presence on .....201 , on verification of the attendance statement.

....

Counter-signature of the Principal of the College where the examination/s was/were held.)

.....

Signature of the Senior Supervisor.

P. U. P. — 40,000-12-2010 (908) [2]

To be submitted along with the Junior Supervisor's bills **(in duplicate)**

UNIVERSITY OF PUNE

(For Junior Supervisors)

Statement showing the Supervision work at the ..... Examination/s held in October/November/March/April 20 at the ..... Centre

(Place of Examination : .....)

Sr. No.	Name of the Junior Supervisor appointed																	Total No. of full turns	Total Amount		Name of the Auhority by whom the appointment is made*	Remarks
		M	E	M	E	M	E	M	E	M	E	M	E	M	E	M	E					

M—Morning

E—Evening

Dates of Supervision (please mention dates of examination).
*Mention P against the name of the Supervisor if he has worked for morning (M) session or Evening (E) session
*Whether by University or by the Senior Supervisor.

Signature of the Senior Supervisor at the _____
Examination/s held in October/November/March/April 20
at the _____ Centre

P.U.P.—20,000-12-2010 (909) [5]

Rem. Reg. Page No.

B.L.F.
Vr. No.
Cheque No.

UNIVERSITY OF PUNE

(Individual Claim to be filled in by the Principal)

Name of the Principal : .....
(in Block Letters)

Name of the College : .....

Residential Address : .....

at the ..... Examination/s held in April/October 20 .

		Rs.	P.
1.	Allowance per session @ Rs. 200/- per session session from ..... to	...		
2.	Allowance Rs. 100/- per day for Two days-one day for preparation and one day for conclusion	...		
	Total ...			

Received record and Senior Supervisor's report in time.

Asstt. Registrar,
(Exams.)

Signature of the Examiner

Budget Head

Rem. to Exam. .....

.....

Revenue Stamp if over Rs. 5000/-

Signature across the revenue stamp is required.

Passed for Rs. ..... P. .....

(Rupees .....

.....)

Date : .....

Section Officer, (Exam. Finance),

F.O./Dy. registrar, (Exams.)

TO BE RECEIPTED IN ADVANCE

P.U.P.—25,000-12-2010 (910) [5]

Payment Register Page No. ..... CBF ..... Voucher No. .....

Cash/Cheque No. ..... Date .....

THE REGISTRAR, UNIVERSITY OF PUNE ..... **Dr.**

To

Name of the Junior Supervisor : .....

(In Block letters beginning with Surname)

at the ..... Examination/s

of April / October 200 (..... Centre).

Place of Examination : .....

	Rs.	Ps.
The amount due to me as Junior Supervisor at the above Examination/s for having worked* (i) for ..... **FULL** days† on ..... (dates) ..... (ii) for ..... **HALF** days† on ..... (dates)		
Total ..		

Address :

.....

.....

.....

I hereby undertake to refund any amount paid in excess of the amount due.

Signature : .....

(Junior Supervisor)

PAYMENT RECEIVED

To be stamped and signed in advance.

Revenue Stamp for Payment over Rs. 500/-

Signature : .....

(Junior Supervisor)

Countersignature : .....

(Senior Supervisor)

*[*Senior Supervisor should see that dates are filled in before the bill is countersigned.]*

(1) Bill verified as per Attendance Roll.

(2) Certified that the Junior Supervisor has actually worked on the dates and sessions shown in the bill and that the remuneration due to him is paid in my presence.

.....

(Signature of the Sr. Supervisor)

† The prescribed rate of payment of Rs. 30/- per Session.

P.U.P.—2,00,000–2–2001 (1968) [PC-5]

UNIVERSITY OF PUNE

[THE BILL IS TO BE PAID BY THE COLLEGE OUT OF THE EXAMINATION GRANT ISSUED TO COLLEGE]

Budget Head—Supervision Charges
THROUGH THE PRINCIPAL,

_____ **COLLEGE** _____ **Dr.**

To
(Name of Senior Supervisor) _____
(in capital letters beginning with Surname)

Senior Supervisor at the _____ Examination/s

of April/October, 201 _____ Centre.

Place of Examination _____

	Rs.	P.
To amount due to me as Senior Supervisor at the above Examination/s		
For having worked for Two Sessions on* _____		
For having worked for One Session on* _____		
Total ...		

*Dates must be mentioned without fail.

PAYMENT RECEIVED

To be stamped and signed in advance

Revenue Stamp for payment over Rs. 5000/-

The bill must be receipted in advance.

Checked

Signature : _____

Address : _____

_____

_____

Passed for Rs. _____ **P.** _____

(Rs. _____

_____**)**

Date : _____

Registrar/office Supdt. (of the College) | Accountant (of the College) | Principal (of the College)

N.B. : Rs. 50/- will be paid to Senior Supervisor for each session as per provisions of scale of Remuneration of 1995 on page 19.

P.U.P — 25,000-12-2010 (912) (Pc-2)