

INTRODUCTORY STATISTICS, 6/E

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STATISTICAL TABLES

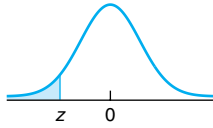
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TABLE I
Random numbers

Line number	Column number									
	00–09		10–19		20–29		30–39		40–49	
00	15544	80712	97742	21500	97081	42451	50623	56071	28882	28739
01	01011	21285	04729	39986	73150	31548	30168	76189	56996	19210
02	47435	53308	40718	29050	74858	64517	93573	51058	68501	42723
03	91312	75137	86274	59834	69844	19853	06917	17413	44474	86530
04	12775	08768	80791	16298	22934	09630	98862	39746	64623	32768
05	31466	43761	94872	92230	52367	13205	38634	55882	77518	36252
06	09300	43847	40881	51243	97810	18903	53914	31688	06220	40422
07	73582	13810	57784	72454	68997	72229	30340	08844	53924	89630
08	11092	81392	58189	22697	41063	09451	09789	00637	06450	85990
09	93322	98567	00116	35605	66790	52965	62877	21740	56476	49296
10	80134	12484	67089	08674	70753	90959	45842	59844	45214	36505
11	97888	31797	95037	84400	76041	96668	75920	68482	56855	97417
12	92612	27082	59459	69380	98654	20407	88151	56263	27126	63797
13	72744	45586	43279	44218	83638	05422	00995	70217	78925	39097
14	96256	70653	45285	26293	78305	80252	03625	40159	68760	84716
15	07851	47452	66742	83331	54701	06573	98169	37499	67756	68301
16	25594	41552	96475	56151	02089	33748	65289	89956	89559	33687
17	65358	15155	59374	80940	03411	94656	69440	47156	77115	99463
18	09402	31008	53424	21928	02198	61201	02457	87214	59750	51330
19	97424	90765	01634	37328	41243	33564	17884	94747	93650	77668

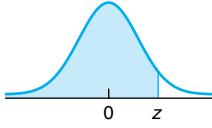
TABLE II
Areas under the
standard normal curve



Second decimal place in z										z
0.09	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01	0.00	
									0.0000 [†]	-3.9
0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-3.8
0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-3.7
0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	-3.6
0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	-3.5
0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	-3.4
0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	-3.3
0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007	-3.2
0.0007	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0010	-3.1
0.0010	0.0010	0.0011	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0013	-3.0
0.0014	0.0014	0.0015	0.0015	0.0016	0.0016	0.0017	0.0018	0.0018	0.0019	-2.9
0.0019	0.0020	0.0021	0.0021	0.0022	0.0023	0.0023	0.0024	0.0025	0.0026	-2.8
0.0026	0.0027	0.0028	0.0029	0.0030	0.0031	0.0032	0.0033	0.0034	0.0035	-2.7
0.0036	0.0037	0.0038	0.0039	0.0040	0.0041	0.0043	0.0044	0.0045	0.0047	-2.6
0.0048	0.0049	0.0051	0.0052	0.0054	0.0055	0.0057	0.0059	0.0060	0.0062	-2.5
0.0064	0.0066	0.0068	0.0069	0.0071	0.0073	0.0075	0.0078	0.0080	0.0082	-2.4
0.0084	0.0087	0.0089	0.0091	0.0094	0.0096	0.0099	0.0102	0.0104	0.0107	-2.3
0.0110	0.0113	0.0116	0.0119	0.0122	0.0125	0.0129	0.0132	0.0136	0.0139	-2.2
0.0143	0.0146	0.0150	0.0154	0.0158	0.0162	0.0166	0.0170	0.0174	0.0179	-2.1
0.0183	0.0188	0.0192	0.0197	0.0202	0.0207	0.0212	0.0217	0.0222	0.0228	-2.0
0.0233	0.0239	0.0244	0.0250	0.0256	0.0262	0.0268	0.0274	0.0281	0.0287	-1.9
0.0294	0.0301	0.0307	0.0314	0.0322	0.0329	0.0336	0.0344	0.0351	0.0359	-1.8
0.0367	0.0375	0.0384	0.0392	0.0401	0.0409	0.0418	0.0427	0.0436	0.0446	-1.7
0.0455	0.0465	0.0475	0.0485	0.0495	0.0505	0.0516	0.0526	0.0537	0.0548	-1.6
0.0559	0.0571	0.0582	0.0594	0.0606	0.0618	0.0630	0.0643	0.0655	0.0668	-1.5
0.0681	0.0694	0.0708	0.0721	0.0735	0.0749	0.0764	0.0778	0.0793	0.0808	-1.4
0.0823	0.0838	0.0853	0.0869	0.0885	0.0901	0.0918	0.0934	0.0951	0.0968	-1.3
0.0985	0.1003	0.1020	0.1038	0.1056	0.1075	0.1093	0.1112	0.1131	0.1151	-1.2
0.1170	0.1190	0.1210	0.1230	0.1251	0.1271	0.1292	0.1314	0.1335	0.1357	-1.1
0.1379	0.1401	0.1423	0.1446	0.1469	0.1492	0.1515	0.1539	0.1562	0.1587	-1.0
0.1611	0.1635	0.1660	0.1685	0.1711	0.1736	0.1762	0.1788	0.1814	0.1841	-0.9
0.1867	0.1894	0.1922	0.1949	0.1977	0.2005	0.2033	0.2061	0.2090	0.2119	-0.8
0.2148	0.2177	0.2206	0.2236	0.2266	0.2296	0.2327	0.2358	0.2389	0.2420	-0.7
0.2451	0.2483	0.2514	0.2546	0.2578	0.2611	0.2643	0.2676	0.2709	0.2743	-0.6
0.2776	0.2810	0.2843	0.2877	0.2912	0.2946	0.2981	0.3015	0.3050	0.3085	-0.5
0.3121	0.3156	0.3192	0.3228	0.3264	0.3300	0.3336	0.3372	0.3409	0.3446	-0.4
0.3483	0.3520	0.3557	0.3594	0.3632	0.3669	0.3707	0.3745	0.3783	0.3821	-0.3
0.3859	0.3897	0.3936	0.3974	0.4013	0.4052	0.4090	0.4129	0.4168	0.4207	-0.2
0.4247	0.4286	0.4325	0.4364	0.4404	0.4443	0.4483	0.4522	0.4562	0.4602	-0.1
0.4641	0.4681	0.4721	0.4761	0.4801	0.4840	0.4880	0.4920	0.4960	0.5000	-0.0

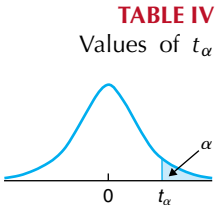
[†] For $z \leq -3.90$, the areas are 0.0000 to four decimal places.

TABLE II (cont.)
Areas under the
standard normal curve



<i>z</i>	Second decimal place in <i>z</i>									
	<i>0.00</i>	<i>0.01</i>	<i>0.02</i>	<i>0.03</i>	<i>0.04</i>	<i>0.05</i>	<i>0.06</i>	<i>0.07</i>	<i>0.08</i>	<i>0.09</i>
<i>0.0</i>	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
<i>0.1</i>	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
<i>0.2</i>	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
<i>0.3</i>	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
<i>0.4</i>	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
<i>0.5</i>	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
<i>0.6</i>	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
<i>0.7</i>	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
<i>0.8</i>	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
<i>0.9</i>	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
<i>1.0</i>	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
<i>1.1</i>	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
<i>1.2</i>	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
<i>1.3</i>	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
<i>1.4</i>	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
<i>1.5</i>	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
<i>1.6</i>	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
<i>1.7</i>	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
<i>1.8</i>	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
<i>1.9</i>	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
<i>2.0</i>	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
<i>2.1</i>	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
<i>2.2</i>	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
<i>2.3</i>	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
<i>2.4</i>	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
<i>2.5</i>	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
<i>2.6</i>	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
<i>2.7</i>	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
<i>2.8</i>	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
<i>2.9</i>	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
<i>3.0</i>	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
<i>3.1</i>	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
<i>3.2</i>	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
<i>3.3</i>	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
<i>3.4</i>	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
<i>3.5</i>	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
<i>3.6</i>	0.9998	0.9998	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
<i>3.7</i>	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
<i>3.8</i>	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
<i>3.9</i>	1.0000 [†]									

[†] For $z \geq 3.90$, the areas are 1.0000 to four decimal places.



df	$t_{0.10}$	$t_{0.05}$	$t_{0.025}$	$t_{0.01}$	$t_{0.005}$	df
1	3.078	6.314	12.706	31.821	63.657	1
2	1.886	2.920	4.303	6.965	9.925	2
3	1.638	2.353	3.182	4.541	5.841	3
4	1.533	2.132	2.776	3.747	4.604	4
5	1.476	2.015	2.571	3.365	4.032	5
6	1.440	1.943	2.447	3.143	3.707	6
7	1.415	1.895	2.365	2.998	3.499	7
8	1.397	1.860	2.306	2.896	3.355	8
9	1.383	1.833	2.262	2.821	3.250	9
10	1.372	1.812	2.228	2.764	3.169	10
11	1.363	1.796	2.201	2.718	3.106	11
12	1.356	1.782	2.179	2.681	3.055	12
13	1.350	1.771	2.160	2.650	3.012	13
14	1.345	1.761	2.145	2.624	2.977	14
15	1.341	1.753	2.131	2.602	2.947	15
16	1.337	1.746	2.120	2.583	2.921	16
17	1.333	1.740	2.110	2.567	2.898	17
18	1.330	1.734	2.101	2.552	2.878	18
19	1.328	1.729	2.093	2.539	2.861	19
20	1.325	1.725	2.086	2.528	2.845	20
21	1.323	1.721	2.080	2.518	2.831	21
22	1.321	1.717	2.074	2.508	2.819	22
23	1.319	1.714	2.069	2.500	2.807	23
24	1.318	1.711	2.064	2.492	2.797	24
25	1.316	1.708	2.060	2.485	2.787	25
26	1.315	1.706	2.056	2.479	2.779	26
27	1.314	1.703	2.052	2.473	2.771	27
28	1.313	1.701	2.048	2.467	2.763	28
29	1.311	1.699	2.045	2.462	2.756	29
30	1.310	1.697	2.042	2.457	2.750	30
31	1.309	1.696	2.040	2.453	2.744	31
32	1.309	1.694	2.037	2.449	2.738	32
33	1.308	1.692	2.035	2.445	2.733	33
34	1.307	1.691	2.032	2.441	2.728	34
35	1.306	1.690	2.030	2.438	2.724	35
36	1.306	1.688	2.028	2.434	2.719	36
37	1.305	1.687	2.026	2.431	2.715	37
38	1.304	1.686	2.024	2.429	2.712	38
39	1.304	1.685	2.023	2.426	2.708	39
40	1.303	1.684	2.021	2.423	2.704	40
41	1.303	1.683	2.020	2.421	2.701	41
42	1.302	1.682	2.018	2.418	2.698	42
43	1.302	1.681	2.017	2.416	2.695	43
44	1.301	1.680	2.015	2.414	2.692	44
45	1.301	1.679	2.014	2.412	2.690	45
46	1.300	1.679	2.013	2.410	2.687	46
47	1.300	1.678	2.012	2.408	2.685	47
48	1.299	1.677	2.011	2.407	2.682	48
49	1.299	1.677	2.010	2.405	2.680	49

TABLE IV (cont.)
Values of t_α

df	$t_{0.10}$	$t_{0.05}$	$t_{0.025}$	$t_{0.01}$	$t_{0.005}$	df
50	1.299	1.676	2.009	2.403	2.678	50
51	1.298	1.675	2.008	2.402	2.676	51
52	1.298	1.675	2.007	2.400	2.674	52
53	1.298	1.674	2.006	2.399	2.672	53
54	1.297	1.674	2.005	2.397	2.670	54
55	1.297	1.673	2.004	2.396	2.668	55
56	1.297	1.673	2.003	2.395	2.667	56
57	1.297	1.672	2.002	2.394	2.665	57
58	1.296	1.672	2.002	2.392	2.663	58
59	1.296	1.671	2.001	2.391	2.662	59
60	1.296	1.671	2.000	2.390	2.660	60
61	1.296	1.670	2.000	2.389	2.659	61
62	1.295	1.670	1.999	2.388	2.657	62
63	1.295	1.669	1.998	2.387	2.656	63
64	1.295	1.669	1.998	2.386	2.655	64
65	1.295	1.669	1.997	2.385	2.654	65
66	1.295	1.668	1.997	2.384	2.652	66
67	1.294	1.668	1.996	2.383	2.651	67
68	1.294	1.668	1.995	2.382	2.650	68
69	1.294	1.667	1.995	2.382	2.649	69
70	1.294	1.667	1.994	2.381	2.648	70
71	1.294	1.667	1.994	2.380	2.647	71
72	1.293	1.666	1.993	2.379	2.646	72
73	1.293	1.666	1.993	2.379	2.645	73
74	1.293	1.666	1.993	2.378	2.644	74
75	1.293	1.665	1.992	2.377	2.643	75
80	1.292	1.664	1.990	2.374	2.639	80
85	1.292	1.663	1.988	2.371	2.635	85
90	1.291	1.662	1.987	2.368	2.632	90
95	1.291	1.661	1.985	2.366	2.629	95
100	1.290	1.660	1.984	2.364	2.626	100
200	1.286	1.653	1.972	2.345	2.601	200
300	1.284	1.650	1.968	2.339	2.592	300
400	1.284	1.649	1.966	2.336	2.588	400
500	1.283	1.648	1.965	2.334	2.586	500
600	1.283	1.647	1.964	2.333	2.584	600
700	1.283	1.647	1.963	2.332	2.583	700
800	1.283	1.647	1.963	2.331	2.582	800
900	1.282	1.647	1.963	2.330	2.581	900
1000	1.282	1.646	1.962	2.330	2.581	1000

1.282	1.645	1.960	2.326	2.576
$Z_{0.10}$	$Z_{0.05}$	$Z_{0.025}$	$Z_{0.01}$	$Z_{0.005}$

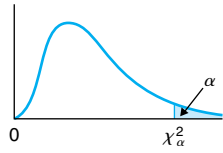
TABLE V
Values of W_α

n	$W_{0.10}$	$W_{0.05}$	$W_{0.025}$	$W_{0.01}$	$W_{0.005}$	n
7	22	24	26	28	—	7
8	28	30	32	34	36	8
9	34	37	39	42	43	9
10	41	44	47	50	52	10
11	48	52	55	59	61	11
12	56	61	64	68	71	12
13	65	70	74	78	81	13
14	74	79	84	89	92	14
15	83	90	95	100	104	15
16	94	100	106	112	117	16
17	104	112	118	125	130	17
18	116	124	131	138	143	18
19	128	136	144	152	158	19
20	140	150	158	167	173	20

TABLE VI
Values of M_α

		n_1							
n_2	α	3	4	5	6	7	8	9	10
3	0.10	14	20	27	36	45	55	66	78
	0.05	15	21	29	37	46	57	68	80
	0.025	—	22	30	38	48	58	70	82
	0.01	—	—	—	39	49	59	71	83
	0.005	—	—	—	—	—	60	72	85
4	0.10	16	23	31	40	49	60	72	85
	0.05	17	24	32	41	51	62	74	87
	0.025	18	25	33	43	53	64	76	89
	0.01	—	26	35	44	54	65	78	91
	0.005	—	—	—	45	55	66	79	93
5	0.10	18	26	34	44	54	65	78	91
	0.05	20	27	36	46	56	68	80	94
	0.025	21	28	37	47	58	70	83	96
	0.01	—	30	39	49	60	72	85	99
	0.005	—	—	40	50	61	73	86	101
6	0.10	21	29	38	48	59	71	84	98
	0.05	22	30	40	50	61	73	87	101
	0.025	23	32	41	52	63	76	89	103
	0.01	24	33	43	54	65	78	92	106
	0.005	—	34	44	55	67	80	94	108
7	0.10	23	31	41	52	63	76	89	104
	0.05	24	33	43	54	66	79	93	107
	0.025	26	35	45	56	68	81	95	110
	0.01	27	36	47	58	71	84	98	114
	0.005	—	37	48	60	72	86	101	116
8	0.10	25	34	44	56	68	81	95	110
	0.05	27	36	47	58	71	84	99	114
	0.025	28	38	49	61	73	87	102	117
	0.01	29	39	51	63	76	90	105	121
	0.005	30	40	52	65	78	92	108	124
9	0.10	27	37	48	60	72	86	101	116
	0.05	29	39	50	63	76	90	105	121
	0.025	31	41	53	65	78	93	108	124
	0.01	32	43	55	68	81	96	112	129
	0.005	33	44	56	70	84	99	114	131
10	0.10	29	40	51	64	77	91	106	123
	0.05	31	42	54	67	80	95	111	127
	0.025	33	44	56	69	83	98	114	131
	0.01	34	46	59	72	87	102	119	136
	0.005	36	48	61	74	89	105	121	139

TABLE VII
Values of χ^2_α

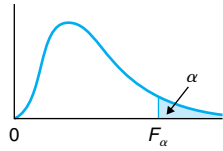


df	$\chi^2_{0.995}$	$\chi^2_{0.99}$	$\chi^2_{0.975}$	$\chi^2_{0.95}$	$\chi^2_{0.90}$
1	0.000	0.000	0.001	0.004	0.016
2	0.010	0.020	0.051	0.103	0.211
3	0.072	0.115	0.216	0.352	0.584
4	0.207	0.297	0.484	0.711	1.064
5	0.412	0.554	0.831	1.145	1.610
6	0.676	0.872	1.237	1.635	2.204
7	0.989	1.239	1.690	2.167	2.833
8	1.344	1.646	2.180	2.733	3.490
9	1.735	2.088	2.700	3.325	4.168
10	2.156	2.558	3.247	3.940	4.865
11	2.603	3.053	3.816	4.575	5.578
12	3.074	3.571	4.404	5.226	6.304
13	3.565	4.107	5.009	5.892	7.042
14	4.075	4.660	5.629	6.571	7.790
15	4.601	5.229	6.262	7.261	8.547
16	5.142	5.812	6.908	7.962	9.312
17	5.697	6.408	7.564	8.672	10.085
18	6.265	7.015	8.231	9.390	10.865
19	6.844	7.633	8.907	10.117	11.651
20	7.434	8.260	9.591	10.851	12.443
21	8.034	8.897	10.283	11.591	13.240
22	8.643	9.542	10.982	12.338	14.041
23	9.260	10.196	11.689	13.091	14.848
24	9.886	10.856	12.401	13.848	15.659
25	10.520	11.524	13.120	14.611	16.473
26	11.160	12.198	13.844	15.379	17.292
27	11.808	12.879	14.573	16.151	18.114
28	12.461	13.565	15.308	16.928	18.939
29	13.121	14.256	16.047	17.708	19.768
30	13.787	14.953	16.791	18.493	20.599
40	20.707	22.164	24.433	26.509	29.051
50	27.991	29.707	32.357	34.764	37.689
60	35.534	37.485	40.482	43.188	46.459
70	43.275	45.442	48.758	51.739	55.329
80	51.172	53.540	57.153	60.391	64.278
90	59.196	61.754	65.647	69.126	73.291
100	67.328	70.065	74.222	77.930	82.358

TABLE VII (cont.)
 Values of χ^2_α

$\chi^2_{0.10}$	$\chi^2_{0.05}$	$\chi^2_{0.025}$	$\chi^2_{0.01}$	$\chi^2_{0.005}$	df
2.706	3.841	5.024	6.635	7.879	1
4.605	5.991	7.378	9.210	10.597	2
6.251	7.815	9.348	11.345	12.838	3
7.779	9.488	11.143	13.277	14.860	4
9.236	11.070	12.833	15.086	16.750	5
10.645	12.592	14.449	16.812	18.548	6
12.017	14.067	16.013	18.475	20.278	7
13.362	15.507	17.535	20.090	21.955	8
14.684	16.919	19.023	21.666	23.589	9
15.987	18.307	20.483	23.209	25.188	10
17.275	19.675	21.920	24.725	26.757	11
18.549	21.026	23.337	26.217	28.300	12
19.812	22.362	24.736	27.688	29.819	13
21.064	23.685	26.119	29.141	31.319	14
22.307	24.996	27.488	30.578	32.801	15
23.542	26.296	28.845	32.000	34.267	16
24.769	27.587	30.191	33.409	35.718	17
25.989	28.869	31.526	34.805	37.156	18
27.204	30.143	32.852	36.191	38.582	19
28.412	31.410	34.170	37.566	39.997	20
29.615	32.671	35.479	38.932	41.401	21
30.813	33.924	36.781	40.290	42.796	22
32.007	35.172	38.076	41.638	44.181	23
33.196	36.415	39.364	42.980	45.559	24
34.382	37.653	40.647	44.314	46.928	25
35.563	38.885	41.923	45.642	48.290	26
36.741	40.113	43.195	46.963	49.645	27
37.916	41.337	44.461	48.278	50.994	28
39.087	42.557	45.722	49.588	52.336	29
40.256	43.773	46.979	50.892	53.672	30
51.805	55.759	59.342	63.691	66.767	40
63.167	67.505	71.420	76.154	79.490	50
74.397	79.082	83.298	88.381	91.955	60
85.527	90.531	95.023	100.424	104.213	70
96.578	101.879	106.628	112.328	116.320	80
107.565	113.145	118.135	124.115	128.296	90
118.499	124.343	129.563	135.811	140.177	100

TABLE VIII
Values of F_α



dfd	α	dfn								
		1	2	3	4	5	6	7	8	9
1	0.10	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86
	0.05	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
	0.025	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28
	0.01	4052.2	4999.5	5403.4	5624.6	5763.6	5859.0	5928.4	5981.1	6022.5
	0.005	16211	20000	21615	22500	23056	23437	23715	23925	24091
2	0.10	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38
	0.05	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
	0.025	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39
	0.01	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39
	0.005	198.50	199.00	199.17	199.25	199.30	199.33	199.36	199.37	199.39
3	0.10	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24
	0.05	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
	0.025	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47
	0.01	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35
	0.005	55.55	49.80	47.47	46.19	45.39	44.84	44.43	44.13	43.88
4	0.10	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94
	0.05	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
	0.025	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90
	0.01	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66
	0.005	31.33	26.28	24.26	23.15	22.46	21.97	21.62	21.35	21.14
5	0.10	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32
	0.05	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
	0.025	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68
	0.01	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16
	0.005	22.78	18.31	16.53	15.56	14.94	14.51	14.20	13.96	13.77
6	0.10	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96
	0.05	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
	0.025	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52
	0.01	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98
	0.005	18.63	14.54	12.92	12.03	11.46	11.07	10.79	10.57	10.39
7	0.10	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72
	0.05	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
	0.025	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82
	0.01	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72
	0.005	16.24	12.40	10.88	10.05	9.52	9.16	8.89	8.68	8.51
8	0.10	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56
	0.05	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
	0.025	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36
	0.01	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91
	0.005	14.69	11.04	9.60	8.81	8.30	7.95	7.69	7.50	7.34

TABLE VIII (cont.)
Values of F_α

										dfn	
	10	12	15	20	24	30	40	60	120	α	dfd
	60.19	60.71	61.22	61.74	62.00	62.26	62.53	62.79	63.06	0.10	
	241.88	243.91	245.95	248.01	249.05	250.10	251.14	252.20	253.25	0.05	
	968.63	976.71	984.87	993.10	997.25	1001.41	1005.60	1009.80	1014.02	0.025	1
	6055.8	6106.3	6157.3	6208.7	6234.6	6260.6	6286.7	631.9	6339.4	0.01	
	24224	24426	24630	24836	24940	25044	25148	25253	25359	0.005	
	9.39	9.41	9.42	9.44	9.45	9.46	9.47	9.47	9.48	0.10	
	19.40	19.41	19.43	19.45	19.45	19.46	19.47	19.48	19.49	0.05	
	39.40	39.41	39.43	39.45	39.46	39.46	39.47	39.48	39.49	0.025	2
	99.40	99.42	99.43	99.45	99.46	99.47	99.47	99.48	99.49	0.01	
	199.40	199.42	199.43	199.45	199.46	199.47	199.47	199.48	199.49	0.005	
	5.23	5.22	5.20	5.18	5.18	5.17	5.16	5.15	5.14	0.10	
	8.79	8.74	8.70	8.66	8.64	8.62	8.59	8.57	8.55	0.05	
	14.42	14.34	14.25	14.17	14.12	14.08	14.04	13.99	13.95	0.025	3
	27.23	27.05	26.87	26.69	26.60	26.50	26.41	26.32	26.22	0.01	
	43.69	43.39	43.08	42.78	42.62	42.47	42.31	42.15	41.99	0.005	
	3.92	3.90	3.87	3.84	3.83	3.82	3.80	3.79	3.78	0.10	
	5.96	5.91	5.86	5.80	5.77	5.75	5.72	5.69	5.66	0.05	
	8.84	8.75	8.66	8.56	8.51	8.46	8.41	8.36	8.31	0.025	4
	14.55	14.37	14.20	14.02	13.93	13.84	13.75	13.65	13.56	0.01	
	20.97	20.70	20.44	20.17	20.03	19.89	19.75	19.61	19.47	0.005	
	3.30	3.27	3.24	3.21	3.19	3.17	3.16	3.14	3.12	0.10	
	4.74	4.68	4.62	4.56	4.53	4.50	4.46	4.43	4.40	0.05	
	6.62	6.52	6.43	6.33	6.28	6.23	6.18	6.12	6.07	0.025	5
	10.05	9.89	9.72	9.55	9.47	9.38	9.29	9.20	9.11	0.01	
	13.62	13.38	13.15	12.90	12.78	12.66	12.53	12.40	12.27	0.005	
	2.94	2.90	2.87	2.84	2.82	2.80	2.78	2.76	2.74	0.10	
	4.06	4.00	3.94	3.87	3.84	3.81	3.77	3.74	3.70	0.05	
	5.46	5.37	5.27	5.17	5.12	5.07	5.01	4.96	4.90	0.025	6
	7.87	7.72	7.56	7.40	7.31	7.23	7.14	7.06	6.97	0.01	
	10.25	10.03	9.81	9.59	9.47	9.36	9.24	9.12	9.00	0.005	
	2.70	2.67	2.63	2.59	2.58	2.56	2.54	2.51	2.49	0.10	
	3.64	3.57	3.51	3.44	3.41	3.38	3.34	3.30	3.27	0.05	
	4.76	4.67	4.57	4.47	4.41	4.36	4.31	4.25	4.20	0.025	7
	6.62	6.47	6.31	6.16	6.07	5.99	5.91	5.82	5.74	0.01	
	8.38	8.18	7.97	7.75	7.64	7.53	7.42	7.31	7.19	0.005	
	2.54	2.50	2.46	2.42	2.40	2.38	2.36	2.34	2.32	0.10	
	3.35	3.28	3.22	3.15	3.12	3.08	3.04	3.01	2.97	0.05	
	4.30	4.20	4.10	4.00	3.95	3.89	3.84	3.78	3.73	0.025	8
	5.81	5.67	5.52	5.36	5.28	5.20	5.12	5.03	4.95	0.01	
	7.21	7.01	6.81	6.61	6.50	6.40	6.29	6.18	6.06	0.005	

TABLE VIII (cont.)
Values of F_α

dfd	α	dfn								
		1	2	3	4	5	6	7	8	9
9	0.10	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44
	0.05	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
	0.025	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03
	0.01	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35
	0.005	13.61	10.11	8.72	7.96	7.47	7.13	6.88	6.69	6.54
10	0.10	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35
	0.05	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
	0.025	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78
	0.01	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94
	0.005	12.83	9.43	8.08	7.34	6.87	6.54	6.30	6.12	5.97
11	0.10	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27
	0.05	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
	0.025	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59
	0.01	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63
	0.005	12.23	8.91	7.60	6.88	6.42	6.10	5.86	5.68	5.54
12	0.10	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21
	0.05	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
	0.025	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44
	0.01	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39
	0.005	11.75	8.51	7.23	6.52	6.07	5.76	5.52	5.35	5.20
13	0.10	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16
	0.05	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
	0.025	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31
	0.01	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19
	0.005	11.37	8.19	6.93	6.23	5.79	5.48	5.25	5.08	4.94
14	0.10	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12
	0.05	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
	0.025	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21
	0.01	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03
	0.005	11.06	7.92	6.68	6.00	5.56	5.26	5.03	4.86	4.72
15	0.10	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09
	0.05	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
	0.025	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12
	0.01	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89
	0.005	10.80	7.70	6.48	5.80	5.37	5.07	4.85	4.67	4.54
16	0.10	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06
	0.05	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
	0.025	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05
	0.01	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78
	0.005	10.58	7.51	6.30	5.64	5.21	4.91	4.69	4.52	4.38

TABLE VIII (cont.)
Values of F_α

									dfn	
10	12	15	20	24	30	40	60	120	α	dfd
2.42	2.38	2.34	2.30	2.28	2.25	2.23	2.21	2.18	0.10	
3.14	3.07	3.01	2.94	2.90	2.86	2.83	2.79	2.75	0.05	
3.96	3.87	3.77	3.67	3.61	3.56	3.51	3.45	3.39	0.025	9
5.26	5.11	4.96	4.81	4.73	4.65	4.57	4.48	4.40	0.01	
6.42	6.23	6.03	5.83	5.73	5.62	5.52	5.41	5.30	0.005	
2.32	2.28	2.24	2.20	2.18	2.16	2.13	2.11	2.08	0.10	
2.98	2.91	2.85	2.77	2.74	2.70	2.66	2.62	2.58	0.05	
3.72	3.62	3.52	3.42	3.37	3.31	3.26	3.20	3.14	0.025	10
4.85	4.71	4.56	4.41	4.33	4.25	4.17	4.08	4.00	0.01	
5.85	5.66	5.47	5.27	5.17	5.07	4.97	4.86	4.75	0.005	
2.25	2.21	2.17	2.12	2.10	2.08	2.05	2.03	2.00	0.10	
2.85	2.79	2.72	2.65	2.61	2.57	2.53	2.49	2.45	0.05	
3.53	3.43	3.33	3.23	3.17	3.12	3.06	3.00	2.94	0.025	11
4.54	4.40	4.25	4.10	4.02	3.94	3.86	3.78	3.69	0.01	
5.42	5.24	5.05	4.86	4.76	4.65	4.55	4.45	4.34	0.005	
2.19	2.15	2.10	2.06	2.04	2.01	1.99	1.96	1.93	0.10	
2.75	2.69	2.62	2.54	2.51	2.47	2.43	2.38	2.34	0.05	
3.37	3.28	3.18	3.07	3.02	2.96	2.91	2.85	2.79	0.025	12
4.30	4.16	4.01	3.86	3.78	3.70	3.62	3.54	3.45	0.01	
5.09	4.91	4.72	4.53	4.43	4.33	4.23	4.12	4.01	0.005	
2.14	2.10	2.05	2.01	1.98	1.96	1.93	1.90	1.88	0.10	
2.67	2.60	2.53	2.46	2.42	2.38	2.34	2.30	2.25	0.05	
3.25	3.15	3.05	2.95	2.89	2.84	2.78	2.72	2.66	0.025	13
4.10	3.96	3.82	3.66	3.59	3.51	3.43	3.34	3.25	0.01	
4.82	4.64	4.46	4.27	4.17	4.07	3.97	3.87	3.76	0.005	
2.10	2.05	2.01	1.96	1.94	1.91	1.89	1.86	1.83	0.10	
2.60	2.53	2.46	2.39	2.35	2.31	2.27	2.22	2.18	0.05	
3.15	3.05	2.95	2.84	2.79	2.73	2.67	2.61	2.55	0.025	14
3.94	3.80	3.66	3.51	3.43	3.35	3.27	3.18	3.09	0.01	
4.60	4.43	4.25	4.06	3.96	3.86	3.76	3.66	3.55	0.005	
2.06	2.02	1.97	1.92	1.90	1.87	1.85	1.82	1.79	0.10	
2.54	2.48	2.40	2.33	2.29	2.25	2.20	2.16	2.11	0.05	
3.06	2.96	2.86	2.76	2.70	2.64	2.59	2.52	2.46	0.025	15
3.80	3.67	3.52	3.37	3.29	3.21	3.13	3.05	2.96	0.01	
4.42	4.25	4.07	3.88	3.79	3.69	3.58	3.48	3.37	0.005	
2.03	1.99	1.94	1.89	1.87	1.84	1.81	1.78	1.75	0.10	
2.49	2.42	2.35	2.28	2.24	2.19	2.15	2.11	2.06	0.05	
2.99	2.89	2.79	2.68	2.63	2.57	2.51	2.45	2.38	0.025	16
3.69	3.55	3.41	3.26	3.18	3.10	3.02	2.93	2.84	0.01	
4.27	4.10	3.92	3.73	3.64	3.54	3.44	3.33	3.22	0.005	

TABLE VIII (cont.)
Values of F_α

dfd	α	dfn								
		1	2	3	4	5	6	7	8	9
17	0.10	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03
	0.05	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
	0.025	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98
	0.01	8.40	6.11	5.18	4.67	4.34	4.10	3.93	3.79	3.68
	0.005	10.38	7.35	6.16	5.50	5.07	4.78	4.56	4.39	4.25
18	0.10	3.01	2.62	2.42	2.29	2.20	2.13	2.08	2.04	2.00
	0.05	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46
	0.025	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93
	0.01	8.29	6.01	5.09	4.58	4.25	4.01	3.84	3.71	3.60
	0.005	10.22	7.21	6.03	5.37	4.96	4.66	4.44	4.28	4.14
19	0.10	2.99	2.61	2.40	2.27	2.18	2.11	2.06	2.02	1.98
	0.05	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42
	0.025	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88
	0.01	8.18	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52
	0.005	10.07	7.09	5.92	5.27	4.85	4.56	4.34	4.18	4.04
20	0.10	2.97	2.59	2.38	2.25	2.16	2.09	2.04	2.00	1.96
	0.05	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39
	0.025	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84
	0.01	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46
	0.005	9.94	6.99	5.82	5.17	4.76	4.47	4.26	4.09	3.96
21	0.10	2.96	2.57	2.36	2.23	2.14	2.08	2.02	1.98	1.95
	0.05	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37
	0.025	5.83	4.42	3.82	3.48	3.25	3.09	2.97	2.87	2.80
	0.01	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40
	0.005	9.83	6.89	5.73	5.09	4.68	4.39	4.18	4.01	3.88
22	0.10	2.95	2.56	2.35	2.22	2.13	2.06	2.01	1.97	1.93
	0.05	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34
	0.025	5.79	4.38	3.78	3.44	3.22	3.05	2.93	2.84	2.76
	0.01	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35
	0.005	9.73	6.81	5.65	5.02	4.61	4.32	4.11	3.94	3.81
23	0.10	2.94	2.55	2.34	2.21	2.11	2.05	1.99	1.95	1.92
	0.05	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32
	0.025	5.75	4.35	3.75	3.41	3.18	3.02	2.90	2.81	2.73
	0.01	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30
	0.005	9.63	6.73	5.58	4.95	4.54	4.26	4.05	3.88	3.75
24	0.10	2.93	2.54	2.33	2.19	2.10	2.04	1.98	1.94	1.91
	0.05	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30
	0.025	5.72	4.32	3.72	3.38	3.15	2.99	2.87	2.78	2.70
	0.01	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.26
	0.005	9.55	6.66	5.52	4.89	4.49	4.20	3.99	3.83	3.69

TABLE VIII (cont.)
 Values of F_α

									dfn	
10	12	15	20	24	30	40	60	120	α	dfd
2.00	1.96	1.91	1.86	1.84	1.81	1.78	1.75	1.72	0.10	
2.45	2.38	2.31	2.23	2.19	2.15	2.10	2.06	2.01	0.05	
2.92	2.82	2.72	2.62	2.56	2.50	2.44	2.38	2.32	0.025	17
3.59	3.46	3.31	3.16	3.08	3.00	2.92	2.83	2.75	0.01	
4.14	3.97	3.79	3.61	3.51	3.41	3.31	3.21	3.10	0.005	
1.98	1.93	1.89	1.84	1.81	1.78	1.75	1.72	1.69	0.10	
2.41	2.34	2.27	2.19	2.15	2.11	2.06	2.02	1.97	0.05	
2.87	2.77	2.67	2.56	2.50	2.44	2.38	2.32	2.26	0.025	18
3.51	3.37	3.23	3.08	3.00	2.92	2.84	2.75	2.66	0.01	
4.03	3.86	3.68	3.50	3.40	3.30	3.20	3.10	2.99	0.005	
1.96	1.91	1.86	1.81	1.79	1.76	1.73	1.70	1.67	0.10	
2.38	2.31	2.23	2.16	2.11	2.07	2.03	1.98	1.93	0.05	
2.82	2.72	2.62	2.51	2.45	2.39	2.33	2.27	2.20	0.025	19
3.43	3.30	3.15	3.00	2.92	2.84	2.76	2.67	2.58	0.01	
3.93	3.76	3.59	3.40	3.31	3.21	3.11	3.00	2.89	0.005	
1.94	1.89	1.84	1.79	1.77	1.74	1.71	1.68	1.64	0.10	
2.35	2.28	2.20	2.12	2.08	2.04	1.99	1.95	1.90	0.05	
2.77	2.68	2.57	2.46	2.41	2.35	2.29	2.22	2.16	0.025	20
3.37	3.23	3.09	2.94	2.86	2.78	2.69	2.61	2.52	0.01	
3.85	3.68	3.50	3.32	3.22	3.12	3.02	2.92	2.81	0.005	
1.92	1.87	1.83	1.78	1.75	1.72	1.69	1.66	1.62	0.10	
2.32	2.25	2.18	2.10	2.05	2.01	1.96	1.92	1.87	0.05	
2.73	2.64	2.53	2.42	2.37	2.31	2.25	2.18	2.11	0.025	21
3.31	3.17	3.03	2.88	2.80	2.72	2.64	2.55	2.46	0.01	
3.77	3.60	3.43	3.24	3.15	3.05	2.95	2.84	2.73	0.005	
1.90	1.86	1.81	1.76	1.73	1.70	1.67	1.64	1.60	0.10	
2.30	2.23	2.15	2.07	2.03	1.98	1.94	1.89	1.84	0.05	
2.70	2.60	2.50	2.39	2.33	2.27	2.21	2.14	2.08	0.025	22
3.26	3.12	2.98	2.83	2.75	2.67	2.58	2.50	2.40	0.01	
3.70	3.54	3.36	3.18	3.08	2.98	2.88	2.77	2.66	0.005	
1.89	1.84	1.80	1.74	1.72	1.69	1.66	1.62	1.59	0.10	
2.27	2.20	2.13	2.05	2.01	1.96	1.91	1.86	1.81	0.05	
2.67	2.57	2.47	2.36	2.30	2.24	2.18	2.11	2.04	0.025	23
3.21	3.07	2.93	2.78	2.70	2.62	2.54	2.45	2.35	0.01	
3.64	3.47	3.30	3.12	3.02	2.92	2.82	2.71	2.60	0.005	
1.88	1.83	1.78	1.73	1.70	1.67	1.64	1.61	1.57	0.10	
2.25	2.18	2.11	2.03	1.98	1.94	1.89	1.84	1.79	0.05	
2.64	2.54	2.44	2.33	2.27	2.21	2.15	2.08	2.01	0.025	24
3.17	3.03	2.89	2.74	2.66	2.58	2.49	2.40	2.31	0.01	
3.59	3.42	3.25	3.06	2.97	2.87	2.77	2.66	2.55	0.005	

TABLE VIII (cont.)
Values of F_α

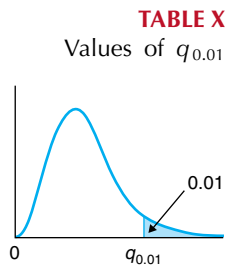
		dfn								
dfd	α	1	2	3	4	5	6	7	8	9
25	0.10	2.92	2.53	2.32	2.18	2.09	2.02	1.97	1.93	1.89
	0.05	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28
	0.025	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68
	0.01	7.77	5.57	4.68	4.18	3.85	3.63	3.46	3.32	3.22
	0.005	9.48	6.60	5.46	4.84	4.43	4.15	3.94	3.78	3.64
26	0.10	2.91	2.52	2.31	2.17	2.08	2.01	1.96	1.92	1.88
	0.05	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27
	0.025	5.66	4.27	3.67	3.33	3.10	2.94	2.82	2.73	2.65
	0.01	7.72	5.53	4.64	4.14	3.82	3.59	3.42	3.29	3.18
	0.005	9.41	6.54	5.41	4.79	4.38	4.10	3.89	3.73	3.60
27	0.10	2.90	2.51	2.30	2.17	2.07	2.00	1.95	1.91	1.87
	0.05	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25
	0.025	5.63	4.24	3.65	3.31	3.08	2.92	2.80	2.71	2.63
	0.01	7.68	5.49	4.60	4.11	3.78	3.56	3.39	3.26	3.15
	0.005	9.34	6.49	5.36	4.74	4.34	4.06	3.85	3.69	3.56
28	0.10	2.89	2.50	2.29	2.16	2.06	2.00	1.94	1.90	1.87
	0.05	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24
	0.025	5.61	4.22	3.63	3.29	3.06	2.90	2.78	2.69	2.61
	0.01	7.64	5.45	4.57	4.07	3.75	3.53	3.36	3.23	3.12
	0.005	9.28	6.44	5.32	4.70	4.30	4.02	3.81	3.65	3.52
29	0.10	2.89	2.50	2.28	2.15	2.06	1.99	1.93	1.89	1.86
	0.05	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22
	0.025	5.59	4.20	3.61	3.27	3.04	2.88	2.76	2.67	2.59
	0.01	7.60	5.42	4.54	4.04	3.73	3.50	3.33	3.20	3.09
	0.005	9.23	6.40	5.28	4.66	4.26	3.98	3.77	3.61	3.48
30	0.10	2.88	2.49	2.28	2.14	2.05	1.98	1.93	1.88	1.85
	0.05	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21
	0.025	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57
	0.01	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07
	0.005	9.18	6.35	5.24	4.62	4.23	3.95	3.74	3.58	3.45
60	0.10	2.79	2.39	2.18	2.04	1.95	1.87	1.82	1.77	1.74
	0.05	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04
	0.025	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33
	0.01	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72
	0.005	8.49	5.79	4.73	4.14	3.76	3.49	3.29	3.13	3.01
120	0.10	2.75	2.35	2.13	1.99	1.90	1.82	1.77	1.72	1.68
	0.05	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96
	0.025	5.15	3.80	3.23	2.89	2.67	2.52	2.39	2.30	2.22
	0.01	6.85	4.79	3.95	3.48	3.17	2.96	2.79	2.66	2.56
	0.005	8.18	5.54	4.50	3.92	3.55	3.28	3.09	2.93	2.81

TABLE VIII (cont.)
Values of F_α

										dfn	
<i>10</i>	<i>12</i>	<i>15</i>	<i>20</i>	<i>24</i>	<i>30</i>	<i>40</i>	<i>60</i>	<i>120</i>	α	dfd	
1.87	1.82	1.77	1.72	1.69	1.66	1.63	1.59	1.56	0.10		
2.24	2.16	2.09	2.01	1.96	1.92	1.87	1.82	1.77	0.05		
2.61	2.51	2.41	2.30	2.24	2.18	2.12	2.05	1.98	0.025	25	
3.13	2.99	2.85	2.70	2.62	2.54	2.45	2.36	2.27	0.01		
3.54	3.37	3.20	3.01	2.92	2.82	2.72	2.61	2.50	0.005		
1.86	1.81	1.76	1.71	1.68	1.65	1.61	1.58	1.54	0.10		
2.22	2.15	2.07	1.99	1.95	1.90	1.85	1.80	1.75	0.05		
2.59	2.49	2.39	2.28	2.22	2.16	2.09	2.03	1.95	0.025	26	
3.09	2.96	2.81	2.66	2.58	2.50	2.42	2.33	2.23	0.01		
3.49	3.33	3.15	2.97	2.87	2.77	2.67	2.56	2.45	0.005		
1.85	1.80	1.75	1.70	1.67	1.64	1.60	1.57	1.53	0.10		
2.20	2.13	2.06	1.97	1.93	1.88	1.84	1.79	1.73	0.05		
2.57	2.47	2.36	2.25	2.19	2.13	2.07	2.00	1.93	0.025	27	
3.06	2.93	2.78	2.63	2.55	2.47	2.38	2.29	2.20	0.01		
3.45	3.28	3.11	2.93	2.83	2.73	2.63	2.52	2.41	0.005		
1.84	1.79	1.74	1.69	1.66	1.63	1.59	1.56	1.52	0.10		
2.19	2.12	2.04	1.96	1.91	1.87	1.82	1.77	1.71	0.05		
2.55	2.45	2.34	2.23	2.17	2.11	2.05	1.98	1.91	0.025	28	
3.03	2.90	2.75	2.60	2.52	2.44	2.35	2.26	2.17	0.01		
3.41	3.25	3.07	2.89	2.79	2.69	2.59	2.48	2.37	0.005		
1.83	1.78	1.73	1.68	1.65	1.62	1.58	1.55	1.51	0.10		
2.18	2.10	2.03	1.94	1.90	1.85	1.81	1.75	1.70	0.05		
2.53	2.43	2.32	2.21	2.15	2.09	2.03	1.96	1.89	0.025	29	
3.00	2.87	2.73	2.57	2.49	2.41	2.33	2.23	2.14	0.01		
3.38	3.21	3.04	2.86	2.76	2.66	2.56	2.45	2.33	0.005		
1.82	1.77	1.72	1.67	1.64	1.61	1.57	1.54	1.50	0.10		
2.16	2.09	2.01	1.93	1.89	1.84	1.79	1.74	1.68	0.05		
2.51	2.41	2.31	2.20	2.14	2.07	2.01	1.94	1.87	0.025	30	
2.98	2.84	2.70	2.55	2.47	2.39	2.30	2.21	2.11	0.01		
3.34	3.18	3.01	2.82	2.73	2.63	2.52	2.42	2.30	0.005		
1.71	1.66	1.60	1.54	1.51	1.48	1.44	1.40	1.35	0.10		
1.99	1.92	1.84	1.75	1.70	1.65	1.59	1.53	1.47	0.05		
2.27	2.17	2.06	1.94	1.88	1.82	1.74	1.67	1.58	0.025	60	
2.63	2.50	2.35	2.20	2.12	2.03	1.94	1.84	1.73	0.01		
2.90	2.74	2.57	2.39	2.29	2.19	2.08	1.96	1.83	0.005		
1.65	1.60	1.55	1.48	1.45	1.41	1.37	1.32	1.26	0.10		
1.91	1.83	1.75	1.66	1.61	1.55	1.50	1.43	1.35	0.05		
2.16	2.05	1.94	1.82	1.76	1.69	1.61	1.53	1.43	0.025	120	
2.47	2.34	2.19	2.03	1.95	1.86	1.76	1.66	1.53	0.01		
2.71	2.54	2.37	2.19	2.09	1.98	1.87	1.75	1.61	0.005		

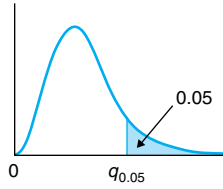
TABLE IX
 Critical values
 for a correlation
 test for normality

<i>n</i>	α		
	0.10	0.05	0.01
5	0.903	0.880	0.832
6	0.911	0.889	0.841
7	0.918	0.897	0.852
8	0.924	0.905	0.862
9	0.930	0.911	0.871
10	0.935	0.917	0.879
11	0.938	0.923	0.887
12	0.942	0.927	0.894
13	0.945	0.931	0.900
14	0.948	0.935	0.905
15	0.951	0.938	0.910
16	0.953	0.941	0.914
17	0.955	0.944	0.918
18	0.957	0.946	0.922
19	0.959	0.949	0.925
20	0.960	0.951	0.928
21	0.962	0.952	0.931
22	0.963	0.954	0.933
23	0.964	0.956	0.936
24	0.966	0.957	0.938
25	0.967	0.958	0.940
26	0.968	0.960	0.942
27	0.969	0.961	0.944
28	0.969	0.962	0.945
29	0.970	0.963	0.947
30	0.971	0.964	0.949
40	0.977	0.972	0.958
50	0.981	0.976	0.966
60	0.983	0.980	0.971
70	0.985	0.982	0.975
80	0.987	0.984	0.978
90	0.988	0.986	0.980
100	0.989	0.987	0.982
200	0.994	0.993	0.990
300	0.996	0.995	0.993
400	0.997	0.996	0.995
500	0.998	0.997	0.996
1000	0.999	0.998	0.998



ν	κ									ν
	2	3	4	5	6	7	8	9	10	
1	90.0	135	164	186	202	216	227	237	246	1
2	14.0	19.0	22.3	24.7	26.6	28.2	29.5	30.7	31.7	2
3	8.26	10.6	12.2	13.3	14.2	15.0	15.6	16.2	16.7	3
4	6.51	8.12	9.17	9.96	10.6	11.1	11.5	11.9	12.3	4
5	5.70	6.97	7.80	8.42	8.91	9.32	9.67	9.97	10.2	5
6	5.24	6.33	7.03	7.56	7.97	8.32	8.61	8.87	9.10	6
7	4.95	5.92	6.54	7.01	7.37	7.68	7.94	8.17	8.37	7
8	4.74	5.63	6.20	6.63	6.96	7.24	7.47	7.68	7.87	8
9	4.60	5.43	5.96	6.35	6.66	6.91	7.13	7.32	7.49	9
10	4.48	5.27	5.77	6.14	6.43	6.67	6.87	7.05	7.21	10
11	4.39	5.14	5.62	5.97	6.25	6.48	6.67	6.84	6.99	11
12	4.32	5.04	5.50	5.84	6.10	6.32	6.51	6.67	6.81	12
13	4.26	4.96	5.40	5.73	5.98	6.19	6.37	6.53	6.67	13
14	4.21	4.89	5.32	5.63	5.88	6.08	6.26	6.41	6.54	14
15	4.17	4.83	5.25	5.56	5.80	5.99	6.16	6.31	6.44	15
16	4.13	4.78	5.19	5.49	5.72	5.92	6.08	6.22	6.35	16
17	4.10	4.74	5.14	5.43	5.66	5.85	6.01	6.15	6.27	17
18	4.07	4.70	5.09	5.38	5.60	5.79	5.94	6.08	6.20	18
19	4.05	4.67	5.05	5.33	5.55	5.73	5.89	6.02	6.14	19
20	4.02	4.64	5.02	5.29	5.51	5.69	5.84	5.97	6.09	20
24	3.96	4.54	4.91	5.17	5.37	5.54	5.69	5.81	5.92	24
30	3.89	4.45	4.80	5.05	5.24	5.40	5.54	5.65	5.76	30
40	3.82	4.37	4.70	4.93	5.11	5.27	5.39	5.50	5.60	40
60	3.76	4.28	4.60	4.82	4.99	5.13	5.25	5.36	5.45	60
120	3.70	4.20	4.50	4.71	4.87	5.01	5.12	5.21	5.30	120
∞	3.64	4.12	4.40	4.60	4.76	4.88	4.99	5.08	5.16	∞

TABLE XI
Values of $q_{0.05}$



ν	κ									ν
	2	3	4	5	6	7	8	9	10	
1	18.0	27.0	32.8	37.1	40.4	43.1	45.4	47.4	49.1	1
2	6.08	8.33	9.80	10.9	11.7	12.4	13.0	13.5	14.0	2
3	4.50	5.91	6.82	7.50	8.04	8.48	8.85	9.18	9.46	3
4	3.93	5.04	5.76	6.29	6.71	7.05	7.35	7.60	7.83	4
5	3.64	4.60	5.22	5.67	6.03	6.33	6.58	6.80	6.99	5
6	3.46	4.34	4.90	5.30	5.63	5.90	6.12	6.32	6.49	6
7	3.34	4.16	4.68	5.06	5.36	5.61	5.82	6.00	6.16	7
8	3.26	4.04	4.53	4.89	5.17	5.40	5.60	5.77	5.92	8
9	3.20	3.95	4.41	4.76	5.02	5.24	5.43	5.59	5.74	9
10	3.15	3.88	4.33	4.65	4.91	5.12	5.30	5.46	5.60	10
11	3.11	3.82	4.26	4.57	4.82	5.03	5.20	5.35	5.49	11
12	3.08	3.77	4.20	4.51	4.75	4.95	5.12	5.27	5.39	12
13	3.06	3.73	4.15	4.45	4.69	4.88	5.05	5.19	5.32	13
14	3.03	3.70	4.11	4.41	4.64	4.83	4.99	5.13	5.25	14
15	3.01	3.67	4.08	4.37	4.59	4.78	4.94	5.08	5.20	15
16	3.00	3.65	4.05	4.33	4.56	4.74	4.90	5.03	5.15	16
17	2.98	3.63	4.02	4.30	4.52	4.70	4.86	4.99	5.11	17
18	2.97	3.61	4.00	4.28	4.49	4.67	4.82	4.96	5.07	18
19	2.96	3.59	3.98	4.25	4.47	4.65	4.79	4.92	5.04	19
20	2.95	3.58	3.96	4.23	4.45	4.62	4.77	4.90	5.01	20
24	2.92	3.53	3.90	4.17	4.37	4.54	4.68	4.81	4.92	24
30	2.89	3.49	3.85	4.10	4.30	4.46	4.60	4.72	4.82	30
40	2.86	3.44	3.79	4.04	4.23	4.39	4.52	4.63	4.73	40
60	2.83	3.40	3.74	3.98	4.16	4.31	4.44	4.55	4.65	60
120	2.80	3.36	3.68	3.92	4.10	4.24	4.36	4.47	4.56	120
∞	2.77	3.31	3.63	3.86	4.03	4.17	4.29	4.39	4.47	∞