

# Tabellen

Die nachstehenden Tabellen wurden mit freundlicher Genehmigung der betreffenden Verlage, Herausgeber bzw. Institute der folgenden Literatur (teilweise in Auszügen) entnommen:

Birnbaum u. Hall (1960) (Institute of Mathematical Statistics)	<b>J</b>
Conover (1971) (Wiley, New York)	<b>P, Q</b>
Hollander u. Wolfe (1973) (Wiley, New York)	<b>R</b>
Kayser u.a. (1972) (Math. Operationsf. u. Statistik)	<b>M</b>
Kendall (1970) (Griffin, London)	<b>T</b>
Kruskal u. Wallis (1952) (J. Amer. Statist. Assoc.)	<b>O</b>
Laubscher u.a. (1968) (Technometrics)	<b>N</b>
Massey (1952) (Institute of Mathematical Statistics)	<b>K</b>
McCornack (1965) (J. Amer. Statist. Assoc.)	<b>H</b>
Pearson u. Hartley (1972) (Cambridge at the University Press)	<b>L</b>
Swed u. Eisenhart (1943) (Institute of Mathematical Statistics)	<b>I</b>
Wetzel u.a. (1967) (De Gruyter, Berlin)	<b>G, S</b>
Eigene Berechnungen	<b>A, B, C, D, E, F</b>

## A Binomialverteilung

$X \sim Bi(n, p)$ ; die Werte der Tabelle geben an

$$F(x) = P(X \leq x) = \sum_{i=0}^x \binom{n}{i} p^i (1-p)^{n-i}$$

für spezielle  $p$  mit  $0.01 \leq p \leq 0.95$  an.

		$p$									
	$x$	0.01	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
$n = 1$	0	0.9900	0.9500	0.9000	0.8500	0.8000	0.7500	0.7000	0.6500	0.6000	0.5500
	1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 2$	0	0.9801	0.9025	0.8100	0.7225	0.6400	0.5625	0.4900	0.4225	0.3600	0.3025
	1	0.9999	0.9975	0.9900	0.9775	0.9600	0.9375	0.9100	0.8775	0.8400	0.7975
	2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 3$	0	0.9703	0.8574	0.7290	0.6141	0.5120	0.4219	0.3430	0.2746	0.2160	0.1664
	1	0.9997	0.9928	0.9720	0.9393	0.8960	0.8438	0.7840	0.7183	0.6480	0.5748
	2	1.0000	0.9999	0.9990	0.9966	0.9920	0.9844	0.9730	0.9571	0.9360	0.9089
	3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 4$	0	0.9606	0.8145	0.6561	0.5220	0.4096	0.3164	0.2401	0.1785	0.1296	0.0915
	1	0.9994	0.9860	0.9477	0.8905	0.8192	0.7383	0.6517	0.5630	0.4752	0.3910
	2	1.0000	0.9995	0.9963	0.9880	0.9728	0.9492	0.9163	0.8735	0.8208	0.7585
	3	1.0000	1.0000	0.9999	0.9995	0.9984	0.9961	0.9919	0.9850	0.9744	0.9590
	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 5$	0	0.9510	0.7738	0.5905	0.4437	0.3277	0.2373	0.1681	0.1160	0.0778	0.0503
	1	0.9990	0.9774	0.9185	0.8352	0.7373	0.6328	0.5282	0.4284	0.3370	0.2562
	2	1.0000	0.9988	0.9914	0.9734	0.9421	0.8965	0.8369	0.7648	0.6826	0.5931
	3	1.0000	1.0000	0.9995	0.9978	0.9933	0.9844	0.9692	0.9460	0.9130	0.8688
	4	1.0000	1.0000	1.0000	0.9999	0.9997	0.9990	0.9976	0.9947	0.9898	0.9815
	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 6$	0	0.9415	0.7351	0.5314	0.3771	0.2621	0.1780	0.1176	0.0754	0.0467	0.0277
	1	0.9985	0.9672	0.8857	0.7765	0.6554	0.5339	0.4202	0.3191	0.2333	0.1636
	2	1.0000	0.9978	0.9842	0.9527	0.9011	0.8306	0.7443	0.6471	0.5443	0.4415
	3	1.0000	0.9999	0.9987	0.9941	0.9830	0.9624	0.9295	0.8826	0.8208	0.7447
	4	1.0000	1.0000	0.9999	0.9996	0.9984	0.9954	0.9891	0.9777	0.9590	0.9308
	5	1.0000	1.0000	1.0000	1.0000	0.9999	0.9998	0.9993	0.9982	0.9959	0.9917
	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 7$	0	0.9321	0.6983	0.4783	0.3206	0.2097	0.1335	0.0824	0.0490	0.0280	0.0152
	1	0.9980	0.9556	0.8503	0.7166	0.5767	0.4449	0.3294	0.2338	0.1586	0.1024
	2	1.0000	0.9962	0.9743	0.9262	0.8520	0.7564	0.6471	0.5323	0.4199	0.3164
	3	1.0000	0.9998	0.9973	0.9879	0.9667	0.9294	0.8740	0.8002	0.7102	0.6083
	4	1.0000	1.0000	0.9998	0.9988	0.9953	0.9871	0.9712	0.9444	0.9037	0.8471
	5	1.0000	1.0000	1.0000	0.9999	0.9996	0.9987	0.9962	0.9910	0.9812	0.9643
	6	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9998	0.9994	0.9984	0.9963
	7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
$n = 1$	0	0.5000	0.4500	0.4000	0.3500	0.3000	0.2500	0.2000	0.1500	0.0500
	1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 2$	0	0.2500	0.2025	0.1600	0.1225	0.0900	0.0625	0.0400	0.0225	0.0100
	1	0.7500	0.6975	0.6400	0.5775	0.5100	0.4375	0.3600	0.2775	0.1900
	2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 3$	0	0.1250	0.0911	0.0640	0.0429	0.0270	0.0156	0.0080	0.0034	0.0010
	1	0.5000	0.4252	0.3520	0.2817	0.2160	0.1563	0.1040	0.0608	0.0280
	2	0.8750	0.8336	0.7840	0.7254	0.6570	0.5781	0.4880	0.3859	0.2710
	3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 4$	0	0.0625	0.0410	0.0256	0.0150	0.0081	0.0039	0.0016	0.0005	0.0001
	1	0.3125	0.2415	0.1792	0.1265	0.0837	0.0508	0.0272	0.0120	0.0037
	2	0.6875	0.6090	0.5248	0.4370	0.3483	0.2617	0.1808	0.1095	0.0523
	3	0.9375	0.9085	0.8704	0.8215	0.7599	0.6836	0.5904	0.4780	0.3439
	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 5$	0	0.0313	0.0185	0.0102	0.0053	0.0024	0.0010	0.0003	0.0001	0.0000
	1	0.1875	0.1312	0.0870	0.0540	0.0308	0.0156	0.0067	0.0022	0.0005
	2	0.5000	0.4069	0.3174	0.2352	0.1631	0.1035	0.0579	0.0266	0.0086
	3	0.8125	0.7438	0.6630	0.5716	0.4718	0.3672	0.2627	0.1648	0.0815
	4	0.9688	0.9497	0.9222	0.8840	0.8319	0.7627	0.6723	0.5563	0.4095
	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 6$	0	0.0156	0.0083	0.0041	0.0018	0.0007	0.0002	0.0001	0.0000	0.0000
	1	0.1094	0.0692	0.0410	0.0223	0.0109	0.0046	0.0016	0.0004	0.0001
	2	0.3438	0.2553	0.1792	0.1174	0.0705	0.0376	0.0170	0.0059	0.0013
	3	0.6563	0.5585	0.4557	0.3529	0.2557	0.1694	0.0989	0.0473	0.0158
	4	0.8906	0.8364	0.7667	0.6809	0.5798	0.4661	0.3446	0.2235	0.1143
	5	0.9844	0.9723	0.9533	0.9246	0.8824	0.8220	0.7379	0.6229	0.4686
	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 7$	0	0.0078	0.0037	0.0016	0.0006	0.0002	0.0001	0.0000	0.0000	0.0000
	1	0.0625	0.0357	0.0188	0.0090	0.0038	0.0013	0.0004	0.0001	0.0000
	2	0.2266	0.1529	0.0963	0.0556	0.0288	0.0129	0.0047	0.0012	0.0002
	3	0.5000	0.3917	0.2898	0.1998	0.1260	0.0706	0.0333	0.0121	0.0027
	4	0.7734	0.6836	0.5801	0.4677	0.3529	0.2436	0.1480	0.0738	0.0257
	5	0.9375	0.8976	0.8414	0.7662	0.6706	0.5551	0.4233	0.2834	0.1497
	6	0.9922	0.9848	0.9720	0.9510	0.9176	0.8665	0.7903	0.6794	0.5217
	7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.01	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
0	0.9227	0.6634	0.4305	0.2725	0.1678	0.1001	0.0576	0.0319	0.0168	0.0084
1	0.9973	0.9428	0.8131	0.6572	0.5033	0.3671	0.2553	0.1691	0.1064	0.0632
2	0.9999	0.9942	0.9619	0.8948	0.7969	0.6785	0.5518	0.4278	0.3154	0.2201
3	1.0000	0.9996	0.9950	0.9786	0.9437	0.8862	0.8059	0.7064	0.5941	0.4770
4	1.0000	1.0000	0.9996	0.9971	0.9896	0.9727	0.9420	0.8939	0.8263	0.7396
5	1.0000	1.0000	1.0000	0.9998	0.9988	0.9958	0.9887	0.9747	0.9502	0.9115
6	1.0000	1.0000	1.0000	1.0000	0.9999	0.9996	0.9987	0.9964	0.9915	0.9819
7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9998	0.9993	0.9983
$n = 8$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.9135	0.6302	0.3874	0.2316	0.1342	0.0751	0.0404	0.0207	0.0101	0.0046
1	0.9966	0.9288	0.7748	0.5995	0.4362	0.3003	0.1960	0.1211	0.0705	0.0385
2	0.9999	0.9916	0.9470	0.8591	0.7382	0.6007	0.4628	0.3373	0.2318	0.1495
3	1.0000	0.9994	0.9917	0.9661	0.9144	0.8343	0.7297	0.6089	0.4826	0.3614
4	1.0000	1.0000	0.9991	0.9944	0.9804	0.9511	0.9012	0.8283	0.7334	0.6214
5	1.0000	1.0000	0.9999	0.9994	0.9969	0.9900	0.9747	0.9464	0.9006	0.8342
6	1.0000	1.0000	1.0000	1.0000	0.9997	0.9987	0.9957	0.9888	0.9750	0.9502
7	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9996	0.9986	0.9962	0.9909
8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9997	0.9992
$n = 9$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.9044	0.5987	0.3487	0.1969	0.1074	0.0563	0.0282	0.0135	0.0060	0.0025
1	0.9957	0.9139	0.7361	0.5443	0.3758	0.2440	0.1493	0.0860	0.0464	0.0233
2	0.9999	0.9885	0.9298	0.8202	0.6778	0.5256	0.3828	0.2616	0.1673	0.0996
3	1.0000	0.9990	0.9872	0.9500	0.8791	0.7759	0.6496	0.5138	0.3823	0.2660
4	1.0000	0.9999	0.9984	0.9901	0.9672	0.9219	0.8497	0.7515	0.6331	0.5044
5	1.0000	1.0000	0.9999	0.9986	0.9936	0.9803	0.9527	0.9051	0.8338	0.7384
6	1.0000	1.0000	1.0000	0.9999	0.9991	0.9965	0.9894	0.9740	0.9452	0.8980
7	1.0000	1.0000	1.0000	1.0000	0.9999	0.9996	0.9984	0.9952	0.9877	0.9726
8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9995	0.9983	0.9955
9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9997
$n = 10$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.8953	0.5688	0.3138	0.1673	0.0859	0.0422	0.0198	0.0088	0.0036	0.0014
1	0.9948	0.8981	0.6974	0.4922	0.3221	0.1971	0.1130	0.0606	0.0302	0.0139
2	0.9998	0.9848	0.9104	0.7788	0.6174	0.4552	0.3127	0.2001	0.1189	0.0652
3	1.0000	0.9984	0.9815	0.9306	0.8389	0.7133	0.5696	0.4256	0.2963	0.1911
4	1.0000	0.9999	0.9972	0.9841	0.9496	0.8854	0.7897	0.6683	0.5328	0.3971
5	1.0000	1.0000	0.9997	0.9973	0.9883	0.9657	0.9218	0.8513	0.7535	0.6331
6	1.0000	1.0000	1.0000	0.9997	0.9980	0.9924	0.9784	0.9499	0.9006	0.8262
7	1.0000	1.0000	1.0000	1.0000	0.9998	0.9988	0.9957	0.9878	0.9707	0.9390
8	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9994	0.9980	0.9941	0.9852
9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998	0.9993	0.9978
10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998
$n = 11$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
0	0.0039	0.0017	0.0007	0.0002	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0352	0.0181	0.0085	0.0036	0.0013	0.0004	0.0001	0.0000	0.0000	0.0000
2	0.1445	0.0885	0.0498	0.0253	0.0113	0.0042	0.0012	0.0002	0.0000	0.0000
3	0.3633	0.2604	0.1737	0.1061	0.0580	0.0273	0.0104	0.0029	0.0004	0.0000
4	0.6367	0.5230	0.4059	0.2936	0.1941	0.1138	0.0563	0.0214	0.0050	0.0004
5	0.8555	0.7799	0.6846	0.5722	0.4482	0.3215	0.2031	0.1052	0.0381	0.0058
6	0.9648	0.9368	0.8936	0.8309	0.7447	0.6329	0.4967	0.3428	0.1869	0.0572
7	0.9961	0.9916	0.9832	0.9681	0.9424	0.8999	0.8322	0.7275	0.5695	0.3366
$n = 8$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0020	0.0008	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0195	0.0091	0.0038	0.0014	0.0004	0.0001	0.0000	0.0000	0.0000	0.0000
2	0.0898	0.0498	0.0250	0.0112	0.0043	0.0013	0.0003	0.0000	0.0000	0.0000
3	0.2539	0.1658	0.0994	0.0536	0.0253	0.0100	0.0031	0.0006	0.0001	0.0000
4	0.5000	0.3786	0.2666	0.1717	0.0988	0.0489	0.0196	0.0056	0.0009	0.0000
5	0.7461	0.6386	0.5174	0.3911	0.2703	0.1657	0.0856	0.0339	0.0083	0.0006
6	0.9102	0.8505	0.7682	0.6627	0.5372	0.3993	0.2618	0.1409	0.0530	0.0084
7	0.9805	0.9615	0.9295	0.8789	0.8040	0.6997	0.5638	0.4005	0.2252	0.0712
8	0.9980	0.9954	0.9899	0.9793	0.9596	0.9249	0.8658	0.7684	0.6126	0.3698
$n = 9$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0010	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0107	0.0045	0.0017	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0547	0.0274	0.0123	0.0048	0.0016	0.0004	0.0001	0.0000	0.0000	0.0000
3	0.1719	0.1020	0.0548	0.0260	0.0106	0.0035	0.0009	0.0001	0.0000	0.0000
4	0.3770	0.2616	0.1662	0.0949	0.0473	0.0197	0.0064	0.0014	0.0001	0.0000
5	0.6230	0.4956	0.3669	0.2485	0.1503	0.0781	0.0328	0.0099	0.0016	0.0001
6	0.8281	0.7340	0.6177	0.4862	0.3504	0.2241	0.1209	0.0500	0.0128	0.0010
7	0.9453	0.9004	0.8327	0.7384	0.6172	0.4744	0.3222	0.1798	0.0702	0.0115
8	0.9893	0.9767	0.9536	0.9140	0.8507	0.7560	0.6242	0.4557	0.2639	0.0861
9	0.9990	0.9975	0.9940	0.9865	0.9718	0.9437	0.8926	0.8031	0.6513	0.4013
$n = 10$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0005	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0059	0.0022	0.0007	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0327	0.0148	0.0059	0.0020	0.0006	0.0001	0.0000	0.0000	0.0000	0.0000
3	0.1133	0.0610	0.0293	0.0122	0.0043	0.0012	0.0002	0.0000	0.0000	0.0000
4	0.2744	0.1738	0.0994	0.0501	0.0216	0.0076	0.0020	0.0003	0.0000	0.0000
5	0.5000	0.3669	0.2465	0.1487	0.0782	0.0343	0.0117	0.0027	0.0003	0.0000
6	0.7256	0.6029	0.4672	0.3317	0.2103	0.1146	0.0504	0.0159	0.0028	0.0001
7	0.8867	0.8089	0.7037	0.5744	0.4304	0.2867	0.1611	0.0694	0.0185	0.0016
8	0.9673	0.9348	0.8811	0.7999	0.6873	0.5448	0.3826	0.2212	0.0896	0.0152
9	0.9941	0.9861	0.9698	0.9394	0.8870	0.8029	0.6779	0.5078	0.3026	0.1019
10	0.9995	0.9986	0.9964	0.9912	0.9802	0.9578	0.9141	0.8327	0.6862	0.4312
$n = 11$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.01	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
0	0.8864	0.5404	0.2824	0.1422	0.0687	0.0317	0.0138	0.0057	0.0022	0.0008
1	0.9938	0.8816	0.6590	0.4435	0.2749	0.1584	0.0850	0.0424	0.0196	0.0083
2	0.9998	0.9804	0.8891	0.7358	0.5583	0.3907	0.2528	0.1513	0.0834	0.0421
3	1.0000	0.9978	0.9744	0.9078	0.7946	0.6488	0.4925	0.3467	0.2253	0.1345
4	1.0000	0.9998	0.9957	0.9761	0.9274	0.8424	0.7237	0.5833	0.4382	0.3044
5	1.0000	1.0000	0.9995	0.9954	0.9806	0.9456	0.8822	0.7873	0.6652	0.5269
6	1.0000	1.0000	0.9999	0.9993	0.9961	0.9857	0.9614	0.9154	0.8418	0.7393
7	1.0000	1.0000	1.0000	0.9999	0.9994	0.9972	0.9905	0.9745	0.9427	0.8883
8	1.0000	1.0000	1.0000	1.0000	0.9999	0.9996	0.9983	0.9944	0.9847	0.9644
9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998	0.9992	0.9972	0.9921
10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9997	0.9989
11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999
$n = 12$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.8775	0.5133	0.2542	0.1209	0.0550	0.0238	0.0097	0.0037	0.0013	0.0004
1	0.9928	0.8646	0.6213	0.3983	0.2336	0.1267	0.0637	0.0296	0.0126	0.0049
2	0.9997	0.9755	0.8661	0.6920	0.5017	0.3326	0.2025	0.1132	0.0579	0.0269
3	1.0000	0.9969	0.9658	0.8820	0.7473	0.5843	0.4206	0.2783	0.1686	0.0929
4	1.0000	0.9997	0.9935	0.9658	0.9009	0.7940	0.6543	0.5005	0.3530	0.2279
5	1.0000	1.0000	0.9991	0.9925	0.9700	0.9198	0.8346	0.7159	0.5744	0.4268
6	1.0000	1.0000	0.9999	0.9987	0.9930	0.9757	0.9376	0.8705	0.7712	0.6437
7	1.0000	1.0000	1.0000	0.9998	0.9988	0.9944	0.9818	0.9538	0.9023	0.8212
8	1.0000	1.0000	1.0000	1.0000	0.9998	0.9990	0.9960	0.9874	0.9679	0.9302
9	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9993	0.9975	0.9922	0.9797
10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9997	0.9987	0.9959
11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9995
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 13$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.8687	0.4877	0.2288	0.1028	0.0440	0.0178	0.0068	0.0024	0.0008	0.0002
1	0.9916	0.8470	0.5846	0.3567	0.1979	0.1010	0.0475	0.0205	0.0081	0.0029
2	0.9997	0.9699	0.8416	0.6479	0.4481	0.2811	0.1608	0.0839	0.0398	0.0170
3	1.0000	0.9958	0.9559	0.8535	0.6982	0.5213	0.3552	0.2205	0.1243	0.0632
4	1.0000	0.9996	0.9908	0.9533	0.8702	0.7415	0.5842	0.4227	0.2793	0.1672
5	1.0000	1.0000	0.9985	0.9885	0.9561	0.8883	0.7805	0.6405	0.4859	0.3373
6	1.0000	1.0000	0.9998	0.9978	0.9884	0.9617	0.9067	0.8164	0.6925	0.5461
7	1.0000	1.0000	1.0000	0.9997	0.9976	0.9897	0.9685	0.9247	0.8499	0.7414
8	1.0000	1.0000	1.0000	1.0000	0.9996	0.9978	0.9917	0.9757	0.9417	0.8811
9	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9983	0.9940	0.9825	0.9574
10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998	0.9989	0.9961	0.9886
11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9994	0.9978
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9997
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 14$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
0	0.0002	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0032	0.0011	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0193	0.0079	0.0028	0.0008	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0730	0.0356	0.0153	0.0056	0.0017	0.0004	0.0001	0.0000	0.0000	0.0000
4	0.1938	0.1117	0.0573	0.0255	0.0095	0.0028	0.0006	0.0001	0.0000	0.0000
5	0.3872	0.2607	0.1582	0.0846	0.0386	0.0143	0.0039	0.0007	0.0001	0.0000
6	0.6128	0.4731	0.3348	0.2127	0.1178	0.0544	0.0194	0.0046	0.0005	0.0000
7	0.8062	0.6956	0.5618	0.4167	0.2763	0.1576	0.0726	0.0239	0.0043	0.0002
8	0.9270	0.8655	0.7747	0.6533	0.5075	0.3512	0.2054	0.0922	0.0256	0.0022
9	0.9807	0.9579	0.9166	0.8487	0.7472	0.6093	0.4417	0.2642	0.1109	0.0196
10	0.9968	0.9917	0.9804	0.9576	0.9150	0.8416	0.7251	0.5565	0.3410	0.1184
11	0.9998	0.9992	0.9978	0.9943	0.9862	0.9683	0.9313	0.8578	0.7176	0.4596
$n = 12$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0017	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0112	0.0041	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0461	0.0203	0.0078	0.0025	0.0007	0.0001	0.0000	0.0000	0.0000	0.0000
4	0.1334	0.0698	0.0321	0.0126	0.0040	0.0010	0.0002	0.0000	0.0000	0.0000
5	0.2905	0.1788	0.0977	0.0462	0.0182	0.0056	0.0012	0.0002	0.0000	0.0000
6	0.5000	0.3563	0.2288	0.1295	0.0624	0.0243	0.0070	0.0013	0.0001	0.0000
7	0.7095	0.5732	0.4256	0.2841	0.1654	0.0802	0.0300	0.0075	0.0009	0.0000
8	0.8666	0.7721	0.6470	0.4995	0.3457	0.2060	0.0991	0.0342	0.0065	0.0003
9	0.9539	0.9071	0.8314	0.7217	0.5794	0.4157	0.2527	0.1180	0.0342	0.0031
10	0.9888	0.9731	0.9421	0.8868	0.7975	0.6674	0.4983	0.3080	0.1339	0.0245
11	0.9983	0.9951	0.9874	0.9704	0.9363	0.8733	0.7664	0.6017	0.3787	0.1354
12	0.9999	0.9996	0.9987	0.9963	0.9903	0.9762	0.9450	0.8791	0.7458	0.4867
$n = 13$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0009	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0065	0.0022	0.0006	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0287	0.0114	0.0039	0.0011	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0898	0.0426	0.0175	0.0060	0.0017	0.0003	0.0000	0.0000	0.0000	0.0000
5	0.2120	0.1189	0.0583	0.0243	0.0083	0.0022	0.0004	0.0000	0.0000	0.0000
6	0.3953	0.2586	0.1501	0.0753	0.0315	0.0103	0.0024	0.0003	0.0000	0.0000
7	0.6047	0.4539	0.3075	0.1836	0.0933	0.0383	0.0116	0.0022	0.0002	0.0000
8	0.7880	0.6627	0.5141	0.3595	0.2195	0.1117	0.0439	0.0115	0.0015	0.0000
9	0.9102	0.8328	0.7207	0.5773	0.4158	0.2585	0.1298	0.0467	0.0092	0.0004
10	0.9713	0.9368	0.8757	0.7795	0.6448	0.4787	0.3018	0.1465	0.0441	0.0042
11	0.9935	0.9830	0.9602	0.9161	0.8392	0.7189	0.5519	0.3521	0.1584	0.0301
12	0.9991	0.9971	0.9919	0.9795	0.9525	0.8990	0.8021	0.6433	0.4154	0.1530
13	0.9999	0.9998	0.9992	0.9976	0.9932	0.9822	0.9560	0.8972	0.7712	0.5123
$n = 14$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.01	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
0	0.8601	0.4633	0.2059	0.0874	0.0352	0.0134	0.0047	0.0016	0.0005	0.0001
1	0.9904	0.8290	0.5490	0.3186	0.1671	0.0802	0.0353	0.0142	0.0052	0.0017
2	0.9996	0.9638	0.8159	0.6042	0.3980	0.2361	0.1268	0.0617	0.0271	0.0107
3	1.0000	0.9945	0.9444	0.8227	0.6482	0.4613	0.2969	0.1727	0.0905	0.0424
4	1.0000	0.9994	0.9873	0.9383	0.8358	0.6865	0.5155	0.3519	0.2173	0.1204
5	1.0000	0.9999	0.9978	0.9832	0.9389	0.8516	0.7216	0.5643	0.4032	0.2608
6	1.0000	1.0000	0.9997	0.9964	0.9819	0.9434	0.8689	0.7548	0.6098	0.4522
7	1.0000	1.0000	1.0000	0.9994	0.9958	0.9827	0.9500	0.8868	0.7869	0.6535
8	1.0000	1.0000	1.0000	0.9999	0.9992	0.9958	0.9848	0.9578	0.9050	0.8182
9	1.0000	1.0000	1.0000	1.0000	0.9999	0.9992	0.9963	0.9876	0.9662	0.9231
10	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9993	0.9972	0.9907	0.9745
11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9995	0.9981	0.9937
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9997	0.9989
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 15$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.8515	0.4401	0.1853	0.0743	0.0281	0.0100	0.0033	0.0010	0.0003	0.0001
1	0.9891	0.8108	0.5147	0.2839	0.1407	0.0635	0.0261	0.0098	0.0033	0.0010
2	0.9995	0.9571	0.7892	0.5614	0.3518	0.1971	0.0994	0.0451	0.0183	0.0066
3	1.0000	0.9930	0.9316	0.7899	0.5981	0.4050	0.2459	0.1339	0.0651	0.0281
4	1.0000	0.9991	0.9830	0.9209	0.7982	0.6302	0.4499	0.2892	0.1666	0.0853
5	1.0000	0.9999	0.9967	0.9765	0.9183	0.8103	0.6598	0.4900	0.3288	0.1976
6	1.0000	1.0000	0.9995	0.9944	0.9733	0.9204	0.8247	0.6881	0.5272	0.3660
7	1.0000	1.0000	0.9999	0.9989	0.9930	0.9729	0.9256	0.8406	0.7161	0.5629
8	1.0000	1.0000	1.0000	0.9998	0.9985	0.9925	0.9743	0.9329	0.8577	0.7441
9	1.0000	1.0000	1.0000	1.0000	0.9998	0.9984	0.9929	0.9771	0.9417	0.8759
10	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9984	0.9938	0.9809	0.9514
11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9987	0.9951	0.9851
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998	0.9991	0.9965
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9994
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999
15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 16$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



$x$	$p$									
	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0037	0.0011	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0176	0.0063	0.0019	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0592	0.0255	0.0093	0.0028	0.0007	0.0001	0.0000	0.0000	0.0000	0.0000
5	0.1509	0.0769	0.0338	0.0124	0.0037	0.0008	0.0001	0.0000	0.0000	0.0000
6	0.3036	0.1818	0.0950	0.0422	0.0152	0.0042	0.0008	0.0001	0.0000	0.0000
7	0.5000	0.3465	0.2131	0.1132	0.0500	0.0173	0.0042	0.0006	0.0000	0.0000
8	0.6964	0.5478	0.3902	0.2452	0.1311	0.0566	0.0181	0.0036	0.0003	0.0000
9	0.8491	0.7392	0.5968	0.4357	0.2784	0.1484	0.0611	0.0168	0.0022	0.0001
10	0.9408	0.8796	0.7827	0.6481	0.4845	0.3135	0.1642	0.0617	0.0127	0.0006
11	0.9824	0.9576	0.9095	0.8273	0.7031	0.5387	0.3518	0.1773	0.0556	0.0055
12	0.9963	0.9893	0.9729	0.9383	0.8732	0.7639	0.6020	0.3958	0.1841	0.0362
13	0.9995	0.9983	0.9948	0.9858	0.9647	0.9198	0.8329	0.6814	0.4510	0.1710
14	1.0000	0.9999	0.9995	0.9984	0.9953	0.9866	0.9648	0.9126	0.7941	0.5367
$n = 15$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0021	0.0006	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0106	0.0035	0.0009	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0384	0.0149	0.0049	0.0013	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.1051	0.0486	0.0191	0.0062	0.0016	0.0003	0.0000	0.0000	0.0000	0.0000
6	0.2272	0.1241	0.0583	0.0229	0.0071	0.0016	0.0002	0.0000	0.0000	0.0000
7	0.4018	0.2559	0.1423	0.0671	0.0257	0.0075	0.0015	0.0002	0.0000	0.0000
8	0.5982	0.4371	0.2839	0.1594	0.0744	0.0271	0.0070	0.0011	0.0001	0.0000
9	0.7728	0.6340	0.4728	0.3119	0.1753	0.0796	0.0267	0.0056	0.0005	0.0000
10	0.8949	0.8024	0.6712	0.5100	0.3402	0.1897	0.0817	0.0235	0.0033	0.0001
11	0.9616	0.9147	0.8334	0.7108	0.5501	0.3698	0.2018	0.0791	0.0170	0.0009
12	0.9894	0.9719	0.9349	0.8661	0.7541	0.5950	0.4019	0.2101	0.0684	0.0070
13	0.9979	0.9934	0.9817	0.9549	0.9006	0.8029	0.6482	0.4386	0.2108	0.0429
14	0.9997	0.9990	0.9967	0.9902	0.9739	0.9365	0.8593	0.7161	0.4853	0.1892
15	1.0000	0.9999	0.9997	0.9990	0.9967	0.9900	0.9719	0.9257	0.8147	0.5599
$n = 16$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.01	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
0	0.8429	0.4181	0.1668	0.0631	0.0225	0.0075	0.0023	0.0007	0.0002	0.0000
1	0.9877	0.7922	0.4818	0.2525	0.1182	0.0501	0.0193	0.0067	0.0021	0.0006
2	0.9994	0.9497	0.7618	0.5198	0.3096	0.1637	0.0774	0.0327	0.0123	0.0041
3	1.0000	0.9912	0.9174	0.7556	0.5489	0.3530	0.2019	0.1028	0.0464	0.0184
4	1.0000	0.9988	0.9779	0.9013	0.7582	0.5739	0.3887	0.2348	0.1260	0.0596
5	1.0000	0.9999	0.9953	0.9681	0.8943	0.7653	0.5968	0.4197	0.2639	0.1471
6	1.0000	1.0000	0.9992	0.9917	0.9623	0.8929	0.7752	0.6188	0.4478	0.2902
7	1.0000	1.0000	0.9999	0.9983	0.9891	0.9598	0.8954	0.7872	0.6405	0.4743
8	1.0000	1.0000	1.0000	0.9997	0.9974	0.9876	0.9597	0.9006	0.8011	0.6626
9	1.0000	1.0000	1.0000	1.0000	0.9995	0.9969	0.9873	0.9617	0.9081	0.8166
10	1.0000	1.0000	1.0000	1.0000	0.9999	0.9994	0.9968	0.9880	0.9652	0.9174
11	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9993	0.9970	0.9894	0.9699
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9994	0.9975	0.9914
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9995	0.9981
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9997
15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 17$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.8345	0.3972	0.1501	0.0536	0.0180	0.0056	0.0016	0.0004	0.0001	0.0000
1	0.9862	0.7735	0.4503	0.2241	0.0991	0.0395	0.0142	0.0046	0.0013	0.0003
2	0.9993	0.9419	0.7338	0.4797	0.2713	0.1353	0.0600	0.0236	0.0082	0.0025
3	1.0000	0.9891	0.9018	0.7202	0.5010	0.3057	0.1646	0.0783	0.0328	0.0120
4	1.0000	0.9985	0.9718	0.8794	0.7164	0.5187	0.3327	0.1886	0.0942	0.0411
5	1.0000	0.9998	0.9936	0.9581	0.8671	0.7175	0.5344	0.3550	0.2088	0.1077
6	1.0000	1.0000	0.9988	0.9882	0.9487	0.8610	0.7217	0.5491	0.3743	0.2258
7	1.0000	1.0000	0.9998	0.9973	0.9837	0.9431	0.8593	0.7283	0.5634	0.3915
8	1.0000	1.0000	1.0000	0.9995	0.9957	0.9807	0.9404	0.8609	0.7368	0.5778
9	1.0000	1.0000	1.0000	0.9999	0.9991	0.9946	0.9790	0.9403	0.8653	0.7473
10	1.0000	1.0000	1.0000	1.0000	0.9998	0.9988	0.9939	0.9788	0.9424	0.8720
11	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998	0.9986	0.9938	0.9797	0.9463
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9986	0.9942	0.9817
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9987	0.9951
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998	0.9990
15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999
16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 18$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	$p$									
$x$	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0012	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0064	0.0019	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0245	0.0086	0.0025	0.0006	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0717	0.0301	0.0106	0.0030	0.0007	0.0001	0.0000	0.0000	0.0000	0.0000
6	0.1662	0.0826	0.0348	0.0120	0.0032	0.0006	0.0001	0.0000	0.0000	0.0000
7	0.3145	0.1834	0.0919	0.0383	0.0127	0.0031	0.0005	0.0000	0.0000	0.0000
8	0.5000	0.3374	0.1989	0.0994	0.0403	0.0124	0.0026	0.0003	0.0000	0.0000
9	0.6855	0.5257	0.3595	0.2128	0.1046	0.0402	0.0109	0.0017	0.0001	0.0000
10	0.8338	0.7098	0.5522	0.3812	0.2248	0.1071	0.0377	0.0083	0.0008	0.0000
11	0.9283	0.8529	0.7361	0.5803	0.4032	0.2347	0.1057	0.0319	0.0047	0.0001
12	0.9755	0.9404	0.8740	0.7652	0.6113	0.4261	0.2418	0.0987	0.0221	0.0012
13	0.9936	0.9816	0.9536	0.8972	0.7981	0.6470	0.4511	0.2444	0.0826	0.0088
14	0.9988	0.9959	0.9877	0.9673	0.9226	0.8363	0.6904	0.4802	0.2382	0.0503
15	0.9999	0.9994	0.9979	0.9933	0.9807	0.9499	0.8818	0.7475	0.5182	0.2078
16	1.0000	1.0000	0.9998	0.9993	0.9977	0.9925	0.9775	0.9369	0.8332	0.5819
$n = 17$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0007	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0038	0.0010	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0154	0.0049	0.0013	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0481	0.0183	0.0058	0.0014	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.1189	0.0537	0.0203	0.0062	0.0014	0.0002	0.0000	0.0000	0.0000	0.0000
7	0.2403	0.1280	0.0576	0.0212	0.0061	0.0012	0.0002	0.0000	0.0000	0.0000
8	0.4073	0.2527	0.1347	0.0597	0.0210	0.0054	0.0009	0.0001	0.0000	0.0000
9	0.5927	0.4222	0.2632	0.1391	0.0596	0.0193	0.0043	0.0005	0.0000	0.0000
10	0.7597	0.6085	0.4366	0.2717	0.1407	0.0569	0.0163	0.0027	0.0002	0.0000
11	0.8811	0.7742	0.6257	0.4509	0.2783	0.1390	0.0513	0.0118	0.0012	0.0000
12	0.9519	0.8923	0.7912	0.6450	0.4656	0.2825	0.1329	0.0419	0.0064	0.0002
13	0.9846	0.9589	0.9058	0.8114	0.6673	0.4813	0.2836	0.1206	0.0282	0.0015
14	0.9962	0.9880	0.9672	0.9217	0.8354	0.6943	0.4990	0.2798	0.0982	0.0109
15	0.9993	0.9975	0.9918	0.9764	0.9400	0.8647	0.7287	0.5203	0.2662	0.0581
16	0.9999	0.9997	0.9987	0.9954	0.9858	0.9605	0.9009	0.7759	0.5497	0.2265
17	1.0000	1.0000	0.9999	0.9996	0.9984	0.9944	0.9820	0.9464	0.8499	0.6028
$n = 18$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.01	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
0	0.8262	0.3774	0.1351	0.0456	0.0144	0.0042	0.0011	0.0003	0.0001	0.0000
1	0.9847	0.7547	0.4203	0.1985	0.0829	0.0310	0.0104	0.0031	0.0008	0.0002
2	0.9991	0.9335	0.7054	0.4413	0.2369	0.1113	0.0462	0.0170	0.0055	0.0015
3	1.0000	0.9868	0.8850	0.6841	0.4551	0.2631	0.1332	0.0591	0.0230	0.0077
4	1.0000	0.9980	0.9648	0.8556	0.6733	0.4654	0.2822	0.1500	0.0696	0.0280
5	1.0000	0.9998	0.9914	0.9463	0.8369	0.6678	0.4739	0.2968	0.1629	0.0777
6	1.0000	1.0000	0.9983	0.9837	0.9324	0.8251	0.6655	0.4812	0.3081	0.1727
7	1.0000	1.0000	0.9997	0.9959	0.9767	0.9225	0.8180	0.6656	0.4878	0.3169
8	1.0000	1.0000	1.0000	0.9992	0.9933	0.9713	0.9161	0.8145	0.6675	0.4940
9	1.0000	1.0000	1.0000	0.9999	0.9984	0.9911	0.9674	0.9125	0.8139	0.6710
10	1.0000	1.0000	1.0000	1.0000	0.9997	0.9977	0.9895	0.9653	0.9115	0.8159
11	1.0000	1.0000	1.0000	1.0000	1.0000	0.9995	0.9972	0.9886	0.9648	0.9129
12	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9994	0.9969	0.9884	0.9658
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9993	0.9969	0.9891
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9994	0.9972
15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999	0.9995
16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9999
17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 19$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.8179	0.3585	0.1216	0.0388	0.0115	0.0032	0.0008	0.0002	0.0000	0.0000
1	0.9831	0.7358	0.3917	0.1756	0.0692	0.0243	0.0076	0.0021	0.0005	0.0001
2	0.9990	0.9245	0.6769	0.4049	0.2061	0.0913	0.0355	0.0121	0.0036	0.0009
3	1.0000	0.9841	0.8670	0.6477	0.4114	0.2252	0.1071	0.0444	0.0160	0.0049
4	1.0000	0.9974	0.9568	0.8298	0.6296	0.4148	0.2375	0.1182	0.0510	0.0189
5	1.0000	0.9997	0.9887	0.9327	0.8042	0.6172	0.4164	0.2454	0.1256	0.0553
6	1.0000	1.0000	0.9976	0.9781	0.9133	0.7858	0.6080	0.4166	0.2500	0.1299
7	1.0000	1.0000	0.9996	0.9941	0.9679	0.8982	0.7723	0.6010	0.4159	0.2520
8	1.0000	1.0000	0.9999	0.9987	0.9900	0.9591	0.8867	0.7624	0.5956	0.4143
9	1.0000	1.0000	1.0000	0.9998	0.9974	0.9861	0.9520	0.8782	0.7553	0.5914
10	1.0000	1.0000	1.0000	1.0000	0.9994	0.9961	0.9829	0.9468	0.8725	0.7507
11	1.0000	1.0000	1.0000	1.0000	0.9999	0.9991	0.9949	0.9804	0.9435	0.8692
12	1.0000	1.0000	1.0000	1.0000	1.0000	0.9998	0.9987	0.9940	0.9790	0.9420
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9985	0.9935	0.9786
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9984	0.9936
15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9985
16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997
17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
$n = 20$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$x$	$p$									
	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0004	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0022	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0096	0.0028	0.0006	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0318	0.0109	0.0031	0.0007	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0835	0.0342	0.0116	0.0031	0.0006	0.0001	0.0000	0.0000	0.0000	0.0000
7	0.1796	0.0871	0.0352	0.0114	0.0028	0.0005	0.0000	0.0000	0.0000	0.0000
8	0.3238	0.1841	0.0885	0.0347	0.0105	0.0023	0.0003	0.0000	0.0000	0.0000
9	0.5000	0.3290	0.1861	0.0875	0.0326	0.0089	0.0016	0.0001	0.0000	0.0000
10	0.6762	0.5060	0.3325	0.1855	0.0839	0.0287	0.0067	0.0008	0.0000	0.0000
11	0.8204	0.6831	0.5122	0.3344	0.1820	0.0775	0.0233	0.0041	0.0003	0.0000
12	0.9165	0.8273	0.6919	0.5188	0.3345	0.1749	0.0676	0.0163	0.0017	0.0000
13	0.9682	0.9223	0.8371	0.7032	0.5261	0.3322	0.1631	0.0537	0.0086	0.0002
14	0.9904	0.9720	0.9304	0.8500	0.7178	0.5346	0.3267	0.1444	0.0352	0.0020
15	0.9978	0.9923	0.9770	0.9409	0.8668	0.7369	0.5449	0.3159	0.1150	0.0132
16	0.9996	0.9985	0.9945	0.9830	0.9538	0.8887	0.7631	0.5587	0.2946	0.0665
17	1.0000	0.9998	0.9992	0.9969	0.9896	0.9690	0.9171	0.8015	0.5797	0.2453
18	1.0000	1.0000	0.9999	0.9997	0.9989	0.9958	0.9856	0.9544	0.8649	0.6226
$n = 19$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0013	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0059	0.0015	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0207	0.0064	0.0016	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0577	0.0214	0.0065	0.0015	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.1316	0.0580	0.0210	0.0060	0.0013	0.0002	0.0000	0.0000	0.0000	0.0000
8	0.2517	0.1308	0.0565	0.0196	0.0051	0.0009	0.0001	0.0000	0.0000	0.0000
9	0.4119	0.2493	0.1275	0.0532	0.0171	0.0039	0.0006	0.0000	0.0000	0.0000
10	0.5881	0.4086	0.2447	0.1218	0.0480	0.0139	0.0026	0.0002	0.0000	0.0000
11	0.7483	0.5857	0.4044	0.2376	0.1133	0.0409	0.0100	0.0013	0.0001	0.0000
12	0.8684	0.7480	0.5841	0.3990	0.2277	0.1018	0.0321	0.0059	0.0004	0.0000
13	0.9423	0.8701	0.7500	0.5834	0.3920	0.2142	0.0867	0.0219	0.0024	0.0000
14	0.9793	0.9447	0.8744	0.7546	0.5836	0.3828	0.1958	0.0673	0.0113	0.0003
15	0.9941	0.9811	0.9490	0.8818	0.7625	0.5852	0.3704	0.1702	0.0432	0.0026
16	0.9987	0.9951	0.9840	0.9556	0.8929	0.7748	0.5886	0.3523	0.1330	0.0159
17	0.9998	0.9991	0.9964	0.9879	0.9645	0.9087	0.7939	0.5951	0.3231	0.0755
18	1.0000	0.9999	0.9995	0.9979	0.9924	0.9757	0.9308	0.8244	0.6083	0.2642
19	1.0000	1.0000	1.0000	0.9998	0.9992	0.9968	0.9885	0.9612	0.8784	0.6415
$n = 20$	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

## B Normalverteilung

$Z \sim N(0, 1)$ ; die Werte der Tabelle geben an:

$$\Phi(z) = P(Z \leq z) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^z e^{-x^2/2} dx.$$

$z$	0.09	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01	0.00
-3.90	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
-3.80	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.70	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.60	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
-3.50	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
-3.40	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
-3.30	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005
-3.20	0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007
-3.10	0.0007	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0010
-3.00	0.0010	0.0010	0.0011	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0013
-2.90	0.0014	0.0014	0.0015	0.0015	0.0016	0.0016	0.0017	0.0018	0.0018	0.0019
-2.80	0.0019	0.0020	0.0021	0.0021	0.0022	0.0023	0.0023	0.0024	0.0025	0.0026
-2.70	0.0026	0.0027	0.0028	0.0029	0.0030	0.0031	0.0032	0.0033	0.0034	0.0035
-2.60	0.0036	0.0037	0.0038	0.0039	0.0040	0.0041	0.0043	0.0044	0.0045	0.0047
-2.50	0.0048	0.0049	0.0051	0.0052	0.0054	0.0055	0.0057	0.0059	0.0060	0.0062
-2.40	0.0064	0.0066	0.0068	0.0069	0.0071	0.0073	0.0075	0.0078	0.0080	0.0082
-2.30	0.0084	0.0087	0.0089	0.0091	0.0094	0.0096	0.0099	0.0102	0.0104	0.0107
-2.20	0.0110	0.0113	0.0116	0.0119	0.0122	0.0125	0.0129	0.0132	0.0136	0.0139
-2.10	0.0143	0.0146	0.0150	0.0154	0.0158	0.0162	0.0166	0.0170	0.0174	0.0179
-2.00	0.0183	0.0188	0.0192	0.0197	0.0202	0.0207	0.0212	0.0217	0.0222	0.0228
-1.90	0.0233	0.0239	0.0244	0.0250	0.0256	0.0262	0.0268	0.0274	0.0281	0.0287
-1.80	0.0294	0.0301	0.0307	0.0314	0.0322	0.0329	0.0336	0.0344	0.0351	0.0359
-1.70	0.0367	0.0375	0.0384	0.0392	0.0401	0.0409	0.0418	0.0427	0.0436	0.0446
-1.60	0.0455	0.0465	0.0475	0.0485	0.0495	0.0505	0.0516	0.0526	0.0537	0.0548
-1.50	0.0559	0.0571	0.0582	0.0594	0.0606	0.0618	0.0630	0.0643	0.0655	0.0668
-1.40	0.0681	0.0694	0.0708	0.0721	0.0735	0.0749	0.0764	0.0778	0.0793	0.0808
-1.30	0.0823	0.0838	0.0853	0.0869	0.0885	0.0901	0.0918	0.0934	0.0951	0.0968
-1.20	0.0985	0.1003	0.1020	0.1038	0.1056	0.1075	0.1093	0.1112	0.1131	0.1151
-1.10	0.1170	0.1190	0.1210	0.1230	0.1251	0.1271	0.1292	0.1314	0.1335	0.1357
-1.00	0.1379	0.1401	0.1423	0.1446	0.1469	0.1492	0.1515	0.1539	0.1562	0.1587
-0.90	0.1611	0.1635	0.1660	0.1685	0.1711	0.1736	0.1762	0.1788	0.1814	0.1841
-0.80	0.1867	0.1894	0.1922	0.1949	0.1977	0.2005	0.2033	0.2061	0.2090	0.2119
-0.70	0.2148	0.2177	0.2206	0.2236	0.2266	0.2296	0.2327	0.2358	0.2389	0.2420
-0.60	0.2451	0.2483	0.2514	0.2546	0.2578	0.2611	0.2643	0.2676	0.2709	0.2743
-0.50	0.2776	0.2810	0.2843	0.2877	0.2912	0.2946	0.2981	0.3015	0.3050	0.3085
-0.40	0.3121	0.3156	0.3192	0.3228	0.3264	0.3300	0.3336	0.3372	0.3409	0.3446
-0.30	0.3483	0.3520	0.3557	0.3594	0.3632	0.3669	0.3707	0.3745	0.3783	0.3821
-0.20	0.3859	0.3897	0.3936	0.3974	0.4013	0.4052	0.4090	0.4129	0.4168	0.4207
-0.10	0.4247	0.4286	0.4325	0.4364	0.4404	0.4443	0.4483	0.4522	0.4562	0.4602
-0.00	0.4641	0.4681	0.4721	0.4761	0.4801	0.4840	0.4880	0.4920	0.4960	0.5000

<i>z</i>	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.00	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.10	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.20	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.30	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.40	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.50	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.60	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.70	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.80	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.90	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.00	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.10	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.20	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.30	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.40	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.50	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.60	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.70	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.80	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.90	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.00	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.10	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.20	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.30	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.40	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.50	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.60	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.70	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.80	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.90	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.00	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.10	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.20	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.30	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.40	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.50	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
3.60	0.9998	0.9998	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.70	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.80	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.90	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

## C Inverse der Normalverteilung

Quantile  $z_p = \Phi^{-1}(p)$  der Standardnormalverteilung für  $0.5 \leq p < 1$ . Für  $p$ -Werte mit  $0 < p < 0.5$  gilt  $z_p = -z_{1-p}$ .

$p$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.50	0.0000	0.0251	0.0502	0.0753	0.1004	0.1257	0.1510	0.1764	0.2019	0.2275
0.60	0.2533	0.2793	0.3055	0.3319	0.3585	0.3853	0.4125	0.4399	0.4677	0.4959
0.70	0.5244	0.5534	0.5828	0.6128	0.6433	0.6745	0.7063	0.7388	0.7722	0.8064
	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.800	0.8416	0.8452	0.8488	0.8524	0.8560	0.8596	0.8633	0.8669	0.8705	0.8742
0.810	0.8779	0.8816	0.8853	0.8890	0.8927	0.8965	0.9002	0.9040	0.9078	0.9116
0.820	0.9154	0.9192	0.9230	0.9269	0.9307	0.9346	0.9385	0.9424	0.9463	0.9502
0.830	0.9542	0.9581	0.9621	0.9661	0.9701	0.9741	0.9782	0.9822	0.9863	0.9904
0.840	0.9945	0.9986	1.0027	1.0069	1.0110	1.0152	1.0194	1.0237	1.0279	1.0322
0.850	1.0364	1.0407	1.0450	1.0494	1.0537	1.0581	1.0625	1.0669	1.0714	1.0758
0.860	1.0803	1.0848	1.0893	1.0939	1.0985	1.1031	1.1077	1.1123	1.1170	1.1217
0.870	1.1264	1.1311	1.1359	1.1407	1.1455	1.1503	1.1552	1.1601	1.1650	1.1700
0.880	1.1750	1.1800	1.1850	1.1901	1.1952	1.2004	1.2055	1.2107	1.2160	1.2212
0.890	1.2265	1.2319	1.2372	1.2426	1.2481	1.2536	1.2591	1.2646	1.2702	1.2759
0.900	1.2816	1.2873	1.2930	1.2988	1.3047	1.3106	1.3165	1.3225	1.3285	1.3346
0.910	1.3408	1.3469	1.3532	1.3595	1.3658	1.3722	1.3787	1.3852	1.3917	1.3984
0.920	1.4051	1.4118	1.4187	1.4255	1.4325	1.4395	1.4466	1.4538	1.4611	1.4684
0.930	1.4758	1.4833	1.4909	1.4985	1.5063	1.5141	1.5220	1.5301	1.5382	1.5464
0.940	1.5548	1.5632	1.5718	1.5805	1.5893	1.5982	1.6072	1.6164	1.6258	1.6352
0.950	1.6449	1.6546	1.6646	1.6747	1.6849	1.6954	1.7060	1.7169	1.7279	1.7392
0.960	1.7507	1.7624	1.7744	1.7866	1.7991	1.8119	1.8250	1.8384	1.8522	1.8663
0.970	1.8808	1.8957	1.9110	1.9268	1.9431	1.9600	1.9774	1.9954	2.0141	2.0335
0.980	2.0537	2.0749	2.0969	2.1201	2.1444	2.1701	2.1973	2.2262	2.2571	2.2904
0.990	2.3263	2.3656	2.4089	2.4573	2.5121	2.5758	2.6521	2.7478	2.8782	3.0902
	0.0000	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0008	0.0009
0.9990	3.0902	3.1214	3.1559	3.1947	3.2389	3.2905	3.3528	3.4316	3.5401	3.7190



## D t-Verteilung

Quantile  $t_{1-\alpha;n}$  der t-Verteilung ( $n$  = Anzahl der Freiheitsgrade).

$n$	$1 - \alpha$							
	0.900	0.950	0.975	0.990	0.995	0.9975	0.999	0.9995
1	3.0777	6.3138	12.7062	31.8205	63.6567	127.3213	318.3088	636.6192
2	1.8856	2.9200	4.3027	6.9646	9.9248	14.0890	22.3271	31.5991
3	1.6377	2.3534	3.1824	4.5407	5.8409	7.4533	10.2145	12.9240
4	1.5332	2.1318	2.7764	3.7470	4.6041	5.5976	7.1732	8.6103
5	1.4759	2.0150	2.5706	3.3649	4.0322	4.7733	5.8934	6.8688
6	1.4398	1.9432	2.4469	3.1427	3.7074	4.3168	5.2076	5.9588
7	1.4149	1.8946	2.3646	2.9980	3.4995	4.0293	4.7853	5.4079
8	1.3968	1.8595	2.3060	2.8965	3.3554	3.8325	4.5008	5.0413
9	1.3830	1.8331	2.2622	2.8214	3.2498	3.6897	4.2968	4.7809
10	1.3722	1.8125	2.2281	2.7638	3.1693	3.5814	4.1437	4.5869
11	1.3634	1.7959	2.2010	2.7181	3.1058	3.4966	4.0247	4.4370
12	1.3562	1.7823	2.1788	2.6810	3.0545	3.4284	3.9296	4.3178
13	1.3502	1.7709	2.1604	2.6503	3.0123	3.3725	3.8520	4.2208
14	1.3450	1.7613	2.1448	2.6245	2.9768	3.3257	3.7874	4.1405
15	1.3406	1.7531	2.1314	2.6025	2.9467	3.2860	3.7328	4.0728
16	1.3368	1.7459	2.1199	2.5835	2.9208	3.2520	3.6862	4.0150
17	1.3334	1.7396	2.1098	2.5669	2.8982	3.2224	3.6458	3.9651
18	1.3304	1.7341	2.1009	2.5524	2.8784	3.1966	3.6105	3.9216
19	1.3277	1.7291	2.0930	2.5395	2.8609	3.1737	3.5794	3.8834
20	1.3253	1.7247	2.0860	2.5280	2.8453	3.1534	3.5518	3.8495
21	1.3232	1.7207	2.0796	2.5176	2.8314	3.1352	3.5272	3.8193
22	1.3212	1.7171	2.0739	2.5083	2.8188	3.1188	3.5050	3.7921
23	1.3195	1.7139	2.0687	2.4999	2.8073	3.1040	3.4850	3.7676
24	1.3178	1.7109	2.0639	2.4922	2.7969	3.0905	3.4668	3.7454
25	1.3163	1.7081	2.0595	2.4851	2.7874	3.0782	3.4502	3.7251
26	1.3150	1.7056	2.0555	2.4786	2.7787	3.0669	3.4350	3.7066
27	1.3137	1.7033	2.0518	2.4727	2.7707	3.0565	3.4210	3.6896
28	1.3125	1.7011	2.0484	2.4671	2.7633	3.0469	3.4082	3.6739
29	1.3114	1.6991	2.0452	2.4620	2.7564	3.0380	3.3962	3.6594
30	1.3104	1.6973	2.0423	2.4573	2.7500	3.0298	3.3852	3.6460
40	1.3031	1.6839	2.0211	2.4233	2.7045	2.9712	3.3069	3.5510
50	1.2987	1.6759	2.0086	2.4033	2.6778	2.9370	3.2614	3.4960
60	1.2958	1.6706	2.0003	2.3901	2.6603	2.9146	3.2317	3.4602
70	1.2938	1.6669	1.9944	2.3808	2.6479	2.8987	3.2108	3.4350
80	1.2922	1.6641	1.9901	2.3739	2.6387	2.8870	3.1953	3.4163
90	1.2910	1.6620	1.9867	2.3685	2.6316	2.8779	3.1833	3.4019
100	1.2901	1.6602	1.9840	2.3642	2.6259	2.8707	3.1737	3.3905
120	1.2886	1.6577	1.9799	2.3578	2.6174	2.8599	3.1595	3.3735
140	1.2876	1.6558	1.9771	2.3533	2.6114	2.8522	3.1495	3.3614
160	1.2869	1.6544	1.9749	2.3499	2.6069	2.8465	3.1419	3.3524
180	1.2863	1.6534	1.9732	2.3472	2.6034	2.8421	3.1361	3.3454
200	1.2858	1.6525	1.9719	2.3451	2.6006	2.8385	3.1315	3.3398
500	1.2832	1.6479	1.9647	2.3338	2.5857	2.8195	3.1066	3.3101
1000	1.2824	1.6464	1.9623	2.3301	2.5808	2.8133	3.0984	3.3003
$\infty$	1.2816	1.6449	1.9600	2.3263	2.5758	2.8070	3.0902	3.2905

E  $\chi^2$ -VerteilungQuantile  $\chi^2_{1-\alpha;n}$  der  $\chi^2$ -Verteilung ( $n$ =Anzahl der Freiheitsgrade).

$n$	$1 - \alpha$									
	0.001	0.01	0.025	0.05	0.1	0.9	0.95	0.975	0.99	0.999
1	0.000	0.000	0.001	0.004	0.016	2.706	3.841	5.024	6.635	10.828
2	0.002	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210	13.816
3	0.024	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345	16.266
4	0.091	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277	18.467
5	0.210	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086	20.515
6	0.381	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812	22.458
7	0.598	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475	24.322
8	0.857	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090	26.124
9	1.152	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666	27.877
10	1.479	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209	29.588
11	1.834	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725	31.264
12	2.214	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217	32.909
13	2.617	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688	34.528
14	3.041	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141	36.123
15	3.483	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578	37.697
16	3.942	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000	39.252
17	4.416	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409	40.790
18	4.905	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805	42.312
19	5.407	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191	43.820
20	5.921	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566	45.315
21	6.447	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932	46.797
22	6.983	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289	48.268
23	7.529	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638	49.728
24	8.085	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980	51.179
25	8.649	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314	52.620
26	9.222	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642	54.052
27	9.803	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963	55.476
28	10.391	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278	56.892
29	10.986	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588	58.301
30	11.588	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892	59.703
31	12.196	15.655	17.539	19.281	21.434	41.422	44.985	48.232	52.191	61.098
32	12.811	16.362	18.291	20.072	22.271	42.585	46.194	49.480	53.486	62.487
33	13.431	17.074	19.047	20.867	23.110	43.745	47.400	50.725	54.776	63.870
34	14.057	17.789	19.806	21.664	23.952	44.903	48.602	51.966	56.061	65.247
35	14.688	18.509	20.569	22.465	24.797	46.059	49.802	53.203	57.342	66.619
36	15.324	19.233	21.336	23.269	25.643	47.212	50.998	54.437	58.619	67.985
37	15.965	19.960	22.106	24.075	26.492	48.363	52.192	55.668	59.893	69.346
38	16.611	20.691	22.878	24.884	27.343	49.513	53.384	56.896	61.162	70.703
39	17.262	21.426	23.654	25.695	28.196	50.660	54.572	58.120	62.428	72.055
40	17.916	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691	73.402

$n$	$1 - \alpha$									
	0.001	0.01	0.025	0.05	0.1	0.9	0.95	0.975	0.99	0.999
41	18.575	22.906	25.215	27.326	29.907	52.949	56.942	60.561	64.950	74.745
42	19.239	23.650	25.999	28.144	30.765	54.090	58.124	61.777	66.206	76.084
43	19.906	24.398	26.785	28.965	31.625	55.230	59.304	62.990	67.459	77.419
44	20.576	25.148	27.575	29.787	32.487	56.369	60.481	64.201	68.710	78.750
45	21.251	25.901	28.366	30.612	33.350	57.505	61.656	65.410	69.957	80.077
46	21.929	26.657	29.160	31.439	34.215	58.641	62.830	66.617	71.201	81.400
47	22.610	27.416	29.956	32.268	35.081	59.774	64.001	67.821	72.443	82.720
48	23.295	28.177	30.755	33.098	35.949	60.907	65.171	69.023	73.683	84.037
49	23.983	28.941	31.555	33.930	36.818	62.038	66.339	70.222	74.919	85.351
50	24.674	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154	86.661
51	25.368	30.475	33.162	35.600	38.560	64.295	68.669	72.616	77.386	87.968
52	26.065	31.246	33.968	36.437	39.433	65.422	69.832	73.810	78.616	89.272
53	26.765	32.018	34.776	37.276	40.308	66.548	70.993	75.002	79.843	90.573
54	27.468	32.793	35.586	38.116	41.183	67.673	72.153	76.192	81.069	91.872
55	28.173	33.570	36.398	38.958	42.060	68.796	73.311	77.380	82.292	93.168
56	28.881	34.350	37.212	39.801	42.937	69.919	74.468	78.567	83.513	94.461
57	29.592	35.131	38.027	40.646	43.816	71.040	75.624	79.752	84.733	95.751
58	30.305	35.913	38.844	41.492	44.696	72.160	76.778	80.936	85.950	97.039
59	31.020	36.698	39.662	42.339	45.577	73.279	77.931	82.117	87.166	98.324
60	31.738	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379	99.607
61	32.459	38.273	41.303	44.038	47.342	75.514	80.232	84.476	89.591	100.888
62	33.181	39.063	42.126	44.889	48.226	76.630	81.381	85.654	90.802	102.166
63	33.906	39.855	42.950	45.741	49.111	77.745	82.529	86.830	92.010	103.442
64	34.633	40.649	43.776	46.595	49.996	78.860	83.675	88.004	93.217	104.716
65	35.362	41.444	44.603	47.450	50.883	79.973	84.821	89.177	94.422	105.988
66	36.093	42.240	45.431	48.305	51.770	81.085	85.965	90.349	95.626	107.258
67	36.826	43.038	46.261	49.162	52.659	82.197	87.108	91.519	96.828	108.526
68	37.561	43.838	47.092	50.020	53.548	83.308	88.250	92.689	98.028	109.791
69	38.298	44.639	47.924	50.879	54.438	84.418	89.391	93.856	99.228	111.055
70	39.036	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425	112.317
71	39.777	46.246	49.592	52.600	56.221	86.635	91.670	96.189	101.621	113.577
72	40.519	47.051	50.428	53.462	57.113	87.743	92.808	97.353	102.816	114.835
73	41.264	47.858	51.265	54.325	58.006	88.850	93.945	98.516	104.010	116.092
74	42.010	48.666	52.103	55.189	58.900	89.956	95.081	99.678	105.202	117.346
75	42.757	49.475	52.942	56.054	59.795	91.061	96.217	100.839	106.393	118.599
76	43.507	50.286	53.782	56.920	60.690	92.166	97.351	101.999	107.583	119.850
77	44.258	51.097	54.623	57.786	61.586	93.270	98.484	103.158	108.771	121.100
78	45.010	51.910	55.466	58.654	62.483	94.374	99.617	104.316	109.958	122.348
79	45.764	52.725	56.309	59.522	63.380	95.476	100.749	105.473	111.144	123.594
80	46.520	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329	124.839
85	50.320	57.634	61.389	64.749	68.777	102.079	107.522	112.393	118.236	131.041
90	54.155	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116	137.208
95	58.022	65.898	69.925	73.520	77.818	113.038	118.752	123.858	129.973	143.344
100	61.918	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807	149.449

## F F-Verteilung

Quantile  $F_{1-\alpha;m,n}$  der F-Verteilung ( $m, n$  Freiheitsgrade). Es gilt:  $F_{\alpha;n,m} = \frac{1}{F_{1-\alpha;m,n}}$ .

n	$\alpha = 0.005.$									
	m									
	1	2	3	4	5	6	7	8	9	10
1	16211	20000	21615	22500	23056	23437	23714	23925	24091	24224
2	199	199	199	199	199	199	199	199	199	199
3	55.55	49.80	47.47	47.05	46.31	45.78	45.38	45.07	44.82	44.62
4	31.33	26.28	24.18	23.15	22.59	22.12	21.77	21.50	21.29	21.12
5	22.78	18.31	16.41	15.55	14.94	14.55	14.24	14.00	13.81	13.66
6	18.64	14.54	12.80	12.00	11.46	11.07	10.80	10.58	10.40	10.26
7	16.24	12.40	10.78	10.02	9.52	9.16	8.89	8.68	8.52	8.39
8	14.69	11.04	9.50	8.78	8.29	7.95	7.69	7.50	7.34	7.21
9	13.61	10.11	8.63	7.93	7.46	7.13	6.88	6.69	6.54	6.42
10	12.83	9.43	8.00	7.32	6.86	6.54	6.30	6.12	5.97	5.85
11	12.23	8.91	7.52	6.86	6.41	6.10	5.86	5.68	5.54	5.42
12	11.75	8.51	7.15	6.50	6.06	5.75	5.52	5.34	5.20	5.09
13	11.37	8.19	6.86	6.21	5.78	5.48	5.25	5.08	4.93	4.82
14	11.06	7.92	6.61	5.98	5.55	5.25	5.03	4.86	4.72	4.60
15	10.80	7.70	6.41	5.78	5.36	5.07	4.85	4.67	4.54	4.42
16	10.58	7.51	6.24	5.62	5.20	4.91	4.69	4.52	4.38	4.27
17	10.38	7.35	6.10	5.48	5.07	4.78	4.56	4.39	4.25	4.14
18	10.22	7.21	5.97	5.36	4.95	4.66	4.44	4.27	4.14	4.03
19	10.07	7.09	5.86	5.25	4.85	4.56	4.34	4.18	4.04	3.93
20	9.94	6.99	5.76	5.16	4.75	4.47	4.26	4.09	3.96	3.85
21	9.83	6.89	5.68	5.07	4.67	4.39	4.18	4.01	3.88	3.77
22	9.73	6.81	5.60	5.00	4.60	4.32	4.11	3.94	3.81	3.70
23	9.63	6.73	5.53	4.93	4.54	4.26	4.05	3.88	3.75	3.64
24	9.55	6.66	5.47	4.87	4.48	4.20	3.99	3.83	3.69	3.59
25	9.48	6.60	5.41	4.82	4.43	4.15	3.94	3.77	3.64	3.54
26	9.41	6.54	5.36	4.77	4.38	4.10	3.89	3.73	3.60	3.49
27	9.34	6.49	5.31	4.72	4.33	4.06	3.85	3.69	3.56	3.45
28	9.28	6.44	5.27	4.68	4.29	4.02	3.81	3.65	3.52	3.41
29	9.23	6.40	5.23	4.64	4.26	3.98	3.77	3.61	3.48	3.38
30	9.18	6.35	5.19	4.61	4.22	3.95	3.74	3.58	3.45	3.34
32	9.09	6.28	5.12	4.54	4.16	3.89	3.68	3.52	3.39	3.29
34	9.01	6.22	5.07	4.49	4.11	3.83	3.63	3.47	3.34	3.23
36	8.94	6.16	5.01	4.44	4.06	3.79	3.58	3.42	3.30	3.19
38	8.88	6.11	4.97	4.40	4.02	3.75	3.54	3.38	3.26	3.15
40	8.83	6.07	4.93	4.36	3.98	3.71	3.51	3.35	3.22	3.12
42	8.78	6.03	4.89	4.33	3.95	3.68	3.48	3.32	3.19	3.09
44	8.74	5.99	4.86	4.30	3.92	3.65	3.45	3.29	3.16	3.06
46	8.70	5.96	4.83	4.27	3.89	3.62	3.42	3.26	3.14	3.03
48	8.66	5.93	4.81	4.24	3.87	3.60	3.40	3.24	3.11	3.01
50	8.63	5.90	4.78	4.22	3.84	3.58	3.38	3.22	3.09	2.99
60	8.49	5.79	4.69	4.13	3.76	3.49	3.29	3.13	3.01	2.90
70	8.40	5.72	4.62	4.06	3.69	3.43	3.23	3.07	2.95	2.85
80	8.33	5.67	4.57	4.02	3.65	3.38	3.19	3.03	2.91	2.80
90	8.28	5.62	4.53	3.98	3.61	3.35	3.15	3.00	2.87	2.77
100	8.24	5.59	4.50	3.95	3.58	3.32	3.13	2.97	2.85	2.74

$n$	$\alpha = 0.005$									
	$m$									
	11	12	13	14	15	16	17	18	19	20
1	24334	24426	24504	24572	24630	24681	24727	24767	24803	24836
2	199	199	199	199	199	199	199	199	199	199
3	44.46	44.32	44.20	44.10	44.01	43.94	43.87	43.81	43.75	43.70
4	20.97	20.85	20.75	20.66	20.59	20.52	20.46	20.40	20.36	20.31
5	13.53	13.42	13.33	13.25	13.19	13.13	13.07	13.02	12.98	12.94
6	10.15	10.05	9.96	9.89	9.83	9.77	9.72	9.68	9.64	9.60
7	8.28	8.18	8.10	8.03	7.97	7.92	7.87	7.83	7.79	7.76
8	7.11	7.02	6.94	6.88	6.82	6.77	6.72	6.68	6.64	6.61
9	6.32	6.23	6.15	6.09	6.03	5.98	5.94	5.90	5.87	5.83
10	5.75	5.66	5.59	5.53	5.47	5.42	5.38	5.34	5.31	5.27
11	5.32	5.24	5.17	5.10	5.05	5.00	4.96	4.92	4.89	4.86
12	4.99	4.91	4.84	4.78	4.72	4.67	4.63	4.59	4.56	4.53
13	4.72	4.64	4.57	4.51	4.46	4.41	4.37	4.33	4.30	4.27
14	4.51	4.43	4.36	4.30	4.25	4.20	4.16	4.12	4.09	4.06
15	4.33	4.25	4.18	4.12	4.07	4.02	3.98	3.95	3.91	3.88
16	4.18	4.10	4.03	3.97	3.92	3.87	3.83	3.80	3.76	3.73
17	4.05	3.97	3.90	3.84	3.79	3.75	3.71	3.67	3.64	3.61
18	3.94	3.86	3.79	3.73	3.68	3.64	3.60	3.56	3.53	3.50
19	3.84	3.76	3.70	3.64	3.59	3.54	3.50	3.46	3.43	3.40
20	3.76	3.68	3.61	3.55	3.50	3.46	3.42	3.38	3.35	3.32
21	3.68	3.60	3.54	3.48	3.43	3.38	3.34	3.31	3.27	3.24
22	3.61	3.53	3.47	3.41	3.36	3.31	3.27	3.24	3.21	3.18
23	3.55	3.47	3.41	3.35	3.30	3.25	3.21	3.18	3.15	3.12
24	3.50	3.42	3.35	3.30	3.25	3.20	3.16	3.12	3.09	3.06
25	3.45	3.37	3.30	3.25	3.20	3.15	3.11	3.08	3.04	3.01
26	3.40	3.33	3.26	3.20	3.15	3.11	3.07	3.03	3.00	2.97
27	3.36	3.28	3.22	3.16	3.11	3.07	3.03	2.99	2.96	2.93
28	3.32	3.25	3.18	3.12	3.07	3.03	2.99	2.95	2.92	2.89
29	3.29	3.21	3.15	3.09	3.04	2.99	2.95	2.92	2.88	2.86
30	3.25	3.18	3.11	3.06	3.01	2.96	2.92	2.89	2.85	2.82
32	3.20	3.12	3.06	3.00	2.95	2.90	2.86	2.83	2.80	2.77
34	3.15	3.07	3.01	2.95	2.90	2.85	2.81	2.78	2.75	2.72
36	3.10	3.03	2.96	2.90	2.85	2.81	2.77	2.73	2.70	2.67
38	3.06	2.99	2.92	2.87	2.82	2.77	2.73	2.70	2.66	2.63
40	3.03	2.95	2.89	2.83	2.78	2.74	2.70	2.66	2.63	2.60
42	3.00	2.92	2.86	2.80	2.75	2.71	2.67	2.63	2.60	2.57
44	2.97	2.89	2.83	2.77	2.72	2.68	2.64	2.60	2.57	2.54
46	2.94	2.87	2.80	2.75	2.70	2.65	2.61	2.58	2.54	2.51
48	2.92	2.85	2.78	2.72	2.67	2.63	2.59	2.55	2.52	2.49
50	2.90	2.82	2.76	2.70	2.65	2.61	2.57	2.53	2.50	2.47
60	2.82	2.74	2.68	2.62	2.57	2.53	2.49	2.45	2.42	2.39
70	2.76	2.68	2.62	2.56	2.51	2.47	2.43	2.39	2.36	2.33
80	2.72	2.64	2.58	2.52	2.47	2.43	2.39	2.35	2.32	2.29
90	2.68	2.61	2.54	2.49	2.44	2.39	2.35	2.32	2.28	2.25
100	2.66	2.58	2.52	2.46	2.41	2.37	2.33	2.29	2.26	2.23

n	$\alpha = 0.005$									
	m									
	21	22	23	24	25	26	27	28	29	30
1	24865	24892	24917	24939	24960	24979	24997	25014	25029	25044
2	199	199	199	199	199	199	199	199	199	199
3	43.66	43.62	43.58	43.54	43.51	43.48	43.46	43.43	43.41	43.39
4	20.27	20.24	20.21	20.18	20.15	20.12	20.10	20.08	20.06	20.04
5	12.91	12.88	12.85	12.82	12.79	12.77	12.75	12.73	12.71	12.69
6	9.57	9.54	9.51	9.49	9.47	9.44	9.42	9.41	9.39	9.37
7	7.73	7.70	7.67	7.65	7.63	7.61	7.59	7.57	7.56	7.54
8	6.58	6.55	6.53	6.51	6.48	6.47	6.45	6.43	6.41	6.40
9	5.80	5.78	5.75	5.73	5.71	5.69	5.67	5.66	5.64	5.63
10	5.25	5.22	5.20	5.17	5.15	5.13	5.12	5.10	5.09	5.07
11	4.83	4.80	4.78	4.76	4.74	4.72	4.70	4.68	4.67	4.65
12	4.50	4.48	4.45	4.43	4.41	4.39	4.38	4.36	4.35	4.33
13	4.24	4.22	4.19	4.17	4.15	4.13	4.12	4.10	4.09	4.07
14	4.03	4.01	3.98	3.96	3.94	3.92	3.91	3.89	3.88	3.86
15	3.86	3.83	3.81	3.79	3.77	3.75	3.73	3.72	3.70	3.69
16	3.71	3.68	3.66	3.64	3.62	3.60	3.58	3.57	3.55	3.54
17	3.58	3.56	3.53	3.51	3.49	3.47	3.46	3.44	3.43	3.41
18	3.47	3.45	3.42	3.40	3.38	3.36	3.35	3.33	3.32	3.30
19	3.37	3.35	3.33	3.31	3.29	3.27	3.25	3.24	3.22	3.21
20	3.29	3.27	3.24	3.22	3.20	3.18	3.17	3.15	3.14	3.12
21	3.22	3.19	3.17	3.15	3.13	3.11	3.09	3.08	3.06	3.05
22	3.15	3.12	3.10	3.08	3.06	3.04	3.03	3.01	3.00	2.98
23	3.09	3.06	3.04	3.02	3.00	2.98	2.97	2.95	2.94	2.92
24	3.04	3.01	2.99	2.97	2.95	2.93	2.91	2.90	2.88	2.87
25	2.99	2.96	2.94	2.92	2.90	2.88	2.86	2.85	2.83	2.82
26	2.94	2.92	2.89	2.87	2.85	2.84	2.82	2.80	2.79	2.77
27	2.90	2.88	2.85	2.83	2.81	2.79	2.78	2.76	2.75	2.73
28	2.86	2.84	2.82	2.79	2.77	2.76	2.74	2.72	2.71	2.69
29	2.83	2.80	2.78	2.76	2.74	2.72	2.70	2.69	2.67	2.66
30	2.80	2.77	2.75	2.73	2.71	2.69	2.67	2.66	2.64	2.63
32	2.74	2.71	2.69	2.67	2.65	2.63	2.61	2.60	2.58	2.57
34	2.69	2.66	2.64	2.62	2.60	2.58	2.56	2.55	2.53	2.52
36	2.64	2.62	2.60	2.58	2.56	2.54	2.52	2.50	2.49	2.48
38	2.61	2.58	2.56	2.54	2.52	2.50	2.48	2.47	2.45	2.44
40	2.57	2.55	2.52	2.50	2.48	2.46	2.45	2.43	2.42	2.40
42	2.54	2.52	2.49	2.47	2.45	2.43	2.42	2.40	2.38	2.37
44	2.51	2.49	2.46	2.44	2.42	2.40	2.39	2.37	2.36	2.34
46	2.49	2.46	2.44	2.42	2.40	2.38	2.36	2.35	2.33	2.32
48	2.46	2.44	2.42	2.39	2.37	2.36	2.34	2.32	2.31	2.29
50	2.44	2.42	2.39	2.37	2.35	2.33	2.32	2.30	2.29	2.27
60	2.36	2.33	2.31	2.29	2.27	2.25	2.23	2.22	2.20	2.19
70	2.30	2.28	2.25	2.23	2.21	2.19	2.17	2.16	2.14	2.13
80	2.26	2.23	2.21	2.19	2.17	2.15	2.13	2.11	2.10	2.08
90	2.23	2.20	2.18	2.15	2.13	2.12	2.10	2.08	2.07	2.05
100	2.20	2.17	2.15	2.13	2.11	2.09	2.07	2.05	2.04	2.02

$n$	$\alpha = 0.005$							
	$m$							
	35	40	50	60	70	80	90	100
1	25103	25148	25211	25253	25283	25306	25323	253370
2	199	199	199	199	199	199	199	199
3	43.30	43.23	43.13	43.07	43.02	42.99	42.96	42.94
4	19.96	19.90	19.81	19.75	19.71	19.68	19.66	19.64
5	12.62	12.57	12.49	12.44	12.40	12.38	12.36	12.34
6	9.31	9.25	9.18	9.14	9.10	9.08	9.06	9.04
7	7.48	7.43	7.36	7.31	7.28	7.26	7.24	7.22
8	6.34	6.29	6.22	6.18	6.15	6.12	6.11	6.09
9	5.57	5.52	5.46	5.41	5.38	5.36	5.34	5.32
10	5.01	4.97	4.90	4.86	4.83	4.81	4.79	4.77
11	4.60	4.55	4.49	4.45	4.41	4.39	4.37	4.36
12	4.27	4.23	4.17	4.12	4.09	4.07	4.05	4.04
13	4.01	3.97	3.91	3.87	3.84	3.81	3.79	3.78
14	3.80	3.76	3.70	3.66	3.62	3.60	3.58	3.57
15	3.63	3.59	3.52	3.48	3.45	3.43	3.41	3.39
16	3.48	3.44	3.37	3.33	3.30	3.28	3.26	3.25
17	3.35	3.31	3.25	3.21	3.18	3.15	3.13	3.12
18	3.25	3.20	3.14	3.10	3.07	3.04	3.02	3.01
19	3.15	3.11	3.04	3.00	2.97	2.95	2.93	2.91
20	3.07	3.02	2.96	2.92	2.88	2.86	2.84	2.83
21	2.99	2.95	2.88	2.84	2.81	2.79	2.77	2.75
22	2.92	2.88	2.82	2.77	2.74	2.72	2.70	2.69
23	2.86	2.82	2.76	2.71	2.68	2.66	2.64	2.62
24	2.81	2.77	2.70	2.66	2.63	2.60	2.58	2.57
25	2.76	2.72	2.65	2.61	2.58	2.55	2.53	2.52
26	2.72	2.67	2.61	2.56	2.53	2.51	2.49	2.47
27	2.67	2.63	2.57	2.52	2.49	2.47	2.45	2.43
28	2.64	2.59	2.53	2.48	2.45	2.43	2.41	2.39
29	2.60	2.56	2.49	2.45	2.42	2.39	2.37	2.36
30	2.57	2.52	2.46	2.42	2.38	2.36	2.34	2.32
32	2.51	2.47	2.40	2.36	2.32	2.30	2.28	2.26
34	2.46	2.42	2.35	2.30	2.27	2.25	2.23	2.21
36	2.42	2.37	2.30	2.26	2.23	2.20	2.18	2.17
38	2.38	2.33	2.27	2.22	2.19	2.16	2.14	2.12
40	2.34	2.30	2.23	2.18	2.15	2.12	2.10	2.09
42	2.31	2.26	2.20	2.15	2.12	2.09	2.07	2.06
44	2.28	2.24	2.17	2.12	2.09	2.06	2.04	2.03
46	2.26	2.21	2.14	2.10	2.06	2.04	2.02	2.00
48	2.23	2.19	2.12	2.07	2.04	2.01	1.99	1.97
50	2.21	2.16	2.10	2.05	2.02	1.99	1.97	1.95
60	2.13	2.08	2.01	1.96	1.93	1.90	1.88	1.86
70	2.07	2.02	1.95	1.90	1.86	1.84	1.81	1.80
80	2.02	1.97	1.90	1.85	1.82	1.79	1.77	1.75
90	1.99	1.94	1.87	1.82	1.78	1.75	1.73	1.71
100	1.96	1.91	1.84	1.79	1.75	1.72	1.70	1.68

$n$	$\alpha = 0.01$									
	$m$									
	1	2	3	4	5	6	7	8	9	10
1	4052	5000	5403	5625	5764	5859	5928	5981	6022	6056
2	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39	99.40
3	34.12	30.82	29.46	29.04	28.60	28.28	28.05	27.87	27.72	27.61
4	21.20	18.00	16.66	15.98	15.58	15.27	15.04	14.86	14.72	14.61
5	16.26	13.27	12.00	11.39	10.97	10.69	10.47	10.31	10.18	10.07
6	13.75	10.92	9.72	9.14	8.75	8.47	8.27	8.11	7.98	7.88
7	12.25	9.55	8.40	7.83	7.46	7.19	6.99	6.84	6.72	6.62
8	11.26	8.65	7.54	6.99	6.63	6.37	6.18	6.03	5.91	5.82
9	10.56	8.02	6.95	6.41	6.05	5.80	5.61	5.47	5.35	5.26
10	10.04	7.56	6.51	5.98	5.63	5.38	5.20	5.06	4.94	4.85
11	9.65	7.21	6.18	5.66	5.31	5.07	4.89	4.74	4.63	4.54
12	9.33	6.93	5.92	5.40	5.06	4.82	4.64	4.50	4.39	4.30
13	9.07	6.70	5.70	5.19	4.86	4.62	4.44	4.30	4.19	4.10
14	8.86	6.51	5.53	5.02	4.69	4.45	4.28	4.14	4.03	3.94
15	8.68	6.36	5.38	4.88	4.55	4.32	4.14	4.00	3.89	3.80
16	8.53	6.23	5.26	4.76	4.43	4.20	4.02	3.89	3.78	3.69
17	8.40	6.11	5.15	4.66	4.33	4.10	3.93	3.79	3.68	3.59
18	8.29	6.01	5.06	4.57	4.24	4.01	3.84	3.70	3.60	3.51
19	8.18	5.93	4.98	4.49	4.17	3.94	3.76	3.63	3.52	3.43
20	8.10	5.85	4.91	4.42	4.10	3.87	3.70	3.56	3.46	3.37
21	8.02	5.78	4.85	4.36	4.04	3.81	3.64	3.51	3.40	3.31
22	7.95	5.72	4.79	4.30	3.98	3.76	3.59	3.45	3.35	3.26
23	7.88	5.66	4.74	4.25	3.94	3.71	3.54	3.41	3.30	3.21
24	7.82	5.61	4.69	4.21	3.89	3.67	3.50	3.36	3.26	3.17
25	7.77	5.57	4.65	4.17	3.85	3.63	3.46	3.32	3.22	3.13
26	7.72	5.53	4.61	4.13	3.82	3.59	3.42	3.29	3.18	3.09
27	7.68	5.49	4.57	4.10	3.78	3.56	3.39	3.26	3.15	3.06
28	7.64	5.45	4.54	4.07	3.75	3.53	3.36	3.23	3.12	3.03
29	7.60	5.42	4.51	4.04	3.72	3.50	3.33	3.20	3.09	3.00
30	7.56	5.39	4.48	4.01	3.70	3.47	3.30	3.17	3.07	2.98
32	7.50	5.34	4.43	3.96	3.65	3.43	3.26	3.13	3.02	2.93
34	7.44	5.29	4.39	3.92	3.61	3.38	3.22	3.09	2.98	2.89
36	7.40	5.25	4.35	3.88	3.57	3.35	3.18	3.05	2.95	2.86
38	7.35	5.21	4.32	3.85	3.54	3.32	3.15	3.02	2.91	2.83
40	7.31	5.18	4.29	3.82	3.51	3.29	3.12	2.99	2.89	2.80
42	7.28	5.15	4.26	3.79	3.49	3.26	3.10	2.97	2.86	2.78
44	7.25	5.12	4.24	3.77	3.46	3.24	3.08	2.95	2.84	2.75
46	7.22	5.10	4.21	3.75	3.44	3.22	3.06	2.93	2.82	2.73
48	7.19	5.08	4.19	3.73	3.42	3.20	3.04	2.91	2.80	2.71
50	7.17	5.06	4.18	3.71	3.40	3.19	3.02	2.89	2.78	2.70
60	7.08	4.98	4.10	3.64	3.34	3.12	2.95	2.82	2.72	2.63
70	7.01	4.92	4.05	3.59	3.29	3.07	2.91	2.78	2.67	2.59
80	6.96	4.88	4.01	3.56	3.25	3.03	2.87	2.74	2.64	2.55
90	6.93	4.85	3.99	3.53	3.23	3.01	2.84	2.72	2.61	2.52
100	6.90	4.82	3.96	3.51	3.20	2.99	2.82	2.69	2.59	2.50



$n$	$\alpha = 0.01$									
	$m$									
	11	12	13	14	15	16	17	18	19	20
1	6083	6106	6126	6143	6157	6170	6181	6192	6201	6209
2	99.41	99.42	99.42	99.43	99.43	99.44	99.44	99.44	99.45	99.45
3	27.51	27.43	27.36	27.30	27.25	27.20	27.16	27.13	27.10	27.07
4	14.52	14.44	14.37	14.31	14.26	14.22	14.18	14.14	14.11	14.08
5	9.98	9.91	9.84	9.79	9.74	9.70	9.66	9.63	9.60	9.57
6	7.80	7.72	7.66	7.61	7.57	7.53	7.49	7.46	7.43	7.40
7	6.54	6.47	6.41	6.36	6.32	6.28	6.24	6.21	6.18	6.16
8	5.74	5.67	5.61	5.56	5.52	5.48	5.44	5.41	5.39	5.36
9	5.18	5.11	5.06	5.01	4.96	4.92	4.89	4.86	4.83	4.81
10	4.77	4.71	4.65	4.60	4.56	4.52	4.49	4.46	4.43	4.41
11	4.46	4.40	4.34	4.29	4.25	4.21	4.18	4.15	4.12	4.10
12	4.22	4.16	4.10	4.05	4.01	3.97	3.94	3.91	3.88	3.86
13	4.02	3.96	3.91	3.86	3.82	3.78	3.75	3.72	3.69	3.66
14	3.86	3.80	3.75	3.70	3.66	3.62	3.59	3.56	3.53	3.51
15	3.73	3.67	3.61	3.56	3.52	3.49	3.45	3.42	3.40	3.37
16	3.62	3.55	3.50	3.45	3.41	3.37	3.34	3.31	3.28	3.26
17	3.52	3.46	3.40	3.35	3.31	3.27	3.24	3.21	3.19	3.16
18	3.43	3.37	3.32	3.27	3.23	3.19	3.16	3.13	3.10	3.08
19	3.36	3.30	3.24	3.19	3.15	3.12	3.08	3.05	3.03	3.00
20	3.29	3.23	3.18	3.13	3.09	3.05	3.02	2.99	2.96	2.94
21	3.24	3.17	3.12	3.07	3.03	2.99	2.96	2.93	2.90	2.88
22	3.18	3.12	3.07	3.02	2.98	2.94	2.91	2.88	2.85	2.83
23	3.14	3.07	3.02	2.97	2.93	2.89	2.86	2.83	2.80	2.78
24	3.09	3.03	2.98	2.93	2.89	2.85	2.82	2.79	2.76	2.74
25	3.06	2.99	2.94	2.89	2.85	2.81	2.78	2.75	2.72	2.70
26	3.02	2.96	2.90	2.86	2.81	2.78	2.75	2.72	2.69	2.66
27	2.99	2.93	2.87	2.82	2.78	2.75	2.71	2.68	2.66	2.63
28	2.96	2.90	2.84	2.79	2.75	2.72	2.68	2.65	2.63	2.60
29	2.93	2.87	2.81	2.77	2.73	2.69	2.66	2.63	2.60	2.57
30	2.91	2.84	2.79	2.74	2.70	2.66	2.63	2.60	2.57	2.55
32	2.86	2.80	2.74	2.70	2.65	2.62	2.58	2.55	2.53	2.50
34	2.82	2.76	2.70	2.66	2.61	2.58	2.54	2.51	2.49	2.46
36	2.79	2.72	2.67	2.62	2.58	2.54	2.51	2.48	2.45	2.43
38	2.75	2.69	2.64	2.59	2.55	2.51	2.48	2.45	2.42	2.40
40	2.73	2.66	2.61	2.56	2.52	2.48	2.45	2.42	2.39	2.37
42	2.70	2.64	2.59	2.54	2.50	2.46	2.43	2.40	2.37	2.34
44	2.68	2.62	2.56	2.52	2.47	2.44	2.40	2.37	2.35	2.32
46	2.66	2.60	2.54	2.50	2.45	2.42	2.38	2.35	2.33	2.30
48	2.64	2.58	2.53	2.48	2.44	2.40	2.37	2.33	2.31	2.28
50	2.62	2.56	2.51	2.46	2.42	2.38	2.35	2.32	2.29	2.27
60	2.56	2.50	2.44	2.39	2.35	2.31	2.28	2.25	2.22	2.20
70	2.51	2.45	2.40	2.35	2.31	2.27	2.23	2.20	2.18	2.15
80	2.48	2.42	2.36	2.31	2.27	2.23	2.20	2.17	2.14	2.12
90	2.45	2.39	2.33	2.29	2.24	2.21	2.17	2.14	2.11	2.09
100	2.43	2.37	2.31	2.27	2.22	2.19	2.15	2.12	2.09	2.07

$n$	$\alpha = 0.01$									
	$m$									
	21	22	23	24	25	26	27	28	29	30
1	6216	6223	6229	6235	6240	6245	6249	6253	6257	6261
2	99.45	99.45	99.46	99.46	99.46	99.46	99.46	99.46	99.46	99.47
3	27.04	27.02	26.99	26.97	26.96	26.94	26.92	26.91	26.89	26.88
4	14.06	14.04	14.01	13.99	13.98	13.96	13.94	13.93	13.92	13.90
5	9.55	9.52	9.50	9.48	9.47	9.45	9.44	9.42	9.41	9.40
6	7.38	7.36	7.34	7.32	7.30	7.29	7.27	7.26	7.25	7.24
7	6.14	6.11	6.10	6.08	6.06	6.05	6.03	6.02	6.01	6.00
8	5.34	5.32	5.30	5.28	5.26	5.25	5.24	5.22	5.21	5.20
9	4.79	4.77	4.75	4.73	4.71	4.70	4.69	4.67	4.66	4.65
10	4.38	4.36	4.34	4.33	4.31	4.30	4.28	4.27	4.26	4.25
11	4.08	4.06	4.04	4.02	4.01	3.99	3.98	3.96	3.95	3.94
12	3.84	3.82	3.80	3.78	3.76	3.75	3.74	3.72	3.71	3.70
13	3.64	3.62	3.60	3.59	3.57	3.56	3.54	3.53	3.52	3.51
14	3.48	3.46	3.44	3.43	3.41	3.40	3.38	3.37	3.36	3.35
15	3.35	3.33	3.31	3.29	3.28	3.26	3.25	3.24	3.23	3.21
16	3.24	3.22	3.20	3.18	3.17	3.15	3.14	3.12	3.11	3.10
17	3.14	3.12	3.10	3.08	3.07	3.05	3.04	3.03	3.01	3.00
18	3.06	3.03	3.02	3.00	2.98	2.97	2.95	2.94	2.93	2.92
19	2.98	2.96	2.94	2.92	2.91	2.89	2.88	2.87	2.86	2.84
20	2.92	2.90	2.88	2.86	2.84	2.83	2.81	2.80	2.79	2.78
21	2.86	2.84	2.82	2.80	2.79	2.77	2.76	2.74	2.73	2.72
22	2.81	2.78	2.77	2.75	2.73	2.72	2.70	2.69	2.68	2.67
23	2.76	2.74	2.72	2.70	2.69	2.67	2.66	2.64	2.63	2.62
24	2.72	2.70	2.68	2.66	2.64	2.63	2.61	2.60	2.59	2.58
25	2.68	2.66	2.64	2.62	2.60	2.59	2.58	2.56	2.55	2.54
26	2.64	2.62	2.60	2.58	2.57	2.55	2.54	2.53	2.51	2.50
27	2.61	2.59	2.57	2.55	2.54	2.52	2.51	2.49	2.48	2.47
28	2.58	2.56	2.54	2.52	2.51	2.49	2.48	2.46	2.45	2.44
29	2.55	2.53	2.51	2.49	2.48	2.46	2.45	2.44	2.42	2.41
30	2.53	2.51	2.49	2.47	2.45	2.44	2.42	2.41	2.40	2.39
32	2.48	2.46	2.44	2.42	2.41	2.39	2.38	2.36	2.35	2.34
34	2.44	2.42	2.40	2.38	2.37	2.35	2.34	2.32	2.31	2.30
36	2.41	2.38	2.37	2.35	2.33	2.32	2.30	2.29	2.28	2.26
38	2.37	2.35	2.33	2.32	2.30	2.28	2.27	2.26	2.24	2.23
40	2.35	2.33	2.31	2.29	2.27	2.26	2.24	2.23	2.22	2.20
42	2.32	2.30	2.28	2.26	2.25	2.23	2.22	2.20	2.19	2.18
44	2.30	2.28	2.26	2.24	2.22	2.21	2.19	2.18	2.17	2.15
46	2.28	2.26	2.24	2.22	2.20	2.19	2.17	2.16	2.15	2.13
48	2.26	2.24	2.22	2.20	2.18	2.17	2.15	2.14	2.13	2.12
50	2.24	2.22	2.20	2.18	2.17	2.15	2.14	2.12	2.11	2.10
60	2.17	2.15	2.13	2.12	2.10	2.08	2.07	2.05	2.04	2.03
70	2.13	2.11	2.09	2.07	2.05	2.03	2.02	2.01	1.99	1.98
80	2.09	2.07	2.05	2.03	2.01	2.00	1.98	1.97	1.96	1.94
90	2.06	2.04	2.02	2.00	1.99	1.97	1.96	1.94	1.93	1.92
100	2.04	2.02	2.00	1.98	1.97	1.95	1.93	1.92	1.91	1.89

$n$	$\alpha = 0.01$							
	$m$							
	35	40	50	60	70	80	90	100
1	6276	6287	6303	6313	6321	6326	6331	6334
2	99.47	99.47	99.48	99.48	99.48	99.49	99.49	99.49
3	26.83	26.79	26.73	26.70	26.67	26.65	26.63	26.62
4	13.85	13.81	13.75	13.72	13.69	13.67	13.65	13.64
5	9.35	9.31	9.26	9.22	9.19	9.18	9.16	9.15
6	7.19	7.15	7.10	7.06	7.04	7.02	7.01	6.99
7	5.95	5.91	5.86	5.83	5.80	5.78	5.77	5.76
8	5.15	5.12	5.07	5.03	5.01	4.99	4.98	4.96
9	4.60	4.57	4.52	4.48	4.46	4.44	4.43	4.42
10	4.20	4.17	4.12	4.08	4.06	4.04	4.03	4.01
11	3.90	3.86	3.81	3.78	3.75	3.73	3.72	3.71
12	3.65	3.62	3.57	3.54	3.51	3.49	3.48	3.47
13	3.46	3.43	3.38	3.34	3.32	3.30	3.28	3.27
14	3.30	3.27	3.22	3.18	3.16	3.14	3.12	3.11
15	3.17	3.13	3.08	3.05	3.02	3.00	2.99	2.98
16	3.05	3.02	2.97	2.93	2.91	2.89	2.87	2.86
17	2.96	2.92	2.87	2.83	2.81	2.79	2.78	2.76
18	2.87	2.84	2.78	2.75	2.72	2.71	2.69	2.68
19	2.80	2.76	2.71	2.67	2.65	2.63	2.61	2.60
20	2.73	2.69	2.64	2.61	2.58	2.56	2.55	2.54
21	2.67	2.64	2.58	2.55	2.52	2.50	2.49	2.48
22	2.62	2.58	2.53	2.50	2.47	2.45	2.43	2.42
23	2.57	2.54	2.48	2.45	2.42	2.40	2.39	2.37
24	2.53	2.49	2.44	2.40	2.38	2.36	2.34	2.33
25	2.49	2.45	2.40	2.36	2.34	2.32	2.30	2.29
26	2.45	2.42	2.36	2.33	2.30	2.28	2.26	2.25
27	2.42	2.38	2.33	2.29	2.27	2.25	2.23	2.22
28	2.39	2.35	2.30	2.26	2.24	2.22	2.20	2.19
29	2.36	2.33	2.27	2.23	2.21	2.19	2.17	2.16
30	2.34	2.30	2.25	2.21	2.18	2.16	2.14	2.13
32	2.29	2.25	2.20	2.16	2.13	2.11	2.10	2.08
34	2.25	2.21	2.16	2.12	2.09	2.07	2.05	2.04
36	2.21	2.18	2.12	2.08	2.05	2.03	2.02	2.00
38	2.18	2.14	2.09	2.05	2.02	2.00	1.98	1.97
40	2.15	2.11	2.06	2.02	1.99	1.97	1.95	1.94
42	2.13	2.09	2.03	1.99	1.96	1.94	1.93	1.91
44	2.10	2.07	2.01	1.97	1.94	1.92	1.90	1.89
46	2.08	2.04	1.99	1.95	1.92	1.90	1.88	1.86
48	2.06	2.02	1.97	1.93	1.90	1.88	1.86	1.84
50	2.05	2.01	1.95	1.91	1.88	1.86	1.84	1.82
60	1.98	1.94	1.88	1.84	1.81	1.78	1.76	1.75
70	1.93	1.89	1.83	1.78	1.75	1.73	1.71	1.70
80	1.89	1.85	1.79	1.75	1.71	1.69	1.67	1.65
90	1.86	1.82	1.76	1.72	1.68	1.66	1.64	1.62
100	1.84	1.80	1.74	1.69	1.66	1.63	1.61	1.60

$n$	$\alpha = 0.025$									
	$m$									
	1	2	3	4	5	6	7	8	9	10
1	648	800	864	900	922	937	948	957	963	969
2	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39	39.40
3	17.44	16.04	15.44	15.18	14.98	14.83	14.72	14.64	14.57	14.52
4	12.22	10.65	9.97	9.60	9.38	9.21	9.09	9.00	8.92	8.86
5	10.01	8.43	7.74	7.39	7.15	6.98	6.86	6.76	6.69	6.62
6	8.81	7.26	6.58	6.22	5.99	5.82	5.70	5.60	5.53	5.46
7	8.07	6.54	5.87	5.52	5.28	5.12	4.99	4.90	4.82	4.76
8	7.57	6.06	5.40	5.05	4.82	4.65	4.53	4.43	4.36	4.30
9	7.21	5.71	5.06	4.71	4.48	4.32	4.20	4.10	4.03	3.96
10	6.94	5.46	4.81	4.46	4.23	4.07	3.95	3.85	3.78	3.72
11	6.72	5.26	4.62	4.27	4.04	3.88	3.76	3.66	3.59	3.53
12	6.55	5.10	4.46	4.12	3.89	3.73	3.61	3.51	3.44	3.37
13	6.41	4.97	4.33	3.99	3.77	3.60	3.48	3.39	3.31	3.25
14	6.30	4.86	4.23	3.89	3.66	3.50	3.38	3.29	3.21	3.15
15	6.20	4.77	4.14	3.80	3.57	3.41	3.29	3.20	3.12	3.06
16	6.12	4.69	4.06	3.73	3.50	3.34	3.22	3.12	3.05	2.99
17	6.04	4.62	4.00	3.66	3.44	3.28	3.16	3.06	2.98	2.92
18	5.98	4.56	3.94	3.60	3.38	3.22	3.10	3.01	2.93	2.87
19	5.92	4.51	3.89	3.56	3.33	3.17	3.05	2.96	2.88	2.82
20	5.87	4.46	3.85	3.51	3.29	3.13	3.01	2.91	2.84	2.77
21	5.83	4.42	3.81	3.47	3.25	3.09	2.97	2.87	2.80	2.73
22	5.79	4.38	3.77	3.44	3.21	3.05	2.93	2.84	2.76	2.70
23	5.75	4.35	3.74	3.40	3.18	3.02	2.90	2.81	2.73	2.67
24	5.72	4.32	3.71	3.38	3.15	2.99	2.87	2.78	2.70	2.64
25	5.69	4.29	3.68	3.35	3.13	2.97	2.85	2.75	2.68	2.61
26	5.66	4.27	3.66	3.33	3.10	2.94	2.82	2.73	2.65	2.59
27	5.63	4.24	3.64	3.30	3.08	2.92	2.80	2.71	2.63	2.57
28	5.61	4.22	3.62	3.28	3.06	2.90	2.78	2.69	2.61	2.55
29	5.59	4.20	3.60	3.26	3.04	2.88	2.76	2.67	2.59	2.53
30	5.57	4.18	3.58	3.25	3.03	2.87	2.75	2.65	2.57	2.51
32	5.53	4.15	3.55	3.22	2.99	2.84	2.71	2.62	2.54	2.48
34	5.50	4.12	3.52	3.19	2.97	2.81	2.69	2.59	2.52	2.45
36	5.47	4.09	3.50	3.16	2.94	2.78	2.66	2.57	2.49	2.43
38	5.45	4.07	3.47	3.14	2.92	2.76	2.64	2.55	2.47	2.41
40	5.42	4.05	3.45	3.12	2.90	2.74	2.62	2.53	2.45	2.39
42	5.40	4.03	3.44	3.11	2.89	2.73	2.61	2.51	2.43	2.37
44	5.39	4.02	3.42	3.09	2.87	2.71	2.59	2.50	2.42	2.36
46	5.37	4.00	3.41	3.08	2.86	2.70	2.58	2.48	2.41	2.34
48	5.35	3.99	3.39	3.06	2.84	2.68	2.56	2.47	2.39	2.33
50	5.34	3.97	3.38	3.05	2.83	2.67	2.55	2.46	2.38	2.32
60	5.29	3.93	3.33	3.00	2.79	2.63	2.51	2.41	2.33	2.27
70	5.25	3.89	3.30	2.97	2.75	2.59	2.47	2.38	2.30	2.24
80	5.22	3.86	3.28	2.95	2.73	2.57	2.45	2.35	2.28	2.21
90	5.20	3.84	3.26	2.93	2.71	2.55	2.43	2.34	2.26	2.19
100	5.18	3.83	3.24	2.91	2.70	2.54	2.42	2.32	2.24	2.18

$n$	$\alpha = 0.025$ $m$									
	11	12	13	14	15	16	17	18	19	20
1	973	977	980	983	985	987	989	990	992	993
2	39.41	39.41	39.42	39.43	39.43	39.44	39.44	39.44	39.45	39.45
3	14.47	14.44	14.40	14.38	14.35	14.33	14.31	14.30	14.28	14.27
4	8.81	8.77	8.73	8.70	8.68	8.65	8.63	8.61	8.60	8.58
5	6.57	6.53	6.49	6.46	6.43	6.41	6.39	6.37	6.35	6.33
6	5.41	5.37	5.33	5.30	5.27	5.25	5.22	5.20	5.19	5.17
7	4.71	4.67	4.63	4.60	4.57	4.54	4.52	4.50	4.48	4.47
8	4.24	4.20	4.16	4.13	4.10	4.08	4.05	4.03	4.02	4.00
9	3.91	3.87	3.83	3.80	3.77	3.74	3.72	3.70	3.68	3.67
10	3.67	3.62	3.58	3.55	3.52	3.50	3.47	3.45	3.44	3.42
11	3.47	3.43	3.39	3.36	3.33	3.30	3.28	3.26	3.24	3.23
12	3.32	3.28	3.24	3.21	3.18	3.15	3.13	3.11	3.09	3.07
13	3.20	3.15	3.12	3.08	3.05	3.03	3.00	2.98	2.96	2.95
14	3.09	3.05	3.01	2.98	2.95	2.92	2.90	2.88	2.86	2.84
15	3.01	2.96	2.92	2.89	2.86	2.84	2.81	2.79	2.77	2.76
16	2.93	2.89	2.85	2.82	2.79	2.76	2.74	2.72	2.70	2.68
17	2.87	2.82	2.79	2.75	2.72	2.70	2.67	2.65	2.63	2.62
18	2.81	2.77	2.73	2.70	2.67	2.64	2.62	2.60	2.58	2.56
19	2.76	2.72	2.68	2.65	2.62	2.59	2.57	2.55	2.53	2.51
20	2.72	2.68	2.64	2.60	2.57	2.55	2.52	2.50	2.48	2.46
21	2.68	2.64	2.60	2.56	2.53	2.51	2.48	2.46	2.44	2.42
22	2.65	2.60	2.56	2.53	2.50	2.47	2.45	2.43	2.41	2.39
23	2.62	2.57	2.53	2.50	2.47	2.44	2.42	2.39	2.37	2.36
24	2.59	2.54	2.50	2.47	2.44	2.41	2.39	2.36	2.35	2.33
25	2.56	2.51	2.48	2.44	2.41	2.38	2.36	2.34	2.32	2.30
26	2.54	2.49	2.45	2.42	2.39	2.36	2.34	2.31	2.29	2.28
27	2.51	2.47	2.43	2.39	2.36	2.34	2.31	2.29	2.27	2.25
28	2.49	2.45	2.41	2.37	2.34	2.32	2.29	2.27	2.25	2.23
29	2.48	2.43	2.39	2.36	2.32	2.30	2.27	2.25	2.23	2.21
30	2.46	2.41	2.37	2.34	2.31	2.28	2.26	2.23	2.21	2.20
32	2.43	2.38	2.34	2.31	2.28	2.25	2.22	2.20	2.18	2.16
34	2.40	2.35	2.31	2.28	2.25	2.22	2.20	2.17	2.15	2.13
36	2.37	2.33	2.29	2.25	2.22	2.20	2.17	2.15	2.13	2.11
38	2.35	2.31	2.27	2.23	2.20	2.17	2.15	2.13	2.11	2.09
40	2.33	2.29	2.25	2.21	2.18	2.15	2.13	2.11	2.09	2.07
42	2.32	2.27	2.23	2.20	2.16	2.14	2.11	2.09	2.07	2.05
44	2.30	2.26	2.22	2.18	2.15	2.12	2.10	2.07	2.05	2.03
46	2.29	2.24	2.20	2.17	2.13	2.11	2.08	2.06	2.04	2.02
48	2.27	2.23	2.19	2.15	2.12	2.09	2.07	2.05	2.02	2.01
50	2.26	2.22	2.18	2.14	2.11	2.08	2.06	2.03	2.01	1.99
60	2.22	2.17	2.13	2.09	2.06	2.03	2.01	1.98	1.96	1.94
70	2.18	2.14	2.10	2.06	2.03	2.00	1.97	1.95	1.93	1.91
80	2.16	2.11	2.07	2.03	2.00	1.97	1.95	1.92	1.90	1.88
90	2.14	2.09	2.05	2.02	1.98	1.95	1.93	1.91	1.88	1.86
100	2.12	2.08	2.04	2.00	1.97	1.94	1.91	1.89	1.87	1.85

$n$	$\alpha = 0.025$									
	$m$									
	21	22	23	24	25	26	27	28	29	30
1	994	995	996	997	998	999	1000	1000	1001	1001
2	39.45	39.45	39.45	39.46	39.46	39.46	39.46	39.46	39.46	39.46
3	14.26	14.25	14.24	14.23	14.22	14.21	14.20	14.20	14.19	14.18
4	8.57	8.55	8.54	8.53	8.52	8.51	8.50	8.50	8.49	8.48
5	6.32	6.31	6.30	6.28	6.27	6.26	6.26	6.25	6.24	6.23
6	5.16	5.14	5.13	5.12	5.11	5.10	5.09	5.08	5.07	5.07
7	4.45	4.44	4.43	4.42	4.41	4.40	4.39	4.38	4.37	4.36
8	3.99	3.97	3.96	3.95	3.94	3.93	3.92	3.91	3.90	3.89
9	3.65	3.64	3.63	3.61	3.60	3.59	3.58	3.58	3.57	3.56
10	3.40	3.39	3.38	3.37	3.35	3.34	3.34	3.33	3.32	3.31
11	3.21	3.20	3.18	3.17	3.16	3.15	3.14	3.13	3.13	3.12
12	3.06	3.04	3.03	3.02	3.01	3.00	2.99	2.98	2.97	2.96
13	2.93	2.92	2.91	2.89	2.88	2.87	2.86	2.85	2.85	2.84
14	2.83	2.81	2.80	2.79	2.78	2.77	2.76	2.75	2.74	2.73
15	2.74	2.73	2.71	2.70	2.69	2.68	2.67	2.66	2.65	2.64
16	2.67	2.65	2.64	2.63	2.61	2.60	2.59	2.58	2.58	2.57
17	2.60	2.59	2.57	2.56	2.55	2.54	2.53	2.52	2.51	2.50
18	2.54	2.53	2.52	2.50	2.49	2.48	2.47	2.46	2.45	2.44
19	2.49	2.48	2.46	2.45	2.44	2.43	2.42	2.41	2.40	2.39
20	2.45	2.43	2.42	2.41	2.40	2.39	2.38	2.37	2.36	2.35
21	2.41	2.39	2.38	2.37	2.36	2.34	2.33	2.33	2.32	2.31
22	2.37	2.36	2.34	2.33	2.32	2.31	2.30	2.29	2.28	2.27
23	2.34	2.33	2.31	2.30	2.29	2.28	2.27	2.26	2.25	2.24
24	2.31	2.30	2.28	2.27	2.26	2.25	2.24	2.23	2.22	2.21
25	2.28	2.27	2.26	2.24	2.23	2.22	2.21	2.20	2.19	2.18
26	2.26	2.24	2.23	2.22	2.21	2.19	2.18	2.17	2.17	2.16
27	2.24	2.22	2.21	2.19	2.18	2.17	2.16	2.15	2.14	2.13
28	2.22	2.20	2.19	2.17	2.16	2.15	2.14	2.13	2.12	2.11
29	2.20	2.18	2.17	2.15	2.14	2.13	2.12	2.11	2.10	2.09
30	2.18	2.16	2.15	2.14	2.12	2.11	2.10	2.09	2.08	2.07
32	2.15	2.13	2.12	2.10	2.09	2.08	2.07	2.06	2.05	2.04
34	2.12	2.10	2.09	2.07	2.06	2.05	2.04	2.03	2.02	2.01
36	2.09	2.08	2.06	2.05	2.04	2.03	2.01	2.00	2.00	1.99
38	2.07	2.05	2.04	2.03	2.01	2.00	1.99	1.98	1.97	1.96
40	2.05	2.03	2.02	2.01	1.99	1.98	1.97	1.96	1.95	1.94
42	2.03	2.02	2.00	1.99	1.98	1.96	1.95	1.94	1.93	1.92
44	2.02	2.00	1.99	1.97	1.96	1.95	1.94	1.93	1.92	1.91
46	2.00	1.99	1.97	1.96	1.94	1.93	1.92	1.91	1.90	1.89
48	1.99	1.97	1.96	1.94	1.93	1.92	1.91	1.90	1.89	1.88
50	1.98	1.96	1.95	1.93	1.92	1.91	1.90	1.89	1.88	1.87
60	1.93	1.91	1.90	1.88	1.87	1.86	1.85	1.83	1.82	1.82
70	1.89	1.88	1.86	1.85	1.83	1.82	1.81	1.80	1.79	1.78
80	1.87	1.85	1.83	1.82	1.81	1.79	1.78	1.77	1.76	1.75
90	1.85	1.83	1.81	1.80	1.79	1.77	1.76	1.75	1.74	1.73
100	1.83	1.81	1.80	1.78	1.77	1.76	1.75	1.74	1.72	1.71

$n$	$\alpha = 0.025$							
	$m$							
	35	40	50	60	70	80	90	100
1	1004	1006	1008	1010	1011	1012	1013	1013
2	39.47	39.47	39.48	39.48	39.48	39.49	39.49	39.49
3	14.16	14.14	14.11	14.10	14.08	14.07	14.07	14.06
4	8.45	8.43	8.40	8.38	8.37	8.36	8.35	8.34
5	6.20	6.18	6.15	6.13	6.11	6.10	6.09	6.09
6	5.04	5.01	4.98	4.96	4.95	4.93	4.93	4.92
7	4.33	4.31	4.28	4.26	4.24	4.23	4.22	4.21
8	3.86	3.84	3.81	3.79	3.77	3.76	3.75	3.74
9	3.53	3.51	3.47	3.45	3.43	3.42	3.41	3.40
10	3.28	3.26	3.22	3.20	3.18	3.17	3.16	3.15
11	3.09	3.06	3.03	3.00	2.99	2.97	2.96	2.96
12	2.93	2.91	2.87	2.85	2.83	2.82	2.81	2.80
13	2.80	2.78	2.74	2.72	2.70	2.69	2.68	2.67
14	2.70	2.67	2.64	2.61	2.60	2.58	2.57	2.56
15	2.61	2.59	2.55	2.52	2.51	2.49	2.48	2.47
16	2.53	2.51	2.47	2.45	2.43	2.42	2.40	2.40
17	2.47	2.44	2.41	2.38	2.36	2.35	2.34	2.33
18	2.41	2.38	2.35	2.32	2.30	2.29	2.28	2.27
19	2.36	2.33	2.30	2.27	2.25	2.24	2.23	2.22
20	2.31	2.29	2.25	2.22	2.20	2.19	2.18	2.17
21	2.27	2.25	2.21	2.18	2.16	2.15	2.14	2.13
22	2.24	2.21	2.17	2.14	2.13	2.11	2.10	2.09
23	2.20	2.18	2.14	2.11	2.09	2.08	2.07	2.06
24	2.17	2.15	2.11	2.08	2.06	2.05	2.03	2.02
25	2.15	2.12	2.08	2.05	2.03	2.02	2.01	2.00
26	2.12	2.09	2.05	2.03	2.01	1.99	1.98	1.97
27	2.10	2.07	2.03	2.00	1.98	1.97	1.95	1.94
28	2.08	2.05	2.01	1.98	1.96	1.94	1.93	1.92
29	2.06	2.03	1.99	1.96	1.94	1.92	1.91	1.90
30	2.04	2.01	1.97	1.94	1.92	1.90	1.89	1.88
32	2.00	1.98	1.93	1.91	1.88	1.87	1.86	1.85
34	1.97	1.95	1.90	1.88	1.85	1.84	1.83	1.82
36	1.95	1.92	1.88	1.85	1.83	1.81	1.80	1.79
38	1.93	1.90	1.85	1.82	1.80	1.79	1.77	1.76
40	1.90	1.88	1.83	1.80	1.78	1.76	1.75	1.74
42	1.89	1.86	1.81	1.78	1.76	1.74	1.73	1.72
44	1.87	1.84	1.80	1.77	1.74	1.73	1.71	1.70
46	1.85	1.82	1.78	1.75	1.73	1.71	1.70	1.69
48	1.84	1.81	1.77	1.73	1.71	1.69	1.68	1.67
50	1.83	1.80	1.75	1.72	1.70	1.68	1.67	1.66
60	1.78	1.74	1.70	1.67	1.64	1.63	1.61	1.60
70	1.74	1.71	1.66	1.63	1.60	1.59	1.57	1.56
80	1.71	1.68	1.63	1.60	1.57	1.55	1.54	1.53
90	1.69	1.66	1.61	1.58	1.55	1.53	1.52	1.50
100	1.67	1.64	1.59	1.56	1.53	1.51	1.50	1.48

n	$\alpha = 0.05$									
	m									
	1	2	3	4	5	6	7	8	9	10
1	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54	241.88
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38	19.40
3	10.13	9.55	9.28	9.14	9.04	8.97	8.92	8.88	8.84	8.82
4	7.71	6.94	6.59	6.39	6.26	6.17	6.10	6.05	6.01	5.97
5	6.61	5.79	5.40	5.19	5.05	4.95	4.88	4.82	4.77	4.74
6	5.99	5.14	4.75	4.53	4.39	4.28	4.21	4.15	4.10	4.06
7	5.59	4.74	4.34	4.12	3.97	3.87	3.79	3.73	3.68	3.64
8	5.32	4.46	4.06	3.84	3.69	3.58	3.50	3.44	3.39	3.35
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14
10	4.96	4.10	3.70	3.48	3.33	3.22	3.14	3.07	3.02	2.98
11	4.84	3.98	3.58	3.35	3.20	3.09	3.01	2.95	2.90	2.85
12	4.75	3.89	3.48	3.26	3.11	3.00	2.91	2.85	2.80	2.75
13	4.67	3.81	3.40	3.18	3.02	2.91	2.83	2.77	2.71	2.67
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60
15	4.54	3.68	3.28	3.05	2.90	2.79	2.71	2.64	2.59	2.54
16	4.49	3.63	3.23	3.01	2.85	2.74	2.66	2.59	2.54	2.49
17	4.45	3.59	3.19	2.96	2.81	2.70	2.61	2.55	2.49	2.45
18	4.41	3.55	3.15	2.93	2.77	2.66	2.58	2.51	2.46	2.41
19	4.38	3.52	3.12	2.89	2.74	2.63	2.54	2.48	2.42	2.38
20	4.35	3.49	3.09	2.86	2.71	2.60	2.51	2.45	2.39	2.35
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32
22	4.30	3.44	3.04	2.82	2.66	2.55	2.46	2.40	2.34	2.30
23	4.28	3.42	3.02	2.79	2.64	2.53	2.44	2.37	2.32	2.27
24	4.26	3.40	3.00	2.77	2.62	2.51	2.42	2.35	2.30	2.25
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24
26	4.23	3.37	2.97	2.74	2.59	2.47	2.39	2.32	2.27	2.22
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20
28	4.20	3.34	2.94	2.71	2.56	2.44	2.36	2.29	2.24	2.19
29	4.18	3.33	2.93	2.70	2.54	2.43	2.35	2.28	2.22	2.18
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16
32	4.15	3.29	2.90	2.67	2.51	2.40	2.31	2.24	2.19	2.14
34	4.13	3.28	2.88	2.65	2.49	2.38	2.29	2.23	2.17	2.12
36	4.11	3.26	2.86	2.63	2.48	2.36	2.28	2.21	2.15	2.11
38	4.10	3.24	2.85	2.62	2.46	2.35	2.26	2.19	2.14	2.09
40	4.08	3.23	2.83	2.60	2.45	2.34	2.25	2.18	2.12	2.08
42	4.07	3.22	2.82	2.59	2.44	2.32	2.24	2.17	2.11	2.06
44	4.06	3.21	2.81	2.58	2.43	2.31	2.23	2.16	2.10	2.05
46	4.05	3.20	2.80	2.57	2.42	2.30	2.22	2.15	2.09	2.04
48	4.04	3.19	2.79	2.56	2.41	2.29	2.21	2.14	2.08	2.03
50	4.03	3.18	2.79	2.56	2.40	2.29	2.20	2.13	2.07	2.03
60	4.00	3.15	2.75	2.52	2.37	2.25	2.17	2.10	2.04	1.99
70	3.98	3.13	2.73	2.50	2.35	2.23	2.14	2.07	2.02	1.97
80	3.96	3.11	2.71	2.48	2.33	2.21	2.13	2.06	2.00	1.95
90	3.95	3.10	2.70	2.47	2.32	2.20	2.11	2.04	1.99	1.94
100	3.94	3.09	2.69	2.46	2.30	2.19	2.10	2.03	1.97	1.93



$n$	$\alpha = 0.05$									
	$m$									
	11	12	13	14	15	16	17	18	19	20
1	242.98	243.91	244.69	245.36	245.95	246.46	246.92	247.32	247.69	248.01
2	19.40	19.41	19.42	19.42	19.43	19.43	19.44	19.44	19.44	19.45
3	8.80	8.78	8.76	8.75	8.74	8.73	8.72	8.71	8.70	8.69
4	5.94	5.92	5.90	5.88	5.86	5.85	5.84	5.83	5.82	5.81
5	4.71	4.68	4.66	4.64	4.62	4.61	4.59	4.58	4.57	4.56
6	4.03	4.00	3.98	3.96	3.94	3.92	3.91	3.90	3.89	3.88
7	3.60	3.58	3.55	3.53	3.51	3.49	3.48	3.47	3.46	3.44
8	3.31	3.28	3.26	3.24	3.22	3.20	3.19	3.17	3.16	3.15
9	3.10	3.07	3.05	3.03	3.01	2.99	2.97	2.96	2.95	2.94
10	2.94	2.91	2.89	2.86	2.85	2.83	2.81	2.80	2.79	2.77
11	2.82	2.79	2.76	2.74	2.72	2.70	2.69	2.67	2.66	2.65
12	2.72	2.69	2.66	2.64	2.62	2.60	2.58	2.57	2.56	2.54
13	2.63	2.60	2.58	2.55	2.53	2.51	2.50	2.48	2.47	2.46
14	2.57	2.53	2.51	2.48	2.46	2.44	2.43	2.41	2.40	2.39
15	2.51	2.48	2.45	2.42	2.40	2.38	2.37	2.35	2.34	2.33
16	2.46	2.42	2.40	2.37	2.35	2.33	2.32	2.30	2.29	2.28
17	2.41	2.38	2.35	2.33	2.31	2.29	2.27	2.26	2.24	2.23
18	2.37	2.34	2.31	2.29	2.27	2.25	2.23	2.22	2.20	2.19
19	2.34	2.31	2.28	2.26	2.23	2.21	2.20	2.18	2.17	2.16
20	2.31	2.28	2.25	2.22	2.20	2.18	2.17	2.15	2.14	2.12
21	2.28	2.25	2.22	2.20	2.18	2.16	2.14	2.12	2.11	2.10
22	2.26	2.23	2.20	2.17	2.15	2.13	2.11	2.10	2.08	2.07
23	2.24	2.20	2.18	2.15	2.13	2.11	2.09	2.08	2.06	2.05
24	2.22	2.18	2.15	2.13	2.11	2.09	2.07	2.05	2.04	2.03
25	2.20	2.16	2.14	2.11	2.09	2.07	2.05	2.04	2.02	2.01
26	2.18	2.15	2.12	2.09	2.07	2.05	2.03	2.02	2.00	1.99
27	2.17	2.13	2.10	2.08	2.06	2.04	2.02	2.00	1.99	1.97
28	2.15	2.12	2.09	2.06	2.04	2.02	2.00	1.99	1.97	1.96
29	2.14	2.10	2.08	2.05	2.03	2.01	1.99	1.97	1.96	1.94
30	2.13	2.09	2.06	2.04	2.01	1.99	1.98	1.96	1.95	1.93
32	2.10	2.07	2.04	2.01	1.99	1.97	1.95	1.94	1.92	1.91
34	2.08	2.05	2.02	1.99	1.97	1.95	1.93	1.92	1.90	1.89
36	2.07	2.03	2.00	1.98	1.95	1.93	1.92	1.90	1.88	1.87
38	2.05	2.02	1.99	1.96	1.94	1.92	1.90	1.88	1.87	1.85
40	2.04	2.00	1.97	1.95	1.92	1.90	1.89	1.87	1.85	1.84
42	2.03	1.99	1.96	1.94	1.91	1.89	1.87	1.86	1.84	1.83
44	2.01	1.98	1.95	1.92	1.90	1.88	1.86	1.84	1.83	1.81
46	2.00	1.97	1.94	1.91	1.89	1.87	1.85	1.83	1.82	1.80
48	1.99	1.96	1.93	1.90	1.88	1.86	1.84	1.82	1.81	1.79
50	1.99	1.95	1.92	1.89	1.87	1.85	1.83	1.81	1.80	1.78
60	1.95	1.92	1.89	1.86	1.84	1.82	1.80	1.78	1.76	1.75
70	1.93	1.89	1.86	1.84	1.81	1.79	1.77	1.75	1.74	1.72
80	1.91	1.88	1.84	1.82	1.79	1.77	1.75	1.73	1.72	1.70
90	1.90	1.86	1.83	1.80	1.78	1.76	1.74	1.72	1.70	1.69
100	1.89	1.85	1.82	1.79	1.77	1.75	1.73	1.71	1.69	1.68

n	$\alpha = 0.05$									
	m									
	21	22	23	24	25	26	27	28	29	30
1	248.31	248.58	248.83	249.05	249.26	249.45	249.63	249.80	249.95	250.10
2	19.45	19.45	19.45	19.45	19.46	19.46	19.46	19.46	19.46	19.46
3	8.69	8.68	8.68	8.67	8.67	8.66	8.66	8.66	8.65	8.65
4	5.80	5.79	5.79	5.78	5.78	5.77	5.77	5.76	5.76	5.75
5	4.55	4.54	4.54	4.53	4.52	4.52	4.51	4.51	4.50	4.50
6	3.87	3.86	3.85	3.84	3.84	3.83	3.82	3.82	3.81	3.81
7	3.44	3.43	3.42	3.41	3.40	3.40	3.39	3.39	3.38	3.38
8	3.14	3.13	3.12	3.12	3.11	3.10	3.10	3.09	3.08	3.08
9	2.93	2.92	2.91	2.90	2.89	2.89	2.88	2.87	2.87	2.86
10	2.76	2.75	2.75	2.74	2.73	2.72	2.72	2.71	2.70	2.70
11	2.64	2.63	2.62	2.61	2.60	2.59	2.59	2.58	2.58	2.57
12	2.53	2.52	2.51	2.51	2.50	2.49	2.48	2.48	2.47	2.47
13	2.45	2.44	2.43	2.42	2.41	2.41	2.40	2.39	2.39	2.38
14	2.38	2.37	2.36	2.35	2.34	2.33	2.33	2.32	2.31	2.31
15	2.32	2.31	2.30	2.29	2.28	2.27	2.27	2.26	2.25	2.25
16	2.26	2.25	2.24	2.24	2.23	2.22	2.21	2.21	2.20	2.19
17	2.22	2.21	2.20	2.19	2.18	2.17	2.17	2.16	2.15	2.15
18	2.18	2.17	2.16	2.15	2.14	2.13	2.13	2.12	2.11	2.11
19	2.14	2.13	2.12	2.11	2.11	2.10	2.09	2.08	2.08	2.07
20	2.11	2.10	2.09	2.08	2.07	2.07	2.06	2.05	2.05	2.04
21	2.08	2.07	2.06	2.05	2.05	2.04	2.03	2.02	2.02	2.01
22	2.06	2.05	2.04	2.03	2.02	2.01	2.00	2.00	1.99	1.98
23	2.04	2.02	2.01	2.01	2.00	1.99	1.98	1.97	1.97	1.96
24	2.01	2.00	1.99	1.98	1.97	1.97	1.96	1.95	1.95	1.94
25	2.00	1.98	1.97	1.96	1.96	1.95	1.94	1.93	1.93	1.92
26	1.98	1.97	1.96	1.95	1.94	1.93	1.92	1.91	1.91	1.90
27	1.96	1.95	1.94	1.93	1.92	1.91	1.90	1.90	1.89	1.88
28	1.95	1.93	1.92	1.91	1.91	1.90	1.89	1.88	1.88	1.87
29	1.93	1.92	1.91	1.90	1.89	1.88	1.88	1.87	1.86	1.85
30	1.92	1.91	1.90	1.89	1.88	1.87	1.86	1.85	1.85	1.84
32	1.90	1.88	1.87	1.86	1.85	1.85	1.84	1.83	1.82	1.82
34	1.88	1.86	1.85	1.84	1.83	1.82	1.82	1.81	1.80	1.80
36	1.86	1.85	1.83	1.82	1.81	1.81	1.80	1.79	1.78	1.78
38	1.84	1.83	1.82	1.81	1.80	1.79	1.78	1.77	1.77	1.76
40	1.83	1.81	1.80	1.79	1.78	1.77	1.77	1.76	1.75	1.74
42	1.81	1.80	1.79	1.78	1.77	1.76	1.75	1.75	1.74	1.73
44	1.80	1.79	1.78	1.77	1.76	1.75	1.74	1.73	1.73	1.72
46	1.79	1.78	1.77	1.76	1.75	1.74	1.73	1.72	1.71	1.71
48	1.78	1.77	1.76	1.75	1.74	1.73	1.72	1.71	1.70	1.70
50	1.77	1.76	1.75	1.74	1.73	1.72	1.71	1.70	1.69	1.69
60	1.73	1.72	1.71	1.70	1.69	1.68	1.67	1.66	1.66	1.65
70	1.71	1.70	1.68	1.67	1.66	1.65	1.65	1.64	1.63	1.62
80	1.69	1.68	1.67	1.65	1.64	1.63	1.63	1.62	1.61	1.60
90	1.67	1.66	1.65	1.64	1.63	1.62	1.61	1.60	1.59	1.59
100	1.66	1.65	1.64	1.63	1.62	1.61	1.60	1.59	1.58	1.57

n	$\alpha = 0.05$							
	m							
	35	40	50	60	70	80	90	100
1	250.69	251.14	251.77	252.20	252.50	252.72	252.90	253.04
2	19.47	19.47	19.48	19.48	19.48	19.48	19.48	19.49
3	8.64	8.63	8.62	8.61	8.60	8.60	8.59	8.59
4	5.74	5.72	5.71	5.70	5.69	5.68	5.68	5.67
5	4.48	4.47	4.45	4.43	4.42	4.42	4.41	4.41
6	3.79	3.78	3.75	3.74	3.73	3.72	3.72	3.71
7	3.36	3.34	3.32	3.30	3.29	3.29	3.28	3.28
8	3.06	3.04	3.02	3.01	2.99	2.99	2.98	2.97
9	2.84	2.83	2.80	2.79	2.78	2.77	2.76	2.76
10	2.68	2.66	2.64	2.62	2.61	2.60	2.59	2.59
11	2.55	2.53	2.51	2.49	2.48	2.47	2.46	2.46
12	2.44	2.43	2.40	2.38	2.37	2.36	2.36	2.35
13	2.36	2.34	2.31	2.30	2.28	2.27	2.27	2.26
14	2.28	2.27	2.24	2.22	2.21	2.20	2.19	2.19
15	2.22	2.20	2.18	2.16	2.15	2.14	2.13	2.12
16	2.17	2.15	2.12	2.11	2.09	2.08	2.07	2.07
17	2.12	2.10	2.08	2.06	2.05	2.03	2.03	2.02
18	2.08	2.06	2.04	2.02	2.00	1.99	1.98	1.98
19	2.05	2.03	2.00	1.98	1.97	1.96	1.95	1.94
20	2.01	1.99	1.97	1.95	1.93	1.92	1.91	1.91
21	1.98	1.96	1.94	1.92	1.90	1.89	1.88	1.88
22	1.96	1.94	1.91	1.89	1.88	1.86	1.86	1.85
23	1.93	1.91	1.88	1.86	1.85	1.84	1.83	1.82
24	1.91	1.89	1.86	1.84	1.83	1.82	1.81	1.80
25	1.89	1.87	1.84	1.82	1.81	1.80	1.79	1.78
26	1.87	1.85	1.82	1.80	1.79	1.78	1.77	1.76
27	1.86	1.84	1.81	1.79	1.77	1.76	1.75	1.74
28	1.84	1.82	1.79	1.77	1.75	1.74	1.73	1.73
29	1.83	1.81	1.77	1.75	1.74	1.73	1.72	1.71
30	1.81	1.79	1.76	1.74	1.72	1.71	1.70	1.70
32	1.79	1.77	1.74	1.71	1.70	1.69	1.68	1.67
34	1.77	1.75	1.71	1.69	1.68	1.66	1.65	1.65
36	1.75	1.73	1.69	1.67	1.66	1.64	1.63	1.62
38	1.73	1.71	1.68	1.65	1.64	1.62	1.61	1.61
40	1.72	1.69	1.66	1.64	1.62	1.61	1.60	1.59
42	1.70	1.68	1.65	1.62	1.61	1.59	1.58	1.57
44	1.69	1.67	1.63	1.61	1.59	1.58	1.57	1.56
46	1.68	1.65	1.62	1.60	1.58	1.57	1.56	1.55
48	1.67	1.64	1.61	1.59	1.57	1.56	1.54	1.54
50	1.66	1.63	1.60	1.58	1.56	1.54	1.53	1.52
60	1.62	1.59	1.56	1.53	1.52	1.50	1.49	1.48
70	1.59	1.57	1.53	1.50	1.49	1.47	1.46	1.45
80	1.57	1.54	1.51	1.48	1.46	1.45	1.44	1.43
90	1.55	1.53	1.49	1.46	1.44	1.43	1.42	1.41
100	1.54	1.52	1.48	1.45	1.43	1.41	1.40	1.39

## G Kolmogorow-Smirnow-Anpassungstest

Die Tabelle gibt Quantile der Statistiken  $K_n$ ,  $K_n^+$  und  $K_n^-$  für den zweiseitigen bzw. einseitigen Test an.

Einseitig: $k_{1-\alpha}^+ (k_{1-\alpha}^-)$	für $\alpha =$	0.1	0.05	0.04	0.025	0.02	0.01	0.005
Zweiseitig: $k_{1-\alpha}$	für $\alpha =$	0.2	0.1	0.08	0.05	0.04	0.02	0.01
	$n=1$	0.900	0.950	0.960	0.975	0.980	0.990	0.995
	2	0.684	0.776	0.800	0.842	0.859	0.900	0.929
	3	0.565	0.636	0.658	0.708	0.729	0.785	0.829
	4	0.493	0.565	0.585	0.624	0.641	0.689	0.734
	5	0.447	0.509	0.527	0.563	0.580	0.627	0.669
	6	0.410	0.468	0.485	0.519	0.534	0.577	0.617
	7	0.381	0.436	0.452	0.483	0.497	0.538	0.576
	8	0.358	0.410	0.425	0.454	0.468	0.507	0.542
	9	0.339	0.387	0.402	0.430	0.443	0.480	0.513
	10	0.323	0.369	0.382	0.409	0.421	0.457	0.489
	11	0.308	0.352	0.365	0.391	0.403	0.437	0.468
	12	0.296	0.338	0.351	0.375	0.387	0.419	0.449
	13	0.285	0.325	0.338	0.361	0.372	0.404	0.432
	14	0.275	0.314	0.326	0.349	0.359	0.390	0.418
	15	0.266	0.304	0.315	0.338	0.348	0.377	0.404
	16	0.258	0.295	0.306	0.327	0.337	0.366	0.392
	17	0.250	0.286	0.297	0.318	0.327	0.355	0.381
	18	0.244	0.279	0.289	0.309	0.319	0.346	0.371
	19	0.237	0.271	0.281	0.301	0.310	0.337	0.361
	20	0.232	0.265	0.275	0.294	0.303	0.329	0.352
	21	0.226	0.259	0.268	0.287	0.296	0.321	0.344
	22	0.221	0.253	0.262	0.281	0.289	0.314	0.337
	23	0.216	0.247	0.257	0.275	0.283	0.307	0.330
	24	0.212	0.242	0.251	0.269	0.277	0.301	0.323
	25	0.208	0.238	0.246	0.264	0.272	0.295	0.317
	26	0.204	0.233	0.242	0.259	0.267	0.290	0.311
	27	0.200	0.229	0.237	0.254	0.262	0.284	0.305
	28	0.197	0.225	0.233	0.250	0.257	0.279	0.300
	29	0.193	0.221	0.229	0.246	0.253	0.275	0.295
	30	0.190	0.218	0.226	0.242	0.249	0.270	0.290
	31	0.187	0.214	0.222	0.238	0.245	0.266	0.285
	32	0.184	0.211	0.219	0.234	0.241	0.262	0.281
	33	0.182	0.208	0.215	0.231	0.238	0.258	0.277
	34	0.179	0.205	0.212	0.227	0.234	0.254	0.273
	35	0.177	0.202	0.209	0.224	0.231	0.251	0.269
	36	0.174	0.199	0.206	0.221	0.228	0.247	0.265
	37	0.172	0.196	0.204	0.218	0.225	0.244	0.262
	38	0.170	0.194	0.201	0.215	0.222	0.241	0.258
	39	0.168	0.191	0.199	0.213	0.219	0.238	0.255
	40	0.165	0.189	0.196	0.210	0.216	0.235	0.252
Approximation für $n > 40$		$\frac{1.07}{\sqrt{n}}$	$\frac{1.22}{\sqrt{n}}$	$\frac{1.27}{\sqrt{n}}$	$\frac{1.36}{\sqrt{n}}$	$\frac{1.40}{\sqrt{n}}$	$\frac{1.52}{\sqrt{n}}$	$\frac{1.63}{\sqrt{n}}$

H     Wilcoxon's  $W_n^+$ -Test

Die Tabelle gibt kritische Werte der  $W_n^+$ -Statistik für  $\alpha \leq 0.4$  an mit  $P(W^+ \leq w_\alpha^+) \leq \alpha$  und  $P(W_n^+ \leq w_\alpha^+ + 1) > \alpha$ . Kritische Werte  $w_\alpha^+$  für  $\alpha \geq 0.6$  können über die Beziehung  $w_\alpha^+ = n(n+1)/2 - w_{1-\alpha}^+$  berechnet werden.

$n$	$w_{0.005}^+$	$w_{0.01}^+$	$w_{0.025}^+$	$w_{0.05}^+$	$w_{0.10}^+$	$w_{0.20}^+$	$w_{0.30}^+$	$w_{0.40}^+$	$\frac{n(n+1)}{2}$
4	0	0	0	0	0	2	2	3	10
5	0	0	0	0	2	3	4	5	15
6	0	0	0	2	3	5	7	8	21
7	0	0	2	3	5	8	10	11	28
8	0	1	3	5	8	11	13	15	36
9	1	3	5	8	10	14	17	19	45
10	3	5	8	10	14	18	21	24	55
11	5	7	10	13	17	22	26	29	66
12	7	9	13	17	21	27	31	35	78
13	9	12	17	21	26	32	37	41	91
14	12	15	21	25	31	38	43	47	105
15	15	19	25	30	36	44	50	54	120
16	19	23	29	35	42	50	57	62	136
17	23	27	34	41	48	57	64	70	153
18	27	32	40	47	55	65	72	79	171
19	32	37	46	53	62	73	81	88	190
20	37	43	52	60	69	81	90	97	210

## I Wald-Wolfowitz-Iterationstest

Die Tabelle gibt kritische Werte  $r_\alpha$  der Statistik  $R$  an. Für Stichprobenumfänge  $n_1, n_2$ , die nicht angeführt sind, können die nächstliegenden  $(n_1, n_2)$ -Kombinationen als gute Approximation benutzt werden.

$n_1$	$n_2$	$w_{0.005}$	$w_{0.01}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$w_{0.90}$	$w_{0.95}$	$w_{0.975}$	$w_{0.99}$	$w_{0.995}$
2	5	—	—	—	—	3	—	—	—	—	—
	8	—	—	—	3	3	—	—	—	—	—
	11	—	—	—	3	3	—	—	—	—	—
	14	—	—	3	3	3	—	—	—	—	—
	17	—	—	3	3	3	—	—	—	—	—
	20	—	3	3	3	4	—	—	—	—	—
5	5	—	3	3	4	4	8	8	9	9	—
	8	3	3	4	4	5	9	10	10	—	—
	11	4	4	5	5	6	10	—	—	—	—
	14	4	4	5	6	6	—	—	—	—	—
	17	4	5	5	6	7	—	—	—	—	—
	20	5	5	6	6	7	—	—	—	—	—
8	8	4	5	5	6	6	12	12	13	13	14
	11	5	6	6	7	8	13	14	14	15	15
	14	6	6	7	8	8	14	15	15	16	16
	17	6	7	8	8	9	15	15	16	—	—
	20	7	7	8	9	10	15	16	16	—	—
11	11	6	7	8	8	9	15	16	16	17	18
	14	7	8	9	9	10	16	17	18	19	19
	17	8	9	10	10	11	17	18	19	20	21
	20	9	9	10	11	12	18	19	20	21	21
14	14	8	9	10	11	12	18	19	20	21	22
	17	9	10	11	12	13	20	21	22	23	23
	20	10	11	12	13	14	21	22	23	24	24
17	17	11	11	12	13	14	22	23	24	25	25
	20	12	12	14	14	16	23	24	25	26	27
20	20	13	14	15	16	17	25	26	27	28	29

J Kolmogorow-Smirnow-Zweistichprobentest ( $m = n$ )

Die Tabelle gibt kritische Werte der Statistiken  $K_{n,n}$ ,  $K_{n,n}^+$  und  $K_{n,n}^-$  für den zweiseitigen bzw. einseitigen Test an.

Einseitig: $k_{1-\alpha}^+ (k_{1-\alpha}^-)$	für $\alpha =$	0.1	0.05	0.025	0.01	0.005
Zweiseitig: $k_{1-\alpha}$	für $\alpha =$	0.2	0.1	0.05	0.02	0.01
	$n = 3$	2/3	2/3			
	4	3/4	3/4	3/4		
	5	3/5	3/5	4/5	4/5	4/5
	6	3/6	4/6	4/6	5/6	5/6
	7	4/7	4/7	5/7	5/7	5/7
	8	4/8	4/8	5/8	5/8	6/8
	9	4/9	5/9	5/9	6/9	6/9
	10	4/10	5/10	6/10	6/10	7/10
	11	5/11	5/11	6/11	7/11	7/11
	12	5/12	5/12	6/12	7/12	7/12
	13	5/13	6/13	6/13	7/13	8/13
	14	5/14	6/14	7/14	7/14	8/14
	15	5/15	6/15	7/15	8/15	8/15
	16	6/16	6/16	7/16	8/16	9/16
	17	6/17	7/17	7/17	8/17	9/17
	18	6/18	7/18	8/18	9/18	9/18
	19	6/19	7/19	8/19	9/19	9/19
	20	6/20	7/20	8/20	9/20	10/20
	21	6/21	7/21	8/21	9/21	10/21
	22	7/22	8/22	8/22	10/22	10/22
	23	7/23	8/23	9/23	10/23	10/23
	24	7/24	8/24	9/24	10/24	11/24
	25	7/25	8/25	9/25	10/25	11/25
	26	7/26	8/26	9/26	10/26	11/26
	27	7/27	8/27	9/27	11/27	11/27
	28	8/28	9/28	10/28	11/28	12/28
	29	8/29	9/29	10/29	11/29	12/29
	30	8/30	9/30	10/30	11/30	12/30
	31	8/31	9/31	10/31	11/31	12/31
	32	8/32	9/32	10/32	12/32	12/32
	34	8/34	10/34	11/34	12/34	13/34
	36	9/36	10/36	11/36	12/36	13/36
	38	9/38	10/38	11/38	13/38	14/38
	40	9/40	10/40	12/40	13/40	14/40
Approximation für $n > 40$		$\frac{1.52}{\sqrt{n}}$	$\frac{1.73}{\sqrt{n}}$	$\frac{1.92}{\sqrt{n}}$	$\frac{2.15}{\sqrt{n}}$	$\frac{2.30}{\sqrt{n}}$

K Kolmogorow-Smirnow-Zweistichprobentest ( $m \neq n$ )

Die Tabelle gibt kritische Werte der Statistiken  $K_{m,n}$ ,  $K_{m,n}^+$  und  $K_{m,n}^-$  für den zweiseitigen bzw. einseitigen Test an.

Einseitig: $k_{1-\alpha}^+(k_{1-\alpha}^-)$		für $\alpha =$	0.1	0.05	0.025	0.01	0.005
Zweiseitig: $k_{1-\alpha}$		für $\alpha =$	0.2	0.1	0.05	0.02	0.01
$m = 1$	$n = 9$	17/18					
	10	9/10					
$m = 2$	$n = 3$	5/6					
	4	3/4					
	5	4/5	4/5				
	6	5/6	5/6				
	7	5/7	6/7				
	8	3/4	7/8	7/8			
	9	7/9	8/9	8/9			
	10	7/10	4/5	9/10			
$m = 3$	$n = 4$	3/4	3/4				
	5	2/3	4/5	4/5			
	6	2/3	2/3	5/6			
	7	2/3	5/7	6/7	6/7		
	8	5/8	3/4	3/4	7/8		
	9	2/3	2/3	7/9	8/9	8/9	
	10	3/5	7/10	4/5	9/10	9/10	
	12	7/12	2/3	3/4	5/6	11/12	
$m = 4$	$n = 5$	3/5	3/4	4/5	4/5		
	6	7/12	2/3	3/4	5/6	5/6	
	7	17/28	5/7	3/4	6/7	6/7	
	8	5/8	5/8	3/4	7/8	7/8	
	9	5/9	2/3	3/4	7/9	8/9	
	10	11/20	13/20	7/10	4/5	4/5	
	12	7/12	2/3	2/3	3/4	5/6	
	16	9/16	5/8	11/16	3/4	13/16	
$m = 5$	$n = 6$	3/5	2/3	2/3	5/6	5/6	
	7	4/7	23/35	5/7	29/35	6/7	
	8	11/20	5/8	27/40	4/5	4/5	
	9	5/9	3/5	31/45	7/9	4/5	
	10	1/2	3/5	7/10	7/10	4/5	
	15	8/15	3/5	2/3	11/15	11/15	
	20	1/2	11/20	3/5	7/10	3/4	



Einseitig: $k_{1-\alpha}^+ (k_{1-\alpha}^-)$	für $\alpha =$	0.1	0.05	0.025	0.01	0.005
Zweiseitig: $k_{1-\alpha}$	für $\alpha =$	0.2	0.1	0.05	0.02	0.01
$m = 6$	$n = 7$	23/42	4/7	29/42	5/7	5/6
	8	1/2	7/12	2/3	3/4	3/4
	9	1/2	5/9	2/3	13/18	7/9
	10	1/2	17/30	19/30	7/10	11/15
	12	1/2	7/12	7/12	2/3	3/4
	18	4/9	5/9	11/18	2/3	13/18
	24	11/24	1/2	7/12	5/8	2/3
$m = 7$	$n = 8$	27/56	33/56	5/8	41/56	3/4
	9	31/63	5/9	40/63	5/7	47/63
	10	33/70	39/70	43/70	7/10	5/7
	14	3/7	1/2	4/7	9/14	5/7
	28	3/7	13/28	15/28	17/28	9/14
$m = 8$	$n = 9$	4/9	13/24	5/8	2/3	3/4
	10	19/40	21/40	23/40	27/40	7/10
	12	11/24	1/2	7/12	5/8	2/3
	16	7/16	1/2	9/16	5/8	5/8
	32	13/32	7/16	1/2	9/16	19/32
$m = 9$	$n = 10$	7/15	1/2	26/45	2/3	31/45
	12	4/9	1/2	5/9	11/18	2/3
	15	19/45	22/45	8/15	3/5	29/45
	18	7/18	4/9	1/2	5/9	11/18
	36	13/36	5/12	17/36	19/36	5/9
$m = 10$	$n = 15$	2/5	7/15	1/2	17/30	19/30
	20	2/5	9/20	1/2	11/20	3/5
	40	7/20	2/5	9/20	1/2	
$m = 12$	$n = 15$	23/60	9/20	1/2	11/20	7/12
	16	3/8	7/16	23/48	13/24	7/12
	18	13/36	5/12	17/36	19/36	5/9
	20	11/30	5/12	7/15	31/60	17/30
$m = 15$	$n = 20$	7/20	2/5	13/30	29/60	31/60
$m = 16$	$n = 20$	27/80	31/80	17/40	19/40	41/80
Approximation		$1.07\sqrt{\frac{m+n}{mn}}$	$1.22\sqrt{\frac{m+n}{mn}}$	$1.36\sqrt{\frac{m+n}{mn}}$	$1.52\sqrt{\frac{m+n}{mn}}$	$1.63\sqrt{\frac{m+n}{mn}}$

L Wilcoxons  $W_N$ -Test

Die Tabelle gibt kritische Werte  $w_\alpha$  der  $W_N$ -Statistik für den linkseinseitigen Test  $C$  mit  $m \leq n$  an. Für den rechtseinseitigen Test  $B$  gilt:

$$w_{1-\alpha} = 2E(W_N) - w_\alpha = 2\mu - w_\alpha.$$

Ist  $m > n$ , so wird durch Umbenennung die  $x$ -Stichprobe zur  $y$ -Stichprobe und umgekehrt und damit Test  $C$  zu Test  $B$  und umgekehrt.

$m = 1$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
2							4
3							5
4							6
5							7
6							8
7							9
8							10
9						1	11
10						1	12
11						1	13
12						1	14
13						1	15
14						1	16
15						1	17
16						1	18
17						1	19
18						1	20
19					1	2	21
20					1	2	22
21					1	2	23
22					1	2	24
23					1	2	25
24					1	2	26
25					1	2	27

$m = 2$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
2							10
3						3	12
4						3	14
5					3	4	16
6					3	4	18
7					3	4	20
8				3	4	5	22
9				3	4	5	24
10				3	4	6	26
11				3	4	6	28
12				4	5	7	30
13			3	4	5	7	32
14			3	4	6	8	34
15			3	4	6	8	36
16			3	4	6	8	38
17			3	5	6	9	40
18			3	5	7	9	42
19		3	4	5	7	10	44
20		3	4	5	7	10	46
21		3	4	6	8	11	48
22		3	4	6	8	11	50
23		3	4	6	8	12	52
24		3	4	6	9	12	54
25		3	4	6	9	12	56

  

$m = 3$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
3					6	7	21
4					6	7	24
5				6	7	8	27
6				7	8	9	30
7			6	7	8	10	33
8			6	8	9	11	36
9		6	7	8	10	11	39
10		6	7	9	10	12	42
11		6	7	9	11	13	45
12		7	8	10	11	14	48
13		7	8	10	12	15	51
14		7	8	11	13	16	54
15		8	9	11	13	16	57
16		8	9	12	14	17	60
17	6	8	10	12	15	18	63
18	6	8	10	13	15	19	66
19	6	9	10	13	16	20	69
20	6	9	11	14	17	21	72
21	7	9	11	14	17	21	75
22	7	10	12	15	18	22	78
23	7	10	12	15	19	23	81
24	7	10	12	16	19	24	84
25	7	11	13	16	20	25	87

<i>m</i> = 4							
<i>n</i>	<i>w</i> <sub>0.001</sub>	<i>w</i> <sub>0.005</sub>	<i>w</i> <sub>0.010</sub>	<i>w</i> <sub>0.025</sub>	<i>w</i> <sub>0.05</sub>	<i>w</i> <sub>0.10</sub>	2μ
4				10	11	13	36
5			10	11	12	14	40
6		10	11	12	13	15	44
7		10	11	13	14	16	48
8		11	12	14	15	17	52
9		11	13	14	16	19	56
10	10	12	13	15	17	20	60
11	10	12	14	16	18	21	64
12	10	13	15	17	19	22	68
13	11	13	15	18	20	23	72
14	11	14	16	19	21	25	76
15	11	15	17	20	22	26	80
16	12	15	17	21	24	27	84
17	12	16	18	21	25	28	88
18	13	16	19	22	26	30	92
19	13	17	19	23	27	31	96
20	13	18	20	24	28	32	100
21	14	18	21	25	29	33	104
22	14	19	21	26	30	35	108
23	14	19	22	27	31	36	112
24	15	20	23	27	32	38	116
25	15	20	23	28	33	38	120

<i>m</i> = 5							
<i>n</i>	<i>w</i> <sub>0.001</sub>	<i>w</i> <sub>0.005</sub>	<i>w</i> <sub>0.010</sub>	<i>w</i> <sub>0.025</sub>	<i>w</i> <sub>0.05</sub>	<i>w</i> <sub>0.10</sub>	2μ
5		15	16	17	19	20	55
6		16	17	18	20	22	60
7		16	18	20	21	23	65
8	15	17	19	21	23	25	70
9	16	18	20	22	24	27	75
10	16	19	21	23	26	28	80
11	17	20	22	24	27	30	85
12	17	21	23	26	28	32	90
13	18	22	24	27	30	33	95
14	18	22	25	28	31	35	100
15	19	23	26	29	33	37	105
16	20	24	27	30	34	38	110
17	20	25	28	32	35	40	115
18	21	26	29	33	37	42	120
19	22	27	30	34	38	43	125
20	22	28	31	35	40	45	130
21	23	29	32	37	41	47	135
22	23	29	33	38	43	48	140
23	24	30	34	39	44	50	145
24	25	31	35	40	45	51	150
25	25	32	36	42	47	53	155

$m = 6$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
6		23	24	26	28	30	78
7	21	24	25	27	29	32	84
8	22	25	27	29	31	34	90
9	23	26	28	31	33	36	96
10	24	27	29	32	35	38	102
11	25	28	30	34	37	40	108
12	25	30	32	35	38	42	114
13	26	31	33	37	40	44	120
14	27	32	34	38	42	46	126
15	28	33	36	40	44	48	132
16	29	34	37	42	46	50	138
17	30	36	39	43	47	52	144
18	31	37	40	45	49	55	150
19	32	38	41	46	51	57	156
20	33	39	43	48	53	59	162
21	33	40	44	50	55	61	168
22	34	42	45	51	57	63	174
23	35	43	47	53	58	65	180
24	36	44	48	54	60	67	186
25	37	45	50	56	62	69	192

  

$m = 7$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
7	29	32	34	36	39	41	105
8	30	34	35	38	41	44	112
9	31	35	37	40	43	46	119
10	33	37	39	42	45	49	126
11	34	38	40	44	47	51	133
12	35	40	42	46	49	54	140
13	36	41	44	48	52	56	147
14	37	43	45	50	54	59	154
15	38	44	47	52	56	61	161
16	39	46	49	54	58	64	168
17	41	47	51	56	61	66	175
18	42	49	52	58	63	69	182
19	43	50	54	60	65	71	189
20	44	52	56	62	67	74	196
21	46	53	58	64	69	76	203
22	47	55	59	66	72	79	210
23	48	57	61	68	74	81	217
24	49	58	63	70	76	84	224
25	50	60	64	72	78	86	231

$m = 8$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
8	40	43	45	49	51	55	136
9	41	45	47	51	54	58	144
10	42	47	49	53	56	60	152
11	44	49	51	55	59	63	160
12	45	51	53	58	62	66	168
13	47	53	56	60	64	69	176
14	48	54	58	62	67	72	184
15	50	56	60	65	69	75	192
16	51	58	62	67	72	78	200
17	53	60	64	70	75	81	208
18	54	62	66	72	77	84	216
19	56	64	68	74	80	87	224
20	57	66	70	77	83	90	232
21	59	68	72	79	85	92	240
22	60	70	74	81	88	95	248
23	62	71	76	84	90	98	256
24	64	73	78	86	93	101	264
25	65	75	81	89	96	104	272

  

$m = 9$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
9	52	56	59	62	66	70	171
10	53	58	61	65	69	73	180
11	55	61	63	68	72	76	189
12	57	63	66	71	75	80	198
13	59	65	68	73	78	83	207
14	60	67	71	76	81	86	216
15	62	69	73	79	84	90	225
16	64	72	76	82	87	93	234
17	66	74	78	84	90	97	243
18	68	76	81	87	93	100	252
19	70	78	83	90	96	103	261
20	71	81	85	93	99	107	270
21	73	83	88	95	102	110	279
22	75	85	90	98	105	113	288
23	77	88	93	101	108	117	297
24	79	90	95	104	111	120	306
25	81	92	98	107	114	123	315

$m = 10$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
10	65	71	74	78	82	87	210
11	67	73	77	81	86	91	220
12	69	76	79	84	89	94	230
13	72	79	82	88	92	98	240
14	74	81	85	91	96	102	250
15	76	84	88	94	99	106	260
16	78	86	91	97	103	109	270
17	80	89	93	100	106	113	280
18	82	92	96	103	110	117	290
19	84	94	99	107	113	121	300
20	87	97	102	110	117	125	310
21	89	99	105	113	120	128	320
22	91	102	108	116	123	132	330
23	93	105	110	119	127	136	340
24	95	107	113	122	130	140	350
25	98	110	116	126	134	144	360

  

$m = 11$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
11	81	87	91	96	100	106	253
12	83	90	94	99	104	110	264
13	86	93	97	103	108	114	275
14	88	96	100	106	112	118	286
15	90	99	103	110	116	123	297
16	93	102	107	113	120	127	308
17	95	105	110	117	123	131	319
18	98	108	113	121	127	135	330
19	100	111	116	124	131	139	341
20	103	114	119	128	135	144	352
21	106	117	123	131	139	148	363
22	108	120	126	135	143	152	374
23	111	123	129	139	147	156	385
24	113	126	132	142	151	161	396
25	116	129	136	146	155	165	407

$m = 12$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
12	98	105	109	115	120	127	300
13	101	109	113	119	125	131	312
14	103	112	116	123	129	136	324
15	106	115	120	127	133	141	336
16	109	119	124	131	138	145	348
17	112	122	127	135	142	150	360
18	115	125	131	139	146	155	372
19	118	129	134	143	150	159	384
20	120	132	138	147	155	164	396
21	123	136	142	151	159	169	408
22	126	139	145	155	163	173	420
23	129	142	149	159	168	178	432
24	132	146	153	163	172	183	444
25	135	149	156	167	176	187	456

  

$m = 13$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
13	117	125	130	136	142	149	351
14	120	129	134	141	147	154	364
15	123	133	138	145	152	159	377
16	126	136	142	150	156	165	390
17	129	140	146	154	161	170	403
18	133	144	150	158	166	175	416
19	136	148	154	163	171	180	429
20	139	151	158	167	175	185	442
21	142	155	162	171	180	190	455
22	145	159	166	176	185	195	468
23	149	163	170	180	189	200	481
24	152	166	174	185	194	205	494
25	155	170	178	189	199	211	507

  

$m = 14$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
14	137	147	152	160	166	174	406
15	141	151	156	164	171	179	420
16	144	155	161	169	176	185	434
17	148	159	165	174	182	190	448
18	151	163	170	179	187	196	462
19	155	168	174	183	192	202	476
20	159	172	178	188	197	207	490
21	162	176	183	193	202	213	504
22	166	180	187	198	207	218	518
23	169	184	192	203	212	224	532
24	173	188	196	207	218	229	546
25	177	192	200	212	223	235	560



$m = 15$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
15	160	171	176	184	192	200	465
16	163	175	181	190	197	206	480
17	167	180	186	195	203	212	495
18	171	184	190	200	208	218	510
19	175	189	195	205	214	224	525
20	179	193	200	210	220	230	540
21	183	198	205	216	225	236	555
22	187	202	210	221	231	242	570
23	191	207	214	226	236	248	585
24	195	211	219	231	242	254	600
25	199	216	224	237	248	260	615

  

$m = 16$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
16	184	196	202	211	219	229	528
17	188	201	207	217	225	235	544
18	192	206	212	222	231	242	560
19	196	210	218	228	237	248	576
20	201	215	223	234	243	255	592
21	205	220	228	239	249	261	608
22	209	225	233	245	255	267	624
23	214	230	238	251	261	274	640
24	218	235	244	256	267	280	656
25	222	240	249	262	273	287	672

  

$m = 17$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
17	210	223	230	240	249	259	595
18	214	228	235	246	255	266	612
19	219	234	241	252	262	273	629
20	223	239	246	258	268	280	646
21	228	244	252	264	274	287	663
22	233	249	258	270	281	294	680
23	238	255	263	276	287	300	697
24	242	260	269	282	294	307	714
25	247	265	275	288	300	314	731

$m = 18$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
18	237	252	259	270	280	291	666
19	242	258	265	277	287	299	684
20	247	263	271	283	294	306	702
21	252	269	277	290	301	313	720
22	257	275	283	296	307	321	738
23	262	280	289	303	314	328	756
24	267	286	295	309	321	335	774
25	273	292	301	316	328	343	792
$m = 19$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
19	267	283	291	303	313	325	741
20	272	289	297	309	320	333	760
21	277	295	303	316	328	341	779
22	283	301	310	323	335	349	798
23	288	307	316	330	342	357	817
24	294	313	323	337	350	364	836
25	299	319	329	344	357	372	855
$m = 20$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
20	298	315	324	337	348	361	820
21	304	322	331	344	356	370	840
22	309	328	337	351	364	378	860
23	315	335	344	359	371	386	880
24	321	341	351	366	379	394	900
25	327	348	358	373	387	403	920
$m = 21$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
21	331	349	359	373	385	399	903
22	337	356	366	381	393	408	924
23	343	363	373	388	401	417	945
24	349	370	381	396	410	425	966
25	356	377	388	404	418	434	987

$m = 22$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
22	365	386	396	411	424	439	990
23	372	393	403	419	432	448	1012
24	379	400	411	427	441	457	1034
25	385	408	419	435	450	467	1056

  

$m = 23$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
23	402	424	434	451	465	481	1081
24	409	431	443	459	474	491	1104
25	416	439	451	468	483	500	1127

  

$m = 24$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
24	440	464	475	492	507	525	1176
25	448	472	484	501	517	535	1200

  

$m = 25$							
$n$	$w_{0.001}$	$w_{0.005}$	$w_{0.010}$	$w_{0.025}$	$w_{0.05}$	$w_{0.10}$	$2\mu$
25	480	505	517	536	552	570	1275

M Van der Waerdens  $X_N$ -Test

Die Tabelle gibt kritische Werte der  $X_N$ -Statistik an.

$\alpha = 0.025$

$m + n$	$ m - n  =$ 0 oder 1	$ m - n  =$ 2 oder 3	$ m - n  =$ 4 oder 5	$ m - n  =$ 6 oder 7	$ m - n  =$ 8 oder 9	$ m - n  =$ 10 oder 11
7	$\infty$	$\infty$	$\infty$	—	—	—
8	2.30	2.20	$\infty$	$\infty$	—	—
9	2.38	2.30	$\infty$	$\infty$	—	—
10	2.60	2.49	2.30	2.03	$\infty$	—
11	2.72	2.58	2.40	2.11	$\infty$	—
12	2.85	2.79	2.68	2.47	2.18	$\infty$
13	2.96	2.91	2.78	2.52	2.27	$\infty$
14	3.11	3.06	3.00	2.83	2.56	2.18
15	3.24	3.19	3.06	2.89	2.61	2.21
16	3.39	3.36	3.28	3.15	2.94	2.66
17	3.49	3.44	3.36	3.21	2.99	2.68
18	3.63	3.60	3.53	3.44	3.26	3.03
19	3.73	3.69	3.61	3.50	3.31	3.06
20	3.86	3.84	3.78	3.70	3.55	3.36
21	3.96	3.92	3.85	3.76	3.61	3.40
22	4.08	4.06	4.01	3.95	3.82	3.65
23	4.18	4.15	4.08	4.01	3.87	3.70
24	4.29	4.27	4.23	4.18	4.07	3.92
25	4.39	4.36	4.30	4.24	4.12	3.96
26	4.52	4.50	4.46	4.39	4.30	4.17
27	4.61	4.59	4.54	4.46	4.35	4.21
28	4.71	4.70	4.66	4.60	4.51	4.40
29	4.80	4.78	4.74	4.67	4.57	4.45
30	4.90	4.89	4.86	4.80	4.72	4.62
31	4.99	4.97	4.93	4.86	4.78	4.67
32	5.08	5.07	5.04	4.99	4.92	4.83
33	5.17	5.15	5.11	5.05	4.97	4.87
34	5.26	5.25	5.22	5.18	5.11	5.03
35	5.35	5.33	5.29	5.24	5.17	5.08
36	5.43	5.42	5.40	5.36	5.30	5.22
37	5.51	5.50	5.46	5.42	5.35	5.26
38	5.60	5.59	5.57	5.53	5.47	5.40
39	5.68	5.66	5.63	5.59	5.53	5.45
40	5.76	5.75	5.73	5.69	5.64	5.58
41	5.84	5.82	5.79	5.75	5.69	5.62
42	5.92	5.91	5.89	5.86	5.81	5.75
43	5.99	5.98	5.95	5.91	5.86	5.79
44	6.07	6.07	6.05	6.01	5.97	5.91
45	6.14	6.13	6.11	6.07	6.02	5.96
46	6.22	6.21	6.20	6.17	6.13	6.07
47	6.29	6.28	6.26	6.22	6.18	6.12
48	6.37	6.36	6.34	6.32	6.28	6.23
49	6.44	6.43	6.40	6.37	6.33	6.27
50	6.51	6.51	6.49	6.46	6.43	6.38

$\alpha = 0.01$ 

$m + n$	$ m - n  =$ 0 oder 1	$ m - n  =$ 2 oder 3	$ m - n  =$ 4 oder 5	$ m - n  =$ 6 oder 7	$ m - n  =$ 8 oder 9	$ m - n  =$ 10 oder 11
7	$\infty$	$\infty$	$\infty$	—	—	—
8	$\infty$	$\infty$	$\infty$	$\infty$	—	—
9	2.80	$\infty$	$\infty$	$\infty$	—	—
10	3.00	2.90	2.80	$\infty$	$\infty$	—
11	3.20	3.00	2.90	$\infty$	$\infty$	—
12	3.29	3.20	3.15	2.85	$\infty$	$\infty$
13	3.48	3.36	3.18	2.92	$\infty$	$\infty$
14	3.62	3.55	3.46	3.28	2.97	$\infty$
15	3.74	3.68	3.57	3.34	3.02	2.55
16	3.92	3.90	3.80	3.66	3.39	3.07
17	4.06	4.01	3.90	3.74	3.47	3.11
18	4.23	4.21	4.14	4.01	3.80	3.52
19	4.37	4.32	4.23	4.08	3.86	3.57
20	4.52	4.50	4.44	4.33	4.15	3.92
21	4.66	4.62	4.53	4.40	4.21	3.97
22	4.80	4.78	4.72	4.62	4.47	4.27
23	4.92	4.89	4.81	4.70	4.53	4.32
24	5.06	5.04	4.99	4.89	4.76	4.59
25	5.18	5.14	5.08	4.97	4.83	4.64
26	5.30	5.28	5.23	5.15	5.04	4.88
27	5.41	5.38	5.32	5.23	5.10	4.94
28	5.53	5.52	5.47	5.40	5.30	5.16
29	5.64	5.62	5.56	5.48	5.36	5.22
30	5.76	5.74	5.70	5.64	5.55	5.42
31	5.86	5.84	5.79	5.71	5.61	5.48
32	5.97	5.96	5.92	5.87	5.78	5.67
33	6.08	6.05	6.01	5.94	5.85	5.73
34	6.18	6.17	6.14	6.09	6.01	5.91
35	6.29	6.27	6.22	6.16	6.08	5.97
36	6.39	6.38	6.35	6.30	6.23	6.14
37	6.49	6.47	6.44	6.37	6.29	6.19
38	6.59	6.58	6.55	6.50	6.44	6.35
39	6.68	6.67	6.63	6.58	6.50	6.41
40	6.78	6.77	6.75	6.70	6.64	6.56
41	6.87	6.86	6.82	6.77	6.71	6.62
42	6.97	6.96	6.94	6.90	6.84	6.77
43	7.06	7.04	7.01	6.96	6.90	6.82
44	7.15	7.15	7.12	7.09	7.03	6.96
45	7.24	7.23	7.20	7.15	7.09	7.02
46	7.33	7.32	7.30	7.27	7.22	7.15
47	7.42	7.40	7.38	7.34	7.28	7.21
48	7.50	7.50	7.48	7.45	7.40	7.34
49	7.59	7.58	7.55	7.51	7.46	7.40
50	7.68	7.67	7.65	7.62	7.58	7.52

$\alpha = 0.005$ 

$m + n$	$ m - n  =$ 0 oder 1	$ m - n  =$ 2 oder 3	$ m - n  =$ 4 oder 5	$ m - n  =$ 6 oder 7	$ m - n  =$ 8 oder 9	$ m - n  =$ 10 oder 11
7	$\infty$	$\infty$	$\infty$	—	—	—
8	$\infty$	$\infty$	$\infty$	$\infty$	—	—
9	$\infty$	$\infty$	$\infty$	$\infty$	—	—
10	3.20	3.10	$\infty$	$\infty$	$\infty$	—
11	3.40	3.30	$\infty$	$\infty$	$\infty$	—
12	3.60	3.58	3.40	3.10	$\infty$	$\infty$
13	3.71	3.68	3.50	3.15	$\infty$	$\infty$
14	3.94	3.88	3.76	3.52	3.25	$\infty$
15	4.07	4.05	3.88	3.65	3.28	$\infty$
16	4.26	4.25	4.12	3.99	3.68	3.30
17	4.44	4.37	4.23	4.08	3.78	3.38
18	4.60	4.58	4.50	4.38	4.15	3.79
19	4.77	4.71	4.62	4.46	4.22	3.89
20	4.94	4.92	4.85	4.73	4.54	4.28
21	5.10	5.05	4.96	4.81	4.61	4.33
22	5.26	5.24	5.17	5.06	4.89	4.67
23	5.40	5.36	5.27	5.14	4.96	4.73
24	5.55	5.53	5.48	5.36	5.22	5.03
25	5.68	5.65	5.58	5.45	5.29	5.09
26	5.81	5.79	5.74	5.65	5.52	5.35
27	5.94	5.90	5.84	5.73	5.58	5.41
28	6.07	6.05	6.01	5.91	5.81	5.66
29	6.19	6.16	6.10	6.01	5.88	5.72
30	6.32	6.30	6.26	6.19	6.09	5.95
31	6.44	6.41	6.35	6.27	6.16	6.01
32	6.56	6.55	6.51	6.44	6.35	6.23
33	6.68	6.65	6.60	6.52	6.42	6.29
34	6.80	6.79	6.75	6.69	6.60	6.49
35	6.91	6.89	6.84	6.77	6.68	6.56
36	7.03	7.01	6.98	6.92	6.85	6.74
37	7.13	7.11	7.07	7.00	6.92	6.81
38	7.25	7.23	7.20	7.15	7.08	6.99
39	7.35	7.33	7.29	7.23	7.15	7.05
40	7.46	7.45	7.42	7.38	7.31	7.22
41	7.56	7.54	7.51	7.45	7.38	7.28
42	7.67	7.66	7.63	7.59	7.53	7.45
43	7.77	7.75	7.72	7.66	7.60	7.51
44	7.87	7.87	7.84	7.80	7.74	7.67
45	7.97	7.96	7.92	7.87	7.81	7.73
46	8.07	8.06	8.04	8.00	7.95	7.88
47	8.17	8.15	8.12	8.08	8.02	7.94
48	8.26	8.26	8.24	8.20	8.15	8.08
49	8.36	8.34	8.32	8.27	8.22	8.14
50	8.46	8.45	8.43	8.39	8.35	8.28

N Moods  $M_N$ -Test

Die Tabelle gibt kritische Werte  $c_\alpha$  der  $M_N$ -Statistik nach dem folgenden Schema an:

$c_{\alpha_1}$	mit $\alpha_1 = P(M_N \leq c_{\alpha_1}) \leq \alpha$
$\alpha_1$	
$c_{\alpha_2}$	mit $\alpha_2 = P(M_N \leq c_{\alpha_2}) > \alpha$
$\alpha_2$	

		$\alpha$ -Werte									
$m$	$n$	0.005	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990	0.995
2	2						2.50	2.50	2.50	2.50	2.50
		0.50 0.1667	0.50 0.1667	0.50 0.1667	0.50 0.1667	0.50 0.1667	0.8333 4.50 1.0000	0.8333 4.50 1.0000	0.8333 4.50 1.0000	0.8333 4.50 1.0000	0.8333 4.50 1.0000
2	3						4.00 0.5000	5.00 0.9000	5.00 0.9000	5.00 0.9000	5.00 0.9000
		1.00 0.2000	1.00 0.2000	1.00 0.2000	1.00 0.2000	1.00 0.2000	5.00 0.9000	8.00 1.0000	8.00 1.0000	8.00 1.0000	8.00 1.0000
2	4					0.50 0.0667	6.50 0.6667	8.50 0.9333	8.50 0.9333	8.50 0.9333	8.50 0.9333
		0.50 0.0667	0.50 0.0667	0.50 0.0667	0.50 0.0667	2.50 0.3333	8.50 0.9333	12.50 1.0000	12.50 1.0000	12.50 1.0000	12.50 1.0000
2	5					1.00 0.0952	10.00 0.7619	10.00 0.7619	13.00 0.9524	13.00 0.9524	13.00 0.9524
		1.00 0.0952	1.00 0.0952	1.00 0.0952	1.00 0.0952	2.00 0.1429	13.00 0.9524	13.00 0.9524	18.00 1.0000	18.00 1.0000	18.00 1.0000
2	6				0.50 0.0357	0.50 0.0357	14.50 0.8214	14.50 0.8214	18.50 0.9643	18.50 0.9643	18.50 0.9643
		0.50 0.0357	0.50 0.0357	0.50 0.0357	2.50 0.1786	2.50 0.1786	18.50 0.9643	18.50 0.9643	24.50 1.0000	24.50 1.0000	24.50 1.0000
2	7					2.00 0.0833	20.00 0.8611	20.00 0.8611	25.00 0.9722	25.00 0.9722	25.00 0.9722
		1.00 0.0556	1.00 0.0556	1.00 0.0556	1.00 0.0556	4.00 0.1389	25.00 0.9722	25.00 0.9722	32.00 1.0000	32.00 1.0000	32.00 1.0000
2	8			0.50 0.0222	0.50 0.0222	0.50 0.0222	26.50 0.8889	26.50 0.8889	26.50 0.8889	32.50 0.9778	32.50 0.9778
		0.50 0.0222	0.50 0.0222	2.50 0.1111	2.50 0.1111	2.50 0.1111	32.50 0.9778	32.50 0.9778	32.50 0.9778	40.50 1.0000	40.50 1.0000
2	9				1.00 0.0364	4.00 0.0909	32.00 0.8364	34.00 0.9091	34.00 0.9091	41.00 0.9818	41.00 0.9818
		1.00 0.0364	1.00 0.0364	1.00 0.0364	2.00 0.0545	5.00 0.1636	34.00 0.9091	41.00 0.9818	41.00 0.9818	50.00 1.0000	50.00 1.0000
2	10			0.50 0.0152	0.50 0.0152	4.50 0.0909	40.50 0.8636	42.50 0.9242	42.50 0.9242	50.50 0.9848	50.50 0.9848
		0.50 0.0152	0.50 0.0152	2.50 0.0758	2.50 0.0758	6.50 0.1515	42.50 0.9242	50.50 0.9848	50.50 0.9848	60.50 1.0000	60.50 1.0000

m	n	$\alpha$ -Werte									
		0.005	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990	0.995
2	11	1.00 0.0256	1.00 0.0256	1.00 0.0256	2.00 0.0385 4.00 0.0641	4.00 0.0641 5.00 0.1154	50.00 0.8846 52.00 0.9359	52.00 0.9359 61.00 0.9872	52.00 0.9359 61.00 0.9872	61.00 0.9872 72.00 1.0000	61.00 0.9872 72.00 1.0000
2	12	0.50 0.0110	0.50 0.0110	0.50 0.0110 2.50 0.0549	0.50 0.0110 2.50 0.0549	4.50 0.0659 6.50 0.1099	54.50 0.8901 60.50 0.9011	62.50 0.9451 72.50 0.9890	62.50 0.9451 72.50 0.9890	72.50 0.9890 84.50 1.0000	72.50 0.9890 84.50 1.0000
2	13	1.00 0.0190	1.00 0.0190	1.00 0.0190 2.00 0.0286	1.00 0.0190 2.00 0.0286	4.00 0.0476 5.00 0.0857	8.00 0.0952 9.00 0.1143	61.00 0.8667 72.00 0.9143	72.00 0.9143 74.00 0.9524	74.00 0.9524 85.00 0.9905	85.00 0.9905 98.00 1.0000
2	14	0.50 0.0083	0.50 0.0083 2.50 0.0417	0.50 0.0083 2.50 0.0417	0.50 0.0083 2.50 0.0417	4.50 0.0500 6.50 0.0833	6.50 0.0833 8.50 0.1167	72.50 0.8833 84.50 0.9167	84.50 0.9250 86.50 0.9583	86.50 0.9583 98.50 0.9917	98.50 0.9917 112.50 1.0000
2	15	1.00 0.0147	1.00 0.0147	2.00 0.0221 4.00 0.0368	2.00 0.0221 4.00 0.0368	4.00 0.0368 5.00 0.0662	9.00 0.0882 10.00 0.1176	85.00 0.8971 98.00 0.9265	98.00 0.9338 100.00 0.9632	100.00 0.9632 113.00 0.9926	113.00 0.9926 128.00 1.0000
2	16	0.50 0.0065	0.50 0.0065 2.50 0.0327	0.50 0.0065 2.50 0.0327	0.50 0.0065 2.50 0.0327	4.50 0.0392 6.50 0.0654	8.50 0.0915 12.50 0.1242	92.50 0.8824 98.50 0.9085	112.50 0.9412 114.50 0.9673	114.50 0.9673 128.50 0.9935	128.50 0.9935 144.50 1.0000
2	17	1.00 0.0117	1.00 0.0117	2.00 0.0175 4.00 0.0292	2.00 0.0175 4.00 0.0292	4.00 0.0292 5.00 0.0526	10.00 0.0936 13.00 0.1170	106.00 0.8947 113.00 0.9181	128.00 0.9474 130.00 0.9708	130.00 0.9708 145.00 0.9942	145.00 0.9942 162.00 1.0000
2	18	0.50 0.0053	0.50 0.0053 2.50 0.0263	0.50 0.0053 2.50 0.0263	0.50 0.0053 2.50 0.0263	4.50 0.0316 6.50 0.0526	12.50 0.1000 14.50 0.1211	114.50 0.8842 120.50 0.9053	132.50 0.9474 144.50 0.9526	146.50 0.9737 162.50 0.9947	162.50 0.9947 180.50 1.0000
3	3	2.75 0.1000	2.75 0.1000	2.75 0.1000	2.75 0.1000	2.75 0.1000 4.75 0.2000	10.75 0.8000 12.75 0.9000	12.75 0.9000 14.75 1.0000	12.75 0.9000 14.75 1.0000	12.75 0.9000 14.75 1.0000	12.75 0.9000 14.75 1.0000
3	4	2.00 0.0286	2.00 0.0286	2.00 0.0286	2.00 0.0286	2.00 0.0286 5.00 0.1429	2.00 0.0286 18.00 0.8857	19.00 0.9429 19.00 1.0000	19.00 0.9429 22.00 1.0000	19.00 0.9429 22.00 1.0000	19.00 0.9429 22.00 1.0000
3	5	2.75 0.0357	2.75 0.0357	2.75 0.0357	2.75 0.0357	2.75 0.0357 4.75 0.0714	4.75 0.0714 20.75 0.8571	24.75 0.9286 24.75 0.9286	26.75 0.9643 30.75 1.0000	26.75 0.9643 30.75 1.0000	26.75 0.9643 30.75 1.0000
3	6	2.00 0.0119	2.00 0.0119	2.00 0.0119 5.00 0.0595	2.00 0.0119 5.00 0.0595	2.00 0.0119 5.00 0.0595	8.00 0.0952 9.00 0.1190	29.00 0.8929 32.00 0.9048	33.00 0.9286 34.00 0.9524	34.00 0.9524 36.00 0.9762	36.00 0.9762 41.00 1.0000



m	n	$\alpha$ -Werte									
		0.005	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990	0.995
3	7			2.75	6.75	6.75	34.75	40.75	44.75	46.75	46.75
				0.0167	0.0500	0.0500	0.8500	0.9333	0.9667	0.9833	0.9833
		2.75	2.75	4.75	8.75	8.75	38.75	42.75	46.75	52.75	52.75
3	8	0.0167	0.0167	0.0333	0.1167	0.1167	0.9167	0.9500	0.9833	1.0000	1.0000
			2.00	2.00	8.00	11.00	45.00	50.00	54.00	59.00	59.00
			0.0061	0.0061	0.0485	0.0970	0.8848	0.9394	0.9636	0.9879	0.9879
3	9	2.00	5.00	5.00	9.00	13.00	50.00	51.00	57.00	66.00	66.00
		0.0061	0.0303	0.0303	0.0606	0.1212	0.9394	0.9515	0.9758	1.0000	1.0000
			2.75	4.75	6.75	12.75	54.75	60.75	66.75	70.75	72.75
3	10		0.0091	0.0182	0.0273	0.0909	0.8727	0.9182	0.9727	0.9818	0.9909
		2.75	4.75	6.75	8.75	14.75	56.75	62.75	70.75	72.75	80.75
		0.0091	0.0182	0.0273	0.0636	0.1364	0.9091	0.9636	0.9818	0.9909	1.0000
3	11	2.00	2.00	6.00	10.00	14.00	68.00	76.00	77.00	86.00	88.00
		0.0035	0.0035	0.0245	0.0490	0.0979	0.8986	0.9441	0.9720	0.9860	0.9930
		5.00	5.00	8.00	11.00	17.00	70.00	77.00	81.00	88.00	97.00
3	12	0.0175	0.0175	0.0280	0.0559	0.1189	0.9266	0.9720	0.9790	0.9930	1.0000
			2.75	6.75	10.75	16.75	74.75	84.75	90.75	102.75	104.75
			0.0055	0.0165	0.0440	0.0879	0.8846	0.9451	0.9560	0.9890	0.9945
3	13	2.75	4.75	8.75	12.75	18.75	78.75	86.75	92.75	104.75	114.75
		0.0055	0.0110	0.0385	0.0549	0.1099	0.9066	0.9505	0.9780	0.9945	1.0000
			2.00	2.00	9.00	13.00	20.00	89.00	99.00	107.00	121.00
3	14	0.0022	0.0022	0.0220	0.0440	0.0945	0.8879	0.9385	0.9648	0.9868	0.9912
		5.00	5.00	10.00	14.00	21.00	90.00	101.00	110.00	121.00	123.00
		0.0110	0.0110	0.0308	0.0615	0.1121	0.9055	0.9560	0.9824	0.9912	0.9956
3	15	2.75	4.75	8.75	12.75	20.75	102.75	114.75	124.75	132.75	140.75
		0.0036	0.0071	0.0250	0.0357	0.0893	0.8893	0.9464	0.9714	0.9893	0.9929
		4.75	6.75	10.75	14.75	22.75	104.75	116.75	128.75	140.75	142.75
3	16	0.0071	0.0107	0.0286	0.0536	0.1036	0.9071	0.9500	0.9857	0.9929	0.9964
			2.00	5.00	11.00	17.00	25.00	116.00	128.00	138.00	149.00
			0.0015	0.0074	0.0235	0.0500	0.0868	0.8926	0.9353	0.9735	0.9882
3	17	5.00	6.00	13.00	18.00	26.00	117.00	129.00	144.00	153.00	164.00
		0.0074	0.0103	0.0294	0.0544	0.1044	0.9044	0.9500	0.9765	0.9912	0.9971
			4.75	6.75	12.75	18.75	26.75	132.75	146.75	156.75	164.75
3	18	0.0049	0.0074	0.0245	0.0490	0.0907	0.8995	0.9485	0.9681	0.9804	0.9926
		6.75	8.75	14.75	20.75	28.75	134.75	148.75	158.75	170.75	184.75
		0.0074	0.0172	0.0368	0.0613	0.1005	0.9191	0.9583	0.9779	0.9902	0.9951
3	19	2.00	8.00	13.00	20.00	32.00	146.00	164.00	179.00	187.00	198.00
		0.0010	0.0083	0.0206	0.0444	0.0970	0.8937	0.9463	0.9732	0.9835	0.9938
		5.00	9.00	14.00	21.00	33.00	149.00	166.00	181.00	194.00	209.00
3	20	0.0052	0.0103	0.0289	0.0526	0.1011	0.9102	0.9567	0.9814	0.9917	0.9959
			4.75	6.75	12.75	20.75	34.75	162.75	180.75	192.75	222.75
			0.0035	0.0053	0.0175	0.0439	0.1000	0.8930	0.9421	0.9719	0.9860
3	21	6.75	8.75	14.75	22.75	36.75	164.75	182.75	200.75	218.75	234.75
		0.0053	0.0123	0.0263	0.0509	0.1070	0.9018	0.9509	0.9750	0.9930	0.9965
				5.00	5.00	9.00	29.00	31.00	31.00	33.00	33.00
4	4			0.0143	0.0143	0.0714	0.8714	0.9286	0.9286	0.9857	0.9857
		5.00	5.00	9.00	9.00	11.00	31.00	33.00	33.00	37.00	37.00
		0.0143	0.0143	0.0714	0.0714	0.1286	0.9286	0.9857	0.9857	1.0000	1.0000

		α-Werte									
m	n	0.005	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990	0.995
4	5			6.00 0.0159	10.00 0.0397	11.00 0.0556	37.00 0.8730	41.00 0.9286	42.00 0.9603	42.00 0.9603	45.00 0.9921
		6.00 0.0159	6.00 0.0159	9.00 0.0317	11.00 0.0556	14.00 0.1190	38.00 0.9048	42.00 0.9603	45.00 0.9921	45.00 0.9921	50.00 1.0000
		5.00 0.0048	5.00 0.0048	9.00 0.0238	13.00 0.0476	15.00 0.0857	47.00 0.8952	51.00 0.9333	53.00 0.9571	55.00 0.9762	55.00 0.9762
4	6			9.00 0.0238	13.00 0.0476	15.00 0.0857	47.00 0.8952	51.00 0.9333	53.00 0.9571	55.00 0.9762	55.00 0.9762
		5.00 0.0048	5.00 0.0048	9.00 0.0238	13.00 0.0476	15.00 0.0857	47.00 0.8952	51.00 0.9333	53.00 0.9571	55.00 0.9762	55.00 0.9762
		9.00 0.0238	9.00 0.0238	11.00 0.0429	15.00 0.0857	17.00 0.1095	49.00 0.9143	53.00 0.9571	55.00 0.9762	59.00 0.9952	59.00 0.9952
4	7			6.00 0.0061	11.00 0.0212	14.00 0.0455	20.00 0.0909	58.00 0.8848	63.00 0.9394	68.00 0.9727	70.00 0.9848
		6.00 0.0061	9.00 0.0121	14.00 0.0455	15.00 0.0576	21.00 0.1152	59.00 0.9030	66.00 0.9576	70.00 0.9848	75.00 0.9970	75.00 0.9970
		5.00 0.0020	5.00 0.0020	13.00 0.0202	17.00 0.0465	21.00 0.0869	69.00 0.8970	77.00 0.9475	81.00 0.9636	87.00 0.9899	87.00 0.9899
4	8			9.00 0.0101	13.00 0.0364	17.00 0.0545	21.00 0.1030	69.00 0.9051	77.00 0.9475	81.00 0.9636	87.00 0.9899
		5.00 0.0020	5.00 0.0020	13.00 0.0202	17.00 0.0465	21.00 0.0869	69.00 0.8970	77.00 0.9475	81.00 0.9636	87.00 0.9899	87.00 0.9899
		9.00 0.0101	9.00 0.0101	15.00 0.0364	19.00 0.0545	23.00 0.1030	71.00 0.9051	79.00 0.9556	83.00 0.9798	93.00 0.9980	93.00 0.9980
4	9			6.00 0.0028	11.00 0.0098	14.00 0.0210	20.00 0.0420	85.00 0.8979	92.00 0.9497	98.00 0.9748	104.00 0.9874
		6.00 0.0028	11.00 0.0098	14.00 0.0210	20.00 0.0420	27.00 0.0965	85.00 0.8979	92.00 0.9497	98.00 0.9748	104.00 0.9874	106.00 0.9930
		9.00 0.0056	14.00 0.0210	15.00 0.0266	21.00 0.0531	29.00 0.1077	86.00 0.9231	93.00 0.9552	101.00 0.9804	106.00 0.9930	113.00 0.9986
4	10			9.00 0.0050	13.00 0.0100	17.00 0.0230	21.00 0.0430	97.00 0.8961	105.00 0.9491	115.00 0.9740	121.00 0.9860
		9.00 0.0050	13.00 0.0100	17.00 0.0230	21.00 0.0430	31.00 0.0969	97.00 0.8961	105.00 0.9491	115.00 0.9740	121.00 0.9860	125.00 0.9910
		11.00 0.0090	15.00 0.0180	19.00 0.0270	23.00 0.0509	33.00 0.1129	99.00 0.9161	107.00 0.9530	117.00 0.9820	123.00 0.9900	127.00 0.9950
4	11			10.00 0.0037	11.00 0.0051	20.00 0.0220	26.00 0.0462	113.00 0.8967	125.00 0.9495	134.00 0.9722	143.00 0.9897
		10.00 0.0037	11.00 0.0051	20.00 0.0220	26.00 0.0462	35.00 0.0967	113.00 0.8967	125.00 0.9495	134.00 0.9722	143.00 0.9897	148.00 0.9934
		11.00 0.0051	14.00 0.0110	21.00 0.0278	27.00 0.0505	36.00 0.1011	114.00 0.9099	126.00 0.9612	135.00 0.9780	146.00 0.9927	150.00 0.9963
4	12			11.00 0.0049	15.00 0.0099	21.00 0.0236	29.00 0.0489	129.00 0.8962	141.00 0.9495	153.00 0.9747	161.00 0.9879
		11.00 0.0049	15.00 0.0099	21.00 0.0236	29.00 0.0489	39.00 0.0978	129.00 0.8962	141.00 0.9495	153.00 0.9747	161.00 0.9879	171.00 0.9945
		13.00 0.0055	17.00 0.0126	23.00 0.0280	31.00 0.0533	41.00 0.1093	131.00 0.9159	143.00 0.9538	155.00 0.9791	163.00 0.9901	173.00 0.9951
4	13			11.00 0.0029	17.00 0.0088	25.00 0.0227	33.00 0.0475	146.00 0.8933	162.00 0.9496	173.00 0.9710	186.00 0.9891
		11.00 0.0029	17.00 0.0088	25.00 0.0227	33.00 0.0475	45.00 0.0971	146.00 0.8933	162.00 0.9496	173.00 0.9710	186.00 0.9891	193.00 0.9941
		14.00 0.0063	18.00 0.0113	25.00 0.0265	34.00 0.0504	46.00 0.1071	147.00 0.9000	163.00 0.9529	174.00 0.9777	187.00 0.9908	198.00 0.9958
4	14			13.00 0.0033	19.00 0.0088	27.00 0.0235	37.00 0.0477	163.00 0.8931	181.00 0.9487	195.00 0.9739	207.00 0.9889
		13.00 0.0033	19.00 0.0088	27.00 0.0235	37.00 0.0477	49.00 0.0928	163.00 0.8931	181.00 0.9487	195.00 0.9739	207.00 0.9889	217.00 0.9941
		15.00 0.0059	21.00 0.0141	29.00 0.0291	39.00 0.0582	51.00 0.1059	165.00 0.9049	183.00 0.9539	197.00 0.9755	213.00 0.9915	221.00 0.9954
4	15			15.00 0.0049	21.00 0.0098	29.00 0.0199	41.00 0.0472	183.00 0.8965	202.00 0.9466	218.00 0.9727	234.00 0.9892
		15.00 0.0049	21.00 0.0098	29.00 0.0199	41.00 0.0472	56.00 0.0993	183.00 0.8965	202.00 0.9466	218.00 0.9727	234.00 0.9892	245.00 0.9943
		17.00 0.0054	22.00 0.0114	30.00 0.0261	42.00 0.0524	57.00 0.1045	185.00 0.9017	203.00 0.9518	219.00 0.9768	235.00 0.9902	247.00 0.9954
4	16			17.00 0.0047	21.00 0.0089	33.00 0.0233	43.00 0.0436	203.00 0.8933	223.00 0.9451	241.00 0.9728	259.00 0.9870
		17.00 0.0047	21.00 0.0089	33.00 0.0233	43.00 0.0436	61.00 0.0962	203.00 0.8933	223.00 0.9451	241.00 0.9728	259.00 0.9870	275.00 0.9946
		19.00 0.0056	23.00 0.0105	35.00 0.0283	45.00 0.0504	63.00 0.1061	205.00 0.9028	225.00 0.9525	243.00 0.9752	261.00 0.9903	277.00 0.9955

m	n	$\alpha$ -Werte									
		0.005	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990	0.995
5	5		11.25 0.0079	15.25 0.0159	17.25 0.0317	23.25 0.0952	55.25 0.8889	59.25 0.9365	61.25 0.9683	65.25 0.9841	67.25 0.9921
			11.25 0.0079	15.25 0.0159	17.25 0.0317	21.25 0.0635	25.25 0.1111	57.25 0.9048	61.25 0.9683	65.25 0.9841	71.25 1.0000
			10.00 0.0022	10.00 0.0022	19.00 0.0238	24.00 0.0476	27.00 0.0758	69.00 0.8810	75.00 0.9459	76.00 0.9632	83.00 0.9870
5	6		15.00 0.0108	15.00 0.0108	20.00 0.0260	25.00 0.0563	30.00 0.1104	70.00 0.9069	76.00 0.9632	79.00 0.9805	84.00 0.9913
			10.00 0.0022	10.00 0.0022	19.00 0.0238	24.00 0.0476	27.00 0.0758	69.00 0.8810	75.00 0.9459	76.00 0.9632	83.00 0.9870
			15.00 0.0108	15.00 0.0108	20.00 0.0260	25.00 0.0563	30.00 0.1104	70.00 0.9069	76.00 0.9632	79.00 0.9805	84.00 0.9913
5	7		11.25 0.0025	15.25 0.0051	21.25 0.0202	27.25 0.0480	33.25 0.0884	83.25 0.8990	89.25 0.9495	93.25 0.9646	101.25 0.9899
			15.25 0.0051	17.25 0.0101	23.25 0.0303	29.25 0.0631	35.25 0.1136	85.25 0.9167	91.25 0.9520	95.25 0.9773	103.25 0.9924
			11.25 0.0025	15.25 0.0051	21.25 0.0202	27.25 0.0480	33.25 0.0884	83.25 0.8990	89.25 0.9495	93.25 0.9646	101.25 0.9899
5	8		15.00 0.0039	20.00 0.0093	26.00 0.0225	31.00 0.0490	39.00 0.0979	99.00 0.8974	106.00 0.9448	113.00 0.9697	118.00 0.9852
			18.00 0.0070	22.00 0.0124	27.00 0.0272	33.00 0.0521	40.00 0.1049	101.00 0.9068	107.00 0.9510	114.00 0.9759	122.00 0.9922
			15.00 0.0039	20.00 0.0093	26.00 0.0225	31.00 0.0490	39.00 0.0979	99.00 0.8974	106.00 0.9448	113.00 0.9697	118.00 0.9852
5	9		17.25 0.0040	21.25 0.0080	29.25 0.0250	35.25 0.0450	45.25 0.0999	115.25 0.8951	123.25 0.9411	133.25 0.9710	141.25 0.9890
			21.25 0.0080	23.25 0.0120	31.25 0.0300	37.25 0.0509	47.25 0.1149	117.25 0.9121	125.25 0.9500	135.25 0.9790	143.25 0.9900
			17.25 0.0040	21.25 0.0080	29.25 0.0250	35.25 0.0450	45.25 0.0999	115.25 0.8951	123.25 0.9411	133.25 0.9710	141.25 0.9890
5	10		20.00 0.0040	26.00 0.0097	33.00 0.0223	41.00 0.0456	52.00 0.0989	134.00 0.8934	146.00 0.9494	154.00 0.9724	166.00 0.9897
			22.00 0.0053	27.00 0.0117	34.00 0.0266	42.00 0.0503	53.00 0.1002	135.00 0.9068	147.00 0.9547	155.00 0.9757	168.00 0.9923
			20.00 0.0040	26.00 0.0097	33.00 0.0223	41.00 0.0456	52.00 0.0989	134.00 0.8934	146.00 0.9494	154.00 0.9724	166.00 0.9897
5	11		21.25 0.0037	27.25 0.0087	37.25 0.0234	45.25 0.0458	57.25 0.0934	153.25 0.8997	165.25 0.9473	177.25 0.9748	187.25 0.9881
			23.25 0.0055	29.25 0.0114	39.25 0.0275	47.25 0.0527	59.25 0.1053	155.25 0.9125	167.25 0.9519	179.25 0.9776	191.25 0.9918
			21.25 0.0037	27.25 0.0087	37.25 0.0234	45.25 0.0458	57.25 0.0934	153.25 0.8997	165.25 0.9473	177.25 0.9748	187.25 0.9881
5	12		26.00 0.0047	30.00 0.0082	42.00 0.0244	53.00 0.0486	65.00 0.0931	174.00 0.8993	189.00 0.9473	202.00 0.9746	216.00 0.9888
			27.00 0.0057	31.00 0.0102	43.00 0.0267	54.00 0.0535	66.00 0.1021	175.00 0.9071	190.00 0.9551	203.00 0.9772	217.00 0.9901
			26.00 0.0047	30.00 0.0082	42.00 0.0244	53.00 0.0486	65.00 0.0931	174.00 0.8993	189.00 0.9473	202.00 0.9746	216.00 0.9888
5	13		27.25 0.0044	33.25 0.0082	45.25 0.0233	57.25 0.0476	73.25 0.0997	195.25 0.8985	211.25 0.9444	227.25 0.9741	243.25 0.9893
			29.25 0.0058	35.25 0.0105	47.25 0.0268	59.25 0.0537	75.25 0.1076	197.25 0.9059	213.25 0.9512	229.25 0.9762	245.25 0.9904
			27.25 0.0044	33.25 0.0082	45.25 0.0233	57.25 0.0476	73.25 0.0997	195.25 0.8985	211.25 0.9444	227.25 0.9741	243.25 0.9893
5	14		30.00 0.0044	38.00 0.0088	51.00 0.0248	65.00 0.0495	81.00 0.0978	219.00 0.8999	238.00 0.9479	254.00 0.9720	275.00 0.9896
			31.00 0.0054	39.00 0.0108	52.00 0.0255	66.00 0.0544	82.00 0.1034	220.00 0.9037	239.00 0.9520	255.00 0.9754	276.00 0.9906
			30.00 0.0044	38.00 0.0088	51.00 0.0248	65.00 0.0495	81.00 0.0978	219.00 0.8999	238.00 0.9479	254.00 0.9720	275.00 0.9896
5	15		33.25 0.0045	39.25 0.0077	55.25 0.0235	69.25 0.0470	89.25 0.0988	241.25 0.8951	265.25 0.9494	283.25 0.9739	305.25 0.9896
			35.25 0.0058	41.25 0.0103	57.25 0.0263	71.25 0.0526	91.25 0.1053	243.25 0.9005	267.25 0.9542	285.25 0.9763	307.25 0.9906
			33.25 0.0045	39.25 0.0077	55.25 0.0235	69.25 0.0470	89.25 0.0988	241.25 0.8951	265.25 0.9494	283.25 0.9739	305.25 0.9896
6	6		17.50 0.0011	27.50 0.0097	33.50 0.0238	39.50 0.0465	45.50 0.0963	93.50 0.8734	99.50 0.9307	105.50 0.9675	111.50 0.9848
			23.50 0.0054	29.50 0.0152	35.50 0.0325	41.50 0.0693	47.50 0.1266	95.50 0.9037	101.50 0.9535	107.50 0.9762	113.50 0.9903
			17.50 0.0011	27.50 0.0097	33.50 0.0238	39.50 0.0465	45.50 0.0963	93.50 0.8734	99.50 0.9307	105.50 0.9675	111.50 0.9848

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		0.005	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990	0.995
6	7	27.00	31.00	38.00	45.00	54.00	114.00	122.00	129.00	135.00	140.00
		0.0047	0.0099	0.0204	0.0466	0.0973	0.8980	0.9476	0.9749	0.9883	0.9948
		28.00	34.00	39.00	46.00	55.00	115.00	123.00	130.00	138.00	142.00
6	8	0.0052	0.0146	0.0251	0.0524	0.1206	0.9108	0.9580	0.9779	0.9918	0.9971
		29.50	35.50	41.50	49.50	59.50	131.50	141.50	149.50	157.50	165.50
		0.0047	0.0100	0.0213	0.0430	0.0942	0.8924	0.9461	0.9737	0.9873	0.9940
6	9	31.50	37.50	43.50	51.50	61.50	133.50	143.50	151.50	159.50	167.50
		0.0060	0.0130	0.0266	0.0509	0.1062	0.9004	0.9540	0.9750	0.9900	0.9967
		34.00	39.00	49.00	58.00	69.00	154.00	165.00	175.00	186.00	193.00
6	10	0.0050	0.0086	0.0232	0.0488	0.0969	0.8973	0.9467	0.9734	0.9894	0.9944
		35.00	40.00	50.00	59.00	70.00	155.00	166.00	176.00	187.00	195.00
		0.0062	0.0110	0.0256	0.0547	0.1039	0.9065	0.9504	0.9766	0.9910	0.9956
6	11	37.50	43.50	53.50	63.50	75.50	175.50	189.50	201.50	213.50	221.50
		0.0049	0.0100	0.0237	0.0448	0.0888	0.8976	0.9476	0.9734	0.9891	0.9948
		39.50	45.50	55.50	65.50	77.50	177.50	191.50	203.50	215.50	223.50
6	12	0.0054	0.0111	0.0262	0.0521	0.1010	0.9063	0.9540	0.9784	0.9901	0.9953
		42.00	49.00	61.00	73.00	87.00	200.00	216.00	229.00	244.00	253.00
		0.0048	0.0094	0.0243	0.0490	0.0977	0.8998	0.9491	0.9737	0.9898	0.9941
6	13	43.00	50.00	62.00	74.00	88.00	201.00	217.00	230.00	245.00	254.00
		0.0060	0.0103	0.0255	0.0512	0.1037	0.9009	0.9504	0.9758	0.9901	0.9954
		45.50	51.50	67.50	79.50	95.50	223.50	243.50	257.50	273.50	285.50
6	14	0.0048	0.0082	0.0248	0.0470	0.0950	0.8954	0.9494	0.9733	0.9879	0.9944
		47.50	53.50	69.50	81.50	97.50	225.50	245.50	259.50	275.50	287.50
		0.0063	0.0102	0.0273	0.0513	0.1033	0.9004	0.9542	0.9757	0.9900	0.9950
7	7	50.00	58.00	74.00	89.00	107.00	252.00	273.00	290.00	310.00	323.00
		0.0047	0.0090	0.0234	0.0483	0.0985	0.8979	0.9499	0.9736	0.9898	0.9949
		51.00	59.00	75.00	90.00	108.00	253.00	274.00	291.00	311.00	324.00
7	8	0.0053	0.0101	0.0256	0.0503	0.1008	0.9001	0.9510	0.9751	0.9902	0.9951
		53.50	63.50	81.50	97.50	117.50	279.50	301.50	321.50	343.50	357.50
		0.0049	0.0093	0.0246	0.0495	0.0974	0.8972	0.9459	0.9730	0.9888	0.9944
7	9	55.50	65.50	83.50	99.50	119.50	281.50	303.50	323.50	345.50	359.50
		0.0054	0.0108	0.0281	0.0527	0.1043	0.9040	0.9501	0.9754	0.9901	0.9950
		41.75	47.75	57.75	65.75	75.75	147.75	157.75	165.75	175.75	179.75
7	10	0.0029	0.0082	0.0233	0.0466	0.0950	0.8869	0.9452	0.9709	0.9889	0.9948
		43.75	49.75	59.75	67.75	77.75	149.75	159.75	167.75	177.75	183.75
		0.0052	0.0111	0.0291	0.0548	0.1131	0.9050	0.9534	0.9767	0.9918	0.9971
7	11	50.00	55.00	66.00	75.00	87.00	173.00	184.00	195.00	204.00	211.00
		0.0050	0.0082	0.0238	0.0479	0.0977	0.8988	0.9455	0.9745	0.9890	0.9939
		51.00	56.00	67.00	76.00	88.00	174.00	185.00	196.00	205.00	212.00
7	12	0.0059	0.0110	0.0272	0.0533	0.1052	0.9004	0.9510	0.9776	0.9902	0.9952
		53.75	59.75	71.75	83.75	95.75	197.75	211.75	221.75	235.75	245.75
		0.0049	0.0087	0.0224	0.0495	0.0920	0.8970	0.9495	0.9706	0.9895	0.9949
7	13	55.75	61.75	73.75	85.75	97.75	199.75	213.75	223.75	237.75	247.75
		0.0058	0.0103	0.0267	0.0556	0.1016	0.9073	0.9549	0.9764	0.9911	0.9963
		59.00	67.00	82.00	94.00	109.00	226.00	242.00	254.00	270.00	279.00
7	14	0.0046	0.0090	0.0243	0.0478	0.0975	0.8978	0.9499	0.9726	0.9896	0.9949
		60.00	68.00	83.00	95.00	110.00	227.00	243.00	255.00	271.00	280.00
		0.0053	0.0100	0.0268	0.0521	0.1009	0.9051	0.9544	0.9753	0.9902	0.9951

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		0.005	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990	0.995
7	11	63.75 0.0042	73.75 0.0096	89.75 0.0246	103.75 0.0495	119.75 0.0946	253.75 0.8991	271.75 0.9483	287.75 0.9742	303.75 0.9882	315.75 0.9943
		65.75 0.0050	75.75 0.0103	91.75 0.0272	105.75 0.0526	121.75 0.1012	255.75 0.9053	273.75 0.9506	289.75 0.9767	305.75 0.9904	317.75 0.9952
		71.00 0.0048	82.00 0.0094	99.00 0.0241	115.00 0.0489	135.00 0.0996	285.00 0.8997	306.00 0.9491	323.00 0.9738	343.00 0.9893	357.00 0.9950
7	12	72.00 0.0051	83.00 0.0104	100.00 0.0258	116.00 0.0519	136.00 0.1044	286.00 0.9020	307.00 0.9515	324.00 0.9754	344.00 0.9900	358.00 0.9952
		75.75 0.0042	87.75 0.0089	107.75 0.0239	125.75 0.0487	147.75 0.0983	315.75 0.8972	339.75 0.9487	359.75 0.9745	381.75 0.9889	397.75 0.9949
		77.75 0.0050	89.75 0.0101	109.75 0.0261	127.75 0.0528	149.75 0.1054	317.75 0.9039	341.75 0.9523	361.75 0.9758	383.75 0.9905	399.75 0.9953
8	8	72.00 0.0043	78.00 0.0078	92.00 0.0239	104.00 0.0496	118.00 0.0984	218.00 0.8908	232.00 0.9457	244.00 0.9740	258.00 0.9900	264.00 0.9942
		74.00 0.0058	80.00 0.0100	94.00 0.0260	106.00 0.0543	120.00 0.1092	220.00 0.9016	234.00 0.9504	246.00 0.9761	260.00 0.9922	266.00 0.9957
		79.00 0.0042	90.00 0.0096	103.00 0.0229	116.00 0.0487	132.00 0.0988	250.00 0.8959	266.00 0.9477	279.00 0.9742	294.00 0.9896	303.00 0.9945
8	9	80.00 0.0050	91.00 0.0102	104.00 0.0253	117.00 0.0510	133.00 0.1016	251.00 0.9005	267.00 0.9520	280.00 0.9760	295.00 0.9901	304.00 0.9952
		88.00 0.0050	98.00 0.0100	114.00 0.0245	128.00 0.0481	146.00 0.0980	280.00 0.8917	300.00 0.9487	316.00 0.9744	332.00 0.9891	344.00 0.9948
		90.00 0.0059	100.00 0.0112	116.00 0.0280	130.00 0.0525	148.00 0.1033	282.00 0.9001	302.00 0.9532	318.00 0.9768	334.00 0.9900	346.00 0.9950
8	11	95.00 0.0047	107.00 0.0095	126.00 0.0247	143.00 0.0500	163.00 0.0988	316.00 0.8984	337.00 0.9489	355.00 0.9739	376.00 0.9900	388.00 0.9948
		96.00 0.0051	108.00 0.0105	127.00 0.0256	144.00 0.0530	164.00 0.1039	317.00 0.9021	338.00 0.9501	356.00 0.9759	377.00 0.9909	389.00 0.9953
		102.00 0.0044	116.00 0.0097	136.00 0.0234	156.00 0.0496	178.00 0.0970	352.00 0.8995	376.00 0.9497	396.00 0.9749	418.00 0.9894	434.00 0.9949
8	12	104.00 0.0051	118.00 0.0103	138.00 0.0252	158.00 0.0533	180.00 0.1031	354.00 0.9056	378.00 0.9531	398.00 0.9763	420.00 0.9903	436.00 0.9953
		110.25 0.0045	120.25 0.0085	138.25 0.0230	154.25 0.0481	172.25 0.0973	308.25 0.8975	326.25 0.9476	342.25 0.9742	360.25 0.9899	370.25 0.9949
		112.25 0.0051	122.25 0.0101	140.25 0.0258	156.25 0.0524	174.25 0.1025	310.25 0.9027	328.25 0.9519	344.25 0.9770	362.25 0.9915	372.25 0.9955
9	10	122.00 0.0049	134.00 0.0096	154.00 0.0250	171.00 0.0492	191.00 0.0963	347.00 0.8987	368.00 0.9489	385.00 0.9738	404.00 0.9890	419.00 0.9950
		123.00 0.0050	135.00 0.0101	155.00 0.0256	172.00 0.0514	192.00 0.1003	348.00 0.9021	369.00 0.9515	386.00 0.9751	405.00 0.9900	420.00 0.9955
		132.25 0.0049	144.25 0.0089	166.25 0.0235	186.25 0.0484	210.25 0.0984	384.25 0.8942	408.25 0.9465	430.25 0.9744	452.25 0.9896	468.25 0.9950
9	11	134.25 0.0056	146.25 0.0102	168.25 0.0251	188.25 0.0519	212.25 0.1049	386.25 0.9005	410.25 0.9500	432.25 0.9750	454.25 0.9900	470.25 0.9955
		162.50 0.0050	176.50 0.0098	198.50 0.0241	218.50 0.0489	242.50 0.0982	418.50 0.8966	442.50 0.9479	462.50 0.9740	484.50 0.9891	498.50 0.9944
		164.50 0.0056	178.50 0.0109	200.50 0.0260	220.50 0.0521	244.50 0.1034	420.50 0.9018	444.50 0.9511	464.50 0.9759	486.50 0.9902	500.50 0.9950

## O Kruskal-Wallis-Test

Die Tabelle gibt Quantile  $h_{1-\alpha}$  der  $H$ -Statistik an.

Stichprobenumfang					Stichprobenumfang				
$n_1$	$n_2$	$n_3$	Quantil	$\alpha$	$n_1$	$n_2$	$n_3$	Quantil	$\alpha$
2	1	1	2.7000	0.500	4	2	2	6.0000	0.014
2	2	1	3.6000	0.200				5.3333	0.033
2	2	2	4.5714	0.067				5.1250	0.052
			3.7143	0.200				4.4583	0.100
								4.1667	0.105
3	1	1	3.2000	0.300					
3	2	1	4.2857	0.100	4	3	1	5.8333	0.021
			3.8571	0.133				5.2083	0.050
								5.0000	0.057
3	3	2	5.3572	0.029				4.0556	0.093
			4.7143	0.048				3.8889	0.129
			4.5000	0.067					
			4.4643	0.105					
3	3	1	5.1429	0.043	4	3	2	6.4444	0.008
			4.5714	0.100				6.3000	0.011
			4.0000	0.129				5.4444	0.046
								5.4000	0.051
								4.5111	0.098
3	3	2	6.2500	0.011				4.4444	0.102
			5.3611	0.032					
			5.1389	0.061					
			4.5556	0.100	4	3	3	6.7455	0.010
			4.2500	0.121				6.7091	0.013
								5.7909	0.046
3	3	3	7.2000	0.004				5.7273	0.050
			6.4889	0.001				4.7091	0.092
			5.6889	0.029				4.7000	0.101
			5.6000	0.050					
			5.0667	0.086					
			4.6222	0.100	4	4	1	6.6667	0.010
4	1	1	3.5714	0.200				6.1667	0.022
4	2	1	4.8214	0.057				4.9667	0.048
			4.5000	0.076				4.8667	0.054
			4.0179	0.114				4.1667	0.082
								4.0667	0.102

Stichprobenumfang					Stichprobenumfang				
$n_1$	$n_2$	$n_3$	Quantil	$\alpha$	$n_1$	$n_2$	$n_3$	Quantil	$\alpha$
4	4	2	7.0364	0.006	5	3	2	6.9091	0.009
			6.8727	0.011				6.8281	0.010
			5.4545	0.046				5.2509	0.049
			5.2364	0.052				5.1055	0.052
			4.5545	0.098				4.6509	0.091
			4.4455	0.103				4.4121	0.101
4	4	3	7.1439	0.010	5	3	3	7.0788	0.009
			7.1364	0.011				6.9818	0.011
			5.5985	0.049				5.6485	0.049
			5.5758	0.051				5.5152	0.051
			4.5455	0.099				4.5333	0.097
			4.4773	0.102				4.4121	0.109
4	4	4	7.6538	0.008	5	4	1	6.9545	0.008
			7.5385	0.011				6.8400	0.011
			5.6923	0.049				4.9855	0.044
			5.6538	0.054				4.8600	0.056
			4.6539	0.097				3.9873	0.098
			4.5001	0.104				3.9600	0.102
5	1	1	3.8571	0.143	5	4	2	7.2045	0.009
								7.1182	0.010
5	2	1	5.2500	0.036				5.2727	0.049
			5.0000	0.048				5.2682	0.050
			4.4500	0.071				4.5409	0.098
			4.2000	0.095				4.5182	0.101
			4.0500	0.119					
5	2	2	6.5333	0.005	5	4	3	7.4449	0.110
			6.1333	0.013				7.3949	0.011
			5.1600	0.034				5.6564	0.049
			5.0400	0.056				5.6308	0.050
			4.3733	0.090				4.5487	0.099
			4.2933	0.112				4.5231	0.103
5	3	1	6.4000	0.012	5	4	4	7.7604	0.009
			4.9600	0.048				7.7440	0.011
			4.8711	0.052				5.6571	0.049
			4.0178	0.095				5.6176	0.050
			3.8400	0.123				4.6187	0.100
								4.5527	0.102

Stichprobenumfang					Stichprobenumfang				
$n_1$	$n_2$	$n_3$	Quantil	$\alpha$	$n_1$	$n_2$	$n_3$	Quantil	$\alpha$
5	5	1	7.3091	0.009	5	5	4	7.8229	0.010
			6.8364	0.011				7.7914	0.010
			5.1273	0.046				5.6657	0.049
			4.9091	0.053				5.6429	0.050
			4.1091	0.086				4.5229	0.100
			4.0364	0.105				4.5200	0.101
5	5	2	7.3385	0.010	5	5	5	8.0000	0.009
			7.2692	0.010				7.9800	0.010
			5.3385	0.047				5.7800	0.049
			5.2462	0.051				5.6600	0.051
			4.6231	0.097				4.5600	0.100
			4.5077	0.100				4.5000	0.102
5	5	3	7.5780	0.010					
			7.5429	0.010					
			5.7055	0.046					
			5.6264	0.051					
			4.5451	0.100					
			4.5363	0.102					



# P    Kolmogorow-Smirnow- $c$ -Stichprobentest (einseitig)

Die Werte der Tabelle sind *nach Division durch  $n$*  (abgesehen von der Approximation) kritische Werte der  $K_1$ -Statistik.

	c=2						c=3				
1 - α =	0.90	0.95	0.975	0.99	0.995		0.90	0.95	0.975	0.99	0.995
n = 2											
3	2	2					2				
4	3	3	3				3	3			
5	3	3	4	4	4		3	4	4	4	
6	3	4	4	5	5		4	4	5	5	5
7	4	4	5	5	5		4	5	5	5	6
8	4	4	5	5	6		4	5	5	6	6
9	4	5	5	6	6		5	5	6	6	7
10	4	5	6	6	7		5	6	6	7	7
12	5	5	6	7	7		5	6	7	7	8
14	5	6	7	7	8		6	7	7	8	8
16	6	6	7	8	9		6	7	8	9	9
18	6	7	8	9	9		7	8	8	9	10
20	6	7	8	9	10		7	8	9	10	10
25	7	8	9	10	11		8	9	10	11	12
30	8	9	10	11	12		9	10	11	12	13
35	8	10	11	12	13		10	11	12	13	14
40	9	10	12	13	14		10	12	13	14	15
45	10	11	12	14	15		11	12	14	15	16
50	10	12	13	15	16		12	13	14	16	17
Approximation für n > 50	$\frac{1.52}{\sqrt{n}}$	$\frac{1.73}{\sqrt{n}}$	$\frac{1.92}{\sqrt{n}}$	$\frac{2.15}{\sqrt{n}}$	$\frac{2.30}{\sqrt{n}}$		$\frac{1.73}{\sqrt{n}}$	$\frac{1.92}{\sqrt{n}}$	$\frac{2.09}{\sqrt{n}}$	$\frac{2.30}{\sqrt{n}}$	$\frac{2.45}{\sqrt{n}}$

c=4						c=5				
$1 - \alpha =$	0.90	0.95	0.975	0.99	0.995	0.90	0.95	0.975	0.99	0.995
$n = 2$										
3						3				
4	3	3				4	4	4		
5	4	4	4			5	5	5	5	5
6	4	4	5	5	5	6	6	6	6	6
7	5	5	6	6	6	7	7	7	7	7
8	5	6	6	6	7	8	8	8	8	8
9	6	6	7	7	8	9	9	9	9	9
10	6	7	7	8	9	10	10	10	10	10
12	7	8	8	9	10	11	11	11	11	11
14	7	8	9	9	11	12	12	12	12	12
16	8	9	9	10	12	13	13	13	13	13
18	8	10	10	11	13	14	14	14	14	14
20	9	10	11	12	14	15	15	15	15	15
25	10	11	12	13	15	16	16	16	16	16
30	10	12	13	14	16	17	17	17	17	17
35	11	13	14	15	17	18	18	18	18	18
40	12	14	15	16	18					
45	13	15	16	17						
50	13	16	17							
Approximation für $n > 50$	$\frac{1.85}{\sqrt{n}}$	$\frac{2.02}{\sqrt{n}}$	$\frac{2.19}{\sqrt{n}}$	$\frac{2.39}{\sqrt{n}}$	$\frac{2.53}{\sqrt{n}}$	$\frac{1.92}{\sqrt{n}}$	$\frac{2.09}{\sqrt{n}}$	$\frac{2.25}{\sqrt{n}}$	$\frac{2.45}{\sqrt{n}}$	$\frac{2.59}{\sqrt{n}}$
c=6						c=7				
$1 - \alpha =$	0.90	0.95	0.975	0.99	0.995	0.90	0.95	0.975	0.99	0.995
$n = 2$										
3						3				
4	3					4	4	4		
5	4	4	4			5	5	5	5	5
6	4	5	5	5	6	6	6	6	6	6
7	5	5	6	6	7	7	7	7	7	7
8	5	6	6	7	8	8	8	8	8	8
9	6	6	7	7	9	9	9	9	9	9
10	6	7	7	8	10	10	10	10	10	10
12	7	8	8	9	11	11	11	11	11	11
14	7	9	9	10	12	12	12	12	12	12
16	8	10	10	11	13	13	13	13	13	13
18	8	11	11	12	14	14	14	14	14	14
20	9	12	12	13	15	15	15	15	15	15
25	10	13	13	14	16	16	16	16	16	16
30	11	14	14	15	17	17	17	17	17	17
35	12	15	15	16	18	18	18	18	18	18
40	13	16	16	17						
45	13	17	17							
50	14	18								
Approximation für $n > 50$	$\frac{1.97}{\sqrt{n}}$	$\frac{2.14}{\sqrt{n}}$	$\frac{2.30}{\sqrt{n}}$	$\frac{2.49}{\sqrt{n}}$	$\frac{2.63}{\sqrt{n}}$	$\frac{2.02}{\sqrt{n}}$	$\frac{2.18}{\sqrt{n}}$	$\frac{2.34}{\sqrt{n}}$	$\frac{2.53}{\sqrt{n}}$	$\frac{2.66}{\sqrt{n}}$

c=8						c=9				
1 - $\alpha$ =	0.90	0.95	0.975	0.99	0.995	0.90	0.95	0.975	0.99	0.995
n = 2										
3										
4	3									
5	4	4				4	4			
6	4	5	5	5		5	5	5	5	
7	5	5	6	6	6	5	5	6	6	6
8	5	6	6	6	7	5	6	6	6	7
9	6	6	6	7	7	6	6	6	7	7
10	6	6	7	7	8	6	6	7	7	8
12	7	7	8	8	9	7	7	8	8	9
14	7	8	8	9	9	7	8	8	9	9
16	8	8	9	10	10	8	8	9	10	10
18	8	9	9	10	11	8	9	10	10	11
20	9	9	10	11	11	9	9	10	11	11
25	10	11	11	12	13	10	11	11	12	13
30	11	12	12	13	14	11	12	13	14	14
35	12	13	13	15	15	12	13	14	15	15
40	12	13	14	16	16	13	14	15	16	17
45	13	14	15	17	17	13	15	16	17	18
50	14	15	16	17	18	14	15	16	18	19
Approximation für n > 50	$\frac{2.05}{\sqrt{n}}$	$\frac{2.22}{\sqrt{n}}$	$\frac{2.37}{\sqrt{n}}$	$\frac{2.55}{\sqrt{n}}$	$\frac{2.69}{\sqrt{n}}$	$\frac{2.09}{\sqrt{n}}$	$\frac{2.25}{\sqrt{n}}$	$\frac{2.40}{\sqrt{n}}$	$\frac{2.58}{\sqrt{n}}$	$\frac{2.72}{\sqrt{n}}$

c=10					
1 - $\alpha$ =	0.90	0.95	0.975	0.99	0.995
n = 2					
3					
4					
5		4	4		
6		5	5	5	
7		5	5	6	6
8		5	6	6	7
9		6	6	7	7
10		6	7	7	8
12		7	7	8	9
14		7	8	8	9
16		8	8	9	10
18		8	9	10	10
20		9	10	10	11
25		10	11	12	12
30		11	12	13	14
35		12	13	14	15
40		13	14	15	16
45		14	15	16	17
50		14	16	17	18
Approximation für n > 50	$\frac{2.11}{\sqrt{n}}$	$\frac{2.27}{\sqrt{n}}$	$\frac{2.42}{\sqrt{n}}$	$\frac{2.61}{\sqrt{n}}$	$\frac{2.74}{\sqrt{n}}$

Q Kolmogorow-Smirnow- $c$ -Stichprobentest (zweiseitig)

Die Werte der Tabelle sind *nach Division durch  $n$*  (abgesehen von der Approximation) kritische Werte der  $K_2$ -Statistik. Die approximierten kritischen Werte gelten für alle  $c$ .

$1 - \alpha =$	0.90	0.95	0.975
$n = 3$	$2(c = 2)$		
$n = 4$	$3(2 \leq c \leq 6)$	$3(c = 2)$	
$n = 5$	$3(c = 2)$	$4(2 \leq c \leq 10)$	$4(2 \leq c \leq 4)$
	$4(3 \leq c \leq 10)$		
$n = 6$	$4(2 \leq c \leq 8)$	$4(c = 2, 3)$	$4(c = 2)$
	$5(c = 9, 10)$	$5(4 \leq c \leq 10)$	$5(3 \leq c \leq 10)$
$n = 7$	$4(2 \leq c \leq 4)$	$4(c = 2)$	$5(2 \leq c \leq 5)$
	$5(5 \leq c \leq 10)$	$5(3 \leq c \leq 10)$	$6(6 \leq c \leq 10)$
$n = 8$	$4(c = 2)$	$5(2 \leq c \leq 6)$	$5(c = 2)$
	$5(3 \leq c \leq 10)$	$6(7 \leq c \leq 10)$	$6(3 \leq c \leq 10)$
$n = 9$	$4(c = 2)$	$5(c = 2, 3)$	$6(2 \leq c \leq 9)$
	$5(3 \leq c \leq 10)$	$6(4 \leq c \leq 10)$	$7(c = 10)$
$n = 10$	$5(2 \leq c \leq 6)$	$5(c = 2)$	$6(2 \leq c \leq 5)$
	$6(7 \leq c \leq 10)$	$6(3 \leq c \leq 10)$	$7(6 \leq c \leq 10)$
$n = 12$	$5(c = 2, 3)$	$6(2 \leq c \leq 4)$	$6(c = 2)$
	$6(4 \leq c \leq 10)$	$7(5 \leq c \leq 10)$	$7(3 \leq c \leq 10)$
$n = 14$	$6(2 \leq c \leq 7)$	$6(c = 2)$	$7(c = 2, 3)$
	$7(8 \leq c \leq 10)$	$7(3 \leq c \leq 10)$	$8(4 \leq c \leq 10)$
$n = 16$	$6(c = 2, 3)$	$7(2 \leq c \leq 5)$	$8(2 \leq c \leq 8)$
	$7(4 \leq c \leq 10)$	$8(6 \leq c \leq 10)$	$9(c = 9, 10)$
$n = 18$	$6(c = 2)$	$7(c = 2)$	$8(2 \leq c \leq 4)$
	$7(3 \leq c \leq 10)$	$8(3 \leq c \leq 10)$	$9(5 \leq c \leq 10)$
$n = 20$	$7(2 \leq c \leq 6)$	$8(2 \leq c \leq 7)$	$8(c = 2)$
	$8(7 \leq c \leq 10)$	$9(8 \leq c \leq 10)$	$9(3 \leq c \leq 10)$
$n = 25$	$8(2 \leq c \leq 8)$	$9(2 \leq c \leq 8)$	$9(c = 2)$
			$10(3 \leq c \leq 9)$
	$9(c = 9, 10)$	$10(c = 9, 10)$	$11(c = 10)$
$n = 30$	$8(c = 2)$	$9(c = 2)$	$10(c = 2)$
	$9(3 \leq c \leq 10)$	$10(3 \leq c \leq 10)$	$11(3 \leq c \leq 10)$
$n = 35$	$9(2 \leq c \leq 4)$	$10(c = 2, 3)$	$11(c = 2)$
	$10(5 \leq c \leq 10)$	$11(4 \leq c \leq 10)$	$12(3 \leq c \leq 10)$
$n = 40$	$10(2 \leq c \leq 8)$	$11(2 \leq c \leq 5)$	$12(c = 2, 3)$
	$11(c = 9, 10)$	$12(6 \leq c \leq 10)$	$13(4 \leq c \leq 10)$
$n = 45$	$10(c = 2, 3)$	$12(2 \leq c \leq 8)$	$13(2 \leq c \leq 5)$
	$11(4 \leq c \leq 10)$	$13(c = 9, 10)$	$14(6 \leq c \leq 10)$
$n = 50$	$11(2 \leq c \leq 6)$	$12(c = 2, 3)$	$14(2 \leq c \leq 9)$
	$12(7 \leq c \leq 10)$	$13(4 \leq c \leq 10)$	$15(c = 10)$
Approximation	$\frac{1.52}{\sqrt{n}}$	$\frac{1.73}{\sqrt{n}}$	$\frac{1.92}{\sqrt{n}}$
für $n > 50$			

	$1 - \alpha = 0.99$	0.995
$n = 3$		
$n = 4$		
$n = 5$	$4(c = 2)$	
$n = 6$	$5(2 \leq c \leq 6)$	$5(c = 2, 3)$
$n = 7$	$5(c = 2)$ $6(3 \leq c \leq 10)$	$6(2 \leq c \leq 10)$
$n = 8$	$6(2 \leq c \leq 7)$ $7(8 \leq c \leq 10)$	$6(c = 2, 3)$ $7(4 \leq c \leq 10)$
$n = 9$	$6(c = 2, 3)$ $7(4 \leq c \leq 10)$	$7(2 \leq c \leq 10)$
$n = 10$	$7(2 \leq c \leq 10)$	$7(2 \leq c \leq 4)$ $8(5 \leq c \leq 10)$
$n = 12$	$7(c = 2, 3)$ $8(4 \leq c \leq 10)$	$8(2 \leq c \leq 7)$ $9(8 \leq c \leq 10)$
$n = 14$	$8(2 \leq c \leq 5)$ $9(6 \leq c \leq 10)$	$8(c = 2)$ $9(3 \leq c \leq 10)$
$n = 16$	$8(c = 2)$ $9(3 \leq c \leq 10)$	$9(2 \leq c \leq 4)$ $10(5 \leq c \leq 10)$
$n = 18$	$9(2 \leq c \leq 4)$ $10(5 \leq c \leq 10)$	$10(2 \leq c \leq 9)$ $11(c = 10)$
$n = 20$	$9(c = 2)$ $10(3 \leq c \leq 10)$	$10(c = 2, 3)$ $11(4 \leq c \leq 10)$
$n = 25$	$11(2 \leq c \leq 8)$	$11(c = 2)$
$n = 30$	$12(c = 9, 10)$ $12(2 \leq c \leq 8)$ $13(c = 9, 10)$	$12(3 \leq c \leq 10)$ $12(c = 2)$ $13(3 \leq c \leq 10)$
$n = 35$	$13(2 \leq c \leq 8)$ $14(c = 9, 10)$	$13(c = 2)$ $14(3 \leq c \leq 10)$
$n = 40$	$13(c = 2)$ $14(3 \leq c \leq 10)$	$14(c = 2)$ $15(3 \leq c \leq 10)$
$n = 45$	$14(c = 2)$ $15(3 \leq c \leq 10)$	$15(c = 2)$ $16(3 \leq c \leq 10)$
$n = 50$	$15(c = 2, 3)$ $16(4 \leq c \leq 10)$	$16(c = 2, 3)$ $17(4 \leq c \leq 10)$
Approximation	$\frac{2.15}{\sqrt{n}}$	$\frac{2.30}{\sqrt{n}}$
für $n > 50$		

R Friedmans  $F_c$ -Test

Die Tabelle gibt Wahrscheinlichkeiten  $P(F_c \geq x)$  an.

$c=3, n=2$		$c=3, n=5$		$c=3, n=7$		$c=3, n=9$	
$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$
0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
1.000	0.833	0.400	0.954	0.286	0.964	0.222	0.971
3.000	0.500	1.200	0.691	0.857	0.768	0.667	0.814
4.000	0.167	1.600	0.522	1.143	0.620	0.889	0.685
$c=3, n=3$		2.8	0.367	2.000	0.486	1.556	0.569
		3.6	0.182	2.571	0.305	2.000	0.398
		4.8	0.124	3.429	0.237	2.667	0.328
		5.2	0.093	3.714	0.192	2.889	0.278
		6.4	0.039	4.571	0.112	3.556	0.187
$x$	$P(F_c \geq x)$	7.6	0.024	5.429	0.085	4.222	0.154
0.000	1.000	8.4	0.008	6.000	0.051	4.667	0.107
0.667	0.944	10.0	0.001	7.143	0.027	5.556	0.069
2.000	0.528	$c=3, n=6$		7.714	0.021	6.000	0.057
2.667	0.361			8.000	0.016	6.222	0.048
4.667	0.194			8.857	0.008	6.889	0.031
6.000	0.028			10.286	0.004	8.000	0.019
$c=3, n=4$				10.571	0.003	8.222	0.016
		11.143	0.001	8.667	0.010		
		12.286	0.000	9.556	0.006		
		$c=3, n=8$		10.667	0.004		
				10.889	0.003		
11.556	0.001						
12.667	0.001						
13.556	0.000						
$x$	$P(F_c \geq x)$	0.000	1.000	$c=3, n=8$			
0.500	0.931	0.250	0.967				
1.500	0.653	0.750	0.794				
2.000	0.431	1.000	0.654				
3.500	0.273	1.750	0.531				
4.500	0.125	2.250	0.355				
6.000	0.069	3.000	0.285				
6.500	0.042	3.250	0.236				
8.000	0.005	4.000	0.149				
$c=3, n=4$		4.750	0.120				
		5.250	0.079				
		6.250	0.047				
		6.750	0.038				
		7.000	0.030				
		7.750	0.018				
		9.000	0.010				
		9.250	0.008				
		9.750	0.005				
		10.750	0.002				
		12.000	0.001				
		12.250	0.001				
$c=3, n=4$		13.000	0.000				
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$c=3, n=10$		$c=3, n=11$		$c=3, n=12$		$c=3, n=13$	
$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$
0.0	1.000	0.000	1.000	0.000	1.000	0.000	1.000
0.2	0.974	0.182	0.976	0.167	0.978	0.154	0.980
0.6	0.830	0.545	0.844	0.500	0.856	0.462	0.866
0.8	0.710	0.727	0.732	0.667	0.751	0.615	0.767
1.4	0.601	1.273	0.629	1.167	0.654	1.077	0.675
1.8	0.436	1.636	0.470	1.500	0.500	1.385	0.527
2.4	0.368	2.182	0.403	2.000	0.434	1.846	0.463
2.6	0.316	2.364	0.351	2.167	0.383	2.000	0.412
3.2	0.222	2.909	0.256	2.667	0.287	2.462	0.316
3.8	0.187	3.455	0.219	3.167	0.249	2.923	0.278
4.2	0.135	3.818	0.163	3.500	0.191	3.231	0.217
5.0	0.092	4.545	0.116	4.167	0.141	3.846	0.165
5.4	0.078	4.909	0.100	4.500	0.123	4.154	0.145
5.6	0.066	5.091	0.087	4.667	0.108	4.308	0.129
6.2	0.046	5.636	0.062	5.167	0.080	4.769	0.098
7.2	0.030	6.545	0.043	6.000	0.058	5.538	0.073
7.4	0.026	6.727	0.038	6.167	0.051	5.692	0.065
7.8	0.018	7.091	0.027	6.500	0.038	6.000	0.050
8.6	0.012	7.818	0.019	7.167	0.027	6.615	0.037
9.6	0.007	8.727	0.013	8.000	0.020	7.385	0.028
9.8	0.006	8.909	0.011	8.167	0.017	7.538	0.025
10.4	0.003	9.455	0.006	8.667	0.011	8.000	0.016
11.4	0.002	10.364	0.004	9.500	0.007	8.769	0.012
12.2	0.001	11.091	0.003	10.167	0.005	9.385	0.009
12.6	0.001	11.455	0.002	10.500	0.004	9.692	0.007
12.8	0.001	11.636	0.001	10.667	0.003	9.846	0.005
13.4	0.000	12.182	0.001	11.167	0.002	10.308	0.004
		13.273	0.001	12.167	0.002	11.231	0.003
		13.636	0.000	12.500	0.001	11.538	0.002
				12.667	0.001	11.692	0.002
				13.167	0.001	12.154	0.001
				13.500	0.000	12.462	0.001
						12.923	0.001
						14.000	0.001
						14.308	0.000

$c=4, n=2$		$c=4, n=4$		$c=4, n=5$		$c=4, n=6$	
$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$
0.0	1.000	0.0	1.000	0.12	1.000	0.0	1.000
0.6	0.958	0.3	0.992	0.36	0.975	0.2	0.996
1.2	0.833	0.6	0.928	0.60	0.944	0.4	0.957
1.8	0.792	0.9	0.900	1.08	0.857	0.6	0.940
2.4	0.625	1.2	0.800	1.32	0.771	0.8	0.874
3.0	0.542	1.5	0.754	1.56	0.709	1.0	0.844
3.6	0.458	1.8	0.677	2.04	0.652	1.2	0.789
4.2	0.375	2.1	0.649	2.28	0.561	1.4	0.772
4.8	0.208	2.4	0.524	2.52	0.521	1.6	0.679
5.4	0.167	2.7	0.508	3.00	0.445	1.8	0.668
6.0	0.042	3.0	0.432	3.24	0.408	2.0	0.609
$c=4, n=3$		3.3	0.389	3.48	0.372	2.2	0.574
$x$	$P(F_c \geq x)$	3.6	0.355	3.96	0.298	2.4	0.541
0.2	1.000	3.9	0.324	4.20	0.260	2.6	0.512
0.6	0.958	4.5	0.242	4.44	0.226	3.0	0.431
1.0	0.910	4.8	0.200	4.92	0.210	3.2	0.386
1.8	0.727	5.1	0.190	5.16	0.162	3.4	0.375
2.2	0.608	5.4	0.158	5.40	0.151	3.6	0.338
2.6	0.524	5.7	0.141	5.88	0.123	3.8	0.317
3.4	0.446	6.0	0.105	6.12	0.107	4.0	0.270
3.8	0.342	6.3	0.094	6.36	0.093	4.2	0.256
4.2	0.300	6.6	0.077	6.84	0.075	4.4	0.230
5.0	0.207	6.9	0.068	7.08	0.067	4.6	0.218
5.4	0.175	7.2	0.054	7.32	0.055	4.8	0.197
5.8	0.148	7.5	0.052	7.80	0.044	5.0	0.194
6.6	0.075	7.8	0.036	8.04	0.034	5.2	0.163
7.0	0.054	8.1	0.033	8.28	0.031	5.4	0.155
7.4	0.033	8.4	0.019	8.76	0.023	5.6	0.127
8.2	0.017	8.7	0.014	9.00	0.020	5.8	0.114
9.0	0.002	9.3	0.012	9.24	0.017	6.2	0.108
		9.6	0.007	9.72	0.012	6.4	0.089
		9.9	0.006	9.96	0.009	6.6	0.088
		10.2	0.003	10.20	0.007	6.8	0.073
		10.8	0.002	10.68	0.005	7.0	0.066
		11.1	0.001	10.92	0.003	7.2	0.060
		12.0	0.000	11.16	0.002	7.4	0.056
				11.64	0.002	7.6	0.043
				11.88	0.002	7.8	0.041
				12.12	0.001	8.0	0.037
				12.60	0.001	8.2	0.035
				12.84	0.000	8.4	0.032
						8.6	0.029
						8.8	0.023
						9.0	0.022
						9.4	0.017



$c=4, n=6$		$c=4, n=7$		$c=4, n=7$		$c=4, n=8$	
$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$
9.6	0.014	0.086	1.000	10.029	0.012	0.00	1.000
9.8	0.013	0.257	0.984	10.371	0.010	0.15	0.998
10.0	0.010	0.429	0.963	10.543	0.009	0.30	0.971
10.2	0.010	0.771	0.906	10.714	0.008	0.45	0.959
10.4	0.009	0.943	0.845	11.057	0.007	0.60	0.912
10.6	0.007	1.114	0.800	11.229	0.005	0.75	0.890
10.8	0.006	1.457	0.757	11.400	0.004	0.90	0.849
11.0	0.006	1.629	0.685	11.743	0.004	1.05	0.837
11.4	0.004	1.800	0.652	11.914	0.003	1.20	0.765
11.6	0.003	2.143	0.590	12.086	0.003	1.35	0.757
11.8	0.003	2.314	0.557	12.429	0.002	1.50	0.710
12.0	0.002	2.486	0.524	12.600	0.002	1.65	0.681
12.2	0.002	2.829	0.456	12.771	0.002	1.80	0.654
12.6	0.001	3.000	0.418	13.114	0.001	1.95	0.629
12.8	0.001	3.171	0.382	13.286	0.001	2.25	0.558
13.0	0.001	3.514	0.366	13.457	0.001	2.40	0.517
13.2	0.001	3.686	0.310	13.800	0.001	2.55	0.507
13.4	0.001	3.857	0.297	13.971	0.001	2.70	0.471
13.6	0.000	4.200	0.262	14.143	0.001	2.85	0.450
		4.371	0.239	14.486	0.000	3.00	0.404
		4.543	0.220			3.15	0.389
		4.886	0.195			3.30	0.362
		5.057	0.180			3.45	0.350
		5.229	0.161			3.60	0.326
		5.571	0.143			3.75	0.323
		5.743	0.122			3.90	0.287
		5.914	0.118			4.05	0.278
		6.257	0.100			4.20	0.242
		6.429	0.093			4.35	0.226
		6.600	0.085			4.65	0.219
		6.943	0.073			4.80	0.193
		7.114	0.063			4.95	0.191
		7.286	0.056			5.10	0.168
		7.629	0.052			5.25	0.158
		7.800	0.041			5.40	0.148
		7.971	0.038			5.55	0.141
		8.314	0.035			5.70	0.121
		8.486	0.033			5.85	0.117
		8.657	0.030			6.00	0.110
		9.000	0.023			6.15	0.106
		9.171	0.020			6.30	0.100
		9.343	0.017			6.45	0.094
		9.686	0.015			6.60	0.081
		9.857	0.013			6.75	0.079
						7.05	0.068
						7.20	0.060
						7.35	0.058

$c=4, n=8$		$c=5, n=3$		$c=5, n=4$		$c=5, n=4$	
$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$
7.50	0.051	0.000	1.000	0.0	1.000	9.0	0.043
7.65	0.049	0.267	1.000	0.2	0.999	9.2	0.038
7.80	0.046	0.533	0.988	0.4	0.991	9.4	0.035
7.95	0.042	0.800	0.972	0.6	0.980	9.6	0.028
8.10	0.038	1.067	0.941	0.8	0.959	9.8	0.025
8.25	0.037	1.333	0.914	1.0	0.940	10.0	0.021
8.55	0.031	1.600	0.845	1.2	0.906	10.2	0.019
8.70	0.028	1.867	0.831	1.4	0.895	10.4	0.017
8.85	0.025	2.133	0.768	1.6	0.850	10.6	0.014
9.00	0.023	2.400	0.720	1.8	0.815	10.8	0.011
9.15	0.022	2.667	0.682	2.0	0.785	11.0	0.010
9.45	0.019	2.933	0.649	2.2	0.759	11.2	0.008
9.60	0.016	3.200	0.595	2.4	0.715	11.4	0.007
9.75	0.015	3.467	0.559	2.6	0.685	11.6	0.006
9.90	0.014	3.733	0.493	2.8	0.630	11.8	0.005
10.05	0.014	4.000	0.475	3.0	0.612	12.0	0.004
10.20	0.011	4.267	0.432	3.2	0.579	12.2	0.004
10.35	0.011	4.533	0.406	3.4	0.552	12.4	0.003
10.50	0.009	4.800	0.347	3.6	0.500	12.6	0.002
10.65	0.009	5.067	0.326	3.8	0.479	12.8	0.002
10.80	0.008	5.333	0.291	4.0	0.442	13.0	0.001
10.95	0.008	5.600	0.253	4.2	0.413	13.2	0.001
11.10	0.006	5.867	0.236	4.4	0.395	13.4	0.001
11.25	0.006	6.133	0.213	4.6	0.370	13.6	0.001
11.40	0.005	6.400	0.172	4.8	0.329	13.8	0.000
11.55	0.005	6.667	0.163	5.0	0.317		
11.85	0.004	6.933	0.127	5.2	0.286		
12.00	0.004	7.200	0.117	5.4	0.275		
12.15	0.004	7.467	0.096	5.6	0.249		
12.30	0.003	7.733	0.080	5.8	0.227		
12.45	0.003	8.000	0.063	6.0	0.205		
12.60	0.002	8.267	0.056	6.2	0.197		
12.75	0.002	8.533	0.045	6.4	0.178		
12.90	0.002	8.800	0.038	6.6	0.161		
13.05	0.002	9.067	0.028	6.8	0.143		
13.20	0.002	9.333	0.026	7.0	0.136		
13.35	0.001	9.600	0.017	7.2	0.121		
13.50	0.001	9.867	0.015	7.4	0.113		
13.65	0.001	10.133	0.008	7.6	0.095		
13.80	0.001	10.400	0.005	7.8	0.086		
13.95	0.001	10.667	0.004	8.0	0.080		
14.25	0.001	10.933	0.003	8.2	0.072		
14.40	0.001	11.467	0.001	8.4	0.063		
14.55	0.001	12.000	0.000	8.6	0.060		
14.70	0.001			8.8	0.049		
14.85	0.000						

$c=5, n=5$		$c=5, n=5$	
$x$	$P(F_c \geq x)$	$x$	$P(F_c \geq x)$
0.00	1.000	7.68	0.094
0.16	1.000	7.84	0.089
0.32	0.994	8.00	0.082
0.48	0.986	8.16	0.077
0.64	0.972	8.32	0.073
0.80	0.958	8.48	0.066
0.96	0.932	8.64	0.058
1.12	0.925	8.80	0.056
1.28	0.891	8.96	0.049
1.44	0.865	9.12	0.046
1.60	0.842	9.28	0.042
1.76	0.823	9.44	0.038
1.92	0.789	9.60	0.035
2.08	0.765	9.76	0.032
2.24	0.721	9.92	0.029
2.40	0.707	10.08	0.026
2.56	0.679	10.24	0.024
2.72	0.657	10.40	0.022
2.88	0.613	10.56	0.019
3.04	0.594	10.72	0.018
3.20	0.562	10.88	0.015
3.36	0.535	11.04	0.013
3.52	0.518	11.20	0.012
3.68	0.494	11.36	0.012
3.84	0.454	11.52	0.010
4.00	0.443	11.68	0.009
4.16	0.410	11.84	0.008
4.32	0.398	12.00	0.007
4.48	0.371	12.16	0.006
4.64	0.349	12.32	0.006
4.80	0.325	12.48	0.005
4.96	0.316	12.64	0.004
5.12	0.295	12.80	0.004
5.28	0.275	12.96	0.003
5.44	0.255	13.12	0.003
5.60	0.246	13.28	0.003
5.76	0.227	13.44	0.002
5.92	0.218	13.60	0.002
6.08	0.195	13.76	0.002
6.24	0.183	13.92	0.002
6.40	0.174	14.08	0.001
6.56	0.164	14.24	0.001
6.72	0.151	14.40	0.001
6.88	0.146	14.56	0.001
7.04	0.130	14.72	0.001
7.20	0.121	14.88	0.001
7.36	0.112	15.04	0.000
7.52	0.107		

S Spearmans  $r_S$ -Test

Die Tabelle gibt kritische Werte  $d_\alpha$  der Statistik  $D$  nach dem folgenden Schema an:

$d_{\alpha_1}$	$\alpha_1$	mit $\alpha_1 = P(D \leq d_{\alpha_1}) \leq \alpha$
$d_{\alpha_2}$	$\alpha_2$	mit $\alpha_2 = P(D \leq d_{\alpha_2}) \geq \alpha$

$\alpha$	Stichprobenumfang $n$									
	3	4	5	6	7	8	9	10	11	12
0.001				0	0.001	0	0.001	2	0.001	
0.005				0	0.001	4	0.003			
0.010			0	0.008	2	0.008	6	0.006		
0.015			2	0.042	4	0.017	8	0.012		
0.020			0	0.008	4	0.017	10	0.017		
0.025			2	0.042	6	0.029	12	0.024		
0.030			0	0.008	6	0.029	12	0.024		
0.035			2	0.042	8	0.051	14	0.033		
0.040			0	0.008	6	0.029	14	0.033		
0.045			2	0.042	8	0.051	16	0.044		
0.050			4	0.067	8	0.051	18	0.055		
0.100		0	0.042	2	0.042	6	0.029	16	0.044	
0.125		2	0.167	4	0.067	8	0.051	18	0.055	
0.200		0	0.042	4	0.067	12	0.087	22	0.083	
0.250		2	0.167	6	0.117	14	0.121	24	0.100	
		0	0.042	6	0.117	14	0.121	26	0.118	
		2	0.167	8	0.175	16	0.149	28	0.133	
	0	0.167	2	0.167	8	0.175	18	0.178	34	0.198
	2	0.500	4	0.208	10	0.225	20	0.210	36	0.222
	0	0.167	4	0.208	10	0.225	22	0.249	38	0.249
	2	0.500	6	0.375	12	0.258	24	0.282	40	0.278

$\alpha$	Stichprobenumfang $n$									
	3	4	5	6	7					
0.750	4	0.500	12	0.625	26	0.742	44	0.718	70	0.722
	6	0.833	14	0.792	28	0.775	46	0.751	72	0.751
0.800	4	0.500	14	0.792	28	0.775	48	0.790	74	0.778
	6	0.833	16	0.833	30	0.825	50	0.822	76	0.802
0.875	6	0.833	16	0.833	30	0.825	52	0.851	82	0.867
	8	1.000	18	0.958	32	0.883	54	0.879	84	0.882
0.900	6	0.833	16	0.833	32	0.883	54	0.879	84	0.882
	8	1.000	18	0.958	34	0.933	56	0.912	86	0.900
0.950	6	0.833	16	0.833	34	0.933	60	0.949	92	0.945
	8	1.000	18	0.958	36	0.958	62	0.971	94	0.956
0.955	6	0.833	16	0.833	34	0.933	60	0.949	92	0.945
	8	1.000	18	0.958	36	0.958	62	0.971	94	0.956
0.960	6	0.833	18	0.958	36	0.958	60	0.949	94	0.956
	8	1.000	20	1.000	38	0.992	62	0.971	96	0.967
0.965	6	0.833	18	0.958	36	0.958	60	0.949	94	0.956
	8	1.000	20	1.000	38	0.992	62	0.971	96	0.967
0.970	6	0.833	18	0.958	36	0.958	60	0.949	96	0.967
	8	1.000	20	1.000	38	0.992	62	0.971	98	0.976
0.975	6	0.833	18	0.958	36	0.958	62	0.971	96	0.967
	8	1.000	20	1.000	38	0.992	64	0.983	98	0.976
0.980	6	0.833	18	0.958	36	0.958	62	0.971	98	0.976
	8	1.000	20	1.000	38	0.992	64	0.983	100	0.983
0.985	6	0.833	18	0.958	36	0.958	64	0.983	100	0.983
	8	1.000	20	1.000	38	0.992	66	0.992	102	0.988
0.990	6	0.833	18	0.958	36	0.958	64	0.983	102	0.988
	8	1.000	20	1.000	38	0.992	66	0.992	104	0.994
0.995	6	0.833	18	0.958	38	0.992	66	0.992	104	0.994
	8	1.000	20	1.000	40	1.000	68	0.999	106	0.997
0.999	6	0.833	18	0.958	38	0.992	68	0.999	108	0.999
	8	1.000	20	1.000	40	1.000	70	1.000	110	1.000

$\alpha$	Stichprobenumfang $n$							
	8		9		10		11	
0.001	4	0.001	10	0.001	20	0.001	34	0.001
	6	0.001	12	0.001	22	0.001	36	0.001
0.005	10	0.004	20	0.004	34	0.004	54	0.005
	12	0.005	22	0.005	36	0.005	56	0.006
0.010	14	0.008	26	0.009	42	0.009	64	0.009
	16	0.011	28	0.011	44	0.010	66	0.010
0.015	18	0.014	30	0.013	48	0.013	72	0.014
	20	0.018	32	0.016	50	0.015	74	0.015
0.020	20	0.018	34	0.018	54	0.018	78	0.018
	22	0.023	36	0.022	56	0.022	80	0.020
0.025	22	0.023	36	0.022	58	0.024	84	0.024
	24	0.029	38	0.025	60	0.027	86	0.026
0.030	24	0.029	40	0.029	60	0.027	88	0.028
	26	0.035	42	0.033	62	0.030	90	0.030
0.035	26	0.035	42	0.033	64	0.033	92	0.033
	28	0.042	44	0.038	66	0.037	94	0.035
0.040	26	0.035	44	0.038	66	0.037	96	0.038
	28	0.042	46	0.043	68	0.040	98	0.041
0.045	28	0.042	46	0.043	70	0.044	100	0.044
	30	0.048	48	0.048	72	0.048	102	0.047
0.050	30	0.048	48	0.048	72	0.048	102	0.047
	32	0.057	50	0.054	74	0.052	104	0.050
0.100	40	0.098	62	0.097	90	0.096	126	0.096
	42	0.108	64	0.106	92	0.102	128	0.102
0.125	44	0.122	68	0.125	98	0.124	136	0.124
	46	0.134	70	0.135	100	0.132	138	0.130
0.200	54	0.195	80	0.193	114	0.193	156	0.193
	56	0.214	82	0.205	116	0.203	158	0.201
0.250	58	0.231	88	0.247	124	0.246	168	0.243
	60	0.250	90	0.260	126	0.257	170	0.252

$\alpha$	Stichprobenumfang $n$							
	8		9		10		11	
0.750	106	0.750	148	0.740	202	0.743	268	0.748
	108	0.769	150	0.753	204	0.754	270	0.757
0.800	110	0.786	156	0.795	212	0.797	280	0.799
	112	0.805	158	0.807	214	0.807	282	0.807
0.875	120	0.866	168	0.865	228	0.868	300	0.870
	122	0.878	170	0.875	230	0.876	302	0.876
0.900	124	0.892	174	0.894	236	0.898	310	0.898
	126	0.902	176	0.903	238	0.904	312	0.904
0.950	134	0.943	188	0.946	254	0.948	332	0.946
	136	0.952	190	0.952	256	0.952	334	0.950
0.955	136	0.952	190	0.952	256	0.952	336	0.953
	138	0.958	192	0.957	258	0.956	338	0.956
0.960	138	0.958	192	0.957	260	0.960	340	0.959
	140	0.965	194	0.962	262	0.963	342	0.962
0.965	138	0.958	194	0.962	262	0.963	342	0.962
	140	0.965	196	0.967	264	0.967	344	0.965
0.970	140	0.965	196	0.967	266	0.970	346	0.967
	142	0.971	198	0.971	268	0.973	348	0.970
0.975	142	0.971	200	0.975	268	0.973	352	0.974
	144	0.977	202	0.978	270	0.976	354	0.976
0.980	144	0.977	202	0.978	272	0.978	356	0.978
	146	0.982	204	0.982	274	0.981	358	0.980
0.985	146	0.982	206	0.984	278	0.985	362	0.983
	148	0.986	208	0.987	280	0.987	364	0.985
0.990	150	0.989	210	0.989	284	0.990	370	0.989
	152	0.992	212	0.991	286	0.991	372	0.990
0.995	154	0.995	216	0.995	292	0.995	382	0.994
	156	0.996	218	0.996	294	0.996	384	0.995
0.999	160	0.999	226	0.999	306	0.999	398	0.998
	162	0.999	228	0.999	308	0.999	400	0.999

## T Kendalls S-Test

Die Tabelle gibt Wahrscheinlichkeiten  $P(S \geq s)$  mit  $s \geq 0$  an. Da  $S$  symmetrisch um  $E(S) = 0$  ist, gilt für  $s < 0$ :  $P(S \leq s) = P(S \geq -s)$ . Ist  $n(n-1)/2$  gerade bzw. ungerade, so nimmt  $S$  nur gerade bzw. ungerade Werte an.

s	Stichprobenumfang n				s	Stichprobenumfang n		
	4	5	8	9		6	7	10
0	0.625	0.592	0.548	0.540	1	0.500	0.500	0.500
2	0.375	0.408	0.452	0.460	3	0.360	0.386	0.431
4	0.167	0.242	0.360	0.381	5	0.235	0.281	0.364
6	0.042	0.117	0.274	0.306	7	0.136	0.191	0.300
8		0.042	0.199	0.238	9	0.068	0.119	0.242
10		0.0 <sup>2</sup> 83	0.138	0.179	11	0.028	0.068	0.190
12			0.089	0.130	13	0.0 <sup>2</sup> 83	0.035	0.146
14			0.054	0.090	15	0.0 <sup>2</sup> 14	0.015	0.108
16			0.031	0.060	17		0.0 <sup>2</sup> 54	0.078
18			0.016	0.038	19		0.0 <sup>2</sup> 14	0.054
20			0.0 <sup>2</sup> 71	0.022	21		0.0 <sup>3</sup> 20	0.036
22			0.0 <sup>2</sup> 28	0.012	23			0.023
24			0.0 <sup>3</sup> 87	0.0 <sup>2</sup> 63	25			0.014
26			0.0 <sup>3</sup> 19	0.0 <sup>2</sup> 29	27			0.0 <sup>2</sup> 83
28			0.0 <sup>4</sup> 25	0.0 <sup>2</sup> 12	29			0.0 <sup>2</sup> 46
30				0.0 <sup>3</sup> 43	31			0.0 <sup>2</sup> 23
32				0.0 <sup>3</sup> 12	33			0.0 <sup>2</sup> 11
34				0.0 <sup>4</sup> 25	35			0.0 <sup>3</sup> 47
36				0.0 <sup>5</sup> 28	37			0.0 <sup>3</sup> 18
					39			0.0 <sup>4</sup> 58
					41			0.0 <sup>4</sup> 15
					43			0.0 <sup>5</sup> 28
					45			0.0 <sup>6</sup> 28

Bemerkung: Wiederholte Nullen sind durch Hochzahlen gekennzeichnet. Beispielsweise steht 0.0<sup>3</sup>47 für 0.00047.