1 Random Digits

34990	62122	38223	28526	37006	22774	46026	15981	87291	56946
02269	22795	87593	81830	95383	67823	201%	54850	46779	64519
43042	53600	45738	00261	31100	67239	02004	70698	53597	62617
92565	12211	06868	87786	59576	61382	33912	13161	47208	96604
67424	32620	60841	86848	85000	04835	48576	33884	10101	84129
04015	77148	09535	lo743	97871	55919	45274	38304	93125	91847
85226	19763	46105	25289	26714	73253	85922	21785	42624	92741
03360	07457	75131	41209	50451	23472	07438	08375	29312	62264
72460	99682	27970	25632	340%	17656	12736	27476	21938	67305
66960	55780	71778	52629	51692	71442	36130	70425	39874	62035
14824	95631	00697	65462	24815	13930	02938	54619	28909	53950
34001	05618	41900	23303	19928	60755	61404	56947	91441	19299
77718	83830	29781	72917	10840	74182	08293	62588	99625	22088
60930	05091	35726	07414	49211	69586	20226	08274	28167	65279
94180	62151	08112	26646	07617	42954	22521	09395	43561	45692
81073	85543	47650	93830	07377	87995	35084	39386	93141	88309
18467	39689	60801	46828	38670	88243	89042	78452	08032	72566
60643	593vv	79740	17295	50094	66436	92677	68345	24025	36489
73372	61697	85728	90779	13235	83114	70728	32093	74306	08325
18395	18482	83245	54942	51905	09534	70839	91073	42193	81199
07261	28720	71244	05064	84873	68020	39037	68981	00670	86291
61679	81529	83725	33269	45958	74265	87460	60525	42539	25605
11815	48679	00556	96871	39835	83055	84949	11681	51687	55696
99007	35050	86440	44280	20320	97527	28138	01088	49037	85430
06446	65608	79291	16624	06135	30622	56133	33998	32308	29434
37913	83900	49166	00249	53178	72307	72190	75931	77613	20172
89444	98195	46733	37201	71901	55023	54570	83126	09462	93979
12582	41940	36060	56756	07999	64138	06492	25815	19518	86938
50494	80008	64774	51382	08059	66448	16437	91579	39197	437%
78301	66128	12840	22254	15193	81210	95747	47344	33660	41707
79457	31686	94486	27386	41641	72199	67265	51794	81521	01556
49337	lo475	49588	79338	32156	47732	29464	92835	09498	81902
92540	56528	21200	87462	08924	56993	57330	a5069	10903	80904
17729	61914	74616	20433	59474	21270	96406	13090	94308	02072
24003	80475	19793	71578	52010	72216	15692	96689	80452	46312
16129	49245	21693	20946	60873	82451	32516	23823	30046	06870
OS453	03060	83621	43443	17082	04401	15299	64642	73497	88426
67711	70526	46700	00171	55077	11440	94932	91116	17259	19645
76306	39287	31026	49379	30267	68885	98147	70311	43856	37376
81300	17782	76403	00972	12558	46140	19818	20440	83967	61036

SOURCE: *A Million Random Digits with 100,000 Normal Deviates*, The RAND Corporation, 1955.

2 Binomial Probabilities

$$P(R = r \mid n, p) = \binom{n}{r} p^r (1-p)^{n-r},$$

for $n = 1(1)20$, $r = 0(1)n$, and $p = .05(.05).50$. For $p > .50$, take $P(r \mid n, p) = P(n - r \mid n, 1 - p)$.

Examples: $P(R = 3 \mid n = 8, p = .25) = .2076$, and $P(R = 2 \mid n = 5, p = .60) = P(R = 3 \mid n = 5, p = .40) = .2304$.

		p									
n	r	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50
1	0	.9500	.9000	.8500	.8000	.7500	.7000	.6500	.6000	.5500	.5000
	1	.0500	.1000	.1500	.2000	.2500	.3000	.3500	.4000	.4500	.5000
2	0	.9025	.8100	.7225	.6400	.5625	.4900	.4225	.3600	.3025	.2500
	1	.0950	.1800	.2550	.3200	.3750	.4200	.4550	.4800	.4950	.5000
	2	.0025	.0100	.0225	.0400	.0625	.0900	.1225	.1600	.2025	.2500
3	0	.8574	.7290	.6141	.5120	.4219	.3430	.2746	.2160	.1664	.1250
	1	.1354	.2430	.3251	.3840	.4219	.4410	.4436	.4320	.4084	.3750
	2	.0071	.0270	.0574	.0960	.1406	.1890	.2389	.2880	.3341	.3750
	3	.0001	.0010	.0034	.0080	.0156	.0270	.0429	.0640	.0911	.1250
4	0	.8145	.6561	.5220	.4096	.3164	.2401	.1785	.1296	.0915	.0625
	1	.1715	.2916	.3685	.4096	.4219	.4116	.3845	.3456	.2995	.2500
	2	.0135	.0486	.0975	.1536	.2109	.2646	.3105	.3456	.3675	.3750
	3	.0005	.0036	.0115	.0256	.0469	.0756	.1115	.1536	.2005	.2500
	4	.0000	.0001	.0005	.0016	.0039	.0081	.0150	.0256	.0410	.0625
5	0	.7738	.5905	.4437	.3277	.2373	.1681	.1160	.0778	.0503	.0312
	1	.2036	.3280	.3915	.4096	.3955	.3602	.3124	.2592	.2059	.1562
	2	.0214	.0729	.1382	.2048	.2637	.3087	.3364	.3456	.3369	.3125
	3	.0011	.0081	.0244	.0512	.0879	.1323	.1811	.2304	.2757	.3125
	4	.0000	.0004	.0022	.0064	.0146	.0284	.0488	.0768	1128	.1562
	5	.0000	.0000	.0001	.0003	.0010	.0024	.0053	.0102	.0185	.0312
6	0	.7351	.5314	.3771	.2621	.1780	.1176	.0754	.0467	.0277	.0156
	1	.2321	.3543	.3993	.3932	.3560	.3025	.2437	.1866	.1359	.0938
	2	.0305	.0984	.1762	.2458	.2966	.3241	.3280	.3110	.2780	.2344
	3	.0021	.0146	.0415	.0819	.1318	.1852	.2355	.2765	.3032	.3125
	4	.0001	.0012	.0055	.0154	.0330	.0595	.0951	.1382	.1861	.2344
	5	.0000	.0001	.0004	.0015	.0044	.0102	.0205	.0369	.0609	.0938
	6	.0000	.0000	.0000	.0001	.0002	.0007	.0018	.0041	.0083	.0156
7	0	.6983	.4783	.3206	.2097	.1335	.0824	.0490	.0280	.0152	.0078
	1	.2573	.3720	.3960	.3670	.3115	.2471	.1848	.1306	.0872	.0547
	2	.0406	.1240	.2097	.2753	.3115	.3177	.2985	.2613	.2140	.1641
	3	.0036	.0230	.0617	.1147	.1730	.2269	.2679	.2903	.2918	.2734
	4	.0002	.0026	.0109	.0287	.0577	.0972	.1442	.1935	.2388	.2734
	5	.0000	.0002	.0012	.0043	.0115	.0250	.0466	.0774	.1172	.1641
	6	.0000	.0000	.0001	.0004	.0013	.0036	.0084	.0172	.0320	.0547
	7	.0000	.0000	.0000	.0000	.0001	.0002	.0006	.0016	.0037	.0078

n	r	p = .05	.10	.15	.20	.25	.30	.35	.40	.45	.50
8	0	.6634	.4305	.2725	.1678	.1001	.0576	.0319	.0168	.0084	.0039
	1	.2793	.3826	.3847	.3355	.2760	.1977	.1373	.0896	.0548	.0312
	2	.0515	.1488	.2376	.2936	.3115	.2965	.2587	.2090	.1569	.1094
	3	.0054	.0331	.0839	.1468	.2076	.2541	.2786	.2787	.2568	.2188
	4	.0004	.0046	.0185	.0459	.0865	.1361	.1875	.2322	.2627	.2734
	5	.0000	.0004	.0026	.0092	.0231	.0467	.0808	.1239	.1719	.2188
	6	.0000	.0000	.0002	.0011	.0038	.0100	.0217	.0413	.0703	.1094
	7	.0000	.0000	.0000	.0001	.0004	.0012	.0033	.0079	.0164	.0312
	8	.0000	.0000	.0000	.0000	.0000	.0001	.0002	.0007	.0017	.0039
9	0	.6302	.3874	.2316	.1342	.0751	.0404	.0277	.0101	.0046	.0020
	1	.2985	.3874	.3679	.3020	.2253	.1556	.1004	.0605	.0339	.0176
	2	.0629	.1722	.2597	.3020	.3003	.2668	.2162	.1612	.1110	.0703
	3	.0077	.0446	.1069	.1762	.2336	.2668	.2716	.2508	.2119	.1641
	4	.0006	.0074	.0283	.0661	.1168	.1715	.2194	.2508	.2600	.2461
	5	.0000	.0008	.0050	.0165	.0389	.0735	.1181	.1672	.2128	.2461
	6	.0000	.0001	.0006	.0028	.0087	.0210	.0424	.0743	.1160	.1641
	7	.0000	.0000	.0000	.0003	.0012	.0039	.0098	.0212	.0407	.0703
	8	.0000	.0000	.0000	.0000	.0001	.0004	.0013	.0035	.0083	.0176
	9	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0003	.0008	.0020
10	0	.5987	.3487	.1969	.1074	.0563	.0282	.0135	.0060	.0025	.0010
	1	.3151	.3874	.3474	.2684	.1877	.1211	.0725	.0403	.0207	.0098
	2	.0746	.1937	.2759	.3020	.2816	.2335	.1757	.1209	.0763	.0439
	3	.0105	.0574	.1298	.2013	.2503	.2668	.2522	.2150	.1665	.1172
	4	.0010	.0112	.0401	.0881	.1460	.2001	.2377	.2508	.2384	.2051
	5	.0001	.0015	.0085	.0264	.0584	.1029	.1536	.2007	.2340	.2461
	6	.0000	.0001	.0012	.0055	.0162	.0368	.0689	.1115	.1596	.2051
	7	.0000	.0000	.0001	.0008	.0031	.0090	.0212	.0425	.0746	.1172
	8	.0000	.0000	.0000	.0001	.0004	.0014	.0043	.0106	.0229	.0439
	9	.0000	.0000	.0000	.0000	.0000	.0001	.0005	.0016	.0042	.0098
	10	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0003	.0010
11	0	.5688	.3138	.1673	.0859	.0422	.0198	.0088	.0036	.0014	.0005
	1	.3293	.3835	.3248	.2362	.1549	.0932	.0518	.0266	.0125	.0054
	2	.0867	.2131	.2866	.2953	.2581	.1998	.1395	.0887	.0513	.0269
	3	.0137	.0710	.1517	.2215	.2581	.2568	.2254	.1774	.1259	.0806
	4	.0014	.0158	.0536	.1107	.1721	.2201	.2428	.2365	.2060	.1611
	5	.0001	.0025	.0132	.0388	.0803	.1231	.1830	.2207	.2360	.2256
	6	.0000	.0003	.0023	.0097	.0268	.0566	.0985	.1471	.1931	.2256
	7	.0000	.0000	.0003	.0017	.0064	.0173	.0379	.0701	.1128	.1611
	8	.0000	.0000	.0000	.0002	.0011	.0037	.0102	.0234	.0462	.0806
	9	.0000	.0000	.0000	.0000	.0001	.0005	.0018	.0052	.0126	.0269
	10	.0000	.0000	.0000	.0000	.0000	.0000	.0002	.0007	.0021	.0054
	11	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0002	.0005
12	0	.5404	.2824	.1422	.0687	.0317	.0138	.0057	.0022	.0008	.0002
	1	.3413	.3766	.3012	.2062	.1267	.0712	.0368	.0174	.0075	.0029
	2	.0988	.2301	.2924	.2835	.2323	.1678	.1088	.0639	.0339	.0161
	3	.0173	.0852	.1720	.2362	.2581	.2397	.1954	.1419	.0923	.0537
	4	.0021	.0213	.0683	.1329	.1936	.2311	.2367	.2128	.1700	.1208
	5	.0002	.0038	.0193	.0532	.1032	.1585	.2039	.2270	.2225	.1934
	6	.0000	.0005	.0040	.0155	.0401	.0792	.1281	.1766	.2124	.2256

n	r	p = .05	.10	.15	.20	.25	.30	.35	.40	.45	.50
12	7	.0000	.0000	.0006	.0033	.0115	.0291	.0591	.1009	.1489	.1934
	8	.0000	.0000	.0001	.0005	.0024	.0078	.0199	.0420	.0762	.1208
	9	.0000	.0000	.0000	.0001	.0004	.0015	.0048	.0125	.0277	.0537
	10	.0000	.0000	.0000	.0000	.0000	.0002	.0008	.0025	.0068	.0161
	11	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0003	.0010	.0029
	12	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0002
13	0	.5133	.2542	.1209	.0550	.0238	.0097	.0037	.0013	.0004	.0001
	1	.3512	.3672	.2774	.1787	.1029	.0540	.0259	.0113	.0045	.0016
	2	.1109	.2448	.2937	.2680	.2059	.1388	.0836	.0453	.0220	.0095
	3	.0214	.0997	.1900	.2457	.2517	.2181	.1651	.1107	.0660	.0349
	4	.0028	.0277	.0838	.1535	.2097	.2337	.2222	.1845	.1350	.0873
	5	.0003	.0055	.0266	.0691	.1258	.1803	.2154	.2214	.1989	.1571
	6	.0000	.0008	.0063	.0230	.0559	.1030	.1546	.1968	.2169	.2095
	7	.0000	.0001	.0011	.0058	.0186	.0442	.0833	.1312	.1775	.2095
	8	.0000	.0000	.0001	.0011	.0047	.0142	.0336	.0656	.1089	.1571
	9	.0000	.0000	.0000	.0001	.0009	.0034	.0101	.0243	.0495	.0873
	10	.0000	.0000	.0000	.0000	.0001	.0006	.0022	.0065	.0162	.0349
	11	.0000	.0000	.0000	.0000	.0000	.0001	.0003	.0012	.0036	.0095
	12	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0005	.0016
	13	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001
14	0	.4877	.2288	.1028	.0440	.0178	.0068	.0024	.0008	.0002	.0001
	1	.3593	.3559	.2539	.1539	.0832	.0407	.0181	.0073	.0027	.0009
	2	.1229	.2570	.2912	.2501	.1802	.1134	.0634	.0317	.0141	.0056
	3	.0259	.1142	.2056	.2501	.2402	.1943	.1366	.0845	.0462	.0222
	4	.0037	.0349	.0998	.1720	.2202	.2290	.2022	.1549	.1040	.0611
	5	.0004	.0078	.0352	.0860	.1468	.1963	.2178	.2066	.1701	.1222
	6	.0000	.0013	.0093	.0322	.0734	.1262	.1759	.2066	.2088	.1833
	7	.0000	.0002	.0019	.0092	.0280	.0618	.1082	.1574	.1952	.2095
	8	.0000	.0000	.0003	.0020	.0082	.0232	.0510	.0918	.1398	.1833
	9	.0000	.0000	.0000	.0003	.0018	.0066	.0183	.0408	.0762	.1222
	10	.0000	.0000	.0000	.0000	.0003	.0014	.0049	.0136	.0312	.0611
	11	.0000	.0000	.0000	.0000	.0000	.0002	.0010	.0033	.0093	.0222
	12	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0005	.0019	.0056
	13	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0002	.0009
	14	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001
15	0	.4633	.2059	.0874	.0352	.0134	.0047	.0016	.0005	.0001	.0000
	1	.3658	.3432	.2312	.1319	.0668	.0305	.0126	.0047	.0016	.0005
	2	.1348	.2669	.2856	.2309	.1559	.0916	.0476	.0219	.0090	.0032
	3	.0307	.1285	.2184	.2501	.2252	.1700	.1110	.0634	.0318	.0139
	4	.0049	.0428	.1156	.1876	.2252	.2186	.1792	.1268	.0780	.0417
	5	.0006	.0105	.0449	.1032	.1651	.2061	.2123	.1859	.1404	.0916
	6	.0000	.0019	.0132	.0430	.0917	.1472	.1906	.2066	.1914	.1527
	7	.0000	.0003	.0030	.0138	.0393	.0811	.1319	.1771	.2013	.1964
	8	.0000	.0000	.0005	.0035	.0131	.0348	.0710	.1181	.1647	.1964
	9	.0000	.0000	.0001	.0007	.0034	.0116	.0298	.0612	.1048	.1527
	10	.0000	.0000	.0000	.0001	.0007	.0030	.0096	.0245	.0515	.0916
	11	.0000	.0000	.0000	.0000	.0001	.0006	.0024	.0074	.0191	.0417
	12	.0000	.0000	.0000	.0000	.0000	.0001	.0004	.0016	.0052	.0139
	13	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0003	.0010	.0032
	14	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0005
	15	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

n	r	p = .05	.10	.15	.20	.25	.30	.35	.40	.45	.50
16	0	.4401	.1853	.0743	.0281	.0100	.0033	.0010	.0003	.0001	.0000
	1	.3706	.3294	.2097	.1126	.0535	.0228	.0087	.0030	.0009	.0002
	2	.1463	.2745	.2775	.2111	.1336	.0732	.0353	.0150	.0056	.0018
	3	.0359	.1423	.2285	.2463	.2079	.1465	.0888	.0468	.0215	.0085
	4	.0061	.0514	.1311	.2001	.2252	.2040	.1553	.1014	.0572	.0278
	5	.0008	.0137	.0555	.1201	.1802	.2099	.2008	.1623	.1123	.0667
	6	.0001	.0028	.0180	.0550	.1101	.1640	.1982	.1983	.1684	.1222
	7	.0000	.0004	.0045	.0197	.0524	.1010	.1524	.1889	.1969	.1746
	8	.0000	.0001	.0009	.0055	.0197	.0487	.0923	.1417	.1812	.1964
	9	.0000	.0000	.0001	.0012	.0058	.0185	.0442	.0840	.1318	.1746
	10	.0000	.0000	.0000	.0002	.0014	.0056	.0167	.0392	.0755	.1222
	11	.0000	.0000	.0000	.0000	.0002	.0013	.0049	.0142	.0337	.0667
	12	.0000	.0000	.0000	.0000	.0000	.0002	.0011	.0040	.0115	.0278
	13	.0000	.0000	.0000	.0000	.0000	.0000	.0002	.0008		.0085
	14	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001		.0018
	15	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000		.0002
	16	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000		.0000
17	0	.4181	.1668	.0631	.0225	.0075	.0023	.0007	.0002	0000	.0000
	1	.3741	.3150	.1893	.0957	.0426	.0169	.0060	.0019		.0001
	2	.1575	.2800	.2673	.1914	.1136	.0581	.0260	.0102		.0010
	3	.0415	.1556	.2359	.2393	.1893	.1245	.0701	.0341	0144	.0052
	4	.0076	.0605	.1457	.2093	.2209	.1868	.1320	.0796	0411	.0182
	5	.0010	.0175	.0668	.1361	.1914	.2081	.1849	.1379	.0873	.0472
	6	.0001	.0039	.0236	.0680	.1276	.1784	.1991	.1839	.1432	.0944
	7	.0000	.0007	.0065	.0267	.0668	.1201	.1685	.1927	.1841	.1484
	8	.0000	.0001	.0014	.0084	.0279	.0644	.1143	.1606		.1855
	9	.0000	.0000	.0003	.0021	.0093	.0276	.0611	.1070	.1540	.1855
	10	.0000	.0000	.0000	.0004	.0025	.0095	.0263	.0571		.1484
	11	.0000	.0000	.0000	.0001	.0005	.0026	.0090	.0242	.0525	.0944
	12	.0000	.0000	.0000	.0000	.0001	.0006	.0024	.0081	0215	.0472
	13	.0000	.0000	.0000	.0000	.0000	.0001	.0005	.0021	.0068	.0182
	14	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0004	.0016	.0052
	15	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0003	.0010
	16	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001
	17	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
18	0	.3972	.1501	.0536	.0180	.0056	.0016	.0004	.0001	.0000	.0000
	1	.3763	.3002	.1704	.0811	.0338	.0126	.0042	.0012	.0003	.0001
	2	.1683	.2835	.2556	.1723	.0958	.0458	.0190	.0069	.0022	.0006
	3	.0473	.1680	.2406	.2297	.1704	.1046	.0547	.0246	.0095	.0031
	4	.0093	.0700	.1592	.2153	.2130	.1681	.1104	.0614	.0291	.0117
	5	.0014	.0218	.0787	.1507	.1988	.2017	.1664	.1146	.0666	.0327
	6	.0002	.0052	.0310	.0816	.1436	.1873	.1941	.1655	.1181	.0708
	7	.0000	.0010	.0091	.0350	.0820	.1376	.1792	.1892	.1657	.1214
	8	.0000	.0002	.0022	.0120	.0376	.0811	.1327	.1734	.1864	.1669
	9	.0000	.0000	.0004	.0033	.0139	.0386	.0794	.1284	.1694	.1855
	10	.0000	.0000	.0001	.0008	.0042	.0149	.0385	.0771	.1248	.1669
	11	.0000	.0000	.0000	.0001	.0010	.0046	.0151	.0374	.0742	.1214
	12	.0000	.0000	.0000	.0000	.0002	.0012	.0047	.0145	.0354	.0708

n	r	p = .05	.10	.15	.20	.25	.30	.35	.40	.45	.50
18	13	.0000	.0000	.0000	.0000	.0000	.0002	.0012	.0045	.0134	.0327
	14	.0000	.0000	.0000	.0000	.0000	.0000	.0002	.0011	.0039	.0117
	15	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0002	.0009	.0031
	16	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0006
	17	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001
	18	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
19	0	.3774	.1351	.0456	.0144	.0042	.0011	.0003	.0001	.0000	.0000
	1	.3774	.2852	.1529	.0685	.0268	.0093	.0029	.0008	.0002	.0000
	2	.1787	.2852	.2428	.1540	.0803	.0358	.0138	.0046	.0013	.0003
	3	.0533	.1796	.2428	.2182	.1517	.0869	.0422	.0175	.0062	.0018
	4	.0112	.0798	.1714	.2182	.2023	.1491	.0909	.0467	.0203	.0074
	5	.0018	.0266	.0907	.1636	.2023	.1916	.1468	.0933	.0497	.0222
	6	.0002	.0069	.0374	.0955	.1574	.1916	.1844	.1451	.0949	.0518
	7	.0000	.0014	.0122	.0443	.0974	.1525	.1844	.1797	.1443	.0961
	8	.0000	.0002	.0032	.0166	.0487	.0981	.1489	.1797	.1771	.1442
	9	.0000	.0000	.0007	.0051	.0198	.0514	.0980	.1464	.1771	.1762
	10	.0000	.0000	.0001	.0013	.0066	.0220	.0528	.0976	.1449	.1762
	11	.0000	.0000	.0000	.0003	.0018	.0077	.0233	.0532	.0970	.1442
	12	.0000	.0000	.0000	.0000	.0004	.0022	.0083	.0237	.0529	.0961
	13	.0000	.0000	.0000	.0000	.0001	.0005	.0024	.0085	.0233	.0518
	14	.0000	.0000	.0000	.0000	.0000	.0001	.0006	.0024	.0082	.0222
	15	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0005	.0022	.0074
	16	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0005	.0018
	17	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0003
	18	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	19	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
20	0	.3585	.1216	.0388	.0115	.0032	.0008	.0002	.0000	.0000	.0000
	1	.3774	.2702	.1368	.0576	.0211	.0068	.0020	.0005	.0001	.0000
	2	.1887	.2852	.2293	.1369	.0669	.0278	.0100	.0031	.0008	.0002
	3	.0596	.1901	.2428	.2054	.1339	.0716	.0323	.0123	.0040	.0011
	4	.0133	.0898	.1821	.2182	.1897	.1304	.0738	.0350	.0139	.0046
	5	.0022	.0319	.1028	.1746	.2023	.1789	.1272	.0746	.0365	.0148
	6	.0003	.0089	.0454	.1091	.1686	.1916	.1712	.1244	.0746	.0370
	7	.0000	.0020	.0160	.0545	.1124	.1643	.1844	.1659	.1221	.0739
	8	.0000	.0004	.0046	.0222	.0609	.1144	.1614	.1797	.1623	.1201
	9	.0000	.0001	.0011	.0074	.0271	.0654	.1158	.1597	.1771	.1602
	10	.0000	.0000	.0002	.0020	.0099	.0308	.0686	.1171	.1593	.1762
	11	.0000	.0000	.0000	.0005	.0030	.0120	.0336	.0710	.1185	.1602
	12	.0000	.0000	.0000	.0001	.0008	.0039	.0136	.0355	.0727	.1201
	13	.0000	.0000	.0000	.0000	.0002	.0010	.0045	.0146	.0366	.0739
	14	.0000	.0000	.0000	.0000	.0000	.0002	.0012	.0049	.0150	.0370
	15	.0000	.0000	.0000	.0000	.0000	.0000	.0003	.0013	.0049	.0148
	16	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0003	.0013	.0046
	17	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0002	.0011
	18	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0002
	19	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
	20	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

3 Poisson Probabilities

$$P(R = r|\lambda, t) = \frac{e^{-\lambda t}(\lambda t)^r}{r!},$$

for At = 1(.1)10(1)20 and suitable values of r.

Example: $P(R = 2|\lambda B = 1.5, t = 5) = .0156$.

	λt									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0	.9048	.8187	.7408	.6703	.6065	.5488	.4966	.4493	.4066	.3679
1	.0905	.1637	.2222	.2681	.3033	.3293	.3476	.3595	.3659	.3679
2	.0045	.0164	.0333	.0536	.0758	.0988	.1217	.1438	.1647	.1839
3	.0002	.0011	.0033	.0072	.0126	.0198	.0284	.0383	.0494	.0613
4	.0000	.0001	.0002	.0007	.0016	.0030	.0050	.0077	.0111	.0153
5	.0000	.0000	.0000	.0001	.0002	.0004	.0007	.0012	.0020	.0031
6	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0002	.0003	.0005
7	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001

	λt									
r	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
0	.3329	.3012	.2725	.2466	.2231	.2019	.1827	.1653	.1496	.1353
1	.3662	.3614	.3543	.3452	.3347	.3230	.3106	.2975	.2842	.2707
2	.2014	.2169	.2303	.2417	.2510	.2584	.2640	.2678	.2700	.2707
3	.0738	.0867	.0998	.1128	.1255	.1378	.1496	.1607	.1710	.1804
4	.0203	.0260	.0324	.0395	.0471	.0551	.0636	.0723	.0812	.0902
5	.0045	.0062	.0084	.0111	.0141	.0176	.0216	.0260	.0309	.0361
6	.0008	.0012	.0018	.0026	.0035	.0047	.0061	.0078	.0098	.0120
7	.0001	.0002	.0003	.0005	.0008	.0011	.0015	.0020	.0027	.0034
8	.0000	.0000	.0001	.0001	.0001	.0002	.0003	.0005	.0006	.0009
9	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0001	.0001	.0002

	λt									
r	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
0	.1*25	.1108	.1003	.0907	.0821	.0743	.0672	.0608	.0550	.0498
1	.2572	.2438	.2306	.2177	.2052	.1931	.1815	.1703	.1596	.1494
2	.2700	.2681	.2652	.2613	.2565	.2510	.2450	.2384	.2314	.2240
3		.1966	.2033	.2090	.2138	.2176	.2205	.2225	.2237	.2240
4		.1082	.1169	.1254	.1336	.1414	.1488	.1557	.1622	.1680
5	.0417	.0476	.0538	.0602	.0668	.0735	.0804	.0872	.0940	.1008
6	.0146	.0174	.0206	.0241	.0278	.0319	.0362	.0407	.0455	.0540
,	.0044	.0055	.0068	.0083	.0099	.0118	.0139	.0163	.0188	.0216
8	.0011	.0015	.0019	.0025	.0031	.0038	.0047	.0057	.0068	.0081
9	.0003	.0004	.0005	.0007	.0009	.0011	.0014	.0018	.0022	.0027
10	.0001	.0001	.0001	.0002	.0002	.0003	.0004	.0005	.0006	.0008
11	.0000	.0000	.0000	.0000	.0000	.0001	.0001	.0001	.0002	.0002
12	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001

	λt									
r	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
0	.0450	.0408	.0369	.0344	.0302	.0273	.0247	.0224	.0202	.0183
1	.1397	.1304	.1217	.1135	.1057	.0984	.0915	.0850	.0789	.0733
2	.2165	.2087	.2008	.1929	.1850	.1771	.1692	.1615	.1539	.1465
3	.2237	.2226	.2209	.2186	.2158	.2125	.2087	.2046	.2001	.1954
4	.1734	.1781	.1823	.1858	.1888	.1912	.1931	.1944	.1951	.1954
5	.1075	.1140	.1203	.1264	.1322	.1377	.1429	.1477	.1522	.1563
6	.0555	.0608	.0662	.0716	.0771	.0826	.0881	.0936	.0989	.1042
7	.0246	.0278	.0312	.0348	.0385	.0425	.0466	.0508	.0551	.0595
8	.0095	.0111	.0129	.0148	.0169	.0191	.0215	.0241	.0269	.0298
9	.0033	.0040	.0047	.0056	.0066	.0076	.0089	.0102	.0116	.0132
10	.0010	.0013	.0016	.0019	.0023	.0028	.0033	.0039	.0045	.0053
11	.0003	.0004	.0005	.0006	.0007	.0009	.0011	.0013	.0016	.0019
12	.0001	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0005	.0006
13	.0000	.0000	.0000	.0000	.0001	.0001	.0001	.0001	.0002	.0002
14	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001

	λt									
r	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
0	.0166	.0150	.0136	.0123	.0111	.0101	.0091	.0082	.0074	.0067
1	.0679	.0630	.0583	.0540	.0500	.0462	.0427	.0395	.0365	.0337
2	.1393	.1323	.1254	.1188	.1125	.1063	.1005	.0948	.0894	.0842
3	.1904	.1852	.1798	.1743	.1687	.1631	.1574	.1517	.1460	.1404
4	.1951	.1944	.1933	.1917	.1898	.1875	.1849	.1820	.1789	.1755
5	.1600	.1633	.1662	.1687	.1708	.1725	.1738	.1747	.1753	.1755
6	.1093	.1143	.1191	.1237	.1281	.1323	.1362	.1398	.1432	.1462
7	.0640	.0686	.0732	.0778	.0824	.0869	.0914	.0959	.1002	.1044
8	.0328	.0360	.0393	.0428	.0463	.0500	.0537	.0575	.0614	.0653
9	.0150	.0168	.0188	.0209	.0232	.0255	.0280	.0307	0334	.0363
10	.0061	.0071	.0081	.0092	.0104	.0118	.0132	.0147	.0164	.0181
11	.0023	.0027	.0032	.0037	.0043	.0049	.0056	.0064	.0073	.0082
12	.0008	.0009	.0011	.0014	.0016	.0019	.0022	.0026	.0030	.0034
13	.0002	.0003	.0004	.0005	.0006	.0007	.0008	.0009	.0011	.0013
14	.0001	.0001	.0001	.0001	.0002	.0002	.0003	.0003	.0004	.0005
15	.0000	.0000	.0000	.0000	.0001	.0001	.0001	.0001	.0001	.0002

	λt									
r	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
0	.0061	.0055	.0050	.0045	.0041	.0037	.0033	.0030	.0027	.0025
1	.0311	.0287	.0265	.0244	.0225	.0207	.0191	.0176	.0162	.0149
2	.0793	.0746	.0701	.0659	.0618	.0580	.0544	.0509	.0477	.0446
3	.1348	.1293	.1239	.1185	.1133	.1082	.1033	.0985	.0938	.0892
4	.1719	.1681	.1641	.1600	.1558	.1515	.1472	.1428	.1383	.1339
5	.1753	.1748	.1740	.1728	.1714	.1697	.1678	.1656	.1632	.1606
6	.1490	.1515	.1537	.1555	.1571	.1584	.1594	.1601	.1605	.1606
7	.1086	.1125	.1163	.1200	.1234	.1267	.1298	.1326	.1353	.1377
8	.0692	.0731	.0771	.0810	.0849	.0887	.0925	.0962	.0998	.1033
9	.0392	.0423	.0454	.0486	.0519	.0552	.0586	.0620	.0654	.0688

r	λ = 5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
10	.0200	.0220	.0241	.0262	.0285	.0309	.0334	.0359	.0386	.0413
11	.0093	.0104	.0116	.0129	.0143	.0157	.0173	.0190	.0207	.0225
12	.0039	.0045	.0051	.0058	.0065	.0073	.0082	.0092	.0102	.0113
13	.0015	.0018	.0021	.0024	.0028	.0032	.0036	.0041	.0046	.0052
14	.0006	.0007	.0008	.0009	.0011	.0013	.0015	.0017	.0019	.0022
15	.0002	.0002	.0003	.0003	.0004	.0005	.0006	.0007	.0008	.0009
16	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0003	.0003
17	.0000	.0000	.0000	.0000	.0000	.0001	.0001	.0001	.0001	.0001

r	λ = 6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0
0	.0022	.0020	.0018	.0017	.0015	.0014	.0012	.0011	.0010	.0009
1	.0137	.0126	.0116	.0106	.0098	.0090	.0082	.0076	.0070	.0064
2	.0417	.0390	.0364	.0340	.0318	.0296	.0276	.0258	.0240	.0223
3	.0848	.0806	.0765	.0726	.0688	.0652	.0617	.0584	.0552	.0521
4	.1294	.1249	.1205	.1162	.1118	.1076	.1034	.0992	.0952	.0912
5	.1579	.1549	.1519	.1487	.1454	.1420	.1385	.1349	.1314	.1277
6	.1605	.1601	.1595	.1586	.1575	.1562	.1546	.1529	.1511	.1490
7	.1399	.1418	.1435	.1450	.1462	.1472	.1480	.1486	.1489	.1490
8	.1066	.1099	.1130	.1160	.1188	.1215	.1240	.1263	.1284	.1304
9	.0723	.0757	.0791	.0825	.0858	.0891	.0923	.0954	.0985	.1014
10	.0441	.0469	.0498	.0528	.0558	.0588	.0618	.0649	.0679	.0710
11	.0245	.0265	.0285	.0307	.0330	.0353	.0377	.0401	.0426	.0452
12	.0124	.0137	.0150	.0164	.0179	.0194	.0210	.0227	.0245	.0264
13	.0058	.0065	.0073	.0081	.0089	.0098	.0108	.0119	.0130	.0142
14	.0025	.0029	.0033	.0037	.0041	.0046	.0052	.0058	.0064	.0071
15	.0010	.0012	.0014	.0016	.0018	.0020	.0023	.0026	.0029	.0033
16	.0004	.0005	.0005	.0006	.0007	.0008	.0010	.0011	.0013	.0014
17	.0001	.0002	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0006
18	.0000	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002
19	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0001	.0001

r	λ = 7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0
0	.0008	.0007	.0007	.0006	.0006	.0005	.0005	.0004	.0004	.0003
1	.0059	.0054	.0049	.0045	.0041	.0038	.0035	.0032	.0029	.0027
2	.0208	.0194	.0180	.0167	.0156	.0145	.0134	.0125	.0116	.0107
3	.0492	.0464	.0438	.0413	.0389	.0366	.0345	.0324	.0305	.0286
4	.0874	.0836	.0799	.0764	.0729	.0696	.0663	.0632	.0602	.0573
5	.1241	.1204	.1167	.1130	.1094	.1057	.1021	.0986	.0951	.0916
6	.1468	.1445	.1420	.1394	.1367	.1339	.1311	.1282	.1252	.1221
7	.1489	.1486	.1481	.1474	.1465	.1454	.1442	.1428	.1413	.1396
8	.1321	.1337	.1351	.1363	.1373	.1382	.1388	.1392	.1395	.1396
9	.1042	.1070	.1096	.1121	.1144	.1167	.1187	.1207	.1224	.1241
10	.0740	.0770	.0800	.0829	.0858	.0887	.0914	.0941	.0967	.0993
11	.0478	.0504	.0531	.0558	.0585	.0613	.0640	.0667	.0695	.0722

r	λ = 7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0
12	.0283	.0303	.0323	.0344	.0366	.0388	.0411	.0434	.0457	.0481
13	.0154	.0168	.0181	.0196	.0211	.0227	.0243	.0260	.0278	.0296
14	.0078	.0086	.0095	.0104	.0113	.0123	.0134	.0145	.0157	.0169
15	.0037	.0041	.0046	.0051	.0057	.0062	.0069	.0075	.0083	.0090
16	.0016	.0019	.0021	.0024	.0026	.0030	.0033	.0037	.0041	.0045
17	.0007	.0008	.0009	.0010	.0012	.0013	.0015	.0017	.0019	.0021
18	.0003	.0003	.0004	.0004	.0005	.0006	.0006	.0007	.0008	.0009
19	.0001	.0001	.0001	.0002	.0002	.0002	.0003	.0003	.0003	.0004
20	.0000	.0000	.0001	.0001	.0001	.0000	.0001	.0001	.0001	.0002
21	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0001

r	λ = 8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0
0	.0003	.0003	.0002	.0002	.0002	.0002	.0002	.0002	.0001	.0001
1	.0025	.0023	.0021	.0019	.0017	.0016	.0014	.0013	.0012	.0011
2	.0100	.0092	.0086	.0079	.0074	.0068	.0063	.0058	.0054	.0050
3	.0269	.0252	.0237	.0222	.0208	.0195	.0183	.0171	.0160	.0150
4	.0544	.0517	.0491	.0466	.0443	.0420	.0398	.0377	.0357	.0337
5	.0882	.0849	.0816	.0784	.0752	.0722	.0692	.0663	.0635	.0607
6	.1191	.1160	.1128	.1097	.1066	.1034	.1003	.0972	.0941	.0911
7	.1378	.1358	.1338	.1317	.1294	.1271	.1247	.1222	.1197	.1171
8	.1395	.1392	.1388	.1382	.1375	.1366	.1356	.1344	.1332	.1318
9	.1256	.1269	.1280	.1290	.1299	.1306	.1311	.1315	.1317	.1318
10	.1017	.1040	.1063	.1084	.1104	.1123	.1140	.1157	.1172	.1186
11	.0749	.0776	.0802	.0828	.0853	.0878	.0902	.0925	.0948	.0970
12	.0505	.0530	.0555	.0579	.0604	.0629	.0654	.0679	.0703	.0728
13	.0315	.0334	.0354	.0374	.0395	.0416	.0438	.0459	.0481	.0504
14	.0182	.0196	.0210	.0225	.0240	.0256	.0272	.0289	.0306	.0324
15	.0098	.0107	.0116	.0126	.0136	.0147	.0158	.0169	.0182	.0194
16	.0050	.0055	.0060	.0066	.0072	.0079	.0086	.0093	.0101	.0109
17	.0024	.0026	.0029	.0033	.0036	.0040	.0044	.0048	.0053	.0058
18	.0011	.0012	.0014	.0015	.0017	.0019	.0021	.0024	.0026	.0029
19	.0005	.0005	.0006	.0007	.0008	.0009	.0010	.0011	.0012	.0014
20	.0002	.0002	.0002	.0003	.0003	.0004	.0004	.0005	.0005	.0006
21	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0002	.0003
22	.0000	.0000	.0000	.0000	.0001	.0001	.0001	.0001	.0001	.0001

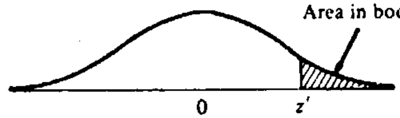
r	λ = 9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10
0	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0000
1	.0010	.0009	.0009	.0008	.0007	.0007	.0006	.0005	.0005	.0005
2	.0046	.0043	.0040	.0037	.0034	.0031	.0029	.0027	.0025	.0023
3	.0140	.0131	.0123	.0115	.0107	.0100	.0093	.0087	.0081	.0076
4	.0319	.0302	.0285	.0269	.0254	.0240	.0226	.0213	.0201	.0189

r	λ = 9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10
5	.0581	.0555	.0530	.0506	.0483	.0460	.0439	.0418	.0398	.0378
6	.0881	.0851	.0822	.0793	.0764	.0736	.0709	.0682	.0656	.0631
7	.1145	.1118	.1091	.1064	.1037	.1010	.0982	.0955	.0928	.0901
8	.1302	.1286	.1269	.1251	.1232	.1212	.1191	.1170	.1148	.1126
9	.1317	.1315	.1311	.1306	.1300	.1293	.1284	.1274	.1263	.1251
10	.1198	.1210	.1219	.1228	.1235	.1241	.1245	.1249	.1250	.1251
11	.0991	.1012	.1031	.1049	.1067	.1083	.1098	.1112	.1125	.1137
12	.0752	.0776	.0799	.0822	.0844	.0866	.0888	.0908	.0928	.0948
13	.0526	.0549	.0572	.0594	.0617	.0640	.0662	.0685	.0707	.0729
14	.0342	.0361	.0380	.0399	.0419	.0439	.0459	.0479	.0500	.0521
15	.0208	.0221	.0235	.0250	.0265	.0281	.0297	.0313	.0330	.0347
16	.0118	.0127	.0137	.0147	.0157	.0168	.0180	.0192	.0204	.0217
17	.0063	.0069	.0075	.0081	.0088	.0095	.0103	.0111	.0119	.0128
18	.0032	.0035	.0039	.0042	.0046	.0051	.0055	.0060	.0065	.0071
19	.0015	.0017	.0019	.0021	.0023	.0026	.0028	.0031	.0034	.0037
20	.0007	.0008	.0009	.0010	.0011	.0012	.0014	.0015	.0017	.0019
21	.0003	.0003	.0004	.0004	.0005	.0006	.0006	.0007	.0008	.0009
22	.0001	.0001	.0002	.0002	.0002	.0002	.0003	.0003	.0004	.0004
23	.0000	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002
24	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0001	.0001

r	λ = 11	12	13	14	15	16	17	18	19	20
0	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1	.0002	.0001	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2	.0010	.0004	.0002	.0001	.0000	.0000	.0000	.0000	.0000	.0000
3	.0037	.0018	.0008	.0004	.0002	.0001	.0000	.0000	.0000	.0000
4	.0102	.0053	.0027	.0013	.0006	.0003	.0001	.0001	.0000	.0000
5	.0224	.0127	.0070	.0037	.0019	.0010	.0005	.0002	.0001	.0001
6	.0411	.0255	.0152	.0087	.0048	.0026	.0014	.0007	.0004	.0002
7	.0646	.0437	.0281	.0174	.0104	.0060	.0034	.0018	.0010	.0005
8	.0888	.0655	.0457	.0304	.0194	.0120	.0072	.0042	.0024	.0013
9	.1085	.0874	.0661	.0473	.0324	.0213	.0135	.0083	.0050	.0029
10	.1194	.1048	.0859	.0693	.0486	.0341	.0230	.0150	.0095	.0058
11	.1194	.1144	.1015	.0844	.0663	.0496	.0355	.0245	.0164	.0106
12	.1094	.1144	.1099	.0984	.0829	.0661	.0504	.0368	.0259	.0176
13	.0926	.1056	.1099	.1060	.0956	.0814	.0658	.0509	.0378	.0271
14	.0728	.0905	.1021	.1060	.1024	.0930	.0800	.0655	.0541	.0387
15	.0534	.0724	.0885	.0989	.1024	.0992	.0906	.0786	.0650	.0516
16	.0367	.0543	.0719	.0866	.0960	.0992	.0963	.0884	.0772	.0646
17	.0237	.0383	.0550	.0713	.0847	.0934	.0963	.0936	.0863	.0760
18	.0145	.0256	.0397	.0554	.0706	.0830	.0909	.0936	.0911	.0844
19	.0084	.0161	.0272	.0409	.0557	.0699	.0814	.0887	.0911	.0888
20	.0046	.0097	.0177	.0286	.0418	.0559	.0692	.0798	.0866	.0888
21	.0024	.0055	.0109	.0191	.0299	.0426	.0560	.0684	.0783	.0846
22	.0012	.0030	.0065	.0121	.0204	.0310	.0433	.0560	.0676	.0769
23	.0006	.0016	.0037	.0074	.0133	.0216	.0320	.0438	.0559	.0669
24	.0003	.0008	.0020	.0043	.0083	.0144	.0226	.0328	.0442	.0557

r	λ = 11	12	13	14	15	16	17	18	19	20
25	.0001	.0004	.0010	.0024	.0050	.0092	.0154	.0237	.0336	.0446
26	.0000	.0002	.0005	.0013	.0029	.0057	.0101	.0164	.0246	.0343
27	.0000	.0001	.0002	.0007	.0016	.0034	.0063	.0109	.0173	.0254
28	.0000	.0000	.0001	.0003	.0009	.0019	.0038	.0070	.0117	.0181
29	.0000	.0000	.0001	.0002	.0004	.0011	.0023	.0044	.0077	.0125
30	.0000	.0000	.0000	.0001	.0002	.0006	.0013	.0026	.0049	.0083
31	.0000	.0000	.0000	.0000	.0001	.0003	.0007	.0015	.0030	.0054
32	.0000	.0000	.0000	.0000	.0001	.0001	.0004	.0009	.0018	.0034
33	.0000	.0000	.0000	.0000	.0000	.0001	.0002	.0005	.0010	.0020
34	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0002	.0006	.0012
35	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0003	.0007
36	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0002	.0004
37	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001	.0002
38	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001
39	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0001

4 Standard Normal Distribution



z'		0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.	50000	49601	49202	48803	48405	48006	47608	47210	46812	46414
0.1		46017	45620	45224	44828	44433	44038	43644	43251	42858	42465
0.2		42074	41683	41294	40905	40517	40129	39743	39358	38974	38591
0.3		38209	37828	37448	37070	36693	36317	35942	35569	35197	34827
0.4		34458	34090	33724	33360	32997	32636	32276	31918	31561	31207
0.5		30854	30503	30153	29806	29460	29116	28774	28434	28096	27760
0.6		27425	27093	26763	26435	26109	25785	25463	25143	24825	24510
0.7		24196	23885	23576	23270	22965	22663	22363	22065	21770	21476
0.8		21186	20897	20611	20327	20045	19766	19489	19215	18943	18673
0.9		18406	18141	17879	17619	17361	17106	16853	16602	16354	16109
1.0		15866	15625	15386	15151	14917	14686	14457	14231	14007	13786
1.1		13567	13350	13136	12924	12714	12507	12302	12100	11900	11702
1.2		11507	11314	11123	10935	10749	10565	10383	10204	10027	**98525***
1.3	0.0	96800	95098	93418	91759	90123	88508	86915	85343	83793	82264
1.4		80757	79270	77804	76359	74934	73529	72145	70781	69437	68112
1.5		66807	65522	64255	63008	61780	60571	59380	58208	57053	55917
1.6		54799	53699	52616	51551	50503	49471	48457	47460	46479	45514
1.7		44565	43633	42716	41815	40930	40059	39204	38364	37538	36727
1.8		35930	35148	34380	33625	32884	32157	31443	30742	30054	29379
1.9		28717	28067	27429	26803	26190	25588	24998	24419	23852	23295
2.0		22750	22216	21692	21178	20675	20182	19699	19226	18763	18309
2.1		17864	17429	17003	16586	16177	15778	15386	15003	14629	14262
2.2		13903	13553	13209	12874	12545	12224	11911	11604	11304	11011
2.3		10724	10444	10170	**99031**	**96419**	**93867**	**91375**	**88940**	**86563**	**84242**
2.4	0.0^2	81975	79763	77603	75494	73436	71428	69469	67557	65691	63872
2.5		62097	60366	58677	57031	55426	53861	52336	50849	49400	47988
2.6		46612	45271	43965	42692	41453	40246	39070	37926	36811	35726
2.7		34670	33642	32641	31667	30720	29798	28901	28028	27179	26354
2.8		25551	24771	24012	23274	22557	21860	21182	20524	19884	19262
2.9		18658	18071	17502	16943	16411	15889	15382	14890	14412	13949
3.0		13499	13062	12639	12228	11829	11442	11067	10703	10350	10008
3.1	0.0^3	96760	93544	90426	87403	84474	81635	78885	76219	73638	71136
3.2		68714	66367	64095	61895	59765	57703	55706	53774	51904	50094
3.3		48342	46648	45009	43423	41889	40406	38971	37584	36243	34946
3.4		33693	32481	31311	30179	29086	28029	27009	26023	25071	24151

*Boldface numbers should be preceded by one additional zero.

z'		0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
3.5		23263	22405	21577	20778	20006	19262	18543	17849	17180	16534
3.6		15911	15310	14730	14171	13632	13112	12611	12128	11662	11213
3.7		10780	10363	**99611**	**95740**	**92010**	**88417**	**84957**	**81624**	**78414**	**75324**
3.8	0.0^4	72348	69483	66726	64072	61517	59059	56694	54418	52228	50122
3.9		48096	46148	44274	42473	40741	39076	37475	35936	34458	33037
4.0		31671	30359	29099	27888	26726	25609	24536	23507	22518	21569
4.1		20658	19783	18944	18138	17365	16624	15912	15230	14575	13948
4.2		13346	12769	12215	11685	11176	10689	10221	**97736**	**93447**	**89337**
4.3	0.0^5	85399	81627	78015	74555	71241	68069	65031	62123	59340	56675
4.4		54125	51685	49350	47117	44979	42935	40980	39110	37322	35612
4.5		33977	32414	30920	29492	28127	26823	25577	24386	23249	22162
4.6		21125	20133	19187	18283	17420	16597	15810	15060	14344	13660
4.7		13008	12386	11792	11226	10686	10171	**96796**	**92113**	**87648**	**83391**
4.8	0.0^6	79333	75465	71779	68267	64920	61731	58693	55799	53043	50418
4.9		47918	45538	43272	41115	39061	37107	35247	33476	31792	30190

SOURCE: Table D is taken from Fisher and Yates, *Statistical Tables for Biological, Agricultural, and Medical Research*, (6th edition, 1974) published by Longman Group Ltd., London (previously published by Oliver & Boyd, Edinburgh), and by permission of the authors and publishers.

*Boldface numbers should be preceded by one additional zero.

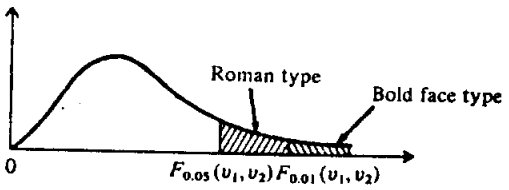
5 Distribution of Chi Square

ν	Probability .99	.98	.95	.90	.80	.70	.50	.30	.20	.10	.05	.02	.01	.001
1	$.0^3157$	$.0^3628$	.00393	.0158	.0642	.148	.455	1.074	1.642	2.706	3.841	5.412	6.635	10.827
2	.0201	.0404	.103	.211	.446	.713	1.386	2.408	3.219	4.605	5.991	7.824	9.210	13.815
3	.115	.185	.352	.584	1.005	1.424	2.366	3.665	4.642	6.251	7.815	9.837	11.345	16.266
4	.297	.429	.711	1.064	1.649	2.195	3.357	4.878	5.989	7.779	9.488	11.668	13.277	18.467
5	.554	.752	1.145	1.610	2.343	3.000	4.351	6.064	7.289	9.236	11.070	13.388	15.086	20.515
6	.872	1.134	1.635	2.204	3.070	3.828	5.348	7.231	8.558	10.645	12.592	15.033	16.812	22.457
7	1.239	1.564	2.167	2.833	3.822	4.671	6.346	8.383	9.803	12.017	14.067	16.622	18.475	24.322
8	1.646	2.032	2.733	3.490	4.594	5.527	7.344	9.524	11.030	13.362	15.507	18.168	20.090	26.125
9	2.088	2.532	3.325	4.168	5.380	6.393	8.343	10.656	12.242	14.684	16.919	19.679	21.666	27.877
10	2.558	3.059	3.940	4.865	6.179	7.267	9.342	11.781	13.442	15.987	18.307	21.161	23.209	29.588
11	3.053	3.609	4.575	5.578	6.989	8.148	10.341	12.899	14.631	17.275	19.675	22.618	24.725	31.264
12	3.571	4.178	5.226	6.304	7.807	9.034	11.340	14.011	15.812	18.549	21.026	24.054	26.217	32.909
13	4.107	4.765	5.892	7.042	8.634	9.926	12.340	15.119	16.985	19.812	22.362	25.472	27.688	34.528
14	4.660	5.368	6.571	7.790	9.467	10.821	13.339	16.222	18.151	21.064	23.685	26.873	29.141	36.123
15	5.229	5.985	7.261	8.547	10.307	11.721	14.339	17.322	19.311	22.307	24.996	28.259	30.578	37.697
16	5.812	6.614	7.962	9.312	11.152	12.624	15.338	18.418	20.465	23.542	26.296	29.633	32.000	39.252
17	6.408	7.255	8.672	10.085	12.002	13.531	16.338	19.511	21.615	24.769	27.587	30.995	33.409	40.790
18	7.015	7.906	9.390	10.865	12.857	14.440	17.338	20.601	22.760	25.989	28.869	32.346	34.805	42.312
19	7.633	8.567	10.117	11.651	13.716	15.352	18.338	21.689	23.900	27.204	30.144	33.687	36.191	43.820
20	8.260	9.237	10.851	12.443	14.578	16.266	19.337	22.775	25.038	28.412	31.410	35.020	37.566	45.315
21	8.897	9.915	11.591	13.240	15.445	17.182	20.337	23.858	26.171	29.615	32.671	36.343	38.932	46.797
22	9.542	10.600	12.338	14.041	16.314	18.101	21.337	24.939	27.301	30.813	33.924	37.659	40.289	48.268
23	10.196	11.293	13.091	14.848	17.187	19.021	22.337	26.018	28.429	32.007	35.172	38.968	41.638	49.728
24	10.856	11.992	13.848	15.659	18.062	19.943	23.337	27.096	29.553	33.196	36.415	40.270	42.980	51.179
25	11.524	12.697	14.611	16.473	18.940	20.867	24.337	28.172	30.675	34.382	37.652	41.566	44.314	52.620
26	12.198	13.409	15.379	17.292	19.820	21.792	25.336	29.246	31.795	35.563	38.885	42.856	45.642	54.052
27	12.879	14.125	16.151	18.114	20.703	22.719	26.336	30.319	32.912	36.741	40.113	44.140	46.963	55.476
28	13.565	14.847	16.928	18.939	21.588	23.647	27.336	31.391	34.027	37.916	41.337	45.419	48.278	56.893
29	14.256	15.574	17.708	19.768	22.475	24.577	28.336	32.461	35.139	39.087	42.557	46.693	49.588	58.302
30	14.953	16.306	18.493	20.599	23.364	25.508	29.336	33.530	36.250	40.256	43.773	47.962	50.892	59.703
32	16.362	17.783	20.072	22.271	25.148	27.373	31.336	35.665	38.466	42.585	46.194	50.487	53.486	62.487
34	17.789	19.275	21.664	23.952	26.938	29.242	33.336	37.795	40.676	44.903	48.602	52.995	56.061	65.247
36	19.233	20.783	23.269	25.643	28.735	31.115	35.336	39.922	42.879	47.212	50.999	55.489	58.619	67.985
38	20.691	22.304	24.884	27.343	30.537	32.992	37.335	42.045	45.076	49.513	53.384	57.969	61.162	70.703
40	22.164	23.838	26.509	29.051	32.345	34.872	39.335	44.165	47.269	51.805	55.759	60.436	63.691	73.402
42	23.650	25.383	28.144	30.765	34.157	36.755	41.335	46.282	49.456	54.090	58.124	62.892	66.206	76.084
44	25.148	26.939	29.787	32.487	35.974	38.641	43.335	48.396	51.639	56.369	60.481	65.337	68.710	78.750
46	26.657	28.504	31.439	34.215	37.795	40.529	45.335	50.507	53.818	58.641	62.830	67.771	71.201	81.400
48	28.177	30.080	33.098	35.949	39.621	42.420	47.335	52.616	55.993	60.907	65.171	70.197	73.683	84.027
50	29.707	31.664	34.764	37.689	41.449	44.313	49.335	54.723	58.164	63.167	67.505	72.613	76.154	86.661
52	31.246	33.256	36.437	39.433	43.281	46.209	51.335	56.827	60.332	65.422	69.832	75.021	78.616	89.272
54	32.793	34.856	38.116	41.183	45.117	48.106	53.335	58.930	62.496	67.673	72.153	77.422	81.069	91.872
56	34.350	36.464	39.801	42.937	46.955	50.005	55.335	61.031	64.658	69.919	74.468	79.815	83.513	94.461
58	35.913	38.078	41.492	44.696	48.797	51.906	57.335	63.129	66.816	72.160	76.778	82.201	85.950	97.039
60	37.485	39.699	43.188	46.459	50.641	53.809	59.335	65.227	68.972	74.397	79.082	84.580	88.379	99.607
62	39.063	41.327	44.889	48.226	52.487	55.714	61.335	67.322	71.125	76.630	81.381	86.953	90.802	102.166
64	40.649	42.960	46.595	49.996	54.336	57.620	63.335	69.416	73.276	78.860	83.675	89.320	93.217	104.716
66	42.240	44.599	48.305	51.770	56.188	59.527	65.335	71.508	75.424	81.085	85.965	91.681	95.626	107.258
68	43.838	46.244	50.020	53.548	58.042	61.436	67.335	73.600	77.571	83.308	88.250	94.037	98.028	109.791
70	45.442	47.893	51.739	55.329	59.898	63.346	69.334	75.689	79.715	85.527	90.531	96.388	100.425	112.317

For odd values of ν between 30 and 70, the mean of the tabular values for $\nu-1$ and $\nu+1$ may be taken. For larger values of ν, the expression $\sqrt{2X^2}-\sqrt{2\nu-1}$ may be used as a normal deviate with unit variance, remembering that the probability for X^2 corresponds with that of a single tail of the normal curve.

Source: This table is reprinted from Table IV of R. A. Fisher and F. Yates, *Statistical Tables for Biological, Agricultural and Medical Research*, published by Longman Group Ltd., London (previously published by Oliver and Boyd, Edinburgh), by permission of the authors and publishers.

6 Percentage Points of the F Distribution



υ_2	υ_1																							υ_2
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞	
1	161	200	216	225	230	234	237	239	241	242	243	244	245	246	248	249	250	251	252	253	253	254	254	254	1
	4,052	**4,999**	**5,403**	**5,625**	**5,764**	**5,859**	**5,928**	**5,981**	**6,022**	**6,056**	**6,082**	**6,106**	**6,142**	**6,169**	**6,206**	**6,234**	**6,261**	**6,286**	**6,302**	**6,323**	**6,334**	**6,352**	**6,361**	**6,366**	
2	18.51	19.00	19.16	19.25	19.30	19.33	19.36	19.37	19.38	19.39	19.40	19.41	19.42	19.43	19.44	19.45	19.46	19.47	19.47	19.48	19.49	19.49	19.50	19.50	2
	98.49	**99.00**	**99.17**	**99.25**	**99.30**	**99.33**	**99.36**	**99.37**	**99.39**	**99.40**	**99.41**	**99.42**	**99.43**	**99.44**	**99.45**	**99.46**	**99.47**	**99.48**	**99.48**	**99.49**	**99.49**	**99.49**	**99.50**	**99.50**	
3	10.13	9.55	9.28	9.12	9.01	8.94	8.88	8.84	8.81	8.78	8.76	8.74	8.71	8.69	8.66	8.64	8.62	8.60	8.58	8.57	8.56	8.54	8.54	8.53	3
	34.12	**30.82**	**29.46**	**28.71**	**28.24**	**27.91**	**27.67**	**27.49**	**27.34**	**27.23**	**27.13**	**27.05**	**26.92**	**26.83**	**26.69**	**26.60**	**26.50**	**26.41**	**26.35**	**26.27**	**26.23**	**26.18**	**26.14**	**26.12**	
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.93	5.91	5.87	5.84	5.80	5.77	5.74	5.71	5.70	5.68	5.66	5.65	5.64	5.63	4
	21.20	**18.00**	**16.69**	**15.98**	**15.52**	**15.21**	**14.98**	**14.80**	**14.66**	**14.54**	**14.45**	**14.37**	**14.24**	**14.15**	**14.02**	**13.93**	**13.83**	**13.74**	**13.69**	**13.61**	**13.57**	**13.52**	**13.48**	**13.46**	
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.78	4.74	4.70	4.68	4.64	4.60	4.56	4.53	4.50	4.46	4.44	4.42	4.40	4.38	4.37	4.36	5
	16.26	**13.27**	**12.06**	**11.39**	**10.97**	**10.67**	**10.45**	**10.29**	**10.15**	**10.05**	**9.96**	**9.89**	**9.77**	**9.68**	**9.55**	**9.47**	**9.38**	**9.29**	**9.24**	**9.17**	**9.13**	**9.07**	**9.04**	**9.02**	
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.03	4.00	3.96	3.92	3.87	3.84	3.81	3.77	3.75	3.72	3.71	3.69	3.68	3.67	6
	13.74	**10.92**	**9.78**	**9.15**	**8.75**	**8.47**	**8.26**	**8.10**	**7.98**	**7.87**	**7.79**	**7.72**	**7.60**	**7.52**	**7.39**	**7.31**	**7.23**	**7.14**	**7.09**	**7.02**	**6.99**	**6.94**	**6.90**	**6.88**	
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.63	3.60	3.57	3.52	3.49	3.44	3.41	3.38	3.34	3.32	3.29	3.28	3.25	3.24	3.23	7
	12.25	**9.55**	**8.45**	**7.85**	**7.46**	**7.19**	**7.00**	**6.84**	**6.71**	**6.62**	**6.54**	**6.47**	**6.35**	**6.27**	**6.15**	**6.07**	**5.98**	**5.90**	**5.85**	**5.78**	**5.75**	**5.70**	**5.67**	**5.65**	
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.34	3.31	3.28	3.23	3.20	3.15	3.12	3.08	3.05	3.03	3.00	2.98	2.96	2.94	2.93	8
	11.26	**8.65**	**7.59**	**7.01**	**6.63**	**6.37**	**6.19**	**6.03**	**5.91**	**5.82**	**5.74**	**5.67**	**5.56**	**5.48**	**5.36**	**5.28**	**5.20**	**5.11**	**5.06**	**5.00**	**4.96**	**4.91**	**4.88**	**4.86**	
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.13	3.10	3.07	3.02	2.98	2.93	2.90	2.86	2.82	2.80	2.77	2.76	2.73	2.72	2.71	9
	10.56	**8.02**	**6.99**	**6.42**	**6.06**	**5.80**	**5.62**	**5.47**	**5.35**	**5.26**	**5.18**	**5.11**	**5.00**	**4.92**	**4.80**	**4.73**	**4.64**	**4.56**	**4.51**	**4.45**	**4.41**	**4.36**	**4.33**	**4.31**	
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.97	2.94	2.91	2.86	2.82	2.77	2.74	2.70	2.67	2.64	2.61	2.59	2.56	2.55	2.54	10
	10.04	**7.56**	**6.55**	**5.99**	**5.64**	**5.39**	**5.21**	**5.06**	**4.95**	**4.85**	**4.78**	**4.71**	**4.60**	**4.52**	**4.41**	**4.33**	**4.25**	**4.17**	**4.12**	**4.05**	**4.01**	**3.96**	**3.93**	**3.91**	
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.86	2.82	2.79	2.74	2.70	2.65	2.61	2.57	2.53	2.50	2.47	2.45	2.42	2.41	2.40	11
	9.65	**7.20**	**6.22**	**5.67**	**5.32**	**5.07**	**4.88**	**4.74**	**4.63**	**4.54**	**4.46**	**4.40**	**4.29**	**4.21**	**4.10**	**4.02**	**3.94**	**3.86**	**3.80**	**3.74**	**3.70**	**3.66**	**3.62**	**3.60**	
12	4.75	3.88	3.49	3.26	3.11	3.00	2.92	2.85	2.80	2.76	2.72	2.69	2.64	2.60	2.54	2.50	2.46	2.42	2.40	2.36	2.35	2.32	2.31	2.30	12
	9.33	**6.93**	**5.95**	**5.41**	**5.06**	**4.82**	**4.65**	**4.50**	**4.39**	**4.30**	**4.22**	**4.16**	**4.05**	**3.98**	**3.86**	**3.78**	**3.70**	**3.61**	**3.56**	**3.49**	**3.46**	**3.41**	**3.38**	**3.36**	
13	4.67	3.80	3.41	3.18	3.02	2.92	2.84	2.77	2.72	2.67	2.63	2.60	2.55	2.51	2.46	2.42	2.38	2.34	2.32	2.28	2.26	2.24	2.22	2.21	13
	9.07	**6.70**	**5.74**	**5.20**	**4.86**	**4.62**	**4.44**	**4.30**	**4.19**	**4.10**	**4.02**	**3.96**	**3.85**	**3.78**	**3.67**	**3.59**	**3.51**	**3.42**	**3.37**	**3.30**	**3.27**	**3.21**	**3.18**	**3.16**	
14	4.60	3.74	3.34	3.11	2.96	2.85	2.77	2.70	2.65	2.60	2.56	2.53	2.48	2.44	2.39	2.35	2.31	2.27	2.24	2.21	2.19	2.16	2.14	2.13	14
	8.86	**6.51**	**5.56**	**5.03**	**4.69**	**4.46**	**4.28**	**4.14**	**4.03**	**3.94**	**3.86**	**3.80**	**3.70**	**3.62**	**3.51**	**3.43**	**3.34**	**3.26**	**3.21**	**3.14**	**3.11**	**3.06**	**3.02**	**3.00**	
15	4.54	3.68	3.29	3.06	2.90	2.79	2.70	2.64	2.59	2.55	2.51	2.48	2.43	2.39	2.33	2.29	2.25	2.21	2.18	2.15	2.12	2.10	2.08	2.07	15
	8.68	**6.36**	**5.42**	**4.89**	**4.56**	**4.32**	**4.14**	**4.00**	**3.89**	**3.80**	**3.73**	**3.67**	**3.56**	**3.48**	**3.36**	**3.29**	**3.20**	**3.12**	**3.07**	**3.00**	**2.97**	**2.92**	**2.89**	**2.87**	
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.45	2.42	2.37	2.33	2.28	2.24	2.20	2.16	2.13	2.09	2.07	2.04	2.02	2.01	16
	8.53	**6.23**	**5.29**	**4.77**	**4.44**	**4.20**	**4.03**	**3.89**	**3.78**	**3.69**	**3.61**	**3.55**	**3.45**	**3.37**	**3.25**	**3.18**	**3.10**	**3.01**	**2.96**	**2.98**	**2.86**	**2.80**	**2.77**	**2.75**	
17	4.45	3.59	3.20	2.96	2.81	2.70	2.62	2.55	2.50	2.45	2.41	2.38	2.33	2.29	2.23	2.19	2.15	2.11	2.08	2.04	2.02	1.99	1.97	1.96	17
	8.40	**6.11**	**5.18**	**4.67**	**4.34**	**4.10**	**3.93**	**3.79**	**3.68**	**3.59**	**3.52**	**3.45**	**3.35**	**3.27**	**3.16**	**3.08**	**3.00**	**2.92**	**2.86**	**2.79**	**2.76**	**2.70**	**2.67**	**2.65**	
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.37	2.34	2.29	2.25	2.19	2.15	2.11	2.07	2.04	2.00	1.98	1.95	1.93	1.92	18
	8.28	**6.01**	**5.09**	**4.58**	**4.25**	**4.01**	**3.85**	**3.71**	**3.60**	**3.51**	**3.44**	**3.37**	**3.27**	**3.19**	**3.07**	**3.00**	**2.91**	**2.83**	**2.78**	**2.71**	**2.68**	**2.62**	**2.59**	**2.57**	

ν_2	ν_1 = 1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞	ν_2
19	4.38	3.52	3.13	2.90	2.74	2.63	2.55	2.48	2.43	2.38	2.34	2.31	2.26	2.21	2.15	2.11	2.07	2.02	2.00	1.96	1.94	1.91	1.90	1.88	19
	8.18	**5.93**	**5.01**	**4.50**	**4.17**	**3.94**	**3.77**	**3.63**	**3.52**	**3.43**	**3.36**	**3.30**	**3.19**	**3.12**	**3.00**	**2.92**	**2.84**	**2.76**	**2.70**	**2.63**	**2.60**	**2.54**	**2.51**	**2.49**	
20	4.35	3.49	3.10	2.87	2.71	2.60	2.52	2.45	2.40	2.35	2.31	2.28	2.23	2.18	2.12	2.08	2.04	1.99	1.96	1.92	1.90	1.87	1.85	1.84	20
	8.10	**5.85**	**4.94**	**4.43**	**4.10**	**3.87**	**3.71**	**3.56**	**3.45**	**3.37**	**3.30**	**3.23**	**3.13**	**3.05**	**2.94**	**2.86**	**2.77**	**2.69**	**2.63**	**2.56**	**2.53**	**2.47**	**2.44**	**2.42**	
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.28	2.25	2.20	2.15	2.09	2.05	2.00	1.96	1.93	1.89	1.87	1.84	1.82	1.81	21
	8.02	**5.78**	**4.87**	**4.37**	**4.04**	**3.81**	**3.65**	**3.51**	**3.40**	**3.31**	**3.24**	**3.17**	**3.07**	**2.99**	**2.88**	**2.80**	**2.72**	**2.63**	**2.58**	**2.51**	**2.47**	**2.42**	**2.38**	**2.36**	
22	4.30	3.44	3.05	2.82	2.66	2.55	2.47	2.40	2.35	2.30	2.26	2.23	2.18	2.13	2.07	2.03	1.98	1.93	1.91	1.87	1.84	1.81	1.80	1.78	22
	7.94	**5.72**	**4.82**	**4.31**	**3.99**	**3.76**	**3.59**	**3.45**	**3.35**	**3.26**	**3.18**	**3.12**	**3.02**	**2.94**	**2.83**	**2.75**	**2.67**	**2.58**	**2.53**	**2.46**	**2.42**	**2.37**	**2.33**	**2.31**	
23	4.28	3.42	3.03	2.80	2.64	2.53	2.45	2.38	2.32	2.28	2.24	2.20	2.14	2.10	2.04	2.00	1.96	1.91	1.88	1.84	1.82	1.79	1.77	1.76	23
	7.88	**5.66**	**4.76**	**4.26**	**3.94**	**3.71**	**3.54**	**3.41**	**3.30**	**3.21**	**3.14**	**3.07**	**2.97**	**2.89**	**2.78**	**2.70**	**2.62**	**2.53**	**2.48**	**2.41**	**2.37**	**2.32**	**2.28**	**2.26**	
24	4.26	3.40	3.01	2.78	2.62	2.51	2.43	2.36	2.30	2.26	2.22	2.18	2.13	2.09	2.02	1.98	1.94	1.89	1.86	1.82	1.80	1.76	1.74	1.73	24
	7.82	**5.61**	**4.72**	**4.22**	**3.90**	**3.67**	**3.50**	**3.36**	**3.25**	**3.17**	**3.09**	**3.03**	**2.93**	**2.85**	**2.74**	**2.66**	**2.58**	**2.49**	**2.44**	**2.36**	**2.33**	**2.27**	**2.23**	**2.21**	
25	4.24	3.38	2.99	2.76	2.60	2.49	2.41	2.34	2.28	2.24	2.20	2.16	2.11	2.06	2.00	1.96	1.92	1.87	1.84	1.80	1.77	1.74	1.72	1.71	25
	7.77	**5.57**	**4.68**	**4.18**	**3.86**	**3.63**	**3.46**	**3.32**	**3.21**	**3.13**	**3.05**	**2.99**	**2.89**	**2.81**	**2.70**	**2.62**	**2.54**	**2.45**	**2.40**	**2.32**	**2.29**	**2.23**	**2.19**	**2.17**	
26	4.22	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18	2.15	2.10	2.05	1.99	1.95	1.90	1.85	1.82	1.78	1.76	1.72	1.70	1.69	26
	7.72	**5.53**	**4.64**	**4.14**	**3.82**	**3.59**	**3.42**	**3.29**	**3.17**	**3.09**	**3.02**	**2.96**	**2.86**	**2.77**	**2.66**	**2.58**	**2.50**	**2.41**	**2.36**	**2.28**	**2.25**	**2.19**	**2.15**	**2.13**	

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7 Table of Orthogonal Polynomials

k	Polynomial	Coefficients									Σc_j^2
3	Linear	−1	0	1							2
	Quadratic	1	−2	1							6
4	Linear	−3	−1	1	3						20
	Quadratic	1	−1	−1	1						4
	Cubic	−1	3	−3	1						20
5	Linear	−2	−1	0	1	2					10
	Quadratic	2	−1	−2	−1	2					14
	Cubic	−1	2	0	−2	1					10
	Quartic	1	−4	6	−4	1					70
6	Linear	−5	−3	−1	1	3	5				70
	Quadratic	5	−1	−4	−4	−1	5				84
	Cubic	−5	7	4	−4	−7	5				180
	Quartic	1	−3	2	2	−3	1				28
7	Linear	−3	−2	−1	0	1	2	3			28
	Quadratic	5	0	−3	−4	−3	0	5			84
	Cubic	−1	1	1	0	−1	−1	1			6
	Quartic	3	−7	1	6	1	−7	3			154
8	Linear	−7	−5	−3	−1	1	3	5	7		168
	Quadratic	7	1	−3	−5	−5	−3	1	7		168
	Cubic	−7	5	7	3	−3	−7	−5	7		264
	Quartic	7	−13	3	9	9	−3	−13	7		616
	Quintic	−7	23	−17	−15	15	17	−23	7		2184
9	Linear	−4	−3	−2	−1	0	1	2	3	4	60
	Quadratic	28	7	−8	−17	−20	−17	−8	7	28	2772
	Cubic	−14	7	13	9	0	−9	−13	−7	14	990
	Quartic	14	−21	−11	9	18	9	−11	−21	14	2002
	Quintic	−4	11	−4	−9	0	9	4	−11	4	468
10	Linear	−9	−7	−5	−3	−1	1	3	5	7	330
	Quadratic	6	2	−1	−3	−4	−4	−3	−1	2	132
	Cubic	−42	14	35	31	12	−12	−31	−35	−14	8580
	Quartic	18	−22	−17	3	18	18	3	−17	−22	2860
	Quintic	−6	14	−1	−11	−6	6	11	1	−14	780

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8 Arcsin Transformation

$\phi = 2 \arcsin \sqrt{X}$

X	ϕ	X	ϕ	X	ϕ	X	ϕ	X	ϕ
.001	.0633	.041	.4078	.36	1.2870	.76	2.1177	.971	2.7993
.002	.0895	.042	.4128	.37	1.3078	.77	2.1412	.972	2.8053
.003	.1096	.043	.4178	.38	1.3284	.78	2.1652	.973	2.8115
.004	.1266	.044	.4227	.39	1.3490	.79	2.1895	.974	2.8177
.005	.1415	.045	.4275	.40	1.3694	.80	2.2143	.975	2.8240
.006	.1551	.046	.4323	.41	1.3898	.81	2.2395	.976	2.8305
.007	.1675	.047	.4371	.42	1.4101	.82	2.2653	.977	2.8371
.008	.1791	.048	.4418	.43	1.4303	.83	2.2916	.978	2.8438
.009	.1900	.049	.4464	.44	1.4505	.84	2.3186	.979	2.8507
.010	.2003	.050	.4510	.45	1.4706	.85	2.3462	.980	2.8578
.011	.2101	.06	.4949	.46	1.4907	.86	2.3746	.981	2.8650
.012	.2195	.07	.5355	.47	1.5108	.87	2.4039	.982	2.8725
.013	.2285	.08	.5735	.48	1.5308	.88	2.4341	.983	2.8801
.014	.2372	.09	.6094	.49	1.5508	.89	2.4655	.984	2.8879
.015	.2456	.10	.6435	.50	1.5708	.90	2.4981	.985	2.8960
.016	.2537	.11	.6761	.51	1.5908	.91	2.5322	.986	2.9044
.017	.2615	.12	.7075	.52	1.6108	.92	2.5681	.987	2.9131
.018	.2691	.13	.7377	.53	1.6308	.93	2.6062	.988	2.9221
.019	.2766	.14	.7670	.54	1.6509	.94	2.6467	.989	2.9315
.020	.2838	.15	.7954	.55	1.6710	.95	2.6906	.990	2.9413
.021	.2909	.16	.8230	.56	1.6911	.951	2.6952	.991	2.9516
.022	.2978	.17	.8500	.57	1.7113	.952	2.6998	.992	2.9625
.023	.3045	.18	.8763	.58	1.7315	.953	2.7045	.993	2.9741
.024	.3111	.19	.9021	.59	1.7518	.954	2.7093	.994	2.9865
.025	.3176	.20	.9273	.60	1.7722	.955	2.7141	.995	3.0001
.026	.3239	.21	.9521	.61	1.7926	.956	2.7189	.996	3.0150
.027	.3301	.22	.9764	.62	1.8132	.957	2.7238	.997	3.0320
.028	.3363	.23	1.0004	.63	1.8338	.958	2.7288	.998	3.0521
.029	.3423	.24	1.0239	.64	1.8546	.959	2.7338	.999	3.0783
.030	.3482	.25	1.0472	.65	1.8755	.960	2.7389		
.031	.3540	.26	1.0701	.66	1.8965	.961	2.7440		
.032	.3597	.27	1.0928	.67	1.9177	.962	2.7492		
.033	.3654	.28	1.1152	.68	1.9391	.963	2.7545		
.034	.3709	.29	1.1374	.69	1.9606	.964	2.7598		
.035	.3764	.30	1.1593	.70	1.9823	.965	2.7652		
.036	.3818	.31	1.1810	.71	2.0042	.966	2.7707		
.037	.3871	.32	1.2025	.72	2.0264	.967	2.7762		
.038	.3924	.33	1.2239	.73	2.0488	.968	2.7819		
.039	.3976	.34	1.2451	.74	2.0715	.969	2.7876		
.040	.4027	.35	1.2661	.75	2.0944	.970	2.7934		

9 Percentage Points of the Dunn Multiple Comparison Test

Number of Comparisons Q	α	*Error df* 5	7	10	12	15	20	24	30	40	60	120	∞
2	.05	3.17	2.84	2.64	2.56	2.49	2.42	2.39	2.36	2.33	2.30	2.27	2.24
	.01	4.78	4.03	3.58	3.43	3.29	3.16	3.09	3.03	2.97	2.92	2.86	2.81
3	.05	3.54	3.13	2.87	2.78	2.69	2.61	2.58	2.54	2.50	2.47	2.43	2.39
	.01	5.25	4.36	3.83	3.65	3.48	3.33	3.26	3.19	3.12	3.06	2.99	2.94
4	.05	3.81	3.34	3.04	2.94	2.84	2.75	2.70	2.66	2.62	2.58	2.54	2.50
	.01	5.60	4.59	4.01	3.80	3.62	3.46	3.38	3.30	3.23	3.16	3.09	3.02
5	.05	4.04	3.50	3.17	3.06	2.95	2.85	2.80	2.75	2.71	2.66	2.62	2.58
	.01	5.89	4.78	4.15	3.93	3.74	3.55	3.47	3.39	3.31	3.24	3.16	3.09
6	.05	4.22	3.64	3.28	3.15	3.04	2.93	2.88	2.83	2.78	2.73	2.68	2.64
	.01	6.15	4.95	4.27	4.04	3.82	3.63	3.54	3.46	3.38	3.30	3.22	3.15
7	.05	4.38	3.76	3.37	3.24	3.11	3.00	2.94	2.89	2.84	2.79	2.74	2.69
	.01	6.36	5.09	4.37	4.13	3.90	3.70	3.61	3.52	3.43	3.34	3.27	3.19
8	.05	4.53	3.86	3.45	3.31	3.18	3.06	3.00	2.94	2.89	2.84	2.79	2.74
	.01	6.56	5.21	4.45	4.20	3.97	3.76	3.66	3.57	3.48	3.39	3.31	3.23
9	.05	4.66	3.95	3.52	3.37	3.24	3.11	3.05	2.99	2.93	2.88	2.83	2.77
	.01	6.70	5.31	4.53	4.26	4.02	3.80	3.70	3.61	3.51	3.42	3.34	3.26
10	.05	4.78	4.03	3.58	3.43	3.29	3.16	3.09	3.03	2.97	2.92	2.86	2.81
	.01	6.86	5.40	4.59	4.32	4.07	3.85	3.74	3.65	3.55	3.46	3.37	3.29
15	.05	5.25	4.36	3.83	3.65	3.48	3.33	3.26	3.19	3.12	3.06	2.99	2.94
	.01	7.51	5.79	4.86	4.56	4.29	4.03	3.91	3.80	3.70	3.59	3.50	3.40
20	.05	5.60	4.59	4.01	3.80	3.62	3.46	3.38	3.30	3.23	3.16	3.09	3.02
	.01	8.00	6.08	5.06	4.73	4.42	4.15	4.04	3.90	3.79	3.69	3.58	3.48
25	.05	5.89	4.78	4.15	3.93	3.74	3.55	3.47	3.39	3.31	3.24	3.16	3.09
	.01	8.37	6.30	5.20	4.86	4.53	4.25	4.1*	3.98	3.88	3.76	3.64	3.54
30	.05	6.15	4.95	4.27	4.04	3.82	3.63	3.54	3.46	3.38	3.30	3.22	3.15
	.01	8.68	6.49	5.33	4.95	4.61	4.33	4.2*	4.13	3.93	3.81	3.69	3.59
35	.05	6.36	5.09	4.37	4.13	3.90	3.70	3.61	3.52	3.43	3.34	3.27	3.19
	.01	8.95	6.67	5.44	5.04	4.71	4.39	4.3*	4.26	3.97	3.84	3.73	3.63
40	.05	6.56	5.21	4.45	4.20	3.97	3.76	3.66	3.57	3.48	3.39	3.31	3.23
	.01	9.19	6.83	5.52	5.12	4.78	4.46	4.3*	4.1*	4.01	3.89	3.77	3.66
45	.05	6.70	5.31	4.53	4.26	4.02	3.80	3.70	3.61	3.51	3.42	3.34	3.26
	.01	9.41	6.93	5.60	5.20	4.84	4.52	4.3*	4.2*	4.1*	3.93	3.80	3.69
50	.05	6.86	5.40	4.59	4.32	4.07	3.85	3.74	3.65	3.55	3.46	3.37	3.29
	.01	9.68	7.06	5.70	5.27	4.90	4.56	4.4*	4.2*	4.1*	3.97	3.83	3.72
100	.05	8.00	6.08	5.06	4.73	4.42	4.15	4.04	3.90	3.79	3.69	3.58	3.48
	.01	11.04	7.80	6.20	5.70	5.20	4.80	4.7*	4.4*	4.5*		4.00	3.89
250	.05	9.68	7.06	5.70	5.27	4.90	4.56	4.4*	4.2*	4.1*	3.97	3.83	3.72
	.01	13.26	8.83	6.9*	6.3*	5.8*	5.2*	5.0*	4.9*	4.8*			4.11

*Obtained by graphical interpolation. Table reproduced from Multiple comparisons among means, *Journal of the American Statistical Association*, 1961, **56**, 52–64, with permission of the author, O. J. Dunn, and the editor.

10 Quantiles of the Wilcoxon Signed Ranks Test Statistics

	$w_{.005}$	$w_{.01}$	$w_{.025}$	$w_{.05}$	$w_{.10}$	$w_{.20}$	$w_{.30}$	$w_{.40}$	$w_{.50}$	$\frac{n(n+1)}{2}$
$n = 4$	0	0	0	0	1	3	3	4	5	10
5	0	0	0	1	3	4	5	6	7.5	15
6	0	0	1	3	4	6	8	9	10.5	21
7	0	1	3	4	6	9	11	12	14	28
8	1	2	4	6	9	12	14	16	18	36
9	2	4	6	9	11	15	18	20	22.5	45
10	4	6	9	11	15	19	22	25	27.5	55
11	6	8	11	14	18	23	27	30	33	66
12	8	10	14	18	22	28	32	36	39	78
13	10	13	18	22	27	33	38	42	45.5	91
14	13	16	22	26	32	39	44	48	52.5	105
15	16	20	26	31	37	45	51	55	60	120
16	20	24	30	36	43	51	58	63	68	136
17	24	28	35	42	49	58	65	71	76.5	153
18	28	33	41	48	56	66	73	80	85.5	171
19	33	38	47	54	63	74	82	89	95	190
20	38	44	53	61	70	82	91	98	105	210

For n larger than 20, the pth quantile w_p of the Wilcoxon signed ranks test statistic may be approximated by $w_p = [n(n+1)/4] + x_p\sqrt{n(n+1)(2n+1)/24}$, where x_p is the pth quantile of a standard normal random variable, obtained from Table 1.

SOURCE. Adapted from Table 1, McCornack (1965).

[a] The entries in this table are quantiles w_p of the Wilcoxon signed ranks test statistic T, given by Equation (5.1.4), for selected values of $p \leq .50$. Quantiles w_p for $p > .50$ may be computed from the equation

$$w_p = n(n+1)/2 - w_{1-p}$$

where $n(n+1)/2$ is given in the right hand column in the table. Note that $P(T < w_p) \leq p$ and $P(T > w_p) \leq 1 - p$ if H_0 is true. Critical regions correspond to values of T less than (or greater than) but not including the appropriate quantile.

11 Quantiles of the Mann-Whitney Test Statistic

n	p	$m = 2$	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	.001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	.005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
2	.01	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	2
	.025	0	0	0	0	0	0	1	1	1	1	2	2	2	2	2	3	3	3	3
	.05	0	0	0	1	1	1	2	2	2	2	3	3	4	4	4	4	5	5	5
	.10	0	1	1	2	2	2	3	3	4	4	5	5	5	6	6	7	7	8	8
	.001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	.005	0	0	0	0	0	0	0	1	1	1	2	2	2	3	3	3	3	4	4
3	.01	0	0	0	0	0	1	1	2	2	2	3	3	3	4	4	5	5	5	6
	.025	0	0	0	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
	.05	0	1	1	2	3	3	4	5	5	6	6	7	8	8	9	10	10	11	12
	.10	1	2	2	3	4	5	6	6	7	8	9	10	11	11	12	13	14	15	16
	.001	0	0	0	0	0	0	0	0	1	1	1	2	2	2	3	3	4	4	4
	.005	0	0	0	0	1	1	2	2	3	3	4	4	5	6	6	7	7	8	9
4	.01	0	0	0	1	2	2	3	4	4	5	6	6	7	9	8	9	10	10	11
	.025	0	0	1	2	3	4	5	5	6	7	8	9	10	11	12	12	13	14	15
	.05	0	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17	18	19
	.10	1	2	4	5	6	7	8	10	11	12	13	14	16	17	18	19	21	22	23

SOURCE. Adapted from Table 1, Verdooren (1963).

[a] The entries in this table are the quantiles w_p of the Mann-Whitney test statistic T, given by Equation (5.3.2), for selected values of p. Note that $P(T < w_p) \leq p$. Upper quantiles may be found from the equation

$$w_{1-p} = nm - w_p$$

n	p	m = 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	.001	0	0	0	0	0	0	1	2	2	3	3	4	4	5	6	6	7	8	8
	.005	0	0	0	1	2	2	3	4	5	6	7	8	8	9	10	11	12	13	14
5	.01	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	.025	0	1	2	3	4	6	7	8	9	10	12	13	14	15	16	18	19	20	21
	.05	1	2	3	5	6	7	9	10	12	13	14	16	17	19	20	21	23	24	26
	.10	2	3	5	6	8	9	11	13	14	16	18	19	21	23	24	26	28	29	31
	.001	0	0	0	0	0	0	2	3	4	5	5	6	7	8	9	10	11	12	13
	.005	0	0	1	2	3	4	5	6	7	8	10	11	12	13	14	16	17	18	19
6	.01	0	0	2	3	4	5	7	8	9	10	12	13	14	16	17	19	20	21	23
	.025	0	2	3	4	6	7	9	11	12	14	15	17	18	20	22	23	25	26	28
	.05	1	3	4	6	8	9	11	13	15	17	18	20	22	24	26	27	29	31	33
	.10	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	35	37	39
	.001	0	0	0	0	1	2	3	4	6	7	8	9	10	11	12	14	15	16	17
	.005	0	0	1	2	4	5	7	8	10	11	13	14	16	17	19	20	22	23	25
7	.01	0	1	2	4	5	7	8	10	12	13	15	17	18	20	22	24	25	27	29
	.025	0	2	4	6	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35
	.05	1	3	5	7	9	12	14	16	18	20	22	25	27	29	31	34	36	38	40
	.10	2	5	7	9	12	14	17	19	22	24	27	29	32	34	37	39	42	44	47
	.001	0	0	0	1	2	3	5	6	7	9	10	12	13	15	16	18	19	21	22
	005	0	0	2	3	5	7	8	10	12	14	16	18	19	21	23	25	27	29	31
8	01	0	1	3	5	7	8	10	12	14	16	18	21	23	25	27	29	31	33	35
	.025	1	3	5	7	9	11	14	16	18	20	23	25	27	30	32	35	37	39	42
	.05	2	4	6	9	11	14	16	19	21	24	27	29	32	34	37	40	42	45	48
	.10	3	6	8	11	14	17	20	23	25	28	31	34	37	40	43	46	49	52	55

n	p	m = 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	.001	0	0	0	2	3	4	6	8	9	11	13	15	16	18	20	22	24	26	27
	.005	0	1	2	4	6	8	10	12	14	17	19	21	23	25	28	30	32	34	37
9	.01	0	2	4	6	8	10	12	15	17	19	22	24	27	29	32	34	37	39	41
	.025	1	3	5	8	11	13	16	18	21	24	27	29	32	35	38	40	43	46	49
	.05	2	5	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	55
	.10	3	6	10	13	16	19	23	26	29	32	36	39	42	46	49	53	56	59	63
	.001	0	0	1	2	4	6	7	9	11	13	15	18	20	22	24	26	28	30	33
	.005	0	1	3	5	7	10	12	14	17	19	22	25	27	30	32	35	38	40	43
10	.01	0	2	4	7	9	12	14	17	20	23	25	28	31	34	37	39	42	45	48
	.025	1	4	6	9	12	15	18	21	24	27	30	34	37	40	43	46	49	53	56
	.05	2	5	8	12	15	18	21	25	28	32	35	38	42	45	49	52	56	59	63
	.10	4	7	11	14	18	22	25	29	33	37	40	44	48	52	55	59	63	67	71
	.001	0	0	1	3	5	7	9	11	13	16	18	21	23	25	28	30	33	35	38
	.005	0	1	3	6	8	11	14	17	19	22	25	28	31	34	37	40	43	46	49
11	.01	0	2	5	8	10	13	16	19	23	26	29	32	35	38	42	45	48	51	54
	.025	1	4	7	10	14	17	20	24	27	31	34	38	41	45	48	52	56	59	63
	.05	2	6	9	13	17	20	24	28	32	35	39	43	47	51	55	58	62	66	70
	.10	4	8	12	16	20	24	28	32	37	41	45	49	53	58	62	66	70	74	79
	.001	0	0	1	3	5	8	10	13	15	18	21	24	26	29	32	35	38	41	43
	.005	0	2	4	7	10	13	16	19	22	25	28	32	35	38	42	45	48	52	55
12	.01	0	3	6	9	12	15	18	22	25	29	32	36	39	43	47	50	54	57	61
	.025	2	5	8	12	15	19	23	27	30	34	38	42	46	50	54	58	62	66	70
	.05	3	6	10	14	18	22	27	31	35	39	43	48	52	56	61	65	69	73	78
	.10	5	9	13	18	22	27	31	36	40	45	50	54	59	64	68	73	78	82	87

n	p	$m=2$	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	.001	0	0	2	4	6	9	12	15	18	21	24	27	30	33	36	39	43	46	49
	.005	0	2	4	8	11	14	18	21	25	28	32	35	39	43	46	50	54	58	61
13	.01	1	3	6	10	13	17	21	24	28	32	36	40	44	48	52	56	60	64	68
	.025	2	5	9	13	17	21	25	29	34	38	42	46	51	55	60	64	68	73	77
	.05	3	7	11	16	20	25	29	34	38	43	48	52	57	62	66	71	76	81	85
	.10	5	10	14	19	24	29	34	39	44	49	54	59	64	69	75	80	85	90	95
	.001	0	0	2	4	7	10	13	16	20	23	26	30	33	37	40	44	47	51	55
	.005	0	2	5	8	12	16	19	23	27	31	35	39	43	47	51	55	59	64	68
14	.01	1	3	7	11	14	18	23	27	31	35	39	44	48	52	57	61	66	70	74
	.025	2	6	10	14	18	23	27	32	37	41	46	51	56	60	65	70	75	79	84
	.05	4	8	12	17	22	27	32	37	42	47	52	57	62	67	72	78	83	88	93
	.10	5	11	16	21	26	32	37	42	48	53	59	64	70	75	81	86	92	98	103
	.001	0	0	2	5	8	11	15	18	22	25	29	33	37	41	44	48	52	56	60
	.005	0	3	6	9	13	17	21	25	30	34	38	43	47	52	56	61	65	70	74
15	.01	1	4	8	12	16	20	25	29	34	38	43	48	52	57	62	67	71	76	81
	.025	2	6	11	15	20	25	30	35	40	45	50	55	60	65	71	76	81	86	91
	.05	4	8	13	19	24	29	34	40	45	51	56	62	67	73	78	84	89	95	101
	.10	6	11	17	23	28	34	40	46	52	58	64	69	75	81	87	93	99	105	111
	.001	0	0	3	6	9	12	16	20	24	28	32	36	40	44	49	53	57	61	66
	.005	0	3	6	10	14	19	23	28	32	37	42	46	51	56	61	66	71	75	80
16	.01	1	4	8	13	17	22	27	32	37	42	47	52	57	62	67	72	77	83	88
	.025	2	7	12	16	22	27	32	38	43	48	54	60	65	71	76	82	87	93	99
	.05	4	9	15	20	26	31	37	43	49	55	61	66	72	78	84	90	96	102	108
	.10	6	12	18	24	30	37	43	49	55	62	68	75	81	87	94	100	107	113	120

n	p	$m=2$	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	.001	0	1	3	6	10	14	18	22	26	30	35	39	44	48	53	58	62	67	71
	.005	0	3	7	11	16	20	25	30	35	40	45	50	55	61	66	71	76	82	87
17	.01	1	5	9	14	19	24	29	34	39	45	50	56	61	67	72	78	83	89	94
	.025	3	7	12	18	23	29	35	40	46	52	58	64	70	76	82	88	94	100	106
	.05	4	10	16	21	27	34	40	46	52	58	65	71	78	84	90	97	103	110	116
	.10	7	13	19	26	32	39	46	53	59	66	73	80	86	93	100	107	114	121	128
	.001	0	1	4	7	11	15	19	24	28	33	38	43	47	52	57	62	67	72	77
	.005	0	3	7	12	17	22	27	32	38	43	48	54	59	65	71	76	82	88	93
18	.01	1	5	10	15	20	25	31	37	42	48	54	60	66	71	77	83	89	95	101
	.025	3	8	13	19	25	31	37	43	49	56	62	68	75	81	87	94	100	107	113
	.05	5	10	17	23	29	36	42	49	56	62	69	76	83	89	96	103	110	117	124
	.10	7	14	21	28	35	42	49	56	63	70	78	85	92	99	107	114	121	129	136
	.001	0	1	4	8	12	16	21	26	30	35	41	46	51	56	61	67	72	78	83
	.005	1	4	8	13	18	23	29	34	40	46	52	58	64	70	75	82	88	94	100
19	.01	2	5	10	16	21	27	33	39	45	51	57	64	70	76	83	89	95	102	108
	.025	3	8	14	20	26	33	39	46	53	59	66	73	79	86	93	100	107	114	120
	.05	5	11	18	24	31	38	45	52	59	66	73	81	88	95	102	110	117	124	131
	.10	8	15	22	29	37	44	52	59	67	74	82	90	98	105	113	121	129	136	144
	.001	0	1	4	8	13	17	22	27	33	38	43	49	55	60	66	71	77	83	89
	.005	1	4	9	14	19	25	31	37	43	49	55	61	68	74	80	87	93	100	106
20	.01	2	6	11	17	23	29	35	41	48	54	61	68	74	81	88	94	101	108	115
	.025	3	9	15	21	28	35	42	49	56	63	70	77	84	91	99	106	113	120	128
	.05	5	12	19	26	33	40	48	55	63	70	78	85	93	101	108	116	124	131	139
	.10	8	16	23	31	39	47	55	63	71	79	87	95	103	111	120	128	136	144	152

For n or m greater than 20, the pth quantile w_p of the Mann-Whitney test statistic may be approximated by

$$w_p = \frac{nm}{2} + z_p \frac{\sqrt{nm(n+m+1)}}{12}$$

12 *Expected values of order statistics of the Terry–Hoeffding form* $E(V^{(n)})$

[Number of standard deviations above (+) or below (−) the mean]

Numbers in left margin are the numbers of the order statistics taken from the right—greatest to least. These numbers are values of $n - i + 1$; the $n - i + 1$st order statistic from the right is the ith from the left, and vice versa.

Example. Find the mean difference between the 18th and 7th order statistic in a sample of size 20 from the standard normal.

Solution. Under $n = 20$, the number tted for 7 is 0.45, which gives −0.45 for the 7th smallest; $20 - 18 + 1 = 3$, and so +1.13 is the mean for the 18th order statistic. The difference is $1.13 - (-0.45) = 1.58$ standard deviations.

$n-i+1$ \ n	1	2	3	4	5	6	7	8	9	10
1	0	0.56	0.85	1.03	1.16	1.27	1.35	1.42	1.49	1.54
2		−0.56	0.00	0.30	0.50	0.64	0.76	0.85	0.93	1.00
3			−0.85	−0.30	0.00	0.20	0.35	0.47	0.57	0.66
4				−1.03	−0.50	−0.20	0.00	0.15	0.27	0.38
5					−1.16	−0.64	−0.35	−0.15	0.00	0.12
6						−1.27	−0.76	−0.47	−0.27	−0.12

$n-i+1$ \ n	11	12	13	14	15	16	17	18	19	20
1	1.59	1.63	1.67	1.70	1.74	1.77	1.79	1.82	1.84	1.87
2	1.06	1.12	1.16	1.21	1.25	1.28	1.32	1.35	1.38	1.41
3	0.73	0.79	0.85	0.90	0.95	0.99	1.03	1.07	1.10	1.13
4	0.46	0.54	0.60	0.66	0.71	0.76	0.81	0.85	0.89	0.92
5	0.22	0.31	0.39	0.46	0.52	0.57	0.62	0.66	0.71	0.75
6	0.00	0.10	0.19	0.27	0.34	0.40	0.45	0.50	0.55	0.59
7	−0.22	−0.10	0.00	0.09	0.17	0.23	0.30	0.35	0.40	0.45
8	−0.46	−0.31	−0.19	−0.09	0.00	0.08	0.15	0.21	0.26	0.31
9	−0.73	−0.54	−0.39	−0.27	−0.17	−0.08	0.00	0.07	0.13	0.19
10	−1.06	−0.79	−0.60	−0.46	−0.34	−0.23	−0.15	−0.07	0.00	0.06
11	−1.59	−1.12	−0.85	−0.66	−0.52	−0.40	−0.30	−0.21	−0.13	−0.06

$n-i+1$ \ n	21	22	23	24	25	26	27	28	29	30
1	1.89	1.91	1.93	1.95	1.97	1.98	2.00	2.01	2.03	2.04
2	1.43	1.46	1.48	1.50	1.52	1.54	1.56	1.58	1.60	1.62
3	1.16	1.19	1.21	1.24	1.26	1.29	1.31	1.33	1.35	1.36
4	0.95	0.98	1.01	1.04	1.07	1.09	1.11	1.14	1.16	1.18
5	0.78	0.82	0.85	0.88	0.91	0.93	0.96	0.98	1.00	1.03
6	0.63	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.87	0.89
7	0.49	0.53	0.57	0.60	0.64	0.67	0.70	0.73	0.75	0.78
8	0.36	0.41	0.45	0.48	0.52	0.55	0.58	0.61	0.64	0.67
9	0.24	0.29	0.33	0.37	0.41	0.44	0.48	0.51	0.54	0.57
10	0.12	0.17	0.22	0.26	0.30	0.34	0.38	0.41	0.44	0.47
11	0.00	0.06	0.11	0.16	0.20	0.24	0.28	0.32	0.35	0.38
12	−0.12	−0.06	0.00	0.05	0.10	0.14	0.19	0.22	0.26	0.29
13	−0.24	−0.17	−0.11	−0.05	0.00	0.05	0.09	0.13	0.17	0.21
14	−0.36	−0.29	−0.22	−0.16	−0.10	−0.05	0.00	0.04	0.09	0.12
15	−0.49	−0.41	−0.33	−0.26	−0.20	−0.14	−0.09	−0.04	0.00	0.04
16	−0.63	−0.53	−0.45	−0.37	−0.30	−0.24	−0.19	−0.13	−0.09	−0.04

$n-i+1$ \ n	31	32	33	34	35	36	37	38	39	40
1	2.06	2.07	2.08	2.09	2.11	2.12	2.13	2.14	2.15	2.16
2	1.63	1.65	1.66	1.68	1.69	1.70	1.72	1.73	1.74	1.75
3	1.38	1.40	1.42	1.43	1.45	1.46	1.48	1.49	1.50	1.52
4	1.20	1.22	1.23	1.25	1.27	1.28	1.30	1.32	1.33	1.34
5	1.05	1.07	1.09	1.11	1.12	1.14	1.16	1.17	1.19	1.20
6	0.92	0.94	0.96	0.98	1.00	1.02	1.03	1.05	1.07	1.08
7	0.80	0.82	0.85	0.87	0.89	0.91	0.92	0.94	0.96	0.98
8	0.69	0.72	0.74	0.76	0.79	0.81	0.83	0.85	0.86	0.88
9	0.60	0.62	0.65	0.67	0.69	0.71	0.73	0.75	0.77	0.79
10	0.50	0.53	0.56	0.58	0.60	0.63	0.65	0.67	0.69	0.71
11	0.41	0.44	0.47	0.50	0.52	0.54	0.57	0.59	0.61	0.63
12	0.33	0.36	0.39	0.41	0.44	0.47	0.49	0.51	0.54	0.56
13	0.24	0.28	0.31	0.34	0.36	0.39	0.42	0.44	0.46	0.49
14	0.16	0.20	0.23	0.26	0.29	0.32	0.34	0.37	0.39	0.42
15	0.08	0.12	0.15	0.18	0.22	0.24	0.27	0.30	0.33	0.35
16	0.00	0.04	0.08	0.11	0.14	0.17	0.20	0.23	0.26	0.28
17	−0.08	−0.04	0.00	0.04	0.07	0.10	0.14	0.16	0.19	0.22
18	−0.16	−0.12	−0.08	−0.04	0.00	0.03	0.07	0.10	0.13	0.16
19	−0.24	−0.20	−0.15	−0.11	−0.07	−0.03	0.00	0.03	0.06	0.09
20	−0.33	−0.28	−0.23	−0.18	−0.14	−0.10	−0.07	−0.03	0.00	0.03
21	−0.41	−0.36	−0.31	−0.26	−0.22	−0.17	−0.14	−0.10	−0.06	−0.03

n 16

13 *The Van der Waerden inverse-normal scores for n = 1 to n = 40*

i \ *n*	1	2	3	4	5	6	7	8	9	10
1	0	−.44	−.67	−.82	−.98	−1.07	−1.15	−1.22	−1.28	−1.34
2		.44	0	−.25	−.44	−.57	−.67	−.76	−.84	−.91
3			.67	.25	0	−.18	−.32	−.43	−.52	−.60
4				.82	.44	.18	0	−.14	−.25	−.35
5					.98	.57	.32	.14	0	−.11
6							.67	.43	.25	.11
7									.52	.35

i \ *n*	11	12	13	14	15	16	17	18	19	20
1	−1.38	−1.43	−1.46	−1.50	−1.53	−1.56	−1.59	−1.62	−1.64	−1.67
2	−.97	−1.02	−1.07	−1.11	−1.15	−1.19	−1.22	−1.25	−1.28	−1.31
3	−.67	−.74	−.79	−.84	−.89	−.93	−.97	−1.00	−1.04	−1.07
4	−.43	−.50	−.57	−.62	−.67	−.72	−.76	−.80	−.84	−.88
5	−.21	−.29	−.37	−.43	−.49	−.54	−.59	−.63	−.67	−.71
6	0	−.10	−.18	−.25	−.32	−.38	−.43	−.48	−.52	−.57
7	.21	.10	0	−.09	−.16	−.22	−.28	−.34	−.39	−.43
8	.43	.29	.18	.09	0	−.07	−.14	−.20	−.25	−.30
9			.37	.25	.16	.07	0	−.07	−.13	−.18
10					.32	.22	.14	.07	0	−.06
11							.28	.20	.13	.06
12									.25	.18

i \ *n*	21	22	23	24	25	26	27	28	29	30
1	−1.69	−1.71	−1.73	−1.75	−1.77	−1.79	−1.80	−1.82	−1.83	−1.85
2	−1.34	−1.36	−1.38	−1.41	−1.43	−1.45	−1.47	−1.48	−1.50	−1.52
3	−1.10	−1.12	−1.15	−1.17	−1.20	−1.22	−1.24	−1.26	−1.28	−1.30
4	−.91	−.94	−.97	−.99	−1.02	−1.04	−1.07	−1.09	−1.11	−1.13
5	−.75	−.78	−.81	−.84	−.87	−.90	−.92	−.94	−.97	−.99
6	−.60	−.64	−.67	−.71	−.74	−.76	−.79	−.82	−.84	−.86
7	−.47	−.51	−.55	−.58	−.62	−.65	−.67	−.70	−.73	−.75
8	−.35	−.39	−.43	−.47	−.50	−.54	−.57	−.60	−.62	−.65
9	−.23	−.28	−.32	−.36	−.40	−.43	−.46	−.49	−.52	−.55
10	−.11	−.16	−.21	−.25	−.29	−.33	−.37	−.40	−.43	−.46
11	0	−.05	−.10	−.15	−.19	−.23	−.27	−.31	−.34	−.37
12	.11	.05	0	−.05	−.10	−.14	−.18	−.22	−.25	−.29
13	.23	.16	.10	.05	0	−.05	−.09	−.13	−.17	−.20
14			.21	.15	.10	.05	0	−.04	−.08	−.12
15					.19	.14	.09	.04	0	−.04
16							.18	.13	.08	.04
17									.17	.12

i \ *n*	31	32	33	34	35	36	37	38	39	40
1	−1.86	−1.88	−1.89	−1.90	−1.91	−1.93	−1.94	−1.95	−1.96	−1.97
2	−1.53	−1.55	−1.56	−1.58	−1.59	−1.61	−1.62	−1.63	−1.64	−1.66
3	−1.32	−1.34	−1.35	−1.37	−1.38	−1.40	−1.41	−1.43	−1.44	−1.45
4	−1.15	−1.17	−1.19	−1.20	−1.22	−1.24	−1.25	−1.27	−1.28	−1.30
5	−1.01	−1.03	−1.05	−1.07	−1.09	−1.10	−1.12	−1.13	−1.15	−1.17
6	−.89	−.91	−.93	−.95	−.97	−.99	−1.00	−1.02	−1.04	−1.05
7	−.77	−.80	−.82	−.84	−.86	−.88	−.90	−.92	−.93	−.95
8	−.67	−.70	−.72	−.74	−.76	−.79	−.80	−.82	−.84	−.86
9	−.58	−.60	−.63	−.65	−.67	−.70	−.72	−.74	−.76	−.77
10	−.49	−.52	−.54	−.57	−.59	−.61	−.63	−.65	−.67	−.69
11	−.40	−.43	−.46	−.48	−.51	−.53	−.55	−.58	−.60	−.62
12	−.32	−.35	−.38	−.40	−.43	−.46	−.48	−.50	−.52	−.55
13	−.24	−.27	−.30	−.33	−.36	−.38	−.41	−.43	−.45	−.48
14	−.16	−.19	−.22	−.25	−.28	−.31	−.34	−.36	−.39	−.41
15	−.08	−.11	−.15	−.18	−.21	−.24	−.27	−.29	−.32	−.34
16	0	−.04	−.07	−.11	−.14	−.17	−.20	−.23	−.25	−.28
17	.08	.04	0	−.04	−.07	−.10	−.13	−.16	−.19	−.22
18	.16	.11	.07	.04	0	−.03	−.07	−.10	−.13	−.15
19			.15	.11	.07	.03	0	−.03	−.06	−.09
20					.14	.10	.07	.03	0	−.03
21							.13	.10	.06	.03
22									.13	.09

01	02	03	04	05	06	07	08	09	10
0.464	0.137	2.455	−0.323	−0.068	0.296	−0.288	1.298	0.241	−0.957
0.060	−2.526	−0.531	−0.194	0.543	−1.558	0.187	−1.190	0.022	0.525
1.486	−0.354	−0.634	0.697	0.926	1.375	0.785	−0.963	−0.853	−1.865
1.022	−0.472	1.279	3.521	0.571	−1.851	0.194	1.102	−0.501	−0.273
1.394	−0.555	0.046	0.321	2.945	1.974	−0.258	0.412	0.439	−0.035
0.906	−0.513	−0.525	0.595	0.881	−0.934	1.579	0.161	−1.885	0.371
1.179	−1.055	0.007	0.769	0.971	0.712	1.090	−0.631	−0.255	−0.702
−1.501	−0.488	−0.162	−0.136	1.033	0.203	0.448	0.748	−0.423	−0.452
−0.690	0.756	−1.618	−0.345	−0.511	−2.051	−0.457	−0.218	0.857	−0.255
1.372	0.225	0.378	0.761	0.181	−0.736	0.960	−1.530	−0.260	0.120
−0.482	1.678	−0.057	−1.229	−0.486	0.856	−0.491	−1.983	−2.830	−0.238
−1.376	−0.150	1.356	−0.561	−0.256	−0.212	0.219	0.779	0.953	−0.869
−1.010	0.598	−0.918	1.598	0.005	0.415	−0.169	0.313	−0.973	−1.016
−0.005	−0.899	0.012	−0.725	1.117	−0.121	1.096	0.481	−1.691	0.417
1.393	−1.163	−0.911	1.231	−0.199	−0.246	1.239	−2.574	−0.558	0.056
−1.787	−0.261	1.237	1.046	−0.508	−1.630	−0.146	−0.392	−0.627	0.561
−0.105	−0.357	−1.384	0.360	−0.992	−0.116	−1.698	−2.832	−1.108	−2.357
−1.339	1.827	−0.959	0.424	0.969	−1.141	−1.041	0.362	−1.726	1.956
1.041	0.535	0.731	1.377	0.983	−1.330	1.620	−1.040	0.524	−0.281
0.279	−2.056	0.717	−0.873	−1.026	−1.396	1.047	0.089	−0.573	0.932
−1.805	−2.008	−1.633	0.542	0.250	−0.166	0.032	0.079	0.471	−1.029
−1.186	1.180	1.114	0.882	1.265	−0.202	0.151	−0.376	−0.310	0.479
0.658	−1.141	1.151	−1.210	−0.927	0.425	0.290	−0.902	0.610	2.709
−0.439	0.358	−1.939	0.891	−0.227	0.602	0.873	−0.437	−0.220	−0.057
−1.399	−0.230	0.385	−0.649	−0.577	0.237	−0.289	0.513	0.738	−0.300
0.199	0.208	−1.083	−0.219	−0.291	1.221	1.119	0.004	−2.015	−0.594
0.159	0.272	−0.313	0.084	−2.828	−0.439	−0.792	−1.275	−0.623	−1.047
2.273	0.606	0.606	−0.747	0.247	1.291	0.063	−1.793	−0.699	−1.347
0.041	−0.307	0.121	0.790	−0.584	0.541	0.484	−0.986	0.481	0.996
−1.132	−2.098	0.921	0.145	0.446	−1.661	1.045	−1.363	−0.586	−1.023
0.768	0.079	−1.473	0.034	−2.127	0.665	0.084	−0.880	−0.579	0.551
0.375	−1.658	−0.851	0.234	−0.656	0.340	−0.086	−0.158	−0.120	0.418
−0.513	−0.314	0.210	−0.736	1.041	0.008	0.427	−0.831	0.191	0.074
0.292	−0.521	1.266	−1.206	−0.899	0.110	−0.528	−0.813	0.071	0.524
1.026	2.990	−0.574	−0.491	−1.114	1.297	−1.433	−1.345	−3.001	0.479
−1.334	1.278	−0.568	−0.109	−0.515	−0.566	2.923	0.500	0.359	0.326
−0.287	−0.144	−0.254	0.574	−0.451	−1.181	−1.190	−0.318	−0.094	1.114
0.161	−0.886	−0.921	−0.509	1.410	−0.518	0.192	−0.432	1.501	1.068
−1.346	0.193	−1.202	0.394	−1.045	0.843	0.942	1.045	0.031	0.772
1.250	−0.199	−0.288	1.810	1.378	0.584	1.216	0.733	0.402	0.226
0.630	−0.537	0.782	0.060	0.499	−0.431	1.705	1.164	0.884	−0.298
0.375	−1.941	0.247	−0.491	0.665	−0.135	−0.145	−0.498	0.457	1.064
−1.420	0.489	−1.711	−1.186	0.754	−0.732	−0.066	1.006	−0.798	0.162
−0.151	−0.243	−0.430	−0.762	0.298	1.049	1.810	2.885	−0.768	−0.129
−0.309	0.531	0.416	−1.541	1.456	2.040	−0.124	0.196	0.023	−1.204
0.424	−0.444	0.593	0.993	−0.106	0.116	0.484	−1.272	1.066	1.097
0.593	0.658	−1.127	−1.407	−1.579	−1.616	1.458	1.262	0.736	−0.916
0.862	−0.885	−0.142	−0.504	0.532	1.381	0.022	−0.281	−0.342	1.222
0.235	−0.628	−0.023	−0.463	−0.899	−0.394	−0.538	1.707	−0.188	−1.153
−0.853	0.402	0.777	0.833	0.410	−0.349	−1.094	0.580	1.395	1.298

11	12	13	14	15	16	17	18	19	20
−1.329	−0.238	−0.838	−0.988	−0.445	0.964	−0.266	−0.322	−1.726	2.252
1.284	−0.229	1.058	0.090	0.050	0.523	0.016	0.277	1.639	0.554
0.619	0.628	0.005	0.973	−0.058	0.150	−0.635	−0.917	0.313	−1.203
0.699	−0.269	0.722	−0.994	−0.807	−1.203	1.163	1.244	1.306	−1.210
0.101	0.202	−0.150	0.731	0.420	0.116	−0.496	−0.037	−2.466	0.794
−1.381	0.301	0.522	0.233	0.791	−1.017	−0.182	0.926	−1.096	1.001
−0.574	1.366	−1.843	0.746	0.890	0.824	−1.249	−0.806	−0.240	0.217
0.096	0.210	1.091	0.990	0.900	−0.837	−1.097	−1.238	0.030	−0.311
1.389	−0.236	0.094	3.282	0.295	−0.416	0.313	0.720	0.007	0.354
1.249	0.706	1.453	0.366	−2.654	−1.400	0.212	0.307	−1.145	0.639
0.756	−0.397	−1.772	−0.257	1.120	1.188	−0.527	0.709	0.479	0.317
−0.860	0.412	−0.327	0.178	0.524	−0.672	−0.831	0.758	0.131	0.771
−0.778	−0.979	0.236	−1.033	1.497	−0.661	0.906	1.169	−1.582	1.303
0.037	0.062	0.426	1.220	0.471	0.784	−0.719	0.465	1.559	−1.326
2.619	−0.440	0.477	1.063	0.320	1.406	−0.701	−0.128	0.518	−0.676
−0.420	−0.287	−0.050	−0.481	1.521	−1.367	0.609	0.292	0.048	0.592
1.048	0.220	1.121	−1.789	−1.211	−0.871	−0.740	0.513	−0.558	−0.395
1.000	−0.638	1.261	0.510	−0.150	0.034	0.054	−0.055	0.639	−0.825
0.170	−1.131	−0.985	0.102	−0.939	−1.457	1.766	1.087	−1.275	2.362
0.389	−0.435	0.171	0.891	1.158	1.041	1.048	−0.324	−0.404	1.060
−0.305	0.838	−2.019	−0.540	0.905	1.195	−1.190	0.106	0.571	0.298
−0.321	−0.039	1.799	−1.032	−2.225	−0.148	0.758	−0.862	0.158	−0.726
1.900	1.572	−0.244	−1.721	1.130	0.495	−0.484	0.014	−0.778	−1.483
−0.778	−0.288	−0.224	−1.324	−0.072	0.890	−0.410	0.752	0.376	−0.224
0.617	−1.718	−0.183	−0.100	1.719	0.696	−1.339	−0.614	1.071	−0.386
−1.430	−0.953	0.770	−0.007	−1.872	1.075	−0.913	−1.168	1.775	0.238
0.267	−0.048	0.972	0.734	−1.408	−1.955	−0.848	2.002	0.232	−1.273
0.978	−0.520	−0.368	1.690	−1.479	0.985	1.475	−0.098	−1.633	2.399
−1.235	−1.168	0.325	1.421	2.652	−0.486	−1.253	0.270	−1.103	0.118
−0.258	0.638	2.309	0.741	−0.161	−0.679	0.336	1.973	0.370	−2.277
0.243	0.629	−1.516	−0.157	0.693	1.710	0.800	−0.265	1.218	0.655
−0.292	−1.455	−1.451	1.492	−0.713	0.821	−0.031	−0.780	1.330	0.977
−0.505	0.389	0.544	−0.042	1.615	−1.440	−0.989	−0.580	0.156	0.052
0.397	−0.287	1.712	0.289	−0.904	0.259	−0.600	−1.635	−0.009	−0.799
−0.605	−0.470	0.007	0.721	−1.117	0.635	0.592	−1.362	−1.441	0.672
1.360	0.182	−1.476	−0.599	−0.875	0.292	−0.700	0.058	−0.340	−0.639
0.480	−0.699	1.615	−0.225	1.014	−1.370	−1.097	0.294	0.309	−1.389
−0.027	−0.487	−1.000	−0.015	0.119	−1.990	−0.687	−1.964	−0.366	1.759
−1.482	−0.815	−0.121	1.884	−0.185	0.601	0.793	0.430	−1.181	0.426
−1.256	−0.567	−0.994	1.011	−1.071	−0.623	−0.420	−0.309	1.362	0.863
−1.132	2.039	1.934	−0.222	0.386	1.100	0.284	1.597	−1.718	−0.560
−0.780	−0.239	−0.497	−0.434	−0.284	−0.241	−0.333	1.348	−0.478	−0.169
−0.859	−0.215	0.241	1.471	0.389	−0.952	0.245	0.781	1.093	−0.240
0.447	1.479	0.067	0.426	−0.370	−0.675	−0.972	0.225	0.815	0.389
0.269	0.735	−0.066	−0.271	−1.439	1.036	−0.306	−1.439	−0.122	−0.336
0.097	−1.883	−0.218	0.202	−0.357	0.019	1.631	1.400	0.223	−0.793
−0.686	1.596	−0.286	0.722	0.655	−0.275	1.245	−1.504	0.066	−1.280
0.957	0.057	−1.153	0.701	−0.280	1.747	−0.745	1.338	−1.421	0.386
−0.976	−1.789	−0.696	−1.799	−0.354	0.071	2.355	0.135	−0.598	1.883
0.274	0.226	−0.909	−0.572	0.181	1.115	0.406	0.453	−1.218	−0.115

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R TABLE FOR WILCOXON'S STRATIFIED TEST

No. of groups or strata k	No. of pairs in each group n	Values of R indicating P = 5%	P = 1%
2	2	6	—
	3	15	13
	4	26	24
	5	42	38
	6	61	55
	7	83	77
3	2	11	9
	3	24	21
	4	42	39
	5	66	61
	6	96	89
	7	131	123
4	2	15	13
	3	33	30
	4	58	54
	5	91	85
	6	131	124
	7	179	170
5	2	19	17
	3	42	39
	4	75	70
	5	116	110
	6	168	159
	7	228	218
6	2	24	22
	3	52	49
	4	91	86
	5	142	135
	6	204	195
	7	277	266
7	2	28	26
	3	62	58
	4	108	102
	5	168	160
	6	241	231
	7	327	314

Adapted from F. Wilcoxon, *Biometrics Journal*, 1947, Vol. 3, p. 122.

N	Significance level of tests		Tests	
			Two-tailed: accept $\mu_1 \neq 0$ if either	
	One-tailed	Two-tailed	One-tailed: accept $\mu_1 < 0$ if	One-tailed: accept $\mu_1 > 0$ if
4	.062	.125	$d_4 < 0$	$d_1 > 0$
5	.062	.125	$\frac{1}{2}(d_4 + d_5) < 0$	$\frac{1}{2}(d_1 + d_2) > 0$
	.031	.062	$d_5 < 0$	$d_1 > 0$
6	.047	.094	$\max [d_6, \frac{1}{2}(d_5 + d_6)] < 0$	$\min [d_1, \frac{1}{2}(d_1 + d_2)] > 0$
	.031	.062	$\frac{1}{2}(d_5 + d_6) < 0$	$\frac{1}{2}(d_5 + d_6) > 0$
	.016	.031	$d_6 < 0$	$d_1 > 0$
7	.055	.109	$\max [d_7, \frac{1}{2}(d_6 + d_7)] < 0$	$\min [d_6, \frac{1}{2}(d_1 + d_2)] > 0$
	.023	.047	$\max [d_6, \frac{1}{2}(d_5 + d_7)] < 0$	$\min [d_7, \frac{1}{2}(d_5 + d_6)] > 0$
	.016	.031	$\frac{1}{2}(d_6 + d_7) < 0$	$\frac{1}{2}(d_1 + d_2) > 0$
	.008	.016	$d_7 < 0$	$d_1 > 0$
8	.043	.086	$\max [d_8, \frac{1}{2}(d_7 + d_8)] > 0$	$\min [d_8, \frac{1}{2}(d_1 + d_2)] > 0$
	.027	.055	$\max [d_8, \frac{1}{2}(d_6 + d_8)] < 0$	$\min [d_7, \frac{1}{2}(d_1 + d_3)] > 0$
	.012	.023	$\max [d_7, \frac{1}{2}(d_6 + d_8)] < 0$	$\min [d_6, \frac{1}{2}(d_1 + d_4)] > 0$
	.008	.016	$\frac{1}{2}(d_7 + d_8) < 0$	$\frac{1}{2}(d_1 + d_2) > 0$
	.004	.008	$d_8 < 0$	$d_1 > 0$
9	.051	.102	$\max [d_9, \frac{1}{2}(d_8 + d_9)] < 0$	$\min [d_9, \frac{1}{2}(d_1 + d_2)] > 0$
	.022	.043	$\max [d_8, \frac{1}{2}(d_7 + d_9)] < 0$	$\min [d_8, \frac{1}{2}(d_1 + d_3)] > 0$
	.010	.020	$\max [d_7, \frac{1}{2}(d_6 + d_9)] < 0$	$\min [d_7, \frac{1}{2}(d_1 + d_4)] > 0$
	.006	.012	$\max [d_6, \frac{1}{2}(d_5 + d_9)] < 0$	$\min [d_6, \frac{1}{2}(d_1 + d_5)] > 0$
	.004	.008	$\frac{1}{2}(d_8 + d_9) < 0$	$\frac{1}{2}(d_1 + d_2) > 0$
10	.056	.111	$\max [d_{10}, \frac{1}{2}(d_9 + d_{10})] < 0$	$\min [d_{10}, \frac{1}{2}(d_1 + d_2)] > 0$
	.025	.051	$\max [d_9, \frac{1}{2}(d_8 + d_{10})] < 0$	$\min [d_9, \frac{1}{2}(d_1 + d_3)] > 0$
	.011	.021	$\max [d_8, \frac{1}{2}(d_7 + d_{10})] < 0$	$\min [d_8, \frac{1}{2}(d_1 + d_4)] > 0$
	.005	.010	$\max [d_7, \frac{1}{2}(d_6 + d_{10})] < 0$	$\min [d_7, \frac{1}{2}(d_1 + d_5)] > 0$
11	.048	.097	$\max [d_{11}, \frac{1}{2}(d_{10} + d_{11})] < 0$	$\min [d_{11}, \frac{1}{2}(d_1 + d_2)] > 0$
	.028	.056	$\max [d_{10}, \frac{1}{2}(d_9 + d_{11})] < 0$	$\min [d_{10}, \frac{1}{2}(d_1 + d_3)] > 0$
	.011	.021	$\max [\frac{1}{2}(d_{10} + d_{11}), \frac{1}{2}(d_9 + d_{11})] < 0$	$\min [\frac{1}{2}(d_1 + d_2), \frac{1}{2}(d_3 + d_4)] > 0$
	.005	.011	$\max [d_9, \frac{1}{2}(d_7 + d_{11})] < 0$	$\min [d_7, \frac{1}{2}(d_1 + d_5)] > 0$
12	.047	.094	$\max [\frac{1}{2}(d_{11} + d_{12}), \frac{1}{2}(d_{10} + d_{12})] < 0$	$\min [\frac{1}{2}(d_1 + d_2), \frac{1}{2}(d_3 + d_4)] > 0$
	.024	.048	$\max [d_{11}, \frac{1}{2}(d_9 + d_{12})] < 0$	$\min [d_{11}, \frac{1}{2}(d_1 + d_3)] > 0$
	.010	.020	$\max [d_{10}, \frac{1}{2}(d_8 + d_{12})] < 0$	$\min [d_{10}, \frac{1}{2}(d_1 + d_4)] > 0$
	.005	.011	$\max [\frac{1}{2}(d_7 + d_{12}), \frac{1}{2}(d_8 + d_{10})] < 0$	$\min [\frac{1}{2}(d_1 + d_6), \frac{1}{2}(d_5 + d_6)] > 0$
13	.047	.094	$\max [\frac{1}{2}(d_{12} + d_{13}), \frac{1}{2}(d_{11} + d_{13})] < 0$	$\min [\frac{1}{2}(d_1 + d_{12}), \frac{1}{2}(d_2 + d_{11})] > 0$
	.023	.047	$\max [\frac{1}{2}(d_{11} + d_{13}), \frac{1}{2}(d_{10} + d_{13})] < 0$	$\min [\frac{1}{2}(d_1 + d_{11}), \frac{1}{2}(d_2 + d_{10})] > 0$
	.010	.020	$\max [\frac{1}{2}(d_{10} + d_{13}), \frac{1}{2}(d_9 + d_{13})] < 0$	$\min [\frac{1}{2}(d_1 + d_{10}), \frac{1}{2}(d_2 + d_9)] > 0$
	.005	.010	$\max [d_{13}, \frac{1}{2}(d_7 + d_{13})] < 0$	$\min [d_{13}, \frac{1}{2}(d_1 + d_7)] > 0$
14	.047	.094	$\max [\frac{1}{2}(d_{13} + d_{14}), \frac{1}{2}(d_{12} + d_{14})] < 0$	$\min [\frac{1}{2}(d_1 + d_{13}), \frac{1}{2}(d_2 + d_{12})] > 0$
	.023	.047	$\max [\frac{1}{2}(d_{12} + d_{14}), \frac{1}{2}(d_{11} + d_{14})] < 0$	$\min [\frac{1}{2}(d_1 + d_{12}), \frac{1}{2}(d_2 + d_{11})] > 0$
	.010	.020	$\max [d_{14}, \frac{1}{2}(d_{10} + d_{14})] < 0$	$\min [d_{14}, \frac{1}{2}(d_1 + d_{10})] > 0$
	.005	.010	$\max [\frac{1}{2}(d_7 + d_{14}), \frac{1}{2}(d_{13} + d_{11})] < 0$	$\min [\frac{1}{2}(d_1 + d_{14}), \frac{1}{2}(d_4 + d_{11})] > 0$
15	.047	.094	$\max [\frac{1}{2}(d_{14} + d_{15}), \frac{1}{2}(d_{13} + d_{15})] < 0$	$\min [\frac{1}{2}(d_1 + d_{14}), \frac{1}{2}(d_2 + d_{13})] > 0$
	.023	.047	$\max [\frac{1}{2}(d_{13} + d_{15}), \frac{1}{2}(d_{12} + d_{15})] < 0$	$\min [\frac{1}{2}(d_1 + d_{13}), \frac{1}{2}(d_2 + d_{12})] > 0$
	.010	.020	$\max [\frac{1}{2}(d_{12} + d_{15}), \frac{1}{2}(d_{11} + d_{15})] < 0$	$\min [\frac{1}{2}(d_1 + d_{12}), \frac{1}{2}(d_3 + d_{11})] > 0$
	.005	.010	$\max [d_{15}, \frac{1}{2}(d_7 + d_{15})] < 0$	$\min [d_{15}, \frac{1}{2}(d_1 + d_8)] > 0$

* Adapted from Walsh, J. E. 1949. Applications of some significance tests for the median which are valid under very general conditions. *J. Amer. Statist. Ass.*, 44, 343, with the kind permission of the author and the publisher.

17 *Upper tail probabilities for the null distribution of the Kruskal-Wallis H statistic:*

$$k = 3, n_1 = 1(1)5, n_2 = n_1(1)5, 2 \leqslant n_3 = n_2(1)5$$

For $k = 3$ and sample sizes n_1, n_2, n_3, the tabled entry for the point x is $P_0\{H \geqslant x\}$. Thus if x is such that $P_0\{H \geqslant x\} = \alpha$, then $h(\alpha, 3, (n_1, n_2, n_3)) = x$.

$n_1 = 1, n_2 = 1, n_3 = 2$

x	$P_0\{H \geqslant x\}$
.300	1.000
1.800	.833
2.700	.500

$n_1 = 1, n_2 = 1, n_3 = 3$

x	$P_0\{H \geqslant x\}$
.533	1.000
.800	.800
2.133	.700
3.200	.300

$n_1 = 1, n_2 = 1, n_3 = 4$

x	$P_0\{H \geqslant x\}$
.143	1.000
.786	.933
1.000	.800
1.286	.667
2.143	.600
2.500	.467
3.571	.200

$n_1 = 1, n_2 = 1, n_3 = 5$

x	$P_0\{H \geqslant x\}$
.257	1.000
.429	.905
1.029	.857
1.114	.762
1.457	.667
1.714	.571
2.314	.524
2.829	.333
3.857	.143

$n_1 = 1, n_2 = 2, n_3 = 2$

x	$P_0\{H \geqslant x\}$
.000	1.000
.400	.933
.600	.867
1.400	.733
2.000	.600
2.400	.467
3.000	.333
3.600	.200

$n_1 = 1, n_2 = 2, n_3 = 3$

x	$P_0\{H \geqslant x\}$
.095	1.000
.238	.933
.429	.900
.810	.833
.857	.800
1.238	.700
1.381	.600
1.952	.567
2.143	.533
2.381	.433
3.095	.267
3.524	.200
3.857	.133
4.286	.100

$n_1 = 1, n_2 = 2, n_3 = 4$

x	$P_0\{H \geqslant x\}$
.000	1.000
.161	.971
.268	.933
.321	.895
.536	.857
.643	.819
.696	.800
1.018	.781
1.071	.743
1.125	.705
1.286	.667
1.393	.629
1.446	.590
1.875	.533
2.036	.495
2.143	.476
2.250	.457
2.411	.400
2.571	.305
2.786	.286
2.893	.267
3.161	.190
3.696	.171
3.750	.133
4.018	.114
4.500	.076
4.821	.057

$n_1 = 1, n_2 = 2, n_3 = 5$

x	$P_0\{H \geqslant x\}$
.050	1.000
.133	.964
.200	.940
.450	.905
.467	.845
.583	.821
.667	.798
.717	.774
1.000	.750
1.117	.738
1.200	.714
1.250	.655
1.383	.619
1.533	.583
1.783	.560
1.800	.536
1.917	.488
2.050	.464
2.333	.429
2.450	.393
2.717	.298
2.800	.286
2.867	.214
3.133	.202
3.333	.190
3.383	.179
3.783	.131
4.050	.119
4.200	.095
4.450	.071
5.000	.048
5.250	.036

$n_1 = 1, n_2 = 3, n_3 = 3$

x	$P_0\{H \geqslant x\}$
.000	1.000
.143	.986
.286	.957
.571	.871
1.000	.771
1.143	.743
1.286	.600
1.571	.571
2.000	.514
2.286	.486
2.571	.329
3.143	.243
3.286	.157
4.000	.129
4.571	.100
5.143	.043

$n_1 = 1, n_2 = 3, n_3 = 4$

x	$P_0\{H \geqslant x\}$
.056	1.000
.097	.971
.208	.950
.333	.921
.431	.900
.500	.871
.556	.843
.764	.786
.875	.743
1.097	.721
1.208	.707
1.222	.679
1.389	.629
1.431	.557
1.764	.536
1.833	.514
1.875	.471
2.097	.457
2.208	.443
2.333	.429
2.431	.371
2.722	.300
2.764	.229
3.000	.221
3.097	.214
3.208	.200
3.222	.157
3.764	.136
3.889	.129
4.056	.093
4.097	.086
4.208	.079
4.764	.071
5.000	.057
5.208	.050
5.389	.036
5.833	.021

$n_1 = 1, n_2 = 3, n_3 = 5$

x	$P_0\{H \geqslant x\}$
.000	1.000
.071	.992
.160	.972
.178	.952
.284	.929
.338	.889
.551	.869
.604	.853
.640	.833
.711	.770
.818	.750
.960	.730
1.084	.694
1.138	.683
1.351	.651
1.404	.611
1.440	.591
1.511	.571
1.600	.560
1.671	.520
1.778	.488
1.884	.480
1.938	.468
2.044	.452
2.204	.437
2.400	.413
2.418	.405
2.560	.341
2.844	.258
2.951	.218
3.040	.210
3.218	.190
3.271	.183
3.378	.143
3.484	.135
3.804	.131
3.840	.123
4.018	.095
4.284	.083
4.338	.079
4.551	.075
4.711	.056
4.871	.052
4.960	.048
5.404	.044
5.440	.036
5.760	.028
6.044	.020
6.400	.012

$n_1 = 1, n_2 = 4, n_3 = 4$

x	$P_0\{H \geqslant x\}$
.000	1.000
.067	.987
.167	.968
.267	.930
.300	.911
.567	.873
.600	.835
.667	.803
.867	.759
.967	.721
1.067	.689
1.200	.676
1.367	.644
1.500	.600
1.667	.537
1.767	.498
2.167	.460
2.267	.410
2.400	.384
2.467	.349
2.667	.305
2.700	.260
2.967	.235
3.000	.222
3.267	.178
3.367	.171
3.467	.152
3.867	.121
3.900	.108
4.067	.102
4.167	.083
4.267	.070
4.800	.067
4.867	.054
4.967	.048
5.100	.041
5.667	.035
6.000	.029
6.167	.022
6.667	.010

$n_1 = 1, n_2 = 4, n_3 = 5$

x	$P_0\{H \geqslant x\}$
.033	1.000
.060	.983
.104	.968
.186	.952
.273	.938
.278	.922
.295	.906
.360	.890
.409	.875
.540	.848
.622	.821
.731	.806
.758	.794
.796	.778
.818	.762

$n_1 = 1, n_2 = 4, n_3 = 5$

x	$P_0\{H \geq x\}$
.906	.730
.933	.719
.976	.690
1.151	.676
1.167	.665
1.195	.651
1.233	.640
1.342	.625
1.369	.614
1.495	.606
1.500	.589
1.587	.562
1.604	.535
1.669	.517
1.778	.498
1.806	.483
1.849	.468
1.931	.460
2.040	.441
2.067	.432
2.106	.419
2.242	.406
2.286	.400
2.455	.394
2.460	.354
2.504	.346
2.591	.300
2.651	.286
2.896	.251
2.913	.222
2.940	.216
3.000	.208
3.087	.194
3.158	.187
3.240	.183
3.349	.151
3.524	.146
3.595	.138
3.682	.132
3.813	.110
3.960	.102
3.987	.098
4.206	.095
4.222	.087

$n_1 = 1, n_2 = 4, n_3 = 5$

x	$P_0\{H \geq x\}$
4.287	.071
4.549	.067
4.636	.063
4.724	.060
4.833	.059
4.860	.056
4.986	.044
5.078	.041
5.160	.038
5.515	.037
5.558	.035
5.596	.033
5.733	.027
5.776	.025
5.858	.024
5.864	.022
5.967	.021
6.431	.019
6.578	.016
6.818	.013
6.840	.011
6.954	.008
7.364	.005

$n_1 = 1, n_2 = 5, n_3 = 5$

x	$P_0\{H \geq x\}$
.000	1.000
.036	.994
.109	.982
.146	.956
.182	.944
.327	.920
.400	.885
.436	.872
.546	.847
.582	.802
.727	.792
.836	.771
.909	.752
.982	.716
1.127	.669
1.200	.646

$n_1 = 1, n_2 = 5, n_3 = 5$

x	$P_0\{H \geq x\}$
1.309	.630
1.346	.605
1.600	.584
1.636	.571
1.709	.509
1.746	.493
1.782	.468
1.927	.462
2.000	.438
2.146	.422
2.182	.411
2.327	.379
2.436	.374
2.509	.361
2.582	.314
2.727	.286
2.909	.242
2.946	.227
3.236	.188
3.346	.168
3.382	.161
3.527	.141
3.600	.132
3.636	.116
3.927	.113
4.036	.105
4.109	.086
4.182	.082
4.400	.076
4.546	.074
4.800	.056
4.909	.053
5.127	.046
5.236	.039
5.636	.033
5.709	.030
5.782	.027
6.000	.022
6.146	.019
6.509	.018
6.546	.015
6.582	.014
6.727	.012
6.836	.011

$n_1 = 1, n_2 = 5, n_3 = 5$

x	$P_0\{H \geq x\}$
7.309	.009
7.527	.008
7.746	.005
8.182	.002

$n_1 = 2, n_2 = 2, n_3 = 2$

x	$P_0\{H \geq x\}$
.000	1.000
.286	.933
.857	.800
1.143	.667
2.000	.533
2.571	.400
3.429	.333
3.714	.200
4.571	.067

$n_1 = 2, n_2 = 2, n_3 = 3$

x	$P_0\{H \geq x\}$
.000	1.000
.133	.971
.179	.895
.214	.857
.500	.857
.607	.800
.714	.743
.857	.686
1.179	.657
1.357	.619
1.464	.562
1.607	.524
1.929	.467
2.000	.438
2.214	.419
2.429	.381
2.464	.362
2.750	.324
2.857	.286
3.179	.267
3.429	.248

$n_1 = 2, n_2 = 2, n_3 = 3$

x	$P_0\{H \geq x\}$
3.607	.238
3.750	.219
3.929	.181
4.464	.105
4.500	.067
4.714	.048
5.357	.029

$n_1 = 2, n_2 = 2, n_3 = 4$

x	$P_0\{H \geq x\}$
.000	1.000
.125	.971
.167	.914
.333	.890
.458	.862
.500	.814
.667	.757
.792	.733
1.000	.695
1.125	.657
1.333	.581
1.500	.552
1.792	.514
1.833	.486
2.000	.448
2.125	.410
2.458	.362
2.667	.333
2.792	.314
2.833	.295
3.000	.276
3.125	.248
3.167	.229
3.458	.210
3.667	.190
4.000	.181
4.125	.152
4.167	.105
4.458	.100
4.500	.090
5.125	.052

$n_1 = 2, n_2 = 2, n_3 = 4$

x	$P_0\{H \geq x\}$
5.333	.033
5.500	.024
6.000	.014

$n_1 = 2, n_2 = 2, n_3 = 5$

x	$P_0\{H \geq x\}$
3.773	.175
3.840	.164
3.973	.159
4.093	.148
4.200	.138
4.293	.122
4.373	.090
4.573	.085
4.800	.063
4.893	.061
5.040	.056
5.160	.034
5.693	.029
6.000	.019
6.133	.013
6.533	.008

$n_1 = 2, n_2 = 3, n_3 = 3$

x	$P_0\{H \geq x\}$
.028	1.000
.111	.968
.222	.946
.250	.896
.472	.864
.556	.807
.694	.757
1.000	.686
1.111	.671
1.139	.600
1.361	.564
1.444	.539
1.806	.511
1.889	.446
2.000	.425
2.028	.396
2.250	.368
2.472	.357
2.694	.329
2.778	.307
2.889	.286
3.139	.243

$n_1 = 2, n_2 = 3, n_3 = 3$

x	$P_0\{H \geq x\}$
3.222	.221
3.361	.207
3.778	.200
3.806	.179
4.028	.164
4.111	.129
4.250	.121
4.556	.100
4.694	.093
5.000	.075
5.139	.061
5.361	.032
5.556	.025
6.250	.011

$n_1 = 2, n_2 = 3, n_3 = 4$

x	$P_0\{H \geq x\}$
.000	1.000
.078	.987
.100	.965
.111	.944
.244	.922
.278	.902
.311	.881
.344	.862
.400	.844
.444	.829
.544	.811
.600	.794
.611	.770
.700	.756
.778	.722
.811	.703
.900	.689
.978	.673
1.000	.660
1.078	.627
1.111	.614
1.178	.602
1.244	.586
1.344	.571

$n_1 = 5, n_2 = 5, n_3 = 5$		$n_1 = 5, n_2 = 5, n_3 = 5$		$n_1 = 5, n_2 = 5, n_3 = 5$		$n_1 = 5, n_2 = 5, n_3 = 5$	
x	$P_0\{H \geq x\}$	x	$P_0\{H \geq x\}$	x	$P_0\{H \geq x\}$	x	$P_0\{H \geq x\}$
.060	.983	2.340	.330	5.120	.072	8.000	.009
.080	.968	2.420	.319	5.180	.070	8.060	.009
.140	.954	2.480	.314	5.360	.065	8.180	.008
.180	.925	2.540	.304	5.420	.063	8.240	.008
.240	.911	2.580	.294	5.460	.060	8.340	.007
.260	.898	2.660	.284	5.540	.055	8.420	.007
.320	.871	2.780	.265	5.580	.053	8.540	.006
.380	.858	2.880	.256	5.660	.051	8.640	.006
.420	.832	2.940	.252	5.780	.049	8.660	.006
.500	.807	2.960	.239	5.820	.048	8.720	.005
.540	.794	3.020	.231	5.840	.046	8.780	.005
.560	.783	3.120	.223	6.000	.044	8.820	.005
.620	.759	3.140	.216	6.020	.043	8.880	.004
.720	.736	3.260	.208	6.080	.040	8.960	.004
.740	.725	3.380	.201	6.140	.038	9.060	.004
.780	.703	3.420	.190	6.180	.036	9.140	.003
.860	.681	3.440	.184	6.260	.035	9.260	.003
.960	.660	3.500	.177	6.320	.033	9.360	.003
.980	.650	3.620	.171	6.480	.032	9.380	.003
1.040	.620	3.660	.165	6.500	.031	9.420	.002
1.140	.601	3.780	.159	6.540	.030	9.500	.002
1.220	.582	3.840	.153	6.620	.028	9.620	.002
1.260	.564	3.860	.150	6.660	.027	9.680	.001
1.280	.547	3.920	.145	6.720	.026	9.740	.001
1.340	.538	3.980	.137	6.740	.025	9.780	.001
1.460	.521	4.020	.132	6.860	.024	9.920	.001
1.500	.505	4.160	.127	6.980	.021	9.980	.001
1.520	.497	4.220	.123	7.020	.020	10.140	.001
1.580	.481	4.340	.118	7.220	.019	10.220	.001
1.620	.466	4.380	.110	7.260	.018	10.260	.000
1.680	.459	4.460	.105	7.280	.018	10.500	.000
1.820	.444	4.500	.102	7.340	.016	10.580	.000
1.860	.416	4.560	.100	7.440	.015	10.640	.000
1.940	.403	4.580	.096	7.460	.015	10.820	.000
2.000	.390	4.740	.092	7.580	.014	11.060	.000
2.060	.383	4.820	.089	7.620	.013	11.180	.000
2.160	.371	4.860	.085	7.740	.012	11.520	.000
2.180	.365	4.880	.084	7.760	.012	11.580	.000
2.220	.353	4.940	.081	7.940	.011	12.020	.000
2.240	.342	5.040	.075	7.980	.011	12.500	.000

Adapted from Table F of *A Nonparametric Introduction to Statistics*, by C.H. Kraft and C. van Eeden, Macmillan, New York, 1968, with the permission of the authors and the publisher. Copyright © 1968, by the Macmillan Company.

18 *Selected critical values for the range of k independent N(0, 1) variables: k = 2(1)20(2)40(10)100*

For a given k and α, the tabled entry is $q(\alpha, k, \infty)$.

	α								
k	.0001	.0005	.001	.005	.01	.025	.05	.10	.20
2	5.502	4.923	4.654	3.970	3.643	3.170	2.772	2.326	1.812
3	5.864	5.316	5.063	4.424	4.120	3.682	3.314	2.902	2.424
4	6.083	5.553	5.309	4.694	4.403	3.984	3.633	3.240	2.784
5	6.240	5.722	5.484	4.886	4.603	4.197	3.858	3.478	3.037
6	6.362	5.853	5.619	5.033	4.757	4.361	4.030	3.661	3.232
7	6.461	5.960	5.730	5.154	4.882	4.494	4.170	3.808	3.389
8	6.546	6.050	5.823	5.255	4.987	4.605	4.286	3.931	3.520
9	6.618	6.127	5.903	5.341	5.078	4.700	4.387	4.037	3.632
10	6.682	6.196	5.973	5.418	5.157	4.784	4.474	4.129	3.730
11	6.739	6.257	6.036	5.485	5.227	4.858	4.552	4.211	3.817
12	6.791	6.311	6.092	5.546	5.290	4.925	4.622	4.285	3.895
13	6.837	6.361	6.144	5.602	5.348	4.985	4.685	4.351	3.966
14	6.880	6.407	6.191	5.652	5.400	5.041	4.743	4.412	4.030
15	6.920	6.449	6.234	5.699	5.448	5.092	4.796	4.468	4.089
16	6.957	6.488	6.274	5.742	5.493	5.139	4.845	4.519	4.144
17	6.991	6.525	6.312	5.783	5.535	5.183	4.891	4.568	4.195
18	7.023	6.559	6.347	5.820	5.574	5.224	4.934	4.612	4.242
19	7.054	6.591	6.380	5.856	5.611	5.262	4.974	4.654	4.287
20	7.082	6.621	6.411	5.889	5.645	5.299	5.012	4.694	4.329
22	7.135	6.677	6.469	5.951	5.709	5.365	5.081	4.767	4.405
24	7.183	6.727	6.520	6.006	5.766	5.425	5.144	4.832	4.475
26	7.226	6.773	6.568	6.057	5.818	5.480	5.201	4.892	4.537
28	7.266	6.816	6.611	6.103	5.866	5.530	5.253	4.947	4.595
30	7.303	6.855	6.651	6.146	5.911	5.577	5.301	4.997	4.648
32	7.337	6.891	6.689	6.186	5.952	5.620	5.346	5.044	4.697
34	7.370	6.925	6.723	6.223	5.990	5.660	5.388	5.087	4.743
36	7.400	6.957	6.756	6.258	6.026	5.698	5.427	5.128	4.786
38	7.428	6.987	6.787	6.291	6.060	5.733	5.463	5.166	4.826
40	7.455	7.015	6.816	6.322	6.092	5.766	5.498	5.202	4.864
50	7.571	7.137	6.941	6.454	6.228	5.909	5.646	5.357	5.026
60	7.664	7.235	7.041	6.561	6.338	6.023	5.764	5.480	5.155
70	7.741	7.317	7.124	6.649	6.429	6.118	5.863	5.582	5.262
80	7.808	7.387	7.196	6.725	6.507	6.199	5.947	5.669	5.353
90	7.866	7.448	7.259	6.792	6.575	6.270	6.020	5.745	5.433
100	7.918	7.502	7.314	6.850	6.636	6.333	6.085	5.812	5.503

Adapted from H. L. Harter, Tables of range and studentized range, *Ann. Math. Statist.* **31**, 1122-47 (1960), with the permission of the author, and the editor of *The Annals of Mathematical Statistics*.

19 *Selected critical values for all treatments multiple comparisons based on Kruskal-Wallis rank sums:*

$k = 3, n = 2(1)6$; $k = 6, 7, 8, n = 2, 3$;
$k = 4, 5, n = 2, 3, 4$; $k = 9(1)15, n = 2$

For a given k and n, the entries in the table correspond to $P_0\{|R_u - R_v| < y(\alpha, k, n), u = 1, \ldots, k-1, v = u+1, \ldots, k\} \approx 1 - \alpha$.

	n = 2		3		4		5		6	
k	$y(\alpha, k, 2)$	α	$y(\alpha, k, 3)$	α	$y(\alpha, k, 4)$	α	$y(\alpha, k, 5)$	α	$y(\alpha, k, 6)$	α
3	8	.067	15*	.064	24*	.045	33*	.048	43*	.049
			16	.029	25	.031	35	.031	51*	.011
			17*	.011	27*	.011	39*	.009		
4	12	.029	22	.043	34	.049				
			23	.023	36	.026				
			24	.012	38	.012				
5	15	.048	28	.060	44	.056				
	16	.016	30	.023	46	.033				
			32	.007	50	.010				
6	19	.030	35	.055						
	20	.010	37	.024						
			39	.009						
7	22	.056	42	.054						
	23	.021	44	.026						
	24	.007	46	.012						
8	26	.041	49	.055						
	28	.005	51	.029						
			54	.010						
9	29	.063								
	30	.031								
	31	.012								
10	33	.050								
	34	.025								
	35	.009								
11	37	.040								
	38	.020								
	39	.008								

	n = 2	
k	$y(\alpha, k, 2)$	α
12	40	.062
	41	.033
	43	.006
13	44	.052
	45	.028
	46	.014
14	48	.044
	49	.024
	50	.012
15	52	.038
	54	.010

20 *Critical values for one-sided treatments versus control multiple comparisons based on Kruskal-Wallis rank sums: $k = 3, n = 2(1)6$*

For a given n, the tabled entry for x is $P_0\{(R_u - R_1) < x, u = 2, 3\}$. Thus if x is such that $P_0\{(R_u - R_1) < x, u = 2, 3\} = 1 - \alpha$, then $y^*(\alpha, 2, n) = x$. For given n, the entries are terminated at x_n, where x_n is the smallest value of x for which $P_0\{(R_u - R_1) < x, u = 2, 3\} = 1$, to four decimal places.

$k = 3$

x	n = 2	n = 3	n = 4	n = 5	n = 6
1	.4222	.3571	.3541	.3471	.3442
2	.4889	.4179	.3896	.3745	.3649
3	.6000	.4810	.4317	.4038	.3873
4	.6889	.5429	.4711	.4331	.4093
5	.7778	.5976	.5118	.4615	.4313
6	.8444	.6619	.5530	.4921	.4543
7	.9333	.7179	.5942	.5217	.4772
8	.9778	.7702	.6316	.5507	.4995
9		.8179	.6717	.5807	.5230
10		.8560	.7071	.6099	.5457
11		.8869	.7419	.6375	.5680
12		.9190	.7748	.6661	.5908
13		.9429	.8068	.6930	.6131
14		.9631	.8342	.7188	.6345
15		.9786	.8612	.7442	.6564
16		.9905	.8836	.7681	.6773
17		.9964	.9044	.7902	.6976
18		.9988	.9221	.8122	.7178
19			.9378	.8323	.7372
20			.9505	.8509	.7555
21			.9621	.8686	.7738
22			.9710	.8848	.7910
23			.9787	.8993	.8073
24			.9849	.9130	.8232
25			.9898	.9252	.8382
26			.9935	.9361	.8522
27			.9962	.9460	.8657
28			.9978	.9547	.8782
29			.9990	.9621	.8899
30			.9995	.9688	.9010
31			.9998	.9744	.9112
32			.9999	.9793	.9205
33				.9834	.9293
34				.9869	.9373

$k = 3$

x	$n = 2$	$n = 3$	$n = 4$	$n = 5$	$n = 6$
35				.9898	.9446
36				.9922	.9514
37				.9941	.9574
38				.9956	.9629
39				.9969	.9679
40				.9979	.9723
41				.9986	.9762
42				.9991	.9797
43				.9994	.9828
44				.9997	.9854
45				.9998	.9878
46				.9999	.9898
47				1.0000	.9916
48					.9931
49					.9944
50					.9954
51					.9964
52					.9971
53					.9977
54					.9983
55					.9986
56					.9990
57					.9993
58					.9995
59					.9996
60					.9997
61					.9998
62					.9999
63					.9999
64					1.0000

Computed by S. P. Leach on the Florida State University CDC 6400.

21 *Critical values for two-sided treatments versus control multiple comparisons based on Kruskal-Wallis rank sums: $k = 3$, $n = 2(1)6$*

For a given n, the tabled entry for x is $P_0\left\{|R_u - R_1| < x,\ u = 2, 3\right\}$. Thus if x is such that $P_0\left\{|R_u - R_1| < x,\ u = 2, 3\right\} = 1 - \alpha$, then $y^{**}(\alpha, 2, n) = x$. For given n, the entries are terminated at x_n, where x_n is the smallest value of x for which $P_0\left\{|R_u - R_1| < x,\ u = 2, 3\right\} = 1$, to four decimal places.

$k = 3$

x	$n = 2$	$n = 3$	$n = 4$	$n = 5$	$n = 6$
1	.0667	.0071	.0055	.0024	.0015
2	.1111	.0286	.0145	.0074	.0045
3	.2444	.0881	.0417	.0222	.0133
4	.4000	.1571	.0763	.0414	.0249
5	.5556	.2369	.1191	.0647	.0393
6	.6889	.3440	.1733	.0967	.0589
7	.8667	.4440	.2330	.1315	.0808
8	.9556	.5429	.2924	.1692	.1047
9		.6369	.3608	.2127	.1332
10		.7119	.4248	.2577	.1629
11		.7738	.4894	.3027	.1940
12		.8381	.5524	.3517	.2282
13		.8857	.6147	.3995	.2631
14		.9262	.6689	.4465	.2980
15		.9571	.7226	.4942	.3352
16		.9810	.7672	.5399	.3718
17		.9929	.8087	.5827	.4080
18		.9976	.8443	.6257	.4451
19			.8757	.6652	.4812
20			.9011	.7022	.5160
21			.9243	.7373	.5511
22			.9419	.7697	.5843
23			.9574	.7986	.6163
24			.9698	.8261	.6475
25			.9796	.8504	.6771
26			.9870	.8722	.7047
27			.9924	.8919	.7317
28			.9956	.9093	.7566
29			.9979	.9243	.7799
30			.9991	.9375	.8019
31			.9997	.9489	.8224
32			.9999	.9585	.8410
33				.9668	.8587
34				.9738	.8746
35				.9795	.8893

$k = 3$

x	$n = 2$	$n = 3$	$n = 4$	$n = 5$	$n = 6$
36				.9843	.9027
37				.9882	.9149
38				.9913	.9258
39				.9938	.9357
40				.9957	.9445
41				.9971	.9524
42				.9981	.9594
43				.9988	.9655
44				.9993	.9709
45				.9996	.9756
46				.9998	.9797
47				.9999	.9832
48				1.0000	.9862
49					.9887
50					.9909
51					.9927
52					.9943
53					.9955
54					.9966
55					.9974
56					.9981
57					.9986
58					.9990
59					.9993
60					.9995
61					.9997
62					.9998
63					.9998
64					.9999
65					.9999
66					1.0000

Computed by S. P. Leach on the Florida State University CDC 6400.

22 *Cumulative probabilities for the distribution of the maximum of* ℓ *N*(0, 1) *random variables with common correlation* ρ: $\ell = 1(1)12; \rho = .1(.1).9, \rho = .125(.125).875, \rho = 1/3, 2/3$

For given ℓ and ρ, the entry corresponding to x is the probability that ℓ standard normal random variables with common correlation ρ are simultaneously less than or equal to x. If ℓ, ρ, and x are such that the tabled entry is $1 - \alpha$, then $m(\alpha, \ell, \rho) = x$.

$\rho = .100$

x \ ℓ	1	2	3	4	5	6	7	8	9	10	11	12
3.50	.00023	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.40	.00034	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.30	.00048	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.20	.00069	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.10	.00097	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.00	.00135	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.90	.00187	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.80	.00256	.00002	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.70	.00347	.00003	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.60	.00466	.00005	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.50	.00621	.00008	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.40	.00820	.00013	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.30	.01072	.00022	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.20	.01390	.00035	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.10	.01786	.00056	.00003	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.00	.02275	.00087	.00005	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.90	.02872	.00134	.00009	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.80	.03593	.00202	.00016	.00002	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.70	.04457	.00300	.00028	.00003	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.60	.05480	.00440	.00048	.00007	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.50	.06681	.00633	.00079	.00012	.00002	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.40	.08076	.00899	.00129	.00023	.00005	.00001	.00000	.00000	.00000	.00000	.00000	.00000
1.30	.09680	.01256	.00205	.00040	.00009	.00002	.00001	.00000	.00000	.00000	.00000	.00000
1.20	.11507	.01729	.00321	.00071	.00018	.00005	.00002	.00001	.00000	.00000	.00000	.00000
1.10	.13567	.02344	.00491	.00120	.00033	.00010	.00004	.00001	.00001	.00000	.00000	.00000
1.00	.15866	.03132	.00736	.00199	.00061	.00020	.00007	.00003	.00001	.00001	.00000	.00000
0.90	.18406	.04125	.01082	.00322	.00107	.00039	.00015	.00006	.00003	.00001	.00001	.00000
0.80	.21186	.05355	.01559	.00510	.00183	.00072	.00030	.00013	.00006	.00003	.00002	.00001
0.70	.24196	.06854	.02204	.00786	.00306	.00128	.00057	.00027	.00013	.00007	.00004	.00002
0.60	.27425	.08653	.03057	.01186	.00497	.00223	.00106	.00053	.00027	.00015	.00008	.00005
0.50	.30854	.10776	.04162	.01746	.00786	.00375	.00189	.00099	.00054	.00031	.00018	.00011
0.40	.34458	.13242	.05562	.02515	.01210	.00614	.00326	.00181	.00103	.00061	.00037	.00023
0.30	.38209	.16062	.07301	.03543	.01816	.00976	.00547	.00317	.00190	.00117	.00074	.00048
0.20	.42074	.19237	.09418	.04883	.02658	.01508	.00888	.00540	.00337	.00216	.00142	.00095
0.10	.46017	.22755	.11942	.06588	.03794	.02266	.01398	.00887	.00577	.00384	.00261	.00180
0.00	.50000	.26594	.14891	.08709	.05286	.03314	.02137	.01413	.00955	.00659	.00462	.00330

x \ ℓ	1	2	3	4	5	6	7	8	9	10	11	12
0.00	.50000	.26594	.14891	.08709	.05286	.03314	.02137	.01413	.00955	.00659	.00462	.00330
0.10	.53983	.30720	.18271	.11283	.07196	.04720	.03173	.02180	.01528	.01089	.00789	.00580
0.20	.57926	.35089	.22070	.14336	.09574	.06551	.04580	.03263	.02365	.01741	.01299	.00982
0.30	.61791	.39645	.26259	.17875	.12461	.08870	.06431	.04741	.03547	.02689	.02063	.01601
0.40	.65542	.44327	.30791	.21889	.15877	.11724	.08795	.06692	.05157	.04020	.03167	.02519
0.50	.69146	.49068	.35605	.26340	.19820	.15141	.11722	.09186	.07277	.05823	.04701	.03827
0.60	.72575	.53802	.40625	.31173	.24261	.19122	.15244	.12276	.09979	.08180	.06758	.05622

$\rho = .100$

	1	2	3	4	5	6	7	8	9	10	11	12
0.70	.75804	.58461	.45769	.36310	.29145	.23642	.19360	.15990	.13310	.11159	.09417	.07995
0.80	.78814	.62984	.50948	.41659	.34393	.28641	.24039	.20320	.17289	.14799	.12737	.11019
0.90	.81594	.67313	.56074	.47120	.39906	.34035	.29216	.25226	.21899	.19105	.16744	.14738
1.00	.84134	.71401	.61064	.52586	.45570	.39715	.34794	.30628	.27080	.24041	.21424	.19159
1.10	.86433	.75211	.65841	.57955	.51267	.45557	.40653	.36416	.32738	.29528	.26716	.24241
1.20	.88493	.78715	.70344	.63131	.56879	.51430	.46657	.42456	.38744	.35451	.32518	.29898
1.30	.90320	.81896	.74522	.68034	.62298	.57205	.52664	.48600	.44951	.41664	.38693	.36002
1.40	.91924	.84747	.78340	.72597	.67430	.62764	.58538	.54698	.51200	.48004	.45078	.42393
1.50	.93319	.87272	.81779	.76774	.72199	.68007	.64155	.60608	.57335	.54307	.51501	.48895
1.60	.94520	.89480	.84831	.80534	.76552	.72855	.69415	.66209	.63215	.60415	.57792	.55331
1.70	.95543	.91387	.87503	.83868	.80458	.77255	.74241	.71402	.68723	.66193	.63800	.61534
1.80	.96407	.93016	.89841	.86777	.83902	.81174	.78583	.76118	.73772	.71535	.69402	.67365
1.90	.97128	.94390	.91777	.89281	.86893	.84607	.82417	.80317	.78302	.76367	.74507	.72718
2.00	.97725	.95537	.93431	.91403	.89449	.87563	.85743	.83986	.82288	.80646	.79058	.77520
2.10	.98214	.96483	.94806	.93179	.91601	.90069	.88580	.87135	.85729	.84362	.83032	.81738
2.20	.98610	.97255	.95933	.94645	.93387	.92160	.90961	.89791	.88647	.87529	.86436	.85367
2.30	.98928	.97877	.96848	.95839	.94850	.93880	.92929	.91995	.91079	.90180	.89298	.88431
2.40	.99180	.98374	.97580	.96800	.96031	.95275	.94530	.93797	.93074	.92363	.91662	.90971
2.50	.99379	.98766	.98161	.97564	.96974	.96391	.95816	.95247	.94686	.94131	.93583	.93042
2.60	.99534	.99072	.98616	.98164	.97716	.97273	.96834	.96399	.95969	.95542	.95120	.94702
2.70	.99653	.99309	.98968	.98630	.98294	.97960	.97630	.97301	.96976	.96652	.96332	.96013
2.80	.99744	.99491	.99238	.98987	.98738	.98490	.98244	.97999	.97756	.97514	.97273	.97034
2.90	.99813	.99628	.99443	.99259	.99076	.98894	.98712	.98532	.98352	.98173	.97995	.97818
3.00	.99865	.99730	.99596	.99463	.99330	.99197	.99065	.98934	.98802	.98672	.98541	.98412
3.10	.99903	.99807	.99710	.99614	.99519	.99423	.99328	.99233	.99139	.99044	.98950	.98856
3.20	.99931	.99863	.99794	.99726	.99658	.99590	.99522	.99454	.99387	.99319	.99252	.99185
3.30	.99952	.99903	.99855	.99807	.99759	.99711	.99663	.99615	.99568	.99520	.99472	.9942
3.40	.99966	.99933	.99899	.99865	.99832	.99798	.99765	.99731	.99698	.99665	.99631	.99598
3.50	.99977	.99953	.99930	.99907	.99884	.99861	.99838	.99814	.99791	.99768	.99745	.99722

$\rho = .125$

$-x$ \ ϱ	1	2	3	4	5	6	7	8	9	10	11	12
3.50	.00023	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.40	.00034	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.30	.00048	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.20	.00069	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.10	.00097	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
3.00	.00135	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.90	.00187	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.80	.00256	.00002	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.70	.00347	.00003	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.60	.00466	.00006	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.50	.00621	.00009	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.40	.00820	.00016	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

$\rho = .125$

$-x$ \ ϱ	1	2	3	4	5	6	7	8	9	10	11	12
2.30	.01072	.00025	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.20	.01390	.00040	.00002	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.10	.01786	.00064	.00004	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
2.00	.02275	.00098	.00007	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.90	.02872	.00149	.00012	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.80	.03593	.00224	.00021	.00003	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.70	.04457	.00330	.00036	.00005	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.60	.05480	.00480	.00059	.00010	.00002	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.50	.06681	.00686	.00097	.00018	.00004	.00001	.00000	.00000	.00000	.00000	.00000	.00000
1.40	.08076	.00967	.00155	.00031	.00008	.00002	.00001	.00000	.00000	.00000	.00000	.00000
1.30	.09680	.01343	.00244	.00054	.00014	.00004	.00001	.00001	.00000	.00000	.00000	.00000
1.20	.11507	.01838	.00375	.00093	.00027	.00009	.00003	.00001	.00001	.00000	.00000	.00000
1.10	.13567	.02479	.00566	.00154	.00048	.00017	.00006	.00003	.00001	.00001	.00000	.00000
1.00	.15866	.03295	.00838	.00250	.00085	.00032	.00013	.00006	.00003	.00001	.00001	.00000
0.90	.18406	.04318	.01217	.00396	.00145	.00058	.00025	.00012	.00006	.00003	.00002	.00001
0.80	.21186	.05580	.01734	.00614	.00241	.00103	.00047	.00023	.00012	.00006	.00004	.00002
0.70	.24196	.07112	.02425	.00930	.00392	.00178	.00087	.00045	.00024	.00013	.00008	.00005
0.60	.27425	.08942	.03330	.01377	.00620	.00300	.00154	.00083	.00047	.00027	.00016	.00010
0.50	.30854	.11096	.04491	.01997	.00958	.00490	.00264	.00149	.00088	.00053	.00033	.00021
0.40	.34458	.13589	.05951	.02833	.01444	.00779	.00441	.00260	.00159	.00100	.00065	.00043
0.30	.38209	.16432	.07749	.03936	.02124	.01205	.00714	.00439	.00279	.00182	.00122	.00083
0.20	.42074	.19623	.09923	.05356	.03050	.01817	.01125	.00720	.00474	.00320	.00221	.00155
0.10	.46017	.23152	.12499	.07144	.04281	.02670	.01722	.01144	.00780	.00544	.00387	.00280
0.00	.50000	.26995	.15492	.09344	.05875	.03825	.02566	.01766	.01244	.00894	.00654	.00486

x \ ϱ	1	2	3	4	5	6	7	8	9	10	11	12
0.00	.50000	.26995	.15492	.09344	.05875	.03825	.02566	.01766	.01244	.00894	.00654	.00486
0.10	.53983	.31117	.18905	.11992	.07885	.05346	.03721	.02650	.01925	.01424	.01070	.00815
0.20	.57926	.35475	.22724	.15106	.10360	.07296	.05258	.03865	.02892	.02198	.01694	.01322
0.30	.61791	.40014	.26919	.18692	.13332	.09729	.07242	.05486	.04220	.03291	.02598	.02074
0.40	.65542	.44673	.31443	.22733	.16815	.12685	.09734	.07583	.05987	.04783	.03863	.03150
0.50	.69146	.49388	.36235	.27192	.20804	.16185	.12777	.10217	.08265	.06755	.05573	.04636
0.60	.72575	.54092	.41221	.32011	.25264	.20223	.16390	.13430	.11114	.09279	.07809	.06619
0.70	.75804	.58719	.46321	.37115	.30142	.24769	.20568	.17239	.14570	.12407	.10637	.09177
0.80	.78814	.63209	.51449	.42414	.35357	.29764	.25274	.21629	.18641	.16167	.14103	.12368
0.90	.81594	.67506	.56519	.47811	.40814	.35121	.30441	.26555	.23300	.20554	.18220	.16223
1.00	.84134	.71564	.61450	.53204	.46404	.40737	.35973	.31935	.28487	.25524	.22961	.20733
1.10	.86433	.75346	.66170	.58495	.52013	.46493	.41756	.37663	.34105	.30995	.28263	.25850
1.20	.88493	.78824	.70618	.63593	.57531	.52264	.47659	.43610	.40032	.36856	.34023	.31487
1.30	.90320	.81983	.74746	.68419	.62853	.57929	.53549	.49637	.46127	.42966	.40108	.37517
1.40	.91924	.84816	.78520	.72912	.67891	.63376	.59299	.55603	.52241	.49174	.46366	.43790
1.50	.93319	.87325	.81920	.77025	.72574	.68512	.64792	.61377	.58230	.55325	.52636	.50141
1.60	.94520	.89520	.84940	.80731	.76850	.73261	.69935	.66843	.63963	.61276	.58762	.56407

$\rho = .875$

-x \ ℓ	1	2	3	4	5	6	7	8	9	10	11	12
0.50	.30854	.23775	.20554	.18602	.17250	.16239	.15444	.14796	.14253	.13790	.13387	.13033
0.40	.34458	.27046	.23607	.21500	.20030	.18925	.18051	.17337	.16737	.16224	.15777	.15382
0.30	.38209	.30527	.26894	.24644	.23063	.21867	.20919	.20140	.19484	.18921	.18430	.17996
0.20	.42074	.34194	.30396	.28018	.26336	.25057	.24038	.23198	.22489	.21878	.21344	.20872
0.10	.46017	.38015	.34086	.31601	.29830	.28476	.27393	.26498	.25739	.25084	.24511	.24001
0.00	.50000	.41957	.37935	.35365	.33521	.32104	.30965	.30020	.29218	.28523	.27913	.27370

x \ ℓ	1	2	3	4	5	6	7	8	9	10	11	12
0.00	.50000	.41957	.37935	.35365	.33521	.32104	.30965	.30020	.29218	.28523	.27913	.27370
0.10	.53983	.45981	.41908	.39278	.37378	.35910	.34726	.33740	.32900	.32171	.31529	.30958
0.20	.57926	.50046	.45963	.43301	.41365	.39861	.38643	.37625	.36755	.35999	.35332	.34736
0.30	.61791	.54109	.50061	.47395	.45442	.43918	.42679	.41639	.40749	.39972	.39286	.38671
0.40	.65542	.58130	.54157	.51516	.49568	.48040	.46792	.45742	.44840	.44052	.43353	.42727
0.50	.69146	.62068	.58210	.55620	.53697	.52182	.50939	.49891	.48987	.48195	.47491	.46860
0.60	.72575	.65883	.62176	.59664	.57787	.56300	.55076	.54039	.53144	.52357	.51656	.51027
0.70	.75804	.69542	.66017	.63606	.61793	.60350	.59157	.58144	.57266	.56493	.55803	.55182
0.80	.78814	.73015	.69698	.67409	.65676	.64291	.63141	.62161	.61309	.60558	.59886	.59280
0.90	.81594	.76276	.73189	.71038	.69400	.68084	.66987	.66050	.65233	.64511	.63864	.63278
1.00	.84134	.79309	.76464	.74465	.72933	.71696	.70662	.69775	.69000	.68313	.67696	.67137
1.10	.86433	.82099	.79505	.77667	.76249	.75099	.74134	.73304	.72576	.71930	.71348	.70821
1.20	.88493	.84639	.82299	.80626	.79328	.78271	.77380	.76611	.75936	.75334	.74792	.74299
1.30	.90320	.86928	.84839	.83333	.82157	.81195	.80381	.79677	.79057	.78503	.78003	.77548
1.40	.91924	.88969	.87124	.85782	.84729	.83863	.83128	.82490	.81926	.81422	.80966	.80550
1.50	.93319	.90771	.89158	.87975	.87041	.86270	.85613	.85041	.84535	.84081	.83669	.83293
1.60	.94520	.92345	.90949	.89918	.89099	.88419	.87839	.87332	.86882	.86477	.86110	.85773
1.70	.95543	.93705	.92511	.91621	.90910	.90318	.89810	.89365	.88970	.88613	.88289	.87991
1.80	.96407	.94870	.93858	.93098	.92488	.91977	.91538	.91152	.90808	.90497	.90213	.89953
1.90	.97128	.95856	.95007	.94366	.93847	.93412	.93036	.92704	.92408	.92140	.91895	.91670
2.00	.97725	.96682	.95978	.95442	.95006	.94639	.94320	.94039	.93787	.93558	.93349	.93156
2.10	.98214	.97368	.96790	.96346	.95984	.95677	.95410	.95174	.94962	.94769	.94592	.94428
2.20	.98610	.97930	.97461	.97098	.96800	.96546	.96325	.96129	.95952	.95791	.95643	.95506
2.30	.98928	.98388	.98010	.97716	.97474	.97267	.97085	.96924	.96778	.96645	.96523	.96409
2.40	.99180	.98756	.98455	.98220	.98024	.97857	.97710	.97578	.97460	.97351	.97251	.97158
2.50	.99379	.99048	.98812	.98625	.98469	.98335	.98217	.98112	.98016	.97928	.97847	.97772
2.60	.99534	.99279	.99095	.98948	.98825	.98719	.98626	.98542	.98465	.98395	.98330	.98270
2.70	.99653	.99459	.99317	.99203	.99107	.99024	.98951	.98884	.98824	.98769	.98717	.98669
2.80	.99744	.99598	.99489	.99402	.99328	.99264	.99206	.99155	.99108	.99064	.99024	.98986
2.90	.99813	.99704	.99622	.99555	.99499	.99450	.99406	.99366	.99329	.99296	.99265	.99235
3.00	.99865	.99784	.99722	.99673	.99630	.99593	.99559	.99529	.99501	.99475	.99451	.99429
3.10	.99903	.99844	.99798	.99761	.99729	.99701	.99676	.99653	.99632	.99613	.99595	.99578
3.20	.99931	.99888	.99855	.99828	.99804	.99783	.99764	.99747	.99732	.99717	.99703	.99691
3.30	.99952	.99921	.99897	.99877	.99859	.99844	.99830	.99818	.99806	.99795	.99785	.99776
3.40	.99966	.99944	.99927	.99913	.99900	.99889	.99879	.99870	.99861	.99853	.99846	.99839
3.50	.99977	.99961	.99949	.99939	.99930	.99922	.99915	.99908	.99902	.99896	.99891	.99886

$\rho = .900$

-x \ ℓ	1	2	3	4	5	6	7	8	9	10	11	12
3.50	.00023	.00009	.00006	.00004	.00003	.00003	.00002	.00002	.00002	.00002	.00002	.00002
3.40	.00034	.00014	.00009	.00006	.00005	.00004	.00004	.00003	.00003	.00003	.00003	.00002
3.30	.00048	.00020	.00013	.00010	.00008	.00007	.00006	.00005	.00005	.00004	.00004	.00004
3.20	.00069	.00029	.00019	.00014	.00012	.00010	.00009	.00008	.00007	.00007	.00006	.00006
3.10	.00097	.00043	.00028	.00021	.00018	.00015	.00013	.00012	.00011	.00010	.00009	.00009
3.00	.00135	.00061	.00041	.00031	.00026	.00022	.00020	.00018	.00016	.00015	.00014	.00013
2.90	.00187	.00087	.00059	.00046	.00038	.00033	.00029	.00026	.00024	.00023	.00021	.00020
2.80	.00256	.00122	.00084	.00066	.00055	.00048	.00043	.00039	.00036	.00033	.00031	.00029
2.70	.00347	.00170	.00119	.00094	.00079	.00069	.00062	.00056	.00052	.00048	.00045	.00043
2.60	.00466	.00235	.00166	.00132	.00112	.00098	.00088	.00080	.00074	.00069	.00065	.00062
2.50	.00621	.00322	.00230	.00184	.00157	.00138	.00124	.00114	.00106	.00099	.00093	.00088
2.40	.00820	.00436	.00315	.00255	.00218	.00193	.00174	.00160	.00149	.00140	.00132	.00125
2.30	.01072	.00585	.00428	.00349	.00300	.00266	.00242	.00223	.00208	.00195	.00185	.00176
2.20	.01390	.00778	.00576	.00473	.00409	.00365	.00332	.00307	.00287	.00270	.00256	.00244
2.10	.01786	.01024	.00768	.00635	.00552	.00494	.00452	.00418	.00392	.00370	.00351	.00335
2.00	.02275	.01336	.01013	.00844	.00738	.00663	.00608	.00565	.00530	.00501	.00477	.00456
1.90	.02872	.01727	.01325	.01111	.00976	.00882	.00811	.00755	.00710	.00673	.00642	.00615
1.80	.03593	.02211	.01715	.01450	.01280	.01160	.01071	.01000	.00943	.00895	.00855	.00820
1.70	.04457	.02806	.02201	.01873	.01662	.01513	.01400	.01311	.01239	.01179	.01128	.01084
1.60	.05480	.03527	.02797	.02397	.02138	.01953	.01814	.01703	.01613	.01538	.01473	.01418
1.50	.06681	.04395	.03522	.03039	.02724	.02499	.02327	.02191	.02079	.01986	.01906	.01837
1.40	.08076	.05427	.04395	.03818	.03439	.03166	.02957	.02791	.02655	.02541	.02443	.02358
1.30	.09680	.06641	.05434	.04752	.04300	.03974	.03723	.03523	.03359	.03220	.03101	.02998
1.20	.11507	.08056	.06659	.05860	.05329	.04942	.04644	.04406	.04209	.04043	.03900	.03776
1.10	.13567	.09687	.08086	.07162	.06543	.06090	.05739	.05458	.05225	.05028	.04858	.04710
1.00	.15866	.11549	.09734	.08675	.07961	.07436	.07028	.06700	.06427	.06196	.05996	.05822
0.90	.18406	.13652	.11615	.10415	.09600	.08998	.08529	.08149	.07833	.07565	.07333	.07130
0.80	.21186	.16002	.13740	.12395	.11474	.10791	.10257	.09823	.09462	.09153	.08886	.08652
0.70	.24196	.18602	.16116	.14624	.13595	.12829	.12226	.11736	.11326	.10976	.10672	.10405
0.60	.27425	.21448	.18746	.17107	.15970	.15118	.14447	.13899	.13439	.13046	.12703	.12402
0.50	.30854	.24533	.21624	.19844	.18601	.17665	.16925	.16318	.15808	.15370	.14989	.14652
0.40	.34458	.27841	.24743	.22829	.21484	.20467	.19659	.18995	.18435	.17954	.17533	.17161
0.30	.38209	.31352	.28088	.26051	.24611	.23517	.22645	.21926	.21318	.20794	.20335	.19929
0.20	.42074	.35040	.31636	.29492	.27967	.26803	.25871	.25100	.24447	.23883	.23388	.22949
0.10	.46017	.38875	.35361	.33129	.31530	.30304	.29319	.28502	.27808	.27207	.26680	.26210
0.00	.50000	.42822	.39233	.36931	.35274	.33996	.32967	.32110	.31380	.30747	.30189	.29693

x \ ℓ	1	2	3	4	5	6	7	8	9	10	11	12
0.00	.50000	.42822	.39233	.36931	.35274	.33996	.32967	.32110	.31380	.30747	.30189	.29693
0.10	.53983	.46841	.43213	.40866	.39165	.37848	.36783	.35894	.35135	.34475	.33892	.33373
0.20	.57926	.50892	.47263	.44894	.43168	.41825	.40734	.39822	.39040	.38359	.37758	.37220
0.30	.61791	.54934	.51341	.48976	.47241	.45886	.44782	.43855	.43059	.42364	.41749	.41198
0.40	.65542	.58925	.55405	.53068	.51344	.49991	.48884	.47953	.47151	.46450	.45827	.45269

$\rho = .900$

x \ ℓ	1	2	3	4	5	6	7	8	9	10	11	12
0.50	.69146	.62825	.59412	.57127	.55431	.54095	.52998	.52072	.51273	.50572	.49950	.49390
0.60	.72575	.66597	.63323	.61112	.59462	.58155	.57079	.56168	.55381	.54689	.54072	.53517
0.70	.75804	.70209	.67099	.64982	.63393	.62130	.61086	.60200	.59431	.58754	.58151	.57607
0.80	.78814	.73631	.70708	.68703	.67189	.65980	.64978	.64124	.63383	.62728	.62143	.61615
0.90	.81594	.76840	.74122	.72241	.70814	.69670	.68718	.67905	.67197	.66570	.66009	.65502
1.00	.84134	.79818	.77317	.75572	.74241	.73169	.72274	.71508	.70839	.70246	.69714	.69232
1.10	.86433	.82554	.80276	.78674	.77446	.76452	.75620	.74905	.74280	.73725	.73226	.72773
1.20	.88493	.85042	.82988	.81533	.80411	.79500	.78734	.78075	.77497	.76982	.76519	.76098
1.30	.90320	.87281	.85449	.84141	.83127	.82300	.81603	.81001	.80472	.80000	.79575	.79188
1.40	.91924	.89275	.87658	.86494	.85587	.84845	.84217	.83674	.83195	.82767	.82380	.82028
1.50	.93319	.91033	.89620	.88596	.87793	.87134	.86574	.86089	.85660	.85276	.84929	.84611
1.60	.94520	.92568	.91345	.90453	.89751	.89171	.88678	.88248	.87868	.87527	.87218	.86936
1.70	.95543	.93893	.92847	.92078	.91469	.90965	.90534	.90159	.89826	.89526	.89254	.89005
1.80	.96407	.95025	.94139	.93483	.92962	.92528	.92156	.91831	.91542	.91282	.91045	.90828
1.90	.97128	.95984	.95241	.94687	.94245	.93875	.93558	.93280	.93032	.92808	.92604	.92417
2.00	.97725	.96786	.96170	.95708	.95336	.95025	.94757	.94521	.94310	.94120	.93946	.93786
2.10	.98214	.97451	.96946	.96563	.96255	.95995	.95771	.95573	.95396	.95236	.95090	.94955
2.20	.98610	.97997	.97586	.97273	.97020	.96806	.96620	.96456	.96309	.96176	.96054	.95941
2.30	.98928	.98440	.98110	.97857	.97650	.97476	.97324	.97189	.97068	.96958	.96858	.96764
2.40	.99180	.98796	.98533	.98331	.98165	.98024	.97901	.97791	.97693	.97603	.97521	.97445
2.50	.99379	.99080	.98873	.98712	.98580	.98467	.98368	.98281	.98201	.98129	.98063	.98001
2.60	.99534	.99303	.99142	.99015	.98911	.98822	.98744	.98674	.98611	.98553	.98500	.98451
2.70	.99653	.99477	.99352	.99254	.99173	.99103	.99042	.98987	.98937	.98892	.98850	.98811
2.80	.99744	.99611	.99516	.99441	.99378	.99324	.99276	.99234	.99195	.99159	.99127	.99096
2.90	.99813	.99714	.99642	.99585	.99537	.99495	.99459	.99426	.99396	.99368	.99343	.99319
3.00	.99865	.99791	.99737	.99694	.99658	.99627	.99599	.99574	.99551	.99530	.99510	.99492
3.10	.99903	.99849	.99809	.99777	.99750	.99727	.99706	.99687	.99669	.99654	.99639	.99625
3.20	.99931	.99892	.99863	.99839	.99819	.99802	.99786	.99772	.99759	.99747	.99736	.99726
3.30	.99952	.99923	.99902	.99885	.99870	.99857	.99846	.99836	.99826	.99817	.99809	.99801
3.40	.99966	.99946	.99931	.99919	.99908	.99899	.99890	.99883	.99876	.99869	.99863	.99858
3.50	.99977	.99963	.99952	.99943	.99935	.99929	.99923	.99917	.99912	.99907	.99903	.99899

Adapted from S. S. Gupta, Probability integrals of multivariate normal and multivariate t, *Ann. Math. Statist.* **34**, 792-828 (1963), with the permission of the author, and the editor of *The Annals of Mathematical Statistics.*

23 *Selected critical values for the maximum absolute value of* ℓ $N(0, 1)$ *random variables with common correlation* ρ

$\rho = (1/2)$, $\ell = 1(1)12, 15, 20$

For a given ℓ and α, the tabular value is $|m|$ $(\alpha, \ell, 1/2)$.

	α	
ℓ	.01	.05
1	2.58	1.96
2	2.79	2.21
3	2.92	2.35
4	3.00	2.44
5	3.06	2.51
6	3.11	2.57
7	3.15	2.61
8	3.19	2.65
9	3.22	2.69
10	3.25	2.72
11	3.27	2.74
12	3.29	2.77
15	3.35	2.83
20	3.42	2.91

Adapted from C. W. Dunnett, New tables for multiple comparisons with a control, *Biometrics* **20**, 482-91 (1964), with the permission of the author, and the editor of *Biometrics.*

24 *Selected critical values for the null distribution of Jonckheere's J statistic:* $k = 3, 2 \leq n_1 \leq n_2 \leq n_3 \leq 8; k = 4, 5, 6, n_1 = \cdots = n_k = 2(1)6$

For given k, α and sample sizes $n_1, \ldots, n_k$, the tabled entry is $j(\alpha, k, (n_1, \ldots, n_k))$ satisfying $P_0\{J \geq j(\alpha, k, (n_1, \ldots, n_k))\} = \alpha$.

$k = 3$

n_1 n_2 n_3	α	$j(\alpha, 3, (n_1, n_2, n_3))$
2 2 2	.5778	6
	.4222	7
	.2889	8
	.1667	9
	.0889	10
	.0333	11
	.0111	12
2 2 3	.5619	8
	.4381	9
	.2191	11
	.1381	12
	.0762	13
	.0381	14
	.0143	15
	.0048	16
2 2 4	.5524	10
	.4476	11
	.2571	13
	.1810	14
	.1167	15
	.0714	16
	.0381	17
	.0191	18
	.0071	19
	.0024	20
2 2 5	.5450	12
	.4550	13
	.2156	16
	.1534	17
	.1045	18
	.0661	19
	.0397	20
	.0212	21
	.0106	22
	.0040	23

$k = 3$

n_1 n_2 n_3	α	$j(\alpha, 3, (n_1, n_2, n_3))$
2 2 6	.5397	14
	.4603	15
	.2444	18
	.1849	19
	.1357	20
	.0944	21
	.0635	22
	.0397	23
	.0238	24
	.0127	25
	.0064	26
	.0024	27
2 2 7	.5354	16
	.4647	17
	.2121	21
	.1636	22
	.1217	23
	.0879	24
	.0606	25
	.0404	26
	.0253	27
	.0152	28
	.0081	29
	.0040	30
2 2 8	.5320	18
	.4680	19
	.2354	23
	.1886	24
	.1118	26
	.0822	27
	.0589	28
	.0404	29
	.0269	30
	.0168	31
	.0101	32
	.0054	33
	.0027	34

$k = 3$

n_1 n_2 n_3	α	$j(\alpha, 3, (n_1, n_2, n_3))$
2 3 3	.5000	11
	.4000	12
	.2214	14
	.1518	15
	.0964	16
	.0571	17
	.0304	18
	.0143	19
	.0054	20
	.0018	21
2 3 4	.5429	13
	.4571	14
	.2222	17
	.1619	18
	.1119	19
	.0738	20
	.0452	21
	.0262	22
	.0135	23
	.0064	24
	.0024	25
2 3 5	.5000	16
	.4250	17
	.2230	20
	.1694	21
	.1242	22
	.0877	23
	.0591	24
	.0381	25
	.0230	26
	.0131	27
	.0068	28
	.0032	29
2 3 6	.5336	18
	.4665	19
	.2234	23
	.1755	24
	.1340	25
	.0996	26
	.0714	27
	.0496	28

$k = 3$

n_1 n_2 n_3	α	$j(\alpha, 3, (n_1, n_2, n_3))$
2 3 6	.0329	29
	.0210	30
	.0126	31
	.0071	32
	.0037	33
2 3 7	.5000	21
	.4400	22
	.2237	26
	.1803	27
	.1096	29
	.0823	30
	.0602	31
	.0427	32
	.0293	33
	.0193	34
	.0123	35
	.0073	36
	.0042	37
2 3 8	.5273	23
	.4727	24
	.2239	29
	.1843	30
	.1183	32
	.0919	33
	.0520	35
	.0377	36
	.0265	37
	.0181	38
	.0119	39
	.0075	40
	.0045	41
2 4 4	.5375	16
	.4625	17
	.2559	20
	.1981	21
	.1079	23
	.0756	24
	.0502	25
	.0321	26
	.0191	27
	.0108	28