PROBABILITIES FOR THE χ^2 DISTRIBUTION $[\chi^2_\nu]$

[Calculated with *qchisq* in **Splus** V3.0R1 using 17-digit arithmetic; accuracy of all digits in the table entries has *not* been verified]

Each table entry is the value (y) of the random variable $Y \sim \chi^2_\nu$ such that $\Pr(Y \le y)$ = the probability given in the column heading

Df (ν)	0.50	0.60	0.70	0.75	0.80	0.85	0.90	0.95	***0.975***	0.99	***0.995***	0.999	0.999 5	0.999 9	0.999 95	0.999 99	0.999 995	0.999 999	
1	.454 936	.708 326	1.07 419	1.32 330	1.64 237	2.07 225	2.70 554	3.84 146	*5.02 389*	6.63 490	*7.87 944*	10.8 276	12.1 157	15.1 367	16.4 481	19.5 114	20.8 373	23.9 281	1
2	1.38 629	1.83 258	2.40 795	2.77 259	3.21 888	3.79 424	4.60 517	5.99 146	*7.37 776*	9.21 034	*10.5 966*	13.8 155	15.2 018	18.4 207	19.8 070	23.0 259	24.4 121	27.6 310	
3	2.36 597	2.94 617	3.66 487	4.10 834	4.64 163	5.31 705	6.25 139	7.81 473	*9.34 840*	11.3 449	*12.8 382*	16.2 662	17.7 300	21.1 075	22.5 547	25.9 017	27.3 384	30.6 648	
4	3.35 669	4.04 463	4.87 843	5.38 527	5.98 862	6.74 488	7.77 944	9.48 773	*11.1 433*	13.2 767	*14.8 603*	18.4 668	19.9 974	23.5 127	25.0 133	28.4 733	29.9 545	33.3 768	
5	4.35 146	5.13 187	6.06 443	6.62 568	7.28 928	8.11 520	9.23 636	11.0 705	*12.8 325*	15.0 863	*16.7 496*	20.5 150	22.1 053	25.7 448	27.2 937	30.8 562	32.3 781	35.8 882	5
6	5.34 812	6.21 076	7.23 114	7.84 080	8.55 806	9.44 610	10.6 446	12.5 916	*14.4 494*	16.8 119	*18.5 476*	22.4 577	24.1 028	27.8 563	29.4 497	33.1 071	34.6 667	38.2 583	
7	6.34 581	7.28 321	8.38 343	9.03 715	9.80 325	10.7 479	12.0 170	14.0 671	*16.0 128*	18.4 753	*20.2 777*	24.3 219	26.0 178	29.8 775	31.5 124	35.2 585	36.8 535	40.5 218	
8	7.34 412	8.35 053	9.52 446	10.2 189	11.0 301	12.0 271	13.3 616	15.5 073	*17.5 345*	20.0 902	*21.9 550*	26.1 245	27.8 680	31.8 276	33.5 017	37.3 316	38.9 600	42.7 009	
9	8.34 283	9.41 364	10.6 564	11.3 888	12.2 421	13.2 880	14.6 837	16.9 190	*19.0 228*	21.6 660	*23.5 894*	27.8 772	29.6 658	33.7 199	35.4 312	39.3 407	41.0 009	44.8 109	
10	9.34 182	10.4 732	11.7 807	12.5 489	13.4 420	14.5 339	15.9 872	18.3 070	*20.4 831*	23.2 092	*25.1 882*	29.5 883	31.4 198	35.5 640	37.3 107	41.2 962	42.9 869	46.8 630	10
11	10.3 410	11.5 298	12.8 987	13.7 007	14.6 314	15.7 671	17.2 750	19.6 751	*21.9 200*	24.7 249	*26.7 568*	31.2 641	33.1 366	37.3 670	39.1 476	43.2 060	44.9 259	48.8 656	
12	11.3 403	12.5 838	14.0 111	14.8 454	15.8 120	16.9 893	18.5 493	21.0 260	*23.3 366*	26.2 169	*28.2 995*	32.9 095	34.8 213	39.1 344	40.9 476	45.0 761	46.8 242	50.8 253	
13	12.3 398	13.6 356	15.1 187	15.9 839	16.9 848	18.2 020	19.8 119	22.3 620	*24.7 356*	27.6 882	*29.8 195*	34.5 282	36.4 778	40.8 707	42.7 153	46.9 116	48.6 868	52.7 471	
14	13.3 393	14.6 853	16.2 221	17.1 169	18.1 508	19.4 062	21.0 641	23.6 848	*26.1 189*	29.1 412	*31.3 193*	36.1 233	38.1 094	42.5 793	44.4 544	48.7 161	50.5 176	54.6 353	
15	14.3 389	15.7 332	17.3 217	18.2 451	19.3 107	20.6 030	22.3 071	24.9 958	*27.4 884*	30.5 779	*32.8 013*	37.6 973	39.7 188	44.2 632	46.1 678	50.4 930	52.3 201	56.4 934	15
16	15.3 385	16.7 795	18.4 179	19.3 689	20.4 651	21.7 930	23.5 418	26.2 962	*28.8 453*	31.9 999	*34.2 672*	39.2 524	41.3 081	45.9 249	47.8 581	52.2 450	54.0 968	58.3 244	
17	16.3 382	17.8 244	19.5 110	20.4 887	21.6 146	22.9 770	24.7 690	27.5 871	*30.1 910*	33.4 087	*35.7 185*	40.7 902	42.8 792	47.5 664	49.5 274	53.9 743	55.8 503	60.1 306	
18	17.3 379	18.8 679	20.6 014	21.6 049	22.7 595	24.1 555	25.9 894	28.8 693	*31.5 264*	34.8 053	*37.1 565*	42.3 124	44.4 338	49.1 894	51.1 775	55.6 829	57.5 824	61.9 142	
19	18.3 377	19.9 102	21.6 891	22.7 178	23.9 004	25.3 288	27.2 036	30.1 435	*32.8 523*	36.1 909	*38.5 823*	43.8 202	45.9 731	50.7 955	52.8 100	57.3 725	59.2 950	63.6 771	
20	19.3 374	20.9 514	22.7 745	23.8 277	25.0 375	26.4 976	28.4 120	31.4 104	*34.1 696*	37.5 662	*39.9 968*	45.3 147	47.4 985	52.3 860	54.4 263	59.0 446	60.9 895	65.4 207	20
21	20.3 372	21.9 915	23.8 578	24.9 348	26.1 711	27.6 620	29.6 151	32.6 706	*35.4 789*	38.9 322	*41.4 011*	46.7 970	49.0 108	53.9 620	56.0 276	60.7 003	62.6 673	67.1 465	
22	21.3 370	23.0 307	24.9 390	26.0 393	27.3 014	28.8 224	30.8 133	33.9 244	*36.7 807*	40.2 894	*42.7 957*	48.2 679	50.5 111	55.5 246	57.6 149	62.3 410	64.3 295	68.8 558	
23	22.3 369	24.0 689	26.0 184	27.1 413	28.4 288	29.9 792	32.0 069	35.1 725	*38.0 756*	41.6 384	*44.1 813*	49.7 282	52.0 002	57.0 746	59.1 891	63.9 675	65.9 771	70.5 496	
24	23.3 367	25.1 063	27.0 960	28.2 411	29.5 533	31.1 325	33.1 962	36.4 150	*39.3 641*	42.9 798	*45.5 585*	51.1 786	53.4 788	58.6 130	60.7 512	65.5 808	67.6 111	72.2 289	
25	24.3 366	26.1 430	28.1 719	29.3 388	30.6 752	32.2 825	34.3 816	37.6 525	*40.6 465*	44.3 141	*46.9 279*	52.6 197	54.9 475	60.1 403	62.3 017	67.1 818	69.2 323	73.8 945	25
26	25.3 365	27.1 789	29.2 463	30.4 346	31.7 946	33.4 295	35.5 632	38.8 851	*41.9 232*	45.6 417	*48.2 899*	54.0 520	56.4 069	61.6 573	63.8 415	68.7 710	70.8 415	75.5 474	
27	26.3 363	28.2 141	30.3 193	31.5 284	32.9 117	34.5 736	36.7 412	40.1 133	*43.1 945*	46.9 629	*49.6 449*	55.4 760	57.8 576	63.1 645	65.3 712	70.3 492	72.4 393	77.1 882	
28	27.3 362	29.2 486	31.3 909	32.6 205	34.0 266	35.7 150	37.9 159	41.3 371	*44.4 608*	48.2 782	*50.9 934*	56.8 923	59.3 000	64.6 624	66.8 912	71.9 170	74.0 263	78.8 175	
29	28.3 361	30.2 825	32.4 612	33.7 109	35.1 394	36.8 538	39.0 875	42.5 570	*45.7 223*	49.5 879	*52.3 356*	58.3 012	60.7 346	66.1 517	68.4 022	73.4 749	75.6 032	80.4 360	
30	29.3 360	31.3 159	33.5 302	34.7 997	36.2 502	37.9 902	40.2 560	43.7 730	*46.9 792*	50.8 922	*53.6 720*	59.7 031	62.1 619	67.6 326	69.9 045	75.0 234	77.1 704	82.0 441	30
32	31.3 359	33.3 809	35.6 649	36.9 730	38.4 663	40.2 563	42.5 847	46.1 943	*49.4 804*	53.4 858	*56.3 281*	62.4 872	64.9 955	70.5 712	72.8 848	78.0 942	80.2 777	85.2 316	
34	33.3 357	35.4 438	37.7 954	39.1 408	40.6 756	42.5 140	44.9 032	48.6 024	*51.9 660*	56.0 609	*58.9 639*	65.2 472	67.8 035	73.4 812	75.8 353	81.1 325	83.3 516	88.3 833	
36	35.3 356	37.5 049	39.9 220	41.3 036	42.8 788	44.7 641	47.2 122	50.9 985	*54.4 373*	58.6 192	*61.5 812*	67.9 852	70.5 881	76.3 650	78.7 585	84.1 412	86.3 948	91.5 024	
38	37.3 355	39.5 643	42.0 450	43.4 619	45.0 763	47.0 072	49.5 126	53.3 835	*56.8 955*	61.1 621	*64.1 814*	70.7 029	73.3 512	79.2 247	81.6 567	87.1 227	89.4 100	94.5 915	
40	39.3 353	41.6 222	44.1 649	45.6 160	47.2 685	49.2 438	51.8 051	55.7 585	*59.3 417*	63.6 907	*66.7 660*	73.4 020	76.0 946	82.0 623	84.5 318	90.0 791	92.3 993	97.6 530	40
42	41.3 352	43.6 786	46.2 817	47.7 662	49.4 560	51.4 746	54.0 902	58.1 240	*61.7 768*	66.2 062	*69.3 360*	76.0 838	78.8 197	84.8 793	87.3 854	93.0 122	95.3 645	100. 689	
44	43.3 352	45.7 336	48.3 957	49.9 129	51.6 389	53.6 998	56.3 685	60.4 809	*64.2 015*	68.7 095	*71.8 926*	78.7 495	81.5 277	87.6 773	90.2 192	95.9 236	98.3 073	103. 701	
46	45.3 351	47.7 874	50.5 071	52.0 562	53.8 177	55.9 199	58.6 405	62.8 296	*66.6 165*	71.2 014	*74.4 365*	81.4 003	84.2 198	90.4 574	93.0 343	98.8 148	101. 229	106. 690	
48	47.3 350	49.8 401	52.6 161	54.1 964	55.9 926	58.1 352	60.9 066	65.1 708	*69.0 226*	73.6 826	*76.9 688*	84.0 371	86.8 971	93.2 209	95.8 322	101. 687	104. 132	109. 659	
50	49.3 349	51.8 916	54.7 228	56.3 336	58.1 638	60.3 460	63.1 671	67.5 048	*71.4 202*	76.1 539	*79.4 900*	86.6 608	89.5 605	95.9 687	98.6 136	104. 542	107. 016	112. 608	50
55	54.3 348	57.0 160	59.9 805	61.6 650	63.5 772	65.8 550	68.7 962	73.3 115	*77.3 805*	82.2 921	*85.7 490*	93.1 675	96.1 632	102. 776	105. 502	111. 607	114. 153	119. 902	
60	59.3 347	62.1 348	65.2 265	66.9 815	68.9 721	71.3 411	74.3 970	79.0 819	*83.2 977*	88.3 794	*91.9 517*	99.6 072	102. 695	109. 503	112. 307	118. 582	121. 196	127. 097	
65	64.3 346	67.2 488	70.4 624	72.2 848	74.3 506	76.8 071	79.9 730	84.8 206	*89.1 771*	94.4 221	*98.1 051*	105. 988	109. 164	116. 160	119. 039	125. 476	128. 157	134. 202	
70	69.3 345	72.3 583	75.6 893	77.5 767	79.7 146	82.2 554	85.5 270	90.5 312	*95.0 232*	100. 425	*104. 215*	112. 317	115. 578	122. 755	125. 706	132. 300	135. 044	141. 230	
75	74.3 344	77.4 640	80.9 081	82.8 581	85.0 658	87.6 877	91.0 615	96.2 167	*100. 839*	106. 393	*110. 286*	118. 599	121. 942	129. 294	132. 315	139. 060	141. 866	148. 187	75
80	79.3 343	82.5 662	86.1 197	88.1 303	90.4 053	93.1 058	96.5 782	101. 879	*106. 629*	112. 329	*116. 321*	124. 839	128. 261	135. 783	138. 871	145. 764	148. 629	155. 081	
85	84.3 343	87.6 653	91.3 247	93.3 939	95.7 343	98.5 108	102. 079	107. 522	*112. 393*	118. 236	*122. 325*	131. 041	134. 540	142. 226	145. 380	152. 415	155. 338	161. 917	
90	89.3 342	92.7 614	96.5 238	98.6 499	101. 054	103. 904	107. 565	113. 145	*118. 136*	124. 116	*128. 299*	137. 208	140. 782	148. 627	151. 845	159. 019	161. 998	168. 701	
95	94.3 342	97.8 549	101. 717	103. 899	106. 364	109. 286	113. 038	118. 752	*123. 858*	129. 973	*134. 247*	143. 344	146. 990	154. 991	158. 271	165. 579	168. 613	175. 436	
99	98.3 341	101. 928	105. 868	108. 093	110. 607	113. 585	117. 407	123. 225	*128. 422*	134. 642	*138. 987*	148. 230	151. 934	160. 056	163. 384	170. 798	173. 875	180. 792	99
100	99.3 341	102. 946	106. 906	109. 141	111. 667	114. 659	118. 498	124. 342	*129. 561*	135. 807	*140. 169*	149. 449	153. 167	161. 319	164. 659	172. 099	175. 186	182. 127	100
125	124. 334	128. 370	132. 784	135. 271	138. 076	141. 394	145. 643	152. 094	*157. 839*	164. 694	*169. 471*	179. 604	183. 653	192. 511	196. 134	204. 188	207. 525	215. 015	
150	149. 334	153. 753	158. 577	161. 291	164. 349	167. 962	172. 581	179. 581	*185. 800*	193. 208	*198. 360*	209. 265	213. 613	223. 112	226. 991	235. 602	239. 164	247. 153	
200	199. 334	204. 434	209. 985	213. 102	216. 609	220. 744	226. 021	233. 994	*241. 058*	249. 445	*255. 264*	267. 541	272. 423	283. 060	287. 394	296. 997	300. 962	309. 838	
250	249. 334	255. 033	261. 225	264. 697	268. 599	273. 194	279. 050	287. 881	*295. 689*	304. 940	*311. 346*	324. 832	330. 185	341. 828	346. 563	357. 042	361. 363	371. 024	250
								90% CI	95% CI		99% CI								

χ^2_ν right half

University of Waterloo

W.H. Cherry

(*continued overleaf*)