

Table of the χ^2 Distribution

If X has a χ^2 distribution with n degrees of freedom, this table gives the value of x such that $\Pr(X \leq x) = p$.

n	p	.005	.01	.025	.05	.10	.20	.25	.30	.40
1	.0000	.0002	.0010	.0039	.0158	.0642	.1015	.1484	.1950	.2750
2	.0100	.0201	.0306	.1026	.2107	.4463	.5754	.7133	1.022	1.879
3	.0177	.0348	.0541	.1382	.2767	.5091	.6745	.8535	1.108	2.366
4	.0270	.0541	.0844	.1923	.3548	.6368	.8787	1.133	1.486	2.878
5	.4117	.5543	.8312	1.145	1.610	2.343	2.675	3.000	3.655	4.351
6	.6757	.8721	1.237	1.635	2.204	3.070	3.455	3.828	4.570	5.209
7	.9893	1.239	1.690	2.167	2.833	3.822	4.255	4.671	5.493	6.346
8	1.344	1.647	2.180	2.732	3.490	4.594	5.071	5.527	6.423	7.344
9	1.735	2.088	2.700	3.325	4.168	5.380	5.899	6.393	7.357	8.342
10	2.156	2.558	3.247	3.940	4.865	6.179	6.737	7.267	8.295	9.342
11	2.603	3.053	3.816	4.575	5.578	6.989	7.584	8.148	9.237	10.34
12	3.074	3.571	4.404	5.226	6.304	7.807	8.438	9.034	10.18	11.34
13	3.565	4.107	5.009	5.892	7.042	8.634	9.299	9.926	11.13	12.34
14	4.075	4.660	5.629	6.571	7.790	9.467	10.17	10.82	12.08	13.34
15	4.601	5.229	6.262	7.261	8.547	10.31	11.04	11.72	13.03	14.34
16	5.142	5.812	6.908	7.962	9.312	11.15	11.91	12.62	13.98	15.34
17	5.697	6.408	7.564	8.672	10.09	12.00	12.79	13.53	14.94	16.34
18	6.265	7.015	8.231	9.390	10.86	12.86	13.68	14.43	15.89	17.34
19	6.844	7.633	8.907	10.12	11.65	13.72	14.56	15.35	16.85	18.34
20	7.434	8.260	9.591	10.85	12.44	14.58	15.45	16.27	17.81	19.34
21	8.034	8.897	10.28	11.59	13.24	15.44	16.34	17.18	18.77	20.34
22	8.643	9.542	10.98	12.34	14.04	16.31	17.24	18.10	19.73	21.34
23	9.260	10.20	11.69	13.09	14.85	17.19	18.14	19.02	20.69	22.34
24	9.886	10.86	12.40	13.85	15.66	18.06	19.04	19.94	21.65	23.34
25	10.52	11.52	13.12	14.61	16.47	18.94	19.94	20.87	22.62	24.34
30	13.79	14.95	16.79	18.49	20.60	23.36	24.48	25.51	27.44	29.34
40	20.71	22.16	24.43	26.51	29.05	32.34	33.66	34.87	36.16	39.34
50	27.99	29.71	32.36	34.76	37.69	41.45	42.94	44.31	46.86	49.33
60	35.53	37.48	40.48	43.19	46.46	50.64	52.29	53.81	56.62	59.33
70	43.27	45.44	48.76	51.74	55.33	59.90	61.70	63.35	66.40	69.33
80	51.17	53.54	57.15	60.39	64.28	69.21	71.14	72.92	76.19	79.33
90	59.20	61.75	65.65	69.13	73.29	78.56	80.62	82.51	85.99	89.33
100	67.33	70.06	74.22	77.93	82.86	87.95	90.13	92.13	95.81	99.33

Adapted with permission from *Biometrika Tables for Statisticians*, Vol. 1, 3rd ed., Cambridge University Press, 1966, edited by E. S. Pearson and H. O. Hartley; and from "A new table of percentage points of the chi-square distribution," *Biometrika*, Vol. 51(1964), pp. 231-239, by H. L. Harter, Aerospace Research Laboratories.

Table of the χ^2 Distribution (Continued)

n	.50	.60	.70	.75	.80	.90	.95	.975	.99	.995
1	.4549	.7083	1.074	1.323	1.642	2.706	3.841	5.024	6.635	7.879
2	1.386	1.833	2.408	2.773	3.219	4.605	5.991	7.378	9.210	10.60
3	2.366	2.946	3.665	4.108	4.642	6.251	7.815	9.348	11.34	12.84
4	3.357	4.045	4.878	5.385	5.989	7.779	9.488	11.14	13.28	14.86
5	4.351	5.132	6.064	6.626	7.289	9.236	11.07	12.83	15.09	16.75
6	5.348	6.211	7.231	7.841	8.558	10.64	12.59	14.45	16.81	18.55
7	6.346	7.283	8.383	9.037	9.803	12.02	14.07	16.01	18.48	20.28
8	7.344	8.351	9.524	10.22	11.03	13.36	15.51	17.53	20.09	21.95
9	8.342	9.414	10.66	11.39	12.24	14.68	16.92	19.02	21.67	23.59
10	9.342	10.47	11.78	12.55	13.44	15.99	18.31	20.48	23.21	25.19
11	10.34	11.53	12.90	13.70	14.63	17.27	19.68	21.92	24.72	26.76
12	11.34	12.58	14.01	14.85	15.81	18.55	21.03	23.34	26.22	28.30
13	12.34	13.64	15.12	15.98	16.98	19.81	22.36	24.74	27.69	29.82
14	13.34	14.69	16.22	17.12	18.15	21.06	23.68	26.12	29.14	31.32
15	14.34	15.73	17.32	18.25	19.31	22.31	25.00	27.49	30.58	32.80
16	15.34	16.78	18.42	19.37	20.47	23.54	26.30	28.85	32.00	34.27
17	16.34	17.82	19.51	20.49	21.61	24.77	27.59	30.19	33.41	35.72
18	17.34	18.87	20.60	21.60	22.76	25.99	28.87	31.53	34.81	37.16
19	18.34	19.91	21.69	22.72	23.90	27.20	30.14	32.85	36.19	38.58
20	19.34	20.95	22.77	23.83	25.04	28.41	31.41	34.17	37.57	40.00
21	20.34	21.99	23.86	24.93	26.17	29.62	32.67	35.48	38.93	41.40
22	21.34	23.03	24.94	26.04	27.30	30.81	33.92	36.78	40.29	42.80
23	22.34	24.07	26.02	27.14	28.43	32.01	35.17	38.08	41.64	44.18
24	23.34	25.11	27.10	28.24	29.55	33.20	36.42	39.36	42.98	45.56
25	24.34	26.14	28.17	29.34	30.68	34.38	37.65	40.65	44.31	46.93
30	29.34	31.32	33.53	34.80	36.25	40.26	43.77	46.98	50.89	53.67
40	39.34	41.62	44.16	45.62	47.27	51.81	55.76	59.34	63.69	66.77
50	49.33	51.89	54.72	56.33	58.16	63.17	67.51	71.42	76.15	79.49
60	59.33	62.13	65.23	66.98	68.97	74.40	79.08	83.30	88.38	91.95
70	69.33	72.36	75.69	77.58	79.71	85.53	90.53	95.02	100.4	104.2
80	79.33	82.57	86.12	88.13	90.41	96.58	101.9	106.6	112.3	116.3
90	89.33	92.76	96.52	98.65	101.1	107.6	113.1	118.1	124.1	128.3
100	99.33	102.9	106.9	109.1	111.7	118.5	124.3	129.6	135.8	140.2