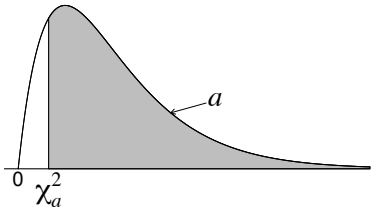
Critical Values of the χ^2 Distribution

A table entry is the value of χ^2_a, having an area to the right of a under a χ^2 distribution with df degrees of freedom.



df	$\chi^2_{0.9995}$	$\chi^2_{0.999}$	$\chi^2_{0.995}$	$\chi^2_{0.990}$	$\chi^2_{0.975}$	$\chi^2_{0.95}$	$\chi^2_{0.90}$	$\chi^2_{0.85}$	$\chi^2_{0.80}$
1	0.000	0.000	0.000	0.000	0.001	0.004	0.016	0.036	0.064
2	0.001	0.002	0.010	0.020	0.051	0.103	0.211	0.325	0.446
3	0.015	0.024	0.072	0.115	0.216	0.352	0.584	0.798	1.005
4	0.064	0.091	0.207	0.297	0.484	0.711	1.064	1.366	1.649
5	0.158	0.210	0.412	0.554	0.831	1.145	1.610	1.994	2.343
6	0.299	0.381	0.676	0.872	1.237	1.635	2.204	2.661	3.070
7	0.485	0.598	0.989	1.239	1.690	2.167	2.833	3.358	3.822
8	0.710	0.857	1.344	1.646	2.180	2.733	3.490	4.078	4.594
9	0.972	1.152	1.735	2.088	2.700	3.325	4.168	4.817	5.380
10	1.265	1.479	2.156	2.558	3.247	3.940	4.865	5.570	6.179
11	1.587	1.834	2.603	3.053	3.816	4.575	5.578	6.336	6.989
12	1.934	2.214	3.074	3.571	4.404	5.226	6.304	7.114	7.807
13	2.305	2.617	3.565	4.107	5.009	5.892	7.042	7.901	8.634
14	2.697	3.041	4.075	4.660	5.629	6.571	7.790	8.696	9.467
15	3.108	3.483	4.601	5.229	6.262	7.261	8.547	9.499	10.307
16	3.536	3.942	5.142	5.812	6.908	7.962	9.312	10.309	11.152
17	3.980	4.416	5.697	6.408	7.564	8.672	10.085	11.125	12.002
18	4.439	4.905	6.265	7.015	8.231	9.390	10.865	11.946	12.857
19	4.912	5.407	6.844	7.633	8.907	10.117	11.651	12.773	13.716
20	5.398	5.921	7.434	8.260	9.591	10.851	12.443	13.604	14.578
21	5.896	6.447	8.034	8.897	10.283	11.591	13.240	14.439	15.445
22	6.404	6.983	8.643	9.542	10.982	12.338	14.041	15.279	16.314
23	6.924	7.529	9.260	10.196	11.689	13.091	14.848	16.122	17.187
24	7.453	8.085	9.886	10.856	12.401	13.848	15.659	16.969	18.062
25	7.991	8.649	10.520	11.524	13.120	14.611	16.473	17.818	18.940
26	8.538	9.222	11.160	12.198	13.844	15.379	17.292	18.671	19.820
27	9.093	9.803	11.808	12.879	14.573	16.151	18.114	19.527	20.703
28	9.656	10.391	12.461	13.565	15.308	16.928	18.939	20.386	21.588
29	10.227	10.986	13.121	14.256	16.047	17.708	19.768	21.247	22.475
30	10.804	11.588	13.787	14.953	16.791	18.493	20.599	22.110	23.364
31	11.389	12.196	14.458	15.655	17.539	19.281	21.434	22.976	24.255
32	11.979	12.811	15.134	16.362	18.291	20.072	22.271	23.844	25.148
33	12.576	13.431	15.815	17.074	19.047	20.867	23.110	24.714	26.042
34	13.179	14.057	16.501	17.789	19.806	21.664	23.952	25.586	26.938
35	13.787	14.688	17.192	18.509	20.569	22.465	24.797	26.460	27.836
36	14.401	15.324	17.887	19.233	21.336	23.269	25.643	27.336	28.735
37	15.020	15.965	18.586	19.960	22.106	24.075	26.492	28.214	29.635
38	15.644	16.611	19.289	20.691	22.878	24.884	27.343	29.093	30.537
39	16.273	17.262	19.996	21.426	23.654	25.695	28.196	29.974	31.441
40	16.906	17.916	20.707	22.164	24.433	26.509	29.051	30.856	32.345

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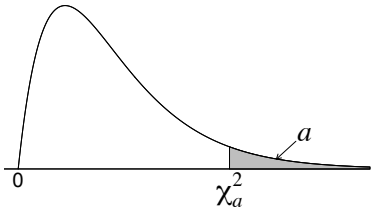

df	$\chi^2_{0.20}$	$\chi^2_{0.15}$	$\chi^2_{0.10}$	$\chi^2_{0.05}$	$\chi^2_{0.025}$	$\chi^2_{0.01}$	$\chi^2_{0.005}$	$\chi^2_{0.001}$	$\chi^2_{.0005}$
1	1.642	2.072	2.706	3.841	5.024	6.635	7.879	10.828	12.116
2	3.219	3.794	4.605	5.991	7.378	9.210	10.597	13.816	15.202
3	4.642	5.317	6.251	7.815	9.348	11.345	12.838	16.266	17.730
4	5.989	6.745	7.779	9.488	11.143	13.277	14.860	18.467	19.997
5	7.289	8.115	9.236	11.070	12.833	15.086	16.750	20.515	22.105
6	8.558	9.446	10.645	12.592	14.449	16.812	18.548	22.458	24.103
7	9.803	10.748	12.017	14.067	16.013	18.475	20.278	24.322	26.018
8	11.030	12.027	13.362	15.507	17.535	20.090	21.955	26.124	27.868
9	12.242	13.288	14.684	16.919	19.023	21.666	23.589	27.877	29.666
10	13.442	14.534	15.987	18.307	20.483	23.209	25.188	29.588	31.420
11	14.631	15.767	17.275	19.675	21.920	24.725	26.757	31.264	33.137
12	15.812	16.989	18.549	21.026	23.337	26.217	28.300	32.909	34.821
13	16.985	18.202	19.812	22.362	24.736	27.688	29.819	34.528	36.478
14	18.151	19.406	21.064	23.685	26.119	29.141	31.319	36.123	38.109
15	19.311	20.603	22.307	24.996	27.488	30.578	32.801	37.697	39.719
16	20.465	21.793	23.542	26.296	28.845	32.000	34.267	39.252	41.308
17	21.615	22.977	24.769	27.587	30.191	33.409	35.718	40.790	42.879
18	22.760	24.155	25.989	28.869	31.526	34.805	37.156	42.312	44.434
19	23.900	25.329	27.204	30.144	32.852	36.191	38.582	43.820	45.973
20	25.038	26.498	28.412	31.410	34.170	37.566	39.997	45.315	47.498
21	26.171	27.662	29.615	32.671	35.479	38.932	41.401	46.797	49.011
22	27.301	28.822	30.813	33.924	36.781	40.289	42.796	48.268	50.511
23	28.429	29.979	32.007	35.172	38.076	41.638	44.181	49.728	52.000
24	29.553	31.132	33.196	36.415	39.364	42.980	45.559	51.179	53.479
25	30.675	32.282	34.382	37.652	40.646	44.314	46.928	52.620	54.947
26	31.795	33.429	35.563	38.885	41.923	45.642	48.290	54.052	56.407
27	32.912	34.574	36.741	40.113	43.195	46.963	49.645	55.476	57.858
28	34.027	35.715	37.916	41.337	44.461	48.278	50.993	56.892	59.300
29	35.139	36.854	39.087	42.557	45.722	49.588	52.336	58.301	60.735
30	36.250	37.990	40.256	43.773	46.979	50.892	53.672	59.703	62.162
31	37.359	39.124	41.422	44.985	48.232	52.191	55.003	61.098	63.582
32	38.466	40.256	42.585	46.194	49.480	53.486	56.328	62.487	64.995
33	39.572	41.386	43.745	47.400	50.725	54.776	57.648	63.870	66.403
34	40.676	42.514	44.903	48.602	51.966	56.061	58.964	65.247	67.803
35	41.778	43.640	46.059	49.802	53.203	57.342	60.275	66.619	69.199
36	42.879	44.764	47.212	50.998	54.437	58.619	61.581	67.985	70.588
37	43.978	45.886	48.363	52.192	55.668	59.893	62.883	69.346	71.972
38	45.076	47.007	49.513	53.384	56.896	61.162	64.181	70.703	73.351
39	46.173	48.126	50.660	54.572	58.120	62.428	65.476	72.055	74.725
40	47.269	49.244	51.805	55.758	59.342	63.691	66.766	73.402	76.095

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