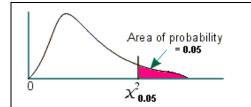
**Appendix F- Chi-Square Distribution Table** 



**Example:** The upper  $\chi^2$  value at 5% level of significance with 9 degrees of freedom is obtained at the point of intersection of 9 degrees of freedom row and 0.05 column. This  $\chi^2$  value is = 16.918960

Upper Chi-Square Value								
Degrees of freedom	0.1	0.05	0.025	0.01	0.005			
1	2.705541	3.841455	5.023903	6.634891	7.879400			
2	4.605176	5.991476	7.377779	9.210351	10.596530			
3	6.251394	7.814725	9.348404	11.344882	12.838073			
4	7.779434	9.487728	11.143262	13.276699	14.860166			
5	9.236349	11.070483	12.832492	15.086317	16.749648			
6	10.644637	12.591577	14.449355	16.811872	18.547513			
7	12.017031	14.067127	16.012774	18.475324	20.277738			
8	13.361562	15.507312	17.534545	20.090159	21.954861			
9	14.683663	16.918960	19.022778	21.666048	23.589275			
10	15.987175	18.307029	20.483201	23.209287	25.188055			
11	17.275007	19.675153	21.920023	24.725022	26.756864			
12	18.549340	21.026055	23.336660	26.216964	28.299660			
13	19.811933	22.362027	24.735581	27.688184	29.819318			
14	21.064141	23.684782	26.118935	29.141163	31.319425			
15	22.307121	24.995797	27.488365	30.577951	32.801491			
16	23.541821	26.296221	28.845325	31.999861	34.267053			
17	24.769028	27.587100	30.190983	33.408717	35.718378			
18	25.989418	28.869321	31.526410	34.805237	37.156386			
19	27.203565	30.143505	32.852337	36.190775	38.582122			
20	28.411970	31.410420	34.169581	37.566272	39.996856			
21	29.615086	32.670558	35.478856	38.932232	41.400943			
22	30.813285	33.924460	36.780678	40.289448	42.795664			
23	32.006890	35.172460	38.075609	41.638334	44.181385			
24	33.196235	36.415026	39.364060	42.979781	45.558363			
25	34.381583	37.652489	40.646498	44.314014	46.927966			
26	35.563164	38.885130	41.923138	45.641636	48.289777			
27	36.741228	40.113266	43.194521	46.962837	49.645035			
28	37.915907	41.337152	44.460790	48.278166	50.993559			
29	39.087475	42.556948	45.722279	49.587829	52.335495			
30	40.256017	43.772954	46.979218	50.892181	53.671868			
40	51.805044	55.758487	59.341679	63.690771	66.766047			
50	63.167113	67.504805	71.420194	76.153802	79.489839			
60	74.396999	79.081954	83.297706	88.379430	91.951806			
70	85.527036	90.531262	95.023149	100.425051	104.214769			
80	96.578196	101.879472	106.628542	112.328791	116.320928			
90	107.565010	113.145234	118.135908	124.116195	128.298676			
100	118.498002	124.342101	129.561252	135.806891	140.169714			

Upper Chi-Square Value								
0.9	0.95	0.975	0.99	0.995	Degrees of freedom			
0.015791	0.003932	0.000982	0.000157	0.000039	1			
0.210721	0.102586	0.050636	0.020100	0.010025	2			
0.584375	0.351846	0.215795	0.114832	0.071723	3			
1.063624	0.710724	0.484419	0.297107	0.206984	4			
1.610309	1.145477	0.831209	0.554297	0.411751	5			
2.204130	1.635380	1.237342	0.872083	0.675733	6			
2.833105	2.167349	1.689864	1.239032	0.989251	7			
3.489537	2.732633	2.179725	1.646506	1.344403	8			
4.168156	3.325115	2.700389	2.087889	1.734911	9			
4.865178	3.940295	3.246963	2.558199	2.155845	10			
5.577788	4.574809	3.815742	3.053496	2.603202	11			
6.303796	5.226028	4.403778	3.570551	3.073785	12			
7.041500	5.891861	5.008738	4.106900	3.565042	13			
7.789538	6.570632	5.628724	4.660415	4.074659	14			
8.546753	7.260935	6.262123	5.229356	4.600874	15			
9.312235	7.961639	6.907664	5.812197	5.142164	16			
10.085183	8.671754	7.564179	6.407742	5.697274	17			
10.864937	9.390448	8.230737	7.014903	6.264766	18			
11.650912	10.117006	8.906514	7.632698	6.843923	19			
12.442601	10.850799	9.590772	8.260368	7.433811	20			
13.239596	11.591316	10.282907	8.897172	8.033602	21			
14.041490	12.338009	10.982330	9.542494	8.642681	22			
14.847954	13.090505	11.688534	10.195689	9.260383	23			
15.658679	13.848422	12.401146	10.856349	9.886199	24			
16.473405	14.611396	13.119707	11.523951	10.519647	25			
17.291880	15.379163	13.843881	12.198177	11.160218	26			
18.113889	16.151395	14.573373	12.878468	11.807655	27			
18.939235	16.927876	15.307854	13.564666	12.461281	28			
19.767740	17.708381	16.047051	14.256406	13.121067	29			
20.599245	18.492667	16.790756	14.953464	13.786682	30			
29.050516	26.509296	24.433058	22.164201	20.706577	40			
37.688637	34.764236	32.357385	29.706725	27.990825	50			
46.458885	43.187966	40.481707	37.484796	35.534397	60			
55.328945	51.739263	48.757536	45.441700	43.275305	70			
64.277842	60.391459	57.153152	53.539983	51.171933	80			
73.291079	69.126018	65.646592	61.754019	59.196327	90			
82.358127	77.929442	74.221882	70.064995	67.327533	100			