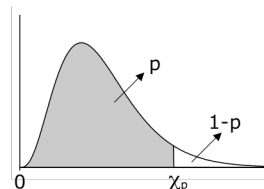


Quantis da Distribuição Qui-quadrado

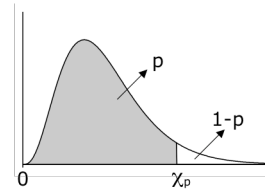
$$\chi_p : P[\chi^2_{(v)} \leq \chi_p] = p$$



v	p	0.0005	0.001	0.005	0.010	0.025	0.050	0.075	0.100	0.150	0.200	0.300	0.400	0.500
1		.0 ⁶ 3927	.0 ⁵ 1571	.0 ⁴ 3927	.0 ³ 1571	.0 ³ 9821	0.00393	0.00886	0.01579	0.03577	0.06418	0.14847	0.27500	0.45494
2		0.00100	0.00200	0.01003	0.02010	0.05064	0.10259	0.15592	0.21072	0.32504	0.44629	0.71335	1.02165	1.38629
3		0.01528	0.02430	0.07172	0.11483	0.21580	0.35185	0.47199	0.58437	0.79777	1.00517	1.42365	1.86917	2.36597
4		0.06392	0.09080	0.20699	0.29711	0.48442	0.71072	0.89694	1.06362	1.36648	1.64878	2.19470	2.75284	3.35669
5		0.15814	0.21021	0.41174	0.55430	0.83121	1.14548	1.39371	1.61031	1.99382	2.34253	2.99991	3.65550	4.35146
6		0.29941	0.38107	0.67573	0.87209	1.23734	1.63538	1.94149	2.20413	2.66127	3.07009	3.82755	4.57015	5.34812
7		0.48487	0.59849	0.98926	1.23904	1.68987	2.16735	2.52766	2.83311	3.35828	3.82232	4.67133	5.49323	6.34581
8		0.71038	0.85710	1.34441	1.64650	2.17973	2.73264	3.14397	3.48954	4.07820	4.59357	5.52742	6.42265	7.34412
9		0.97170	1.15195	1.73493	2.08790	2.70039	3.32511	3.78475	4.16816	4.81652	5.38005	6.39331	7.35703	8.34283
10		1.26498	1.47874	2.15586	2.55821	3.24697	3.94030	4.44587	4.86518	5.57006	6.17908	7.26722	8.29547	9.34182
11		1.58685	1.83385	2.60322	3.05348	3.81575	4.57481	5.12425	5.57778	6.33643	6.98867	8.14787	9.23729	10.3410
12		1.93438	2.21421	3.07382	3.57057	4.40379	5.22603	5.81751	6.30380	7.11384	7.80733	9.03428	10.1820	11.3403
13		2.30506	2.61722	3.56503	4.10692	5.00875	5.89186	6.52377	7.04150	7.90084	8.63386	9.92568	11.1291	12.3398
14		2.69673	3.04067	4.07467	4.66043	5.62873	6.57063	7.24151	7.78953	8.69630	9.46733	10.8215	12.0785	13.3393
15		3.10752	3.48268	4.60092	5.22935	6.26214	7.26094	7.96949	8.54676	9.49928	10.3070	11.7212	13.0297	14.3389
16		3.53581	3.94163	5.14221	5.81221	6.90766	7.96165	8.70667	9.31224	10.3090	11.1521	12.6243	13.9827	15.3385
17		3.98018	4.41609	5.69722	6.40776	7.56419	8.67176	9.45217	10.0852	11.1249	12.0023	13.5307	14.9373	16.3382
18		4.43939	4.90485	6.26480	7.01491	8.23075	9.39046	10.2053	10.8649	11.9463	12.8570	14.4399	15.8932	17.3379
19		4.91234	5.40682	6.84397	7.63273	8.90652	10.1170	10.9653	11.6509	12.7727	13.7158	15.3517	16.8504	18.3377
20		5.39807	5.92104	7.43384	8.26040	9.59078	10.8508	11.7317	12.4426	13.6039	14.5784	16.2659	17.8088	19.3374
21		5.89570	6.44668	8.03365	8.89720	10.2829	11.5913	12.5041	13.2396	14.4393	15.4446	17.1823	18.7683	20.3372
22		6.40447	6.98297	8.64272	9.54249	10.9823	12.3380	13.2819	14.0415	15.2788	16.3140	18.1007	19.7288	21.3370
23		6.92368	7.52924	9.26042	10.1957	11.6886	13.0905	14.0648	14.8480	16.1219	17.1865	19.0211	20.6902	22.3369
24		7.45269	8.08488	9.88623	10.8564	12.4012	13.8484	14.8525	15.6587	16.9686	18.0618	19.9432	21.6525	23.3367
25		7.99096	8.64934	10.5197	11.5240	13.1197	14.6114	15.6447	16.4734	17.8184	18.9398	20.8670	22.6156	24.3366
26		8.53795	9.22213	11.1602	12.1981	13.8439	15.3792	16.4410	17.2919	18.6714	19.8202	21.7924	23.5794	25.3365
27		9.09320	9.80278	11.8076	12.8785	14.5734	16.1514	17.2414	18.1139	19.5272	20.7030	22.7192	24.5440	26.3363
28		9.65627	10.3909	12.4613	13.5647	15.3079	16.9279	18.0454	18.9392	20.3857	21.5880	23.6475	25.5093	27.3362
29		10.2268	10.9861	13.1211	14.2565	16.0471	17.7084	18.8530	19.7677	21.2468	22.4751	24.5770	26.4751	28.3361
30		10.8044	11.5880	13.7867	14.9535	16.7908	18.4927	19.6639	20.5992	22.1103	23.3641	25.5078	27.4416	29.3360
31		11.3887	12.1963	14.4578	15.6555	17.5387	19.2806	20.4780	21.4336	22.9762	24.2551	26.4397	28.4087	30.3359
32		11.9794	12.8107	15.1340	16.3622	18.2908	20.0719	21.2951	22.2706	23.8442	25.1478	27.3728	29.3763	31.3359
33		12.5763	13.4309	15.8153	17.0735	19.0467	20.8665	22.1151	23.1102	24.7143	26.0422	28.3069	30.3444	32.3358
34		13.1791	14.0567	16.5013	17.7891	19.8063	21.6643	22.9379	23.9523	25.5864	26.9383	29.2421	31.3130	33.3357
35		13.7875	14.6878	17.1918	18.5089	20.5694	22.4650	23.7633	24.7967	26.4604	27.8359	30.1782	32.2821	34.3356
36		14.4012	15.3241	17.8867	19.2327	21.3359	23.2686	24.5911	25.6433	27.3362	28.7350	31.1152	33.2517	35.3356
37		15.0202	15.9653	18.5858	19.9602	22.1056	24.0749	25.4214	26.4921	28.2138	29.6355	32.0532	34.2216	36.3355
38		15.6441	16.6112	19.2889	20.6914	22.8785	24.8839	26.2540	27.3430	29.0931	30.5373	32.9919	35.1920	37.3355
39		16.2729	17.2616	19.9959	21.4262	23.6543	25.6954	27.0889	28.1958	29.9739	31.4405	33.9315	36.1628	38.3354
40		16.9062	17.9164	20.7065	22.1643	24.4330	26.5093	27.9258	29.0505	30.8563	32.3450	34.8719	37.1340	39.3353
41		17.5440	18.5754	21.4208	22.9056	25.2145	27.3256	28.7648	29.9071	31.7402	33.2506	35.8131	38.1055	40.3353
42		18.1861	19.2385	22.1385	23.6501	25.9987	28.1440	29.6058	30.7654	32.6255	34.1574	36.7550	39.0774	41.3352
43		18.8323	19.9055	22.8595	24.3976	26.7854	28.9647	30.4487	31.6255	33.5122	35.0653	37.6975	40.0496	42.3352
44		19.4825	20.5763	23.5837	25.1480	27.5746	29.7875	31.2934	32.4871	34.4002	35.9743	38.6408	41.0222	43.3352
45		20.1366	21.2507	24.3110	25.9013	28.3662	30.6123	32.1399	33.3504	35.2896	36.8844	39.5847	41.9950	44.3351
46		20.7945	21.9287	25.0413	26.6572	29.1601	31.4390	32.9882	34.2152	36.1801	37.7955	40.5292	42.9682	45.3351
47		21.4559	22.6101	25.7746	27.4158	29.9562	32.2676	33.8380	35.0814	37.0719	38.7075	41.4744	43.9417	46.3350
48		22.1209	23.2949	26.5106	28.1770	30.7545	33.0981	34.6895	35.9491	37.9648	39.6205	42.4201	44.9154	47.3350
49		22.7893	23.9828	27.2493	28.9406	31.5549	33.9303	35.5426	36.8182	38.8588	40.5344	43.3664	45.8895	48.3350
50		23.4610	24.6739	27.9907	29.7067	32.3574	34.7643	36.3971	37.6886	39.7539	41.4492	44.3133	46.8638	49.3349
60		30.3405	31.7383	35.5345	37.4849	40.4817	43.1880	45.0165	46.4589	48.7587	50.6406	53.8091	56.6200	59.3347
70		37.4674	39.0364	43.2752	45.4417	48.7576	51.7393	53.7478	55.3289	57.8443	59.8978	63.3460	66.3961	69.3345
80		44.7910	46.5199	51.1719	53.5401	57.1532	60.3915	62.5676	64.2778	66.9938	69.2069	72.9153	76.1879	79.3343
90		52.2758	54.1552	59.1963	61.7541	65.6466	69.1260	71.4596	73.2911	76.1954	78.5584	82.5111	85.9925	89.3342
100		59.8957	61.9179	67.3276	70.0649	74.2219	77.9295	80.4119	82.3581	85.4406	87.9453	92.1289	95.8079	99.3341
110		67.6310	69.7894	75.5500	78.4583	82.8671	86.7916	89.4157	91.4710	94.7229	97.3624	101.766	105.632	109.334
120		75.4665	77.7551	83.8516	86.9233	91.5726	95.7046	98.4641	100.624	104.037	106.806	111.419	115.465	119.334
150		99.4629	102.113	109.142	112.668	117.985	122.692	125.827	128.275	132.137	135.263	140.457	145.000	149.334
200		140.660	143.843	152.241	156.432	162.728	168.279	171.963	174.835	179.355	183.003	189.049	194.319	199.334

Quantis da Distribuição Qui-quadrado

$$\chi_p : P[\chi^2_{(v)} \leq \chi_p] = p$$



v	p	0.500	0.600	0.700	0.800	0.850	0.900	0.925	0.950	0.975	0.990	0.995	0.999	0.9995
1		0.45494	0.70833	1.07420	1.64238	2.07225	2.70554	3.17005	3.84146	5.02389	6.63490	7.87944	10.8276	12.1157
2		1.38629	1.83258	2.40795	3.21888	3.79424	4.60517	5.18053	5.99146	7.37776	9.21034	10.5966	13.8155	15.2018
3		2.36597	2.94617	3.66487	4.64163	5.31705	6.25139	6.90464	7.81473	9.34840	11.3449	12.8382	16.2662	17.7300
4		3.35669	4.04463	4.87843	5.98862	6.74488	7.77944	8.49628	9.48773	11.1433	13.2767	14.8603	18.4668	19.9974
5		4.35146	5.13187	6.06443	7.28928	8.11520	9.23636	10.0083	11.0705	12.8325	15.0863	16.7496	20.5150	22.1053
6		5.34812	6.21076	7.23114	8.55806	9.44610	10.6446	11.4659	12.5916	14.4494	16.8119	18.5476	22.4577	24.1028
7		6.34581	7.28321	8.38343	9.80325	10.7479	12.0170	12.8834	14.0671	16.0128	18.4753	20.2777	24.3219	26.0178
8		7.34412	8.35053	9.52446	11.0301	12.0271	13.3616	14.2697	15.5073	17.5345	20.0902	21.9550	26.1245	27.8680
9		8.34283	9.41364	10.6564	12.2421	13.2880	14.6837	15.6309	16.9190	19.0228	21.6660	23.5894	27.8772	29.6658
10		9.34182	10.4732	11.7807	13.4420	14.5339	15.9872	16.9714	18.3070	20.4832	23.2093	25.1882	29.5883	31.4198
11		10.3410	11.5298	12.8987	14.6314	15.7671	17.2750	18.2942	19.6751	21.9200	24.7250	26.7568	31.2641	33.1366
12		11.3403	12.5838	14.0111	15.8120	16.9893	18.5493	19.6020	21.0261	23.3367	26.2170	28.2995	32.9095	34.8213
13		12.3398	13.6356	15.1187	16.9848	18.2020	19.8119	20.8966	22.3620	24.7356	27.6882	29.8195	34.5282	36.4778
14		13.3393	14.6853	16.2221	18.1508	19.4062	21.0641	22.1795	23.6848	26.1189	29.1412	31.3193	36.1233	38.1094
15		14.3389	15.7332	17.3217	19.3107	20.6030	22.3071	23.4522	24.9958	27.4884	30.5779	32.8013	37.6973	39.7188
16		15.3385	16.7795	18.4179	20.4651	21.7931	23.5418	24.7155	26.2962	28.8454	31.9999	34.2672	39.2524	41.3081
17		16.3382	17.8244	19.5110	21.6146	22.9770	24.7690	25.9705	27.5871	30.1910	33.4087	35.7185	40.7902	42.8792
18		17.3379	18.8679	20.6014	22.7595	24.1555	25.9894	27.2178	28.8693	31.5264	34.8053	37.1565	42.3124	44.4338
19		18.3377	19.9102	21.6891	23.9004	25.3289	27.2036	28.4581	30.1435	32.8523	36.1909	38.5823	43.8202	45.9731
20		19.3374	20.9514	22.7745	25.0375	26.4976	28.4120	29.6920	31.4104	34.1696	37.5662	39.9968	45.3147	47.4985
21		20.3372	21.9915	23.8578	26.1711	27.6620	29.6151	30.9200	32.6706	35.4789	38.9322	41.4011	46.7970	49.0108
22		21.3370	23.0307	24.9390	27.3015	28.8225	30.8133	32.1424	33.9244	36.7807	40.2894	42.7957	48.2679	50.5111
23		22.3369	24.0689	26.0184	28.4288	29.9792	32.0069	33.3597	35.1725	38.0756	41.6384	44.1813	49.7282	52.0002
24		23.3367	25.1063	27.0960	29.5533	31.1325	33.1962	34.5723	36.4150	39.3641	42.9798	45.5585	51.1786	53.4788
25		24.3366	26.1430	28.1719	30.6752	32.2825	34.3816	35.7803	37.6525	40.6465	44.3141	46.9279	52.6197	54.9475
26		25.3365	27.1789	29.2463	31.7946	33.4295	35.5632	36.9841	38.8851	41.9232	45.6417	48.2899	54.0520	56.4069
27		26.3363	28.2141	30.3193	32.9117	34.5736	36.7412	38.1840	40.1133	43.1945	46.9629	49.6449	55.4760	57.8576
28		27.3362	29.2486	31.3909	34.0266	35.7150	37.9159	39.3801	41.3371	44.4608	48.2782	50.9934	56.8923	59.3000
29		28.3361	30.2825	32.4612	35.1394	36.8538	39.0875	40.5727	42.5570	45.7223	49.5879	52.3356	58.3012	60.7346
30		29.3360	31.3159	33.5302	36.2502	37.9903	40.2560	41.7619	43.7730	46.9792	50.8922	53.6720	59.7031	62.1619
31		30.3359	32.3486	34.5981	37.3591	39.1244	41.4217	42.9479	44.9853	48.2319	52.1914	55.0027	61.0983	63.5820
32		31.3359	33.3809	35.6649	38.4663	40.2563	42.5847	44.1309	46.1943	49.4804	53.4858	56.3281	62.4872	64.9955
33		32.3358	34.4126	36.7307	39.5718	41.3861	43.7452	45.3110	47.3999	50.7251	54.7755	57.6484	63.8701	66.4025
34		33.3357	35.4438	37.7954	40.6756	42.5140	44.9032	46.4884	48.6024	51.9660	56.0609	58.9639	65.2472	67.8035
35		34.3356	36.4746	38.8591	41.7780	43.6399	46.0588	47.6631	49.8018	53.2033	57.3421	60.2748	66.6188	69.1986
36		35.3356	37.5049	39.9220	42.8788	44.7641	47.2122	48.8353	50.9985	54.4373	58.6192	61.5812	67.9852	70.5881
37		36.3355	38.5348	40.9839	43.9782	45.8865	48.3634	50.0051	52.1923	55.6680	59.8925	62.8833	69.3465	71.9722
38		37.3355	39.5643	42.0451	45.0763	47.0072	49.5126	51.1726	53.3835	56.8955	61.1621	64.1814	70.7029	73.3512
39		38.3354	40.5935	43.1053	46.1730	48.1263	50.6598	52.3378	54.5722	58.1201	62.4281	65.4756	72.0547	74.7253
40		39.3353	41.6222	44.1649	47.2685	49.2439	51.8051	53.5010	55.7585	59.3417	63.6907	66.7660	73.4020	76.0946
41		40.3353	42.6506	45.2236	48.3628	50.3599	52.9485	54.6620	56.9424	60.5606	64.9501	68.0527	74.7449	77.4593
42		41.3352	43.6786	46.2817	49.4560	51.4746	54.0902	55.8211	58.1240	61.7768	66.2062	69.3360	76.0838	78.8197
43		42.3352	44.7063	47.3390	50.5480	52.5879	55.2302	56.9783	59.3035	62.9904	67.4593	70.6159	77.4186	80.1757
44		43.3352	45.7336	48.3957	51.6389	53.6998	56.3685	58.1336	60.4809	64.2015	68.7095	71.8926	78.7495	81.5277
45		44.3351	46.7607	49.4517	52.7288	54.8105	57.5053	59.2872	61.6562	65.4102	69.9568	73.1661	80.0767	82.8757
46		45.3351	47.7874	50.5071	53.8177	55.9199	58.6405	60.4390	62.8296	66.6165	71.2014	74.4365	81.4003	84.2198
47		46.3350	48.8139	51.5619	54.9056	57.0281	59.7743	61.5892	64.0011	67.8206	72.4433	75.7041	82.7204	85.5603
48		47.3350	49.8401	52.6161	55.9926	58.1352	60.9066	62.7378	65.1708	69.0226	73.6826	76.9688	84.0371	86.8971
49		48.3350	50.8660	53.6697	57.0786	59.2411	62.0375	63.8848	66.3386	70.2224	74.9195	78.2307	85.3506	88.2305
50		49.3349	51.8916	54.7228	58.1638	60.3460	63.1671	65.0303	67.5048	71.4202	76.1539	79.4900	86.6608	89.5605
60		59.3347	62.1348	65.2265	68.9721	71.3411	74.3970	76.4113	79.0819	83.2977	88.3794	91.9517	99.6072	102.695
70		69.3345	72.3583	75.6893	79.7147	82.2554	85.5270	87.6802	90.5312	95.0232	100.425	104.215	112.317	115.578
80		79.3343	82.5662	86.1197	90.4053	93.1058	96.5782	98.8606	101.879	106.629	112.329	116.321	124.839	128.261
90		89.3342	92.7614	96.5238	101.054	103.904	107.565	109.969	113.145	118.136	124.116	128.299	137.208	140.782
100		99.3341	102.946	106.906	111.667	114.659	118.498	121.017	124.342	129.561	135.807	140.169	149.449	153.167
110		109.334	113.121	117.269	122.250	125.376	129.385	132.013	135.480	140.917	147.414	151.948	161.581	165.435
120		119.334	123.289	127.616	132.806	136.062	140.233	142.965	146.567	152.211	158.950	163.648	173.617	177.603
150		149.334	153.753	158.577	164.349	167.962	172.581	175.602	179.581	185.800	193.208	198.360	209.265	213.613
200		199.334	204.434	209.985	216.609	220.744	226.021	229.466	233.994	241.058	249.445	255.264	267.541	272.423