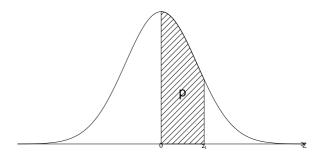
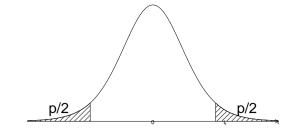
### Distribuição Normal



	0	1	2	3	4	5	6	7	8	9
0,0	0.00000	0.00399	0.00798	0.01197	0.01595	0.01994	0.02392	0.02790	0.03188	0.03586
0,1	0.03983	0.04380	0.04776	0.05172	0.05567	0.05962	0.06356	0.06749	0.07142	0.07535
0,2	0.07926	0.08317	0.08706	0.09095	0.09483	0.09871	0.10257	0.10642	0.11026	0.11409
0,3	0.11791	0.12172	0.12552	0.12930	0.13307	0.13683	0.14058	0.14431	0.14803	0.15173
0,4	0.15542	0.15910	0.16276	0.16640	0.17003	0.17364	0.17724	0.18082	0.18439	0.18793
0,5	0.19146	0.19497	0.19847	0.20194	0.20540	0.20884	0.21226	0.21566	0.21904	0.22240
0,6	0.22575	0.22907	0.23237	0.23565	0.23891	0.24215	0.24537	0.24857	0.25175	0.25490
0,7	0.25804	0.26115	0.26424	0.26730	0.27035	0.27337	0.27637	0.27935	0.28230	0.28524
0,8	0.28814	0.29103	0.29389	0.29673	0.29955	0.30234	0.30511	0.30785	0.31057	0.31327
0,9	0.31594	0.31859	0.32121	0.32381	0.32639	0.32894	0.33147	0.33398	0.33646	0.33891
$^{1,0}$	0.34134	0.34375	0.34614	0.34849	0.35083	0.35314	0.35543	0.35769	0.35993	0.36214
$^{1,1}$	0.36433	0.36650	0.36864	0.37076	0.37286	0.37493	0.37698	0.37900	0.38100	0.38298
1,2	0.38493	0.38686	0.38877	0.39065	0.39251	0.39435	0.39617	0.39796	0.39973	0.40147
1,3	0.40320	0.40490	0.40658	0.40824	0.40988	0.41149	0.41309	0.41466	0.41621	0.41774
$^{1,4}$	0.41924	0.42073	0.42220	0.42364	0.42507	0.42647	0.42785	0.42922	0.43056	0.43189
1,5	0.43319	0.43448	0.43574	0.43699	0.43822	0.43943	0.44062	0.44179	0.44295	0.44408
$^{1,6}$	0.44520	0.44630	0.44738	0.44845	0.44950	0.45053	0.45154	0.45254	0.45352	0.45449
$^{1,7}$	0.45543	0.45637	0.45728	0.45818	0.45907	0.45994	0.46080	0.46164	0.46246	0.46327
1,8	0.46407	0.46485	0.46562	0.46638	0.46712	0.46784	0.46856	0.46926	0.46995	0.47062
1,9	0.47128	0.47193	0.47257	0.47320	0.47381	0.47441	0.47500	0.47558	0.47615	0.47670
$^{2,0}$	0.47725	0.47778	0.47831	0.47882	0.47932	0.47982	0.48030	0.48077	0.48124	0.48169
$^{2,1}$	0.48214	0.48257	0.48300	0.48341	0.48382	0.48422	0.48461	0.48500	0.48537	0.48574
$^{2,2}$	0.48610	0.48645	0.48679	0.48713	0.48745	0.48778	0.48809	0.48840	0.48870	0.48899
$^{2,3}$	0.48928	0.48956	0.48983	0.49010	0.49036	0.49061	0.49086	0.49111	0.49134	0.49158
$^{2,4}$	0.49180	0.49202	0.49224	0.49245	0.49266	0.49286	0.49305	0.49324	0.49343	0.49361
$^{2,5}$	0.49379	0.49396	0.49413	0.49430	0.49446	0.49461	0.49477	0.49492	0.49506	0.49520
$^{2,6}$	0.49534	0.49547	0.49560	0.49573	0.49585	0.49598	0.49609	0.49621	0.49632	0.49643
$^{2,7}$	0.49653	0.49664	0.49674	0.49683	0.49693	0.49702	0.49711	0.49720	0.49728	0.49736
$^{2,8}$	0.49744	0.49752	0.49760	0.49767	0.49774	0.49781	0.49788	0.49795	0.49801	0.49807
$^{2,9}$	0.49813	0.49819	0.49825	0.49831	0.49836	0.49841	0.49846	0.49851	0.49856	0.49861
3,0	0.49865	0.49869	0.49874	0.49878	0.49882	0.49886	0.49889	0.49893	0.49896	0.49900
3,1	0.49903	0.49906	0.49910	0.49913	0.49916	0.49918	0.49921	0.49924	0.49926	0.49929
3,2	0.49931	0.49934	0.49936	0.49938	0.49940	0.49942	0.49944	0.49946	0.49948	0.49950
3,3	0.49952	0.49953	0.49955	0.49957	0.49958	0.49960	0.49961	0.49962	0.49964	0.49965
3,4	0.49966	0.49968	0.49969	0.49970	0.49971	0.49972	0.49973	0.49974	0.49975	0.49976
3,5	0.49977	0.49978	0.49978	0.49979	0.49980	0.49981	0.49981	0.49982	0.49983	0.49983
3,6	0.49984	0.49985	0.49985	0.49986	0.49986	0.49987	0.49987	0.49988	0.49988	0.49989
3,7	0.49989	0.49990	0.49990	0.49990	0.49991	0.49991	0.49992	0.49992	0.49992	0.49992
3,8	0.49993	0.49993	0.49993	0.49994	0.49994	0.49994	0.49994	0.49995	0.49995	0.49995
3,9	0.49995	0.49995	0.49996	0.49996	0.49996	0.49996	0.49996	0.49996	0.49997	0.49997

Tabela 1: Probabilidades  $p = P[0 \le Z \le Z_t]$  da Distribuição Normal padrão com valores de  $Z_t$  dados nas margens da tabela

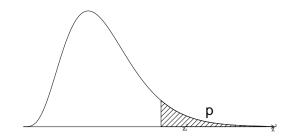
#### Distribuição t de Student



	90%	80%	70%	60%	50%	40%	30%	20%	10%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0.5%	0.25%	0.1%
2	0.142	0.289	0.445	0.617	0.816	1.061	1.386	1.886	2.920	3.104	3.320	3.578	3.896	4.303	4.849	5.643	6.965	9.925	14.089	19.962	31.599
3	0.137	0.277	0.424	0.584	0.765	0.978	1.250	1.638	2.353	2.471	2.605	2.763	2.951	3.182	3.482	3.896	4.541	5.841	7.453	9.465	12.924
4	0.134	0.271	0.414	0.569	0.741	0.941	1.190	1.533	2.132	2.226	2.333	2.456	2.601	2.776	2.999	3.298	3.747	4.604	5.598	6.758	8.610
5	0.132	0.267	0.408	0.559	0.727	0.920	1.156	1.476	2.015	2.098	2.191	2.297	2.422	2.571	2.757	3.003	3.365	4.032	4.773	5.604	6.869
6	0.131	0.265	0.404	0.553	0.718	0.906	1.134	1.440	1.943	2.019	2.104	2.201	2.313	2.447	2.612	2.829	3.143	3.707	4.317	4.981	5.959
7	0.130	0.263	0.402	0.549	0.711	0.896	1.119	1.415	1.895	1.966	2.046	2.136	2.241	2.365	2.517	2.715	2.998	3.499	4.029	4.595	5.408
8	0.130	0.262	0.399	0.546	0.706	0.889	1.108	1.397	1.860	1.928	2.004	2.090	2.189	2.306	2.449	2.634	2.896	3.355	3.833	4.334	5.041
9	0.129	0.261	0.398	0.543	0.703	0.883	1.100	1.383	1.833	1.899	1.973	2.055	2.150	2.262	2.398	2.574	2.821	3.250	3.690	4.146	4.781
10	0.129	0.260	0.397	0.542	0.700	0.879	1.093	1.372	1.812	1.877	1.948	2.028	2.120	2.228	2.359	2.527	2.764	3.169	3.581	4.005	4.587
11	0.129	0.260	0.396	0.540	0.697	0.876	1.088	1.363	1.796	1.859	1.928	2.007	2.096	2.201	2.328	2.491	2.718	3.106	3.497	3.895	4.437
12	0.128	0.259	0.395	0.539	0.695	0.873	1.083	1.356	1.782	1.844	1.912	1.989	2.076	2.179	2.303	2.461	2.681	3.055	3.428	3.807	4.318
13	0.128	0.259	0.394	0.538	0.694	0.870	1.079	1.350	1.771	1.832	1.899	1.974	2.060	2.160	2.282	2.436	2.650	3.012	3.372	3.735	4.221
14	0.128	0.258	0.393	0.537	0.692	0.868	1.076	1.345	1.761	1.821	1.887	1.962	2.046	2.145	2.264	2.415	2.624	2.977	3.326	3.675	4.140
15	0.128	0.258	0.393	0.536	0.691	0.866	1.074	1.341	1.753	1.812	1.878	1.951	2.034	2.131	2.249	2.397	2.602	2.947	3.286	3.624	4.073
16	0.128	0.258	0.392	0.535	0.690	0.865	1.071	1.337	1.746	1.805	1.869	1.942	2.024	2.120	2.235	2.382	2.583	2.921	3.252	3.581	4.015
17	0.128	0.257	0.392	0.534	0.689	0.863	1.069	1.333	1.740	1.798	1.862	1.934	2.015	2.110	2.224	2.368	2.567	2.898	3.222	3.543	3.965
18	0.127	0.257	0.392	0.534	0.688	0.862	1.067	1.330	1.734	1.792	1.855	1.926	2.007	2.101	2.214	2.356	2.552	2.878	3.197	3.510	3.922
19	0.127	0.257	0.391	0.533	0.688	0.861	1.066	1.328	1.729	1.786	1.850	1.920	2.000	2.093	2.205	2.346	2.539	2.861	3.174	3.481	3.883
20	0.127	0.257	0.391	0.533	0.687	0.860	1.064	1.325	1.725	1.782	1.844	1.914	1.994	2.086	2.197	2.336	2.528	2.845	3.153	3.455	3.850
21	0.127	0.257	0.391	0.532	0.686	0.859	1.063	1.323	1.721	1.777	1.840	1.909	1.988	2.080	2.189	2.328	2.518	2.831	3.135	3.432	3.819
22	0.127	0.256	0.390	0.532	0.686	0.858	1.061	1.321	1.717	1.773	1.835	1.905	1.983	2.074	2.183	2.320	2.508	2.819	3.119	3.412	3.792
23	0.127	0.256	0.390	0.532	0.685	0.858	1.060	1.319	1.714	1.770	1.832	1.900	1.978	2.069	2.177	2.313	2.500	2.807	3.104	3.393	3.768
24	0.127	0.256	0.390	0.531	0.685	0.857	1.059	1.318	1.711	1.767	1.828	1.896	1.974	2.064	2.172	2.307	2.492	2.797	3.091	3.376	3.745
25	0.127	0.256	0.390	0.531	0.684	0.856	1.058	1.316	1.708	1.764	1.825	1.893	1.970	2.060	2.167	2.301	2.485	2.787	3.078	3.361	3.725
26	0.127	0.256	0.390	0.531	0.684	0.856	1.058	1.315	1.706	1.761	1.822	1.890	1.967	2.056	2.162	2.296	2.479	2.779	$\frac{3.067}{2.057}$	3.346	$\frac{3.707}{2.600}$
27	$0.127 \\ 0.127$	$0.256 \\ 0.256$	0.389	0.531	0.684 $0.683$	0.855	1.057	1.314	1.703	1.758	1.819	1.887 1.884	1.963	2.052	2.158	2.291 $2.286$	2.473	2.771 $2.763$	$\frac{3.057}{2.047}$	3.333 $3.321$	$3.690 \\ 3.674$
28 29	0.127 $0.127$	0.256	0.389 $0.389$	$0.530 \\ 0.530$		0.855 $0.854$	1.056 $1.055$	1.313	1.701 $1.699$	1.756 $1.754$	1.817 $1.814$	1.881	1.960	2.048 $2.045$	2.154 $2.150$	2.280 $2.282$	2.467 $2.462$	2.703 $2.756$	3.047 $3.038$		$\frac{3.074}{3.659}$
$\frac{29}{30}$	0.127 $0.127$	0.256	0.389	0.530	0.683 $0.683$	0.854	1.055 $1.055$	1.311 1.310	1.699 $1.697$	1.754 $1.752$	1.812	1.879	1.957 $1.955$	2.045 $2.042$	2.130 $2.147$	2.282 $2.278$	2.402 $2.457$	2.750 $2.750$	3.030	3.310 $3.300$	3.646
35	0.127 $0.127$	0.250 $0.255$	0.388	0.529	0.682	0.854 $0.852$	1.055 $1.052$	1.310 $1.306$	1.690	1.732 $1.744$	1.803	1.869	1.935 $1.944$	2.042 $2.030$	2.147 $2.133$	2.218 $2.262$	$\frac{2.437}{2.438}$	2.730 $2.724$	$\frac{3.030}{2.996}$	$\frac{3.300}{3.258}$	3.591
40	0.127 $0.126$	0.255	0.388	0.529	0.682	0.852 $0.851$	1.052 $1.050$	1.300 $1.303$	1.684	1.744 $1.737$	1.796	1.862	1.944 $1.936$	2.030 $2.021$	2.133 $2.123$	2.202 $2.250$	2.436 $2.423$	2.724 $2.704$	2.990 $2.971$	$\frac{3.256}{3.227}$	3.551
50	0.126	0.255	0.388	0.529 $0.528$	0.679	0.849	1.030 $1.047$	1.303 $1.299$	1.676	1.737 $1.729$	1.787	1.852	1.930 $1.924$	2.021 $2.009$	2.123 $2.109$	2.230 $2.234$	2.423 $2.403$	2.704 $2.678$	2.971 $2.937$	3.184	3.496
60	0.126	0.253 $0.254$	0.387	0.526 $0.527$	0.679	0.848	1.047 $1.045$	1.296	1.670 $1.671$	1.723 $1.723$	1.781	1.845	1.924 $1.917$	2.009 $2.000$	2.109 $2.099$	2.234 $2.223$	2.403 $2.390$	$\frac{2.078}{2.660}$	2.937 $2.915$	3.154	3.460
120	0.126	0.254 $0.254$	0.386	0.527 $0.526$	0.675	0.845	1.045	1.289	1.658	1.729	1.766	1.828	1.899	1.980	2.035 $2.076$	2.196	2.358	2.617	$\frac{2.315}{2.860}$	3.088	3.373
	0.120	J.204	0.000	0.020	0.011	0.040	1.041	1.200	1.000	1.100	1.100	1.020	1.000	1.000	2.010	2.100	2.000	2.011	2.000	<b>3.</b> 000	0.010

Tabela 2: Quantis da Distribuição t. Graus de liberdade na margem esquerda da tabela e probabilidades p dadas no topo da tabela tal que  $\frac{p}{2} = P[t \ge t_t]$ .

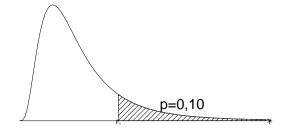
## Distribuição $\chi^2$



	99.5%	99%	98%	97.5%	95%	90%	80%	70%	60%	50%	40%	30%	20%	10%	5%	2.5%	2%	1%	0.5%	0.1%
	$\frac{99.570}{0.000}$	$\frac{9970}{0.000}$	0.001	0.001	$\frac{9370}{0.004}$	0.016	0.064	0.148	0.275	0.455	0.708	$\frac{30\%}{1.074}$	$\frac{2070}{1.642}$	$\frac{1076}{2.706}$	$\frac{370}{3.841}$	$\frac{2.370}{5.024}$	$\frac{270}{5.412}$	$\frac{170}{6.635}$	7.879	$\frac{0.176}{10.828}$
2	0.010	0.020	0.040	0.051	0.103	0.211	0.446	0.713	1.022	1.386	1.833	2.408	3.219	4.605	5.991	7.378	7.824	9.210	10.597	13.816
3	0.072	0.115	0.185	0.216	0.352	0.584	1.005	1.424	1.869	2.366	2.946	3.665	4.642	6.251	7.815	9.348	9.837	11.345	12.838	16.266
4	0.207	0.297	0.429	0.484	0.711	1.064	1.649	2.195	2.753	3.357	4.045	4.878	5.989	7.779	9.488	11.143	11.668	13.277	14.860	18.467
5	0.412	0.554	0.752	0.831	1.145	1.610	2.343	3.000	3.655	4.351	5.132	6.064	7.289	9.236	11.070	12.833	13.388	15.086	16.750	20.515
6	0.676	0.872	1.134	1.237	1.635	2.204	3.070	3.828	4.570	5.348	6.211	7.231	8.558	10.645	12.592	14.449	15.033	16.812	18.548	22.458
7	0.989	1.239	1.564	1.690	2.167	2.833	3.822	4.671	5.493	6.346	7.283	8.383	9.803	12.017	14.067	16.013	16.622	18.475	20.278	24.322
8	1.344	1.646	2.032	2.180	2.733	3.490	4.594	5.527	6.423	7.344	8.351	9.524	11.030	13.362	15.507	17.535	18.168	20.090	21.955	26.124
9	1.735	2.088	2.532	2.700	3.325	4.168	5.380	6.393	7.357	8.343	9.414	10.656	12.242	14.684	16.919	19.023	19.679	21.666	23.589	27.877
10	2.156	2.558	3.059	3.247	3.940	4.865	6.179	7.267	8.295	9.342	10.473	11.781	13.442	15.987	18.307	20.483	21.161	23.209	25.188	29.588
11	2.603	3.053	3.609	3.816	4.575	5.578	6.989	8.148	9.237	10.341	11.530	12.899	14.631	17.275	19.675	21.920	22.618	24.725	26.757	31.264
12	3.074	3.571	4.178	4.404	5.226	6.304	7.807	9.034	10.182	11.340	12.584	14.011	15.812	18.549	21.026	23.337	24.054	26.217	28.300	32.909
13	3.565	4.107	4.765	5.009	5.892	7.042	8.634	9.926	11.129	12.340	13.636	15.119	16.985	19.812	22.362	24.736	25.472	27.688	29.819	34.528
14	4.075	4.660	5.368	5.629	6.571	7.790	9.467	10.821	12.078	13.339	14.685	16.222	18.151	21.064	23.685	26.119	26.873	29.141	31.319	36.123
15	4.601	5.229	5.985	6.262	7.261	8.547	10.307	11.721	13.030	14.339	15.733	17.322	19.311	22.307	24.996	27.488	28.259	30.578	32.801	37.697
16	5.142	5.812	6.614	6.908	7.962	9.312	11.152	12.624	13.983	15.338	16.780	18.418	20.465	23.542	26.296	28.845	29.633	32.000	34.267	39.252
17	5.697	6.408	7.255	7.564	8.672	10.085	12.002	13.531	14.937	16.338	17.824	19.511	21.615	24.769	27.587	30.191	30.995	33.409	35.718	40.790
18	6.265	7.015	$7.906 \\ 8.567$	8.231	9.390 $10.117$	10.865 $11.651$	12.857 $13.716$	14.440	15.893	17.338	18.868	20.601	22.760	25.989 $27.204$	28.869	31.526 $32.852$	32.346 $33.687$	34.805	37.156	42.312 $43.820$
19 20	6.844	7.633 $8.260$	9.237	8.907 $9.591$	10.117 $10.851$	12.443	13.710 $14.578$	$15.352 \\ 16.266$	16.850 $17.809$	18.338 $19.337$	$19.910 \\ 20.951$	21.689 $22.775$	23.900 $25.038$	28.412	30.144 $31.410$	32.832 $34.170$	35.020	36.191 $37.566$	38.582 $39.997$	45.820 $45.315$
21	7.434 $8.034$	8.897	9.237	$\frac{9.391}{10.283}$	10.851 $11.591$	12.443 $13.240$	15.445	17.182	18.768	$\frac{19.337}{20.337}$	20.931 $21.991$	23.858	26.171	29.615	31.410 $32.671$	35.479	36.343	38.932	39.997 41.401	46.797
$\frac{21}{22}$	8.643	9.542	10.600	10.283 $10.982$	12.338	13.240 $14.041$	16.314	18.101	19.729	20.337 $21.337$	23.031	24.939	27.301	30.813	33.924	36.781	37.659	40.289	42.796	48.268
23	9.260	10.196	11.293	11.689	13.091	14.848	17.187	19.021	20.690	21.337 $22.337$	24.069	26.018	28.429	32.007	35.324 $35.172$	38.076	38.968	40.263 $41.638$	44.181	49.728
24	9.886	10.856	11.992	12.401	13.848	15.659	18.062	19.943	21.652	23.337	25.106	27.096	29.553	33.196	36.415	39.364	40.270	42.980	45.559	51.179
25	10.520	11.524	12.697	13.120	14.611	16.473	18.940	20.867	22.616	24.337	26.143	28.172	30.675	34.382	37.652	40.646	41.566	44.314	46.928	52.620
26	11.160	12.198	13.409	13.844	15.379	17.292	19.820	21.792	23.579	25.336	27.179	29.246	31.795	35.563	38.885	41.923	42.856	45.642	48.290	54.052
27	11.808	12.879	14.125	14.573	16.151	18.114	20.703	22.719	24.544	26.336	28.214	30.319	32.912	36.741	40.113	43.195	44.140	46.963	49.645	55.476
28	12.461	13.565	14.847	15.308	16.928	18.939	21.588	23.647	25.509	27.336	29.249	31.391	34.027	37.916	41.337	44.461	45.419	48.278	50.993	56.892
29	13.121	14.256	15.574	16.047	17.708	19.768	22.475	24.577	26.475	28.336	30.283	32.461	35.139	39.087	42.557	45.722	46.693	49.588	52.336	58.301
30	13.787	14.953	16.306	16.791	18.493	20.599	23.364	25.508	27.442	29.336	31.316	33.530	36.250	40.256	43.773	46.979	47.962	50.892	53.672	59.703
35	17.192	18.509	20.027	20.569	22.465	24.797	27.836	30.178	32.282	34.336	36.475	38.859	41.778	46.059	49.802	53.203	54.244	57.342	60.275	66.619
40	20.707	22.164	23.838	24.433	26.509	29.051	32.345	34.872	37.134	39.335	41.622	44.165	47.269	51.805	55.758	59.342	60.436	63.691	66.766	73.402
45	24.311	25.901	27.720	28.366	30.612	33.350	36.884	39.585	41.995	44.335	46.761	49.452	52.729	57.505	61.656	65.410	66.555	69.957	73.166	80.077
_50	27.991	29.707	31.664	32.357	34.764	37.689	41.449	44.313	46.864	49.335	51.892	54.723	58.164	63.167	67.505	71.420	72.613	76.154	79.490	86.661

Tabela 3: Quantis da Distribuição  $\chi^2$ . Graus de liberdade na margem esquerda da tabela e probabilidades p dadas no topo da tabela tal que  $p=P[\chi^2 \geq \chi^2_t]$ .

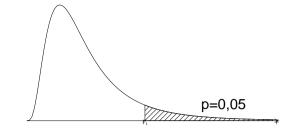
### Distribuição F de Snedecor a 10% (p=0.10)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	30	40	60	120
2	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38	9.39	9.40	9.41	9.41	9.42	9.42	9.43	9.44	9.44	9.46	9.47	9.47	9.48
3	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24	5.23	5.22	5.22	5.21	5.20	5.20	5.20	5.19	5.18	5.17	5.16	5.15	5.14
4	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94	3.92	3.91	3.90	3.89	3.88	3.87	3.86	3.85	3.84	3.82	3.80	3.79	3.78
5	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32	3.30	3.28	3.27	3.26	3.25	3.24	3.23	3.22	3.21	3.17	3.16	3.14	3.12
6	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96	2.94	2.92	2.90	2.89	2.88	2.87	2.86	2.85	2.84	2.80	2.78	2.76	2.74
7	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72	2.70	2.68	2.67	2.65	2.64	2.63	2.62	2.61	2.59	2.56	2.54	2.51	2.49
8	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56	2.54	2.52	2.50	2.49	2.48	2.46	2.45	2.44	2.42	2.38	2.36	2.34	2.32
9	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44	2.42	2.40	2.38	2.36	2.35	2.34	2.33	2.31	2.30	2.25	2.23	2.21	2.18
10	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35	2.32	2.30	2.28	2.27	2.26	2.24	2.23	2.22	2.20	2.16	2.13	2.11	2.08
11	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27	2.25	2.23	2.21	2.19	2.18	2.17	2.16	2.14	2.12	2.08	2.05	2.03	2.00
12	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21	2.19	2.17	2.15	2.13	2.12	2.10	2.09	2.08	2.06	2.01	1.99	1.96	1.93
13	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16	2.14	2.12	2.10	2.08	2.07	2.05	2.04	2.02	2.01	1.96	1.93	1.90	1.88
14	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12	2.10	2.07	2.05	2.04	2.02	2.01	2.00	1.98	1.96	1.91	1.89	1.86	1.83
15	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09	2.06	2.04	2.02	2.00	1.99	1.97	1.96	1.94	1.92	1.87	1.85	1.82	1.79
16	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06	2.03	2.01	1.99	1.97	1.95	1.94	1.93	1.91	1.89	1.84	1.81	1.78	1.75
17	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03	2.00	1.98	1.96	1.94	1.93	1.91	1.90	1.88	1.86	1.81	1.78	1.75	1.72
18	3.01	2.62	2.42	2.29	2.20	2.13	2.08	2.04	2.00	1.98	1.95	1.93	1.92	1.90	1.89	1.87	1.85	1.84	1.78	1.75	1.72	1.69
19	2.99	2.61	2.40	2.27	2.18	2.11	2.06	2.02	1.98	1.96	1.93	1.91	1.89	1.88	1.86	1.85	1.83	1.81	1.76	1.73	1.70	1.67
20	2.97	2.59	2.38	2.25	2.16	2.09	2.04	2.00	1.96	1.94	1.91	1.89	1.87	1.86	1.84	1.83	1.81	1.79	1.74	1.71	1.68	1.64
21	2.96	2.57	2.36	2.23	2.14	2.08	2.02	1.98	1.95	1.92	1.90	1.87	1.86	1.84	1.83	1.81	1.79	1.78	1.72	1.69	1.66	1.62
22	2.95	2.56	2.35	2.22	2.13	2.06	2.01	1.97	1.93	1.90	1.88	1.86	1.84	1.83	1.81	1.80	1.78	1.76	1.70	1.67	1.64	1.60
23	2.94	2.55	2.34	2.21	2.11	2.05	1.99	1.95	1.92	1.89	1.87	1.84	1.83	1.81	1.80	1.78	1.76	1.74	1.69	1.66	1.62	1.59
24	2.93	$\frac{2.54}{2.52}$	2.33	2.19	2.10	2.04	1.98	1.94	1.91	1.88	1.85	1.83	1.81	1.80	1.78	1.77	1.75	1.73	1.67	1.64	1.61	1.57
25	2.92	$\frac{2.53}{2.53}$	2.32	2.18	2.09	2.02	1.97	1.93	1.89	1.87	1.84	1.82	1.80	1.79	1.77	1.76	1.74	1.72	1.66	1.63	1.59	1.56
26 27	2.91	$\frac{2.52}{2.51}$	2.31 $2.30$	$\frac{2.17}{2.17}$	$\frac{2.08}{2.07}$	2.01	1.96	1.92	1.88	1.86	1.83	1.81	1.79	1.77	1.76	1.75	1.72	1.71	$\frac{1.65}{1.64}$	1.61	1.58	1.54
27 28	$\frac{2.90}{2.89}$	$2.51 \\ 2.50$	2.30 $2.29$	2.17 $2.16$	2.07 $2.06$	$\frac{2.00}{2.00}$	$1.95 \\ 1.94$	1.91 1.90	1.87 $1.87$	1.85 $1.84$	1.82 $1.81$	$1.80 \\ 1.79$	$1.78 \\ 1.77$	$1.76 \\ 1.75$	$1.75 \\ 1.74$	$1.74 \\ 1.73$	$1.71 \\ 1.70$	$1.70 \\ 1.69$	1.64 $1.63$	$1.60 \\ 1.59$	$1.57 \\ 1.56$	$1.53 \\ 1.52$
29	2.89	$\frac{2.50}{2.50}$	2.29 $2.28$	2.10 $2.15$	2.06	1.99	1.94 $1.93$	1.89	1.86	1.83	1.80	1.78	1.76	1.75 $1.75$	1.74 $1.73$	1.73 $1.72$	1.69	1.68	1.62	1.59 $1.58$	1.55	1.52 $1.51$
30	2.88	2.49	$\frac{2.28}{2.28}$	2.13 $2.14$	2.05	1.98	1.93	1.88	1.85	1.82	1.79	1.77	1.75	1.75 $1.74$	1.73 $1.72$	1.72 $1.71$	1.69	1.67	1.62	1.56 $1.57$	1.54	1.50
40	2.84	$\frac{2.49}{2.44}$	2.23	2.14 $2.09$	2.00	1.93	1.87	1.83	1.79	1.76	1.74	1.71	1.70	1.68	1.66	1.65	1.62	1.61	1.54	1.51	1.47	1.42
60	2.79	2.39	2.23 $2.18$	2.03 $2.04$	1.95	1.87	1.82	1.77	1.73 $1.74$	1.71	1.68	1.66	1.64	1.62	1.60	1.59	1.56	1.54	1.48	1.44	1.40	1.42 $1.35$
120	$\frac{2.15}{2.75}$	$\frac{2.35}{2.35}$	2.13	1.99	1.90	1.82	1.77	1.72	1.68	1.65	1.63	1.60	1.58	1.56	1.55	1.53	1.50	1.48	1.41	1.37	1.32	1.26
120	2.10	2.00	2.10	1.00	1.00	1.02	1.11	1.14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.11	1.01	1.04	

Tabela 4: Quantis da Distribuição F para probabilidade  $p=P[F\geq F_t]=0,10.$  Graus de liberdade do numerador no topo e do denominador na margem esquerda.

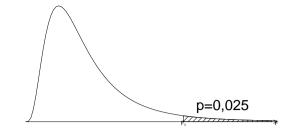
### Distribuição F de Snedecor a 5% (p=0.05)



-	1	2	3	4		6	7	8	0	10	12	14	15	16	18	20	30	40	60	120
			19.16	10.25	5 19.30				10.20			19.42								$\frac{120}{19.49}$
$\frac{2}{3}$	18.51	19.00	9.28	19.25 $9.12$		19.33	19.35	19.37	19.38	19.40	19.41	8.71	19.43	19.43	19.44	19.45	$19.46 \\ 8.62$	19.47	19.48	8.55
-	10.13	9.55			9.01	8.94	8.89	8.85	8.81	8.79	8.74		8.70	8.69	8.67	8.66		8.59	8.57	
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	$6.04 \\ 4.82$	$6.00 \\ 4.77$	5.96	5.91	5.87	$5.86 \\ 4.62$	5.84	5.82	5.80	5.75	5.72	5.69	5.66
5 6	6.61	5.79	5.41	5.19	5.05	4.95	4.88			4.74	4.68	4.64		4.60	4.58	4.56	4.50	4.46	4.43	4.40
6	$5.99 \\ 5.59$	$5.14 \\ 4.74$	$4.76 \\ 4.35$	4.53 $4.12$	$4.39 \\ 3.97$	$4.28 \\ 3.87$	$4.21 \\ 3.79$	$4.15 \\ 3.73$	$4.10 \\ 3.68$	$4.06 \\ 3.64$	$\frac{4.00}{3.57}$	$3.96 \\ 3.53$	$3.94 \\ 3.51$	$3.92 \\ 3.49$	$\frac{3.90}{3.47}$	$\frac{3.87}{3.44}$	$\frac{3.81}{3.38}$	$3.77 \\ 3.34$	$3.74 \\ 3.30$	$3.70 \\ 3.27$
(																				
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.28	3.24	3.22	3.20	3.17	3.15	3.08	3.04	3.01	2.97
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.07	3.03	3.01	2.99	2.96	2.94	2.86	2.83	2.79	2.75
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.91	2.86	2.85	2.83	2.80	2.77	2.70	2.66	2.62	2.58
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.79	2.74	2.72	2.70	2.67	2.65	2.57	2.53	2.49	2.45
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.69	2.64	2.62	2.60	2.57	2.54	2.47	2.43	2.38	2.34
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.60	2.55	2.53	2.51	2.48	2.46	2.38	2.34	2.30	2.25
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.53	2.48	2.46	2.44	2.41	2.39	2.31	2.27	2.22	2.18
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.48	2.42	2.40	2.38	2.35	2.33	2.25	2.20	2.16	2.11
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.42	2.37	2.35	2.33	2.30	2.28	2.19	2.15	2.11	2.06
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.38	2.33	2.31	2.29	2.26	2.23	2.15	2.10	2.06	2.01
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.34	2.29	2.27	2.25	2.22	2.19	2.11	2.06	2.02	1.97
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.31	2.26	2.23	2.21	2.18	2.16	2.07	2.03	1.98	1.93
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.28	2.22	2.20	2.18	2.15	2.12	2.04	1.99	1.95	1.90
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.25	2.20	2.18	2.16	2.12	2.10	2.01	1.96	1.92	1.87
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.23	2.17	2.15	2.13	2.10	2.07	1.98	1.94	1.89	1.84
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27	2.20	2.15	2.13	2.11	2.08	2.05	1.96	1.91	1.86	1.81
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.18	2.13	2.11	2.09	2.05	2.03	1.94	1.89	1.84	1.79
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.16	2.11	2.09	2.07	2.04	2.01	1.92	1.87	1.82	1.77
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.15	2.09	2.07	2.05	2.02	1.99	1.90	1.85	1.80	1.75
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20	2.13	2.08	2.06	2.04	2.00	1.97	1.88	1.84	1.79	1.73
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.12	2.06	2.04	2.02	1.99	1.96	1.87	1.82	1.77	1.71
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18	2.10	2.05	2.03	2.01	1.97	1.94	1.85	1.81	1.75	1.70
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.09	2.04	2.01	1.99	1.96	1.93	1.84	1.79	1.74	1.68
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.00	1.95	1.92	1.90	1.87	1.84	1.74	1.69	1.64	1.58
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.92	1.86	1.84	1.82	1.78	1.75	1.65	1.59	1.53	1.47
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96	1.91	1.83	1.78	1.75	1.73	1.69	1.66	1.55	1.50	1.43	1.35

Tabela 5: Quantis da Distribuição F para probabilidade  $p=P[F\geq F_t]=0,05$ . Graus de liberdade do numerador dado no topo e do denominador na margem esquerda.

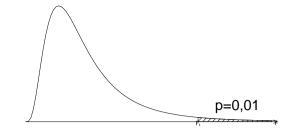
### Distribuição F de Snedecor a 2,5% (p=0.025)



	1	2	3	4	5	6	7	8	9	10	12	14	15	16	18	20	30	40	60	120
	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39	39.40	39.41	39.43	39.43	39.44	39.44	39.45	39.46	39.47	39.48	39.49
3	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47	14.42	14.34	14.28	14.25	14.23	14.20	14.17	14.08	14.04	13.99	13.95
<i>J</i>	17.44 $12.22$	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90	8.84	8.75	8.68	8.66	8.63	8.59	8.56	8.46	8.41	8.36	8.31
5	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68	6.62	6.73	6.46	6.43	6.40	6.36	6.33	6.23	6.18	6.12	6.07
6	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52	5.46	5.37	5.30	5.27	5.24	5.20	5.17	5.07	5.01	4.96	4.90
7	8.07	6.54	5.89	5.52	5.29	5.32 $5.12$	4.99	4.90	4.82	4.76	$\frac{3.37}{4.67}$	4.60	$\frac{3.27}{4.57}$	$\frac{3.24}{4.54}$	4.50	$\frac{5.17}{4.47}$	4.36	4.31	4.90 $4.25$	4.20
8	7.57	6.06	5.42	5.02	4.82	$\frac{3.12}{4.65}$	4.53	4.43	4.36	4.70	4.20	4.00 $4.13$	4.10	4.04	4.03	4.00	$\frac{4.50}{3.89}$	$\frac{4.31}{3.84}$	$\frac{4.23}{3.78}$	$\frac{4.20}{3.73}$
9	7.21	5.71	5.42 $5.08$	4.72	4.48	4.03 $4.32$	4.20	4.43	4.03	3.96	$\frac{4.20}{3.87}$	3.80	$\frac{4.10}{3.77}$	3.74	3.70	$\frac{4.00}{3.67}$	3.56	3.54	3.45	3.39
10	6.94	5.46	4.83	4.12 $4.47$	4.46	4.07	$\frac{4.20}{3.95}$	$\frac{4.10}{3.85}$	$\frac{4.03}{3.78}$	3.72	$\frac{3.67}{3.62}$	3.55	$\frac{3.77}{3.52}$	3.74 $3.50$	$\frac{3.70}{3.45}$	3.42	3.31	$\frac{3.31}{3.26}$	$3.40 \\ 3.20$	3.14
11	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.76	$\frac{3.72}{3.53}$	$\frac{3.02}{3.43}$	3.36	$\frac{3.32}{3.33}$	3.30	3.46	$\frac{3.42}{3.23}$	3.12	3.20 $3.06$	$\frac{3.20}{3.00}$	$\frac{3.14}{2.94}$
12	6.55	5.20 $5.10$	$\frac{4.03}{4.47}$	4.12	3.89	3.73	3.61	3.51	3.44	3.37	3.43 $3.28$	3.21	3.18	3.15	3.11	3.23	$\frac{3.12}{2.96}$	$\frac{3.00}{2.91}$	2.85	2.79
13	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.44 $3.31$	3.25	$\frac{3.25}{3.15}$	3.08	3.16	3.13	2.98	2.95	2.84	$\frac{2.31}{2.78}$	$\frac{2.63}{2.72}$	2.66
14	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21	3.15	3.15	2.98	2.95	$\frac{3.03}{2.92}$	$\frac{2.38}{2.88}$	$\frac{2.35}{2.84}$	2.73	$\frac{2.16}{2.67}$	$\frac{2.12}{2.61}$	2.55
15	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12	3.16	2.96	$\frac{2.36}{2.89}$	$\frac{2.35}{2.86}$	$\frac{2.32}{2.84}$	$\frac{2.33}{2.79}$	2.76	$\frac{2.13}{2.64}$	2.59	2.52	2.46
16	6.12	4.69	4.08	3.73	3.50	3.34	3.23	3.12	3.12 $3.05$	2.99	2.89	$\frac{2.83}{2.82}$	$\frac{2.30}{2.79}$	2.76	$\frac{2.13}{2.72}$	2.68	$\frac{2.04}{2.57}$	2.53 $2.51$	$\frac{2.32}{2.45}$	2.38
17	6.04	4.62	4.00	3.66	3.44	3.28	3.16	3.12 $3.06$	2.98	$\frac{2.93}{2.92}$	$\frac{2.83}{2.82}$	$\frac{2.02}{2.75}$	$\frac{2.13}{2.72}$	$\frac{2.70}{2.70}$	$\frac{2.12}{2.65}$	2.62	$\frac{2.57}{2.50}$	$\frac{2.31}{2.44}$	$\frac{2.43}{2.38}$	2.32
18	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93	$\frac{2.32}{2.87}$	2.77	$\frac{2.70}{2.70}$	2.67	$\frac{2.16}{2.64}$	2.60	2.56	$\frac{2.50}{2.44}$	2.38	2.32	2.26
19	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88	2.82	$\frac{2.77}{2.72}$	$\frac{2.16}{2.65}$	2.62	2.59	2.55	2.50 $2.51$	2.39	2.33	$\frac{2.32}{2.27}$	2.20
20	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84	2.77	2.68	2.60	2.57	2.55	2.50	2.46	2.35	2.29	2.21	2.16
21	5.83	4.42	3.82	3.48	3.25	3.09	2.97	2.87	2.80	2.73	2.64	2.56	2.53	2.51	2.46	2.42	2.31	2.25	2.18	2.11
22	5.79	4.38	3.78	3.44	3.22	3.05	2.93	2.84	2.76	2.70	2.60	2.53	2.50	2.47	2.43	2.39	2.27	2.21	2.14	2.08
23	5.75	4.35	3.75	3.41	3.18	3.02	2.90	2.81	2.73	2.67	2.57	2.50	2.47	2.44	2.39	2.36	2.24	2.18	2.11	2.04
24	5.72	4.32	3.72	3.38	3.15	2.99	2.87	2.78	2.70	2.64	2.54	2.47	2.44	2.41	2.36	2.33	2.21	2.15	2.08	2.01
25	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68	2.61	2.51	2.44	2.41	2.38	2.34	2.30	2.18	2.12	2.05	1.98
26	5.66	4.27	3.67	3.33	3.10	2.94	2.82	2.73	2.65	2.59	2.49	2.42	2.39	2.36	2.31	2.28	2.16	2.09	2.03	1.95
27	5.63	4.24	3.65	3.31	3.08	2.92	2.80	2.71	2.63	2.57	2.47	2.39	2.36	2.34	2.29	2.25	2.13	2.07	2.00	1.93
28	5.61	4.22	3.63	3.29	3.06	2.90	2.78	2.69	2.61	2.55	2.45	2.37	2.34	2.32	2.27	2.23	2.11	2.05	1.98	1.91
29	5.59	4.20	3.61	3.27	3.04	2.88	2.76	2.67	2.59	2.53	2.43	2.36	2.32	2.32	2.25	2.21	2.09	2.03	1.96	1.89
30	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57	2.51	2.41	2.34	2.31	2.28	2.23	2.20	2.07	2.01	1.94	1.87
40	5.42	4.05	3.46	3.13	2.90	2.74	2.62	2.53	2.45	2.39	2.29	2.21	2.18	2.15	2.11	2.07	1.94	1.88	1.80	1.72
60	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33	2.27	2.17	2.09	2.06	2.03	1.98	1.94	1.82	1.74	1.67	1.58
120	5.15	3.80	3.23	2.89	2.67	2.52	2.39	2.30	2.22	2.16	2.05	1.98	1.94	1.92	1.87	1.82	1.69	1.61	1.53	1.43

Tabela 6: Quantis da Distribuição F para probabilidade  $p=P[F\geq F_t]=0,025$ . Graus de liberdade do numerador dado no topo e do denominador na margem esquerda.

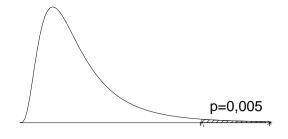
### Distribuição F de Snedecor a 1% (p=0.01)



	1	2	3	4	5	6	7	8	9	10	12	14	15	16	18	20	30	40	60	120
	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39	99.40	99.42	99.43	99.43	99.44	99.44	99.45	99.47	99.47	99.48	99.49
3	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35	27.23	27.05	26.92	26.87	26.83	26.75	26.69	26.50	26.41	26.32	26.22
4	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66	14.55	14.37	14.25	14.20	14.15	14.08	14.02	13.84	13.75	13.65	13.56
5	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16	10.05	9.89	9.77	9.72	9.68	9.61	9.55	9.38	9.29	9.20	9.11
6	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98	7.87	7.72	7.60	7.56	7.52	7.45	7.40	7.23	7.14	7.06	6.97
7	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72	6.62	6.47	6.36	6.31	6.28	6.21	6.16	5.99	5.91	5.82	5.74
8	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91	5.81	5.67	5.56	5.52	5.48	5.41	5.36	5.20	5.12	5.03	4.95
9	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35	5.26	5.11	5.01	4.96	4.92	4.86	4.81	4.65	4.57	4.48	4.40
10	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94	4.85	4.71	4.60	4.56	4.52	4.46	4.41	4.25	4.17	4.08	4.00
11	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63	4.54	4.40	4.29	4.25	4.21	4.15	4.10	3.94	3.86	3.78	3.69
12	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39	4.30	4.16	4.05	4.01	3.97	3.91	3.86	3.70	3.62	3.54	3.45
13	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19	4.10	3.96	3.86	3.82	3.78	3.72	3.66	3.51	3.43	3.34	3.25
14	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03	3.94	3.80	3.70	3.66	3.62	3.56	3.51	3.35	3.27	3.18	3.09
15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89	3.80	3.67	3.56	3.52	3.49	3.42	3.37	3.21	3.13	3.05	2.96
16	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69	3.55	3.45	3.41	3.37	3.31	3.26	3.10	3.02	2.93	2.84
17	8.40	6.11	5.18	4.67	4.34	4.10	3.93	3.79	3.68	3.59	3.46	3.35	3.31	3.27	3.21	3.16	3.00	2.92	2.83	2.75
18	8.29	6.01	5.09	4.58	4.25	4.01	3.84	3.71	3.60	3.51	3.37	3.27	3.23	3.19	3.13	3.08	2.92	2.84	2.75	2.66
19	8.18	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52	3.43	3.30	3.19	3.15	3.12	3.05	3.00	2.84	2.76	2.67	2.58
20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46	3.37	3.23	3.13	3.09	3.05	2.99	2.94	2.78	2.69	2.61	2.52
21	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40	3.31	3.17	3.07	3.03	2.99	2.93	2.88	2.72	2.64	2.55	2.46
22	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26	3.12	3.02	2.98	2.94	2.88	2.83	2.67	2.58	2.50	2.40
23	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21	3.07	2.97	2.93	2.89	2.83	2.78	2.62	2.54	2.45	2.35
24 25	7.82	5.61	4.72	4.22	3.90	$\frac{3.67}{3.63}$	3.50	$3.36 \\ 3.32$	$3.26 \\ 3.22$	3.17	3.03	2.93 $2.89$	$\frac{2.89}{2.85}$	$2.85 \\ 2.81$	2.79	2.74 $2.70$	$2.58 \\ 2.54$	2.49	$2.40 \\ 2.36$	$2.31 \\ 2.27$
$\frac{25}{26}$	7.77	5.57	4.68	4.18	$\frac{3.85}{3.82}$		$3.46 \\ 3.42$	$\frac{3.32}{3.29}$	$\frac{3.22}{3.18}$	3.13	2.99		$\frac{2.83}{2.81}$		$2.75 \\ 2.72$	$\frac{2.70}{2.66}$	$\frac{2.54}{2.50}$	2.45	$\frac{2.30}{2.33}$	$\frac{2.27}{2.23}$
	$7.72 \\ 7.68$	5.53	4.64	4.14	3.78	3.59				3.09	2.96	2.86	$\frac{2.81}{2.78}$	$\frac{2.78}{2.75}$	$\frac{2.72}{2.68}$			$2.42 \\ 2.38$	$\frac{2.33}{2.29}$	$\frac{2.23}{2.20}$
27 28	7.68	$5.49 \\ 5.45$	$4.60 \\ 4.57$	$4.11 \\ 4.07$	3.78 3.75	$3.56 \\ 3.53$	$3.39 \\ 3.36$	$3.26 \\ 3.23$	$3.15 \\ 3.12$	$\frac{3.06}{3.03}$	2.93 $2.90$	$2.82 \\ 2.79$	$\frac{2.78}{2.75}$	$2.75 \\ 2.72$	$\frac{2.08}{2.65}$	2.63 $2.60$	$2.47 \\ 2.44$	$\frac{2.38}{2.35}$	$\frac{2.29}{2.26}$	$\frac{2.20}{2.17}$
20 29	7.60	5.43 $5.42$	$\frac{4.57}{4.54}$	4.04	3.73	3.50	3.33	3.20	$\frac{3.12}{3.09}$	3.00	$\frac{2.90}{2.87}$	$\frac{2.79}{2.77}$	$\frac{2.73}{2.73}$	$\frac{2.12}{2.69}$	$\frac{2.63}{2.63}$	2.50	$\frac{2.44}{2.41}$	$\frac{2.33}{2.33}$	$\frac{2.20}{2.23}$	$\frac{2.17}{2.14}$
30	7.56	5.42 $5.39$	4.54 $4.51$	4.04 $4.02$	3.73 3.70	$\frac{3.50}{3.47}$	3.30	$\frac{3.20}{3.17}$	3.09 $3.07$	$\frac{3.00}{2.98}$	2.84	$\frac{2.77}{2.74}$	$\frac{2.73}{2.70}$	$\frac{2.09}{2.66}$	$\frac{2.03}{2.60}$	$\frac{2.57}{2.55}$	$\frac{2.41}{2.39}$	2.30	$\frac{2.23}{2.21}$	$\frac{2.14}{2.11}$
40	7.30 $7.31$	5.18	4.31	$\frac{4.02}{3.83}$	3.70 $3.51$	3.47	3.12	2.99	$\frac{3.07}{2.89}$	2.80	2.64	2.74 $2.56$	$\frac{2.70}{2.52}$	2.48	2.42	$\frac{2.33}{2.37}$	2.39 $2.20$	2.30 $2.11$	$\frac{2.21}{2.02}$	1.92
60	7.31 $7.08$	4.98	4.13	3.65	3.34	3.29 $3.12$	$\frac{3.12}{2.95}$	$\frac{2.99}{2.82}$	2.72	2.63	2.50	2.30 $2.39$	$\frac{2.32}{2.35}$	2.40 $2.31$	$\frac{2.42}{2.25}$	2.20	2.20	1.94	1.84	1.73
120	6.85	4.79	$\frac{4.15}{3.95}$	$\frac{3.03}{3.48}$	3.14	$\frac{3.12}{2.96}$	$\frac{2.33}{2.79}$	$\frac{2.62}{2.66}$	$\frac{2.12}{2.56}$	$\frac{2.03}{2.47}$	$\frac{2.30}{2.34}$	2.33	2.39 $2.19$	$\frac{2.31}{2.15}$	$\frac{2.25}{2.09}$	2.20	1.86	1.76	1.66	1.73
120	0.00	4.13	0.90	9.40	9.11	4.90	4.13	2.00	2.00	4.41	4.04	۵.20	2.13	2.10	2.03	۵.00	1.00	1.10	1.00	1.00

Tabela 7: Quantis da Distribuição F para probabilidade  $p = P[F \ge F_t] = 0,01$ . Graus de liberdade do numerador dado no topo e do denominador na margem esquerda.

# Distribuição F de Snedecor a 0,5% (p=0.005)



	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	30	40	60	120
2	198.50	199.00	199.17	199.25	199.30	199.33	199.36	199.37	199.39	199.40	199.42	199.43	199.44	199.44	199.45	199.47	199.47	199.48	199.49
3	55.55	49.80	47.47	46.19	45.39	44.84	44.43	44.13	43.88	43.69	43.39	43.17	43.01	42.88	42.78	42.47	42.31	42.15	41.99
4	31.33	26.28	24.26	23.15	22.46	21.97	21.62	21.35	21.14	20.97	20.70	20.51	20.37	20.26	20.17	19.89	19.75	19.61	19.47
5	22.78	18.31	16.53	15.56	14.94	14.51	14.20	13.96	13.77	13.62	13.38	13.21	13.09	12.98	12.90	12.66	12.53	12.40	12.27
6	18.63	14.54	12.92	12.03	11.46	11.07	10.79	10.57	10.39	10.25	10.03	9.88	9.76	9.66	9.59	9.36	9.24	9.12	9.00
7	16.24	12.40	10.88	10.05	9.52	9.16	8.89	8.68	8.51	8.38	8.18	8.03	7.91	7.83	7.75	7.53	7.42	7.31	7.19
8	14.69	11.04	9.60	8.81	8.30	7.95	7.69	7.50	7.34	7.21	7.01	6.87	6.76	6.68	6.61	6.40	6.29	6.18	6.06
9	13.61	10.11	8.72	7.96	7.47	7.13	6.88	6.69	6.54	6.42	6.23	6.09	5.98	5.90	5.83	5.62	5.52	5.41	5.30
10	12.83	9.43	8.08	7.34	6.87	6.54	6.30	6.12	5.97	5.85	5.66	5.53	5.42	5.34	5.27	5.07	4.97	4.86	4.75
11	12.23	8.91	7.60	6.88	6.42	6.10	5.86	5.68	5.54	5.42	5.24	5.10	5.00	4.92	4.86	4.65	4.55	4.45	4.34
12	11.75	8.51	7.23	6.52	6.07	5.76	5.52	5.35	5.20	5.09	4.91	4.77	4.67	4.59	4.53	4.33	4.23	4.12	4.01
13	11.37	8.19	6.93	6.23	5.79	5.48	5.25	5.08	4.94	4.82	4.64	4.51	4.41	4.33	4.27	4.07	3.97	3.87	3.76
14	11.06	7.92	6.68	6.00	5.56	5.26	5.03	4.86	4.72	4.60	4.43	4.30	4.20	4.12	4.06	3.86	3.76	3.66	3.55
15	10.80	7.70	6.48	5.80	5.37	5.07	4.85	4.67	4.54	4.42	4.25	4.12	4.02	3.95	3.88	3.69	3.58	3.48	3.37
16	10.58	7.51	6.30	5.64	5.21	4.91	4.69	4.52	4.38	4.27	4.10	3.97	3.87	3.80	3.73	3.54	3.44	3.33	3.22
17	10.38	7.35	6.16	5.50	5.07	4.78	4.56	4.39	4.25	4.14	3.97	3.84	3.75	3.67	3.61	3.41	3.31	3.21	3.10
18	10.22	7.21	6.03	5.37	4.96	4.66	4.44	4.28	4.14	4.03	3.86	3.73	3.64	3.56	3.50	3.30	3.20	3.10	2.99
19	10.07	7.09	5.92	5.27	4.85	4.56	4.34	4.18	4.04	3.93	3.76	3.64	3.54	3.46	3.40	3.21	3.11	3.00	2.89
20	9.94	6.99	5.82	5.17	4.76	4.47	4.26	4.09	3.96	3.85	3.68	3.55	3.46	3.38	3.32	3.12	3.02	2.92	2.81
21	9.83	6.89	5.73	5.09	4.68	4.39	4.18	4.01	3.88	3.77	3.60	3.48	3.38	3.31	3.24	3.05	2.95	2.84	2.73
22	9.73	6.81	5.65	5.02	4.61	4.32	4.11	3.94	3.81	3.70	3.54	3.41	3.31	3.24	3.18	2.98	2.88	2.77	2.66
23	9.63	6.73	5.58	4.95	4.54	4.26	4.05	3.88	3.75	3.64	3.47	3.35	3.25	3.18	3.12	2.92	2.82	2.71	2.60
24	9.55	6.66	5.52	4.89	4.49	4.20	3.99	3.83	3.69	3.59	3.42	3.30	3.20	3.12	3.06	2.87	2.77	2.66	2.55
25	9.48	6.60	5.46	4.84	4.43	4.15	3.94	3.78	3.64	3.54	3.37	3.25	3.15	3.08	3.01	2.82	2.72	2.61	2.50
26	9.41	6.54	5.41	4.79	4.38	4.10	3.89	3.73	3.60	3.49	3.33	3.20	3.11	3.03	2.97	2.77	2.67	2.56	2.45
27	9.34	6.49	5.36	4.74	4.34	4.06	3.85	3.69	3.56	3.45	3.28	3.16	3.07	2.99	2.93	2.73	2.63	2.52	2.41
28	9.28	6.44	5.32	4.70	4.30	4.02	3.81	3.65	3.52	3.41	3.25	3.12	3.03	2.95	2.89	2.69	2.59	2.48	2.37
29	9.23	6.40	5.28	4.66	4.26	3.98	3.77	3.61	3.48	3.38	3.21	3.09	2.99	2.92	2.86	2.66	2.56	2.45	2.33
30	9.18	6.35	5.24	4.62	4.23	3.95	3.74	3.58	3.45	3.34	3.18	3.06	2.96	2.89	2.82	2.63	2.52	2.42	2.30
40	8.83	6.07	4.98	4.37	3.99	3.71	3.51	3.35	3.22	3.12	2.95	2.83	2.74	2.66	2.60	2.40	2.30	2.18	2.06
60	8.49	5.79	4.73	4.14	3.76	3.49	3.29	3.13	3.01	2.90	2.74	2.62	2.53	2.45	2.39	2.19	2.08	1.96	1.83
_120	8.18	5.54	4.50	3.92	3.55	3.28	3.09	2.93	2.81	2.71	2.54	2.42	2.33	2.25	2.19	1.98	1.87	1.75	1.61

Tabela 8: Quantis da Distribuição F para probabilidade  $p=P[F\geq F_t]=0,005$ . Graus de liberdade do numerador dado no topo e do denominador na margem esquerda.