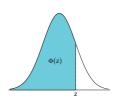
### Função Distribuição Cumulativa da Normal Reduzida

Esta tabela foi criada com base no comando pnorm do software R, indicando os valores da Função Distribuição Cumulativa duma  $\mathcal{N}(0,1)$ , para valores positivos da variável. No corpo da tabela estão as probabilidades  $\Phi(z) = P[Z \leq z]$ , onde z é o valor da variável que se obtem somando o número (com uma casa decimal) que está no princípio da linha com o número (de duas casas decimais) que está no topo da coluna. **Nota:**  $\Phi(-z) = 1 - \Phi(z)$ .

#### Densidade duma N(0,1)



	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.50000	0.50399	0.50798	0.51197	0.51595	0.51994	0.52392	0.52790	0.53188	0.53586
0.1	0.53983	0.54380	0.54776	0.55172	0.55567	0.55962	0.56356	0.56749	0.57142	0.57535
0.2	0.57926	0.58317	0.58706	0.59095	0.59483	0.59871	0.60257	0.60642	0.61026	0.61409
0.3	0.61791	0.62172	0.62552	0.62930	0.63307	0.63683	0.64058	0.64431	0.64803	0.65173
0.4	0.65542	0.65910	0.66276	0.66640	0.67003	0.67364	0.67724	0.68082	0.68439	0.68793
0.1	0.00012	0.00010	0.00210	0.00010	0.01000	0.01001	0.01121	0.00002	0.00100	0.00100
0.5	0.69146	0.69497	0.69847	0.70194	0.70540	0.70884	0.71226	0.71566	0.71904	0.72240
0.6	0.72575	0.72907	0.73237	0.73565	0.73891	0.74215	0.74537	0.74857	0.75175	0.75490
0.7	0.75804	0.76115	0.76424	0.76730	0.77035	0.77337	0.77637	0.77935	0.78230	0.78524
0.8	0.78814	0.79103	0.79389	0.79673	0.79955	0.80234	0.80511	0.80785	0.81057	0.81327
0.9	0.81594	0.81859	0.82121	0.82381	0.82639	0.82894	0.83147	0.83398	0.83646	0.83891
1.0	0.84134	0.84375	0.84614	0.84849	0.85083	0.85314	0.85543	0.85769	0.85993	0.86214
1.1	0.86433	0.86650	0.86864	0.87076	0.87286	0.87493	0.87698	0.87900	0.88100	0.88298
1.2	0.88493	0.88686	0.88877	0.89065	0.89251	0.89435	0.89617	0.89796	0.89973	0.90147
1.3	0.90320	0.90490	0.90658	0.90824	0.90988	0.91149	0.91309	0.91466	0.91621	0.91774
1.4	0.91924	0.92073	0.92220	0.92364	0.92507	0.92647	0.92785	0.92922	0.93056	0.93189
1.5	0.93319	0.93448	0.93574	0.93699	0.93822	0.93943	0.94062	0.94179	0.94295	0.94408
1.6	0.94520	0.94630	0.94738	0.94845	0.94950	0.95053	0.95154	0.95254	0.95352	0.95449
1.7	0.95543	0.95637	0.95728	0.95818	0.95907	0.95994	0.96080	0.96164	0.96246	0.96327
1.8	0.96407	0.96485	0.96562	0.96638	0.96712	0.96784	0.96856	0.96926	0.96995	0.97062
1.9	0.97128	0.97193	0.97257	0.97320	0.97381	0.97441	0.97500	0.97558	0.97615	0.97670
2.0	0.97725	0.97778	0.97831	0.97882	0.97932	0.97982	0.98030	0.98077	0.98124	0.98169
2.1	0.98214	0.98257	0.98300	0.98341	0.98382	0.98422	0.98461	0.98500	0.98537	0.98574
2.2	0.98610	0.98645	0.98679	0.98713	0.98745	0.98778	0.98809	0.98840	0.98870	0.98899
2.3	0.98928	0.98956	0.98983	0.99010	0.99036	0.99061	0.99086	0.99111	0.99134	0.99158
2.4	0.99180	0.99202	0.99224	0.99245	0.99266	0.99286	0.99305	0.99324	0.99343	0.99361
2.5	0.99379	0.99396	0.99413	0.99430	0.99446	0.99461	0.99477	0.99492	0.99506	0.99520
2.6	0.99534	0.99547	0.99560	0.99573	0.99585	0.99598	0.99609	0.99621	0.99632	0.99643
2.7	0.99653	0.99664	0.99674	0.99683	0.99693	0.99702	0.99711	0.99720	0.99728	0.99736
2.8	0.99744	0.99752	0.99760	0.99767	0.99774	0.99781	0.99788	0.99795	0.99801	0.99807
2.9	0.99813	0.99819	0.99825	0.99831	0.99836	0.99841	0.99846	0.99851	0.99856	0.99861
0.0	0.0000#	0.000.00	0.000=4	0.000=0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
3.0	0.99865	0.99869	0.99874	0.99878	0.99882	0.99886	0.99889	0.99893	0.99896	0.99900
3.1	0.99903	0.99906	0.99910	0.99913	0.99916	0.99918	0.99921	0.99924	0.99926	0.99929
3.2	0.99931	0.99934	0.99936	0.99938	0.99940	0.99942	0.99944	0.99946	0.99948	0.99950
3.3	0.99952	0.99953	0.99955	0.99957	0.99958	0.99960	0.99961	0.99962	0.99964	0.99965
3.4	0.99966	0.99968	0.99969	0.99970	0.99971	0.99972	0.99973	0.99974	0.99975	0.99976
2 =	0.00077	0.00079	0.00079	0.00070	0.00000	0.00001	0.00001	0.99982	0.00000	0 00000
3.5	0.99977	0.99978	0.99978	0.99979	0.99980	0.99981	0.99981		0.99983	0.99983
3.6	0.99984	0.99985	0.99985	0.99986	0.99986	0.99987	0.99987	0.99988	0.99988	0.99989
3.7	0.99989 $0.99993$	0.99990	0.99990	0.99990	0.99991	0.99991 $0.99994$	0.99992	0.99992 $0.99995$	0.99992 $0.99995$	0.99992
3.8 3.9	0.99995	0.99993	0.99993	0.99994	0.99994		0.99994	0.99996		0.99995
ა.ყ	0.99990	0.99995	0.99996	0.99996	0.99996	0.99996	0.99996	0.99990	0.99997	0.99997

## Valores percentuais da distribuição t-Student

Densidade duma t(n)

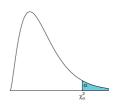
Esta tabela foi criada com base no comando qt do software R, indicando os quantis de ordem  $1-\alpha$  associados a variáveis aleatórias com distribuição t-Student,  $X\cap t_{(n)}$ , para valores do parâmetro n indicados no início de cada linha, e valores de  $\alpha$  indicados no topo de cada coluna. No corpo da tabela estão os valores de  $t_{\alpha}$  tais que  $P[X>t_{\alpha}]=\alpha$ .

					α			
n	0.4	0.25	0.1	0.05	0.025	0.01	0.005	0.001
1	0.32492	1.00000	3.07768	6.31375	12.70620	31.82052	63.65674	318.30884
2	0.28868	0.81650	1.88562	2.91999	4.30265	6.96456	9.92484	22.32712
3	0.27667	0.76489	1.63774	2.35336	3.18245	4.54070	5.84091	10.21453
4	0.27072	0.74070	1.53321	2.13185	2.77645	3.74695	4.60409	7.17318
5	0.26718	0.72669	1.47588	2.01505	2.57058	3.36493	4.03214	5.89343
6	0.26483	0.71756	1.43976	1.94318	2.44691	3.14267	3.70743	5.20763
7	0.26317	0.71114	1.41492	1.89458	2.36462	2.99795	3.49948	4.78529
8	0.26192	0.70639	1.39682	1.85955	2.30600	2.89646	3.35539	4.50079
9	0.26096	0.70272	1.38303	1.83311	2.26216	2.82144	3.24984	4.29681
10	0.26018	0.69981	1.37218	1.81246	2.22814	2.76377	3.16927	4.14370
11	0.25956	0.69745	1.36343	1.79588	2.20099	2.71808	3.10581	4.02470
12	0.25903	0.69548	1.35622	1.78229	2.17881	2.68100	3.05454	3.92963
13	0.25859	0.69383	1.35017	1.77093	2.16037	2.65031	3.01228	3.85198
14	0.25821	0.69242	1.34503	1.76131	2.14479	2.62449	2.97684	3.78739
15	0.25789	0.69120	1.34061	1.75305	2.13145	2.60248	2.94671	3.73283
16	0.25760	0.69013	1.33676	1.74588	2.11991	2.58349	2.92078	3.68615
17	0.25735	0.68920	1.33338	1.73961	2.10982	2.56693	2.89823	3.64577
18	0.25712	0.68836	1.33039	1.73406	2.10092	2.55238	2.87844	3.61048
19	0.25692	0.68762	1.32773	1.72913	2.09302	2.53948	2.86093	3.57940
20	0.25674	0.68695	1.32534	1.72472	2.08596	2.52798	2.84534	3.55181
21	0.25658	0.68635	1.32319	1.72074	2.07961	2.51765	2.83136	3.52715
22	0.25643	0.68581	1.32124	1.71714	2.07387	2.50832	2.81876	3.50499
23	0.25630	0.68531	1.31946	1.71387	2.06866	2.49987	2.80734	3.48496
24	0.25617	0.68485	1.31784	1.71088	2.06390	2.49216	2.79694	3.46678
25	0.25606	0.68443	1.31635	1.70814	2.05954	2.48511	2.78744	3.45019
0.0	0.05505	0.00404	1 21 407	1 70500	0.05550	0.47069	0.77071	9.49500
$\frac{26}{27}$	$0.25595 \\ 0.25586$	0.68404	$1.31497 \\ 1.31370$	1.70562	2.05553	2.47863 $2.47266$	2.77871 $2.77068$	$3.43500 \\ 3.42103$
28	0.25580 $0.25577$	0.68368 $0.68335$	1.31370 $1.31253$	1.70329 $1.70113$	2.05183 $2.04841$	2.46714	2.76326	3.42103 $3.40816$
29	0.25568	0.68304	1.31233 $1.31143$	1.69913	2.04541 $2.04523$	2.46714 $2.46202$	2.76520 $2.75639$	3.40610 $3.39624$
30	0.25560	0.68276	1.31143 $1.31042$	1.69913 $1.69726$	2.04323 $2.04227$	2.45726	2.75009 $2.75000$	3.38518
30	0.20001	0.00270	1.01042	1.03720	2.04221	2.40720	2.75000	0.00010
40	0.25504	0.68067	1.30308	1.68385	2.02108	2.42326	2.70446	3.30688
50	0.25304 $0.25470$	0.67943	1.29871	1.67591	2.02100	2.42320 $2.40327$	2.67779	3.26141
60	0.25470 $0.25447$	0.67860	1.29581 $1.29582$	1.67065	2.00030	2.39012	2.66028	3.23171
70	0.25431	0.67801	1.29376	1.66691	1.99444	2.38081	2.64790	3.21079
80	0.25419	0.67757	1.29222	1.66412	1.99006	2.37387	2.63869	3.19526
	3.23110	0.0.101	1.2022	1.00112	1.0000	2.5.501		3.13020
90	0.25410	0.67723	1.29103	1.66196	1.98667	2.36850	2.63157	3.18327
100	0.25402	0.67695	1.29007	1.66023	1.98397	2.36422	2.62589	3.17374
110	0.25396	0.67673	1.28930	1.65882	1.98177	2.36073	2.62126	3.16598
120	0.25391	0.67654	1.28865	1.65765	1.97993	2.35782	2.61742	3.15954
$\infty$	0.25341	0.67474	1.28240	1.64638	1.96234	2.33008	2.58075	3.09840
$\sim$	0.20011	0.01717	1.20240	1.04000	1,00201	2.00000	2,00010	0.00010

# Valores percentuais da distribuição $\chi^2$

Esta tabela foi criada com base no comando qchisq do software R, indicando os quantis de ordem  $1-\alpha$  associados a variáveis aleatórias com distribuição  $\chi^2,\, X\cap\chi^2_{(n)}$ , para valores do parâmetro n indicados no início de cada linha, e valores de  $\alpha$  indicados no topo de cada coluna. No corpo da tabela estão os valores de  $\chi^2_\alpha$  tais que  $P[X>\chi^2_\alpha]=\alpha$ .

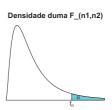
#### Densidade duma Qui-quadrado



								0							
n	0.999	0.995	0.99	0.975	0.95	0.9	0.75	$\frac{\alpha}{0.5}$	0.25	0.1	0.05	0.025	0.01	0.005	0.001
	0.000	0,000	0.00	0.0.0	0.00				0.20		0.00	0.020	0.01	0.000	0.001
1	0.000	0.000	0.000	0.001	0.004	0.016	0.102	0.455	1.323	2.706	3.841	5.024	6.635	7.879	10.828
2	0.002	0.010	0.020	0.051	0.103	0.211	0.575	1.386	2.773	4.605	5.991	7.378	9.210	10.597	13.816
3	0.024	0.072	0.115	0.216	0.352	0.584	1.213	2.366	4.108	6.251	7.815	9.348	11.345	12.838	16.266
4	0.091	0.207	0.297	0.484	0.711	1.064	1.923	3.357	5.385	7.779	9.488	11.143	13.277	14.860	18.467
5	0.210	0.412	0.554	0.831	1.145	1.610	2.675	4.351	6.626	9.236	11.070	12.833	15.086	16.750	20.515
6	0.381	0.676	0.872	1.237	1.635	2.204	3.455	5.348		10.645					
7	0.598	0.989	1.239	1.690	2.167	2.833	4.255	6.346		12.017					
8	0.857	1.344	1.646	2.180	2.733	3.490	5.071	7.344		13.362					
9	1.152	1.735	2.088	2.700	3.325	4.168	5.899			14.684					
10	1.479	2.156	2.558	3.247	3.940	4.865	6.737	9.342	12.549	15.987	18.307	20.483	23.209	25.188	29.588
1.4	1.004	0.000	0.070	0.010	4		<b>P F</b> 0 4	10.043	10 =01	15 05-	10.07	01 000	0.4 =0=	00 ===	01.004
11	1.834	2.603	3.053	3.816	4.575	5.578				17.275					
12	2.214	3.074	3.571	4.404	5.226	6.304				18.549					
13	2.617	3.565	4.107	5.009	5.892	7.042				19.812					
$\frac{14}{15}$	$3.041 \\ 3.483$	4.075 $4.601$	$4.660 \\ 5.229$	5.629 $6.262$	$6.571 \\ 7.261$					21.064 $22.307$					
19	3.403	4.001	0.229	0.202	1.201	0.047	11.037	14.559	10.240	22.307	24.990	21.400	30.376	32.001	31.091
16	3.942	5.142	5.812	6.908	7.962	9.312	11 912	15 338	19 369	23.542	26 296	28 845	32 000	34 267	39 252
17	4.416	5.697	6.408	7.564						24.769					
18	4.905	6.265	7.015	8.231						25.989					
19	5.407	6.844	7.633							27.204					
20	5.921	7.434	8.260							28.412					
21	6.447	8.034	8.897	10.283	11.591	13.240	16.344	20.337	24.935	29.615	32.671	35.479	38.932	41.401	46.797
22	6.983	8.643	9.542	10.982	12.338	14.041	17.240	21.337	26.039	30.813	33.924	36.781	40.289	42.796	48.268
23	7.529	9.260	10.196	11.689	13.091	14.848	18.137	22.337	27.141	32.007	35.172	38.076	41.638	44.181	49.728
24	8.085	9.886	10.856	12.401	13.848	15.659	19.037	23.337	28.241	33.196	36.415	39.364	42.980	45.559	51.179
25	8.649	10.520	11.524	13.120	14.611	16.473	19.939	24.337	29.339	34.382	37.652	40.646	44.314	46.928	52.620
26										35.563					
27										36.741					
28										37.916					
29										39.087					
30	11.500	13.787	14.903	10.791	18.493	20.599	24.410	29.330	34.800	40.256	43.773	40.979	50.892	55.07Z	59.7US
40	17 016	20 707	22 164	24 433	26 500	29 051	33 660	39 335	45 616	51.805	55 758	59 3/19	63 601	66 766	73 409
50										63.167					
60										74.397					
70										85.527					
80										96.578					
90										107.57					
100										118.50					
· · · · · · · · · · · · · · · · · · ·															

### Valores percentuais ( $\alpha = 0.10$ ) da distribuição F

Esta tabela foi criada com base no comando qf do software R, comando que fornece os quantis associados a variáveis aleatórias com distribuição  $F, X \cap F_{n_1,n_2}$ . No topo de cada coluna indicam-se os valores do primeiro parâmetro,  $n_1$ . No início de cada linha indicam-se os valores do segundo parâmetro,  $n_2$ . No corpo da tabela indicam-se os valores  $f_{\alpha}$ , para  $\alpha=0.1$ , i.e., tais que  $P[X>f_{0.1}]=\alpha=0.10$ .



	$n_1$																		
$n_2$	1	2	3	4	5	6	7	8	9	10	12	15	20	25	30	40	60	120	$\infty$
1	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86	60.19	60.71	61.22	61.74	62.05	62.26	62.53	62.79	63.06	63.33
2	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38	9.39	9.41	9.42	9.44	9.45	9.46	9.47	9.47	9.48	9.49
3	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24	5.23	5.22	5.20	5.18	5.17	5.17	5.16	5.15	5.14	5.13
4	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94	3.92	3.90	3.87	3.84	3.83	3.82	3.80	3.79	3.78	3.76
5	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32	3.30	3.27	3.24	3.21	3.19	3.17	3.16	3.14	3.12	3.10
6	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96	2.94	2.90	2.87	2.84	2.81	2.80	2.78	2.76	2.74	2.72
7	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72	2.70	2.67	2.63	2.59	2.57	2.56	2.54	2.51	2.49	2.47
8	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56	2.54	2.50	2.46	2.42	2.40	2.38	2.36	2.34	2.32	2.29
9	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44	2.42	2.38	2.34	2.30	2.27	2.25	2.23	2.21	2.18	2.16
10	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35	2.32	2.28	2.24	2.20	2.17	2.16	2.13	2.11	2.08	2.06
12	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21	2.19	2.15	2.10	2.06	2.03	2.01	1.99	1.96	1.93	1.90
15	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09	2.06	2.02	1.97	1.92	1.89	1.87	1.85	1.82	1.79	1.76
20	2.97	2.59	2.38	2.25	2.16	2.09	2.04	2.00	1.96	1.94	1.89	1.84	1.79	1.76	1.74	1.71	1.68	1.64	1.61
25	2.92	2.53	2.32	2.18	2.09	2.02	1.97	1.93	1.89	1.87	1.82	1.77	1.72	1.68	1.66	1.63	1.59	1.56	1.52
30	2.88	2.49	2.28	2.14	2.05	1.98	1.93	1.88	1.85	1.82	1.77	1.72	1.67	1.63	1.61	1.57	1.54	1.50	1.46
40	2.84	2.44	2.23	2.09	2.00	1.93	1.87	1.83	1.79	1.76	1.71	1.66	1.61	1.57	1.54	1.51	1.47	1.42	1.38
60	2.79	2.39	2.18	2.04	1.95	1.87	1.82	1.77	1.74	1.71	1.66	1.60	1.54	1.50	1.48	1.44	1.40	1.35	1.29
120	2.75	2.35	2.13	1.99	1.90	1.82	1.77	1.72	1.68	1.65	1.60	1.55	1.48	1.44	1.41	1.37	1.32	1.26	1.19
$\infty$	2.71	2.30	2.08	1.94	1.85	1.77	1.72	1.67	1.63	1.60	1.55	1.49	1.42	1.38	1.34	1.30	1.24	1.17	1.00

Valores percentuais ( $\alpha = 0.05$ ) da distribuição F

Análoga à tabela anterior, para  $\alpha=0.05$ . A tabela indica os valores  $f_{\alpha}$  tais que  $P[X>f_{\alpha}]=\alpha=0.05$ .

	$n_1$																		
$n_2$	1	2	3	4	5	6	7	8	9	10	12	15	20	25	30	40	60	120	$\infty$
1	161.4	199.5	215.7	224.6	230.2	234.0	236.8	238.9	240.5	241.9	243.9	245.9	248.0	249.3	250.1	251.1	252.2	253.3	254.3
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38	19.40	19.41	19.43	19.45	19.46	19.46	19.47	19.48	19.49	19.50
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.74	8.70	8.66	8.63	8.62	8.59	8.57	8.55	8.53
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.91	5.86	5.80	5.77	5.75	5.72	5.69	5.66	5.63
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.68	4.62	4.56	4.52	4.50	4.46	4.43	4.40	4.36
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.00	3.94	3.87	3.83	3.81	3.77	3.74	3.70	3.67
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.57	3.51	3.44	3.40	3.38	3.34	3.30	3.27	3.23
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.28	3.22	3.15	3.11	3.08	3.04	3.01	2.97	2.93
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.07	3.01	2.94	2.89	2.86	2.83	2.79	2.75	2.71
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.91	2.85	2.77	2.73	2.70	2.66	2.62	2.58	2.54
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.69	2.62	2.54	2.50	2.47	2.43	2.38	2.34	2.30
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.48	2.40	2.33	2.28	2.25	2.20	2.16	2.11	2.07
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.28	2.20	2.12	2.07	2.04	1.99	1.95	1.90	1.84
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.16	2.09	2.01	1.96	1.92	1.87	1.82	1.77	1.71
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.09	2.01	1.93	1.88	1.84	1.79	1.74	1.68	1.62
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.00	1.92	1.84	1.78	1.74	1.69	1.64	1.58	1.51
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.92	1.84	1.75	1.69	1.65	1.59	1.53	1.47	1.39
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96	1.91	1.83	1.75	1.66	1.60	1.55	1.50	1.43	1.35	1.25
$\infty$	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88	1.83	1.75	1.67	1.57	1.51	1.46	1.39	1.32	1.22	1.00

# Valores percentuais ( $\alpha=0.025$ ) da distribuição F

Análoga à tabela anterior, para  $\alpha=0.025$ . A tabela indica os valores  $f_{\alpha}$  tais que  $P[X>f_{\alpha}]=\alpha=0.025$ .

	$n_1$																		
$n_2$	1	2	3	4	5	6	7	8	9	10	12	15	20	25	30	40	60	120	$\infty$
1	647.8	799.5	86.2	899.6	921.8	937.1	948.2	956.7	963.3	968.6	976.7	984.9	993.1	998.1	1001	1006	1010	1014	1018
2	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39	39.40	39.41	39.43	39.45	39.46	39.46	39.47	39.48	39.49	39.50
3	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47	14.42	14.34	14.25	14.17	14.12	14.08	14.04	13.99	13.95	13.90
4	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90	8.84	8.75	8.66	8.56	8.50	8.46	8.41	8.36	8.31	8.26
5	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68	6.62	6.52	6.43	6.33	6.27	6.23	6.18	6.12	6.07	6.02
6	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52	5.46	5.37	5.27	5.17	5.11	5.07	5.01	4.96	4.90	4.85
7	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82	4.76	4.67	4.57	4.47	4.40	4.36	4.31	4.25	4.20	4.14
8	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36	4.30	4.20	4.10	4.00	3.94	3.89	3.84	3.78	3.73	3.67
9	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03	3.96	3.87	3.77	3.67	3.60	3.56	3.51	3.45	3.39	3.33
10	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78	3.72	3.62	3.52	3.42	3.35	3.31	3.26	3.20	3.14	3.08
12	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44	3.37	3.28	3.18	3.07	3.01	2.96	2.91	2.85	2.79	2.72
15	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12	3.06	2.96	2.86	2.76	2.69	2.64	2.59	2.52	2.46	2.40
20	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84	2.77	2.68	2.57	2.46	2.40	2.35	2.29	2.22	2.16	2.09
25	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68	2.61	2.51	2.41	2.30	2.23	2.18	2.12	2.05	1.98	1.91
30	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57	2.51	2.41	2.31	2.20	2.12	2.07	2.01	1.94	1.87	1.79
40	5.42	4.05	3.46	3.13	2.90	2.74	2.62	2.53	2.45	2.39	2.29	2.18	2.07	1.99	1.94	1.88	1.80	1.72	1.64
60	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33	2.27	2.17	2.06	1.94	1.87	1.82	1.74	1.67	1.58	1.48
120	5.15	3.80	3.23	2.89	2.67	2.52	2.39	2.30	2.22	2.16	2.05	1.94	1.82	1.75	1.69	1.61	1.53	1.43	1.31
$\infty$	5.02	3.69	3.12	2.79	2.57	2.41	2.29	2.19	2.11	2.05	1.94	1.83	1.71	1.63	1.57	1.48	1.39	1.27	1.00

# Valores percentuais ( $\alpha=0.01$ ) da distribuição F

Análoga à tabela anterior, para  $\alpha=0.01$ . A tabela indica os valores  $f_{\alpha}$  tais que  $P[X>f_{\alpha}]=\alpha=0.01$ .

-										$n_1$									
$n_2$	1	2	3	4	5	6	7	8	9	10	12	15	20	25	30	40	60	120	$\infty$
1	4052	4999	5403	5625	5764	5859	5928	5981	6022	6056	6106	6157	6209	6240	6261	6287	6313	6339	6366
2	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39	99.40	99.42	99.43	99.45	99.46	99.47	99.47	99.48	99.49	99.50
3	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35	27.23	27.05	26.87	26.69	26.58	26.50	26.41	26.32	26.22	26.13
4	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66	14.55	14.37	14.20	14.02	13.91	13.84	13.75	13.65	13.56	13.46
5	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16	10.05	9.89	9.72	9.55	9.45	9.38	9.29	9.20	9.11	9.02
6	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98	7.87	7.72	7.56	7.40	7.30	7.23	7.14	7.06	6.97	6.88
7	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72	6.62	6.47	6.31	6.16	6.06	5.99	5.91	5.82	5.74	5.65
8	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91	5.81	5.67	5.52	5.36	5.26	5.20	5.12	5.03	4.95	4.86
9	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35	5.26	5.11	4.96	4.81	4.71	4.65	4.57	4.48	4.40	4.31
10	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94	4.85	4.71	4.56	4.41	4.31	4.25	4.17	4.08	4.00	3.91
12	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39	4.30	4.16	4.01	3.86	3.76	3.70	3.62	3.54	3.45	3.36
15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89	3.80	3.67	3.52	3.37	3.28	3.21	3.13	3.05	2.96	2.87
20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46	3.37	3.23	3.09	2.94	2.84	2.78	2.69	2.61	2.52	2.42
25	7.77	5.57	4.68	4.18	3.85	3.63	3.46	3.32	3.22	3.13	2.99	2.85	2.70	2.60	2.54	2.45	2.36	2.27	2.17
30	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07	2.98	2.84	2.70	2.55	2.45	2.39	2.30	2.21	2.11	2.01
40	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.89	2.80	2.66	2.52	2.37	2.27	2.20	2.11	2.02	1.92	1.80
60	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72	2.63	2.50	2.35	2.20	2.10	2.03	1.94	1.84	1.73	1.60
120	6.85	4.79	3.95	3.48	3.17	2.96	2.79	2.66	2.56	2.47	2.34	2.19	2.03	1.93	1.86	1.76	1.66	1.53	1.38
$\infty$	6.63	4.61	3.78	3.32	3.02	2.80	2.64	2.51	2.41	2.32	2.18	2.04	1.88	1.77	1.70	1.59	1.47	1.32	1.00