

**Tabela 1: Distribuição Binomial  $B(N, p)$  – Função de Distribuição**  
 Os valores tabelados correspondem, para diferentes valores de  $N$  e  $p$ , às probabilidades acumuladas

$$F(y) = \sum_{i=0}^y \binom{N}{i} \cdot p^i \cdot (1 - p)^{N-i}$$

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
2	0	.9025	.81	.7225	.64	.5625	.49	.4225	.36	.3025	.25	2
	1	.9975	.99	.9775	.96	.9375	.91	.8775	.84	.7975	.75	1
	2	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
3	0	.8574	.729	.6141	.512	.4219	.343	.2746	.216	.1664	.125	3
	1	.9928	.972	.9393	.896	.8438	.784	.7183	.648	.5748	.5	2
	2	.9999	.999	.9966	.992	.9844	.973	.9571	.936	.9089	.875	1
	3	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
4	0	.8145	.6561	.522	.4096	.3164	.2401	.1785	.1296	.0915	.0625	4
	1	.986	.9477	.8905	.8192	.7383	.6517	.563	.4752	.391	.3125	3
	2	.9995	.9963	.988	.9728	.9492	.9163	.8735	.8208	.7585	.6875	2
	3	1.	.9999	.9995	.9984	.9961	.9919	.985	.9744	.959	.9375	1
	4	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
5	0	.7738	.5905	.4437	.3277	.2373	.1681	.116	.0778	.0503	.0313	5
	1	.9774	.9185	.8352	.7373	.6328	.5282	.4284	.337	.2562	.1875	4
	2	.9988	.9914	.9734	.9421	.8965	.8369	.7648	.6826	.5931	.5	3
	3	1.	.9995	.9978	.9933	.9844	.9692	.946	.913	.8688	.8125	2
	4	1.	1.	.9999	.9997	.999	.9976	.9947	.9898	.9815	.9688	1
	5	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
6	0	.7351	.5314	.3771	.2621	.178	.1176	.0754	.0467	.0277	.0156	6
	1	.9672	.8857	.7765	.6554	.5339	.4202	.3191	.2333	.1636	.1094	5
	2	.9978	.9842	.9527	.9011	.8306	.7443	.6471	.5443	.4415	.3438	4
	3	.9999	.9987	.9941	.983	.9624	.9295	.8826	.8208	.7447	.6563	3
	4	1.	.9999	.9996	.9984	.9954	.9891	.9777	.959	.9308	.8906	2
	5	1.	1.	1.	.9999	.9998	.9993	.9982	.9959	.9917	.9844	1
	6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
7	0	.6983	.4783	.3206	.2097	.1335	.0824	.049	.028	.0152	.0078	7
	1	.9556	.8503	.7166	.5767	.4449	.3294	.2338	.1586	.1024	.0625	6
	2	.9962	.9743	.9262	.852	.7564	.6471	.5323	.4199	.3164	.2266	5
	3	.9998	.9973	.9879	.9667	.9294	.874	.8002	.7102	.6083	.5	4
	4	1.	.9998	.9988	.9953	.9871	.9712	.9444	.9037	.8471	.7734	3
	5	1.	1.	.9999	.9996	.9987	.9962	.991	.9812	.9643	.9375	2
	6	1.	1.	1.	1.	.9999	.9998	.9994	.9984	.9963	.9922	1
	7	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
8	0	.6634	.4305	.2725	.1678	.1001	.0576	.0319	.0168	.0084	.0039	8
	1	.9428	.8131	.6572	.5033	.3671	.2553	.1691	.1064	.0632	.0352	7
	2	.9942	.9619	.8948	.7969	.6785	.5518	.4278	.3154	.2201	.1445	6
	3	.9996	.995	.9786	.9437	.8862	.8059	.7064	.5941	.477	.3633	5
	4	1.	.9996	.9971	.9896	.9727	.942	.8939	.8263	.7396	.6367	4
	5	1.	1.	.9998	.9988	.9958	.9887	.9747	.9502	.9115	.8555	3
	6	1.	1.	1.	.9999	.9996	.9987	.9964	.9915	.9819	.9648	2
	7	1.	1.	1.	1.	1.	.9999	.9998	.9993	.9983	.9961	1
	8	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
9	0	.6302	.3874	.2316	.1342	.0751	.0404	.0207	.0101	.0046	.002	9
	1	.9288	.7748	.5995	.4362	.3003	.196	.1211	.0705	.0385	.0195	8
	2	.9916	.947	.8591	.7382	.6007	.4628	.3373	.2318	.1495	.0898	7
	3	.9994	.9917	.9661	.9144	.8343	.7297	.6089	.4826	.3614	.2539	6
	4	1.	.9991	.9944	.9804	.9511	.9012	.8283	.7334	.6214	.5	5
	5	1.	.9999	.9994	.9969	.99	.9747	.9464	.9006	.8342	.7461	4
	6	1.	1.	1.	.9997	.9987	.9957	.9888	.975	.9502	.9102	3
	7	1.	1.	1.	1.	.9999	.9996	.9986	.9962	.9909	.9805	2
	8	1.	1.	1.	1.	1.	1.	.9999	.9997	.9992	.998	1
	9	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
	p →	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

continua ...

...continuação da tabela 1 (Distribuição Binomial Acumulada)

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
10	0	.5987	.3487	.1969	.1074	.0563	.0282	.0135	.006	.0025	.001	10
	1	.9139	.7361	.5443	.3758	.244	.1493	.086	.0464	.0233	.0107	9
	2	.9885	.9298	.8202	.6778	.5256	.3828	.2616	.1673	.0996	.0547	8
	3	.999	.9872	.95	.8791	.7759	.6496	.5138	.3823	.266	.1719	7
	4	.9999	.9984	.9901	.9672	.9219	.8497	.7515	.6331	.5044	.377	6
	5	1.	.9999	.9986	.9936	.9803	.9527	.9051	.8338	.7384	.623	5
	6	1.	1.	.9999	.9991	.9965	.9894	.974	.9452	.898	.8281	4
	7	1.	1.	1.	.9999	.9996	.9984	.9952	.9877	.9726	.9453	3
	8	1.	1.	1.	1.	1.	.9999	.9995	.9983	.9955	.9893	2
	9	1.	1.	1.	1.	1.	1.	1.	.9999	.9997	.999	1
	10	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
12	0	.5404	.2824	.1422	.0687	.0317	.0138	.0057	.0022	.0008	.0002	12
	1	.8816	.659	.4435	.2749	.1584	.085	.0424	.0196	.0083	.0032	11
	2	.9804	.8891	.7358	.5583	.3907	.2528	.1513	.0834	.0421	.0193	10
	3	.9978	.9744	.9078	.7946	.6488	.4925	.3467	.2253	.1345	.073	9
	4	.9998	.9957	.9761	.9274	.8424	.7237	.5833	.4382	.3044	.1938	8
	5	1.	.9995	.9954	.9806	.9456	.8822	.7873	.6652	.5269	.3872	7
	6	1.	.9999	.9993	.9961	.9857	.9614	.9154	.8418	.7393	.6128	6
	7	1.	1.	.9999	.9994	.9972	.9905	.9745	.9427	.8883	.8062	5
	8	1.	1.	1.	.9999	.9996	.9983	.9944	.9847	.9644	.927	4
	9	1.	1.	1.	1.	1.	.9998	.9992	.9972	.9921	.9807	3
	10	1.	1.	1.	1.	1.	1.	.9999	.9997	.9989	.9968	2
	11	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9998	1
	12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
14	0	.4877	.2288	.1028	.044	.0178	.0068	.0024	.0008	.0002	.0001	14
	1	.847	.5846	.3567	.1979	.101	.0475	.0205	.0081	.0029	.0009	13
	2	.9699	.8416	.6479	.4481	.2811	.1608	.0839	.0398	.017	.0065	12
	3	.9958	.9559	.8535	.6982	.5213	.3552	.2205	.1243	.0632	.0287	11
	4	.9996	.9908	.9533	.8702	.7415	.5842	.4227	.2793	.1672	.0898	10
	5	1.	.9985	.9885	.9561	.8883	.7805	.6405	.4859	.3373	.212	9
	6	1.	.9998	.9978	.9884	.9617	.9067	.8164	.6925	.5461	.3953	8
	7	1.	1.	.9997	.9976	.9897	.9685	.9247	.8499	.7414	.6047	7
	8	1.	1.	1.	.9996	.9978	.9917	.9757	.9417	.8811	.788	6
	9	1.	1.	1.	1.	.9997	.9983	.994	.9825	.9574	.9102	5
	10	1.	1.	1.	1.	1.	.9998	.9989	.9961	.9886	.9713	4
	11	1.	1.	1.	1.	1.	1.	.9999	.9994	.9978	.9935	3
	12	1.	1.	1.	1.	1.	1.	1.	.9999	.9997	.9991	2
	13	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9999	1
	14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
16	0	.4401	.1853	.0743	.0281	.01	.0033	.001	.0003	.0001	.	16
	1	.8108	.5147	.2839	.1407	.0635	.0261	.0098	.0033	.001	.0003	15
	2	.9571	.7892	.5614	.3518	.1971	.0994	.0451	.0183	.0066	.0021	14
	3	.993	.9316	.7899	.5981	.405	.2459	.1339	.0651	.0281	.0106	13
	4	.9991	.983	.9209	.7982	.6302	.4499	.2892	.1666	.0853	.0384	12
	5	.9999	.9967	.9765	.9183	.8103	.6598	.49	.3288	.1976	.1051	11
	6	1.	.9995	.9944	.9733	.9204	.8247	.6881	.5272	.366	.2272	10
	7	1.	.9999	.9989	.993	.9729	.9256	.8406	.7161	.5629	.4018	9
	8	1.	1.	.9998	.9985	.9925	.9743	.9329	.8577	.7441	.5982	8
	9	1.	1.	1.	.9998	.9984	.9929	.9771	.9417	.8759	.7728	7
	10	1.	1.	1.	1.	.9997	.9984	.9938	.9809	.9514	.8949	6
	11	1.	1.	1.	1.	1.	.9997	.9987	.9951	.9851	.9616	5
	12	1.	1.	1.	1.	1.	1.	.9998	.9991	.9965	.9894	4
	13	1.	1.	1.	1.	1.	1.	1.	.9999	.9994	.9979	3
	14	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9997	2
	15	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
18	0	.3972	.1501	.0536	.018	.0056	.0016	.0004	.0001	.	.	18
	1	.7735	.4503	.2241	.0991	.0395	.0142	.0046	.0013	.0003	.0001	17
	2	.9419	.7338	.4797	.2713	.1353	.06	.0236	.0082	.0025	.0007	16
	3	.9891	.9018	.7202	.501	.3057	.1646	.0783	.0328	.012	.0038	15
	4	.9985	.9718	.8794	.7164	.5187	.3327	.1886	.0942	.0411	.0154	14
	5	.9998	.9936	.9581	.8671	.7175	.5344	.355	.2088	.1077	.0481	13
	6	1.	.9988	.9882	.9487	.861	.7217	.5491	.3743	.2258	.1189	12
	7	1.	.9998	.9973	.9837	.9431	.8593	.7283	.5634	.3915	.2403	11
	8	1.	1.	.9995	.9957	.9807	.9404	.8609	.7368	.5778	.4073	10
	9	1.	1.	.9999	.9991	.9946	.979	.9403	.8653	.7473	.5927	9
	10	1.	1.	1.	.9998	.9988	.9939	.9788	.9424	.872	.7597	8
	11	1.	1.	1.	1.	.9998	.9986	.9938	.9797	.9463	.8811	7
	12	1.	1.	1.	1.	1.	.9997	.9986	.9942	.9817	.9519	6
	13	1.	1.	1.	1.	1.	1.	.9997	.9987	.9951	.9846	5
	14	1.	1.	1.	1.	1.	1.	1.	.9998	.999	.9962	4
	15	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9993	3
	16	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9999	2
	17	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

continua ...

...continuação da tabela 1 (Distribuição Binomial Acumulada)

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
20	0	.3585	.1216	.0388	.0115	.0032	.0008	.0002	.	.	.	20
	1	.7358	.3917	.1756	.0692	.0243	.0076	.0021	.0005	.0001	.	19
	2	.9245	.6769	.4049	.2061	.0913	.0355	.0121	.0036	.0009	.0002	18
	3	.9841	.867	.6477	.4114	.2252	.1071	.0444	.016	.0049	.0013	17
	4	.9974	.9568	.8298	.6296	.4148	.2375	.1182	.051	.0189	.0059	16
	5	.9997	.9887	.9327	.8042	.6172	.4164	.2454	.1256	.0553	.0207	15
	6	1.	.9976	.9781	.9133	.7858	.608	.4166	.25	.1299	.0577	14
	7	1.	.9996	.9941	.9679	.8982	.7723	.601	.4159	.252	.1316	13
	8	1.	.9999	.9987	.99	.9591	.8867	.7624	.5956	.4143	.2517	12
	9	1.	1.	.9998	.9974	.9861	.952	.8782	.7553	.5914	.4119	11
	10	1.	1.	1.	.9994	.9961	.9829	.9468	.8725	.7507	.5881	10
	11	1.	1.	1.	.9999	.9991	.9949	.9804	.9435	.8692	.7483	9
	12	1.	1.	1.	1.	.9998	.9987	.994	.979	.942	.8684	8
	13	1.	1.	1.	1.	1.	.9997	.9985	.9935	.9786	.9423	7
	14	1.	1.	1.	1.	1.	1.	.9997	.9984	.9936	.9793	6
	15	1.	1.	1.	1.	1.	1.	1.	.9997	.9985	.9941	5
	16	1.	1.	1.	1.	1.	1.	1.	1.	.9997	.9987	4
	17	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9998	3
	18	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
50	0	.0769	.0052	.0003	.	.	.	.	.	.	.	50
	1	.2794	.0338	.0029	.0002	.	.	.	.	.	.	49
	2	.5405	.1117	.0142	.0013	.0001	.	.	.	.	.	48
	3	.7604	.2503	.046	.0057	.0005	.	.	.	.	.	47
	4	.8964	.4312	.1121	.0185	.0021	.0002	.	.	.	.	46
	5	.9622	.6161	.2194	.048	.007	.0007	.0001	.	.	.	45
	6	.9882	.7702	.3613	.1034	.0194	.0025	.0002	.	.	.	44
	7	.9968	.8779	.5188	.1904	.0453	.0073	.0008	.0001	.	.	43
	8	.9992	.9421	.6681	.3073	.0916	.0183	.0025	.0002	.	.	42
	9	.9998	.9755	.7911	.4437	.1637	.0402	.0067	.0008	.0001	.	41
	10	1.	.9906	.8801	.5836	.2622	.0789	.016	.0022	.0002	.	40
	11	1.	.9968	.9372	.7107	.3816	.139	.0342	.0057	.0006	.	39
	12	1.	.999	.9699	.8139	.511	.2229	.0661	.0133	.0018	.0002	38
	13	1.	.9997	.9868	.8894	.637	.3279	.1163	.028	.0045	.0005	37
	14	1.	.9999	.9947	.9393	.7481	.4468	.1878	.054	.0104	.0013	36
	15	1.	1.	.9981	.9692	.8369	.5692	.2801	.0955	.022	.0033	35
	16	1.	1.	.9993	.9856	.9017	.6839	.3889	.1561	.0427	.0077	34
	17	1.	1.	.9998	.9937	.9449	.7822	.506	.2369	.0765	.0164	33
	18	1.	1.	.9999	.9975	.9713	.8594	.6216	.3356	.1273	.0325	32
	19	1.	1.	1.	.9991	.9861	.9152	.7264	.4465	.1974	.0595	31
	20	1.	1.	1.	.9997	.9937	.9522	.8139	.561	.2862	.1013	30
	21	1.	1.	1.	.9999	.9974	.9749	.8813	.6701	.39	.1611	29
	22	1.	1.	1.	1.	.999	.9877	.929	.766	.5019	.2399	28
	23	1.	1.	1.	1.	.9996	.9944	.9604	.8438	.6134	.3359	27
	24	1.	1.	1.	1.	.9999	.9976	.9793	.9022	.716	.4439	26
	25	1.	1.	1.	1.	1.	.9991	.99	.9427	.8034	.5561	25
	26	1.	1.	1.	1.	1.	.9997	.9955	.9686	.8721	.6641	24
	27	1.	1.	1.	1.	1.	.9999	.9981	.984	.922	.7601	23
	28	1.	1.	1.	1.	1.	1.	.9993	.9924	.9556	.8389	22
	29	1.	1.	1.	1.	1.	1.	.9997	.9966	.9765	.8987	21
	30	1.	1.	1.	1.	1.	1.	.9999	.9986	.9884	.9405	20
	31	1.	1.	1.	1.	1.	1.	1.	.9995	.9947	.9675	19
	32	1.	1.	1.	1.	1.	1.	1.	.9998	.9978	.9836	18
	33	1.	1.	1.	1.	1.	1.	1.	.9999	.9991	.9923	17
	34	1.	1.	1.	1.	1.	1.	1.	1.	.9997	.9967	16
	35	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9987	15
	36	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9995	14
	37	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9998	13
	38	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	12
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p
100	0	.0059	.	.	.	.	.	.	.	.	.	100
	1	.0371	.0003	.	.	.	.	.	.	.	.	99
	2	.1183	.0019	.	.	.	.	.	.	.	.	98
	3	.2578	.0078	.0001	.	.	.	.	.	.	.	97
	4	.436	.0237	.0004	.	.	.	.	.	.	.	96
	5	.616	.0576	.0016	.	.	.	.	.	.	.	95
	6	.766	.1172	.0047	.0001	.	.	.	.	.	.	94
	7	.872	.2061	.0122	.0003	.	.	.	.	.	.	93
	8	.9369	.3209	.0275	.0009	.	.	.	.	.	.	92
	9	.9718	.4513	.0551	.0023	.	.	.	.	.	.	91
	10	.9885	.5832	.0994	.0057	.0001	.	.	.	.	.	90
	11	.9957	.703	.1635	.0126	.0004	.	.	.	.	.	89
	12	.9985	.8018	.2473	.0253	.001	.	.	.	.	.	88
	13	.9995	.8761	.3474	.0469	.0025	.0001	.	.	.	.	87
	14	.9999	.9274	.4572	.0804	.0054	.0002	.	.	.	.	86
	15	1.	.9601	.5683	.1285	.0111	.0004	.	.	.	.	85
	16	1.	.9794	.6725	.1923	.0211	.001	.	.	.	.	84
	17	1.	.99	.7633	.2712	.0376	.0022	.0001	.	.	.	83
	18	1.	.9954	.8372	.3621	.063	.0045	.0001	.	.	.	82
	19	1.	.998	.8935	.4602	.0995	.0089	.0003	.	.	.	81
	20	1.	.9992	.9337	.5595	.1488	.0165	.0008	.	.	.	80
p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑

continua ...

... continuação da tabela 1 (Distribuição Binomial Acumulada)													
N	y ↓	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	← p	
100	21	1.	.9997	.9607	.654	.2114	.0288	.0017	.	.	.	79	
	22	1.	.9999	.9779	.7389	.2864	.0479	.0034	.0001	.	.	78	
	23	1.	1.	.9881	.8109	.3711	.0755	.0066	.0003	.	.	77	
	24	1.	1.	.9939	.8686	.4617	.1136	.0121	.0006	.	.	76	
	25	1.	1.	.997	.9125	.5535	.1631	.0211	.0012	.	.	75	
	26	1.	1.	.9986	.9442	.6417	.2244	.0351	.0024	.0001	.	74	
	27	1.	1.	.9994	.9658	.7224	.2964	.0558	.0046	.0002	.	73	
	28	1.	1.	.9997	.98	.7925	.3768	.0848	.0084	.0004	.	72	
	29	1.	1.	.9999	.9888	.8505	.4623	.1236	.0148	.0008	.	71	
	30	1.	1.	1.	.9939	.8962	.5491	.173	.0248	.0015	.	70	
	31	1.	1.	1.	.9969	.9307	.6331	.2331	.0398	.003	.0001	69	
	32	1.	1.	1.	.9984	.9554	.7107	.3029	.0615	.0055	.0002	68	
	33	1.	1.	1.	.9993	.9724	.7793	.3803	.0913	.0098	.0004	67	
	34	1.	1.	1.	.9997	.9836	.8371	.4624	.1303	.0166	.0009	66	
	35	1.	1.	1.	.9999	.9906	.8839	.5458	.1795	.0272	.0018	65	
	36	1.	1.	1.	.9999	.9948	.9201	.6269	.2386	.0429	.0033	64	
	37	1.	1.	1.	1.	.9973	.947	.7024	.3068	.0651	.006	63	
	38	1.	1.	1.	1.	.9986	.966	.7699	.3822	.0951	.0105	62	
	39	1.	1.	1.	1.	.9993	.979	.8276	.4621	.1343	.0176	61	
	40	1.	1.	1.	1.	.9997	.9875	.875	.5433	.1831	.0284	60	
	41	1.	1.	1.	1.	.9999	.9928	.9123	.6225	.2415	.0443	59	
	42	1.	1.	1.	1.	.9999	.996	.9406	.6967	.3087	.0666	58	
	43	1.	1.	1.	1.	1.	.9979	.9611	.7635	.3828	.0967	57	
	44	1.	1.	1.	1.	1.	.9989	.9754	.8211	.4613	.1356	56	
	45	1.	1.	1.	1.	1.	.9995	.985	.8689	.5413	.1841	55	
	46	1.	1.	1.	1.	1.	.9997	.9912	.907	.6196	.2421	54	
	47	1.	1.	1.	1.	1.	.9999	.995	.9362	.6931	.3086	53	
	48	1.	1.	1.	1.	1.	.9999	.9973	.9577	.7596	.3822	52	
	49	1.	1.	1.	1.	1.	1.	.9985	.9729	.8173	.4602	51	
	50	1.	1.	1.	1.	1.	1.	.9993	.9832	.8654	.5398	50	
	51	1.	1.	1.	1.	1.	1.	.9996	.99	.904	.6178	49	
	52	1.	1.	1.	1.	1.	1.	.9998	.9942	.9338	.6914	48	
	53	1.	1.	1.	1.	1.	1.	.9999	.9968	.9559	.7579	47	
	54	1.	1.	1.	1.	1.	1.	1.	.9983	.9716	.8159	46	
	55	1.	1.	1.	1.	1.	1.	1.	.9991	.9824	.8644	45	
	56	1.	1.	1.	1.	1.	1.	1.	.9996	.9894	.9033	44	
	57	1.	1.	1.	1.	1.	1.	1.	.9998	.9939	.9334	43	
	58	1.	1.	1.	1.	1.	1.	1.	.9999	.9966	.9557	42	
	59	1.	1.	1.	1.	1.	1.	1.	1.	.9982	.9716	41	
	60	1.	1.	1.	1.	1.	1.	1.	1.	.9991	.9824	40	
	61	1.	1.	1.	1.	1.	1.	1.	1.	.9995	.9895	39	
	62	1.	1.	1.	1.	1.	1.	1.	1.	.9998	.994	38	
	63	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9967	37	
	64	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9982	36	
	65	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9991	35	
	66	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9996	34	
	67	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9998	33	
	68	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9999	32	
	69	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	31	
	p →		0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	y ↑
	Fim da tabela 1 (Distribuição Binomial Acumulada)												

Fim da tabela 1 (Distribuição Binomial Acumulada)

## Tabela 2: Distribuição de Poisson $Poisson(\lambda)$ – Função de Distribuição

Os valores tabelados correspondem, para diferentes valores de  $\lambda$ , às probabilidades acumuladas

$$F(y) = \sum_{i=0}^y \frac{e^{-\lambda} \cdot \lambda^y}{y!}$$

y ↓	λ →	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0		.9048	.8187	.7408	.6703	.6065	.5488	.4966	.4493	.4066	.3679
1		.9953	.9825	.9631	.9384	.9098	.8781	.8442	.8088	.7725	.7358
2		.9998	.9989	.9964	.9921	.9856	.9769	.9659	.9526	.9371	.9197
3	1.	.9999	.9997	.9992	.9982	.9966	.9942	.9909	.9865	.981	
4	1.	1.	1.	1.	.9999	.9998	.9996	.9992	.9986	.9977	.9963
5	1.	1.	1.	1.	1.	1.	1.	.9999	.9998	.9997	.9994
6	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	.9999
7	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

y ↓	λ →	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
0		.3329	.3012	.2725	.2466	.2231	.2019	.1827	.1653	.1496	.1353
1		.699	.6626	.6268	.5918	.5578	.5249	.4932	.4628	.4337	.406
2		.9004	.8795	.8571	.8335	.8088	.7834	.7572	.7306	.7037	.6767
3		.9743	.9662	.9569	.9463	.9344	.9212	.9068	.8913	.8747	.8571
4		.9946	.9923	.9893	.9857	.9814	.9763	.9704	.9636	.9559	.9473
5		.999	.9985	.9978	.9968	.9955	.994	.992	.9896	.9868	.9834
6		.9999	.9997	.9996	.9994	.9991	.9987	.9981	.9974	.9966	.9955
7	1.	1.	1.	.9999	.9999	.9998	.9997	.9996	.9994	.9992	.9989
8	1.	1.	1.	1.	1.	1.	1.	.9999	.9999	.9998	.9998
9	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

continua ...

...continuação da tabela 2 (Distribuição de Poisson Acumulada)

$y \downarrow \lambda \rightarrow$	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
0	.1225	.1108	.1003	.0907	.0821	.0743	.0672	.0608	.055	.0498
1	.3796	.3546	.3309	.3084	.2873	.2674	.2487	.2311	.2146	.1991
2	.6496	.6227	.596	.5697	.5438	.5184	.4936	.4695	.446	.4232
3	.8386	.8194	.7993	.7787	.7576	.736	.7141	.6919	.6696	.6472
4	.9379	.9275	.9162	.9041	.8912	.8774	.8629	.8477	.8318	.8153
5	.9796	.9751	.97	.9643	.958	.951	.9433	.9349	.9258	.9161
6	.9941	.9925	.9906	.9884	.9858	.9828	.9794	.9756	.9713	.9665
7	.9985	.998	.9974	.9967	.9958	.9947	.9934	.9919	.9901	.9881
8	.9997	.9995	.9994	.9991	.9989	.9985	.9981	.9976	.9969	.9962
9	.9999	.9999	.9999	.9998	.9997	.9996	.9995	.9993	.9991	.9989
10	1.	1.	1.	1.	.9999	.9999	.9999	.9998	.9998	.9997
11	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9999
12	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

$y \downarrow \lambda \rightarrow$	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
0	.045	.0408	.0369	.0334	.0302	.0273	.0247	.0224	.0202	.0183
1	.1847	.1712	.1586	.1468	.1359	.1257	.1162	.1074	.0992	.0916
2	.4012	.3799	.3594	.3397	.3208	.3027	.2854	.2689	.2531	.2381
3	.6248	.6025	.5803	.5584	.5366	.5152	.4942	.4735	.4532	.4335
4	.7982	.7806	.7626	.7442	.7254	.7064	.6872	.6678	.6484	.6288
5	.9057	.8946	.8829	.8705	.8576	.8441	.8301	.8156	.8006	.7851
6	.9612	.9554	.949	.9421	.9347	.9267	.9182	.9091	.8995	.8893
7	.9858	.9832	.9802	.9769	.9733	.9692	.9648	.9599	.9546	.9489
8	.9953	.9943	.9931	.9917	.9901	.9883	.9863	.984	.9815	.9786
9	.9986	.9982	.9978	.9973	.9967	.996	.9952	.9942	.9931	.9919
10	.9996	.9995	.9994	.9992	.999	.9987	.9984	.9981	.9977	.9972
11	.9999	.9999	.9998	.9998	.9997	.9996	.9995	.9994	.9993	.9991
12	1.	1.	1.	.9999	.9999	.9999	.9999	.9998	.9998	.9997
13	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9999
14	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

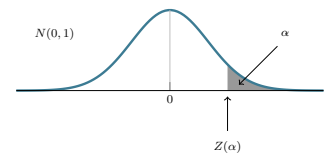
$y \downarrow \lambda \rightarrow$	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
0	.0166	.015	.0136	.0123	.0111	.0101	.0091	.0082	.0074	.0067
1	.0845	.078	.0719	.0663	.0611	.0563	.0518	.0477	.0439	.0404
2	.2238	.2102	.1974	.1851	.1736	.1626	.1523	.1425	.1333	.1247
3	.4142	.3954	.3772	.3594	.3423	.3257	.3097	.2942	.2793	.265
4	.6093	.5898	.5704	.5512	.5321	.5132	.4946	.4763	.4582	.4405
5	.7693	.7531	.7367	.7199	.7029	.6858	.6684	.651	.6335	.616
6	.8786	.8675	.8558	.8436	.8311	.818	.8046	.7908	.7767	.7622
7	.9427	.9361	.929	.9214	.9134	.9049	.896	.8867	.8769	.8666
8	.9755	.9721	.9683	.9642	.9597	.9549	.9497	.9442	.9382	.9319
9	.9905	.9889	.9871	.9851	.9829	.9805	.9778	.9749	.9717	.9682
10	.9966	.9959	.9952	.9943	.9933	.9922	.991	.9896	.988	.9863
11	.9989	.9986	.9983	.998	.9976	.9971	.9966	.996	.9953	.9945
12	.9997	.9996	.9995	.9993	.9992	.999	.9988	.9986	.9983	.998
13	.9999	.9999	.9998	.9998	.9997	.9997	.9996	.9995	.9994	.9993
14	1.	1.	1.	.9999	.9999	.9999	.9999	.9999	.9998	.9998
15	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9999
16	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

$y \downarrow \lambda \rightarrow$	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
0	.0041	.0025	.0015	.0009	.0006	.0003	.0002	.0001	.0001	.
1	.0266	.0174	.0113	.0073	.0047	.003	.0019	.0012	.0008	.0005
2	.0884	.062	.043	.0296	.0203	.0138	.0093	.0062	.0042	.0028
3	.2017	.1512	.1118	.0818	.0591	.0424	.0301	.0212	.0149	.0103
4	.3575	.2851	.2237	.173	.1321	.0996	.0744	.055	.0403	.0293
5	.5289	.4457	.369	.3007	.2414	.1912	.1496	.1157	.0885	.0671
6	.686	.6063	.5265	.4497	.3782	.3134	.2562	.2068	.1649	.1301
7	.8095	.744	.6728	.5987	.5246	.453	.3856	.3239	.2687	.2202
8	.8944	.8472	.7916	.7291	.662	.5925	.5231	.4557	.3918	.3328
9	.9462	.9161	.8774	.8305	.7764	.7166	.653	.5874	.5218	.4579
10	.9747	.9574	.9332	.9015	.8622	.8159	.7634	.706	.6453	.583
11	.989	.9799	.9661	.9467	.9208	.8881	.8487	.803	.752	.6968
12	.9955	.9912	.984	.973	.9573	.9362	.9091	.8758	.8364	.7916
13	.9983	.9964	.9929	.9872	.9784	.9658	.9486	.9261	.8981	.8645
14	.9994	.9986	.997	.9943	.9897	.9827	.9726	.9585	.94	.9165
15	.9998	.9995	.9988	.9976	.9954	.9918	.9862	.978	.9665	.9513
16	.9999	.9998	.9996	.999	.998	.9963	.9934	.9889	.9823	.973
17	1.	.9999	.9998	.9996	.9992	.9984	.997	.9947	.9911	.9857
18	1.	1.	.9999	.9999	.9997	.9993	.9987	.9976	.9957	.9928
19	1.	1.	1.	1.	.9999	.9997	.9995	.9989	.998	.9965
20	1.	1.	1.	1.	1.	.9999	.9998	.9996	.9991	.9984
21	1.	1.	1.	1.	1.	1.	.9999	.9998	.9996	.9993
22	1.	1.	1.	1.	1.	1.	1.	.9999	.9999	.9997
23	1.	1.	1.	1.	1.	1.	1.	1.	.9999	.9999
24	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

Fim da tabela 2 (Distribuição de Poisson Acumulada)

**Tabela 3:** Probabilidades Associadas à Cauda Direita da Distribuição Normal Padronizada

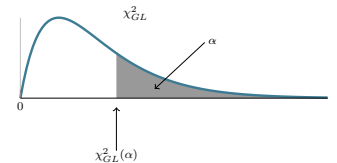
Os valores tabelados correspondem à área  $\alpha$  assinalada na figura



$Z(\alpha) = a + b$											
a ↓	b →	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	.5	.496	.492	.488	.484	.4801	.4761	.4721	.4681	.4641	
0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247	
0.2	.4207	.4168	.4129	.409	.4052	.4013	.3974	.3936	.3897	.3859	
0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.352	.3483	
0.4	.3446	.3409	.3372	.3336	.33	.3264	.3228	.3192	.3156	.3121	
0.5	.3085	.305	.3015	.2981	.2946	.2912	.2877	.2843	.281	.2776	
0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451	
0.7	.242	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148	
0.8	.2119	.209	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867	
0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.166	.1635	.1611	
1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379	
1.1	.1357	.1335	.1314	.1292	.1271	.1251	.123	.121	.119	.117	
1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.102	.1003	.0985	
1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823	
1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681	
1.5	.0668	.0655	.0643	.063	.0618	.0606	.0594	.0582	.0571	.0559	
1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455	
1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367	
1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294	
1.9	.0287	.0281	.0274	.0268	.0262	.0256	.025	.0244	.0239	.0233	
2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183	
2.1	.0179	.0174	.017	.0166	.0162	.0158	.0154	.015	.0146	.0143	
2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.011	
2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084	
2.4	.0082	.008	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064	
2.5	.0062	.006	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048	
2.6	.0047	.0045	.0044	.0043	.0041	.004	.0039	.0038	.0037	.0036	
2.7	.0035	.0034	.0033	.0032	.0031	.003	.0029	.0028	.0027	.0026	
2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.002	.0019	
2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014	
3.0	.00135	.00131	.00126	.00122	.00118	.00114	.00111	.00107	.00104	.001	

**Tabela 4:** Valores Críticos de Distribuições  $\chi^2_{GL}$

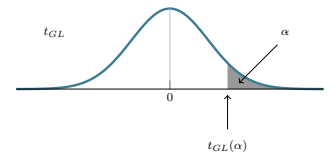
Na tabela encontram-se os valores  $\chi^2_{GL}$  tais que  $\alpha = \int_{\chi^2_{GL}}^{\infty} f(x) \cdot dx$  assinalada na figura



	$\alpha$												
GL $\downarrow$	0.995	0.990	0.975	0.950	0.900	0.750	0.500	0.250	0.100	0.050	0.025	0.010	0.005
1	.	.	.001	.004	.016	.102	.455	1.323	2.71	3.84	5.02	6.63	7.88
2	.01	.02	.051	.103	.211	.575	1.386	2.77	4.61	5.99	7.38	9.21	10.6
3	.072	.115	.216	.352	.584	1.213	2.37	4.11	6.25	7.81	9.35	11.34	12.84
4	.207	.297	.484	.711	1.064	1.923	3.36	5.39	7.78	9.49	11.14	13.28	14.86
5	.412	.554	.831	1.145	1.61	2.67	4.35	6.63	9.24	11.07	12.83	15.09	16.75
6	.676	.872	1.24	1.64	2.2	3.45	5.35	7.84	10.64	12.59	14.45	16.81	18.55
7	.989	1.24	1.69	2.17	2.83	4.25	6.35	9.04	12.02	14.07	16.01	18.48	20.28
8	1.34	1.65	2.18	2.73	3.49	5.07	7.34	10.22	13.36	15.51	17.53	20.09	21.95
9	1.73	2.09	2.7	3.33	4.17	5.9	8.34	11.39	14.68	16.92	19.02	21.67	23.59
10	2.16	2.56	3.25	3.94	4.87	6.74	9.34	12.55	15.99	18.31	20.48	23.21	25.19
11	2.6	3.05	3.82	4.57	5.58	7.58	10.34	13.7	17.28	19.68	21.92	24.72	26.76
12	3.07	3.57	4.4	5.23	6.3	8.44	11.34	14.85	18.55	21.03	23.34	26.22	28.3
13	3.57	4.11	5.01	5.89	7.04	9.3	12.34	15.98	19.81	22.36	24.74	27.69	29.82
14	4.07	4.66	5.63	6.57	7.79	10.17	13.34	17.12	21.06	23.68	26.12	29.14	31.32
15	4.6	5.23	6.26	7.26	8.55	11.04	14.34	18.25	22.31	25.	27.49	30.58	32.8
16	5.14	5.81	6.91	7.96	9.31	11.91	15.34	19.37	23.54	26.3	28.85	32.	34.27
17	5.7	6.41	7.56	8.67	10.09	12.79	16.34	20.49	24.77	27.59	30.19	33.41	35.72
18	6.26	7.01	8.23	9.39	10.86	13.68	17.34	21.6	25.99	28.87	31.53	34.81	37.16
19	6.84	7.63	8.91	10.12	11.65	14.56	18.34	22.72	27.2	30.14	32.85	36.19	38.58
20	7.43	8.26	9.59	10.85	12.44	15.45	19.34	23.83	28.41	31.41	34.17	37.57	40.
21	8.03	8.9	10.28	11.59	13.24	16.34	20.34	24.93	29.62	32.67	35.48	38.93	41.4
22	8.64	9.54	10.98	12.34	14.04	17.24	21.34	26.04	30.81	33.92	36.78	40.29	42.8
23	9.26	10.2	11.69	13.09	14.85	18.14	22.34	27.14	32.01	35.17	38.08	41.64	44.18
24	9.89	10.86	12.4	13.85	15.66	19.04	23.34	28.24	33.2	36.42	39.36	42.98	45.56
25	10.52	11.52	13.12	14.61	16.47	19.94	24.34	29.34	34.38	37.65	40.65	44.31	46.93
26	11.16	12.2	13.84	15.38	17.29	20.84	25.34	30.43	35.56	38.89	41.92	45.64	48.29
27	11.81	12.88	14.57	16.15	18.11	21.75	26.34	31.53	36.74	40.11	43.19	46.96	49.64
28	12.46	13.56	15.31	16.93	18.94	22.66	27.34	32.62	37.92	41.34	44.46	48.28	50.99
29	13.12	14.26	16.05	17.71	19.77	23.57	28.34	33.71	39.09	42.56	45.72	49.59	52.34
30	13.79	14.95	16.79	18.49	20.6	24.48	29.34	34.8	40.26	43.77	46.98	50.89	53.67
40	20.71	22.16	24.43	26.51	29.05	33.66	39.34	45.62	51.81	55.76	59.34	63.69	66.77
50	27.99	29.71	32.36	34.76	37.69	42.94	49.33	56.33	63.17	67.5	71.42	76.15	79.49
60	35.53	37.48	40.48	43.19	46.46	52.29	59.33	66.98	74.4	79.08	83.3	88.38	91.95
70	43.28	45.44	48.76	51.74	55.33	61.7	69.33	77.58	85.53	90.53	95.02	100.4	104.2
80	51.17	53.54	57.15	60.39	64.28	71.14	79.33	88.13	96.58	101.9	106.6	112.3	116.3
90	59.2	61.75	65.65	69.13	73.29	80.62	89.33	98.65	107.6	113.1	118.1	124.1	128.3
100	67.33	70.06	74.22	77.93	82.36	90.13	99.33	109.1	118.5	124.3	129.6	135.8	140.2

**Tabela 5:** Valores Críticos de Distribuições  $t_{GL}$

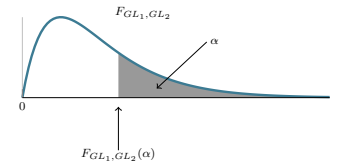
Na tabela encontram-se os valores  $t_{GL}$  tais que  $\alpha = \int_{t_{GL}}^{\infty} f(x) \cdot dx$  assinalada na figura



GL ↓	α								
	0.25	0.20	0.15	0.10	0.05	0.025	0.010	0.005	0.0005
1	1.	1.376	1.963	3.078	6.314	12.706	31.821	63.657	636.619
2	.816	1.061	1.386	1.886	2.92	4.303	6.965	9.925	31.599
3	.765	.978	1.25	1.638	2.353	3.182	4.541	5.841	12.924
4	.741	.941	1.19	1.533	2.132	2.776	3.747	4.604	8.61
5	.727	.92	1.156	1.476	2.015	2.571	3.365	4.032	6.869
6	.718	.906	1.134	1.44	1.943	2.447	3.143	3.707	5.959
7	.711	.896	1.119	1.415	1.895	2.365	2.998	3.499	5.408
8	.706	.889	1.108	1.397	1.86	2.306	2.896	3.355	5.041
9	.703	.883	1.1	1.383	1.833	2.262	2.821	3.25	4.781
10	.7	.879	1.093	1.372	1.812	2.228	2.764	3.169	4.587
11	.697	.876	1.088	1.363	1.796	2.201	2.718	3.106	4.437
12	.695	.873	1.083	1.356	1.782	2.179	2.681	3.055	4.318
13	.694	.87	1.079	1.35	1.771	2.16	2.65	3.012	4.221
14	.692	.868	1.076	1.345	1.761	2.145	2.624	2.977	4.14
15	.691	.866	1.074	1.341	1.753	2.131	2.602	2.947	4.073
16	.69	.865	1.071	1.337	1.746	2.12	2.583	2.921	4.015
17	.689	.863	1.069	1.333	1.74	2.11	2.567	2.898	3.965
18	.688	.862	1.067	1.33	1.734	2.101	2.552	2.878	3.922
19	.688	.861	1.066	1.328	1.729	2.093	2.539	2.861	3.883
20	.687	.86	1.064	1.325	1.725	2.086	2.528	2.845	3.85
21	.686	.859	1.063	1.323	1.721	2.08	2.518	2.831	3.819
22	.686	.858	1.061	1.321	1.717	2.074	2.508	2.819	3.792
23	.685	.858	1.06	1.319	1.714	2.069	2.5	2.807	3.768
24	.685	.857	1.059	1.318	1.711	2.064	2.492	2.797	3.745
25	.684	.856	1.058	1.316	1.708	2.06	2.485	2.787	3.725
26	.684	.856	1.058	1.315	1.706	2.056	2.479	2.779	3.707
27	.684	.855	1.057	1.314	1.703	2.052	2.473	2.771	3.69
28	.683	.855	1.056	1.313	1.701	2.048	2.467	2.763	3.674
29	.683	.854	1.055	1.311	1.699	2.045	2.462	2.756	3.659
30	.683	.854	1.055	1.31	1.697	2.042	2.457	2.75	3.646
40	.681	.851	1.05	1.303	1.684	2.021	2.423	2.704	3.551
60	.679	.848	1.045	1.296	1.671	2.	2.39	2.66	3.46
120	.677	.845	1.041	1.289	1.658	1.98	2.358	2.617	3.373
∞	.674	.842	1.036	1.282	1.645	1.96	2.326	2.576	3.291

**Tabela 6:** Valores Críticos de Distribuições  $F_{GL_1, GL_2}$

Na tabela encontram-se os valores  $F_{GL_1, GL_2}$  tais que  $\alpha = \int_{F_{GL_1, GL_2}}^{\infty} f(x) \cdot dx$  assinalada na figura



$\alpha = 10\%$																							
$GL_1 \rightarrow$	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	25	30	40	50	100	150	200
1	39.9	49.5	53.6	55.8	57.2	58.2	58.9	59.4	59.9	60.2	60.5	60.7	61.1	61.3	61.6	61.7	62.1	62.3	62.5	62.7	63	63.1	63.2
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	9.42	9.43	9.44	9.44	9.45	9.46	9.47	9.47	9.48	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	5.22	5.20	5.20	5.19	5.18	5.17	5.17	5.16	5.15	5.14	5.14	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	3.88	3.86	3.85	3.84	3.83	3.82	3.80	3.80	3.78	3.77	3.77
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	3.25	3.23	3.22	3.21	3.19	3.17	3.16	3.15	3.13	3.12	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	2.88	2.86	2.85	2.84	2.81	2.80	2.78	2.77	2.75	2.74	2.73
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	2.64	2.62	2.61	2.59	2.57	2.56	2.54	2.52	2.50	2.49	2.48
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	2.48	2.45	2.44	2.42	2.40	2.38	2.36	2.35	2.32	2.31	2.31
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	2.35	2.33	2.31	2.30	2.27	2.25	2.23	2.22	2.19	2.18	2.17
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	2.26	2.23	2.22	2.20	2.17	2.16	2.13	2.12	2.09	2.08	2.07
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	2.18	2.16	2.14	2.12	2.10	2.08	2.05	2.04	2.01	1.99	1.99
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	2.12	2.09	2.08	2.06	2.03	2.01	1.99	1.97	1.94	1.93	1.92
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	2.07	2.04	2.02	2.01	1.98	1.96	1.93	1.92	1.88	1.87	1.86
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	2.02	2.00	1.98	1.96	1.93	1.91	1.89	1.87	1.83	1.82	1.82
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	1.99	1.96	1.94	1.92	1.89	1.87	1.85	1.83	1.79	1.78	1.77
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	1.95	1.93	1.91	1.89	1.86	1.84	1.81	1.79	1.76	1.74	1.74
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	1.93	1.90	1.88	1.86	1.83	1.81	1.78	1.76	1.73	1.71	1.71
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	1.90	1.87	1.85	1.84	1.80	1.78	1.75	1.74	1.70	1.68	1.68
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	1.88	1.85	1.83	1.81	1.78	1.76	1.73	1.71	1.67	1.66	1.65
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	1.86	1.83	1.81	1.79	1.76	1.74	1.71	1.69	1.65	1.64	1.63
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	1.84	1.81	1.79	1.78	1.74	1.72	1.69	1.67	1.63	1.62	1.61
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	1.83	1.80	1.78	1.76	1.73	1.70	1.67	1.65	1.61	1.60	1.59
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	1.81	1.78	1.76	1.74	1.71	1.69	1.66	1.64	1.59	1.58	1.57
24	2.93	2.54	2.33	2.19	2.10	2.04	1.98	1.94	1.91	1.88	1.85	1.83	1.80	1.77	1.75	1.73	1.70	1.67	1.64	1.62	1.58	1.56	1.56
25	2.92	2.53	2.32	2.18	2.09	2.02	1.97	1.93	1.89	1.87	1.84	1.82	1.79	1.76	1.74	1.72	1.68	1.66	1.63	1.61	1.56	1.55	1.54

GL<sub>2</sub> ↑

GL<sub>1</sub>: Número de graus de liberdade do numerador.

GL<sub>2</sub>: Número de graus de liberdade do denominador.

continua ...

$\alpha = 10\%$																							
$GL_1 \rightarrow$	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	25	30	40	50	100	150	200
26	2.91	2.52	2.31	2.17	2.08	2.01	1.96	1.92	1.88	1.86	1.83	1.81	1.77	1.75	1.72	1.71	1.67	1.65	1.61	1.59	1.55	1.54	1.53
27	2.90	2.51	2.30	2.17	2.07	2.00	1.95	1.91	1.87	1.85	1.82	1.80	1.76	1.74	1.71	1.70	1.66	1.64	1.60	1.58	1.54	1.52	1.52
28	2.89	2.50	2.29	2.16	2.06	2.00	1.94	1.90	1.87	1.84	1.81	1.79	1.75	1.73	1.70	1.69	1.65	1.63	1.59	1.57	1.53	1.51	1.50
29	2.89	2.50	2.28	2.15	2.06	1.99	1.93	1.89	1.86	1.83	1.80	1.78	1.75	1.72	1.69	1.68	1.64	1.62	1.58	1.56	1.52	1.50	1.49
30	2.88	2.49	2.28	2.14	2.05	1.98	1.93	1.88	1.85	1.82	1.79	1.77	1.74	1.71	1.69	1.67	1.63	1.61	1.57	1.55	1.51	1.49	1.48
32	2.87	2.48	2.26	2.13	2.04	1.97	1.91	1.87	1.83	1.81	1.78	1.76	1.72	1.69	1.67	1.65	1.62	1.59	1.56	1.53	1.49	1.47	1.46
34	2.86	2.47	2.25	2.12	2.02	1.96	1.90	1.86	1.82	1.79	1.77	1.75	1.71	1.68	1.66	1.64	1.60	1.58	1.54	1.52	1.47	1.46	1.45
36	2.85	2.46	2.24	2.11	2.01	1.94	1.89	1.85	1.81	1.78	1.76	1.73	1.70	1.67	1.65	1.63	1.59	1.56	1.53	1.51	1.46	1.44	1.43
38	2.84	2.45	2.23	2.10	2.01	1.94	1.88	1.84	1.80	1.77	1.75	1.72	1.69	1.66	1.63	1.61	1.58	1.55	1.52	1.49	1.45	1.43	1.42
40	2.84	2.44	2.23	2.09	2.00	1.93	1.87	1.83	1.79	1.76	1.74	1.71	1.68	1.65	1.62	1.61	1.57	1.54	1.51	1.48	1.43	1.42	1.41
42	2.83	2.43	2.22	2.08	1.99	1.92	1.86	1.82	1.78	1.75	1.73	1.71	1.67	1.64	1.62	1.60	1.56	1.53	1.50	1.47	1.42	1.40	1.40
44	2.82	2.43	2.21	2.08	1.98	1.91	1.86	1.81	1.78	1.75	1.72	1.70	1.66	1.63	1.61	1.59	1.55	1.52	1.49	1.46	1.41	1.39	1.39
46	2.82	2.42	2.21	2.07	1.98	1.91	1.85	1.81	1.77	1.74	1.71	1.69	1.65	1.63	1.60	1.58	1.54	1.52	1.48	1.46	1.40	1.39	1.38
48	2.81	2.42	2.20	2.07	1.97	1.90	1.85	1.80	1.77	1.73	1.71	1.69	1.65	1.62	1.59	1.57	1.54	1.51	1.47	1.45	1.40	1.38	1.37
50	2.81	2.41	2.20	2.06	1.97	1.90	1.84	1.80	1.76	1.73	1.70	1.68	1.64	1.61	1.59	1.57	1.53	1.50	1.46	1.44	1.39	1.37	1.36
60	2.79	2.39	2.18	2.04	1.95	1.87	1.82	1.77	1.74	1.71	1.68	1.66	1.62	1.59	1.56	1.54	1.50	1.48	1.44	1.41	1.36	1.34	1.33
70	2.78	2.38	2.16	2.03	1.93	1.86	1.80	1.76	1.72	1.69	1.66	1.64	1.60	1.57	1.55	1.53	1.49	1.46	1.42	1.39	1.34	1.31	1.30
80	2.77	2.37	2.15	2.02	1.92	1.85	1.79	1.75	1.71	1.68	1.65	1.63	1.59	1.56	1.53	1.51	1.47	1.44	1.40	1.38	1.32	1.30	1.28
90	2.76	2.36	2.15	2.01	1.91	1.84	1.78	1.74	1.70	1.67	1.64	1.62	1.58	1.55	1.52	1.50	1.46	1.43	1.39	1.36	1.30	1.28	1.27
100	2.76	2.36	2.14	2.00	1.91	1.83	1.78	1.73	1.69	1.66	1.64	1.61	1.57	1.54	1.52	1.49	1.45	1.42	1.38	1.35	1.29	1.27	1.26
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	1.99	1.96	1.94	1.92	1.89	1.87	1.85	1.83	1.79	1.78	1.77
150	2.74	2.34	2.12	1.98	1.89	1.81	1.76	1.71	1.67	1.64	1.61	1.59	1.55	1.52	1.49	1.47	1.43	1.40	1.35	1.33	1.26	1.23	1.22
200	2.73	2.33	2.11	1.97	1.88	1.80	1.75	1.70	1.66	1.63	1.60	1.58	1.54	1.51	1.48	1.46	1.41	1.38	1.34	1.31	1.24	1.21	1.20
300	2.72	2.32	2.10	1.96	1.87	1.79	1.74	1.69	1.65	1.62	1.59	1.57	1.53	1.49	1.47	1.45	1.40	1.37	1.32	1.29	1.22	1.19	1.18
500	2.72	2.31	2.09	1.96	1.86	1.79	1.73	1.68	1.64	1.61	1.58	1.56	1.52	1.49	1.46	1.44	1.39	1.36	1.31	1.28	1.21	1.18	1.16
$GL_2 \uparrow$																							

$GL_2 \uparrow$

$GL_1$ : Número de graus de liberdade do numerador.

$GL_2$ : Número de graus de liberdade do denominador.

$\alpha = 5\%$																								
$GL_1 \rightarrow$	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	25	30	40	50	100	150	200	
1	161	200	216	225	230	234	237	239	241	242	243	244	245	246	247	248	249	250	251	252	253	253	254	
2	18.5	19.0	19.2	19.2	19.3	19.3	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.5	19.5	19.5	19.5	19.5	19.5	19.5	
3	10.1	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.76	8.74	8.71	8.69	8.67	8.66	8.63	8.62	8.59	8.58	8.55	8.54	8.54	
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.94	5.91	5.87	5.84	5.82	5.80	5.77	5.75	5.72	5.70	5.66	5.65	5.65	
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.70	4.68	4.64	4.60	4.58	4.56	4.52	4.50	4.46	4.44	4.41	4.39	4.39	
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.03	4.00	3.96	3.92	3.90	3.87	3.83	3.81	3.77	3.75	3.71	3.70	3.69	
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.60	3.57	3.53	3.49	3.47	3.44	3.40	3.38	3.34	3.32	3.27	3.26	3.25	
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.31	3.28	3.24	3.20	3.17	3.15	3.11	3.08	3.04	3.02	2.97	2.96	2.95	
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.10	3.07	3.03	2.99	2.96	2.94	2.89	2.86	2.83	2.80	2.76	2.74	2.73	
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.94	2.91	2.86	2.83	2.80	2.77	2.73	2.70	2.66	2.64	2.59	2.57	2.56	
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.82	2.79	2.74	2.70	2.67	2.65	2.60	2.57	2.53	2.51	2.46	2.44	2.43	
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.72	2.69	2.64	2.60	2.57	2.54	2.50	2.47	2.43	2.40	2.35	2.33	2.32	
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.63	2.60	2.55	2.51	2.48	2.46	2.41	2.38	2.34	2.31	2.26	2.24	2.23	
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.57	2.53	2.48	2.44	2.41	2.39	2.34	2.31	2.27	2.24	2.19	2.17	2.16	
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.51	2.48	2.42	2.38	2.35	2.33	2.28	2.25	2.20	2.18	2.12	2.10	2.10	
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.46	2.42	2.37	2.33	2.30	2.28	2.23	2.19	2.15	2.12	2.07	2.05	2.04	
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.41	2.38	2.33	2.29	2.26	2.23	2.18	2.15	2.10	2.08	2.02	2.00	1.99	
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.37	2.34	2.29	2.25	2.22	2.19	2.14	2.11	2.06	2.04	1.98	1.96	1.95	
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.34	2.31	2.26	2.21	2.18	2.16	2.11	2.07	2.03	2.00	1.94	1.92	1.91	
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.31	2.28	2.22	2.18	2.15	2.12	2.07	2.04	1.99	1.97	1.91	1.89	1.88	
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.28	2.25	2.20	2.16	2.12	2.10	2.05	2.01	1.96	1.94	1.88	1.86	1.84	
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.26	2.23	2.17	2.13	2.10	2.07	2.02	1.98	1.94	1.91	1.85	1.83	1.82	
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27	2.24	2.20	2.15	2.11	2.08	2.05	2.00	1.96	1.91	1.88	1.82	1.80	1.79	
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.22	2.18	2.13	2.09	2.05	2.03	1.97	1.94	1.89	1.86	1.80	1.78	1.77	
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.20	2.16	2.11	2.07	2.04	2.01	1.96	1.92	1.87	1.84	1.78	1.76	1.75	
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18	2.15	2.09	2.05	2.02	1.99	1.94	1.90	1.85	1.82	1.76	1.74	1.73	
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20	2.17	2.13	2.08	2.04	2.00	1.97	1.92	1.88	1.84	1.81	1.74	1.72	1.71	
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.15	2.12	2.06	2.02	1.99	1.96	1.91	1.87	1.82	1.79	1.73	1.70	1.69	
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18	2.14	2.10	2.05	2.01	1.97	1.94	1.89	1.85	1.81	1.77	1.71	1.69	1.67	
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.13	2.09	2.04	1.99	1.96	1.93	1.88	1.84	1.79	1.76	1.70	1.67	1.66	
32	4.15	3.29	2.90	2.67	2.51	2.40	2.31	2.24	2.19	2.14	2.10	2.07	2.01	1.97	1.94	1.91	1.85	1.82	1.77	1.74	1.67	1.64	1.63	
34	4.13	3.28	2.88	2.65	2.49	2.38	2.29	2.23	2.17	2.12	2.08	2.05	1.99	1.95	1.92	1.89	1.83	1.80	1.75	1.71	1.65	1.62	1.61	
36	4.11	3.26	2.87	2.63	2.48	2.36	2.28	2.21	2.15	2.11	2.07	2.03	1.98	1.93	1.90	1.87	1.81	1.78	1.73	1.69	1.62	1.60	1.59	
38	4.10	3.24	2.85	2.62	2.46	2.35	2.26	2.19	2.14	2.09	2.05	2.02	1.96	1.92	1.88	1.85	1.80	1.76	1.71	1.68	1.61	1.58	1.57	
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.04	2.00	1.95	1.90	1.87	1.84	1.78	1.74	1.69	1.66	1.59	1.56	1.55	
42	4.07	3.22	2.83	2.59	2.44	2.32	2.24	2.17	2.11	2.06	2.03	1.99	1.94	1.89	1.86	1.83	1.77	1.73	1.68	1.65	1.57	1.55	1.53	
44	4.06	3.21	2.82	2.58	2.43	2.31	2.23	2.16	2.10	2.05	2.01	1.98	1.92	1.88	1.84	1.81	1.76	1.72	1.67	1.63	1.56	1.53	1.52	
46	4.05	3.20	2.81	2.57	2.42	2.30	2.22	2.15	2.09	2.04	2.00	1.97	1.91	1.87	1.83	1.80	1.75	1.71	1.65	1.62	1.55	1.52	1.51	
48	4.04	3.19	2.80	2.57	2.41	2.29	2.21	2.14	2.08	2.03	1.99	1.96	1.90	1.86	1.82	1.79	1.74	1.70	1.64	1.61	1.54	1.51	1.49	
50	4.03	3.18	2.79	2.56	2.40	2.29	2.20	2.13	2.07	2.03	1.99	1.95	1.89	1.85	1.81	1.78	1.73	1.69	1.63	1.60	1.52	1.50	1.48	
$GL_2 \uparrow$																								



...continuação  $\alpha = 5\%$

$GL_1 \rightarrow$	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	25	30	40	50	100	150	200
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.95	1.92	1.86	1.82	1.78	1.75	1.69	1.65	1.59	1.56	1.48	1.45	1.44
70	3.98	3.13	2.74	2.50	2.35	2.23	2.14	2.07	2.02	1.97	1.93	1.89	1.84	1.79	1.75	1.72	1.66	1.62	1.57	1.53	1.45	1.42	1.40
80	3.96	3.11	2.72	2.49	2.33	2.21	2.13	2.06	2.00	1.95	1.91	1.88	1.82	1.77	1.73	1.70	1.64	1.60	1.54	1.51	1.43	1.39	1.38
90	3.95	3.10	2.71	2.47	2.32	2.20	2.11	2.04	1.99	1.94	1.90	1.86	1.80	1.76	1.72	1.69	1.63	1.59	1.53	1.49	1.41	1.38	1.36
100	3.94	3.09	2.70	2.46	2.31	2.19	2.10	2.03	1.97	1.93	1.89	1.85	1.79	1.75	1.71	1.68	1.62	1.57	1.52	1.48	1.39	1.36	1.34
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.51	2.48	2.42	2.38	2.35	2.33	2.28	2.25	2.20	2.18	2.12	2.10	2.10
150	3.90	3.06	2.66	2.43	2.27	2.16	2.07	2.00	1.94	1.89	1.85	1.82	1.76	1.71	1.67	1.64	1.58	1.54	1.48	1.44	1.34	1.31	1.29
200	3.89	3.04	2.65	2.42	2.26	2.14	2.06	1.98	1.93	1.88	1.84	1.80	1.74	1.69	1.66	1.62	1.56	1.52	1.46	1.41	1.32	1.28	1.26
300	3.87	3.03	2.63	2.40	2.24	2.13	2.04	1.97	1.91	1.86	1.82	1.78	1.72	1.68	1.64	1.61	1.54	1.50	1.43	1.39	1.30	1.26	1.23
500	3.86	3.01	2.62	2.39	2.23	2.12	2.03	1.96	1.90	1.85	1.81	1.77	1.71	1.66	1.62	1.59	1.53	1.48	1.42	1.38	1.28	1.23	1.21

$GL_2 \uparrow$

$GL_1$ : Número de graus de liberdade do numerador.

$GL_2$ : Número de graus de liberdade do denominador.

$\alpha = 2.5\%$

$GL_1 \rightarrow$	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	25	30	40	50	100	150	200
1	648	800	864	900	922	937	948	957	963	969	973	977	983	987	990	993	998	1001	1006	1008	1013	1015	1016
2	38.5	39.0	39.2	39.2	39.3	39.3	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.5	39.5	39.5	39.5	39.5	39.5	39.5
3	17.4	16.0	15.4	15.1	14.9	14.7	14.6	14.5	14.5	14.4	14.4	14.3	14.3	14.2	14.2	14.2	14.1	14.1	14.0	14.0	14.0	13.9	13.9
4	12.2	10.6	9.98	9.60	9.36	9.20	9.07	8.98	8.90	8.84	8.79	8.75	8.68	8.63	8.59	8.56	8.50	8.46	8.41	8.38	8.32	8.30	8.29
5	10.0	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68	6.62	6.57	6.52	6.46	6.40	6.36	6.33	6.27	6.23	6.18	6.14	6.08	6.06	6.05
6	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52	5.46	5.41	5.37	5.30	5.24	5.20	5.17	5.11	5.07	5.01	4.98	4.92	4.89	4.88
7	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82	4.76	4.71	4.67	4.60	4.54	4.50	4.47	4.40	4.36	4.31	4.28	4.21	4.19	4.18
8	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36	4.30	4.24	4.20	4.13	4.08	4.03	4.00	3.94	3.89	3.84	3.81	3.74	3.72	3.70
9	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03	3.96	3.91	3.87	3.80	3.74	3.70	3.67	3.60	3.56	3.51	3.47	3.40	3.38	3.37
10	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78	3.72	3.66	3.62	3.55	3.50	3.45	3.42	3.35	3.31	3.26	3.22	3.15	3.13	3.12
11	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59	3.53	3.47	3.43	3.36	3.30	3.26	3.23	3.16	3.12	3.06	3.03	2.96	2.93	2.92
12	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44	3.37	3.32	3.28	3.21	3.15	3.11	3.07	3.01	2.96	2.91	2.87	2.80	2.78	2.76
13	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31	3.25	3.20	3.15	3.08	3.03	2.98	2.95	2.88	2.84	2.78	2.74	2.67	2.65	2.63
14	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21	3.15	3.09	3.05	2.98	2.92	2.88	2.84	2.78	2.73	2.67	2.64	2.56	2.54	2.53
15	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12	3.06	3.01	2.96	2.89	2.84	2.79	2.76	2.69	2.64	2.59	2.55	2.47	2.45	2.44
16	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05	2.99	2.93	2.89	2.82	2.76	2.72	2.68	2.61	2.57	2.51	2.47	2.40	2.37	2.36
17	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98	2.92	2.87	2.82	2.75	2.70	2.65	2.62	2.55	2.50	2.44	2.41	2.33	2.30	2.29
18	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93	2.87	2.81	2.77	2.70	2.64	2.60	2.56	2.49	2.44	2.38	2.35	2.27	2.24	2.23
19	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88	2.82	2.76	2.72	2.65	2.59	2.55	2.51	2.44	2.39	2.33	2.30	2.22	2.19	2.18
20	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84	2.77	2.72	2.68	2.60	2.55	2.50	2.46	2.40	2.35	2.29	2.25	2.17	2.14	2.13
21	5.83	4.42	3.82	3.48	3.25	3.09	2.97	2.87	2.80	2.73	2.68	2.64	2.56	2.51	2.46	2.42	2.36	2.31	2.25	2.21	2.13	2.10	2.09
22	5.79	4.38	3.78	3.44	3.22	3.05	2.93	2.84	2.76	2.70	2.65	2.60	2.53	2.47	2.43	2.39	2.32	2.27	2.21	2.17	2.09	2.06	2.05
23	5.75	4.35	3.75	3.41	3.18	3.02	2.90	2.81	2.73	2.67	2.62	2.57	2.50	2.44	2.39	2.36	2.29	2.24	2.18	2.14	2.06	2.03	2.01
24	5.72	4.32	3.72	3.38	3.15	2.99	2.87	2.78	2.70	2.64	2.59	2.54	2.47	2.41	2.36	2.33	2.26	2.21	2.15	2.11	2.02	2.00	1.98
25	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68	2.61	2.56	2.51	2.44	2.38	2.34	2.30	2.23	2.18	2.12	2.08	2.00	1.97	1.95
26	5.66	4.27	3.67	3.33	3.10	2.94	2.82	2.73	2.65	2.59	2.54	2.49	2.42	2.36	2.31	2.28	2.21	2.16	2.09	2.05	1.97	1.94	1.92
27	5.63	4.24	3.65	3.31	3.08	2.92	2.80	2.71	2.63	2.57	2.51	2.47	2.39	2.34	2.29	2.25	2.18	2.13	2.07	2.03	1.94	1.91	1.90
28	5.61	4.22	3.63	3.29	3.06	2.90	2.78	2.69	2.61	2.55	2.49	2.45	2.37	2.32	2.27	2.23	2.16	2.11	2.05	2.01	1.92	1.89	1.88
29	5.59	4.20	3.61	3.27	3.04	2.88	2.76	2.67	2.59	2.53	2.48	2.43	2.36	2.30	2.25	2.21	2.14	2.09	2.03	1.99	1.90	1.87	1.86
30	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57	2.51	2.46	2.41	2.34	2.28	2.23	2.20	2.12	2.07	2.01	1.97	1.88	1.85	1.84
32	5.53	4.15	3.56	3.22	3.00	2.84	2.71	2.62	2.54	2.48	2.43	2.38	2.31	2.25	2.20	2.16	2.09	2.04	1.98	1.93	1.85	1.82	1.80
34	5.50	4.12	3.53	3.19	2.97	2.81	2.69	2.59	2.52	2.45	2.40	2.35	2.28	2.22	2.17	2.13	2.06	2.01	1.95	1.90	1.82	1.78	1.77
36	5.47	4.09	3.50	3.17	2.94	2.78	2.66	2.57	2.49	2.43	2.37	2.33	2.25	2.20	2.15	2.11	2.04	1.99	1.92	1.88	1.79	1.76	1.74
38	5.45	4.07	3.48	3.15	2.92	2.76	2.64	2.55	2.47	2.41	2.35	2.31	2.23	2.17	2.13	2.09	2.01	1.96	1.90	1.85	1.76	1.73	1.71
40	5.42	4.05	3.46	3.13	2.90	2.74	2.62	2.53	2.45	2.39	2.33	2.29	2.21	2.15	2.11	2.07	1.99	1.94	1.88	1.83	1.74	1.71	1.69
42	5.40	4.03	3.45	3.11	2.89	2.73	2.61	2.51	2.43	2.37	2.32	2.27	2.20	2.14	2.09	2.05	1.98	1.92	1.86	1.81	1.72	1.69	1.67
44	5.39	4.02	3.43	3.09	2.87	2.71	2.59	2.50	2.42	2.36	2.30	2.26	2.18	2.12	2.07	2.03	1.96	1.91	1.84	1.80	1.70	1.67	1.65
46	5.37	4.00	3.42	3.08	2.86	2.70	2.58	2.48	2.41	2.34	2.29	2.24	2.17	2.11	2.06	2.02	1.94	1.89	1.82	1.78	1.69	1.65	1.63
48	5.35	3.99	3.40	3.07	2.84	2.69	2.56	2.47	2.39	2.33	2.27	2.23	2.15	2.09	2.05	2.01	1.93	1.88	1.81	1.77	1.67	1.64	1.62
50	5.34	3.97	3.39	3.05	2.83	2.67	2.55	2.46	2.38	2.32	2.26	2.22	2.14	2.08	2.03	1.99	1.92	1.87	1.80	1.75	1.66	1.62	1.60
60	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33	2.27	2.22	2.17	2.09	2.03	1.98	1.94	1.87	1.82	1.74	1.70	1.60	1.56	1.54
70	5.25	3.89	3.31	2.97	2.75	2.59	2.47	2.38	2.30	2.24	2.18	2.14	2.06	2.00	1.95	1.91	1.83	1.78	1.71	1.66	1.56	1.52	1.50
80	5.22	3.86	3.28	2.95	2.73	2.57	2.45	2.35	2.28	2.21	2.16	2.11	2.03	1.97	1.92	1.88	1.81	1.75	1.68	1.63	1.53	1.49	1.47
90	5.20	3.84	3.26	2.93	2.71	2.55	2.43	2.34	2.26	2.19	2.14	2.09	2.02	1.95	1.91	1.86	1.79	1.73	1.66	1.61	1.50	1.46	1

$\alpha = 1.0\%$																							
$GL_1 \rightarrow$	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	25	30	40	50	100	150	200
1	4052	5000	5403	5625	5764	5859	5928	5981	6022	6056	6083	6106	6143	6170	6192	6209	6240	6261	6287	6303	6334	6345	6350
2	98.5	99.0	99.2	99.2	99.3	99.3	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.5	99.5	99.5	99.5	99.5	99.5	99.5
3	34.1	30.8	29.5	28.7	28.2	27.9	27.7	27.5	27.3	27.2	27.1	27.1	26.9	26.8	26.8	26.7	26.6	26.5	26.4	26.4	26.2	26.2	26.2
4	21.2	18.0	16.7	16.0	15.5	15.2	15.0	14.8	14.7	14.5	14.5	14.4	14.2	14.2	14.1	14.0	13.9	13.8	13.7	13.7	13.6	13.5	13.5
5	16.3	13.3	12.1	11.4	11.0	10.7	10.5	10.3	10.2	10.1	9.96	9.89	9.77	9.68	9.61	9.55	9.45	9.38	9.29	9.24	9.13	9.09	9.08
6	13.7	10.9	9.78	9.15	8.75	8.47	8.26	8.10	7.98	7.87	7.79	7.72	7.60	7.52	7.45	7.40	7.30	7.23	7.14	7.09	6.99	6.95	6.93
7	12.2	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72	6.62	6.54	6.47	6.36	6.28	6.21	6.16	6.06	5.99	5.91	5.86	5.75	5.72	5.70
8	11.3	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91	5.81	5.73	5.67	5.56	5.48	5.41	5.36	5.26	5.20	5.12	5.07	4.96	4.93	4.91
9	10.6	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35	5.26	5.18	5.11	5.01	4.92	4.86	4.81	4.71	4.65	4.57	4.52	4.41	4.38	4.36
10	10.0	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94	4.85	4.77	4.71	4.60	4.52	4.46	4.41	4.31	4.25	4.17	4.12	4.01	3.98	3.96
11	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63	4.54	4.46	4.40	4.29	4.21	4.15	4.10	4.01	3.94	3.86	3.81	3.71	3.67	3.66
12	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39	4.30	4.22	4.16	4.05	3.97	3.91	3.86	3.76	3.70	3.62	3.57	3.47	3.43	3.41
13	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19	4.10	4.02	3.96	3.86	3.78	3.72	3.66	3.57	3.51	3.43	3.38	3.27	3.24	3.22
14	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03	3.94	3.86	3.80	3.70	3.62	3.56	3.51	3.41	3.35	3.27	3.22	3.11	3.08	3.06
15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89	3.80	3.73	3.67	3.56	3.49	3.42	3.37	3.28	3.21	3.13	3.08	2.98	2.94	2.92
16	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69	3.62	3.55	3.45	3.37	3.31	3.26	3.16	3.10	3.02	2.97	2.86	2.83	2.81
17	8.40	6.11	5.18	4.67	4.34	4.10	3.93	3.79	3.68	3.59	3.52	3.46	3.35	3.27	3.21	3.16	3.07	3.00	2.92	2.87	2.76	2.73	2.71
18	8.29	6.01	5.09	4.58	4.25	4.01	3.84	3.71	3.60	3.51	3.43	3.37	3.27	3.19	3.13	3.08	2.98	2.92	2.84	2.78	2.68	2.64	2.62
19	8.18	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52	3.43	3.36	3.30	3.19	3.12	3.05	3.00	2.91	2.84	2.76	2.71	2.60	2.57	2.55
20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46	3.37	3.29	3.23	3.13	3.05	2.99	2.94	2.84	2.78	2.69	2.64	2.54	2.50	2.48
21	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40	3.31	3.24	3.17	3.07	2.99	2.93	2.88	2.79	2.72	2.64	2.58	2.48	2.44	2.42
22	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26	3.18	3.12	3.02	2.94	2.88	2.83	2.73	2.67	2.58	2.53	2.42	2.38	2.36
23	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21	3.14	3.07	2.97	2.89	2.83	2.78	2.69	2.62	2.54	2.48	2.37	2.34	2.32
24	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.26	3.17	3.09	3.03	2.93	2.85	2.79	2.74	2.64	2.58	2.49	2.44	2.33	2.29	2.27
25	7.77	5.57	4.68	4.18	3.85	3.63	3.46	3.32	3.22	3.13	3.06	2.99	2.89	2.81	2.75	2.70	2.60	2.54	2.45	2.40	2.29	2.25	2.23
26	7.72	5.53	4.64	4.14	3.82	3.59	3.42	3.29	3.18	3.09	3.02	2.96	2.86	2.78	2.72	2.66	2.57	2.50	2.42	2.36	2.25	2.21	2.19
27	7.68	5.49	4.60	4.11	3.78	3.56	3.39	3.26	3.15	3.06	2.99	2.93	2.82	2.75	2.68	2.63	2.54	2.47	2.38	2.33	2.22	2.18	2.16
28	7.64	5.45	4.57	4.07	3.75	3.53	3.36	3.23	3.12	3.03	2.96	2.90	2.79	2.72	2.65	2.60	2.51	2.44	2.35	2.30	2.19	2.15	2.13
29	7.60	5.42	4.54	4.04	3.73	3.50	3.33	3.20	3.09	3.00	2.93	2.87	2.77	2.69	2.63	2.57	2.48	2.41	2.33	2.27	2.16	2.12	2.10
30	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07	2.98	2.91	2.84	2.74	2.66	2.60	2.55	2.45	2.39	2.30	2.25	2.13	2.09	2.07
32	7.50	5.34	4.46	3.97	3.65	3.43	3.26	3.13	3.02	2.93	2.86	2.80	2.70	2.62	2.55	2.50	2.41	2.34	2.25	2.20	2.08	2.04	2.02
34	7.44	5.29	4.42	3.93	3.61	3.39	3.22	3.09	2.98	2.89	2.82	2.76	2.66	2.58	2.51	2.46	2.37	2.30	2.21	2.16	2.04	2.00	1.98
36	7.40	5.25	4.38	3.89	3.57	3.35	3.18	3.05	2.95	2.86	2.79	2.72	2.62	2.54	2.48	2.43	2.33	2.26	2.18	2.12	2.00	1.96	1.94
38	7.35	5.21	4.34	3.86	3.54	3.32	3.15	3.02	2.92	2.83	2.75	2.69	2.59	2.51	2.45	2.40	2.30	2.23	2.14	2.09	1.97	1.93	1.90
40	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.89	2.80	2.73	2.66	2.56	2.48	2.42	2.37	2.27	2.20	2.11	2.06	1.94	1.90	1.87
42	7.28	5.15	4.29	3.80	3.49	3.27	3.10	2.97	2.86	2.78	2.70	2.64	2.54	2.46	2.40	2.34	2.25	2.18	2.09	2.03	1.91	1.87	1.85
44	7.25	5.12	4.26	3.78	3.47	3.24	3.08	2.95	2.84	2.75	2.68	2.62	2.52	2.44	2.37	2.32	2.22	2.15	2.07	2.01	1.89	1.84	1.82
46	7.22	5.10	4.24	3.76	3.44	3.22	3.06	2.93	2.82	2.73	2.66	2.60	2.50	2.42	2.35	2.30	2.20	2.13	2.04	1.99	1.86	1.82	1.80
48	7.19	5.08	4.22	3.74	3.43	3.20	3.04	2.91	2.80	2.71	2.64	2.58	2.48	2.40	2.33	2.28	2.18	2.12	2.02	1.97	1.84	1.80	1.78
50	7.17	5.06	4.20	3.72	3.41	3.19	3.02	2.89	2.78	2.70	2.63	2.56	2.46	2.38	2.32	2.27	2.17	2.10	2.01	1.95	1.82	1.78	1.76
60	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72	2.63	2.56	2.50	2.39	2.31	2.25	2.20	2.10	2.03	1.94	1.88	1.75	1.70	1.68
70	7.01	4.92	4.07	3.60	3.29	3.07	2.91	2.78	2.67	2.59	2.51	2.45	2.35	2.27	2.20	2.15	2.05	1.98	1.89	1.83	1.70	1.65	1.62
80	6.96	4.88	4.04	3.56	3.26	3.04	2.87	2.74	2.64	2.55	2.48	2.42	2.31	2.23	2.17	2.12	2.01	1.94	1.85	1.79	1.65	1.61	1.58
90	6.93	4.85	4.01	3.53	3.23	3.01	2.84	2.72	2.61	2.52	2.45	2.39	2.29	2.21	2.14	2.09	1.99	1.92	1.82	1.76	1.62	1.57	1.55
100	6.90	4.82	3.98	3.51	3.21	2.99	2.82	2.69	2.59	2.50	2.43	2.37	2.27	2.19	2.12	2.07	1.97	1.89	1.80	1.74	1.60	1.55	1.52
150	6.81	4.75	3.91	3.45	3.14	2.92	2.76	2.63	2.53	2.44	2.37	2.31	2.20	2.12	2.06	2.00	1.90	1.83	1.73	1.66	1.52	1.46	1.43
200	6.76	4.71	3.88	3.41	3.11	2.89	2.73	2.60	2.50	2.41	2.34	2.27	2.17	2.09	2.03	1.97	1.87	1.79	1.69	1.63	1.48	1.42	1.39
300	6.72	4.68	3.85	3.38	3.08	2.86	2.70	2.57	2.47	2.38	2.31	2.24	2.14	2.06	1.99	1.94	1.84	1.76	1.66	1.59	1.44	1.38	1.35
500	6.69	4.65	3.82	3.36	3.05	2.84	2.68	2.55	2.44	2.36	2.28	2.22	2.12	2.04	1.97	1.92	1.81	1.74	1.63	1.57	1.41	1.34	1.31
$GL_2 \uparrow$																							

$GL_2 \uparrow$

$GL_1$ : Número de graus de liberdade do numerador.

$GL_2$ : Número de graus de liberdade do denominador.

Fim da tabela 6 (Distribuição F)

**Tabela 7:** Números Aleatórios (Números Equiprováveis e Independentes)

763150	012500	268350	506190	764530	786380	791930	759796	982380	147550	022450	027192	562990	803448
953420	812760	662160	409727	094360	564940	436650	248557	977660	755040	735890	694344	898469	084015
593300	630770	242972	239033	033133	623908	282163	686200	509928	357516	040141	956246	302670	670452
286353	914160	099318	622683	177601	876335	976523	001004	145280	498150	844850	232013	615680	724927
988830	149510	031520	439362	174845	114146	912337	869647	561216	169780	832765	141247	555500	452902
293316	701351	795780	485981	030700	048505	880407	811897	626287	538190	568145	500370	296667	390319
915136	077920	321660	190030	033538	156660	472764	198036	435293	189969	163689	579768	607137	507758
424765	831062	912392	112453	184951	744661	852574	962055	345073	763754	732938	914246	287825	707558
306799	633872	590550	175959	967646	661861	981980	720749	158506	218626	853590	680640	768100	720916
635654	102276	087721	123271	973327	290726	924460	484617	793570	707400	824546	775398	288290	970700

**Tabela 8:** Valores Críticos da Distribuição da Estatística  $D$  (Kolmogorov-Smirnov, Uma Amostra)

Valores críticos da distribuição da estatística  $D = \sup_x |S(x) - F_0(x)|$  para amostras de dimensão  $N$  e níveis de significância  $\alpha$ .

$\alpha$						$\alpha$					
$N$	0.20	0.10	0.05	0.02	0.01	$N$	0.20	0.10	0.05	0.02	0.01
1	.900	.950	.975	.990	.995	21	.226	.259	.287	.321	.344
2	.684	.776	.842	.900	.929	22	.221	.253	.281	.314	.337
3	.565	.636	.708	.785	.829	23	.216	.247	.275	.307	.330
4	.493	.565	.624	.689	.734	24	.212	.242	.269	.301	.323
5	.447	.509	.563	.627	.669	25	.208	.238	.264	.295	.317
6	.410	.468	.519	.577	.617	26	.204	.233	.259	.290	.311
7	.381	.436	.483	.538	.576	27	.200	.229	.254	.284	.305
8	.358	.410	.454	.407	.542	28	.197	.225	.250	.279	.300
9	.339	.387	.430	.480	.513	29	.193	.221	.246	.275	.295
10	.323	.369	.409	.457	.489	30	.190	.218	.242	.270	.290
11	.308	.352	.391	.437	.468	31	.187	.214	.238	.266	.285
12	.296	.338	.375	.419	.449	32	.184	.211	.234	.262	.281
13	.285	.325	.361	.404	.432	33	.182	.208	.231	.258	.277
14	.275	.314	.349	.390	.418	34	.179	.205	.227	.254	.273
15	.266	.304	.338	.377	.404	35	.177	.202	.224	.251	.269
16	.258	.295	.327	.366	.293	36	.174	.199	.221	.247	.265
17	.250	.286	.318	.355	.381	37	.172	.196	.218	.244	.262
18	.244	.279	.309	.346	.371	38	.170	.194	.215	.241	.258
19	.237	.271	.301	.337	.361	39	.168	.191	.213	.238	.255
20	.232	.265	.294	.329	.352	40	.165	.189	.210	.235	.252
						> 40	$\frac{1.07}{\sqrt{N}}$	$\frac{1.22}{\sqrt{N}}$	$\frac{1.36}{\sqrt{N}}$	$\frac{1.52}{\sqrt{N}}$	$\frac{1.63}{\sqrt{N}}$

**Tabela 9:** Valores Críticos da Distribuição da Estatística  $D$  (Lilliefors, Populações Normais)

Valores críticos da distribuição da estatística  $D = \sup_x |S(x) - F_0(x)|$  para populações Normais a partir de amostras de dimensão  $N$ .

$\alpha$						$\alpha$					
$N$	0.20	0.15	0.10	0.05	0.01	$N$	0.20	0.15	0.10	0.05	0.01
4	.300	.319	.352	.381	.417	14	.183	.194	.207	.227	.261
5	.285	.299	.315	.337	.405	15	.177	.187	.201	.220	.257
6	.265	.277	.294	.319	.364	16	.173	.182	.195	.213	.250
7	.217	.253	.276	.300	.348	17	.169	.177	.189	.206	.245
8	.233	.244	.261	.285	.331	18	.166	.173	.184	.200	.239
9	.223	.233	.249	.271	.311	19	.163	.169	.179	.195	.235
10	.215	.224	.239	.258	.294	20	.160	.166	.174	.190	.231
11	.206	.217	.230	.249	.284	25	.147	.153	.165	.180	.203
12	.199	.212	.223	.242	.275	30	.131	.136	.144	.161	.187
13	.190	.202	.214	.234	.268	> 30	$\frac{0.730}{\sqrt{N}}$	$\frac{0.768}{\sqrt{N}}$	$\frac{0.805}{\sqrt{N}}$	$\frac{0.886}{\sqrt{N}}$	$\frac{1.031}{\sqrt{N}}$

**Tabela 10:** Distribuição da Estatística  $N_A \cdot N_B \cdot D'$  (Kolmogorov-Smirnov, Duas Amostras)

Os valores  $P$  na tabela referem-se à probabilidade na cauda direita da distribuição da estatística  $N_A \cdot N_B \cdot D'$  (em que  $D' = \max |S_A(x) - S_B(x)|$ ), para amostras com dimensões  $N_A$  e  $N_B$  (satisfazendo  $2 \leq N_A \leq N_B \leq 12$  e  $N_A + N_B \leq 16$ ) de duas populações  $A$  e  $B$ . Em testes unilaterais deverá considerar-se  $P/2$  (os valores  $D'$  assim calculados serão correctos se  $P$  for pequeno).

$N_A$	$N_B$	$N_A \cdot N_B \cdot D'$	$P$	$N_A$	$N_B$	$N_A \cdot N_B \cdot D'$	$P$	$N_A$	$N_B$	$N_A \cdot N_B \cdot D'$	$P$
2	2	4	.333	3	6	18	.024	4	5	20	.016
2	3	6	.200			15	.095			16	.079
2	4	8	.133			12	.333			15	.143
2	5	10	.095	3	7	21	.017	4	6	24	.010
		8	.286			18	.067			20	.048
2	6	12	.071			15	.167			18	.095
		10	.214	3	8	24	.012			16	.181
2	7	14	.056			21	.048	4	7	28	.006
		12	.167			18	.121			24	.030
2	8	16	.044	3	9	27	.009			21	.067
		14	.133			24	.036			20	.121
2	9	18	.036			21	.091	4	8	32	.004
		16	.109			18	.236			28	.020
2	10	20	.030	3	10	30	.007			24	.085
		18	.091			27	.028			20	.222
		16	.182			24	.070	4	9	36	.003
2	11	22	.026			21	.140			32	.014
		20	.077	3	11	33	.005			28	.042
		18	.154			30	.022			27	.062
2	12	24	.022			27	.055			24	.115
		22	.066			24	.110	4	10	40	.002
		20	.132	3	12	36	.004			36	.010
3	3	9	.100			33	.018			32	.030
3	4	12	.057			30	.044			30	.046
		9	.229			27	.088			28	.084
3	5	15	.036			24	.189			26	.126
		12	.143	4	4	16	.029				
						12	.229				

continua ...

...continuação da tabela 10 (Distribuição da Estatística $N_A \cdot N_B \cdot D'$ (Kolmogorov-Smirnov, Duas Amostras))												
$N_A$	$N_B$	$N_A \cdot N_B \cdot D'$	$P$	$N_A$	$N_B$	$N_A \cdot N_B \cdot D'$	$P$	$N_A$	$N_B$	$N_A \cdot N_B \cdot D'$	$P$	
4	11	44	.001	5	10	50	.001	6	10	60	.000	
		40	.007			45	.004			54	.002	
		36	.022			40	.019			50	.004	
		33	.035			35	.061			48	.009	
		32	.063			30	.166			44	.019	
		29	.098	5	11	55	.000			42	.031	
		28	.144			50	.003			40	.042	
4	12	48	.001			45	.010			38	.066	
		44	.005			44	.014			36	.092	
		40	.016			40	.029			34	.125	
		36	.048			39	.044	7	7	49	.001	
		32	.112			35	.074			42	.008	
5	5	25	.008			34	.106			35	.053	
		20	.079	6	6	36	.002			28	.212	
		15	.357			30	.026	7	8	56	.000	
5	6	30	.004			24	.143			49	.002	
		25	.026	6	7	42	.001			48	.005	
		24	.048			36	.008			42	.013	
		20	.108			35	.015			41	.024	
5	7	35	.003			30	.038			40	.033	
		30	.015			29	.068			35	.056	
		28	.030			28	.091			34	.087	
		25	.066			24	.147			33	.118	
		23	.166	6	8	48	.001	7	9	63	.000	
5	8	40	.002			42	.005			56	.001	
		35	.009			40	.009			54	.003	
		32	.020			36	.023			49	.008	
		30	.042			34	.043			47	.015	
		27	.079			32	.061			45	.021	
		25	.126			30	.093			42	.034	
5	9	45	.001			28	.139			40	.055	
		40	.006	6	9	54	.000			38	.079	
		36	.014			48	.003			36	.098	
		35	.028			45	.006			35	.127	
		31	.056			42	.014	8	8	64	.000	
		30	.086			39	.028			56	.002	
		27	.119			36	.061			48	.019	
						33	.095			40	.087	
						30	.176			32	.283	

Valores críticos da distribuição da estatística  $N_A \cdot N_B \cdot D'$  (os valores de  $\alpha$  indicados para testes unilaterais são aproximados).

Dimensão da amostra	Nível de significância ( $\alpha$ )				
	(teste bilateral)				
$N_A = N_B$	0.20	0.10	0.05	0.02	0.01
9	45	54	54	63	63
10	50	60	70	70	80
11	66	66	77	88	88
12	72	72	84	96	96
13	78	91	91	104	117
14	84	98	112	112	128
15	90	105	120	135	135
16	112	112	128	144	160
17	119	136	136	153	170
18	126	144	162	180	180
19	133	152	171	190	190
20	140	160	180	200	220
	0.100	0.050	0.025	0.010	0.005
Nível de significância ( $\alpha$ )					
(teste unilateral)					

Para amostras cujas dimensões não estão contempladas nos quadros anteriores, os valores críticos da distribuição da estatística  $D'$  podem ser aproximados através das seguintes expressões (com  $N = N_A + N_B$ ):

Nível de significância ( $\alpha$ )				
(teste bilateral)				
0.20	0.10	0.05	0.02	0.01
$1,07 \cdot \sqrt{\frac{N}{N_A \cdot N_B}}$	$1,22 \cdot \sqrt{\frac{N}{N_A \cdot N_B}}$	$1,36 \cdot \sqrt{\frac{N}{N_A \cdot N_B}}$	$1,52 \cdot \sqrt{\frac{N}{N_A \cdot N_B}}$	$1,63 \cdot \sqrt{\frac{N}{N_A \cdot N_B}}$
0.100	0.050	0.025	0.010	0.005
Nível de significância ( $\alpha$ )				
(teste unilateral)				

Fim da tabela 10 (Distribuição da Estatística  $N_A \cdot N_B \cdot D'$  (Kolmogorov-Smirnov, Duas Amostras))

**Tabela 11:** Distribuição da Estatística  $T$  (Teste de Wilcoxon)

Os valores  $P$  referem-se à probabilidade de, para amostras com dimensão  $N$ , a estatística  $T$  tomar valores inferiores ou iguais a  $t_e$  (cauda esquerda) ou, alternativamente, tomar valores superiores ou iguais a  $t_d$  (cauda direita).

$N$	$t_e$	$P$	$t_d$	$N$	$t_e$	$P$	$t_d$	$N$	$t_e$	$P$	$t_d$	$N$	$t_e$	$P$	$t_d$
2	0	.250	3	9	17	.285	28	12	14	.026	64	14	10	.003	95
	1	.500	2		18	.326	27		15	.032	63		11	.003	94
3	0	.125	6		19	.367	26		16	.039	62		12	.004	93
	1	.250	5		20	.410	25		17	.046	61		13	.005	92
	2	.375	4		21	.455	24		18	.055	60		14	.007	91
	3	.625	3		22	.500	23		19	.065	59		15	.008	90
4	0	.062	10	10	0	.001	55		20	.076	58		16	.010	89
	1	.125	9		1	.002	54		21	.088	57		17	.012	88
	2	.188	8		2	.003	53		22	.102	56		18	.0158	87
	3	.312	7		3	.005	52		23	.117	55		19	.018	86
	4	.438	6		4	.007	51		24	.133	54		20	.021	85
	5	.562	5		5	.010	50		25	.151	53		21	.025	84
5	0	.031	15		6	.014	49		26	.170	52		22	.029	83
	1	.062	14		7	.019	48		27	.190	51		23	.034	82
	2	.094	13		8	.024	47		28	.212	50		24	.039	81
	3	.156	12		9	.032	46		29	.235	49		25	.045	80
	4	.219	11		10	.042	45		30	.259	48		26	.052	79
	5	.312	10		11	.053	44		31	.285	47		27	.059	78
	6	.406	9		12	.065	43		32	.311	46		28	.068	77
	7	.500	8		13	.080	42		33	.339	45		29	.077	76
6	0	.016	21		14	.097	41		34	.367	44		30	.086	75
	1	.031	20		15	.116	40		35	.396	43		31	.097	74
	2	.047	19		16	.138	39		36	.425	42		32	.108	73
	3	.078	18		17	.161	38		37	.455	41		33	.121	72
	4	.109	17		18	.188	37		38	.485	40		34	.134	71
	5	.156	16		19	.216	36		39	.515	39		35	.148	70
	6	.219	15		20	.246	35	13	0	.000	91		36	.163	69
	7	.281	14		21	.278	34		1	.000	90		37	.179	68
	8	.344	13		22	.312	33		2	.000	89		38	.196	67
	9	.422	12		23	.348	32		3	.001	88		39	.213	66
	10	.500	11		24	.385	31		4	.001	87		40	.232	65
7	0	.008	28		25	.423	30		5	.001	86		41	.251	64
	1	.016	27		26	.461	29		6	.002	85		42	.271	63
	2	.023	26		27	.500	28		7	.002	84		43	.292	62
	3	.039	25	11	0	.000	66		8	.003	83		44	.313	61
	4	.055	24		1	.001	65		9	.004	82		45	.335	60
	5	.078	23		2	.001	64		10	.005	81		46	.357	59
	6	.109	22		3	.002	63		11	.007	80		47	.380	58
	7	.148	21		4	.003	62		12	.009	79		48	.404	57
	8	.188	20		5	.005	61		13	.011	78		49	.428	56
	9	.234	19		6	.007	60		14	.013	77		50	.452	55
	10	.289	18		7	.009	59		15	.016	76		51	.476	54
	11	.344	17		8	.0125	58		16	.020	75		52	.500	53
	12	.406	16		9	.016	57		17	.024	74	15	0	.000	120
	13	.469	15		10	.021	56		18	.029	73		1	.000	119
	14	.531	14		11	.027	55		19	.034	72		2	.000	118
8	0	.004	36		12	.034	54		20	.040	71		3	.000	117
	1	.008	35		13	.042	53		21	.047	70		4	.000	116
	2	.012	34		14	.051	52		22	.055	69		5	.000	115
	3	.020	33		15	.062	51		23	.064	68		6	.000	114
	4	.027	32		16	.074	50		24	.073	67		7	.001	113
	5	.039	31		17	.087	49		25	.084	66		8	.001	112
	6	.055	30		18	.103	48		26	.095	65		9	.001	111
	7	.074	29		19	.120	47		27	.108	64		10	.001	110
	8	.098	28		20	.139	46		28	.122	63		11	.002	109
	9	.125	27		21	.160	45		29	.137	62		12	.002	108
	10	.156	26		22	.183	44		30	.153	61		13	.003	107
	11	.191	25		23	.207	43		31	.170	60		14	.003	106
	12	.230	24		24	.232	42		32	.188	59		15	.004	105
	13	.273	23		25	.260	41		33	.207	58		16	.005	104
	14	.320	22		26	.289	40		34	.227	57		17	.006	103
	15	.371	21		27	.319	39		35	.249	56		18	.008	102
	16	.422	20		28	.350	38		36	.271	55		19	.009	101
	17	.473	19		29	.382	37		37	.294	54		20	.011	100
	18	.527	18		30	.416	36		38	.318	53		21	.013	99
9	0	.002	45		31	.449	35		39	.342	52		22	.015	98
	1	.004	44		32	.483	34		40	.368	51		23	.018	97
	2	.006	43		33	.517	33		41	.393	50		24	.021	96
	3	.010	42	12	0	.000	78		42	.420	49		25	.024	95
	4	.014	41		1	.000	77		43	.446	48		26	.028	94
	5	.020	40		2	.001	76		44	.473	47		27	.032	93
	6	.027	39		3	.001	75		45	.500	46		28	.036	92
	7	.037	38		4	.002	74	14	0	.000	105		29	.042	91
	8	.049	37		5	.002	73		1	.000	104		30	.047	90
	9	.064	36		6	.003	72		2	.000	103		31	.053	89
	10	.082	35		7	.005	71		3	.000	102		32	.060	88
	11	.102	34		8	.006	70		4	.000	101		33	.068	87
	12	.125	33		9	.008	69		5	.001	100		34	.076	86
	13	.150	32		10	.010	68		6	.001	99		35	.084	85
	14	.180	31		11	.013	67		7	.001	98		36	.094	84
	15	.213	30		12	.017	66		8	.002	97		37	.104	83
	16	.248	29		13	.021	65		9	.002	96		38	.115	82

continua ...

...continuação da tabela 11 (Distribuição da Estatística  $T$  (Teste de Wilcoxon))

$N$	$t_e$	$P$	$t_d$	$N$	$t_e$	$P$	$t_d$	$N$	$t_e$	$P$	$t_d$	$N$	$t_e$	$P$	$t_d$
15	39	.126	81	15	45	.211	75	15	51	.319	69		57	.445	63
	40	.138	80		46	.227	74		52	.339	68		58	.467	62
	41	.151	79		47	.244	73		53	.360	67		59	.489	61
	42	.165	78		48	.262	72		54	.381	66		60	.511	60
	43	.180	77		49	.281	71		55	.402	65				
	44	.196	76		50	.300	70		56	.423	64				

Fim da tabela 11 (Distribuição da Estatística  $T$  (Teste de Wilcoxon))

**Tabela 12:** Distribuição da Estatística  $W$  (Teste de Mann-Whitney-Wilcoxon)

Os valores  $P$  referem-se à probabilidade de, para amostras de dimensão  $N_A$  e  $N_B$  (com  $N_B \leq N_A \leq 10$ ), a estatística  $W$  tomar valores inferiores ou iguais a  $w_e$  (cauda esquerda) ou, alternativamente, tomar valores superiores ou iguais a  $w_d$  (cauda direita).

$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$
$N_B = 1$ (↓)				8	3	.022	19	5	9	.125	18	$N_B = 4$ (↓)				9	14	.017	42
1	1	.500	2		4	.044	18		10	.196	17	4	10	.014	26		15	.025	41
2	1	.333	3		5	.089	17		11	.286	16		11	.029	25		16	.038	40
	2	.667	2		6	.133	16		12	.393	15		12	.057	24		17	.053	39
3	1	.250	4		7	.200	15		13	.500	14		13	.100	23		18	.074	38
	2	.500	3		8	.267	14	6	6	.012	24		14	.171	22		19	.099	37
4	1	.200	5		9	.356	13		7	.024	23		15	.243	21		20	.130	36
	2	.400	4		10	.444	12		8	.048	22		16	.343	20		21	.165	35
	3	.600	3		11	.556	11		9	.083	21		17	.443	19		22	.207	34
5	1	.167	6	9	3	.018	21		10	.131	20		18	.557	18		23	.252	33
	2	.333	5		4	.036	20		11	.190	19	5	10	.008	30		24	.302	32
	3	.500	4		5	.073	19		12	.274	18		11	.016	29		25	.355	31
6	1	.143	7		6	.214	12		13	.357	17		12	.032	28		26	.413	30
	2	.286	6		7	.321	11		14	.452	16		13	.056	27		27	.470	29
	3	.429	5		8	.429	10		15	.548	15		14	.095	26		28	.530	28
	4	.571	4		9	.571	9	7	6	.008	27		15	.143	25	10	10	.001	50
7	1	.125	8	7	3	.028	17		7	.017	26		16	.206	24		11	.002	49
	2	.250	7		4	.056	16		8	.033	25		17	.278	23		12	.004	48
	3	.375	6		5	.111	15		9	.058	24		18	.365	22		13	.007	47
	4	.500	5		6	.167	14		10	.092	23		19	.452	21		14	.012	46
8	1	.111	9		7	.250	13		11	.133	22		20	.548	20		15	.018	45
	2	.222	8		8	.333	12		12	.192	21	6	10	.005	34		16	.027	44
	3	.333	7		9	.444	11		13	.258	20		11	.010	33		17	.038	43
	4	.444	6		10	.556	10		14	.333	19		12	.019	32		18	.053	42
	5	.556	5	8	3	.022	19		15	.417	18		13	.033	31		19	.071	41
9	1	.100	10		4	.044	18		16	.500	17		14	.057	30		20	.094	40
	2	.200	9		5	.089	17	8	6	.006	30		15	.086	29		21	.120	39
	3	.300	8		6	.133	16		7	.012	29		16	.129	28		22	.152	38
	4	.400	7		7	.200	15		8	.024	28		17	.176	27		23	.187	37
	5	.500	6		8	.267	14		9	.042	27		18	.238	26		24	.227	36
10	1	.091	11		9	.356	13		10	.067	26		19	.305	25		25	.270	35
	2	.182	10		10	.444	12		11	.097	25		20	.381	24		26	.318	34
	3	.273	9		11	.556	11		12	.139	24		21	.457	23		27	.367	33
	4	.364	8	9	3	.018	21		13	.188	23		22	.543	22		28	.420	32
	5	.455	7		4	.036	20		14	.248	22	7	10	.003	38		29	.473	31
	6	.545	6		5	.073	19		15	.315	21		11	.006	37		30	.527	30
$N_B = 2$ (↓)				6	.109	18		16	.388	20		12	.012	36		$N_B = 5$ (↓)			
2	3	.167	7		7	.164	17		17	.461	19		13	.021	35	5	15	.004	40
	4	.333	6		8	.218	16		18	.539	18		14	.036	34		16	.008	39
	5	.667	5		9	.291	15	9	6	.005	33		15	.055	33		17	.016	38
3	3	.100	9		10	.364	14		7	.009	32		16	.082	32		18	.028	37
3	4	.200	8		11	.455	13		8	.018	31		17	.115	31		19	.048	36
	5	.400	7		12	.545	12		9	.032	30		18	.158	30		20	.075	35
	6	.600	6	10	3	.015	23		10	.050	29		19	.206	29		21	.111	34
4	3	.067	11		4	.030	22		11	.073	28		20	.264	28		22	.155	33
	4	.133	10		5	.061	21		12	.105	27		21	.324	27		23	.210	32
	5	.267	9		6	.091	20		13	.141	26		22	.394	26		24	.274	31
	6	.400	8		7	.136	19		14	.186	25		23	.464	25		25	.345	30
	7	.600	7		8	.182	18		15	.241	24		24	.536	24		26	.421	29
5	3	.048	13		9	.242	17		16	.300	23	8	10	.002	42		27	.500	28
	4	.095	12		10	.303	16		17	.364	22		11	.004	41	6	15	.002	45
	5	.190	11		11	.379	15		18	.432	21		12	.008	40		16	.004	44
	6	.286	10		12	.455	14		19	.500	20		13	.014	39		17	.009	43
	7	.429	9		13	.545	13	10	6	.003	36		14	.024	38		18	.015	42
	8	.571	8	$N_B = 3$ (↓)					7	.007	35		15	.036	37		19	.026	41
6	3	.036	15	3	6	.050	15		8	.014	34		16	.055	36		20	.041	40
	4	.071	14		7	.100	14		9	.024	33		17	.077	35		21	.063	39
	5	.143	13		8	.200	13		10	.038	32		18	.107	34		22	.089	38
	6	.214	12		9	.350	12		11	.056	31		19	.141	33		23	.123	37
	7	.321	11		10	.500	11		12	.080	30		20	.184	32		24	.165	36
	8	.429	10		6	.029	18		13	.108	29		21	.230	31		25	.214	35
	9	.571	9	4	7	.057	17		14	.143	28		22	.285	30		26	.268	34
	3	.028	17		8	.114	16		15	.185	27		23	.341	29		27	.331	33
7	4	.056	16		9	.200	15		16	.234	26		24	.404	28		28	.396	32
	5	.111	15		10	.314	14		17	.287	25		25	.467	27		29	.465	31
	6	.167	14		11	.429	13		18	.346	24		26	.533	26		30	.535	30
	7	.250	13		12	.571	12		19	.406	23	9	10	.001	46	7	15	.001	50
	8	.333	12	5	6	.018	21		20	.469	22		11	.003	45		16	.003	49
	9	.444	11		7	.036	20		21	.531	21		12	.006	44		17	.005	48
10	.556	10		8	.071	19							13	.010	43		18	.009	47

continua ...

...continuação da tabela 12 (Distribuição da Estatística  $W$  (Teste de Mann-Whitney-Wilcoxon))

$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$
$N_B = 5 \quad (\downarrow)$				$N_B = 6 \quad (\downarrow)$				9	39	.164	57	8	46	.140	66	8	40	.001	96
8	19	.015	46	6	21	.001	57	10	40	.194	56	9	47	.168	65	9	41	.001	95
	20	.024	45		22	.002	56		41	.228	55		48	.198	64		42	.002	94
	21	.037	44		23	.004	55		42	.264	54		49	.232	63		43	.003	93
	22	.053	43		24	.008	54		43	.303	53		50	.268	62		44	.005	92
	23	.074	42		25	.013	53		44	.344	52		51	.306	61		45	.007	91
	24	.101	41		26	.021	52		45	.388	51		52	.347	60		46	.010	90
	25	.134	40		27	.032	51		46	.432	50		53	.389	59		47	.014	89
	26	.172	39		28	.047	50		47	.477	49		54	.433	58		48	.019	88
	27	.216	38		29	.066	49		48	.523	48		55	.478	57		49	.025	87
	28	.265	37		30	.090	48		56	.522	56		56	.522	56		50	.032	86
	29	.319	36	31	.120	47	22		.000	80	28		.000	91	51		.041	85	
	30	.378	35	32	.155	46	23		.000	79	29		.000	90	52		.052	84	
	31	.438	34	33	.197	45	24		.001	78	30		.000	89	53		.065	83	
	32	.500	33	34	.242	44	25		.001	77	31		.001	88	54		.080	82	
	15	.001	55	35	.294	43	26		.002	76	32		.001	87	55		.097	81	
	16	.002	54	36	.350	42	27		.004	75	33		.002	86	56		.117	80	
	17	.003	53	37	.409	41	28		.005	74	34		.003	85	57		.139	79	
	18	.005	52	38	.469	40	29		.008	73	35		.004	84	58		.164	78	
	19	.009	51	39	.531	39	30		.011	72	36		.006	83	59		.191	77	
	20	.015	50	7	21	.001	63		31	.016	71		37	.008	82		60	.221	76
21	.023	49	22		.001	62	32	.021	70	38	.011	81	61	.253	75				
22	.033	48	23		.002	61	33	.028	69	39	.016	80	62	.287	74				
23	.047	47	24		.004	60	34	.036	68	40	.021	79	63	.323	73				
24	.064	46	25		.007	59	35	.047	67	41	.027	78	64	.360	72				
25	.085	45	26		.011	58	36	.059	66	42	.036	77	65	.399	71				
26	.111	44	27		.017	57	37	.074	65	43	.045	76	66	.439	70				
27	.142	43	28		.026	56	38	.090	64	44	.057	75	67	.480	69				
28	.177	42	29		.037	55	39	.110	63	45	.071	74	68	.520	68				
29	.218	41	30		.051	54	40	.132	62	46	.087	73	9	36	.000	108			
30	.262	40	31	.069	53	41	.157	61	47	.102	72	37		.000	107				
31	.311	39	32	.090	52	42	.184	60	48	.126	71	38		.000	106				
32	.362	38	33	.117	51	43	.214	59	49	.150	70	39		.000	105				
33	.416	37	34	.147	50	44	.246	58	50	.176	69	40		.000	104				
34	.472	36	35	.183	49	45	.281	57	51	.204	68	41		.001	103				
35	.528	35	36	.223	48	46	.318	56	52	.235	67	42		.001	102				
9	15	.000	60	37	.267	47	47	.356	55	53	.268	66		43	.002	101			
	16	.001	59	38	.314	46	48	.396	54	54	.303	65		44	.003	100			
	17	.002	58	39	.365	45	49	.437	53	55	.340	64		45	.004	99			
	18	.003	57	40	.418	44	50	.479	52	56	.379	63	46	.006	98				
	19	.006	56	41	.473	43	51	.521	51	57	.419	62	47	.008	97				
	20	.009	55	42	.527	42	$N_B = 7 \quad (\downarrow)$				58	.459	61	48	.010	96			
	21	.014	54	8	21	.000	69	7	28	.000	77	10	59	.500	60	49	.014	95	
	22	.021	53		22	.001	68	29	.001	76	28		.000	98	50	.018	94		
	23	.030	52		23	.001	67	30	.001	75	29		.000	97	51	.023	93		
	24	.041	51		24	.002	66	31	.002	74	30		.000	96	52	.030	92		
	25	.056	50		25	.004	65	32	.003	73	31		.000	95	53	.037	91		
	26	.073	49		26	.006	64	33	.006	72	32		.001	94	54	.046	90		
	27	.095	48		27	.010	63	34	.009	71	33		.001	93	55	.057	89		
	28	.120	47		28	.015	62	35	.013	70	34		.002	92	56	.069	88		
	29	.149	46		29	.021	61	36	.019	69	$N_B = 7 \quad (\downarrow)$				57	.084	87		
	30	.182	45		30	.030	60	37	.027	68	10		35	.002	91	58	.100	86	
	31	.219	44	31	.041	59	38	.036	67	36		.003	90	59	.118	85			
	32	.259	43	32	.054	58	39	.049	66	37		.005	89	60	.138	84			
	33	.303	42	33	.071	57	40	.064	65	38		.007	88	61	.161	83			
	34	.350	41	34	.091	56	41	.082	64	39		.009	87	62	.185	82			
35	.399	40	35	.114	55	42	.104	63	40	.012		86	63	.212	81				
36	.449	39	36	.141	54	43	.130	62	41	.017		85	64	.240	80				
37	.500	38	37	.172	53	44	.159	61	42	.022		84	65	.271	79				
10	15	.000	65	38	.207	52	45	.191	60	43		.028	83	66	.303	78			
	16	.001	64	39	.245	51	46	.228	59	44		.035	82	67	.336	77			
	17	.001	63	40	.286	50	47	.267	58	45	.044	84	68	.371	76				
	18	.002	62	41	.331	49	48	.310	57	46	.054	80	69	.407	75				
	19	.004	61	42	.377	48	49	.355	56	47	.067	79	70	.444	74				
	20	.006	60	43	.426	47	50	.402	55	48	.081	78	71	.481	73				
	21	.010	59	44	.475	46	51	.451	54	49	.097	77	72	.519	72				
	22	.014	58	45	.525	45	52	.500	53	50	.115	76	10	36	.000	116			
	23	.020	57	9	21	.000	75	8	28	.000	84	51		.135	75	37	.000	115	
	24	.028	56		22	.000	74		29	.000	83	52		.157	74	38	.000	114	
	25	.038	55		23	.001	73		30	.001	82	53		.182	73	39	.000	113	
	26	.050	54		24	.001	72		31	.001	81	54		.209	72	40	.000	112	
	27	.065	53		25	.002	71		32	.002	80	55		.237	71	41	.000	111	
	28	.082	52		26	.004	70		33	.003	79	56		.268	70	42	.001	110	
	29	.103	51		27	.006	69		34	.005	78	57		.300	69	43	.001	109	
	30	.127	50		28	.009	68		35	.007	77	58		.335	68	44	.002	108	
	31	.155	49		29	.013	67		36	.010	76	59		.370	67	45	.002	107	
	32	.185	48		30	.018	66		37	.014	75	60	.406	66	46	.003	106		
	33	.220	47	31	.025	65	38	.020	74	61	.443	65	47	.004	105				
	34	.257	46	32	.033	64	39	.027	73	62	.481	64	48	.006	104				
35	.297	45	33	.044	63	40	.036	72	63	.519	63	10	49	.008	103				
36	.339	44	34	.057	62	41	.047	71	$N_B = 8 \quad (\downarrow)$				50	.010	102				
37	.384	43	35	.072	61	42	.060	70	8	36	.000		100	51	.013	101			
38	.430	42	36	.091	60	43	.076	69		37	.000		99	52	.017	100			
39	.477	41	37	.112	59	44	.095	68		38	.000		98	53	.022	99			
40	.523	40	38	.136	58	45	.116	67		39	.001		97	54	.027	98			

...continuação da tabela 12 (Distribuição da Estatística $W$ (Teste de Mann-Whitney-Wilcoxon))																			
$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$	$N_A$	$w_e$	$P$	$w_d$
$N_B = 8 \quad (\downarrow)$				9	54	.002	117	10	46	.000	134	10	79	.200	101	10	75	.012	135
10	55	.034	97		55	.003	116		47	.000	133		80	.223	100		76	.014	134
	56	.042	96		56	.004	115		48	.000	132		81	.248	99		77	.018	133
	57	.051	95		57	.005	114		49	.000	131		82	.274	98		78	.022	132
	58	.061	94		58	.007	113		50	.000	130		83	.302	97		79	.026	131
	59	.073	93		59	.009	112		51	.000	129		84	.330	96		80	.032	130
	60	.086	92		60	.012	111		52	.000	128		85	.360	95		81	.038	129
	61	.102	91		61	.016	110		53	.001	127		86	.390	94		82	.045	128
	62	.118	90		62	.020	109		54	.001	126		87	.421	93		83	.053	127
	63	.137	89		63	.025	108		55	.001	125		88	.452	92		84	.062	126
	64	.158	88		64	.031	107		56	.002	124		89	.484	91		85	.720	125
	65	.180	87		65	.039	106		57	.003	123		90	.516	90		86	.083	124
	66	.204	86		66	.047	105		58	.004	122	$N_B = 10 \quad (\downarrow)$					87	.095	123
	67	.230	85		67	.057	104		59	.005	121	10	55	.000	155		88	.109	122
	68	.257	84		68	.068	103		60	.007	120		56	.000	154		89	.124	121
	69	.286	83		69	.081	102		61	.009	119		57	.000	153		90	.140	120
	70	.317	82		70	.095	101		62	.011	118		58	.000	152		91	.157	119
	71	.348	81		71	.111	100		63	.014	117		59	.000	151		92	.176	118
	72	.381	80		72	.129	99		64	.017	116		60	.000	150		93	.197	117
	73	.414	79		73	.149	98		65	.022	115		61	.000	149		94	.218	116
	74	.448	78		74	.170	97		66	.027	114		62	.000	148		95	.241	115
	75	.483	77		75	.193	96		67	.033	113		63	.000	147		96	.264	114
	76	.517	76		76	.218	95		68	.039	112		64	.001	146		97	.289	113
$N_B = 9 \quad (\downarrow)$					77	.245	94		69	.047	111		65	.001	145		98	.315	112
9	45	.000	126		78	.273	93		70	.056	110		66	.001	144		99	.342	111
	46	.000	125		79	.302	92		71	.067	109		67	.001	143		100	.370	110
	47	.000	124		80	.333	91		72	.078	108		68	.002	142		101	.398	109
	48	.000	123		81	.365	90		73	.091	107		69	.003	141		102	.427	108
	49	.000	122		82	.398	89		74	.106	106		70	.003	140		103	.456	107
	50	.000	121		83	.432	88		75	.121	105		71	.004	139		104	.485	106
	51	.001	120		84	.466	87		76	.139	104		72	.006	138		105	.515	105
	52	.001	119		85	.500	86		77	.158	103		73	.007	137				
	53	.001	118	10	45	.000	135		78	.178	102		74	.009	136				
Fim da tabela 12 (Distribuição da Estatística $W$ (Teste de Mann-Whitney-Wilcoxon))																			

Fim da tabela 12 (Distribuição da Estatística  $W$  (Teste de Mann-Whitney-Wilcoxon))

**Tabela 13:** Distribuição da Estatística  $R$  (Teste das Sequências)

Os valores  $P$  referem-se à probabilidade de, em amostras com dimensões  $N_A$  e  $N_B$ , a estatística  $R$  tomar valores menores ou iguais a  $r_e$  (cauda esquerda) ou, alternativamente, tomar valores maiores ou iguais a  $r_d$  (cauda direita).

P: probabilidade na cauda esquerda															
$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$
2	2	2	0.333	3	3	2	0.1	3	15	5	0.331	4	12	2	0.001
2	3	2	0.2			3	0.3	3	16	2	0.002			3	0.007
		3	0.5	3	4	2	0.057			3	0.02			4	0.039
2	4	2	0.133			3	0.2			4	0.082			5	0.119
		3	0.4	3	5	2	0.036			5	0.314			6	0.287
2	5	2	0.095			3	0.143	3	17	2	0.002	4	13	2	0.001
		3	0.333			4	0.429			3	0.018			3	0.005
2	6	2	0.071	3	6	2	0.024			4	0.074			4	0.029
		3	0.286			3	0.107			5	0.298			5	0.095
2	7	2	0.056			4	0.345	4	4	2	0.029			6	0.239
		3	0.25	3	7	2	0.017			3	0.114	4	14	2	0.001
2	8	2	0.044			3	0.083			4	0.371			3	0.006
		3	0.222			4	0.283	4	5	2	0.016			4	0.031
2	9	2	0.036	3	8	2	0.012			3	0.071			5	0.121
		3	0.2			3	0.067			4	0.262			6	0.274
		4	0.491			4	0.236			5	0.5	4	15	2	0.001
2	10	2	0.03	3	9	2	0.009	4	6	2	0.01			3	0.005
		3	0.182			3	0.055			3	0.048			4	0.027
		4	0.455			4	0.2			4	0.19			5	0.108
2	11	2	0.026			5	0.491			5	0.405			6	0.249
		3	0.167	3	10	2	0.007	4	7	2	0.006	4	16	2	0
		4	0.423			3	0.045			3	0.033			3	0.004
2	12	2	0.022			4	0.171			4	0.142			4	0.023
		3	0.154			5	0.455			5	0.333			5	0.097
		7	0.396	3	11	2	0.005	4	8	2	0.004			6	0.227
2	13	2	0.019			3	0.038			3	0.024	5	5	2	0.008
		3	0.143			4	0.148			4	0.109			3	0.04
		4	0.371			5	0.423			5	0.279			4	0.167
2	14	2	0.017	3	12	2	0.004	4	9	2	0.003			5	0.357
		3	0.133			3	0.033			3	0.018	5	6	2	0.004
		4	0.25			4	0.13			4	0.085			3	0.024
2	15	2	0.015			5	0.396			5	0.236			4	0.11
		3	0.125	3	13	2	0.004			6	0.471			5	0.262
		4	0.331			3	0.029	4	10	2	0.002	5	7	2	0.003
2	16	2	0.013			4	0.114			3	0.014			3	0.015
		3	0.118			5	0.371			4	0.068			4	0.076
		4	0.314	3	14	2	0.003			5	0.203			5	0.197
2	17	2	0.012			3	0.025			6	0.419			6	0.424
		3	0.111			4	0.101	4	11	2	0.001	5	8	2	0.002
		4	0.298			5	0.35			3	0.011			3	0.01
2	18	2	0.011	3	15	2	0.002			4	0.055			4	0.054
		3	0.105			3	0.022			5	0.176			5	0.152
		4	0.284			4	0.091			6	0.374			6	0.347

continua ...



...continuação da tabela 13a (Distribuição da Estatística  $R$  (Teste das Sequências))

$P$ : probabilidade na cauda esquerda																			
$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$
6	6	2	0.002	6	13	7	0.176	7	12	8	0.247	8	12	10	0.48	10	11	7	0.035
		3	0.013			8	0.338			9	0.428	9	9	2	0			8	0.092
		4	0.067	6	14	2	0	7	13	2	0			3	0			9	0.185
		5	0.175			3	0.001			3	0			4	0.003			10	0.335
		6	0.392			4	0.004			4	0.002			5	0.012			11	0.5
6	7	2	0.001			5	0.017			5	0.01			6	0.044	10	12	2	0
		3	0.008			6	0.058			6	0.035			7	0.109			3	0
		4	0.043			7	0.151			7	0.095			8	0.238			4	0
		5	0.121			8	0.299			8	0.208			9	0.399			5	0.002
		6	0.296	7	7	2	0.001			9	0.378	9	10	2	0			6	0.008
		7	0.5			3	0.004	8	8	2	0			3	0			7	0.024
6	8	2	0.001			4	0.025			3	0.001			4	0.002			8	0.067
		3	0.005			5	0.078			4	0.009			5	0.008			9	0.142
		4	0.028			6	0.209			5	0.032			6	0.029			10	0.271
		5	0.086			7	0.383			6	0.1			7	0.077			11	0.425
		6	0.226	7	8	2	0			7	0.214			8	0.179	11	11	2	0
		7	0.413			3	0.002			8	0.405			9	0.319			3	0
6	9	2	0			4	0.015	8	9	2	0	9	11	2	0			4	0
		3	0.003			5	0.051			3	0.001			3	0			5	0.002
		4	0.019			6	0.149			4	0.005			4	0.001			6	0.007
		5	0.063			7	0.296			5	0.02			5	0.005			7	0.023
		6	0.175	7	9	2	0			6	0.069			6	0.02			8	0.063
		7	0.343			3	0.001			7	0.157			7	0.055			9	0.135
6	10	2	0			4	0.01			8	0.319			8	0.135			10	0.26
		3	0.002			5	0.035			9	0.5			9	0.255			11	0.41
		4	0.013			6	0.108	8	10	2	0			10	0.43	11	12	2	0
		5	0.047			7	0.231			3	0	9	12	2	0			3	0
		6	0.137			8	0.427			4	0.003			3	0			4	0
		7	0.287	7	10	2	0			5	0.013			4	0.001			5	0.001
		8	0.497			3	0.001			6	0.048			5	0.003			6	0.005
6	11	2	0			4	0.006			7	0.117			6	0.014			7	0.015
		3	0.001			2	0.024			8	0.251			7	0.04			8	0.044
		4	0.009			6	0.08			9	0.419			8	0.103			9	0.099
		5	0.036			7	0.182	8	11	2	0			9	0.205			10	0.202
		6	0.108			8	0.355			3	0			10	0.362			11	0.335
		7	0.242	7	11	2	0			4	0.002	10	10	2	0	12	12	2	0
		8	0.436			3	0.001			5	0.009			3	0			3	0
6	12	2	0			4	0.004			6	0.034			4	0.001			4	0
		3	0.001			5	0.018			7	0.088			5	0.004			5	0.001
		4	0.007			6	0.06			8	0.199			6	0.019			6	0.003
		5	0.028			7	0.145			9	0.352			7	0.051			7	0.009
		6	0.087			8	0.296	8	12	2	0			8	0.128			8	0.03
		7	0.205			9	0.484			3	0			9	0.242			9	0.07
		8	0.383	7	12	2	0			4	0.001			10	0.414			10	0.15
6	13	2	0			3	0			5	0.006	10	11	2	0			11	0.263
		3	0.001			4	0.003			6	0.025			3	0			12	0.421
		4	0.005			5	0.013			7	0.067			4	0.001				
		5	0.022			6	0.046			8	0.159			5	0.003				
		6	0.07			7	0.117			9	0.297			6	0.012				

Fim da tabela 13a (Distribuição da Estatística  $R$  (Teste das Sequências))

$P$ : probabilidade na cauda direita																			
$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$
2	2	4	0.333	4	4	8	0.029	4	16	9	0.282	5	12	10	0.181	6	10	13	0.01
2	3	5	0.1			7	0.114			8	0.47			9	0.421			12	0.042
		4	0.5			6	0.371	5	5	10	0.008	5	13	11	0.092			11	0.136
2	4	5	0.2	4	5	9	0.008			9	0.04			10	0.208			10	0.294
2	5	5	0.286			8	0.071			8	0.167			9	0.465	6	11	13	0.017
2	6	5	0.357			7	0.214			7	0.357	5	14	11	0.111			12	0.058
2	7	5	0.417			6	0.5	5	6	11	0.002			10	0.234			11	0.176
2	8	5	0.467	4	6	9	0.024			10	0.024	5	15	11	0.129			10	0.346
3	3	6	0.1			8	0.119			9	0.089			10	0.258	6	12	13	0.025
		5	0.3			7	0.31			8	0.262	6	6	12	0.002			12	0.075
3	4	7	0.029	4	7	9	0.045			7	0.478			11	0.013			11	0.217
		6	0.2			8	0.167	5	7	11	0.008			10	0.067			10	0.395
		5	0.457			7	0.394			10	0.045			9	0.175	6	13	13	0.034
3	5	7	0.071	4	8	9	0.071			9	0.146			8	0.392			12	0.092
		6	0.286			8	0.212			8	0.348	6	7	13	0.001			11	0.257
3	6	7	0.119			7	0.467	5	8	11	0.016			12	0.008			10	0.439
		6	0.357	4	9	9	0.098			10	0.071			11	0.034	6	14	13	0.044
3	7	7	0.167			8	0.255			9	0.207			10	0.121			12	0.111
		6	0.417	4	10	9	0.126			8	0.424			9	0.267			11	0.295
3	8	7	0.212			8	0.294	5	9	11	0.028			8	0.5			10	0.48
		6	0.467	4	11	9	0.154			10	0.098	6	8	13	0.002	7	7	14	0.001
3	9	7	0.255			8	0.33			9	0.266			12	0.016			13	0.004
3	10	7	0.294	4	12	9	0.181			8	0.49			11	0.063			12	0.025
3	11	7	0.33			8	0.363	5	10	11	0.042			10	0.179			11	0.078
3	12	7	0.363	4	13	9	0.208			10	0.126			9	0.354			10	0.209
3	13	7	0.393			8	0.393			9	0.322	6	9	13	0.006			9	0.383
3	14	7	0.421	4	14	9	0.234	5	11	11	0.058			12	0.028	7	8	15	0
3	15	7	0.446			8	0.421	5	11	10	0.154			11	0.098			14	0.002
3	16	7	0.47	4	15	9	0.258			9	0.374			10	0.238			13	0.012
3	17	7	0.491			8	0.446	5	12	11	0.075			9	0.434			12	0.051

continua ...

...continuação da tabela 13b (Distribuição da Estatística  $R$  (Teste das Sequências))

P: probabilidade na cauda direita																			
$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$	$N_B$	$N_A$	$r_e$	$P$
7	8	11	0.133	8	8	16	0	8	12	16	0.007	10	10	20	0	11	11	20	0
		10	0.296			15	0.001			15	0.029			19	0			19	0.002
		9	0.486			14	0.009			14	0.08			18	0.001			18	0.007
7	9	15	0.001			13	0.032			13	0.183			17	0.004			17	0.023
		14	0.006			12	0.1			12	0.337			16	0.019			16	0.063
		13	0.025			11	0.214	9	9	18	0			15	0.051			15	0.135
		12	0.084			10	0.405			17	0			14	0.128			14	0.26
		11	0.194	8	9	17	0			16	0.003			13	0.242			13	0.41
		10	0.378			16	0.001			15	0.012			12	0.414	11	12	23	0
7	10	15	0.002			15	0.004			14	0.044	10	11	21	0			22	0
		14	0.01			14	0.02			13	0.109			20	0			21	0
		13	0.043			13	0.061			12	0.238			19	0			20	0.001
		12	0.121			12	0.157			11	0.399			18	0.003			19	0.004
		11	0.257			11	0.298	9	10	19	0			17	0.01			18	0.015
		10	0.451			10	0.5			18	0			16	0.035			17	0.041
7	11	15	0.004	8	10	17	0			17	0.001			15	0.085			16	0.099
		14	0.017			16	0.002			16	0.008			14	0.185			15	0.191
		13	0.064			15	0.01			15	0.026			13	0.32			14	0.335
		12	0.16			14	0.036			14	0.077			12	0.5			13	0.493
		11	0.318			13	0.097			13	0.166	10	12	21	0	12	12	24	0
7	12	15	0.007			12	0.218			12	0.319			20	0			23	0
		14	0.025			11	0.379			11	0.49			19	0.001			22	0
		13	0.089	8	11	17	0.001	9	11	19	0			18	0.006			21	0.001
		12	0.199			16	0.004			18	0.001			17	0.02			20	0.003
		11	0.376			15	0.018			17	0.003			16	0.056			19	0.009
7	13	15	0.01			14	0.057			18	0.015			15	0.125			18	0.03
		14	0.034			13	0.138			15	0.045			14	0.245			17	0.07
		13	0.116	8	11	12	0.278			14	0.115			13	0.395			16	0.15
		12	0.238			11	0.453			13	0.227	11	11	22	0			15	0.263
		11	0.43	8	12	17	0.001			12	0.395			21	0			14	0.421

Fim da tabela 13b (Distribuição da Estatística  $R$  (Teste das Sequências))

**Tabela 14:** Distribuição da Estatística  $V$  (Teste das Sequências Ascendentes e Descendentes)

Os valores  $P_e$  e  $P_d$  referem-se à probabilidade de, em amostras com dimensão  $N$ , a estatística  $V$  tomar, respectivamente, valores menores ou iguais a  $v_e$  (cauda esquerda) ou valores maiores ou iguais a  $v_d$  (cauda direita).

$N$	$v_e$	$P_e$	$v_d$	$P_d$	$N$	$v_e$	$P_e$	$v_d$	$P_d$	$N$	$v_e$	$P_e$	$v_d$	$P_d$	$N$	$v_e$	$P_e$	$v_d$	$P_d$
3	1	0.3333	2	0.6667	14	3	0			19	3	0			22	13	0.3276	14	0.6724
4			3	0.4167		4	0.0007	13	0.0046		4	0			23	1	0		
	1	0.0833	2	0.9167		5	0.0079	12	0.0391		4	0				2	0		
5	1	0.0167	4	0.2667		6	0.0441	11	0.1536		5	0	18	0.0005		3	0		
	2	0.25	3	0.75		7	0.1534	10	0.3722		6	0.0003	17	0.0056		4	0		
6	1	0.0028				8	0.3633	9	0.6367		7	0.0025	16	0.0308		5	0		
	2	0.0861	5	0.1694	15	1	0				8	0.0137	15	0.1055		6	0		
	3	0.4139	4	0.5861		2	0				9	0.0523	14	0.2546		7	0	22	0.0001
7	1	0.0004	6	0.1079		3	0				10	0.1467	13	0.4663		8	0.0003	21	0.0011
	2	0.025	5	0.4417		4	0.0002				11	0.3144	12	0.6856		9	0.0021	20	0.0076
	3	0.1909	4	0.8091		5	0.0027	14	0.0029	20	1	0				10	0.0099	19	0.0321
8	1	0				6	0.0186	13	0.0267		2	0				11	0.0356	18	0.0968
	2	0.0063	7	0.0687		7	0.0782	12	0.1134		3	0				12	0.0988	17	0.2211
	3	0.0749	6	0.325		8	0.2216	11	0.297		4	0				13	0.2188	16	0.402
	4	0.3124	5	0.6876		9	0.452	10	0.548		5	0				14	0.3953	15	0.6047
9	1	0			16	1	0				6	0.0001	19	0.0003	24	1	0		
	2	0.0014				2	0				7	0.0009	18	0.0038		2	0		
	3	0.0257	8	0.0437		3	0				8	0.0058	17	0.0218		3	0		
	4	0.15	7	0.2347		4	0.0001	15	0.0019		9	0.0255	16	0.0793		4	0		
	5	0.4347	6	0.5653		5	0.0009	14	0.0182		10	0.0821	15	0.2031		5	0		
10	1	0				6	0.0072	13	0.0828		11	0.2012	14	0.3945		6	0		
	2	0.0003	9	0.0278		7	0.0367	12	0.2335		12	0.3873	13	0.6127		7	0		
	3	0.0079	8	0.1671		8	0.1238	11	0.4631	21	1	0				8	0.0001	23	0
	4	0.0633	7	0.4524		9	0.2975	10	0.7025		2	0				9	0.0008	22	0.0007
	5	0.2427	6	0.7573	17	1	0				3	0				10	0.0044	21	0.0053
11	1	0				2	0				4	0				11	0.0177	20	0.0235
	2	0.0001				3	0				5	0				12	0.0554	19	0.0742
	3	0.0022	10	0.0177		4	0				6	0				13	0.1374	18	0.1783
	4	0.0239	9	0.1177		5	0.0003	16	0.0012		7	0.0003	20	0.0002		14	0.2768	17	0.3405
	5	0.1196	8	0.354		6	0.0026	15	0.0123		8	0.0023	19	0.0025		15	0.4631	16	0.5369
	6	0.3438	7	0.6562		7	0.016	14	0.06		9	0.0117	18	0.0154	25	1	0		
12	1	0				8	0.0638	13	0.1812		10	0.0431	17	0.0591		2	0		
	2	0				9	0.1799	12	0.385		11	0.1202	16	0.1602		3	0		
	3	0.0005				10	0.377	11	0.623		12	0.2622	15	0.3293		4	0		
	4	0.0082	11	0.0113	18	1	0				13	0.4603	14	0.5397		5	0		
	5	0.0529	10	0.0821		2	0			22	1	0				6	0		
	6	0.1918	9	0.272		3	0				2	0				7	0	24	0
	7	0.4453	8	0.5547		4	0				3	0				8	0	23	0.0005
13	1	0				5	0.0001				4	0				9	0.0003	22	0.0037
	2	0				6	0.0009	17	0.0008		5	0				10	0.0018	21	0.017
	3	0.0001	12	0.0072		7	0.0065	16	0.0083		6	0	21	0.0001		11	0.0084	20	0.0564
	4	0.0026	11	0.0568		8	0.0306	15	0.0431		7	0.0001	20	0.0017		12	0.0294	19	0.1423
	5	0.0213	10	0.2058		9	0.1006	14	0.1389		8	0.0009	19	0.0108		13	0.0815	18	0.2852
	6	0.0964	9	0.4587		10	0.2443	13	0.3152		9	0.005	18	0.0437		14	0.1827	17	0.4708
	7	0.2749	8	0.7251		11	0.4568	12	0.5432		10	0.0213	17	0.1251		15	0.3384	16	0.6616
14	1	0			19	1	0				11	0.0674	16	0.2714					
	2	0				2	0				12	0.1861	15	0.4688					

**Tabela 15:** Valores Críticos da Distribuição do Coeficiente de Correlação Ordinal de Spearman

Valores críticos da distribuição da estatística  $R_s$  para amostras de dimensão  $N$  e níveis de significância  $\alpha$ .

$N$	$\alpha$				$N$	$\alpha$			
	0.050	0.025	0.010	0.005		0.050	0.025	0.010	0.005
5	.900	—	—	—	18	.399	.476	.564	.625
6	.829	.886	.943	—	19	.388	.462	.549	.608
7	.714	.786	.893	—	20	.377	.450	.534	.591
8	.643	.738	.833	.881	21	.368	.438	.521	.576
9	.600	.683	.783	.833	22	.359	.428	.508	.562
10	.564	.648	.745	.794	23	.351	.418	.496	.549
11	.523	.623	.736	.818	24	.343	.409	.485	.537
12	.497	.591	.703	.780	25	.336	.400	.475	.526
13	.475	.566	.673	.745	26	.329	.392	.465	.515
14	.457	.545	.646	.716	27	.323	.385	.456	.505
15	.441	.525	.623	.689	28	.317	.377	.448	.496
16	.425	.507	.601	.666	29	.311	.370	.440	.487
17	.412	.490	.582	.645	30	.305	.364	.432	.478

**Tabela 16:** Factor  $q_{N, GL}(\alpha)$  (Para o Cálculo de Intervalos de Confiança pelo Método de Tukey)

Valores críticos da distribuição da estatística  $q_{N, GL}$  para níveis de significância  $\alpha = 0.05$  e  $\alpha = 0.01$ , em que  $N$  representa o número de grupos, ou o número de linhas, ou o número de colunas, ou, ainda, o número de linhas vezes o número de colunas, e  $GL$  representa o número de graus de liberdade.

GL	$\alpha$	N																		
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	0.05	6.09	8.33	9.80	10.88	11.74	12.44	13.03	13.54	13.99	14.39	14.75	15.08	15.38	15.65	15.91	16.14	16.37	16.57	16.77
	0.01	14.04	19.02	22.29	24.72	26.63	28.20	29.53	30.68	31.69	32.59	33.40	34.13	34.81	35.43	36.00	36.53	37.03	37.50	37.95
3	0.05	4.50	5.91	6.82	7.50	8.04	8.48	8.85	9.18	9.46	9.72	9.95	10.15	10.35	10.52	10.69	10.84	10.98	11.11	11.24
	0.01	8.26	10.62	12.17	13.33	14.24	15.00	15.64	16.20	16.69	17.13	17.53	17.89	18.22	18.52	18.81	19.07	19.32	19.55	19.77
4	0.05	3.93	5.04	5.76	6.29	6.71	7.05	7.35	7.60	7.83	8.03	8.21	8.37	8.52	8.66	8.79	8.91	9.03	9.13	9.23
	0.01	6.51	8.12	9.17	9.96	10.58	11.10	11.50	11.93	12.27	12.57	12.84	13.09	13.32	13.53	13.73	13.91	14.08	14.24	14.40
5	0.05	3.64	4.60	5.22	5.67	6.03	6.33	6.58	6.80	6.99	7.17	7.32	7.47	7.60	7.72	7.83	7.93	8.03	8.12	8.21
	0.01	5.70	6.98	7.80	8.42	8.91	9.32	9.67	9.97	10.24	10.48	10.70	10.89	11.08	11.24	11.40	11.55	11.68	11.81	11.93
6	0.05	3.46	4.34	4.90	5.30	5.63	5.90	6.12	6.32	6.49	6.65	6.79	6.92	7.03	7.14	7.24	7.34	7.43	7.51	7.59
	0.01	5.24	6.33	7.08	7.56	7.97	8.32	8.61	8.87	9.10	9.30	9.48	9.65	9.81	9.95	10.08	10.21	10.32	10.43	10.54
7	0.05	3.34	4.16	4.68	5.06	5.36	5.61	5.82	6.00	6.16	6.30	6.43	6.55	6.66	6.76	6.85	6.94	7.02	7.10	7.17
	0.01	4.95	5.92	6.54	7.01	7.37	7.68	7.94	8.17	8.37	8.55	8.71	8.86	9.00	9.12	9.24	9.35	9.46	9.55	9.65
8	0.05	3.26	4.04	4.53	4.89	5.17	5.40	5.60	5.77	5.92	6.05	6.18	6.29	6.39	6.48	6.57	6.65	6.73	6.80	6.87
	0.01	4.75	5.64	6.20	6.62	6.96	7.24	7.47	7.68	7.86	8.03	8.18	8.31	8.44	8.55	8.66	8.76	8.85	8.94	9.03
9	0.05	3.20	3.95	4.41	4.76	5.02	5.24	5.43	5.59	5.74	5.87	5.98	6.09	6.19	6.28	6.36	6.44	6.51	6.58	6.64
	0.01	4.60	5.43	5.96	6.35	6.66	6.91	7.13	7.33	7.49	7.65	7.78	7.91	8.03	8.13	8.23	8.33	8.41	8.49	8.57
10	0.05	3.15	3.88	4.33	4.65	4.91	5.12	5.30	5.46	5.60	5.72	5.83	5.93	6.03	6.11	6.19	6.27	6.34	6.40	6.47
	0.01	4.48	5.27	5.77	6.14	6.43	6.67	6.87	7.05	7.21	7.36	7.49	7.60	7.71	7.81	7.91	7.99	8.08	8.15	8.23
11	0.05	3.11	3.82	4.26	4.57	4.82	5.03	5.20	5.35	5.49	5.61	5.71	5.81	5.90	5.98	6.06	6.13	6.20	6.27	6.33
	0.01	4.39	5.15	5.62	5.97	6.25	6.48	6.67	6.84	6.99	7.13	7.25	7.36	7.46	7.56	7.65	7.73	7.81	7.88	7.95
12	0.05	3.08	3.77	4.20	4.51	4.75	4.95	5.12	5.27	5.39	5.51	5.61	5.71	5.80	5.88	5.95	6.02	6.09	6.15	6.21
	0.01	4.32	5.05	5.50	5.84	6.10	6.32	6.51	6.67	6.81	6.94	7.06	7.17	7.26	7.36	7.44	7.52	7.59	7.66	7.73
13	0.05	3.06	3.73	4.15	4.45	4.69	4.88	5.05	5.19	5.32	5.43	5.53	5.63	5.71	5.79	5.85	5.93	5.99	6.05	6.11
	0.01	4.26	4.96	5.40	5.73	5.98	6.19	6.37	6.53	6.67	6.79	6.90	7.01	7.10	7.19	7.27	7.35	7.42	7.48	7.55
14	0.05	3.03	3.70	4.11	4.41	4.64	4.83	4.99	5.13	5.25	5.36	5.46	5.55	5.64	5.71	5.79	5.85	5.91	5.97	6.03
	0.01	4.21	4.89	5.32	5.63	5.88	6.08	6.26	6.41	6.54	6.66	6.77	6.87	6.96	7.05	7.13	7.20	7.27	7.33	7.39
15	0.05	3.01	3.67	4.08	4.37	4.59	4.78	4.94	5.08	5.20	5.31	5.40	5.49	5.57	5.65	5.72	5.78	5.85	5.90	5.96
	0.01	4.17	4.84	5.25	5.56	5.80	5.99	6.16	6.31	6.44	6.55	6.66	6.76	6.84	6.93	7.00	7.07	7.14	7.20	7.26
16	0.05	3.00	3.65	4.05	4.33	4.56	4.74	4.90	5.03	5.15	5.26	5.35	5.44	5.52	5.59	5.66	5.73	5.79	5.84	5.90
	0.01	4.13	4.79	5.19	5.49	5.72	5.92	6.08	6.22	6.35	6.43	6.56	6.66	6.74	6.82	6.90	6.97	7.03	7.09	7.15
17	0.05	2.98	3.63	4.02	4.30	4.52	4.70	4.86	4.99	5.11	5.21	5.31	5.39	5.47	5.54	5.61	5.67	5.73	5.79	5.84
	0.01	4.10	4.74	5.14	5.43	5.66	5.85	6.01	6.15	6.27	6.38	6.48	6.57	6.66	6.73	6.81	6.87	6.94	7.00	7.05
18	0.05	2.97	3.61	4.00	4.28	4.49	4.67	4.82	4.96	5.07	5.17	5.27	5.35	5.43	5.50	5.57	5.63	5.69	5.74	5.79
	0.01	4.07	4.70	5.09	5.38	5.60	5.79	5.94	6.08	6.20	6.31	6.41	6.50	6.58	6.65	6.73	6.79	6.85	6.91	6.97
19	0.05	2.96	3.59	3.98	4.25	4.47	4.65	4.79	4.92	5.04	5.14	5.23	5.31	5.39	5.46	5.53	5.59	5.65	5.70	5.75
	0.01	4.05	4.67	5.05	5.33	5.55	5.73	5.89	6.02	6.14	6.25	6.34	6.43	6.51	6.58	6.65	6.72	6.78	6.84	6.89
20	0.05	2.95	3.58	3.96	4.23	4.45	4.62	4.77	4.90	5.01	5.11	5.20	5.28	5.36	5.43	5.49	5.55	5.61	5.66	5.71
	0.01	4.02	4.64	5.02	5.29	5.51	5.69	5.84	5.97	6.09	6.19	6.28	6.37	6.45	6.52	6.59	6.65	6.71	6.77	6.82
24	0.05	2.92	3.53	3.90	4.17	4.37	4.54	4.68	4.81	4.92	5.01	5.10	5.18	5.25	5.32	5.38	5.44	5.49	5.55	5.59
	0.01	3.96	4.55	4.91	5.17	5.37	5.54	5.69	5.81	5.92	6.02	6.11	6.19	6.26	6.33	6.39	6.45	6.51	6.56	6.61
30	0.05	2.89	3.49	3.85	4.10	4.30	4.46	4.60	4.72	4.82	4.92	5.00	5.08	5.15	5.21	5.27	5.33	5.38	5.43	5.47
	0.01	3.89	4.45	4.80	5.05	5.24	5.40	5.54	5.65	5.76	5.85	5.93	6.01	6.08	6.14	6.20	6.26	6.31	6.36	6.41
40	0.05	2.86	3.44	3.79	4.04	4.23	4.39	4.52	4.63	4.73	4.82	4.90	4.98	5.04	5.11	5.16	5.22	5.27	5.32	5.36
	0.01	3.83	4.37	4.70	4.93	5.11	5.26	5.39	5.50	5.60	5.69	5.76	5.83	5.90	5.96	6.02	6.07	6.12	6.16	6.21
60	0.05	2.83	3.40	3.74	3.98	4.16	4.31	4.44	4.55	4.65	4.73	4.81	4.88	4.94	5.00	5.06	5.11	5.15	5.20	5.24
	0.01	3.76	4.28	4.59	4.82	5.09	5.13	5.25	5.36	5.45	5.53	5.60	5.67	5.73	5.78	5.84	5.89	5.93	5.87	6.01
120	0.05	2.80	3.36	3.68	3.92	4.10	4.24	4.36	4.47	4.56	4.64	4.71	4.78	4.84	4.90	4.95	5.00	5.04	5.09	5.13
	0.01	3.70	4.20	4.50	4.71	4.87	5.01	5.12	5.21	5.30	5.37	5.44	5.50	5.56	5.61	5.66	5.71	5.75	5.79	5.83
$\infty$	0.05	2.77	3.31	3.63	3.86	4.03	4.17	4.29	4.39	4.47	4.55	4.62	4.68	4.74	4.80	4.85	4.89	4.93	4.97	5.01
	0.01	3.64	4.12	4.40	4.60	4.76	4.88	4.99	5.08	5.16	5.23	5.29	5.35	5.40	5.45	5.49	5.54	5.57	5.61	5.65