UNIVERSIDAD NACIONAL DE LA PLATA

Facultad de Ciencias Agrarias y Forestales

CÁLCULO ESTADÍSTICO Y BIOMETRÍA

Curso 2020

TABLAS

DOCENTES

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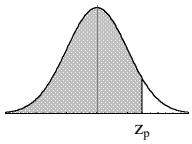
TABLA I (a): DISTRIBUCION NORMAL ESTANDAR ACUMULADA

$$\Phi(z) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{z} e^{-\frac{x^2}{2}} dx$$



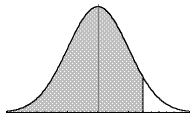
z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
- .0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641
- .1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
- .2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
- .3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
- .4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
- .5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
- .6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
- .7	.2420	.2389	.2358	.2327	.2297	.2266	.2236	.2206	.2177	.2148
- .8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
- .9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
- 1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
- 1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
- 1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.09853
- 1.3	.09680	.09510	.09342	.09176	.09012	.08851	.08691	.08534	.08379	.08226
- 1.4	.08076	.07927	.07780	.07636	.07493	.07353	.07215	.07078	.06944	.06811
- 1.5	.06681	.06552	.06426	.06301	.06178	.06057	.05938	.05821	.05705	.05592
- 1.6	.05480	.05370	.05262	.05 155	.05050	.04947	.04846	.04746	.04648	.04551
- 1.7	.04457	.04363	.04272	.04182	.04093	.04006	.03920	.03836	.03754	.03673
- 1.8	.03593	.03515	.03438	.03362	.03288	.03216	.03144	.03074	.03005	.02938
- 1.9	.02872	.02807	.02743	.02680	.02619	.02559	.02500	.02442	.02385	.02330
- 2.0	.02275	.02222	.02169	.02118	.02068	.02018	.01970	.01923	.01876	.01831
- 2.1	.01786	.01743	.01700	.01659	.01618	.01578	.01539	.01500	.01463	.01426
- 2.2	.01390	.01355	.01321	.01287	.01255	.01222	.01191	.01160	.01130	.01101
- 2.3	.01072	.01044	.01017	$.0^{2}9903$	$.0^{2}9642$	$.0^{2}9387$	$.0^{2}9137$	$.0^{2}8894$	$.0^{2}8656$	$.0^{2}8424$
- 2.4	$.0^{2}8198$	$.0^{2}7976$	$.0^{2}7760$	$.0^{2}7549$	$.0^{2}7344$	$.0^{2}7143$	$.0^{2}6947$	$.0^{2}6756$	$.0^{2}6569$	$.0^{2}6387$
- 2.5	$.0^{2}6210$	$.0^{2}6037$	$.0^{2}5868$	$.0^{2}5703$	$.0^{2}5543$	$.0^{2}5386$	$.0^{2}5234$	$.0^{2}5085$	$.0^{2}4940$	$.0^{2}4799$
- 2.6	$.0^{2}4661$	$.0^{2}4527$	$.0^{2}4396$	$.0^{2}4269$	$.0^{2}4145$	$.0^{2}4025$	$.0^{2}3907$	$.0^{2}3793$	$.0^{2}3681$	$.0^{2}3573$
- 2.7	$.0^{2}3467$	$.0^{2}3364$	$.0^{2}3264$	$.0^{2}3167$	$.0^{2}3072$	$.0^{2}2980$	$.0^{2}2890$	$.0^{2}2803$	$.0^{2}2718$	$.0^{2}2035$
- 2.8	$.0^{2}2555$	$.0^{2}2477$	$.0^{2}2401$	$.0^{2}2327$	$.0^{2}2256$	$.0^{2}2186$	$.0^{2}2118$	$.0^{2}2052$	$.0^{2}1988$	$.0^{2}1926$
- 2.9	$.0^{2}1866$	$.0^{2}1807$	$.0^{2}1750$	$.0^{2}1695$	$.0^{2}1641$	$.0^{2}1589$	$.0^{2}1538$	$.0^{2}1489$	$.0^{2}1441$	$.0^{2}1395$
- 3.0	$.0^{2}1350$	$.0^{2}1306$	$.0^{2}1264$	$.0^{2}1223$	$.0^{2}1183$	$.0^{2}1144$	$.0^{2}1107$	$.0^{2}1070$	$.0^{2}1035$	$.0^{2}1001$
- 3.1	$.0^{3}9676$	$.0^{3}9354$	$.0^{3}9043$	$.0^{3}8740$	$.0^{3}8447$	$.0^{3}8164$	$.0^{3}7888$	$.0^{3}7622$	$.0^{3}7364$	$.0^{3}7114$
- 3.2	$.0^{3}6871$	$.0^{3}6637$	$.0^{3}6410$	$.0^{3}6190$	$.0^{3}5976$	$.0^{3}5770$	$.0^{3}5571$	$.0^{3}5377$	$.0^{3}5190$	$.0^{3}5009$
- 3.3	$.0^{3}4834$	$.0^{3}4665$	$.0^{3}4501$	$.0^{3}4342$	$.0^{3}4189$	$.0^{3}4041$	$.0^{3}3897$	$.0^{3}3758$	$.0^{3}3624$	$.0^{3}3495$
- 3.4	$.0^{3}3369$	$.0^{3}3248$	$.0^{3}3131$	$.0^{3}3018$	$.0^{3}2909$	$.0^{3}2803$	$.0^{3}2701$	$.0^{3}2602$	$.0^{3}2507$	$.0^{3}2415$
- 3.5	$.0^{3}2326$	$.0^{3}2241$	$.0^{3}2158$	$.0^{3}2078$	$.0^{3}2001$	$.0^{3}1926$	$.0^{3}1854$	$.0^{3}1785$	$.0^{3}1718$	$.0^{3}1653$
- 3.6	$.0^{3}1591$	$.0^{3}1531$	$.0^{3}1473$	$.0^{3}1417$	$.0^{3}1363$	$.0^{3}1311$	$.0^{3}1261$	$.0^{3}1213$	$.0^{3}1166$	$.0^{3}1121$
- 3.7	$.0^{3}1078$	$.0^{3}1036$	$.0^{4}9961$	$.0^{4}9574$	$.0^{4}9201$	$.0^{4}8842$	$.0^{4}8496$	$.0^{4}8I62$	$.0^{4}7841$	$.0^{4}7532$
- 3.8	$.0^{4}7235$	$.0^{4}6948$	$.0^{4}6673$	$.0^{4}6407$	$.0^{4}6152$	$.0^{4}5906$	$.0^{4}5669$	$.0^{4}5442$	$.0^{4}5223$	$.0^{4}5012$
- 3.9	$.0^{4}4810$	$.0^{4}4615$	$.0^{4}4427$	$.0^{4}4247$	$.0^{4}4074$	$.0^{4}3908$	$.0^{4}3747$	$.0^{4}3594$	$.0^{4}3446$	$.0^{4}3304$
- 4.0	$.0^{4}3167$	$.0^{4}3036$	$.0^{4}2910$	$.0^{4}2789$	$.0^{4}2673$	$.0^{4}2561$	$.0^{4}2454$	$.0^{4}2351$	$.0^{4}2252$	$.0^{4}2157$
- 4.1	$.0^{4}2066$	$.0^{4}1978$	$.0^{4}1894$	$.0^{4}1814$	$.0^{4}1737$	$.041662$	$.0^{4}1591$	$.0^{4}1523$	$.0^{4}1458$	$.0^{4}1395$
- 4.2	$.0^{4}1335$	$.0^{4}1277$	$.0^{4}1222$	$.0^{4}1168$	$.0^{4}1118$	$.0^{4}1069$	$.0^{4}1022$	$.0^{5}9774$	$.0^{5}9345$	$.0^{5}8934$
- 4.3	$.0^{5}8540$	$.0^{5}8I63$	$.0^{5}7801$	$.0^{5}7455$	$.0^{5}7124$	$.0^{5}6807$	$.0^{5}6503$	$.0^{5}6212$	$.0^{5}5934$	$.0^{5}5668$
- 4.4	$.0^{5}5413$	$.0^{5}5169$	$.0^{5}4935$	$.0^{5}4712$	$.0^{5}4498$	$.0^{5}4294$	$.0^{5}4098$	$.0^{5}3911$	$.0^{5}3732$	$.0^{5}3561$
- 4.5	$.0^{5}3398$	$.0^{5}3241$	$.0^{5}3092$	$.0^{5}2949$	$.0^{5}2813$	$.0^{5}2682$	$.0^{5}2558$	$.0^{5}2439$	$.0^{5}2325$	$.0^{5}2216$
- 4.6	$.0^{5}2112$	$.0^{5}2013$	$.0^{5}1919$	$.0^{5}1828$	$.0^{5}1742$	$.0^{5}1660$	$.0^{5}1581$	$.0^{5}1506$	$.0^{5}1434$	$.0^{5}1366$
- 4.7	$.0^{5}1301$	$.0^{5}1239$	$.0^{5}1179$	$.0^{5}1123$	$.0^{5}1069$	$.0^{5}1017$	$.0^{6}9680$	$.0^{6}9211$	$.0^{6}8765$	$.0^{6}7228$
- 4.8	$.0^{6}7933$	$.0^{6}7547$	$.0^{6}7178$	$.0^{6}6827$	$.0^{6}6492$	$.0^{6}6173$	$.0^{6}5869$	$.0^{6}5580$	$.0^{6}5304$	$.0^{6}5042$
- 4.9	$.0^{6}4792$	$.0^{6}4554$	$.0^{6}4327$	$.0^{6}4111$	$.0^{6}3906$	$.0^{6}3711$	$.0^{6}3525$	$.0^{6}3348$	$.0^{6}3179$	$.0^{6}3019$

Ejemplo: $P(Z < -3.57) = \phi(-3.57) = .0^{3}1785 = 0.0001785$

Fuente: Hald, A., 1952, Statistical Tables and Formulas

TABLA I (b): DISTRIBUCION NORMAL ESTANDAR ACUMULADA

$$\Phi(z) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{z} e^{-\frac{x^2}{2}} dx$$



z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
.7	.7580	.7611	.7642	.7673	.7703	.7734	.7764	.7794	.7823	.7852
.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.90147
1.3	.90320	.90490	.90658	.90824	.90988	.91149	.91309	.91466	.91621	.91774
1.4	.91924	.92073	.92220	.92364	.92507	.92647	.92785	.92922	.93056	.93189
1.5	.93319	.93448	.93574	.93699	.93822	.93943	.94062	.94179	.94295	.94408
1.6	.94520	.94630	.94738	.94845	.94950	.95053	.95154	.95254	.95352	.95449
1.7	.95543	.95637	.95728	.95818	.95907	.95994	.96080	.96164	.96246	.96327
1.8	.96407	.96485	.96562	.96638	.96712	.96784	.96856	.96926	.96995	.97062
1.9	.97128	.97193	.97257	.97320	.97381	.97441	.97500	.97558	.97615	.97670
2.0	.97725	.97778	.97831	.97882	.97932	.97982	.98030	.98077	.98124	.98169
2.1	.98214	.98257	.98300	.98341	.98382	.98422	.98461	.98500	.98537	.98574
2.2	.98610	.98645	.98679	.98713	.98745	.98778	.98809	.98840	.98870	.98899
2.3	.98928	.98956	.98983	$.9^20097$	$.9^20358$	$.9^20613$	$.9^20863$	$.9^21106$	$.9^21344$	$.9^21\,576$
2.4	$.9^21802$	$.9^22024$	$.9^22240$	$.9^22451$	$.9^22656$	$.9^2\,2857$	$.9^23053$	$.9^23244$	$.9^23431$	$.9^23613$
2.5	$.9^23790$	$.9^23963$	$.9^24132$	$.9^24297$	$.9^24457$	$.9^24614$	$.9^24766$	$.9^24915$	$.9^25060$	$.9^25201$
2.6	$.9^25339$	$.9^25473$	$.9^25604$	$.9^25731$	$.9^25855$	$.9^25975$	$.9^26093$	$.9^26207$	$.9^26319$	$.9^26427$
2.7	$.9^26533$	$.9^26636$	$.9^26736$	$.9^26833$	$.9^26928$	$.9^27020$	$.9^27110$	$.9^27197$	$.9^27282$	$.9^27365$
2.8	$.9^27445$	$.9^27523$	$.9^27599$	$.9^27673$	$.9^27744$	$.9^27814$	$.9^27882$	$.9^27948$	$.9^28012$	$.9^28074$
2.9	$.9^2\,8134$	$.9^2\,8193$	$.9^2\,8250$	$.9^2\,8305$	$.9^2\,8359$	$.9^2\,8411$	$.9^2\,8462$	$.9^28511$	$.9^28559$	$.9^28605$
3.0	$.9^28650$	$.9^28694$	$.9^28736$	$.9^28777$	$.9^28817$	$.9^28856$	$.9^28893$	$.9^28930$	$.9^28965$	$.9^28999$
3.1	$.9^30324$	$.9^30646$	$.9^30957$	$.9^31260$	$.9^31553$	$.9^31836$	$.9^32112$	$.9^32378$	$.9^32636$	$.9^32886$
3.2	$.9^33129$	$.9^33363$	$.9^33590$	$.9^33810$	$.9^34024$	$.9^34230$	$.9^34429$	$.9^34623$	$.9^34810$	$.9^34991$
3.3	$.9^35166$	$.9^35335$	$.9^35499$	$.9^35658$	$.9^35811$	$.9^35959$	$.9^36103$	$.9^36242$	$.9^36376$	$.9^36505$
3.4	$.9^36631$	$.9^36752$	$.9^36869$	$.9^36982$	$.9^37091$	$.9^37197$	$.9^37299$	$.9^37398$	$.9^37493$	$.9^37585$
3.5	$.9^37674$	$.9^37759$	$.9^37842$	$.9^37922$	$.9^37999$	$.9^38074$	$.9^38146$	$.9^38215$	$.9^38282$	$.9^38347$
3.6	$.9^38409$	$.9^38469$	$.9^38527$	$.9^38583$	$.9^38637$	$.9^38689$	$.9^38739$	$.9^38787$	$.9^38834$	$.9^38879$
3.7	$.9^38922$	$.9^38964$	$.9^40039$	$.9^40426$	$.9^40799$	$.9^41158$	$.9^41504$	$.9^41838$	$.9^42159$	$.9^42468$
3.8	$.9^42765$	$.9^43052$	$.9^43327$	$.9^43593$	$.9^43848$	$.9^44094$	$.9^44331$	$.9^44558$	$.9^44777$	$.9^44988$
3.9	$.9^45190$	$.9^45385$	$.9^45573$	$.9^45753$	$.9^45926$	$.9^46092$	$.9^46253$	$.9^46406$	$.9^46554$	$.9^46696$
4.0	$.9^46833$	$.9^46964$	$.9^47090$	$.9^47211$	$.9^47327$	$.9^47439$	$.9^47546$	$.9^47649$	$.9^47748$	$.9^47843$
4.1	$.9^47934$	$.9^48022$	$.9^48106$	$.9^48186$	$.9^48263$	$.9^48338$	$.9^48409$	$.9^48477$	$.9^48542$	$.9^48605$
4.2	$.9^48665$	$.9^48723$	$.9^48778$	$.9^48832$	$.9^48882$	$.9^48931$	$.9^48978$	$.9^50226$	$.9^50655$	$.9^51066$
4.3	$.9^51460$	$.9^51837$	$.9^52199$	$.9^52545$	$.9^52876$	$.9^53193$	$.9^53497$	$.9^53788$	$.9^54066$	$.9^54332$
4.4	$.9^54587$	$.9^54831$	$.9^55065$	$.9^55288$	$.9^55502$	$.9^55706$	$.9^55902$	$.9^56089$	$.9^56268$	$.9^56439$
4.5	$.9^56602$	$.9^56759$	$.9^56908$	$.9^57051$	$.9^57187$	$.9^57318$	$.9^57442$	$.9^57561$	$.9^57675$	$.9^57784$
4.6	$.9^57888$	$.9^57987$	$.9^5\,8081$	$.9^58172$	$.9^58258$	$.9^58340$	$.9^58419$	$.9^58494$	$.9^58566$	$.9^58634$
4.7	$.9^58699$	$.9^58761$	$.9^58821$	$.9^58877$	$.9^58931$	$.9^58983$	$.9^60320$	$.9^60789$	$.9^61235$	$.9^61661$
4.8	$.9^62067$	$.9^62453$	$.9^62822$	$.9^63173$	$.9^63508$	$.9^63827$	$.9^64131$	$.9^64420$	$.9^64696$	$.9^64958$
4.9	$.9^65208$	$.9^65446$	$.9^65673$	$.9^65889$	$.9^66094$	$.9^66289$	$.9^66475$	$.9^66652$	$.9^66821$	$.9^66981$

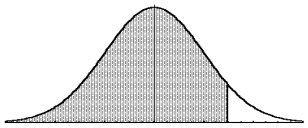
Ejemplo: $P(Z < 3.57) = \phi(3.57) = .9^38215 = 0.9998215$

Fuente: Hald, A., 1952, Statistical Tables and Formulas

TABLA II

DISTRIBUCIÓN t DE STUDENT

Valores percentiles (t_p) para la distribución t de Student con ν grados de libertad



t_p

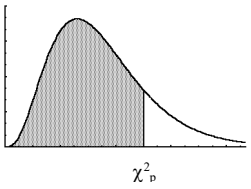
ν	$t_{.995}$	$t_{.99}$	$t_{.975}$	$t_{.95}$	$t_{.90}$	$t_{.80}$	$t_{.75}$	$t_{.70}$	$t_{.60}$	$t_{.55}$
1	63.66	31.32	12.71	6.31	3.08	1.376	1.000	.727	.325	.158
2	9.92	6.96	4.30	2.92	1.89	1.061	.816	.617	.289	.142
3	5.84	4.54	3.18	2.35	1.64	.978	.755	.584	.277	.137
4	4.60	3.75	2.78	2.13	1.53	.941	.741	.569	.271	.134
5	4.03	3.36	2.57	2.02	1.48	.920	.727	.559	.267	.132
6	3.71	3.14	2.45	1.94	1.44	.906	.718	.553	.265	.131
7	3.50	3.00	2.36	1.90	1.42	.896	.711	.549	.263	.130
8	3.36	2.90	2.31	1.86	1.40	.889	.706	.546	.262	.130
9	3.25	2.82	2.26	1.83	1.38	.883	.703	.543	.261	.129
10	3.17	2.76	2.23	1.81	1.37	.879	.700	.542	.260	.129
11	3.11	2.72	2.20	1.80	1.36	.876	.697	.540	.260	.129
12	3.06	2.68	2.18	1.78	1.26	.873	.695	.539	.259	.128
13	3.01	2.65	2.16	1.77	1.35	.870	.694	.533	.259	.128
14	2.98	2.62	2.14	1.76	1.34	.868	.692	.537	.258	.128
15	2.95	2.60	2.13	1.75	1.34	.866	.691	.536	.258	.128
16	2.92	2.58	2.12	1.75	1.34	.865	.690	.535	.258	.128
17	2.90	2.57	2.11	1.74	1.33	.863	.689	.534	.257	.128
18	2.88	2.55	2.10	1.73	1.33	.862	.688	.534	.257	.127
19	2.86	2.54	2.09	1.73	1.33	.861	.688	.533	.257	.127
20	2.84	2.53	2.09	1.72	1.32	.860	.687	.533	.257	.127
21	2.83	2.52	2.08	1.72	1.32	.859	.686	.532	.257	.127
22	2.82	2.51	2.07	1.72	1.32	.858	.686	.532	.256	.127
23	2.81	2.50	2.07	1.71	1.32	.858	.685	.532	.256	.127
24	2.80	2.49	2.06	1.71	1.32	.857	.685	.531	.256	.127
25	2.79	2.48	2.06	1.71	1.32	.856	.684	.531	.256	.127
26	2.78	2.48	2.06	1.71	1.32	.856	.684	.531	.256	.127
27	2.77	2.47	2.05	1.70	1.31	.855	.684	.531	.256	.127
28	2.76	2.47	2.05	1.70	1.31	.855	.683	.530	.256	.127
29	2.76	2.46	2.04	1.70	1.31	.854	.683	.530	.256	.127
30	2.75	2.46	2.04	1.70	1.31	.854	.683	.530	.256	.127
40	2.70	2.42	2.02	1.63	1.30	.851	.681	.529	.255	.126
60	2.66	2.39	2.00	1.67	1.30	.848	.679	.527	.254	.126
120	2.62	2.36	1.98	1.66	1.29	.845	.677	.526	.254	.126
∞	2.58	2.33	1.96	1.64	1.28	.842	.674	.524	.253	.126

Fuente: Spiegel Murray R., 1991, Estadística (2º ed.), Schaum, adaptada a partir de R. A. Fisher y F. Yates. Statistical Tables for Biologica1, Agricultural and Medical Research (5ta edición), Tabla III, Oliver y Boyd Ltd, Edinburgh, con autorización de los autores y editores.

TABLA III

DISTRIBUCION CHI-CUADRADO

Valores percentiles (χ^2_p) para la distribución Chi-cuadrado con ν grados de libertad

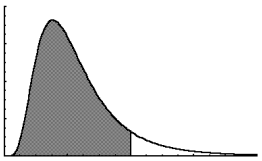


ν	$\chi^2_{.995}$	$\chi^2_{.99}$	$\chi^2_{.975}$	$\chi^2_{.95}$	$\chi^2_{.90}$	$\chi^2_{.75}$	$\chi^2_{.50}$	$\chi^2_{.25}$	$\chi^2_{.10}$	$\chi^2_{.05}$	$\chi^2_{.025}$	$\chi^2_{.01}$	$\chi^2_{.005}$
1	7.88	6.63	5.02	3.84	2.71	1.32	.455	.102	.0158	.0039	.0010	.0002	.0000
2	10.6	9.21	7.38	5.99	4.61	2.77	1.39	.575	.211	.103	.0506	.0201	.0100
3	12.8	11.3	9.35	7.81	6.25	4.11	2.37	1.21	.584	.352	.216	.115	.072
4	14.9	13.3	11.1	9.49	7.78	5.39	3.36	1.92	1.06	.711	.484	.297	.207
5	16.7	15.1	12.8	11.1	9.24	6.63	4.35	2.67	1.61	1.15	.831	.554	.412
6	18.5	16.8	14.4	12.6	10.6	7.84	5.35	3.45	2.20	1.64	1.24	.872	.676
7	20.3	18.5	16.0	14.1	12.0	9.04	6.35	4.25	2.83	2.17	1.69	1.24	.989
8	22.0	20.1	17.5	15.5	13.4	10.2	7.34	5.07	3.49	2.73	2.18	1.65	1.34
9	23.6	21.7	19.0	16.9	14.7	11.4	8.34	5.90	4.17	3.33	2.70	2.09	1.73
10	25.2	23.2	20.5	18.3	16.0	12.5	9.34	6.74	4.87	3.94	3.25	2.56	2.16
11	26.8	24.7	21.9	19.7	17.3	13.7	10.3	7.58	5.58	4.57	3.82	3.05	2.60
12	28.3	26.2	23.3	21.0	18.5	14.8	11.3	8.44	6.30	5.23	4.40	3.57	3.07
13	29.8	27.7	24.7	22.4	19.8	16.0	12.3	9.30	7.04	5.89	5.01	4.11	3.57
14	31.3	29.1	26.1	23.7	21.1	17.1	13.3	10.2	7.79	6.57	5.63	4.66	4.07
15	32.8	30.6	27.5	25.0	22.3	18.2	14.3	11.0	8.55	7.26	6.26	5.23	4.60
16	34.3	32.0	28.8	26.3	23.5	19.4	15.3	11.9	9.31	7.96	6.91	5.81	5.14
17	35.7	33.4	30.2	27.6	24.8	20.5	16.3	12.8	10.1	8.67	7.56	6.41	5.70
18	37.2	34.8	31.5	28.9	26.0	21.6	17.3	13.7	10.9	9.39	8.23	7.01	6.26
19	38.6	36.2	32.9	30.1	27.2	22.7	18.3	14.6	11.7	10.1	8.91	7.63	6.84
20	40.0	37.6	34.2	31.4	28.4	23.8	19.3	15.5	12.4	10.9	9.59	8.26	7.43
21	41.4	38.9	35.5	32.7	29.6	24.9	20.3	16.3	13.2	11.6	10.3	8.90	8.03
22	42.8	40.3	36.8	33.9	30.8	26.0	21.3	17.2	14.0	12.3	11.0	9.54	8.64
23	44.2	41.6	38.1	35.2	32.0	27.1	22.3	18.1	14.3	13.1	11.7	10.2	9.26
24	45.6	43.0	39.4	36.4	33.2	28.2	23.3	19.0	15.7	13.8	12.4	10.9	9.89
25	46.9	44.3	40.6	37.7	34.4	29.3	24.3	19.9	16.5	14.6	13.1	11.5	10.5
26	48.3	45.6	41.9	38.9	35.6	30.4	25.3	20.8	17.3	15.4	13.8	12.2	11.2
27	49.6	47.0	43.2	40.1	36.7	31.5	26.3	21.7	18.1	16.2	14.6	12.9	11.8
28	51.0	48.3	44.5	41.3	37.9	32.6	27.3	22.7	18.9	16.9	15.3	13.6	12.5
29	52.3	49.6	45.7	42.6	39.1	33.7	28.3	23.6	19.8	17.7	16.0	14.3	13.1
30	53.7	50.9	47.0	43.8	40.3	34.8	29.3	24.5	20.6	18.5	16.8	15.0	13.8
40	66.8	63.7	59.3	55.8	51.8	45.6	29.3	33.7	29.1	26.5	24.4	22.2	20.7
50	79.5	76.2	71.4	67.5	63.2	56.3	49.3	42.9	37.7	34.8	32.4	29.7	28.0
60	92.0	88.4	83.3	79.1	74.4	67.0	59.3	52.3	46.5	43.2	40.5	37.5	35.5
70	104.2	100.4	95.0	90.5	85.5	77.6	69.3	61.7	55.3	51.7	48.8	45.4	43.3
80	116.3	112.3	106.6	101.9	96.6	88.1	79.3	71.1	64.3	60.4	57.2	53.5	51.2
90	128.3	124.1	118.1	113.1	107.6	98.6	89.3	80.6	73.3	69.1	65.6	61.8	59.2
100	140.2	135.8	129.6	124.3	118.5	109.1	99.3	90.1	82.4	77.9	74.2	70.1	67.3

Fuente: Spiegel Murray R., 1991, Estadística (2º ed.), Schaum, adaptada a partir de Catherine M. Thompson. Table of percentage points of the χ^2 distribution. Biometrika. Vol. 32 (1941), con autorización del autor y del editor.

TABLA IV (a): DISTRIBUCION *F* DE SNEDECOR PARA $\alpha = 0.05$

Valores de los 95-ésimos percentiles para la distribución *F* con ν_1 grados de libertad en el numerador y ν_2 grados de libertad en el denominador



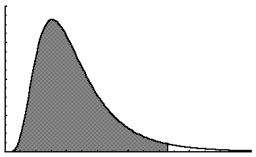
$F_{.95}$

ν_1	1	2	3	4	5	6	7	8	9	10	12	15	20	24	30	40	60	120	∞
ν_2																			
1	161	200	216	225	230	234	237	239	241	242	244	246	248	249	250	251	252	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	19.5	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	8.74	8.70	8.66	8.64	8.62	8.59	8.57	8.55	8.53
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.91	5.86	5.80	5.77	5.75	5.72	5.69	5.66	5.63
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.68	4.62	4.56	4.53	4.50	4.46	4.43	4.40	4.37
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.00	3.94	3.87	3.84	3.81	3.77	3.74	3.70	3.67
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.57	3.51	3.44	3.41	3.38	3.34	3.30	3.27	3.23
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.28	3.22	3.15	3.12	3.08	3.04	3.01	2.97	2.93
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.07	3.01	2.94	2.90	2.86	2.83	2.79	2.75	2.71
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.91	2.85	2.77	2.74	2.70	2.66	2.62	2.58	2.54
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.79	2.72	2.65	2.61	2.57	2.53	2.49	2.45	2.40
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.69	2.62	2.54	2.51	2.47	2.43	2.38	2.34	2.30
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.60	2.53	2.46	2.42	2.38	2.34	2.30	2.25	2.21
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.53	2.46	2.39	2.35	2.31	2.27	2.22	2.18	2.13
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.48	2.40	2.33	2.29	2.25	2.20	2.16	2.11	2.07
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.42	2.35	2.28	2.24	2.19	2.15	2.11	2.06	2.01
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.38	2.31	2.23	2.19	2.15	2.10	2.06	2.01	1.96
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.34	2.27	2.19	2.15	2.11	2.06	2.02	1.97	1.92
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.31	2.23	2.16	2.11	2.07	2.03	1.98	1.93	1.88
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.28	2.20	2.12	2.08	2.04	1.99	1.95	1.90	1.84
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.25	2.18	2.10	2.05	2.01	1.96	1.92	1.87	1.81
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.23	2.15	2.07	2.03	1.98	1.94	1.89	1.84	1.78
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27	2.20	2.13	2.05	2.01	1.96	1.91	1.86	1.81	1.76
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.18	2.11	2.03	1.98	1.94	1.89	1.84	1.79	1.73
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.16	2.09	2.01	1.96	1.92	1.87	1.82	1.77	1.71
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.15	2.07	1.99	1.95	1.90	1.85	1.80	1.75	1.69
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20	2.13	2.06	1.97	1.93	1.88	1.84	1.79	1.73	1.67
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.12	2.04	1.96	1.91	1.87	1.82	1.77	1.71	1.65
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18	2.10	2.03	1.94	1.90	1.85	1.81	1.75	1.70	1.64
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.09	2.01	1.93	1.89	1.84	1.79	1.74	1.68	1.62
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.00	1.92	1.84	1.79	1.74	1.69	1.64	1.58	1.51
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.92	1.84	1.75	1.70	1.65	1.59	1.53	1.47	1.39
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96	1.91	1.83	1.75	1.66	1.61	1.55	1.50	1.43	1.35	1.25
∞	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88	1.83	1.75	1.67	1.57	1.52	1.46	1.39	1.32	1.22	1.00

Fuente: Spiegel Murray R., 1991, Estadística (2º ed.), Schaum, adaptada a partir de E. S. Pearson y H. O. Hart1ey. Biometrika Tables for Statisticans, Vol. 2 (1972), Tabla 5, página 178, reproducción autorizada.

TABLA IV (b): DISTRIBUCION *F* DE SNEDECOR PARA $\alpha = 0.01$

Valores de los 99-ésimos percentiles para la distribución *F* con ν_1 grados de libertad en el numerador y ν_2 grados de libertad en el denominador



$F_{.99}$

ν_1	1	2	3	4	5	6	7	8	9	10	12	15	20	24	30	40	60	120	∞
ν_2																			
1	4052	5000	5403	5625	5764	5859	5928	5981	6023	6056	6106	6157	6209	6235	6261	6287	6313	6339	6366
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	99.5	99.5	99.5	99.5	99.5	99.5
3	34.5	30.8	29.5	28.7	28.2	27.9	27.7	27.5	27.3	27.2	27.1	26.9	26.7	26.6	26.5	26.4	26.3	26.2	26.1
4	*21.2*	*18.0*	*16.7*	*16.0*	*15.5*	*15.2*	*15.0*	*54.3*	*14.7*	*14.5*	*14.4*	*14.2*	*14.0*	*13.9*	*13.8*	*13.7*	*13.7*	*13.6*	*13.5*
5	*16.3*	*13.3*	*12.1*	*11.4*	*11.0*	*10.7*	*10.5*	*10.3*	*10.2*	*10.1*	*9.89*	*9.72*	*9.55*	*9.47*	*9.38*	*9.29*	*9.20*	*9.11*	*9.02*
6	13.7	10.9	9.78	9.55	8.75	8.47	8.26	8.10	7.98	7.87	7.72	7.56	7.40	7.31	7.23	7.14	7.06	6.97	6.88
7	12.2	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72	6.62	6.47	6.31	6.16	6.07	5.99	5.91	5.82	5.74	5.65
8	11.3	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.95	5.81	5.67	5.52	5.36	5.28	5.20	5.12	5.03	4.95	4.86
9	10.6	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35	5.26	5.11	4.96	4.81	4.73	4.65	4.57	4.48	4.40	4.31
10	10.0	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94	4.85	4.71	4.56	4.45	4.33	4.25	4.57	4.08	4.00	3.95
11	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63	4.54	4.40	4.25	4.10	4.02	3.94	3.86	3.78	3.69	3.60
12	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39	4.30	4.56	4.01	3.86	3.78	3.70	3.62	3.54	3.45	3.36
13	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19	4.10	3.96	3.82	3.66	3.59	3.51	3.43	3.34	3.25	3.17
14	8.86	6.51	5.56	5.04	4.70	4.46	4.28	4.14	4.03	3.94	3.80	3.66	3.51	3.43	3.35	3.27	3.18	3.09	3.00
15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89	3.80	3.67	3.52	3.37	3.29	3.21	3.53	3.05	2.96	2.87
16	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69	3.55	3.41	3.26	3.18	3.10	3.02	2.93	2.84	2.75
17	8.40	6.51	5.59	4.67	4.34	4.10	3.93	3.79	3.68	3.59	3.46	3.31	3.56	3.08	3.00	2.92	2.83	2.75	2.65
18	8.29	6.01	5.09	4.58	4.25	4.01	3.84	3.71	3.60	3.51	3.37	3.23	3.08	3.00	2.92	2.84	2.75	2.66	2.57
19	8.13	5.93	5.05	4.50	4.17	3.94	3.77	3.63	3.52	3.43	3.30	3.15	3.00	2.92	2.84	2.76	2.67	2.53	2.49
20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46	3.37	3.23	3.09	2.94	2.86	2.78	2.69	2.61	2.52	2.42
21	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40	3.31	3.17	3.03	2.88	2.80	2.72	2.64	2.55	2.46	2.36
22	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26	3.12	2.98	2.83	2.75	2.67	2.58	2.50	2.40	2.31
23	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21	3.07	2.93	2.78	2.70	2.62	2.54	2.45	2.35	2.26
24	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.26	3.17	3.03	2.89	2.74	2.66	2.58	2.49	2.40	2.31	2.21
25	7.77	5.57	4.68	4.18	3.86	3.63	3.46	3.32	3.22	3.13	2.99	2.85	2.70	2.62	2.54	2.45	2.36	2.27	2.57
26	7.72	5.53	4.64	4.54	3.82	3.59	3.42	3.29	3.18	3.09	2.96	2.82	2.66	2.58	2.50	2.42	2.33	2.23	2.13
27	7.68	5.49	4.60	4.11	3.78	3.56	3.39	3.26	3.15	3.06	2.93	2.78	2.63	2.55	2.47	2.38	2.29	2.20	2.10
28	7.64	5.45	4.57	4.07	3.75	3.53	3.36	3.23	3.12	3.03	2.90	2.75	2.60	2.52	2.44	2.35	2.26	2.57	2.06
29	7.60	5.42	4.54	4.04	3.73	3.50	3.33	3.20	3.09	3.00	2.87	2.73	2.57	2.49	2.41	2.33	2.23	2.14	2.03
30	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07	2.98	2.84	2.70	2.55	2.47	2.39	2.30	2.21	2.11	2.01
40	7.31	5.18	4.31	3.33	3.51	3.29	3.12	2.99	2.89	2.80	2.66	2.52	2.37	2.29	2.20	2.11	2.02	1.92	1.80
60	7.08	4.98	4.23	3.65	3.34	3.52	2.95	2.82	2.72	2.63	2.50	2.35	2.20	2.12	2.03	1.94	2.84	1.73	2.60
120	6.85	4.79	3.95	3.48	3.17	2.96	2.79	2.66	2.56	2.47	2.34	2.19	2.03	1.95	1.86	1.76	1.66	1.53	1.38
∞	6.63	4.61	3.78	3.32	3.02	2.80	2.64	2.51	2.41	2.32	2.18	2.04	1.88	1.79	1.70	1.59	1.47	1.32	1.00

Fuente: Spiegel Murray R., 1991, Estadística (2º ed.), Schaum, adaptada a partir de E. S. Pearson y H. O. Hartley. Biometrika Tables for Statisticans, Vol. 2 (1972) Tabla 5, página 180, reproducción autorizada.

TABLA V (a)

TEST DE TUKEY $\alpha = 0.05$

Valores de la amplitud total estudentizada (q) para su uso en el Test de Tukey, al nivel del 5 % de probabilidades, con n = número de tratamientos y n' = número de grados de libertad del error.

n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
n'																			
1	17.97	26.98	32.82	37.08	40.41	43.12	45.40	47.36	49.07	50.59	51.96	53.20	54.33	55.36	56.32	57.22	58.04	58.83	59.56
2	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
3	4.50	5.91	6.83	7.50	8.04	8.48	8.85	9.18	9.46	9.72	9.95	10.15	10.35	10.53	10.69	10.84	10.98	11.11	11.24
4	3.93	5.04	5.76	6.29	6.71	7.05	7.35	7.60	7.83	8.03	8.21	8.37	8.53	8.66	8.79	8.91	9.03	9.13	9.23
5	3.64	4.60	5.22	5.67	6.03	6.33	6.58	6.80	7.00	7.17	7.32	7.47	7.60	7.72	7.83	7.93	8.03	8.12	8.21
6	3.46	4.34	4.90	5.31	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
7	3.34	4.17	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
8	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
9	3.20	3.95	4.42	4.76	5.02	5.24	5.43	5.60	5.74	5.87	5.98	6.09	6.19	6.28	6.36	6.44	6.51	6.58	6.64
10	3.15	3.88	4.33	4.65	4.91	5.12	5.31	5.46	5.60	5.72	5.83	5.94	6.03	6.11	6.19	6.27	6.34	6.41	6.47
11	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
12	3.08	3.77	4.20	4.51	4.75	4.95	5.12	5.27	5.40	5.51	5.62	5.71	5.80	5.88	5.95	6.02	6.09	6.15	6.21
13	3.06	3.74	4.15	4.45	4.69	4.89	5.05	5.19	5.32	5.43	5.53	5.63	5.71	5.79	5.86	5.93	6.00	6.06	6.11
14	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	5.92	5.97	6.03
15	3.01	3.67	4.08	4.37	4.60	4.78	4.94	5.08	5.20	5.31	5.40	5.49	5.57	5.65	5.72	5.79	5.85	5.90	5.96
16	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
17	2.98	3.63	4.02	4.30	4.52	4.71	4.86	4.99	5.11	5.21	5.31	5.39	5.47	5.54	5.61	5.68	5.73	5.79	5.84
18	2.97	3.61	4.00	4.28	4.50	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
19	2.96	3.59	3.98	4.25	4.47	4.65	4.79	4.92	5.04	5.14	5.23	5.32	5.39	5.46	5.53	5.59	5.65	5.70	5.75
20	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
24	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
30	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	5.48
40	2.86	3.44	3.79	4.04	4.23	4.39	4.52	4.64	4.74	4.82	4.90	4.98	5.04	5.11	5.16	5.22	5.27	5.31	5.36
60	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
120	2.80	3.36	3.69	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
∞	2.77	3.31	3.63	3.86	4.03	4.17	4.29	4.39	4.47	4.55	4.62	4.69	4.74	4.80	4.85	4.89	4.93	4.97	5.01

Esta tabla fue adaptada de Pimentel Gomes F., 1978, Curso de Estadística experimental, Ed. Hemisferio Sur, a partir de los resultados de H. Leon Harter, Tables of Range and Studentized Range, Ann. Math. Stat. 31:1122-1147.

TABLA V (b)

TEST DE TUKEY $\alpha = 0.05$

Valores de la amplitud total estudentizada (q) para su uso en el Test de Tukey, al nivel del 5 % de probabilidades, con n = número de tratamientos y n' = número de grados de libertad del error.

n	22	24	26	28	30	32	34	36	38	40	50	60	70	80	90	100
n'																
1	60.91	62.12	63.22	64.23	65.15	66.01	66.81	67.56	68.26	68.92	71.73	73.97	75.82	77.40	78.77	79.98
2	17.13	17.45	17.75	18.02	18.27	18.50	18.72	18.92	19.11	19.28	20.05	20.66	21.16	21.59	21.96	22.29
3	11.47	11.68	11.87	12.05	12.21	12.36	12.50	12.63	12.75	12.87	13.36	13.76	14.08	14.36	14.61	14.82
4	9.42	9.58	9.74	9.88	10.00	10.12	10.23	10.34	10.44	10.53	10.93	11.24	11.51	11.73	11.92	12.09
5	8.37	8.51	8.64	8.76	8.88	8.98	9.08	9.17	9.25	9.33	9.67	9.95	10.18	10.38	10.54	10.69
6	7.73	7.86	7.98	8.09	8.19	8.28	8.37	8.45	8.53	8.60	8.91	9.16	9.37	9.55	9.70	9.84
7	7.30	7.42	7.53	7.63	7.73	7.81	7.90	7.97	8.04	8.11	8.40	8.63	8.82	8.99	9.13	9.26
8	7.00	7.11	7.21	7.31	7.40	7.48	7.55	7.63	7.69	7.76	8.03	8.25	8.43	8.59	8.72	8.84
9	6.76	6.87	6.97	7.06	7.15	7.22	7.30	7.36	7.43	7.49	7.75	7.96	8.13	8.28	8.41	8.53
10	6.58	6.69	6.78	6.87	6.95	7.02	7.09	7.16	7.22	7.28	7.53	7.73	7.90	8.04	8.17	8.28
11	6.44	6.54	6.63	6.71	6.79	6.86	6.93	6.99	7.05	7.11	7.35	7.55	7.71	7.85	7.97	8.08
12	6.32	6.41	6.50	6.59	6.66	6.73	6.80	6.86	6.92	6.97	7.21	7.39	7.55	7.69	7.80	7.91
13	6.22	6.31	6.40	6.48	6.55	6.62	6.68	6.74	6.80	6.85	7.08	7.27	7.42	7.55	7.67	7.77
14	6.13	6.22	6.31	6.39	6.46	6.53	6.59	6.65	6.70	6.75	6.98	7.16	7.31	7.44	7.55	7.65
15	6.06	6.15	6.23	6.31	6.38	6.45	6.51	6.56	6.62	6.67	6.89	7.07	7.21	7.34	7.45	7.55
16	6.00	6.08	6.17	6.24	6.31	6.37	6.43	6.49	6.54	6.59	6.81	6.98	7.13	7.25	7.36	7.46
17	5.94	6.03	6.11	6.18	6.25	6.31	6.37	6.43	6.48	6.53	6.74	6.91	7.05	7.18	7.28	7.38
18	5.89	5.98	6.06	6.13	6.20	6.26	6.32	6.37	6.42	6.47	6.68	6.85	6.99	7.11	7.21	7.31
19	5.85	5.93	6.01	6.08	6.15	6.21	6.27	6.32	6.37	6.42	6.63	6.79	6.93	7.05	7.15	7.24
20	5.81	5.89	5.97	6.04	6.10	6.17	6.22	6.28	6.33	6.37	6.58	6.74	6.88	6.99	7.10	7.19
24	5.68	5.76	5.84	5.91	5.97	6.03	6.09	6.13	6.18	6.23	6.42	6.58	6.71	6.82	6.92	7.01
30	5.56	5.64	5.71	5.77	5.83	5.89	5.94	5.99	6.04	6.08	6.27	6.42	6.54	6.65	6.74	6.83
40	5.44	5.51	5.58	5.64	5.70	5.75	5.80	5.85	5.89	5.93	6.11	6.26	6.38	6.48	6.57	6.65
60	5.32	5.39	5.45	5.51	5.57	5.62	5.66	5.71	5.75	5.79	5.96	6.09	6.21	6.30	6.39	6.46
120	5.20	5.27	5.33	5.38	5.43	5.48	5.53	5.57	5.61	5.64	5.80	5.93	6.04	6.13	6.21	6.28
∞	5.08	5.14	5.20	5.25	5.30	5.35	5.39	5.43	5.46	5.50	5.65	5.76	5.86	5.95	6.02	6.09

Esta tabla fue adaptada de Pimentel Gomes F., 1978, Curso de Estadística experimental, Ed. Hemisferio Sur, a partir de los resultados de H. Leon Harter, Tables of Range and Studentized Range, Ann. Math. Stat. 31:1122-1147.

TABLA V (c)

TEST DE TUKEY $\alpha = 0.01$

Valores de la amplitud total estudentizada (q) para su uso en el Test de Tukey, al nivel del 1 % de probabilidades, con n = número de tratamientos y n' = número de grados de libertad del error.

n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	l8	19
n′																		
1	90.03	135.0	164.3	185.6	202.2	215.8	227.2	237.0	245.6	253.2	260.0	266.2	271.8	277.0	281.8	286.3	290.4	294.3
2	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	36.52	37.03	37.50
3	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
4	6.51	8.12	9.17	9.96	10.58	11.10	11.55	11.93	12.27	12.57	12.84	13.09	13.32	13.53	13.73	13.91	14.08	14.24
5	5.70	6.98	7.80	8.42	8.91	9.32	9.70	9.97	10.24	10.48	10.07	10.89	11.08	11.24	11.40	11.55	11.68	11.81
6	5.24	6.33	7.03	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
7	4.95	5.92	6.54	7.00	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
8	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	4.60	5.43	5.96	6.35	6.66	6.92	7.13	7.32	7.50	7.65	7.78	7.91	8.02	8.13	8.23	8.32	8.41	8.50
10	4.48	5.27	5.77	6.14	6.43	6.67	6.88	7.06	7.21	7.36	7.48	7.60	7.71	7.81	7.91	7.99	8.08	8.15
11	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
12	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
13	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	7.34	7.42	7.48
14	4.21	4.90	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
15	4.17	4.84	5.25	5.56	5.80	5.99	6.16	6.31	6.44	6.56	6.66	6.76	6.84	6.93	7.00	7.07	7.14	7.20
16	4.13	4.79	5.19	5.49	5.72	5.92	6.08	6.22	6.35	6.46	6.56	6.66	6.74	6.82	6.90	6.97	7.03	7.09
17	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
18	4.07	4.70	5.09	5.38	5.60	5.97	5.94	6.08	6.20	6.31	6.41	6.50	6.58	6.66	6.72	6.79	6.85	6.91
19	4.05	4.67	5.05	5.33	5.55	5.74	5.89	6.02	6.14	6.25	6.34	6.43	6.51	6.58	6.65	6.72	6.78	6.84
20	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
24	3.96	4.55	4.91	5.17	5.37	5.54	5.68	5.81	5.92	6.02	6.11	6.19	6.26	6.33	6.39	6.45	6.51	6.56
30	3.89	4.46	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
40	3.82	4.37	4.70	4.93	5.11	5.26	5.39	5.50	5.60	5.69	5.76	5.84	5.90	5.96	6.02	6.07	6.12	6.16
60	3.76	4.28	4.60	4.82	4.99	5.13	5.25	5.36	5.45	5.53	5.60	5.67	5.73	5.78	5.84	5.89	5.93	5.97
120	3.70	4.20	4.50	4.71	4.87	5.00	5.12	5.21	5.30	5.38	5.44	5.50	5.56	5.61	5.66	5.71	5.75	5.79
∞	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

Esta tabla fue adaptada de Pimentel Gomes F., 1978, Curso de Estadística experimental, Ed. Hemisferio Sur, a partir de los resultados de H. Leon Harter, Tables of Range and Studentized Range, Ann. Math. Stat. 31:1122-1147.

TABLA V (d)

TEST DE TUKEY $\alpha = 0.01$

Valores de la amplitud total estudentizada (q) para su uso en el Test de Tukey, al nivel del 1 % de probabilidades, con n = número de tratamientos y n' = número de grados de libertad del error.

n	20	22	24	26	28	30	32	34	36	38	40	50	60	70	80	90	100
n′																	
1	298.0	304.7	310.8	316.3	321.3	326.0	330.3	334.3	338.0	341.5	344.8	358.9	370.1	379.4	387.3	394.1	400.1
2	37.95	38.76	39.49	40.15	40.76	41.32	41.84	42.33	42.78	43.21	43.61	45.33	46.70	47.83	48.80	49.64	50.38
3	19.77	20.17	20.53	20.86	21.16	21.44	21.70	21.95	22.17	22.39	22.59	23.45	24.13	24.71	25.19	25.62	25.99
4	14.40	14.68	14.93	15.16	15.37	15.57	15.75	15.92	16.08	16.23	16.37	16.98	17.46	17.86	18.20	18.50	18.77
5	11.93	12.16	12.36	12.54	12.71	12.87	13.02	13.15	13.28	13.40	13.52	14.00	14.39	14.72	14.99	15.23	15.45
6	10.54	10.73	10.91	11.06	11.21	11.34	11.47	11.58	11.69	11.80	11.90	12.31	12.65	12.92	13.16	13.37	13.55
7	9.65	9.82	9.97	10.11	10.24	10.36	10.47	10.58	10.67	10.77	10.85	11.23	11.52	11.77	11.99	12.17	12.34
8	9.03	9.18	9.32	9.45	9.57	9.68	9.78	9.87	9.96	10.05	10.13	10.47	10.75	10.97	11.17	11.34	11.49
9	8.58	8.72	8.35	8.97	9.08	9.18	9.27	9.36	9.44	9.52	9.59	9.91	10.17	10.38	10.57	10.73	10.87
10	8.23	8.36	8.48	8.60	8.70	8.79	8.88	8.97	9.04	9.12	9.19	9.49	9.73	9.93	10.10	10.25	10.39
11	7.95	8.08	8.20	8.30	8.40	8.49	8.58	8.65	3.73	8.80	8.86	9.15	9.38	9.57	9.73	9.88	10.00
12	7.73	7.85	7.96	8.07	8.16	8.25	8.33	8.40	8.47	8.54	8.60	8.88	9.09	9.28	9.43	9.57	9.69
13	7.55	7.66	7.77	7.87	7.96	8.04	8.12	8.19	8.26	8.33	8.39	8.65	8.86	9.04	9.19	9.32	9.44
14	7.40	7.51	7.61	7.70	7.79	7.87	7.95	8.02	8.08	8.15	8.20	8.46	8.66	8.83	8.98	9.11	9.22
15	7.26	7.37	7.42	7.57	7.65	7.73	7.80	7.87	7.93	7.99	8.05	8.30	8.49	8.66	8.80	8.92	9.04
16	7.15	7.26	7.36	7.44	7.53	7.60	7.67	7.74	7.80	7.86	7.92	8.15	8.35	8.51	8.65	8.77	8.87
17	7.05	7.16	7.25	7.34	7.42	7.49	7.56	7.63	7.69	7.74	7.80	8.03	8.22	8.38	8.51	8.63	8.74
18	6.97	7.07	7.16	7.25	7.32	7.40	7.46	7.53	7.59	7.64	7.70	7.92	8.11	8.26	8.39	8.51	8.61
19	6.89	6.99	7.08	7.17	7.24	7.31	7.38	7.44	7.50	7.55	7.60	7.83	8.01	8.16	8.29	8.40	8.50
20	6.82	6.92	7.01	7.09	7.17	7.24	7.30	7.36	7.42	7.47	7.52	7.74	7.92	8.07	8.19	8.30	8.40
24	6.61	6.70	6.79	6.86	6.94	7.00	7.06	7.12	7.17	7.22	7.27	7.48	7.64	7.78	7.90	8.00	8.10
30	6.41	6.49	6.57	6.64	6.71	6.77	6.83	6.88	6.93	6.98	7.02	7.22	7.37	7.50	7.61	7.71	7.80
40	6.21	6.29	6.36	6.43	6.49	6.55	6.60	6.65	6.70	6.74	6.78	6.96	7.10	7.22	7.33	7.42	7.50
60	6.02	6.09	6.16	6.22	6.28	6.33	6.38	6.42	6.47	6.51	6.55	6.71	6.84	6.95	7.05	7.13	7.21
120	5.83	5.90	5.96	6.02	6.07	6.12	6.16	6.20	6.24	6.28	6.32	6.47	6.59	6.69	6.78	6.85	6.92
∞	5.64	5.71	5.77	5.82	5.87	5.91	5.95	5.99	6.03	6.06	6.09	6.23	6.34	6.43	6.51	6.58	6.64

Esta tabla fue adaptada de Pimentel Gomes F., 1978, Curso de Estadística experimental, Ed. Hemisferio Sur, a partir de los resultados de H. Leon Harter, Tables of Range and Studentized Range, Ann. Math. Stat. 31:1122-1147.