Tables for Duncan's multiple range tests

Critical values $q'(p, df; 0.05)$ for Duncan's multiple range tests

$df \backslash p$	2	3	4	5	6	7	8	9	10	11	12	15	20
1	17.969	17.969	17.969	17.969	17.969	17.969	17.969	17.969	17.969	17.969	17.969	17.969	17.969
2	6.085	6.085	6.085	6.085	6.085	6.085	6.085	6.085	6.085	6.085	6.085	6.085	6.085
3	4.501	4.516	4.516	4.516	4.516	4.516	4.516	4.516	4.516	4.516	4.516	4.516	4.516
4	3.926	4.013	4.033	4.033	4.033	4.033	4.033	4.033	4.033	4.033	4.033	4.033	4.033
5	3.635	3.749	3.796	3.814	3.814	3.814	3.814	3.814	3.814	3.814	3.814	3.814	3.814
6	3.460	3.586	3.649	3.680	3.694	3.697	3.697	3.697	3.697	3.697	3.697	3.697	3.697
7	3.344	3.477	3.548	3.588	3.611	3.622	3.625	3.625	3.625	3.625	3.625	3.625	3.625
8	3.261	3.398	3.475	3.521	3.549	3.566	3.575	3.579	3.579	3.579	3.579	3.579	3.579
9	3.199	3.339	3.420	3.470	3.502	3.523	3.536	3.544	3.547	3.547	3.547	3.547	3.547
10	3.151	3.293	3.376	3.430	3.465	3.489	3.505	3.516	3.522	3.525	3.525	3.525	3.525
11	3.113	3.256	3.341	3.397	3.435	3.462	3.480	3.493	3.501	3.506	3.509	3.510	3.510
12	3.081	3.225	3.312	3.370	3.410	3.439	3.459	3.474	3.484	3.491	3.495	3.498	3.498
13	3.055	3.200	3.288	3.348	3.389	3.419	3.441	3.458	3.470	3.478	3.484	3.490	3.490
14	3.033	3.178	3.268	3.328	3.371	3.403	3.426	3.444	3.457	3.467	3.474	3.484	3.484
15	3.014	3.160	3.250	3.312	3.356	3.389	3.413	3.432	3.446	3.457	3.465	3.478	3.480
16	2.998	3.144	3.235	3.297	3.343	3.376	3.402	3.422	3.437	3.449	3.458	3.473	3.477
17	2.984	3.130	3.222	3.285	3.331	3.365	3.392	3.412	3.429	3.441	3.451	3.469	3.475
18	2.971	3.117	3.210	3.274	3.320	3.356	3.383	3.404	3.421	3.435	3.445	3.465	3.474
19	2.960	3.106	3.199	3.264	3.311	3.347	3.375	3.397	3.415	3.429	3.440	3.462	3.474
20	2.950	3.097	3.190	3.255	3.303	3.339	3.368	3.390	3.409	3.423	3.435	3.459	3.473

Tables for Duncan's multiple range tests

Critical values $q'(p, df; 0.05)$ for Duncan's multiple range tests *(cont.)*

$df \backslash p$	2	3	4	5	6	7	8	9	10	11	12	15	20
21	2.941	3.088	3.181	3.247	3.295	3.332	3.361	3.385	3.403	3.418	3.431	3.456	3.473
22	2.933	3.080	3.173	3.239	3.288	3.326	3.355	3.379	3.398	3.414	3.427	3.453	3.472
23	2.926	3.072	3.166	3.233	3.282	3.320	3.350	3.374	3.394	3.410	3.423	3.451	3.472
24	2.919	3.066	3.160	3.226	3.276	3.315	3.345	3.370	3.390	3.406	3.420	3.449	3.472
25	2.913	3.059	3.154	3.221	3.271	3.310	3.341	3.366	3.386	3.403	3.417	3.447	3.471
26	2.907	3.054	3.149	3.216	3.266	3.305	3.336	3.362	3.382	3.400	3.414	3.445	3.471
27	2.902	3.049	3.144	3.211	3.262	3.301	3.332	3.358	3.379	3.397	3.412	3.443	3.471
28	2.897	3.044	3.139	3.206	3.257	3.297	3.329	3.355	3.376	3.394	3.409	3.442	3.470
29	2.892	3.039	3.135	3.202	3.253	3.293	3.326	3.352	3.373	3.392	3.407	3.440	3.470
30	2.888	3.035	3.131	3.199	3.250	3.290	3.322	3.349	3.371	3.389	3.405	3.439	3.470
31	2.884	3.031	3.127	3.195	3.246	3.287	3.319	3.346	3.368	3.387	3.403	3.438	3.470
32	2.881	3.028	3.123	3.192	3.243	3.284	3.317	3.344	3.366	3.385	3.401	3.436	3.470
33	2.877	3.024	3.120	3.188	3.240	3.281	3.314	3.341	3.364	3.383	3.399	3.435	3.470
34	2.874	3.021	3.117	3.185	3.238	3.279	3.312	3.339	3.362	3.381	3.398	3.434	3.469
35	2.871	3.018	3.114	3.183	3.235	3.276	3.309	3.337	3.360	3.379	3.396	3.433	3.469
36	2.868	3.015	3.111	3.180	3.232	3.274	3.307	3.335	3.358	3.378	3.395	3.432	3.469
37	2.865	3.013	3.109	3.178	3.230	3.272	3.305	3.333	3.356	3.376	3.393	3.431	3.469
38	2.863	3.010	3.106	3.175	3.228	3.270	3.303	3.331	3.355	3.375	3.392	3.431	3.469
39	2.861	3.008	3.104	3.173	3.226	3.268	3.301	3.330	3.353	3.373	3.391	3.430	3.469
40	2.858	3.005	3.102	3.171	3.224	3.266	3.300	3.328	3.352	3.372	3.389	3.429	3.469
48	2.843	2.991	3.087	3.157	3.211	3.253	3.288	3.318	3.342	3.363	3.382	3.424	3.468
60	2.829	2.976	3.073	3.143	3.198	3.241	3.277	3.307	3.333	3.355	3.374	3.419	3.468
80	2.814	2.961	3.059	3.130	3.185	3.229	3.266	3.297	3.323	3.346	3.366	3.414	3.467
120	2.800	2.947	3.045	3.116	3.172	3.217	3.254	3.286	3.313	3.337	3.358	3.409	3.466
240	2.786	2.933	3.031	3.103	3.159	3.205	3.243	3.276	3.304	3.329	3.350	3.404	3.466
∞	2.772	2.918	3.017	3.089	3.146	3.193	3.232	3.265	3.294	3.320	3.343	3.399	3.466

Tables for Duncan's multiple range tests

Critical values $q'(p, df; 0.01)$ for Duncan's multiple range tests

$df \backslash p$	2	3	4	5	6	7	8	9	10	11	12	15	20
1	90.024	90.024	90.024	90.024	90.024	90.024	90.024	90.024	90.024	90.024	90.024	90.024	90.024
2	14.036	14.036	14.036	14.036	14.036	14.036	14.036	14.036	14.036	14.036	14.036	14.036	14.036
3	8.260	8.321	8.321	8.321	8.321	8.321	8.321	8.321	8.321	8.321	8.321	8.321	8.321
4	6.511	6.677	6.740	6.755	6.755	6.755	6.755	6.755	6.755	6.755	6.755	6.755	6.755
5	5.702	5.893	5.989	6.040	6.065	6.074	6.074	6.074	6.074	6.074	6.074	6.074	6.074
6	5.243	5.439	5.549	5.614	5.655	5.680	5.694	5.701	5.703	5.703	5.703	5.703	5.703
7	4.949	5.145	5.260	5.333	5.383	5.416	5.439	5.454	5.464	5.470	5.472	5.472	5.472
8	4.745	4.939	5.056	5.134	5.189	5.227	5.256	5.276	5.291	5.302	5.309	5.317	5.317
9	4.596	4.787	4.906	4.986	5.043	5.086	5.117	5.142	5.160	5.174	5.185	5.202	5.206
10	4.482	4.671	4.789	4.871	4.931	4.975	5.010	5.036	5.058	5.074	5.087	5.112	5.124
11	4.392	4.579	4.697	4.780	4.841	4.887	4.923	4.952	4.975	4.994	5.009	5.039	5.059
12	4.320	4.504	4.622	4.705	4.767	4.815	4.852	4.882	4.907	4.927	4.944	4.978	5.005
13	4.260	4.442	4.560	4.643	4.706	4.754	4.793	4.824	4.850	4.871	4.889	4.927	4.960
14	4.210	4.391	4.508	4.591	4.654	4.703	4.743	4.775	4.802	4.824	4.843	4.884	4.921
15	4.167	4.346	4.463	4.547	4.610	4.660	4.700	4.733	4.760	4.783	4.803	4.846	4.887
16	4.131	4.308	4.425	4.508	4.572	4.622	4.662	4.696	4.724	4.748	4.768	4.813	4.858
17	4.099	4.275	4.391	4.474	4.538	4.589	4.630	4.664	4.692	4.717	4.737	4.785	4.832
18	4.071	4.246	4.361	4.445	4.509	4.559	4.601	4.635	4.664	4.689	4.710	4.759	4.808
19	4.046	4.220	4.335	4.418	4.483	4.533	4.575	4.610	4.639	4.664	4.686	4.736	4.788
20	4.024	4.197	4.312	4.395	4.459	4.510	4.552	4.587	4.617	4.642	4.664	4.716	4.769

Tables for Duncan's multiple range tests

Critical values $q'(p, df; 0.05)$ for Duncan's multiple range tests *(cont.)*

$df \backslash p$	2	3	4	5	6	7	8	9	10	11	12	15	20
21	4.004	4.177	4.291	4.374	4.438	4.489	4.531	4.567	4.597	4.622	4.645	4.697	4.752
22	3.986	4.158	4.272	4.355	4.419	4.470	4.513	4.548	4.578	4.604	4.627	4.680	4.737
23	3.970	4.141	4.254	4.337	4.402	4.453	4.496	4.531	4.562	4.588	4.611	4.665	4.723
24	3.955	4.126	4.239	4.322	4.386	4.437	4.480	4.516	4.546	4.573	4.596	4.651	4.710
25	3.942	4.112	4.224	4.307	4.371	4.423	4.466	4.502	4.532	4.559	4.582	4.638	4.698
26	3.930	4.099	4.211	4.294	4.358	4.410	4.452	4.489	4.520	4.546	4.570	4.626	4.687
27	3.918	4.087	4.199	4.282	4.346	4.397	4.440	4.477	4.508	4.535	4.558	4.615	4.677
28	3.908	4.076	4.188	4.270	4.334	4.386	4.429	4.465	4.497	4.524	4.548	4.604	4.667
29	3.898	4.065	4.177	4.260	4.324	4.376	4.419	4.455	4.486	4.514	4.538	4.595	4.659
30	3.889	4.056	4.168	4.250	4.314	4.366	4.409	4.445	4.477	4.504	4.528	4.586	4.650
31	3.881	4.047	4.159	4.241	4.305	4.357	4.400	4.436	4.468	4.495	4.519	4.577	4.643
32	3.873	4.039	4.150	4.232	4.296	4.348	4.391	4.428	4.459	4.487	4.511	4.570	4.635
33	3.865	4.031	4.142	4.224	4.288	4.340	4.383	4.420	4.452	4.479	4.504	4.562	4.629
34	3.859	4.024	4.135	4.217	4.281	4.333	4.376	4.413	4.444	4.472	4.496	4.555	4.622
35	3.852	4.017	4.128	4.210	4.273	4.325	4.369	4.406	4.437	4.465	4.490	4.549	4.616
36	3.846	4.011	4.121	4.203	4.267	4.319	4.362	4.399	4.431	4.459	4.483	4.543	4.611
37	3.840	4.005	4.115	4.197	4.260	4.312	4.356	4.393	4.425	4.452	4.477	4.537	4.605
38	3.835	3.999	4.109	4.191	4.254	4.306	4.350	4.387	4.419	4.447	4.471	4.531	4.600
39	3.830	3.993	4.103	4.185	4.249	4.301	4.344	4.381	4.413	4.441	4.466	4.526	4.595
40	3.825	3.988	4.098	4.180	4.243	4.295	4.339	4.376	4.408	4.436	4.461	4.521	4.591
48	3.793	3.955	4.064	4.145	4.209	4.261	4.304	4.341	4.374	4.402	4.427	4.489	4.561
60	3.762	3.922	4.030	4.111	4.174	4.226	4.270	4.307	4.340	4.368	4.394	4.456	4.530
80	3.732	3.890	3.997	4.077	4.140	4.192	4.236	4.273	4.306	4.335	4.360	4.424	4.500
120	3.702	3.858	3.964	4.044	4.107	4.158	4.202	4.239	4.272	4.301	4.327	4.392	4.469
240	3.672	3.827	3.932	4.011	4.073	4.125	4.168	4.206	4.239	4.268	4.294	4.359	4.439
∞	3.643	3.796	3.900	3.978	4.040	4.091	4.135	4.172	4.205	4.235	4.261	4.327	4.408