

**Student 化全距分配的臨界值**  
**Critical values of the studentized range distribution**

$MS_w$ $df$	$\alpha$	$k$ (平均數的數目) 或 $r$ (涵蓋的平均數數目)																		
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3	.05	4.501	5.910	6.825	7.502	8.037	8.478	8.852	9.177	9.462	9.717	9.946	10.155	10.346	10.522	10.686	10.838	10.980	11.114	11.240
	.01	8.260	10.619	12.170	13.324	14.241	14.998	15.641	16.199	16.691	17.130	17.526	17.887	18.217	18.522	18.805	19.068	19.315	19.546	19.765
4	.05	3.926	5.040	5.757	6.287	6.706	7.053	7.347	7.602	7.826	8.027	8.208	8.373	8.524	8.664	8.793	8.914	9.027	9.133	9.233
	.01	6.511	8.120	9.173	9.958	10.583	11.101	11.542	11.925	12.264	12.567	12.840	13.090	13.318	13.530	13.726	13.909	14.081	14.242	14.394
5	.05	3.635	4.602	5.218	5.673	6.033	6.330	6.582	6.801	6.995	7.167	7.323	7.466	7.596	7.716	7.828	7.932	8.030	8.122	8.208
	.01	5.702	6.976	7.804	8.421	8.913	9.321	9.669	9.971	10.239	10.479	10.696	10.894	11.076	11.244	11.400	11.545	11.682	11.811	11.932
6	.05	3.460	4.339	4.896	5.305	5.628	5.895	6.122	6.319	6.493	6.649	6.789	6.917	7.034	7.143	7.244	7.338	7.426	7.508	7.586
	.01	5.243	6.331	7.033	7.556	7.972	8.318	8.612	8.869	9.097	9.300	9.485	9.653	9.808	9.951	10.084	10.208	10.325	10.434	10.538
7	.05	3.344	4.165	4.681	5.060	5.359	5.606	5.815	5.997	6.158	6.302	6.431	6.550	6.658	6.759	6.852	6.939	7.020	7.097	7.169
	.01	4.949	5.919	6.542	7.005	7.373	7.678	7.939	8.166	8.367	8.548	8.711	8.860	8.997	9.124	9.242	9.353	9.456	9.553	9.645
8	.05	3.261	4.041	4.529	4.886	5.167	5.399	5.596	5.767	5.918	6.053	6.175	6.287	6.389	6.483	6.571	6.653	6.729	6.801	6.869
	.01	4.745	5.635	6.204	6.625	6.959	7.237	7.474	7.680	7.863	8.027	8.176	8.311	8.436	8.552	8.659	8.760	8.854	8.943	9.027
9	.05	3.199	3.948	4.415	4.755	5.024	5.244	5.432	5.595	5.738	5.867	5.983	6.089	6.186	6.276	6.359	6.437	6.510	6.579	6.643
	.01	4.596	5.428	5.957	6.347	6.657	6.915	7.134	7.325	7.494	7.646	7.784	7.910	8.025	8.132	8.232	8.325	8.412	8.495	8.573
10	.05	3.151	3.877	4.327	4.654	4.912	5.124	5.304	5.460	5.598	5.722	5.833	5.935	6.028	6.114	6.194	6.269	6.339	6.405	6.467
	.01	4.482	5.270	5.769	6.136	6.428	6.669	6.875	7.054	7.213	7.356	7.485	7.603	7.712	7.812	7.906	7.993	8.075	8.153	8.226
11	.05	3.113	3.820	4.256	4.574	4.823	5.028	5.202	5.353	5.486	5.605	5.713	5.811	5.901	5.984	6.062	6.134	6.202	6.265	6.325
	.01	4.392	5.146	5.621	5.970	6.247	6.476	6.671	6.841	6.992	7.127	7.250	7.362	7.464	7.560	7.648	7.731	7.809	7.883	7.952
12	.05	3.081	3.773	4.199	4.508	4.750	4.950	5.119	5.265	5.395	5.510	5.615	5.710	5.797	5.878	5.953	6.023	6.089	6.151	6.209
	.01	4.320	5.046	5.502	5.836	6.101	6.320	6.507	6.670	6.814	6.943	7.060	7.166	7.265	7.356	7.441	7.520	7.594	7.664	7.730
13	.05	3.055	3.734	4.151	4.453	4.690	4.884	5.049	5.192	5.318	5.431	5.533	5.625	5.711	5.789	5.862	5.931	5.995	6.055	6.112
	.01	4.260	4.964	5.404	5.726	5.981	6.192	6.372	6.528	6.666	6.791	6.903	7.006	7.100	7.188	7.269	7.345	7.417	7.484	7.548
14	.05	3.033	3.701	4.111	4.407	4.639	4.829	4.990	5.130	5.253	5.364	5.463	5.554	5.637	5.714	5.785	5.852	5.915	5.973	6.029
	.01	4.210	4.895	5.322	5.634	5.881	6.085	6.258	6.409	6.543	6.663	6.772	6.871	6.962	7.047	7.125	7.199	7.268	7.333	7.394
15	.05	3.014	3.673	4.076	4.367	4.595	4.782	4.940	5.077	5.198	5.306	5.403	5.492	5.574	5.649	5.719	5.785	5.846	5.904	5.958
	.01	4.167	4.836	5.252	5.556	5.796	5.994	6.162	6.309	6.438	6.555	6.660	6.756	6.845	6.927	7.003	7.074	7.141	7.204	7.264

$MS_w$ $df$	$\alpha$	$k$ (平均數的數目) 或 $r$ (涵蓋的平均數數目)																		
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
16	.05	2.998	3.649	4.046	4.333	4.557	4.741	4.896	5.031	5.150	5.256	5.352	5.439	5.519	5.593	5.662	5.726	5.786	5.843	5.896
	.01	4.131	4.786	5.192	5.489	5.722	5.915	6.079	6.222	6.348	6.461	6.564	6.658	6.744	6.823	6.897	6.967	7.032	7.093	7.151
17	.05	2.984	3.628	4.020	4.303	4.524	4.705	4.858	4.991	5.108	5.212	5.306	5.392	5.471	5.544	5.612	5.675	5.734	5.790	5.842
	.01	4.099	4.742	5.140	5.430	5.659	5.847	6.007	6.147	6.270	6.380	6.480	6.572	6.656	6.733	6.806	6.873	6.937	6.997	7.053
18	.05	2.971	3.609	3.997	4.276	4.494	4.673	4.824	4.955	5.071	5.173	5.266	5.351	5.429	5.501	5.567	5.629	5.688	5.743	5.794
	.01	4.071	4.703	5.094	5.379	5.603	5.787	5.944	6.081	6.201	6.309	6.407	6.496	6.579	6.655	6.725	6.791	6.854	6.912	6.967
19	.05	2.960	3.593	3.977	4.253	4.468	4.645	4.794	4.924	5.037	5.139	5.231	5.314	5.391	5.462	5.528	5.589	5.647	5.701	5.752
	.01	4.046	4.669	5.054	5.334	5.553	5.735	5.889	6.022	6.141	6.246	6.342	6.430	6.510	6.585	6.654	6.719	6.780	6.837	6.891
20	.05	2.950	3.578	3.958	4.232	4.445	4.620	4.768	4.895	5.008	5.108	5.199	5.282	5.357	5.427	5.492	5.553	5.610	5.663	5.714
	.01	4.024	4.639	5.018	5.293	5.510	5.688	5.839	5.970	6.086	6.190	6.285	6.370	6.449	6.523	6.591	6.654	6.714	6.770	6.823
21	.05	2.941	3.565	3.942	4.213	4.424	4.597	4.743	4.870	4.981	5.081	5.170	5.252	5.327	5.396	5.460	5.520	5.576	5.629	5.679
	.01	4.004	4.612	4.986	5.257	5.470	5.646	5.794	5.924	6.038	6.140	6.233	6.317	6.395	6.467	6.534	6.596	6.655	6.710	6.762
22	.05	2.933	3.553	3.927	4.196	4.405	4.577	4.722	4.847	4.957	5.056	5.144	5.225	5.299	5.368	5.431	5.491	5.546	5.599	5.648
	.01	3.986	4.588	4.957	5.225	5.435	5.608	5.754	5.882	5.994	6.095	6.186	6.269	6.346	6.417	6.482	6.544	6.602	6.656	6.707
23	.05	2.926	3.542	3.914	4.180	4.388	4.558	4.702	4.826	4.935	5.033	5.121	5.201	5.274	5.342	5.405	5.464	5.519	5.571	5.620
	.01	3.970	4.566	4.931	5.195	5.403	5.573	5.718	5.844	5.955	6.054	6.144	6.226	6.301	6.371	6.436	6.497	6.553	6.607	6.658
24	.05	2.919	3.532	3.901	4.166	4.373	4.541	4.684	4.807	4.915	5.012	5.099	5.179	5.251	5.319	5.381	5.439	5.494	5.545	5.594
	.01	3.955	4.546	4.907	5.168	5.373	5.542	5.685	5.809	5.919	6.017	6.105	6.186	6.261	6.330	6.394	6.453	6.510	6.562	6.612
25	.05	2.913	3.523	3.890	4.153	4.358	4.526	4.667	4.789	4.897	4.993	5.079	5.158	5.230	5.297	5.359	5.417	5.471	5.522	5.570
	.01	3.942	4.527	4.885	5.144	5.347	5.513	5.655	5.778	5.886	5.983	6.070	6.150	6.224	6.292	6.355	6.414	6.469	6.522	6.571
26	.05	2.907	3.514	3.880	4.141	4.345	4.511	4.652	4.773	4.880	4.975	5.061	5.139	5.211	5.277	5.339	5.396	5.450	5.500	5.548
	.01	3.930	4.510	4.865	5.121	5.322	5.487	5.627	5.749	5.856	5.951	6.038	6.117	6.190	6.257	6.319	6.378	6.432	6.484	6.533
27	.05	2.902	3.506	3.870	4.130	4.333	4.498	4.638	4.758	4.864	4.959	5.044	5.122	5.193	5.259	5.320	5.377	5.430	5.480	5.528
	.01	3.918	4.495	4.847	5.101	5.300	5.463	5.602	5.722	5.828	5.923	6.008	6.087	6.158	6.225	6.287	6.344	6.399	6.450	6.498
28	.05	2.897	3.499	3.861	4.120	4.322	4.486	4.625	4.745	4.850	4.944	5.029	5.106	5.177	5.242	5.302	5.359	5.412	5.462	5.509
	.01	3.908	4.481	4.830	5.082	5.279	5.441	5.578	5.697	5.802	5.896	5.981	6.058	6.129	6.195	6.256	6.314	6.367	6.418	6.465

$MS_w$ $df$	$k$ (平均數的數目) 或 $r$ (涵蓋的平均數數目)																			
	$\alpha$	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
29	.05	2.892	3.493	3.853	4.111	4.311	4.475	4.613	4.732	4.837	4.930	5.014	5.091	5.161	5.226	5.286	5.342	5.395	5.445	5.491
	.01	3.898	4.467	4.814	5.064	5.260	5.420	5.556	5.674	5.778	5.871	5.955	6.032	6.103	6.168	6.228	6.285	6.338	6.388	6.435
30	.05	2.888	3.486	3.845	4.102	4.301	4.464	4.601	4.720	4.824	4.917	5.001	5.077	5.147	5.211	5.271	5.327	5.379	5.429	5.475
	.01	3.889	4.455	4.799	5.048	5.242	5.401	5.536	5.653	5.756	5.848	5.932	6.008	6.078	6.142	6.202	6.258	6.311	6.361	6.407
31	.05	2.884	3.481	3.838	4.094	4.292	4.454	4.591	4.709	4.812	4.905	4.988	5.064	5.134	5.198	5.257	5.313	5.365	5.414	5.460
	.01	3.881	4.443	4.786	5.032	5.225	5.383	5.517	5.633	5.736	5.827	5.910	5.985	6.055	6.119	6.178	6.234	6.286	6.335	6.381
32	.05	2.881	3.475	3.832	4.086	4.284	4.445	4.581	4.698	4.802	4.894	4.976	5.052	5.121	5.185	5.244	5.299	5.351	5.400	5.445
	.01	3.873	4.433	4.773	5.018	5.210	5.367	5.500	5.615	5.716	5.807	5.889	5.964	6.033	6.096	6.155	6.211	6.262	6.311	6.357
33	.05	2.877	3.470	3.825	4.079	4.276	4.436	4.572	4.689	4.791	4.883	4.965	5.040	5.109	5.173	5.232	5.287	5.338	5.386	5.432
	.01	3.865	4.423	4.761	5.005	5.195	5.351	5.483	5.598	5.698	5.789	5.870	5.944	6.013	6.076	6.134	6.189	6.240	6.289	6.334
34	.05	2.874	3.465	3.820	4.072	4.268	4.428	4.563	4.680	4.782	4.873	4.955	5.030	5.098	5.161	5.220	5.275	5.326	5.374	5.420
	.01	3.859	4.413	4.750	4.992	5.181	5.336	5.468	5.581	5.682	5.771	5.852	5.926	5.994	6.056	6.114	6.169	6.220	6.268	6.313
35	.05	2.871	3.461	3.814	4.066	4.261	4.421	4.555	4.671	4.773	4.863	4.945	5.020	5.088	5.151	5.209	5.264	5.315	5.362	5.408
	.01	3.852	4.404	4.739	4.980	5.169	5.323	5.453	5.566	5.666	5.755	5.835	5.908	5.976	6.038	6.096	6.150	6.200	6.248	6.293
36	.05	2.868	3.457	3.809	4.060	4.255	4.414	4.547	4.663	4.764	4.855	4.936	5.010	5.078	5.141	5.199	5.253	5.304	5.352	5.397
	.01	3.846	4.396	4.729	4.969	5.156	5.310	5.439	5.552	5.651	5.739	5.819	5.892	5.959	6.021	6.078	6.132	6.182	6.229	6.274
37	.05	2.865	3.453	3.804	4.054	4.249	4.407	4.540	4.655	4.756	4.846	4.927	5.001	5.069	5.131	5.189	5.243	5.294	5.341	5.386
	.01	3.840	4.388	4.720	4.959	5.145	5.298	5.427	5.538	5.637	5.725	5.804	5.876	5.943	6.004	6.061	6.115	6.165	6.212	6.256
38	.05	2.863	3.449	3.799	4.049	4.243	4.400	4.533	4.648	4.749	4.838	4.919	4.993	5.060	5.122	5.180	5.234	5.284	5.331	5.376
	.01	3.835	4.381	4.711	4.949	5.134	5.286	5.414	5.526	5.623	5.711	5.790	5.862	5.928	5.989	6.046	6.099	6.148	6.195	6.239
39	.05	2.861	3.445	3.795	4.044	4.237	4.394	4.527	4.641	4.741	4.831	4.911	4.985	5.052	5.114	5.171	5.225	5.275	5.322	5.367
	.01	3.830	4.374	4.703	4.940	5.124	5.275	5.403	5.513	5.611	5.698	5.776	5.848	5.914	5.974	6.031	6.084	6.133	6.179	6.223
40	.05	2.858	3.442	3.791	4.039	4.232	4.388	4.521	4.634	4.735	4.824	4.904	4.977	5.044	5.106	5.163	5.216	5.266	5.313	5.358
	.01	3.825	4.367	4.695	4.931	5.114	5.265	5.392	5.502	5.599	5.685	5.764	5.835	5.900	5.961	6.017	6.069	6.118	6.165	6.208
60	.05	2.829	3.399	3.737	3.977	4.163	4.314	4.441	4.550	4.646	4.732	4.808	4.878	4.942	5.001	5.056	5.107	5.154	5.199	5.241
	.01	3.762	4.282	4.594	4.818	4.991	5.133	5.253	5.356	5.447	5.528	5.601	5.667	5.728	5.784	5.837	5.886	5.931	5.974	6.015

$MS_w$ $df$	$k$ (平均數的數目) 或 $r$ (涵蓋的平均數數目)																			
	$\alpha$	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>80</b>	.05	2.814	3.377	3.711	3.947	4.129	4.277	4.402	4.509	4.603	4.686	4.761	4.829	4.892	4.949	5.003	5.052	5.099	5.142	5.183
	.01	3.732	4.241	4.545	4.763	4.931	5.069	5.185	5.284	5.372	5.451	5.521	5.585	5.644	5.698	5.749	5.796	5.840	5.881	5.920
<b>120</b>	.05	2.800	3.356	3.685	3.917	4.096	4.241	4.363	4.468	4.560	4.641	4.714	4.781	4.842	4.898	4.950	4.998	5.043	5.086	5.126
	.01	3.702	4.200	4.497	4.709	4.872	5.005	5.118	5.214	5.299	5.375	5.443	5.505	5.561	5.614	5.662	5.708	5.750	5.790	5.827
<b>240</b>	.05	2.786	3.335	3.659	3.887	4.063	4.205	4.324	4.427	4.517	4.596	4.668	4.733	4.792	4.847	4.897	4.944	4.988	5.030	5.069
	.01	3.672	4.160	4.450	4.655	4.814	4.943	5.052	5.145	5.227	5.300	5.366	5.426	5.480	5.530	5.577	5.621	5.661	5.699	5.735
$\infty$	.05	2.772	3.314	3.633	3.858	4.030	4.170	4.286	4.387	4.474	4.552	4.622	4.685	4.743	4.796	4.845	4.891	4.934	4.974	5.012
	.01	3.643	4.120	4.403	4.603	4.757	4.882	4.987	5.078	5.157	5.227	5.290	5.348	5.400	5.448	5.493	5.535	5.574	5.611	5.645