

Table I. Expected values, variances and covariances of order statistics

Sample size $n=5$				
<u>$\alpha = 0.1$</u>				
.80992	.90130	.96026	1.01229	1.07297
.00950				
406	.00498			
237	294	.00362		
151	188	233	.00309	
92	115	144	193	.00323
<u>$\alpha = 0.3$</u>				
.55377	.74547	.89597	1.04666	1.24566
.03353				
1887	.02814			
1279	1923	.02681		
912	1378	1937	.02864	
625	949	1342	2007	.03845
<u>$\alpha = 0.5$</u>				
.39633	.63024	.84793	1.09468	1.46196
.04292				
2978	.05280			
2294	4093	.06435		
1817	3254	5149	.08502	
1393	2504	3981	6634	.14600
<u>$\alpha = 0.7$</u>				
.29452	.54348	.81367	1.15749	1.73404
.04376				
3589	.07442			
3096	6444	.11372		
2704	5643	9998	.18423	
2311	4833	8592	15926	.40387
<u>$\alpha = 0.9$</u>				
.22594	.47721	.79089	1.23680	2.07799
.04148				
3904	.09347			
3726	8932	.17626		
3567	8558	16911	.34755	
3387	8133	16091	33142	.97171
<u>$\alpha = 1.0$</u>				
.20000	.45000	.78333	1.28333	2.28333
.04000				
"	.10250			
"	"	.21361		
"	"	"	.46361	
"	"	"	"	1.46361

Table II. Expected values, variances and covariances of order statistics

Sample size n = 10

$\alpha = 0.1$

.75568	.83572	.88271	.91816	.94816	.97550	1.00203	1.02955	1.06098	1.10500
.00827									
369	.00426								
231	268	.00298							
164	190	213	.00236						
124	144	161	179	.00200					
96	112	126	140	156	.00178				
76	88	99	111	124	141	.00164			
60	70	78	88	98	112	131	.00159		
46	54	60	67	76	86	101	124	.00166	
32	38	43	48	54	61	72	89	120	.00209

$\alpha = 0.3$

.44980	.59424	.69562	.78049	.85806	.93347	1.01103	1.09622	1.19962	1.35615
.02212									
1286	.01778								
919	1274	.01576							
713	991	1229	.01473						
577	803	997	1198	.01427					
477	665	827	994	1186	.01426				
399	556	691	832	995	1198	.01475			
332	463	577	695	831	1003	1237	.01600		
271	378	472	569	681	822	1017	1320	.01893	
207	289	360	435	521	630	782	1017	1469	.02831

$\alpha = 0.5$

.28025	.43184	.55605	.67054	.78316	.89971	1.02663	1.17408	1.36428	1.67572
.02146									
1523	.02462								
1218	1974	.02692							
1025	1664	2273	.02935						
886	1439	1968	2545	.03229					
776	1262	1728	2237	2841	.03615				
684	1113	1524	1975	2512	3201	.04167			
602	979	1342	1740	2214	2825	3684	.05050		
521	848	1163	1509	1922	2456	3208	4408	.06772	
430	700	960	1246	1589	2032	2658	3663	5656	.12092

Table II. Expected values, variances and covariances of order statistics

Sample size $n = 10$

$\alpha = 0.7$

.18130	.32006	.45044	.58192	.72069	.87326	1.04895	1.26473	1.56042	2.08462
.01658									
1378	.02561								
1216	2262	.03381							
1101	2051	3069	.04257						
1012	1886	2823	3920	.05288					
936	1746	2616	3635	4907	.06608				
869	1622	2430	3378	4564	6152	.08466			
805	1503	2253	3134	4236	5715	7873	.11444		
739	1380	2070	2880	3895	5258	7252	.10560	.17394	
658	1229	1844	2567	3474	4693	6480	9452	.15623	.37194

$\alpha = 0.9$

.12108	.24151	.36947	.50990	.66846	.85333	1.07825	1.37008	1.79485	2.61072
.01191									
1126	.02373								
1083	2282	.03720							
1049	2212	3607	.05361						
1021	2153	3511	5221	.07480					
995	2100	3425	5094	7300	.10397				
971	2049	3344	4974	7130	10157	.14774			
947	1999	3262	4852	6957	9914	14427	.22250		
921	1943	3171	4719	6767	9645	14041	21668	.38328	
886	1870	3051	4541	6513	9287	13524	20885	36989	.98456

$\alpha = 1.0$

.10000	.21111	.33611	.47897	.64564	.84564	1.09564	1.42897	1.92897	2.92897
.01000									
"	.02235								
"	"	.03797							
"	"	"	.05838						
"	"	"	"	.08616					
"	"	"	"	"	.12616				
"	"	"	"	"	"	.18866			
"	"	"	"	"	"	"	.29977		
"	"	"	"	"	"	"	"	.54977	
"	"	"	"	"	"	"	"	"	1.54977

Table III. Expected values, variances and covariances of order statistics

Sample size n = 15

$\alpha = 0.1$

j	.72566	.80102	.84419	.87580	.90152	.92379	.94390	.96267	.98070	.99850
1	.00762									
2	344	.00391								
3	220	250	.00272							
4	159	181	198	.00213						
5	123	141	154	166	.00178					
6	99	113	124	134	144	.00154				
7	82	94	102	111	119	128	.00138			
8	69	79	86	93	100	108	116	.00126		
9	58	67	73	79	85	92	99	108	.00118	
10	50	57	62	67	72	78	84	92	101	.00112
11	42	48	53	58	62	67	72	78	86	96
12	36	41	45	49	53	57	61	67	73	82
13	30	34	38	41	44	48	51	56	62	68
14	24	28	31	33	36	38	42	45	50	56
15	18	21	23	25	27	29	31	34	37	42

	1.01661	1.03571	1.05692	1.08260	1.12068
11	.00109				
12	92	.00108			
13	78	91	.00112		
14	63	74	91	.00124	
15	47	56	69	94	.00168

Table III. Expected values, variances and covariances of order statistics

Sample size n = 15

$\alpha = 0.3$

j	.39828	.52323	.60846	.67732	.73748	.79261	.84486	.89578	.94668	.99887
1	.01734									
2	1018	.01377								
3	737	999	.01202							
4	582	790	951	.01100						
5	481	653	788	912	.01036					
6	409	556	670	776	883	.00996				
7	354	481	580	672	765	864	.00974			
8	310	421	508	589	671	758	854	.00965		
9	273	371	448	520	592	669	755	854	.00972	
10	241	328	396	460	524	593	669	757	862	.00994
11	214	291	351	407	464	525	593	671	765	882
12	188	256	309	359	409	463	523	592	675	780
13	164	223	269	313	357	404	456	516	589	681
14	139	189	229	266	303	343	388	440	502	580
15	110	150	182	211	241	273	308	350	399	462

	1.05397	1.11435	1.18419	1.27286	1.41312
11	.01038				
12	918	.01115			
13	802	976	.01253		
14	684	834	1073	.01538	
15	546	666	859	1238	.02413

Table III. Expected values, variances and covariances of order statistics

Sample size n = 15

$\alpha = 0.5$

J	.22882	.34929	.44481	.52936	.60838	.68483	.76078	.83799	.91822	1.00364
1	.01431									
2	1022	.01609								
3	825	1301	.01716							
4	703	1109	1464	.01813						
5	617	974	1286	1594	.01914					
6	551	870	1150	1426	1713	.02027				
7	498	787	1040	1290	1551	1836	.02158			
8	454	717	948	1176	1414	1675	1970	.02315		
9	415	656	868	1077	1296	1535	1806	2124	.02510	
10	381	602	796	988	1189	1409	1659	1952	2308	.02760
11	349	552	730	907	1091	1294	1523	1792	2120	2538
12	319	504	668	829	998	1183	1393	1640	1942	2325
13	289	457	605	752	905	1073	1264	1489	1763	2113
14	257	407	539	669	806	956	1127	1327	1572	1885
15	218	345	457	568	684	811	956	1126	1335	1602

1.09722 1.20373 1.33204 1.50286 1.79142

11	.03100									
12	2842	.03592								
13	2584	3270	.04390							
14	2308	2923	3932	.05964						
15	1962	2488	3354	5107	.10904					

Table III. Expected values, variances and covariances of order statistics

Sample size n = 15

$\alpha = 0.7$

j	.13650	.23781	.32952	.41789	.50593	.59572	.68909	.78799	.89481	1.01281
1	.00940									
2	784	.01412								
3	696	1254	.01802							
4	635	1144	1646	.02174						
5	588	1061	1527	2018	.02557					
6	551	994	1431	1891	2397	.02971				
7	519	937	1349	1784	2262	2804	.03436			
8	492	887	1277	1689	2142	2656	3257	.03980		
9	466	842	1212	1604	2034	2523	3094	3782	.04640	
10	443	800	1152	1524	1934	2399	2943	3598	4416	.05481
11	421	760	1094	1448	1838	2280	2797	3421	4200	5216
12	399	720	1037	1373	1742	2162	2653	3246	3986	4951
13	376	679	978	1295	1644	2040	2504	3063	3763	4676
14	351	634	913	1208	1534	1904	2337	2860	3514	4368
15	318	573	826	1094	1388	1724	2116	2590	3184	3960

	1.14691	1.30539	1.50422	1.78183	2.28316
11	.06614				
12	6282	.08266			
13	5936	7816	.10984		
14	5548	7311	10285	.16525	
15	5032	6636	9348	15060	.35336

Table III. Expected values, variances and covariances of order statistics

Sample size n = 15

$\alpha = 0.9$

j	.08406	.16484	.24717	.33305	.42401	.52161	.62772	.74475	.87601	1.02640
1	.00574									
2	544	.01104								
3	523	1063	.01657							
4	508	1033	1610	.02264						
5	496	1008	1572	2210	.02949					
6	486	987	1539	2164	2888	.03745				
7	476	968	1510	2123	2834	3676	.04694			
8	468	951	1483	2086	2784	3611	4613	.05859		
9	460	935	1458	2051	2738	3551	4536	5762	.07338	
10	452	919	1434	2016	2692	3492	4462	5668	7219	.09298
11	445	904	1409	1983	2647	3434	4388	5575	7101	9147
12	437	888	1385	1948	2601	3374	4312	5479	6979	8992
13	428	871	1358	1911	2551	3310	4230	5375	6848	8823
14	418	851	1327	1867	2493	3235	4134	5253	6694	8626
15	405	823	1283	1806	2411	3129	3999	5082	6476	8347

	1.20365	1.42112	1.70524	2.12135	2.92551
11	.12048				
12	11845	.16230			
13	11625	15933	.23450		
14	11367	15584	22945	.39110	
15	11002	15087	22225	37920	.98154

Table III. Expected values, variances and covariances of order statistics

Sample size n = 15

$\alpha = 1.0$

j	.06667	.13810	.21502	.29835	.38926	.48926	.60037	.72537	.86823	1.03490
1	.00444									
2	"	.00955								
3	"	"	.01546							
4	"	"	"	.02241						
5	"	"	"	"	.03067					
6	"	"	"	"	"	.04067				
7	"	"	"	"	"	"	.05302			
8	"	"	"	"	"	"	"	.06864		
9	"	"	"	"	"	"	"	"	.08905	
10	"	"	"	"	"	"	"	"	"	.11683
	1.23490	1.48490	1.81823	2.31823	3.31823					
11	.15683									
12	"	.21933								
13	"	"	.33044							
14	"	"	"	.58044						
15	"	"	"	"	1.58044					

Table IV. Expected values, variances and covariances of order statistics

Sample size $n = 20$

$\alpha = 0.1$

j	.70508	.77760	.81869	.84838	.87219	.89243	.91033	.92660	.94173	.95605
1	.00720									
2	327	.00368								
3	210	237	.00256							
4	154	174	188	.00200						
5	120	136	147	157	.00166					
6	98	111	120	128	136	.00143				
7	82	93	101	107	114	120	.00127			
8	70	80	86	92	97	103	109	.00115		
9	61	69	75	80	84	89	94	100	.00106	
10	53	60	65	70	74	78	82	87	92	.00098
11	47	53	57	61	65	69	72	77	82	87
12	42	47	51	54	58	61	64	68	72	77
13	37	42	45	48	51	54	57	60	64	68
14	33	37	40	43	45	47	51	53	57	60
15	29	33	35	38	39	44	44	48	45	54
16	25	29	31	33	35	36	38	40	47	48
17	22	25	27	29	30	33	34	37	30	44
18	19	22	23	25	26	29	29	28	39	35
19	16	18	20	21	22	24	25	30	27	34
20	12	14	15	16	17	18	19	20	22	23
	.96984	.98333	.99672	1.01025	1.02418	1.03887	1.05487	1.07317	1.09595	1.13076
11	.00093									
12	82	.00088								
13	73	78	.00085							
14	65	70	76	.00083						
15	56	62	67	73	.00082					
16	51	54	59	65	72	.00082				
17	44	47	51	57	63	72	.00084			
18	37	39	45	49	54	62	73	.00090		
19	31	36	36	41	46	52	61	75	.00103	
20	25	26	29	31	35	40	47	58	80	.00145

Table IV. Expected values, variances and covariances of order statistics

Sample size $n = 20$

$\alpha = 0.3$

j	.36535	.47866	.55495	.61567	.66780	.71458	.75784	.79875	.83814	.87668
1	.01459									
2	860	.01152								
3	627	841	.00999							
4	499	669	796	.00907						
5	416	558	664	757	.00846					
6	357	479	570	651	727	.00803				
7	312	419	499	570	637	704	.00773			
8	277	372	443	506	566	625	687	.00753		
9	248	333	397	453	507	561	616	675	.00739	
10	224	301	358	409	458	506	557	610	668	.00732
11	203	273	325	371	415	459	505	554	606	665
12	185	248	296	338	378	418	460	504	552	606
13	168	226	270	308	344	381	420	460	504	553
14	153	206	246	281	314	348	383	420	460	504
15	140	188	224	256	286	317	349	384	418	460
16	126	170	203	232	259	287	317	346	382	417
17	114	153	183	209	234	260	283	314	346	376
18	101	136	162	186	208	231	252	277	304	335
19	88	118	141	161	180	200	220	241	265	292
20	71	96	114	131	146	162	178	196	214	236
	.91492	.95341	.99273	1.03357	1.07682	1.12376	1.17647	1.23884	1.31975	1.45073
11	.00731									
12	666	.00737								
13	608	673	.00750							
14	555	614	685	.00771						
15	506	560	624	704	.00805					
16	459	509	567	639	732	.00856				
17	416	459	512	577	661	773	.00936			
18	368	407	456	514	589	690	836	.01072		
19	320	354	396	447	512	600	728	935	.01344	
20	260	288	321	363	416	489	594	764	1103	.02172

Table IV. Expected values, variances and covariances of order statistics

Sample size n = 20

$\alpha = 0.5$

j	.19817	.30113	.38154	.45151	.51559	.57615	.63466	.69214	.74943	.80729
1	.01073									
2	769	.01195								
3	624	970	.01261							
4	534	832	1081	.01315						
5	471	734	955	1162	.01368					
6	424	661	860	1047	1232	.01423				
7	386	602	784	954	1124	1298	.01482			
8	355	554	721	878	1034	1195	1364	.01547		
9	329	513	668	813	958	1107	1264	1434	.01621	
10	306	477	621	757	892	1030	1177	1336	1510	.01706
11	286	445	580	706	833	962	1100	1248	1411	1594
12	267	416	542	661	779	901	1029	1168	1321	1493
13	250	390	508	619	730	844	964	1094	1238	1399
14	234	365	476	580	684	790	903	1025	1160	1312
15	219	342	445	543	640	739	845	960	1086	1228
16	204	319	415	506	597	690	788	897	1014	1147
17	190	296	385	470	554	641	733	831	942	1065
18	174	272	354	432	510	589	674	765	866	981
19	157	246	320	390	460	532	608	692	782	886
20	136	211	275	336	396	458	524	595	674	762
	.86645	.92772	.99209	1.06081	1.13564	1.21924	1.31604	1.43451	1.59468	1.86977
11	.01804									
12	1690	.01921								
13	1585	1802	.02064							
14	1486	1690	1936	.02242						
15	1391	1583	1814	2101	.02473					
16	1299	1478	1694	1964	2312	.02787				
17	1206	1373	1575	1825	2150	2594	.03246			
18	1110	1264	1450	1681	1981	2391	2995	.03992		
19	1004	1142	1311	1520	1792	2165	2713	3622	.05474	
20	864	984	1130	1311	1546	1868	2344	3135	4753	.10172

Table IV. Expected values, variances and covariances of order statistics

Sample size $n = 20$

$\alpha = 0.7$

j	.11160	.19320	.26582	.33444	.40128	.46767	.53457	.60281	.67317	.74647
1	.00628									
2	525	.00932								
3	467	829	.01171							
4	428	759	1072	.01389						
5	398	706	998	1293	.01600					
6	374	664	939	1216	1506	.01815				
7	354	629	890	1153	1427	1720	.02039			
8	337	599	847	1098	1359	1639	1943	.02280		
9	322	572	810	1049	1299	1567	1858	2180	.02544	
10	309	548	776	1005	1245	1502	1781	2090	2439	.02839
11	296	526	745	965	1196	1442	1710	2008	2343	2728
12	285	506	716	928	1150	1386	1645	1931	2254	2624
13	274	487	689	892	1106	1334	1582	1858	2169	2525
14	263	468	662	858	1064	1283	1522	1787	2087	2430
15	253	450	636	825	1022	1233	1463	1718	2006	2337
16	243	432	611	792	981	1183	1404	1649	1926	2242
17	232	413	584	757	938	1132	1343	1578	1842	2146
18	221	392	555	720	892	1076	1277	1500	1753	2041
19	208	369	522	677	839	1013	1202	1412	1648	1921
20	190	337	477	618	766	925	1098	1290	1506	1755
	.82367	.90592	.99475	1.09221	1.20132	1.32676	1.47653	1.66621	1.93346	2.42092
11	.03177									
12	3057	.03574								
13	2942	3440	.04050							
14	2832	3311	3900	.04644						
15	2723	3185	3751	4468	.05412					
16	2614	3058	3602	4291	5200	.06462				
17	2501	2926	3448	4108	4979	6191	.08013			
18	2380	2785	3282	3911	4742	5898	7637	.10589		
19	2239	2621	3089	3682	4466	5556	7199	9991	.15892	
20	2046	2395	2824	3367	4084	5084	6592	9159	.14601	.34081

Table IV. Expected values, variances and covariances of order statistics

Sample size n = 20

$\alpha = 0.9$

j	.06488	.12620	.18751	.25009	.31473	.38208	.45281	.52763	.60736	.69304
1	.00342									
2	324	.00647								
3	312	623	.00952							
4	304	606	926	.01272						
5	297	592	905	1244	.01616					
6	291	581	887	1219	1584	.01991				
7	286	571	872	1198	1557	1957	.02407			
8	281	562	858	1179	1532	1926	2370	.02876		
9	277	553	845	1162	1510	1898	2335	2834	.03412	
10	273	546	834	1146	1489	1872	2303	2796	3365	.04035
11	270	538	822	1130	1469	1847	2273	2759	3321	3982
12	266	531	812	1116	1450	1823	2243	2723	3279	3932
13	263	524	802	1102	1432	1800	2215	2689	3238	3882
14	259	518	791	1088	1414	1777	2187	2655	3197	3833
15	256	511	781	1073	1395	1754	2158	2620	3155	3784
16	252	504	770	1059	1376	1730	2129	2585	3112	3733
17	249	496	759	1043	1356	1705	2098	2547	3067	3678
18	244	488	746	1026	1334	1676	2063	2505	3017	3618
19	240	478	731	1005	1306	1643	2022	2455	2956	3545
20	232	464	709	975	1267	1593	1961	2381	2868	3440

	.78593	.88772	1.00068	1.12805	1.27463	1.44802	1.66148	1.94125	2.35220	3.14903
11	.04772									
12	4712	.05664								
13	4653	5594	.06771							
14	4595	5524	6687	.08189						
15	4536	5453	6602	8085	.10081					
16	4475	5380	6514	7977	9948	.12751				
17	4409	5302	6420	7863	9807	12571	.16833			
18	4337	5216	6315	7736	9648	12370	16567	.23909		
19	4250	5111	6189	7582	9458	12127	16245	23452	.39319	
20	4124	4959	6005	7358	9179	11772	15773	22780	38223	.97672

Table IV. Expected values, variances and covariances of order statistics

Sample size n = 20

$\alpha = 1.0$

j	.05000	.10263	.15819	.21701	.27951	.34618	.41761	.49453	.57786	.66877
1	.00250									
2	"	.00527								
3	"	"	.00836							
4	"	"	"	.01182						
5	"	"	"	"	.01572					
6	"	"	"	"	"	.02017				
7	"	"	"	"	"	"	.02527			
8	"	"	"	"	"	"	"	.03119		
9	"	"	"	"	"	"	"	"	.03813	
10	"	"	"	"	"	"	"	"	"	.04640

11	.76877	.87988	1.00488	1.14774	1.31441	1.51441	1.76441	2.09774	2.59774	3.59774
12	.05640	.06874								
13	"	"	.08437							
14	"	"	"	.10477						
15	"	"	"	"	.13255					
16	"	"	"	"	"	.17255				
17	"	"	"	"	"	"	.23505			
18	"	"	"	"	"	"	"	.34616		
19	"	"	"	"	"	"	"	"	.59616	
20	"	"	"	"	"	"	"	"	"	1.59616