

Table 5. Coefficients $\{a_{n-i+1}\}$ for the W test for normality,
for $n = 2(1)50$.

$\begin{matrix} n \\ i \end{matrix}$	2	3	4	5	6	7	8	9	10	
1	0.7071	0.7071	0.6872	0.6646	0.6431	0.6233	0.6052	0.5888	0.5739	
2	—	·0000	·1677	·2413	·2806	·3031	·3164	·3244	·3291	
3	—	—	—	·0000	·0875	·1401	·1743	·1976	·2141	
4	—	—	—	—	—	·0000	·0561	·0947	·1224	
5	—	—	—	—	—	—	—	·0000	·0399	
$\begin{matrix} n \\ i \end{matrix}$	11	12	13	14	15	16	17	18	19	20
1	0.5601	0.5475	0.5359	0.5251	0.5150	0.5056	0.4968	0.4886	0.4808	0.4734
2	·3315	·3325	·3325	·3318	·3306	·3290	·3273	·3253	·3232	·3211
3	·2260	·2347	·2412	·2460	·2495	·2521	·2540	·2553	·2561	·2565
4	·1429	·1586	·1707	·1802	·1878	·1939	·1988	·2027	·2059	·2085
5	·0695	·0922	·1099	·1240	·1353	·1447	·1524	·1587	·1641	·1686
6	0.0000	0.0303	0.0539	0.0727	0.0880	0.1005	0.1109	0.1197	0.1271	0.1334
7	—	—	·0000	·0240	·0433	·0593	·0725	·0837	·0932	·1013
8	—	—	—	—	·0000	·0196	·0359	·0496	·0612	·0711
9	—	—	—	—	—	—	·0000	·0163	·0303	·0422
10	—	—	—	—	—	—	—	—	·0000	·0140
$\begin{matrix} n \\ i \end{matrix}$	21	22	23	24	25	26	27	28	29	30
1	0.4643	0.4590	0.4542	0.4493	0.4450	0.4407	0.4366	0.4328	0.4291	0.4254
2	·3185	·3156	·3126	·3098	·3069	·3043	·3018	·2992	·2968	·2944
3	·2578	·2571	·2563	·2554	·2543	·2533	·2522	·2510	·2499	·2487
4	·2119	·2131	·2139	·2145	·2148	·2151	·2152	·2151	·2150	·2148
5	·1736	·1764	·1787	·1807	·1822	·1836	·1848	·1857	·1864	·1870
6	0.1399	0.1443	0.1480	0.1512	0.1539	0.1563	0.1584	0.1601	0.1616	0.1630
7	·1092	·1150	·1201	·1245	·1283	·1316	·1346	·1372	·1395	·1415
8	·0804	·0878	·0941	·0997	·1046	·1089	·1128	·1162	·1192	·1219
9	·0530	·0618	·0696	·0764	·0823	·0876	·0923	·0965	·1002	·1036
10	·0263	·0368	·0459	·0539	·0610	·0672	·0728	·0778	·0822	·0862
11	0.0000	0.0122	0.0228	0.0321	0.0403	0.0476	0.0540	0.0598	0.0650	0.0697
12	—	—	·0000	·0107	·0200	·0284	·0358	·0424	·0483	·0537
13	—	—	—	—	·0000	·0094	·0178	·0253	·0320	·0381
14	—	—	—	—	—	—	·0000	·0084	·0159	·0227
15	—	—	—	—	—	—	—	—	·0000	·0076

Table 5. Coefficients $\{a_{n-t+1}\}$ for the W test for normality,
for $n = 2(1)50$ (cont.)

$\begin{matrix} n \\ \backslash \\ i \end{matrix}$	31	32	33	34	35	36	37	38	39	40
1	0.4220	0.4188	0.4156	0.4127	0.4096	0.4068	0.4040	0.4015	0.3989	0.3964
2	.2921	.2898	.2876	.2854	.2834	.2813	.2794	.2774	.2755	.2737
3	.2475	.2463	.2451	.2439	.2427	.2415	.2403	.2391	.2380	.2368
4	.2145	.2141	.2137	.2132	.2127	.2121	.2116	.2110	.2104	.2098
5	.1874	.1878	.1880	.1882	.1883	.1883	.1883	.1881	.1880	.1878
6	0.1641	0.1651	0.1660	0.1667	0.1673	0.1678	0.1683	0.1686	0.1689	0.1691
7	.1433	.1449	.1463	.1475	.1487	.1496	.1505	.1513	.1520	.1526
8	.1243	.1265	.1284	.1301	.1317	.1331	.1344	.1356	.1366	.1376
9	.1066	.1093	.1118	.1140	.1160	.1179	.1196	.1211	.1225	.1237
10	.0899	.0931	.0961	.0988	.1013	.1036	.1056	.1075	.1092	.1108
11	0.0739	0.0777	0.0812	0.0844	0.0873	0.0900	0.0924	0.0947	0.0967	0.0986
12	.0585	.0629	.0669	.0706	.0739	.0770	.0798	.0824	.0848	.0870
13	.0435	.0485	.0530	.0572	.0610	.0645	.0677	.0706	.0733	.0759
14	.0289	.0344	.0395	.0441	.0484	.0523	.0559	.0592	.0622	.0651
15	.0144	.0206	.0262	.0314	.0361	.0404	.0444	.0481	.0515	.0546
16	0.0000	0.0068	0.0131	0.0187	0.0239	0.0287	0.0331	0.0372	0.0409	0.0444
17	—	—	.0000	.0062	.0119	.0172	.0220	.0264	.0305	.0343
18	—	—	—	—	.0000	.0057	.0110	.0158	.0203	.0244
19	—	—	—	—	—	—	.0000	.0053	.0101	.0146
20	—	—	—	—	—	—	—	—	.0000	.0049
$\begin{matrix} n \\ \backslash \\ i \end{matrix}$	41	42	43	44	45	46	47	48	49	50
1	0.3940	0.3917	0.3894	0.3872	0.3850	0.3830	0.3808	0.3789	0.3770	0.3751
2	.2719	.2701	.2684	.2667	.2651	.2635	.2620	.2604	.2589	.2574
3	.2357	.2345	.2334	.2323	.2313	.2302	.2291	.2281	.2271	.2260
4	.2091	.2085	.2078	.2072	.2065	.2058	.2052	.2045	.2038	.2032
5	.1876	.1874	.1871	.1868	.1865	.1862	.1859	.1855	.1851	.1847
6	0.1693	0.1694	0.1695	0.1695	0.1695	0.1695	0.1695	0.1693	0.1692	0.1691
7	.1531	.1535	.1539	.1542	.1545	.1548	.1550	.1551	.1553	.1554
8	.1384	.1392	.1398	.1405	.1410	.1415	.1420	.1423	.1427	.1430
9	.1249	.1259	.1269	.1278	.1286	.1293	.1300	.1306	.1312	.1317
10	.1123	.1136	.1149	.1160	.1170	.1180	.1189	.1197	.1205	.1212
11	0.1004	0.1020	0.1035	0.1049	0.1062	0.1073	0.1085	0.1095	0.1105	0.1113
12	.0891	.0909	.0927	.0943	.0959	.0972	.0986	.0998	.1010	.1020
13	.0782	.0804	.0824	.0842	.0860	.0876	.0892	.0906	.0919	.0932
14	.0677	.0701	.0724	.0745	.0765	.0783	.0801	.0817	.0832	.0846
15	.0575	.0602	.0628	.0651	.0673	.0694	.0713	.0731	.0748	.0764
16	0.0476	0.0506	0.0534	0.0560	0.0584	0.0607	0.0628	0.0648	0.0667	0.0685
17	.0379	.0411	.0442	.0471	.0497	.0522	.0546	.0568	.0588	.0608
18	.0283	.0318	.0352	.0383	.0412	.0439	.0465	.0489	.0511	.0532
19	.0188	.0227	.0263	.0296	.0328	.0357	.0385	.0411	.0436	.0459
20	.0094	.0136	.0175	.0211	.0245	.0277	.0307	.0335	.0361	.0386
21	0.0000	0.0045	0.0087	0.0126	0.0163	0.0197	0.0229	0.0259	0.0288	0.0314
22	—	—	.0000	.0042	.0081	.0118	.0153	.0185	.0215	.0244
23	—	—	—	—	.0000	.0039	.0076	.0111	.0143	.0174
24	—	—	—	—	—	—	.0000	.0037	.0071	.0104
25	—	—	—	—	—	—	—	—	.0000	.0035

Table 6. *Percentage points of the W test* for n = 3(1) 50*

n	Level								
	0-01	0-02	0-05	0-10	0-50	0-90	0-95	0-98	0-99
3	0-753	0-756	0-767	0-789	0-959	0-998	0-999	1-000	1-000
4	-687	-707	-748	-792	-935	-987	-992	-996	-997
5	-686	-715	-762	-806	-927	-979	-986	-991	-993
6	0-713	0-743	0-788	0-826	0-927	0-974	0-981	0-986	0-989
7	-730	-760	-803	-838	-928	-972	-979	-985	-988
8	-749	-778	-818	-851	-932	-972	-978	-984	-987
9	-764	-791	-829	-859	-935	-972	-978	-984	-986
10	-781	-806	-842	-869	-938	-972	-978	-983	-986
11	0-792	0-817	0-850	0-876	0-940	0-973	0-979	0-984	0-986
12	-805	-828	-859	-883	-943	-973	-979	-984	-986
13	-814	-837	-866	-889	-945	-974	-979	-984	-986
14	-825	-846	-874	-895	-947	-975	-980	-984	-986
15	-835	-855	-881	-901	-950	-975	-980	-984	-987
16	0-844	0-863	0-887	0-906	0-952	0-976	0-981	0-985	0-987
17	-851	-869	-892	-910	-954	-977	-981	-985	-987
18	-858	-874	-897	-914	-956	-978	-982	-986	-988
19	-863	-879	-901	-917	-957	-978	-982	-986	-988
20	-868	-884	-905	-920	-959	-979	-983	-986	-988
21	0-873	0-888	0-908	0-923	0-960	0-980	0-983	0-987	0-989
22	-878	-892	-911	-926	-961	-980	-984	-987	-989
23	-881	-895	-914	-928	-962	-981	-984	-987	-989
24	-884	-898	-916	-930	-963	-981	-984	-987	-989
25	-888	-901	-918	-931	-964	-981	-985	-988	-989
26	0-891	0-904	0-920	0-933	0-965	0-982	0-985	0-988	0-989
27	-894	-906	-923	-935	-965	-982	-985	-988	-990
28	-896	-908	-924	-936	-966	-982	-985	-988	-990
29	-898	-910	-926	-937	-966	-982	-985	-988	-990
30	-900	-912	-927	-939	-967	-983	-985	-988	-990
31	0-902	0-914	0-929	0-940	0-967	0-983	0-986	0-988	0-990
32	-904	-915	-930	-941	-968	-983	-986	-988	-990
33	-906	-917	-931	-942	-968	-983	-986	-989	-990
34	-908	-919	-933	-943	-969	-983	-986	-989	-990
35	-910	-920	-934	-944	-969	-984	-986	-989	-990
36	0-912	0-922	0-935	0-945	0-970	0-984	0-986	0-989	0-990
37	-914	-924	-936	-946	-970	-984	-987	-989	-990
38	-916	-925	-938	-947	-971	-984	-987	-989	-990
39	-917	-927	-939	-948	-971	-984	-987	-989	-991
40	-919	-928	-940	-949	-972	-985	-987	-989	-991
41	0-920	0-929	0-941	0-950	0-972	0-985	0-987	0-989	0-991
42	-922	-930	-942	-951	-972	-985	-987	-989	-991
43	-923	-932	-943	-951	-973	-985	-987	-990	-991
44	-924	-933	-944	-952	-973	-985	-987	-990	-991
45	-926	-934	-945	-953	-973	-985	-988	-990	-991
46	0-927	0-935	0-945	0-953	0-974	0-985	0-988	0-990	0-991
47	-928	-936	-946	-954	-974	-985	-988	-990	-991
48	-929	-937	-947	-954	-974	-985	-988	-990	-991
49	-929	-937	-947	-955	-974	-985	-988	-990	-991
50	-930	-938	-947	-955	-974	-985	-988	-990	-991

* Based on fitted Johnson (1949) S_n approximation, see Shapiro & Wilk (1965a) for details.

Kolmogorov-Smirnov One-Sided Test

n	0.1	0.05	0.025	0.01	0.005
1	0.9000	0.9500	0.9750	0.9900	0.9950
2	0.6838	0.7764	0.8419	0.9000	0.9293
3	0.5648	0.6360	0.7076	0.7846	0.8290
4	0.4927	0.5652	0.6239	0.6889	0.7342
5	0.4470	0.5094	0.5633	0.6272	0.6685
6	0.4104	0.4680	0.5193	0.5774	0.6166
7	0.3815	0.4361	0.4834	0.5384	0.5758
8	0.3583	0.4096	0.4543	0.5065	0.5418
9	0.3391	0.3875	0.4300	0.4796	0.5133
10	0.3226	0.3687	0.4092	0.4566	0.4889
11	0.3083	0.3524	0.3912	0.4367	0.4677
12	0.2958	0.3382	0.3754	0.4192	0.4490
13	0.2847	0.3255	0.3614	0.4036	0.4325
14	0.2748	0.3142	0.3489	0.3897	0.4176
15	0.2659	0.3040	0.3376	0.3771	0.4042
16	0.2578	0.2947	0.3273	0.3657	0.3920
17	0.2504	0.2863	0.3180	0.3553	0.3809
18	0.2436	0.2785	0.3094	0.3457	0.3706
19	0.2373	0.2714	0.3014	0.3369	0.3612
20	0.2316	0.2647	0.2941	0.3287	0.3524
21	0.2262	0.2586	0.2872	0.3210	0.3443
22	0.2212	0.2528	0.2809	0.3139	0.3367
23	0.2165	0.2475	0.2749	0.3073	0.3295
24	0.2120	0.2424	0.2693	0.3010	0.3229
25	0.2079	0.2377	0.2640	0.2952	0.3166
26	0.2040	0.2332	0.2591	0.2896	0.3106
27	0.2003	0.2290	0.2544	0.2844	0.3050
28	0.1968	0.2250	0.2499	0.2794	0.2997
29	0.1935	0.2212	0.2457	0.2747	0.2947
30	0.1903	0.2176	0.2417	0.2702	0.2899
31	0.1873	0.2141	0.2379	0.2660	0.2853
32	0.1844	0.2108	0.2342	0.2619	0.2809
33	0.1817	0.2077	0.2308	0.2580	0.2768
34	0.1791	0.2047	0.2274	0.2543	0.2728
35	0.1766	0.2018	0.2242	0.2507	0.2690
36	0.1742	0.1991	0.2212	0.2473	0.2653
37	0.1719	0.1965	0.2183	0.2440	0.2618
38	0.1697	0.1939	0.2154	0.2409	0.2584
39	0.1675	0.1915	0.2127	0.2379	0.2552
40	0.1655	0.1891	0.2101	0.2349	0.2521
> 40	$1.07/\sqrt{n}$	$1.22/\sqrt{n}$	$1.36/\sqrt{n}$	$1.52/\sqrt{n}$	$1.63/\sqrt{n}$