

α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
1	6.3138	12.7065	31.8193	63.6551	127.3447	318.4930	636.0450
2	2.9200	4.3026	6.9646	9.9247	14.0887	22.3276	31.5989
3	2.3534	3.1824	4.5407	5.8408	7.4534	10.2145	12.9242
4	2.1319	2.7764	3.7470	4.6041	5.5976	7.1732	8.6103
5	2.0150	2.5706	3.3650	4.0322	4.7734	5.8934	6.8688
6	1.9432	2.4469	3.1426	3.7074	4.3168	5.2076	5.9589
7	1.8946	2.3646	2.9980	3.4995	4.0294	4.7852	5.4079
8	1.8595	2.3060	2.8965	3.3554	3.8325	4.5008	5.0414
9	1.8331	2.2621	2.8214	3.2498	3.6896	4.2969	4.7809
10	1.8124	2.2282	2.7638	3.1693	3.5814	4.1437	4.5869
11	1.7959	2.2010	2.7181	3.1058	3.4966	4.0247	4.4369
12	1.7823	2.1788	2.6810	3.0545	3.4284	3.9296	4.3178
13	1.7709	2.1604	2.6503	3.0123	3.3725	3.8520	4.2208
14	1.7613	2.1448	2.6245	2.9768	3.3257	3.7874	4.1404
15	1.7530	2.1314	2.6025	2.9467	3.2860	3.7328	4.0728
16	1.7459	2.1199	2.5835	2.9208	3.2520	3.6861	4.0150
17	1.7396	2.1098	2.5669	2.8983	3.2224	3.6458	3.9651
18	1.7341	2.1009	2.5524	2.8784	3.1966	3.6105	3.9216
19	1.7291	2.0930	2.5395	2.8609	3.1737	3.5794	3.8834
20	1.7247	2.0860	2.5280	2.8454	3.1534	3.5518	3.8495
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
21	1.7207	2.0796	2.5176	2.8314	3.1352	3.5272	3.8193
22	1.7172	2.0739	2.5083	2.8188	3.1188	3.5050	3.7921
23	1.7139	2.0686	2.4998	2.8073	3.1040	3.4850	3.7676
24	1.7109	2.0639	2.4922	2.7970	3.0905	3.4668	3.7454
25	1.7081	2.0596	2.4851	2.7874	3.0782	3.4502	3.7251
26	1.7056	2.0555	2.4786	2.7787	3.0669	3.4350	3.7067
27	1.7033	2.0518	2.4727	2.7707	3.0565	3.4211	3.6896
28	1.7011	2.0484	2.4671	2.7633	3.0469	3.4082	3.6739
29	1.6991	2.0452	2.4620	2.7564	3.0380	3.3962	3.6594
30	1.6973	2.0423	2.4572	2.7500	3.0298	3.3852	3.6459
31	1.6955	2.0395	2.4528	2.7440	3.0221	3.3749	3.6334
32	1.6939	2.0369	2.4487	2.7385	3.0150	3.3653	3.6218

33	1.6924	2.0345	2.4448	2.7333	3.0082	3.3563	3.6109
34	1.6909	2.0322	2.4411	2.7284	3.0019	3.3479	3.6008
35	1.6896	2.0301	2.4377	2.7238	2.9961	3.3400	3.5912
36	1.6883	2.0281	2.4345	2.7195	2.9905	3.3326	3.5822
37	1.6871	2.0262	2.4315	2.7154	2.9853	3.3256	3.5737
38	1.6859	2.0244	2.4286	2.7115	2.9803	3.3190	3.5657
39	1.6849	2.0227	2.4258	2.7079	2.9756	3.3128	3.5581
40	1.6839	2.0211	2.4233	2.7045	2.9712	3.3069	3.5510
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
41	1.6829	2.0196	2.4208	2.7012	2.9670	3.3013	3.5442
42	1.6820	2.0181	2.4185	2.6981	2.9630	3.2959	3.5378
43	1.6811	2.0167	2.4162	2.6951	2.9591	3.2909	3.5316
44	1.6802	2.0154	2.4142	2.6923	2.9555	3.2861	3.5258
45	1.6794	2.0141	2.4121	2.6896	2.9521	3.2815	3.5202
46	1.6787	2.0129	2.4102	2.6870	2.9488	3.2771	3.5149
47	1.6779	2.0117	2.4083	2.6846	2.9456	3.2729	3.5099
48	1.6772	2.0106	2.4066	2.6822	2.9426	3.2689	3.5051
49	1.6766	2.0096	2.4049	2.6800	2.9397	3.2651	3.5004
50	1.6759	2.0086	2.4033	2.6778	2.9370	3.2614	3.4960
51	1.6753	2.0076	2.4017	2.6757	2.9343	3.2579	3.4917
52	1.6747	2.0066	2.4002	2.6737	2.9318	3.2545	3.4877
53	1.6741	2.0057	2.3988	2.6718	2.9293	3.2513	3.4838
54	1.6736	2.0049	2.3974	2.6700	2.9270	3.2482	3.4800
55	1.6730	2.0041	2.3961	2.6682	2.9247	3.2451	3.4764
56	1.6725	2.0032	2.3948	2.6665	2.9225	3.2423	3.4730
57	1.6720	2.0025	2.3936	2.6649	2.9204	3.2394	3.4696
58	1.6715	2.0017	2.3924	2.6633	2.9184	3.2368	3.4663
59	1.6711	2.0010	2.3912	2.6618	2.9164	3.2342	3.4632
60	1.6706	2.0003	2.3901	2.6603	2.9146	3.2317	3.4602
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
61	1.6702	1.9996	2.3890	2.6589	2.9127	3.2293	3.4573
62	1.6698	1.9990	2.3880	2.6575	2.9110	3.2269	3.4545
63	1.6694	1.9983	2.3870	2.6561	2.9092	3.2247	3.4518
64	1.6690	1.9977	2.3860	2.6549	2.9076	3.2225	3.4491

65	1.6686	1.9971	2.3851	2.6536	2.9060	3.2204	3.4466
66	1.6683	1.9966	2.3842	2.6524	2.9045	3.2184	3.4441
67	1.6679	1.9960	2.3833	2.6512	2.9030	3.2164	3.4417
68	1.6676	1.9955	2.3824	2.6501	2.9015	3.2144	3.4395
69	1.6673	1.9950	2.3816	2.6490	2.9001	3.2126	3.4372
70	1.6669	1.9944	2.3808	2.6479	2.8987	3.2108	3.4350
71	1.6666	1.9939	2.3800	2.6468	2.8974	3.2090	3.4329
72	1.6663	1.9935	2.3793	2.6459	2.8961	3.2073	3.4308
73	1.6660	1.9930	2.3785	2.6449	2.8948	3.2056	3.4288
74	1.6657	1.9925	2.3778	2.6439	2.8936	3.2040	3.4269
75	1.6654	1.9921	2.3771	2.6430	2.8925	3.2025	3.4250
76	1.6652	1.9917	2.3764	2.6421	2.8913	3.2010	3.4232
77	1.6649	1.9913	2.3758	2.6412	2.8902	3.1995	3.4214
78	1.6646	1.9909	2.3751	2.6404	2.8891	3.1980	3.4197
79	1.6644	1.9904	2.3745	2.6395	2.8880	3.1966	3.4180
80	1.6641	1.9901	2.3739	2.6387	2.8870	3.1953	3.4164
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
81	1.6639	1.9897	2.3733	2.6379	2.8859	3.1939	3.4147
82	1.6636	1.9893	2.3727	2.6371	2.8850	3.1926	3.4132
83	1.6634	1.9889	2.3721	2.6364	2.8840	3.1913	3.4117
84	1.6632	1.9886	2.3716	2.6356	2.8831	3.1901	3.4101
85	1.6630	1.9883	2.3710	2.6349	2.8821	3.1889	3.4087
86	1.6628	1.9879	2.3705	2.6342	2.8813	3.1877	3.4073
87	1.6626	1.9876	2.3700	2.6335	2.8804	3.1866	3.4059
88	1.6623	1.9873	2.3695	2.6328	2.8795	3.1854	3.4046
89	1.6622	1.9870	2.3690	2.6322	2.8787	3.1844	3.4032
90	1.6620	1.9867	2.3685	2.6316	2.8779	3.1833	3.4020
91	1.6618	1.9864	2.3680	2.6309	2.8771	3.1822	3.4006
92	1.6616	1.9861	2.3676	2.6303	2.8763	3.1812	3.3995
93	1.6614	1.9858	2.3671	2.6297	2.8755	3.1802	3.3982
94	1.6612	1.9855	2.3667	2.6292	2.8748	3.1792	3.3970
95	1.6610	1.9852	2.3662	2.6286	2.8741	3.1782	3.3959
96	1.6609	1.9850	2.3658	2.6280	2.8734	3.1773	3.3947
97	1.6607	1.9847	2.3654	2.6275	2.8727	3.1764	3.3936
98	1.6606	1.9845	2.3650	2.6269	2.8720	3.1755	3.3926
99	1.6604	1.9842	2.3646	2.6264	2.8713	3.1746	3.3915

100	1.6602	1.9840	2.3642	2.6259	2.8706	3.1738	3.3905
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
101	1.6601	1.9837	2.3638	2.6254	2.8700	3.1729	3.3894
102	1.6599	1.9835	2.3635	2.6249	2.8694	3.1720	3.3885
103	1.6598	1.9833	2.3631	2.6244	2.8687	3.1712	3.3875
104	1.6596	1.9830	2.3627	2.6240	2.8682	3.1704	3.3866
105	1.6595	1.9828	2.3624	2.6235	2.8675	3.1697	3.3856
106	1.6593	1.9826	2.3620	2.6230	2.8670	3.1689	3.3847
107	1.6592	1.9824	2.3617	2.6225	2.8664	3.1681	3.3838
108	1.6591	1.9822	2.3614	2.6221	2.8658	3.1674	3.3829
109	1.6589	1.9820	2.3611	2.6217	2.8653	3.1667	3.3820
110	1.6588	1.9818	2.3607	2.6212	2.8647	3.1660	3.3812
111	1.6587	1.9816	2.3604	2.6208	2.8642	3.1653	3.3803
112	1.6586	1.9814	2.3601	2.6204	2.8637	3.1646	3.3795
113	1.6585	1.9812	2.3598	2.6200	2.8632	3.1640	3.3787
114	1.6583	1.9810	2.3595	2.6196	2.8627	3.1633	3.3779
115	1.6582	1.9808	2.3592	2.6192	2.8622	3.1626	3.3771
116	1.6581	1.9806	2.3589	2.6189	2.8617	3.1620	3.3764
117	1.6580	1.9805	2.3586	2.6185	2.8612	3.1614	3.3756
118	1.6579	1.9803	2.3583	2.6181	2.8608	3.1607	3.3749
119	1.6578	1.9801	2.3581	2.6178	2.8603	3.1601	3.3741
120	1.6577	1.9799	2.3578	2.6174	2.8599	3.1595	3.3735
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
121	1.6575	1.9798	2.3576	2.6171	2.8594	3.1589	3.3727
122	1.6574	1.9796	2.3573	2.6168	2.8590	3.1584	3.3721
123	1.6573	1.9794	2.3571	2.6164	2.8585	3.1578	3.3714
124	1.6572	1.9793	2.3568	2.6161	2.8582	3.1573	3.3707
125	1.6571	1.9791	2.3565	2.6158	2.8577	3.1567	3.3700
126	1.6570	1.9790	2.3563	2.6154	2.8573	3.1562	3.3694
127	1.6570	1.9788	2.3561	2.6151	2.8569	3.1556	3.3688
128	1.6568	1.9787	2.3559	2.6148	2.8565	3.1551	3.3682
129	1.6568	1.9785	2.3556	2.6145	2.8561	3.1546	3.3676
130	1.6567	1.9784	2.3554	2.6142	2.8557	3.1541	3.3669
131	1.6566	1.9782	2.3552	2.6139	2.8554	3.1536	3.3663

132	1.6565	1.9781	2.3549	2.6136	2.8550	3.1531	3.3658
133	1.6564	1.9779	2.3547	2.6133	2.8546	3.1526	3.3652
134	1.6563	1.9778	2.3545	2.6130	2.8542	3.1522	3.3646
135	1.6562	1.9777	2.3543	2.6127	2.8539	3.1517	3.3641
136	1.6561	1.9776	2.3541	2.6125	2.8536	3.1512	3.3635
137	1.6561	1.9774	2.3539	2.6122	2.8532	3.1508	3.3630
138	1.6560	1.9773	2.3537	2.6119	2.8529	3.1503	3.3624
139	1.6559	1.9772	2.3535	2.6117	2.8525	3.1499	3.3619
140	1.6558	1.9771	2.3533	2.6114	2.8522	3.1495	3.3614
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
141	1.6557	1.9769	2.3531	2.6112	2.8519	3.1491	3.3609
142	1.6557	1.9768	2.3529	2.6109	2.8516	3.1486	3.3604
143	1.6556	1.9767	2.3527	2.6106	2.8512	3.1482	3.3599
144	1.6555	1.9766	2.3525	2.6104	2.8510	3.1478	3.3594
145	1.6554	1.9765	2.3523	2.6102	2.8506	3.1474	3.3589
146	1.6554	1.9764	2.3522	2.6099	2.8503	3.1470	3.3584
147	1.6553	1.9762	2.3520	2.6097	2.8500	3.1466	3.3579
148	1.6552	1.9761	2.3518	2.6094	2.8497	3.1462	3.3575
149	1.6551	1.9760	2.3516	2.6092	2.8494	3.1458	3.3570
150	1.6551	1.9759	2.3515	2.6090	2.8491	3.1455	3.3565
151	1.6550	1.9758	2.3513	2.6088	2.8489	3.1451	3.3561
152	1.6549	1.9757	2.3511	2.6085	2.8486	3.1447	3.3557
153	1.6549	1.9756	2.3510	2.6083	2.8483	3.1443	3.3552
154	1.6548	1.9755	2.3508	2.6081	2.8481	3.1440	3.3548
155	1.6547	1.9754	2.3507	2.6079	2.8478	3.1436	3.3544
156	1.6547	1.9753	2.3505	2.6077	2.8475	3.1433	3.3540
157	1.6546	1.9752	2.3503	2.6075	2.8472	3.1430	3.3536
158	1.6546	1.9751	2.3502	2.6073	2.8470	3.1426	3.3531
159	1.6545	1.9750	2.3500	2.6071	2.8467	3.1423	3.3528
160	1.6544	1.9749	2.3499	2.6069	2.8465	3.1419	3.3523
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
161	1.6544	1.9748	2.3497	2.6067	2.8463	3.1417	3.3520
162	1.6543	1.9747	2.3496	2.6065	2.8460	3.1413	3.3516
163	1.6543	1.9746	2.3495	2.6063	2.8458	3.1410	3.3512

164	1.6542	1.9745	2.3493	2.6062	2.8455	3.1407	3.3508
165	1.6542	1.9744	2.3492	2.6060	2.8452	3.1403	3.3505
166	1.6541	1.9744	2.3490	2.6058	2.8450	3.1400	3.3501
167	1.6540	1.9743	2.3489	2.6056	2.8448	3.1398	3.3497
168	1.6540	1.9742	2.3487	2.6054	2.8446	3.1394	3.3494
169	1.6539	1.9741	2.3486	2.6052	2.8443	3.1392	3.3490
170	1.6539	1.9740	2.3485	2.6051	2.8441	3.1388	3.3487
171	1.6538	1.9739	2.3484	2.6049	2.8439	3.1386	3.3483
172	1.6537	1.9739	2.3482	2.6047	2.8437	3.1383	3.3480
173	1.6537	1.9738	2.3481	2.6046	2.8435	3.1380	3.3477
174	1.6537	1.9737	2.3480	2.6044	2.8433	3.1377	3.3473
175	1.6536	1.9736	2.3478	2.6042	2.8430	3.1375	3.3470
176	1.6536	1.9735	2.3477	2.6041	2.8429	3.1372	3.3466
177	1.6535	1.9735	2.3476	2.6039	2.8427	3.1369	3.3464
178	1.6535	1.9734	2.3475	2.6037	2.8424	3.1366	3.3460
179	1.6534	1.9733	2.3474	2.6036	2.8423	3.1364	3.3457
180	1.6534	1.9732	2.3472	2.6034	2.8420	3.1361	3.3454
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001
df							
181	1.6533	1.9731	2.3471	2.6033	2.8419	3.1358	3.3451
182	1.6533	1.9731	2.3470	2.6031	2.8416	3.1356	3.3448
183	1.6532	1.9730	2.3469	2.6030	2.8415	3.1354	3.3445
184	1.6532	1.9729	2.3468	2.6028	2.8413	3.1351	3.3442
185	1.6531	1.9729	2.3467	2.6027	2.8411	3.1349	3.3439
186	1.6531	1.9728	2.3466	2.6025	2.8409	3.1346	3.3436
187	1.6531	1.9727	2.3465	2.6024	2.8407	3.1344	3.3433
188	1.6530	1.9727	2.3463	2.6022	2.8406	3.1341	3.3430
189	1.6529	1.9726	2.3463	2.6021	2.8403	3.1339	3.3428
190	1.6529	1.9725	2.3461	2.6019	2.8402	3.1337	3.3425
191	1.6529	1.9725	2.3460	2.6018	2.8400	3.1334	3.3422
192	1.6528	1.9724	2.3459	2.6017	2.8398	3.1332	3.3419
193	1.6528	1.9723	2.3458	2.6015	2.8397	3.1330	3.3417
194	1.6528	1.9723	2.3457	2.6014	2.8395	3.1328	3.3414
195	1.6527	1.9722	2.3456	2.6013	2.8393	3.1326	3.3411
196	1.6527	1.9721	2.3455	2.6012	2.8392	3.1323	3.3409
197	1.6526	1.9721	2.3454	2.6010	2.8390	3.1321	3.3406
198	1.6526	1.9720	2.3453	2.6009	2.8388	3.1319	3.3403

199	1.6525	1.9720	2.3452	2.6008	2.8387	3.1317	3.3401
200	1.6525	1.9719	2.3451	2.6007	2.8385	3.1315	3.3398
α (1 tail)	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
α (2 tail)	0.1	0.05	0.02	0.01	0.005	0.002	0.001