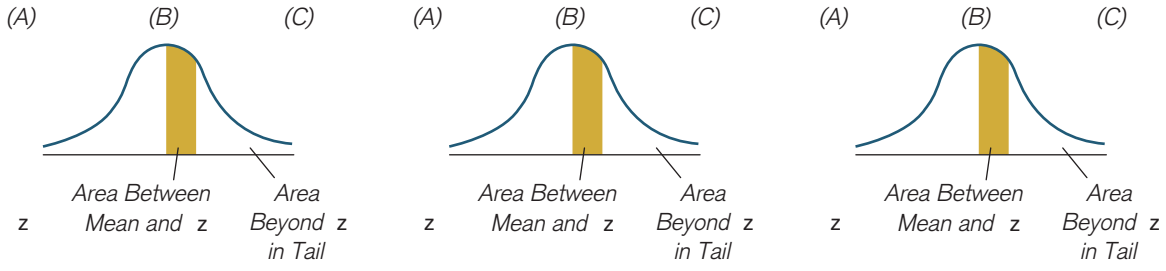
Appendix C

Statistical Tables

TABLE C.1 The Unit Normal Table

Column (A) lists *z*-score values. Column (B) lists the proportion of the area between the mean and the *z*-score value. Column (C) lists the proportion of the area beyond the *z* score in the tail of the distribution. (*Note:* Because the normal distribution is symmetrical, areas for negative *z* scores are the same as those for positive *z* scores.)



(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail
0.00	.0000	.5000	0.15	.0596	.4404	0.30	.1179	.3821
0.01	.0040	.4960	0.16	.0636	.4364	0.31	.1217	.3783
0.02	.0080	.4920	0.17	.0675	.4325	0.32	.1255	.3745
0.03	.0120	.4880	0.18	.0714	.4286	0.33	.1293	.3707
0.04	.0160	.4840	0.19	.0753	.4247	0.34	.1331	.3669
0.05	.0199	.4801	0.20	.0793	.4207	0.35	.1368	.3632
0.06	.0239	.4761	0.21	.0832	.4168	0.36	.1406	.3594
0.07	.0279	.4721	0.22	.0871	.4129	0.37	.1443	.3557
0.08	.0319	.4681	0.23	.0910	.4090	0.38	.1480	.3520
0.09	.0359	.4641	0.24	.0948	.4052	0.39	.1517	.3483
0.10	.0398	.4602	0.25	.0987	.4013	0.40	.1554	.3446
0.11	.0438	.4562	0.26	.1026	.3974	0.41	.1591	.3409
0.12	.0478	.4522	0.27	.1064	.3936	0.42	.1628	.3372
0.13	.0517	.4483	0.28	.1103	.3897	0.43	.1664	.3336
0.14	.0557	.4443	0.29	.1141	.3859	0.44	.1700	.3300

(Continued)

TABLE C.1 (Continued)

(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail
0.45	.1736	.3264	0.78	.2823	.2177	1.11	.3665	.1335
0.46	.1772	.3228	0.79	.2852	.2148	1.12	.3686	.1314
0.47	.1808	.3192	0.80	.2881	.2119	1.13	.3708	.1292
0.48	.1844	.3156	0.81	.2910	.2090	1.14	.3729	.1271
0.49	.1879	.3121	0.82	.2939	.2061	1.15	.3749	.1251
0.50	.1915	.3085	0.83	.2967	.2033	1.16	.3770	.1230
0.51	.1950	.3050	0.84	.2995	.2005	1.17	.3790	.1210
0.52	.1985	.3015	0.85	.3023	.1977	1.18	.3810	.1190
0.53	.2019	.2981	0.86	.3051	.1949	1.19	.3830	.1170
0.54	.2054	.2946	0.87	.3078	.1922	1.20	.3849	.1151
0.55	.2088	.2912	0.88	.3106	.1894	1.21	.3869	.1131
0.56	.2123	.2877	0.89	.3133	.1867	1.22	.3888	.1112
0.57	.2157	.2843	0.90	.3159	.1841	1.23	.3907	.1093
0.58	.2190	.2810	0.91	.3186	.1814	1.24	.3925	.1075
0.59	.2224	.2776	0.92	.3212	.1788	1.25	.3944	.1056
0.60	.2257	.2743	0.93	.3238	.1762	1.26	.3962	.1038
0.61	.2391	.2709	0.94	.3264	.1736	1.27	.3980	.1020
0.62	.2324	.2676	0.95	.3289	.17 11	1.28	.3997	.1003
0.63	.2357	.2643	0.96	.3315	.1685	1.29	.4015	.0985
0.64	.2389	.2611	0.97	.3340	.1660	1.30	.4032	.0968
0.65	.2422	.2578	0.98	.3365	.1635	1.31	.4049	.0951
0.66	.2454	.2546	0.99	.3389	.1611	1.32	.4066	.0934
0.67	.2486	.2514	1.00	.3413	.1587	1.33	.4082	.0918
0.68	.2517	.2483	1.01	.3438	.1562	1.34	.4099	.0901
0.69	.2549	.2451	1.02	.3461	.1539	1.35	.4115	.0885
0.70	.2580	.2420	1.03	.3485	.1515	1.36	.4131	.0869
0.71	.2611	.2389	1.04	.3508	.1492	1.37	.4147	.0853
0.72	.2642	.2358	1.05	.3531	.1469	1.38	.4162	.0838
0.73	.2673	.2327	1.06	.3554	.1446	1.39	.4177	.0823
0.74	.2704	.2296	1.07	.3577	.1423	1.40	.4192	.0808
0.75	.2734	.2266	1.08	.3599	.1401	1.41	.4207	.0793
0.76	.2764	.2236	1.09	.3621	.1379	1.42	.4222	.0778
0.77	.2794	.2206	1.10	.3643	.1357	1.43	.4236	.0764

(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail
1.44	.4251	.0749	1.77	.4616	.0384	2.10	.4821	.0179
1.45	.4265	.0735	1.78	.4625	.0375	2.11	.4826	.0174
1.46	.4279	.0721	1.79	.4633	.0367	2.12	.4830	.0170
1.47	.4292	.0708	1.80	.4641	.0359	2.13	.4834	.0166
1.48	.4306	.0694	1.81	.4649	.0351	2.14	.4838	.0162
1.49	.4319	.0681	1.82	.4656	.0344	2.15	.4842	.0158
1.50	.4332	.0668	1.83	.4664	.0336	2.16	.4846	.0154
1.51	.4345	.0655	1.84	.4671	.0329	2.17	.4850	.0150
1.52	.4357	.0643	1.85	.4678	.0322	2.18	.4854	.0146
1.53	.4370	.0630	1.86	.4686	.0314	2.19	.4857	.0143
1.54	.4382	.0618	1.87	.4693	.0307	2.20	.4861	.0139
1.55	.4394	.0606	1.88	.4699	.0301	2.21	.4864	.0136
1.56	.4406	.0594	1.89	.4706	.0294	2.22	.4868	.0132
1.57	.4418	.0582	1.90	.4713	.0287	2.23	.4871	.0129
1.58	.4429	.0571	1.91	.4719	.0281	2.24	.4875	.0125
1.59	.4441	.0559	1.92	.4726	.0274	2.25	.4878	.0122
1.60	.4452	.0548	1.93	.4732	.0268	2.26	.4881	.0119
1.61	.4463	.0537	1.94	.4738	.0262	2.27	.4884	.0116
1.62	.4474	.0526	1.95	.4744	.0256	2.28	.4887	.0113
1.63	.4484	.0516	1.96	.4750	.0250	2.29	.4890	.0110
1.64	.4495	.0505	1.97	.4756	.0244	2.30	.4893	.0107
1.65	.4505	.0495	1.98	.4761	.0239	2.31	.4896	.0104
1.66	.4515	.0485	1.99	.4767	.0233	2.32	.4898	.0102
1.67	.4525	.0475	2.00	.4772	.0228	2.33	.4901	.0099
1.68	.4535	.0465	2.01	.4778	.0222	2.34	.4904	.0096
1.69	.4545	.0455	2.02	.4783	.0217	2.35	.4906	.0094
1.70	.4554	.0446	2.03	.4788	.0212	2.36	.4909	.0091
1.71	.4564	.0436	2.04	.4793	.0207	2.37	.4911	.0089
1.72	.4573	.0427	2.05	.4798	.0202	2.38	.4913	.0087
1.73	.4582	.0418	2.06	.4803	.0197	2.39	.4916	.0084
1.74	.4591	.0409	2.07	.4808	.0192	2.40	.4918	.0082
1.75	.4599	.0401	2.08	.4812	.0188	2.41	.4920	.0080
1.76	.4608	.0392	2.09	.4817	.0183	2.42	.4922	.0078

(Continued)

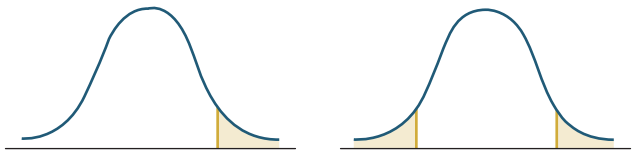
TABLE C.1 (Continued)

(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail	(A) *z*	(B) Area Between Mean and *z*	(C) Area Beyond *z* in Tail
2.43	.4925	.0075	2.74	.4969	.0031	3.05	.4989	.0011
2.44	.4927	.0073	2.75	.4970	.0030	3.06	.4989	.0011
2.45	.4929	.0071	2.76	.4971	.0029	3.07	.4989	.0011
2.46	.4931	.0069	2.77	.4972	.0028	3.08	.4990	.0010
2.47	.4932	.0068	2.78	.4973	.0027	3.09	.4990	.0010
2.48	.4934	.0066	2.79	.4974	.0026	3.10	.4990	.0010
2.49	.4936	.0064	2.80	.4974	.0026	3.11	.4991	.0009
2.50	.4938	.0062	2.81	.4975	.0025	3.12	.4991	.0009
2.51	.4940	.0060	2.82	.4976	.0024	3.13	.4991	.0009
2.52	.4941	.0059	2.83	.4977	.0023	3.14	.4992	.0008
2.53	.4943	.0057	2.84	.4977	.0023	3.15	.4992	.0008
2.54	.4945	.0055	2.85	.4978	.0022	3.16	.4992	.0008
2.55	.4946	.0054	2.86	.4979	.0021	3.17	.4992	.0008
2.56	.4948	.0052	2.87	.4979	.0021	3.18	.4993	.0007
2.57	.4949	.0051	2.88	.4980	.0020	3.19	.4993	.0007
2.58	.4951	.0049	2.89	.4981	.0019	3.20	.4993	.0007
2.59	.4952	.0048	2.90	.4981	.0019	3.21	.4993	.0007
2.60	.4953	.0047	2.91	.4982	.0018	3.22	.4994	.0006
2.61	.4955	.0045	2.92	.4982	.0018	3.23	.4994	.0006
2.62	.4956	.0044	2.93	.4983	.0017	3.24	.4994	.0006
2.63	.4957	.0043	2.94	.4984	.0016	3.25	.4994	.0006
2.64	.4959	.0041	2.95	.4984	.0016	3.30	.4995	.0005
2.65	.4960	.0040	2.96	.4985	.0015	3.35	.4996	.0004
2.66	.4961	.0039	2.97	.4985	.0015	3.40	.4997	.0003
2.67	.4962	.0038	2.98	.4986	.0014	3.45	.4997	.0003
2.68	.4963	.0037	2.99	.4986	.0014	3.50	.4998	.0002
2.69	.4964	.0036	3.00	.4987	.0013	3.60	.4998	.0002
2.70	.4965	.0035	3.01	.4987	.0013	3.70	.4999	.0001
2.71	.4966	.0034	3.02	.4987	.0013	3.80	.4999	.0001
2.72	.4967	.0033	3.03	.4988	.0012	3.90	.49995	.00005
2.73	.4968	.0032	3.04	.4988	.0012	4.00	.49997	.00003

Source: Based on Freund, J. E. (2004) *Modern elementary statistics* (11th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

TABLE C.2 Critical Values for the *t* Distribution

Table entries are values of *t* corresponding to proportions in one tail or in two tails combined.



One tail (either right or left) | Two tails combined

	Proportion in One Tail					
	.25	.10	.05	.025	.01	.005
	Proportion in Two Tails Combined					
df	.50	.20	.10	.05	.02	.01
1	1.000	3.078	6.314	12.706	31.821	63.657
2	0.816	1.886	2.920	4.303	6.965	9.925
3	0.765	1.638	2.353	3.182	4.541	5.841
4	0.741	1.533	2.132	2.776	3.747	4.604
5	0.727	1.476	2.015	2.571	3.365	4.032
6	0.718	1.440	1.943	2.447	3.143	3.707
7	0.711	1.415	1.895	2.365	2.998	3.499
8	0.706	1.397	1.860	2.306	2.896	3.355
9	0.703	1.383	1.833	2.282	2.821	3.250
10	0.700	1.372	1.812	2.228	2.764	3.169
11	0.697	1.363	1.796	2.201	2.718	3.106
12	0.695	1.356	1.782	2.179	2.681	3.055
13	0.694	1.350	1.771	2.160	2.650	3.012
14	0.692	1.345	1.761	2.145	2.624	2.977
15	0.691	1.341	1.753	2.131	2.602	2.947
16	0.690	1.337	1.746	2.120	2.583	2.921
17	0.689	1.333	1.740	2.110	2.567	2.898
18	0.688	1.330	1.734	2.101	2.552	2.878
19	0.688	1.328	1.729	2.093	2.539	2.861
20	0.687	1.325	1.725	2.086	2.528	2.845

(Continued)

TABLE C.2 (Continued)

	Proportion in One Tail					
	.25	.10	.05	.025	.01	.005
	Proportion in Two Tails Combined					
df	.50	.20	.10	.05	.02	.01
21	0.686	1.323	1.721	2.080	2.518	2.831
22	0.686	1.321	1.717	2.074	2.508	2.819
23	0.685	1.319	1.714	2.069	2.500	2.807
24	0.685	1.318	1.711	2.064	2.492	2.797
25	0.684	1.316	1.708	2.060	2.485	2.787
26	0.684	1.315	1.706	2.056	2.479	2.779
27	0.684	1.314	1.703	2.052	2.473	2.771
28	0.683	1.313	1.701	2.048	2.467	2.763
29	0.683	1.311	1.699	2.045	2.462	2.756
30	0.683	1.310	1.697	2.042	2.457	2.750
40	0.681	1.303	1.684	2.021	2.423	2.704
60	0.679	1.296	1.671	2.000	2.390	2.660
120	0.677	1.289	1.658	1.980	2.358	2.617
∞	0.674	1.282	1.645	1.960	2.326	2.576

Source: Table III of Fisher, R. A., & Yates, F. (1974). *Statistical tables for biological, agricultural and medical research* (6th ed.). London, England: Longman Group Ltd. (previously published by Oliver and Boyd Ltd., Edinburgh). Adapted and reprinted with permission of Addison Wesley Longman.

TABLE C.3 Critical Values for the *F* Distribution

Critical values at a .05 level of significance are given in lightface type.
Critical values at a .01 level of significance are given in boldface type.

Degrees of Freedom Denominator	Degrees of Freedom Numerator											
	1	2	3	4	5	6	7	8	9	10	20	∞
1	161 **4052**	200 **5000**	216 **5403**	225 **5625**	230 **5764**	234 **5859**	237 **5928**	239 **5928**	241 **6023**	242 **6056**	248 **6209**	254 **6366**
2	18.51 **98.49**	19.00 **99.00**	19.16 **99.17**	19.25 **99.25**	19.30 **99.30**	19.33 **99.33**	19.36 **99.34**	19.37 **99.36**	19.38 **99.38**	19.39 **99.40**	19.44 **99.45**	19.5 **99.5**
3	10.13 **34.12**	9.55 **30.92**	9.28 **29.46**	9.12 **28.71**	9.01 **28.24**	8.94 **27.91**	8.88 **27.67**	8.84 **27.49**	8.81 **27.34**	8.78 **27.23**	8.66 **26.69**	8.5 **26.1**
4	7.71 **21.20**	6.94 **18.00**	6.59 **16.69**	6.39 **15.98**	6.26 **15.52**	6.16 **15.21**	6.09 **14.98**	6.04 **14.80**	6.00 **14.66**	5.96 **14.54**	5.80 **14.02**	5.6 **13.5**
5	6.61 **16.26**	5.79 **13.27**	5.41 **12.06**	5.19 **11.39**	5.05 **10.97**	4.95 **10.67**	4.88 **10.45**	4.82 **10.27**	4.78 **10.15**	4.74 **10.05**	4.56 **9.55**	4.37 **9.02**
6	5.99 **13.74**	5.14 **10.92**	4.76 **9.78**	4.53 **9.15**	4.39 **8.75**	4.28 **8.47**	4.21 **8.26**	4.15 **8.10**	4.10 **7.98**	4.06 **7.87**	3.87 **7.39**	3.67 **6.88**
7	5.59 **13.74**	4.74 **9.55**	4.35 **8.45**	4.12 **7.85**	3.97 **7.46**	3.87 **7.19**	3.79 **7.00**	3.73 **6.84**	3.68 **6.71**	3.63 **6.62**	3.44 **6.15**	3.23 **5.65**
8	5.32 **11.26**	4.46 **8.65**	4.07 **7.59**	3.84 **7.01**	3.69 **6.63**	3.58 **6.37**	3.50 **6.19**	3.44 **6.03**	3.39 **5.91**	3.34 **5.82**	3.15 **5.36**	2.93 **4.86**
9	5.12 **10.56**	4.26 **8.02**	3.86 **6.99**	3.63 **6.42**	3.48 **6.06**	3.37 **5.80**	3.29 **5.62**	3.23 **5.47**	3.18 **5.35**	3.13 **5.26**	2.93 **4.80**	2.71 **4.31**
10	4.96 **10.04**	4.10 **7.56**	3.71 **6.55**	3.48 **5.99**	3.33 **5.64**	3.22 **5.39**	3.14 **5.21**	3.07 **5.06**	3.02 **4.95**	2.97 **4.85**	2.77 **4.41**	2.54 **3.91**
11	4.84 **9.65**	3.98 **7.20**	3.59 **6.22**	3.36 **5.67**	3.20 **5.32**	3.09 **5.07**	3.01 **4.88**	2.95 **4.74**	2.90 **4.63**	2.86 **4.54**	2.65 **4.10**	2.40 **3.60**
12	4.75 **9.33**	3.89 **6.93**	3.49 **5.95**	3.26 **5.41**	3.11 **5.06**	3.00 **4.82**	2.92 **4.65**	2.85 **4.50**	2.80 **4.39**	2.76 **4.30**	2.54 **3.86**	2.30 **3.36**
13	4.67 **9.07**	3.80 **6.70**	3.41 **5.74**	3.18 **5.20**	3.02 **4.86**	2.92 **4.62**	2.84 **4.44**	2.77 **4.30**	2.72 **4.19**	2.67 **4.10**	2.46 **3.67**	2.21 **3.17**
14	4.60 **8.86**	3.74 **6.51**	3.34 **5.56**	3.11 **5.03**	2.96 **4.69**	2.85 **4.46**	2.77 **4.28**	2.70 **4.14**	2.65 **4.03**	2.60 **3.94**	2.39 **3.51**	2.13 **3.00**
15	4.54 **8.68**	3.68 **6.36**	3.29 **5.42**	3.06 **4.89**	2.90 **4.56**	2.79 **4.32**	2.70 **4.14**	2.64 **4.00**	2.59 **3.89**	2.55 **3.80**	2.33 **3.36**	2.07 **2.87**

(Continued)

TABLE C.3 (Continued)

Degrees of Freedom Denominator	Degrees of Freedom Numerator											
	1	2	3	4	5	6	7	8	9	10	20	∞
16	4.49 **8.53**	3.63 **6.23**	3.24 **5.29**	3.01 **4.77**	2.85 **4.44**	2.74 **4.20**	2.66 **4.03**	2.59 **3.89**	2.54 **3.78**	2.49 **3.69**	2.28 **3.25**	2.01 **2.75**
17	4.45 **8.40**	3.59 **6.11**	3.20 **5.18**	2.96 **4.67**	2.81 **4.34**	2.70 **4.10**	2.62 **3.93**	2.55 **3.79**	2.50 **3.68**	2.45 **3.59**	2.23 **3.16**	1.96 **2.65**
18	4.41 **8.28**	3.55 **6.01**	3.16 **5.09**	2.93 **4.58**	2.77 **4.25**	2.66 **4.01**	2.58 **3.85**	2.51 **3.71**	2.46 **3.60**	2.41 **3.51**	2.19 **3.07**	1.92 **2.57**
19	4.38 **8.18**	3.52 **5.93**	3.13 **5.01**	2.90 **4.50**	2.74 **4.17**	2.63 **3.94**	2.55 **3.77**	2.48 **3.63**	2.43 **3.52**	2.38 **3.43**	2.15 **3.00**	1.88 **2.49**
20	4.35 **8.10**	3.49 **5.85**	3.10 **4.94**	2.87 **4.43**	2.71 **4.10**	2.60 **3.87**	2.52 **3.71**	2.45 **3.56**	2.40 **3.45**	2.35 **3.37**	2.12 **2.94**	1.84 **2.42**
21	4.32 **8.02**	3.47 **5.78**	3.07 **4.87**	2.84 **4.37**	2.68 **4.04**	2.57 **3.81**	2.49 **3.65**	2.42 **3.51**	2.37 **3.40**	2.32 **3.31**	2.09 **2.88**	1.81 **2.36**
22	4.30 **7.94**	3.44 **5.72**	3.05 **4.82**	2.82 **4.31**	2.66 **3.99**	2.55 **3.76**	2.47 **3.59**	2.40 **3.45**	2.35 **3.35**	2.30 **3.26**	2.07 **2.83**	1.78 **2.31**
23	4.28 **7.88**	3.42 **5.66**	3.03 **4.76**	2.80 **4.26**	2.64 **3.94**	2.53 **3.71**	2.45 **3.54**	2.38 **3.41**	2.32 **3.30**	2.28 **3.21**	2.04 **2.78**	1.76 **2.26**
24	4.26 **7.82**	3.40 **5.61**	3.01 **4.72**	2.78 **4.22**	2.62 **3.90**	2.51 **3.67**	2.43 **3.50**	2.36 **3.36**	2.30 **3.25**	2.26 **3.17**	2.02 **2.74**	1.73 **2.21**
25	4.24 **7.77**	3.38 **5.57**	2.99 **4.68**	2.76 **4.18**	2.60 **3.86**	2.49 **3.63**	2.41 **3.46**	2.34 **3.32**	2.28 **3.21**	2.24 **3.13**	2.00 **2.70**	1.71 **2.17**
26	4.22 **7.72**	3.37 **5.53**	2.98 **4.64**	2.74 **4.14**	2.59 **3.82**	2.47 **3.59**	2.39 **3.42**	2.32 **3.29**	2.27 **3.17**	2.22 **3.09**	1.99 **2.66**	1.69 **2.13**
27	4.21 **7.68**	3.35 **5.49**	2.96 **4.60**	2.73 **4.11**	2.57 **3.79**	2.46 **3.56**	2.37 **3.39**	2.30 **3.26**	2.25 **3.14**	2.20 **3.06**	1.97 **2.63**	1.67 **2.10**
28	4.20 **7.64**	3.34 **5.45**	2.95 **4.57**	2.71 **4.07**	2.56 **3.76**	2.44 **3.53**	2.36 **3.36**	2.29 **3.23**	2.24 **3.11**	2.19 **3.03**	1.96 **2.60**	1.65 **2.07**
29	4.18 **7.60**	3.33 **5.42**	2.93 **4.54**	2.70 **4.04**	2.54 **3.73**	2.43 **3.50**	2.35 **3.33**	2.28 **3.20**	2.22 **3.08**	2.18 **3.00**	1.94 **2.57**	1.63 **2.04**
30	4.17 **7.56**	3.32 **5.39**	2.92 **4.51**	2.69 **4.02**	2.53 **3.70**	2.42 **3.47**	2.34 **3.30**	2.27 **3.17**	2.21 **3.06**	2.16 **2.98**	1.93 **2.55**	1.61 **2.01**
31	4.16 **7.53**	3.30 **5.36**	2.91 **4.48**	2.68 **3.99**	2.52 **3.67**	2.41 **3.45**	2.32 **3.28**	2.25 **3.15**	2.20 **3.04**	2.15 **2.96**	1.92 **2.53**	1.60 **1.89**
32	4.15 **7.50**	3.29 **5.34**	2.90 **4.46**	2.67 **3.97**	2.51 **3.65**	2.40 **3.43**	2.31 **3.26**	2.24 **3.13**	2.19 **3.02**	2.14 **2.93**	1.91 **2.51**	1.59 **1.88**

Degrees of Freedom Denominator	Degrees of Freedom Numerator											
	1	2	3	4	5	6	7	8	9	10	20	∞
33	4.14 **7.47**	3.28 **5.31**	2.89 **4.44**	2.66 **3.95**	2.50 **3.63**	2.39 **3.41**	2.30 **3.24**	2.23 **3.11**	2.18 **3.00**	2.13 **2.91**	1.90 **2.49**	1.58 **1.87**
34	4.13 **7.44**	3.28 **5.29**	2.88 **4.42**	2.65 **3.93**	2.49 **3.61**	2.38 **3.39**	2.29 **3.22**	2.23 **3.09**	2.17 **2.98**	2.12 **2.89**	1.89 **2.47**	1.57 **1.86**
35	4.12 **7.42**	3.27 **5.27**	2.87 **4.40**	2.64 **3.91**	2.49 **3.59**	2.37 **3.37**	2.29 **3.20**	2.22 **3.07**	2.16 **2.96**	2.11 **2.88**	1.88 **2.45**	1.56 **1.85**
36	4.11 **7.40**	3.26 **5.25**	2.87 **4.38**	2.63 **3.89**	2.48 **3.57**	2.36 **3.35**	2.28 **3.18**	2.21 **3.05**	2.15 **2.95**	2.11 **2.86**	1.87 **2.43**	1.55 **1.84**
37	4.11 **7.37**	3.25 **5.23**	2.86 **4.36**	2.63 **3.87**	2.47 **3.56**	2.36 **3.33**	2.27 **3.17**	2.20 **3.04**	2.14 **2.93**	2.10 **2.84**	1.86 **2.42**	1.54 **1.83**
38	4.10 **7.35**	3.24 **5.21**	2.85 **4.34**	2.62 **3.86**	2.46 **3.54**	2.35 **3.32**	2.26 **3.15**	2.19 **3.02**	2.14 **2.92**	2.09 **2.83**	1.85 **2.40**	1.53 **1.82**
39	4.09 **7.33**	3.24 **5.19**	2.85 **4.33**	2.61 **3.84**	2.46 **3.53**	2.34 **3.30**	2.26 **3.14**	2.19 **3.01**	2.13 **2.90**	2.08 **2.81**	1.84 **2.39**	1.52 **1.81**
40	4.08 **7.31**	3.23 **5.18**	2.84 **4.31**	2.61 **3.83**	2.45 **3.51**	2.34 **3.29**	2.25 **3.12**	2.18 **2.99**	2.12 **2.88**	2.07 **2.80**	1.84 **2.37**	1.51 **1.80**
42	4.07 **7.27**	3.22 **5.15**	2.83 **4.29**	2.59 **3.80**	2.44 **3.49**	2.32 **3.26**	2.24 **3.10**	2.17 **2.96**	2.11 **2.86**	2.06 **2.77**	1.82 **2.35**	1.50 **1.78**
44	4.06 **7.24**	3.21 **5.12**	2.82 **4.26**	2.58 **3.78**	2.43 **3.46**	2.31 **3.24**	2.23 **3.07**	2.16 **2.94**	2.10 **2.84**	2.05 **2.75**	1.81 **2.32**	1.49 **1.76**
60	4.00 **7.08**	3.15 **4.98**	2.76 **4.13**	2.53 **3.65**	2.37 **3.34**	2.25 **3.12**	2.17 **2.95**	2.10 **2.82**	2.04 **2.72**	1.99 **2.63**	1.75 **2.20**	1.39 **1.60**
120	3.92 **6.85**	3.07 **4.79**	2.68 **3.95**	2.45 **3.48**	2.29 **3.17**	2.18 **2.96**	2.09 **2.79**	2.02 **2.66**	1.96 **2.56**	1.91 **2.47**	1.66 **2.03**	1.25 **1.38**
∞	3.84 **6.63**	3.00 **4.61**	2.60 **3.78**	2.37 **3.32**	2.21 **3.02**	2.10 **2.80**	2.01 **2.64**	1.94 **2.51**	1.88 **2.41**	1.83 **2.32**	1.57 **1.88**	1.00 **1.00**

Source: The entries in this table were computed by the author.

TABLE C.4 The Studentized Range Statistic (q)

The critical values for q correspond to alpha = .05 (lightface type) and alpha = .01 (boldface type).

	Range								
df_E	2	3	4	5	6	7	8	9	10
6	3.46 **5.24**	4.34 **6.32**	4.90 **7.02**	5.30 **7.55**	5.63 **7.98**	5.91 **8.33**	6.13 **8.62**	6.32 **8.87**	6.50 **9.10**
7	3.34 **4.95**	4.17 **5.91**	4.68 **6.54**	5.06 **7.00**	5.36 **7.38**	5.60 **7.69**	5.82 **7.94**	5.99 **8.17**	6.15 **8.38**
8	3.26 **4.75**	4.05 **5.64**	4.53 **6.21**	4.89 **6.63**	5.17 **6.97**	5.41 **7.26**	5.60 **7.47**	5.78 **7.70**	5.93 **7.89**
9	3.20 **4.60**	3.95 **5.43**	4.42 **5.95**	4.76 **6.34**	5.03 **6.67**	5.24 **6.91**	5.43 **7.13**	5.60 **7.33**	5.74 **7.50**
10	3.15 **4.48**	3.88 **5.27**	4.33 **5.77**	4.66 **6.14**	4.92 **6.43**	5.12 **6.67**	5.30 **6.89**	5.46 **7.06**	5.60 **7.22**
11	3.11 **4.38**	3.82 **5.16**	4.27 **5.63**	4.59 **5.98**	4.83 **6.25**	5.03 **6.48**	5.21 **6.69**	5.36 **6.85**	5.49 **7.01**
12	3.08 **4.32**	3.78 **5.05**	4.20 **5.50**	4.51 **5.84**	4.75 **6.10**	4.96 **6.32**	5.12 **6.52**	5.26 **6.67**	5.39 **6.82**
13	3.05 **4.26**	3.73 **4.97**	4.15 **5.41**	4.47 **5.74**	4.69 **5.98**	4.88 **6.19**	5.06 **6.39**	5.21 **6.53**	5.33 **6.68**
14	3.03 **4.21**	3.70 **4.90**	4.11 **5.33**	4.41 **5.64**	4.64 **5.88**	4.83 **6.10**	4.99 **6.28**	5.13 **6.41**	5.25 **6.56**
15	3.01 **4.17**	3.68 **4.84**	4.09 **5.26**	4.38 **5.56**	4.59 **5.80**	4.79 **6.01**	4.95 **6.18**	5.09 **6.31**	5.21 **6.46**
16	2.99 **4.13**	3.65 **4.79**	4.05 **5.19**	4.33 **5.50**	4.56 **5.72**	4.74 **5.94**	4.89 **6.10**	5.03 **6.23**	5.15 **6.37**
17	2.98 **4.10**	3.63 **4.75**	4.02 **5.15**	4.30 **5.44**	4.52 **5.66**	4.70 **5.86**	4.85 **6.02**	4.99 **6.14**	5.11 **6.28**
18	2.97 **4.07**	3.62 **4.71**	4.01 **5.10**	4.29 **5.39**	4.49 **5.60**	4.68 **5.80**	4.84 **5.95**	4.97 **6.08**	5.08 **6.21**
19	2.96 **4.05**	3.59 **4.68**	3.98 **5.05**	4.26 **5.35**	4.47 **5.56**	4.65 **5.75**	4.80 **5.91**	4.93 **6.03**	5.04 **6.15**
20	2.95 **4.02**	3.58 **4.64**	3.96 **5.02**	4.24 **5.31**	4.45 **5.51**	4.63 **5.71**	4.78 **5.86**	4.91 **5.98**	5.01 **6.09**
22	2.94 **3.99**	3.55 **4.59**	3.93 **4.96**	4.20 **5.27**	4.41 **5.44**	4.58 **5.62**	4.72 **5.76**	4.85 **5.87**	4.96 **6.00**

df_E	Range								
	2	3	4	5	6	7	8	9	10
24	2.92 **3.96**	3.53 **4.55**	3.91 **4.92**	4.17 **5.17**	4.37 **5.37**	4.54 **5.55**	4.69 **5.70**	4.81 **5.81**	4.92 **5.93**
26	2.91 **3.94**	3.52 **4.51**	3.89 **4.87**	4.15 **5.13**	4.36 **5.33**	4.53 **5.49**	4.67 **5.63**	4.79 **5.74**	4.90 **5.86**
28	2.90 **3.91**	3.50 **4.48**	3.87 **4.83**	4.12 **5.09**	4.33 **5.28**	4.49 **5.45**	4.63 **5.58**	4.75 **5.69**	4.86 **5.81**
30	2.89 **3.89**	3.49 **4.45**	3.85 **4.80**	4.10 **5.05**	4.30 **5.24**	4.47 **5.40**	0.60 **5.54**	4.73 **5.64**	4.84 **5.76**
40	2.86 **3.82**	3.45 **4.37**	3.79 **4.70**	4.05 **4.93**	4.23 **5.11**	4.39 **5.26**	4.52 **5.39**	4.65 **5.49**	4.73 **5.60**
60	2.83 **3.76**	3.41 **4.28**	3.75 **4.60**	3.98 **4.82**	4.16 **4.99**	4.31 **5.13**	4.44 **5.25**	4.56 **5.36**	4.65 **5.45**
100	2.81 **3.72**	3.36 **4.22**	3.70 **4.52**	3.93 **4.74**	4.11 **4.90**	4.26 **5.04**	4.39 **5.15**	4.50 **5.23**	4.59 **5.34**
∞	2.77 **3.64**	3.31 **4.12**	3.63 **4.40**	3.86 **4.60**	4.03 **4.76**	4.17 **4.88**	4.28 **4.99**	4.39 **5.08**	4.47 **5.16**

Source: The entries in this table were computed by the author.

TABLE C.5 Critical Values for the Pearson Correlation*

*To be significant, the sample correlation, *r*, must be greater than or equal to the critical value in the table.

	Level of Significance for One-Tailed Test			
	.05	.025	.01	.005
	Level of Significance for Two-Tailed Test			
$df = n - 2$	.10	.05	.02	.01
1	.988	.997	.9995	.99999
2	.900	.950	.980	.990
3	.805	.878	.934	.959
4	.729	.811	.882	.917
5	.669	.754	.833	.874
6	.622	.707	.789	.834
7	.582	.666	.750	.798
8	.549	.632	.716	.765
9	.521	.602	.685	.735
10	.497	.576	.658	.708
11	.476	.553	.634	.684
12	.458	.532	.612	.661
13	.441	.514	.592	.641
14	.426	.497	.574	.623
15	.412	.482	.558	.606
16	.400	.468	.542	.590
17	.389	.456	.528	.575
18	.378	.444	.516	.561
19	.369	.433	.503	.549
20	.360	.423	.492	.537
21	.352	.413	.482	.526
22	.344	.404	.472	.515
23	.337	.396	.462	.505
24	.330	.388	.453	.496

	Level of Significance for One-Tailed Test			
	.05	.025	.01	.005
	Level of Significance for Two-Tailed Test			
$df = n - 2$	.10	.05	.02	.01
25	.323	.381	.445	.487
26	.317	.374	.437	.479
27	.311	.367	.430	.471
28	.306	.361	.423	.463
29	.301	.355	.416	.456
30	.296	.349	.409	.449
35	.275	.325	.381	.418
40	.257	.304	.358	.393
45	.243	.288	.338	.372
50	.231	.273	.322	.354
60	.211	.250	.295	.325
70	.195	.232	.274	.302
80	.183	.217	.256	.283
90	.173	.205	.242	.267
100	.164	.195	.230	.254

Source: Table VI of Fisher, R. A., & Yates, F. (1974). *Statistical tables for biological, agricultural and medical research* (6th ed.). London, England: Longman Group Ltd., 1974 (previously published by Oliver and Boyd Ltd., Edinburgh). Adapted and reprinted with permission of Addison Wesley Longman.

TABLE C.6 Critical Values for the Spearman Correlation*

*To be significant, the sample correlation, *r*, must be greater than or equal to the critical value in the table.

	Level of Significance for One-Tailed Test			
	.05	.025	.01	.005
	Level of Significance for Two-Tailed Test			
n	.10	.05	.02	.01
4	1.000			
5	.900	1.000	1.000	
6	.829	.886	.943	1.000
7	.714	.786	.893	.929
8	.643	.738	.833	.881
9	.600	.700	.783	.833
10	.564	.648	.745	.794
11	.536	.618	.709	.755
12	.503	.587	.671	.727
13	.484	.560	.648	.703
14	.464	.538	.622	.675
15	.443	.521	.604	.654
16	.429	.503	.582	.635
17	.414	.485	.566	.615
18	.401	.472	.550	.600
19	.391	.460	.535	.584
20	.380	.447	.520	.570
21	.370	.435	.508	.556
22	.361	.425	.496	.544
23	.353	.415	.486	.532
24	.344	.406	.476	.521
25	.337	.398	.466	.511
26	.331	.390	.457	.501
27	.324	.382	.448	.491

	Level of Significance for One-Tailed Test			
	.05	.025	.01	.005
	Level of Significance for Two-Tailed Test			
n	.10	.05	.02	.01
28	.317	.375	.440	.483
29	.312	.368	.433	.475
30	.306	.362	.425	.467
35	.283	.335	.394	.433
40	.264	.313	.368	.405
45	.248	.294	.347	.382
50	.235	.279	.329	.363
60	.214	.255	.300	.331
70	.190	.235	.278	.307
80	.185	.220	.260	.287
90	.174	.207	.245	.271
100	.165	.197	.233	.257

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TABLE C.7 Critical Values for Chi-Square (χ^2)

Level of Significance		
df	**.05**	**.01**
1	3.84	6.64
2	5.99	9.21
3	7.81	11.34
4	9.49	13.28
5	11.07	15.09
6	12.59	16.81
7	14.07	18.48
8	15.51	20.09
9	16.92	21.67
10	18.31	23.21
11	19.68	24.72
12	21.03	26.22
13	22.36	27.69
14	23.68	29.14
15	25.00	30.58
16	26.30	32.00
17	27.59	33.41
18	28.87	34.80
19	30.14	36.19
20	31.41	37.47
21	32.67	38.93
22	33.92	40.29
23	35.17	41.64
24	36.42	42.98
25	37.65	44.31
26	38.88	45.64
27	40.11	46.96
28	41.34	48.28
29	42.56	49.59
30	43.77	50.89
40	55.76	63.69
50	67.50	76.15
60	79.08	88.38
70	90.53	100.42

Source: From Table IV of Fisher, R. A., & Yates, F. (1974). *Statistical tables for biological, agricultural and medical research* (6th ed.). London, England: Longman Group Ltd., 1974 (previously published by Oliver and Boyd Ltd., Edinburgh). Adapted and reprinted with permission of Addison Wesley Longman.