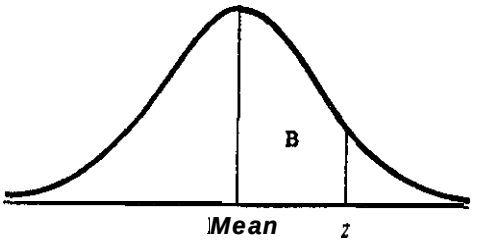
ภาคผนวก

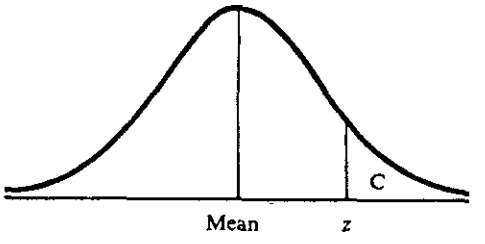
Table A Areas Under the Normal Curve

Column A gives the positive z score.

Column B gives the area between the mean and z. Since the curve is symmetrical, areas for negative z scores are the same as for positive ones.



Column C gives the area that is beyond z.



z	*Area between mean and z*	*Area beyond z*	z	*Area between mean and z*	*Area beyond z*
A	*B*	*C*	*A*	*B*	*C*
0.00	.0000	.5000	0.25	.0987	.4013
0.01	.0040	.4960	0.26	.1026	.3974
0.02	.0080	.4920	0.27	.1064	.3936
0.03	.0120	.4880	0.28	.1103	.3897
0.04	.0160	.4840	0.29	.1141	.3859
0.05	.0199	.4801	0.30	.1179	.3821
0.06	.0239	.4761	0.31	.1217	.3783
0.07	.0279	.4721	0.32	.1255	.3745
0.08	.0319	.4681	0.33	.1293	.3707
0.09	.0359	.4641	0.34	.1331	.3669
0.10	.0398	.4602	0.35	.1368	.3632
0.11	.0438	.4562	0.36	.1406	.3594
0.12	.0478	.4522	0.37	.1443	.3557
0.13	.0517	.4483	0.38	.1480	.3520
0.14	.0557	.4443	0.39	.1517	.3483
0.15	.0596	.4404	0.40	.1554	.3446
0.16	.0636	.4364	0.41	.1591	.3409
0.17	.0675	.4325	0.42	.1628	.3372
0.18	.0714	.4286	0.43	.1664	.3336
0.19	.0753	.4247	0.44	.1700	.3300
0.20	.0793	.4207	0.45	.1736	.3264
0.21	.0832	.4168	0.46	.1772	.3228
0.22	.0871	.4129	0.47	.1808	.3192
0.23	.0910	.4090	0.48	.1844	.3156
0.24	.0948	.4052	0.49	.1879	.3121

Table A (Continued)

z A	Area between mean and z B	Area beyond z C	z A	Area between mean and z B	Area beyond z C
0.50	.1915	.3085	0.95	.3289	.1711
0.51	.1950	.3050	0.96	.3315	.1685
0.52	.1985	.3015	0.97	.3340	.1660
0.53	.2019	.2981	0.98	.3365	.1635
0.54	.2054	.2946	0.99	.3389	.1611
0.55	.2088	.2912	1.00	.3413	.1587
0.56	.2123	.2877	1.01	.3438	.1562
0.57	.2157	.2843	1.02	.3461	.1539
0.58	.2190	.2810	1.03	.3485	.1515
0.59	.2224	.2776	1.04	.3508	.1492
0.60	.2257	.2743	1.05	.3531	.1469
0.61	.2291	.2709	1.06	.3554	.1446
0.62	.2324	.2676	1.07	.3577	.1423
0.63	.2357	.2643	1.08	.3599	.1401
0.64	.2389	.2611	1.09	.3621	.1379
0.65	.2422	.2578	1.10	.3643	.1357
0.66	.2454	.2546	1.11	.3665	.1335
0.67	.2486	.2514	1.12	.3686	.1314
0.68	.2517	.2483	1.13	.3708	.1292
0.69	.2549	.2451	1.14	.3729	.1271
0.70	.2580	.2420	1.15	.3749	.1251
0.71	.2611	.2389	1.16	.3770	.1230
0.72	.2642	.2358	1.17	.3790	.1210
0.73	.2673	.2327	1.18	.3810	.1190
0.74	.2704	.2296	1.19	.3830	.1170
0.75	.2734	.2266	1.20	.3849	.1151
0.76	.2764	.2236	1.21	.3869	.1131
0.77	.2794	.2206	1.22	.3888	.1112
0.78	.2823	.2177	1.23	.3907	.1093
0.79	.2852	.2148	1.24	.3925	.1075
0.80	.2881	.2119	1.25	.3944	.1056
0.81	.2910	.2090	1.26	.3962	.1038
0.82	2939	.2061	1.27	.3980	.1020
0.83	.2967	.2033	1.28	.3997	.1003
0.84	.2995	.2005	1.29	.4015	.0985
0.85	.3023	.1977	1.30	.4032	.0968
0.86	.3051	.1949	1.31	.4049	.0951
0.87	.3078	.1922	1.32	.4066	.0934
0.88	.3106	.1894	1.33	.4082	.0918
0.89	.3133	.1867	I.34	.4099	.0901
0.90	.3159	.1841	1.35	.4115	.0885
0.91	.3186	.1814	1.36	.4131	.0869
0.92	.3212	.1788	1.37	.4147	.0853
0.93	.3238	.1762	1.38	.4162	.0838
0.94	.3264	.1736	1.39	.4177	.0823

Table A (Continued)

z	Area between mean and z	Area beyond z	z	Area between mean and z	Area beyond z
A	B	C	A	B	C
1.40	.4192	.0808	1.85	.4678	.0322
1.41	.4207	.0793	1.86	.4686	.0314
1.42	.4222	.0778	1.87	.4693	.0307
1.43	.4236	.0764	1.88	.4699	.0301
1.44	.4251	.0749	1.89	.4706	.0294
1.45	.4265	.0735	1.90	.4713	.0287
1.46	.4279	.0721	1.91	.4719	.0281
1.47	.4292	.0708	1.92	.4726	.0274
I.48	.4306	.0694	1.93	.4732	.0268
I.49	.4319	.0681	1.94	.4738	.0262
I.50	.4332	.0668	1.95	.4744	.0256
1.51	.4345	.0655	1.96	.4750	.0250
1.52	.4357	.0643	1.97	.4756	.0244
I.53	.4370	.0630	1.98	.4761	.0239
1.54	.4382	.0618	1.99	.4767	.0233
1.55	.4394	.0606	2.00	.4772	.0228
1.56	.4406	.0594	2.01	.4778	.0222
1.57	.4418	.0582	2.02	.4783	.0217
1.58	.4429	.0571	2.03	.4788	.0212
I.59	.4441	.0559	204	.4793	.0207
1.60	.4452	.0548	2.05	.4798	.0202
1.61	.4463	.0537	2.06	.4803	.0197
1.62	.4474	.0526	2.07	.4808	.0192
1.63	.4484	.0516	2.08	.4812	.0188
1.64	.4495	.0505 ✓	2.09	.4817	.0183
1.65	.4505	.0495 ✓	2.10	.4821	.0179
1.66	.4515	.0485	2.11	.4826	.0174
1.67	.4525	.0475	2.12	.4830	.0170
1.68	.4535	.0465	2.13	.4834	.0166
1.69	.4545	.0455	2.14	.4838	.0162
1.70	.4554	.0446	2.15	.4842	.0158
1.71	.4564	.0436	2.16	.4846	.0154
1.72	.4573	.0427	2.17	.4850	.0150
1.73	.4582	.0418	2.18	.4854	.0146
I.74	.4591	.0409	2.19	.4857	.0143
1.75	.4599	.0401	2.20	.4861	.0139
1.76	.4608	.0392	2.21	.4864	.0136
1.77	.4616	.0384	2.22	.4868	.0132
1.78	.4625	.0375	2.23	.4871	.0129
1.79	A633	.0367	2.24	.4875	.0125
1.80	.4641	.0359	2.25'	.4878	:0122
1.81	.4649	.0351	2.26	.4881	.0119
1.82	.4656	.0344	2.27	.4884	.0116
1.83	.4664	.0336	2.28	.4887	.0113
1.84	.4671	.0329	2.29	.4890	.0110

Table A (Continued)

z	Area between mean and z	Area beyond z	z	Area between mean and z	Area beyond z
A	*B*	*C*	*A*	*B*	*C*
2.30	.4893	.0107	2.70	.4965	.0035
2.31	.4896	.0104	2.71	.4966	.0034
2.32	.4898	.0102	2.72	.4967	.0033
2.33	.4901	.0099	2.73	.4968	.0032
2.34	.4904	.0096	2.74	.4969	.0031
2.35	.4906	.0094	2.75	.4970	.0030
2.36	.4909	.0091	2.76	.4971	.0029
2.37	.4911	.0089	2.77	.4972	.0028
2.38	.4913	.0087	2.78	.4973	.0027
2.39	.4916	.0084	2.79	.4974	.0026
2.40	.4918	.0082	2.80	.4974	.0026
2.41	.4920	.0080	2.81	.4975	.0025
2.42	.4922	.0078	2.82	.4976	.0024
2.43	.4925	.0075	2.83	.4977	.0023
2.44	.4927	.0073	2.84	.4977	.0023
2.45	.4929	.0071	2.85	.4978	.0022
2.46	.4931	.0069	2.86	.4979	.0021
2.47	.4932	.0068	2.87	.4979	.0021
2.48	.4934	.0066	2.88	.4980	.0020
2.49	.4936	.0064	2.89	.4981	.0019
2.50	.4938	.0062	2.90	.4981	.0019
2.51	.4940	.0060	2.91	.4982	.0018
2.52	.4941	.0059	2.92	.4982	.0018
2.53	.4943	.0057	2.93	.4983	.0017
2.54	.4945	.0055	2.94	.4984	.0016
2.55	.4946	.0054	2.95	.4984	.0016
2.56	.4948	.0052	2.96	.4985	.0015
2.57	.4949	.0051	2.97	.4985	.0015
2.585	.4951	.0049	2.98	.4986	.0014
2.59	.4952	.0048	2.99	.4986	.0014
2.60	.4953	.0047	3.00	.4987	.0013
2.61	.4955	.0045	3.01	.4987	.0013
2.62	.4956	.0044	3.02	.4987	.0013
2.63	.4957	.0043	3.03	.4988	.0012
2.64	.4959	.0041	3.04	.4988	.0012
2.65	.4960	.0040	3.05	.4989	.0011
2.66	.4961	.0039	3.06	.4989	.0011
2.67	.4962	.0038	3.07	.4989	.0011
2.68	.4963	.0037	3.08	.4990	.0010
2.69	.4964	.0036	3.09	.4990	.0010

Table A (Continued)

z *A*	*Area between mean and z* *B*	*Area beyond z* *C*	*z* *A*	*Area between mean and z* *B*	*Area beyond z* *C*
3.10	.4990	.0010	3.20	.4993	.0007
3.11	.4991	.0009	3.21	.4993	.0007
3.12	.4991	.0009	3.22	.4994	.0006
3.13	.4991	.0009	3.23	.4994	.0006
3.14	.4992	.0008	3.24	.4994	.0006
3.15	.4992	.0008	3.30	.4995	.0005
3.16	.4992	.0008	3.40	.4997	.0003
3.17	.4992	.0008	3.50	.4998	.0002
3.18	.4993	.0007	3.60	.4998	.0002
3.19	.4993	.0007	3.70	.4999	.0001

Table B Critical Values of Student's *t* Distribution

The values listed in the table are the critical values of t for the specified degrees of freedom (left column) and the alpha level (column heading). For two-tailed alpha levels, t_{crit} is both + and −. To be significant, $|t_{obt}| \geq |t_{crit}|$.

df = (n − 1)

df	Level of Significance for One-Tailed Test					
	.10	.05	.025	.01	.005	.0005
	Level of Significance for Two-Tailed Test					
	.20	.10	.05	.02	.01	.001
1	3.078	6.314	12.706	31.821	63.657	636.61')
2	1.886	2.920	4.303	6.965	9.925	31.598
3	1.638	2.353	3.182	4.541	5.841	12.941
4	1.533	2.132	2.776	3.747	4.604	8.610
5	1.476	2.015	2.571	3.365	4.032	6.859
6	1.440	1,943	2.447	3.143	3.707	5.959
7	1.415	1.895	2.365	2.998	3.499	5.405
8	1.397	1.860	2.306	2.896	3.355	5.04 I
Y	1.383	1.833	2.262	2.821	3.250	4.781
10	1.372	1.812	2.228	2.764	3.169	4.587
II	1.363	1.796	2.201	2.718	3.106	4.437
12	1.356	1.782	2.179	2.681	3.055	4.318
13	1.350	I.771	2.160	2.650	3.012	4.221
14	1.345	1.761	2.145	2.624	2.977	4. 140
15	I.341	1.753	2.131,	2.602	2.947	4.073
16	1.337	1.746	2.120	2.583	2.921	4.015
17	1.333	1.740	2.110	2.567	2.898	3.965
18	1.330	1.734	2.101	2.552	2.878	3.922
19	1.328	1.729	2.093	2.539	2.861	3.883
20	1.325	1.725	2.086	2.528	2.845	3.850
21	1.323	I.721	2.080	2.518	2.831	3.819
22	I.321	I.717	2.074	2.508	2.819	3.792
23	1.319	I.714	2.069	2.500	2.807	3.767
24	I.318	I.711	2.064	2.492	2.797	3.745
25	I.316	1.708	2.060	2.485	2.787	3.725
26	I.315	1.706	2.056	2.479	2.719	3.707
27	I.314	1.703	2.052	2.473	2.771	3.690
28	1.313	1.701	2.048	2.467	2.763	3.674
29	I.311	1.699	2.045	2.462	2.256	3.659
30	I.310	I.697	2.042	2.457	2.750	3.646
40	1.303	1.684	2.021	2.423	2.704	3.551
60	1.296	1.671	2.000	2.390	2.660	3.460
120	1.289	1.658	1.980	2.358	2.617	3.373
∞	1.282	1.645	1.960	2.326	2.576	3.291

Table C

REJECTION REGIONS (Z)

Level of Significance

Test	$\alpha = .01$	$\alpha = .05$	$\alpha = .10$
2-Tailed	$Z \leq -2.58$ or $Z \geq 2.58$	$Z \leq -1.96$ or $Z \geq 1.96$	$Z \leq -1.65$ or $Z \geq 1.65$
1-Tailed (upper)	$Z \geq 2.33$	$Z \geq 1.65$	$Z \geq 1.28$
1-Tailed (loner)	$Z \leq -2.33$	$Z \leq -1.65$	$Z \leq -1.28$

TABLE D

CHOOSING AMONG STATISTICAL TECHNIQUES

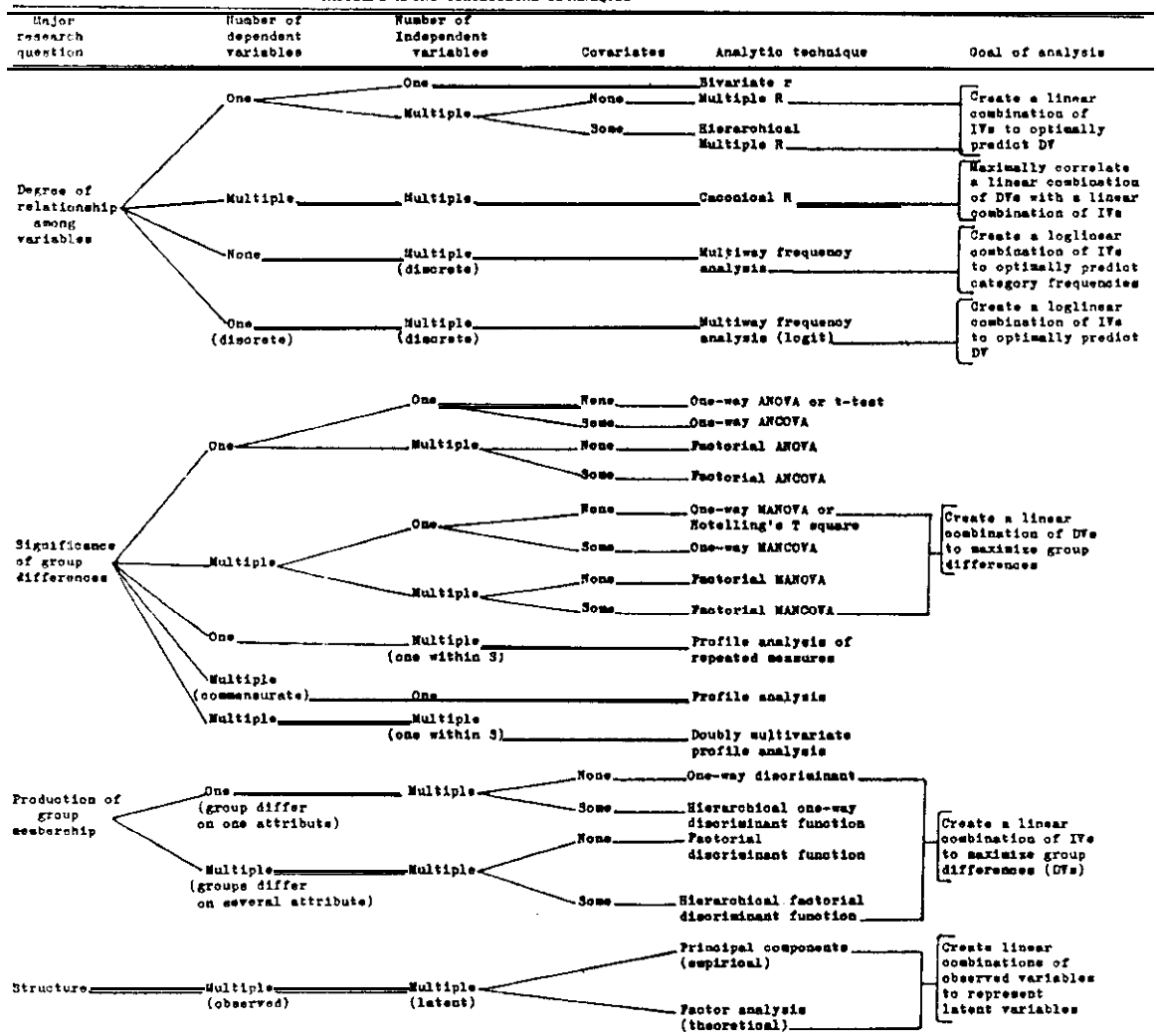


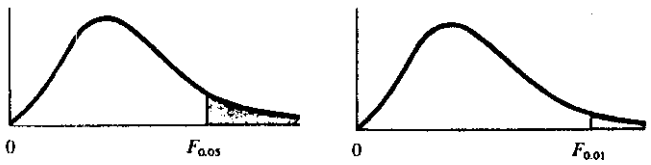
Table E Critical Values of Pearson *r*

The values listed in the table are the critical values of r for the specified degrees of freedom (left column) and the alpha level (column heading). For two-tailed alpha levels, r_{crit} is both + and −. To be significant, $|r_{obt}| \geq |r_{crit}|$.

d f - N - 2	Level of Significance for One-Tailed Test				
	.05	.025	.01	.005	.0005
	Level of Significance for Two-Tailed Test				
	.10	.05	.02	.01	.001
1	.9877	.9969	.9995	.9999	1.0000
2	.9000	.9500	.9800	.9900	.9990
3	.8054	.8783	.9343	.9587	.9912
4	.7293	.8114	.8822	.9172	.9741
5	.6694	.7545	.8329	.8745	.9507
6	.6215	.7067	.7887	.8343	.9249
7	.5822	.6664	.7498	.7977	.8982
8	.5494	.6319	.7155	.7646	.8721
9	.5214	.6021	.6851	.7348	.8471
10	.4973	.5760	.6581	.7079	.8233
11	.4762	.5529	.6339	.6835	.8010
12	.4575	.5324	.6120	.6614	.7800
13	.4409	.5139	.5923	.6411	.7603
14	.4259	.4973	.5742	.6226	.7420
15	.4124	.4821	.5577	.6055	.7246
16	.4000	.4683	.5425	.5897	.7084
17	.3887	.4555	.5285	.5751	.6932
18	.3783	.4438	.5155	.5614	.6787
19	.3687	.4329	.5034	.5487	.6652
20	.3598	.4227	.4921	.5368	.6524
25	.3233	.3809	.4451	.4869	.5974
30	.2960	.3494	.4093	.4487	.5541
35	.2746	.3246	.3810	.4182	.5189
40	.2573	.3044	.3578	.3932	.4896
45	.2428	.2875	.3384	.3721	.4648
50	.2306	.2732	.3218	.3541	.4433
60	.2108	.2500	.2948	.3248	.4078
70	.1954	.2319	.2737	.3017	.3799
80	.1829	.2172	.2565	.2830	.3568
90	.1726	.2050	.2422	.2673	.3375
100	.1638	.1946	.2301	.2540	.3211

Table F Critical Values of the F Distribution for $\alpha = 0.05$ (Roman Type) and $\alpha = 0.01$ (Boldface type)

The values listed in the table are the critical values of F for the degrees of freedom of the numerator of the F ratio (column headings) and the degrees of freedom of the denominator of the F ratio (row headings). To be significant, $F_{obt} \geq F_{crit}$.



↓ Degrees of Freedom: Denominator	Degrees of Freedom: Numerator → 1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞
1	161 **4,052**	200 **4,999**	216 **5,403**	225 **5,625**	230 **5,764**	234 **5,859**	237 **5,928**	239 **5,981**	241 **6,022**	242 **6,056**	243 **6,082**	244 **6,106**	245 **6,142**	246 **6,169**	248 **6,208**	249 **6,234**	250 **6,258**	251 **6,286**	252 **6,302**	253 **6,323**	253 **6,334**	254 **6,352**	254 **6,361**	254 **6,366**
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**	19.40 **99.41**	19.41 **99.42**	19.42 **99.43**	19.43 **99.44**	19.44 **99.45**	19.45 **99.46**	19.46 **99.47**	19.47 **99.48**	19.47 **99.48**	19.48 **99.49**	19.49 **99.49**	19.49 **99.49**	19.50 **99.50**	19.50 **99.50**
3	10.13 **34.12**	9.55 **30.82**	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**	8.76 **27.13**	8.74 **27.05**	8.71 **26.92**	8.69 **26.83**	8.66 **26.69**	8.64 **26.60**	8.62 **26.50**	8.60 **26.41**	8.58 **26.35**	8.57 **26.27**	8.56 **26.23**	8.54 **26.18**	8.54 **26.14**	8.53 **26.12**
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**	5.93 **14.45**	5.91 **14.37**	5.87 **14.24**	5.84 **14.15**	5.80 **14.02**	5.77 **13.93**	5.74 **13.83**	5.71 **13.74**	5.70 **13.69**	5.68 **13.61**	5.66 **13.57**	5.65 **13.52**	5.64 **13.48**	5.63 **13.46**
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**	4.70 **9.96**	4.68 **9.89**	4.64 **9.77**	4.60 **9.68**	4.56 **9.55**	4.53 **9.47**	4.50 **9.38**	4.46 **9.29**	4.44 **9.24**	4.42 **9.17**	4.40 **9.13**	4.38 **9.07**	4.37 **9.04**	4.36 **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**	4.03 **7.79**	4.00 **7.72**	3.96 **7.60**	3.92 **7.52**	3.87 **7.39**	3.84 **7.31**	3.81 **7.23**	3.77 **7.14**	3.75 **7.09**	3.72 **7.02**	3.71 **6.99**	3.69 **6.94**	3.68 **6.90**	3.67 **6.88**
7	5.59 **12.25**	4.47 **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**	3.60 **6.54**	3.57 **6.47**	3.52 **6.35**	3.49 **6.27**	3.44 **6.15**	3.41 **6.07**	3.38 **5.98**	3.34 **5.90**	3.32 **5.85**	3.29 **5.78**	3.28 **5.75**	3.25 **5.70**	3.24 **5.67**	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**	3.31 **5.74**	3.28 **5.67**	3.23 **5.56**	3.20 **5.48**	3.15 **5.36**	3.12 **5.28**	3.08 **5.20**	3.05 **5.11**	3.03 **5.06**	3.00 **5.00**	2.98 **4.96**	2.96 **4.91**	2.94 **4.88**	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**	3.10 **5.18**	3.07 **5.11**	3.02 **5.00**	2.98 **4.92**	2.93 **4.80**	2.90 **4.73**	2.86 **4.64**	2.82 **4.56**	2.80 **4.51**	2.77 **4.45**	2.76 **4.41**	2.73 **4.36**	2.72 **4.33**	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**	2.94 **4.78**	2.91 **4.71**	2.86 **4.60**	2.82 **4.52**	2.77 **4.41**	2.74 **4.33**	2.70 **4.25**	2.67 **4.17**	2.64 **4.12**	2.61 **4.05**	2.59 **4.01**	2.56 **3.96**	2.55 **3.93**	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**	2.82 **4.46**	2.79 **4.40**	2.74 **4.29**	2.70 **4.21**	2.65 **4.10**	2.61 **4.02**	2.57 **3.94**	2.53 **3.86**	2.50 **3.80**	2.47 **3.74**	2.45 **3.70**	2.42 **3.66**	2.41 **3.62**	2.40 **3.60**
12	4.75 **9.33**	3.88 **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**	2.72 **4.22**	2.69 **4.16**	2.64 **4.05**	2.60 **3.98**	2.54 **3.86**	2.50 **3.78**	2.46 **3.70**	2.42 **3.61**	2.40 **3.56**	2.36 **3.49**	2.35 **3.46**	2.32 **3.41**	2.31 **3.38**	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**	2.63 **4.02**	2.60 **3.96**	2.55 **3.85**	2.51 **3.78**	2.46 **3.67**	2.42 **3.59**	2.38 **3.51**	2.34 **3.42**	2.32 **3.37**	2.28 **3.30**	2.26 **3.27**	2.24 **3.21**	2.22 **3.18**	2.21 **3.16**
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**	2.56 **3.86**	2.53 **3.80**	2.48 **3.70**	2.44 **3.62**	2.39 **3.51**	2.35 **3.43**	2.31 **3.34**	2.27 **3.26**	2.24 **3.21**	2.21 **3.14**	2.19 **3.11**	2.16 **3.06**	2.14 **3.02**	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**	2.51 **3.73**	2.48 **3.67**	2.43 **3.56**	2.39 **3.48**	2.33 **3.36**	2.29 **3.29**	2.25 **3.20**	2.21 **3.12**	2.18 **3.07**	2.15 **3.00**	2.12 **2.97**	2.10 **2.92**	2.08 **2.89**	2.07 **2.87**
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**	2.45 **3.61**	2.42 **3.55**	2.37 **3.45**	2.33 **3.37**	2.28 **3.25**	2.24 **3.18**	2.20 **3.10**	2.16 **3.01**	2.13 **2.96**	2.09 **2.89**	2.07 **2.86**	2.04 **2.80**	2.02 **2.77**	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**	2.41 **3.52**	2.38 **3.45**	2.33 **3.35**	2.29 **3.27**	2.23 **3.16**	2.19 **3.08**	2.15 **3.00**	2.11 **2.92**	2.08 **2.86**	2.04 **2.79**	2.02 **2.76**	1.99 **2.70**	1.97 **2.67**	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**	2.37 **3.44**	2.34 **3.37**	2.29 **3.27**	2.25 **3.19**	2.19 **3.07**	2.15 **3.00**	2.11 **2.91**	2.07 **2.83**	2.04 **2.78**	2.00 **2.71**	1.98 **2.68**	1.95 **2.62**	1.93 **2.59**	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**	2.34 **3.36**	2.31 **3.30**	2.26 **3.19**	2.21 **3.12**	2.15 **3.00**	2.11 **2.92**	2.07 **2.84**	2.02 **2.76**	2.00 **2.70**	1.96 **2.63**	1.94 **2.60**	1.91 **2.54**	1.90 **2.51**	1.88 **2.49**

Table F (Continued)

Degrees of Freedom: Denominator	Degrees of Freedom: Numerator																						
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞
20	4.35	3.49	3.10	2.87	2.71	2.60	2.52	2.45	2.40	2.35	2.31	2.28	2.23	2.18	2.12	2.08	2.04	1.99	1.96	1.92	1.90	1.87	1.85	1.84
	8.10	5.85	4.94	4.43	4.10	3.87	3.71	3.56	3.45	3.37	3.30	3.23	3.13	3.05	2.94	2.86	2.77	2.69	2.63	2.56	2.53	2.47	2.44	2.42
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.28	2.25	2.20	2.15	2.09	2.05	2.00	1.96	1.93	1.89	1.87	1.84	1.82	1.81
	8.02	5.78	4.87	4.37	4.04	3.81	3.65	3.51	3.40	3.31	3.24	3.17	3.07	2.99	2.88	2.80	2.72	2.63	2.58	2.51	2.47	2.42	2.38	2.36
22	4.30	3.44	3.05	2.82	2.66	2.55	2.47	2.40	2.35	2.30	2.26	2.23	2.18	2.13	2.07	2.03	1.98	1.93	1.91	1.87	1.84	1.81	1.80	1.78
	7.94	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26	3.18	3.12	3.02	2.94	2.83	2.75	2.67	2.58	2.53	2.46	2.42	2.37	2.33	2.31
23	4.28	3.42	3.03	2.80	2.64	2.53	2.45	2.38	2.32	2.28	2.24	2.20	2.14	2.10	2.04	2.00	1.96	1.91	1.88	1.84	1.82	1.79	1.77	1.76
	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21	3.14	3.07	2.97	2.89	2.78	2.70	2.62	2.53	2.48	2.41	2.37	2.32	2.28	2.26
24	4.26	3.40	3.01	2.78	2.62	2.51	2.43	2.36	2.30	2.26	2.22	2.18	2.13	2.09	2.02	1.98	1.94	1.89	1.86	1.82	1.80	1.76	1.74	1.73
	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.25	3.17	3.09	3.03	2.93	2.85	2.74	2.66	2.58	2.49	2.44	2.36	2.33	2.27	2.23	2.21
25	4.24	3.38	2.99	2.76	2.60	2.49	2.41	2.34	2.28	2.24	2.20	2.16	2.11	2.06	2.00	1.96	1.92	1.87	1.84	1.80	1.77	1.74	1.72	1.71
	7.77	5.57	4.68	4.18	3.86	3.63	3.46	3.32	3.21	3.13	3.05	2.99	2.89	2.81	2.70	2.62	2.54	2.45	2.40	2.32	2.29	2.23	2.19	2.17
26	4.22	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18	2.15	2.10	2.05	1.99	1.95	1.90	1.85	1.82	1.78	1.76	1.72	1.70	1.69
	7.72	5.53	4.64	4.14	3.82	3.59	3.42	3.29	3.17	3.09	3.02	2.96	2.86	2.77	2.66	2.58	2.50	2.41	2.36	2.28	2.25	2.19	2.15	2.13
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.30	2.25	2.20	2.16	2.13	2.08	2.03	1.97	1.93	1.88	1.84	1.80	1.76	1.74	1.71	1.68	1.67
	7.68	5.49	4.60	4.11	3.79	3.56	3.39	3.26	3.14	3.06	2.98	2.93	2.83	2.74	2.63	2.55	2.47	2.38	2.33	2.25	2.21	2.16	2.12	2.10
28	4.20	3.34	2.95	2.71	2.56	2.44	2.36	2.29	2.24	2.19	2.15	2.12	2.06	2.02	1.96	1.91	1.87	1.81	1.78	1.75	1.72	1.69	1.67	1.65
	7.64	5.45	4.57	4.07	3.76	3.53	3.36	3.23	3.11	3.03	2.95	2.90	2.80	2.71	2.60	2.52	2.44	2.35	2.30	2.22	2.18	2.13	2.09	2.06
29	4.18	3.33	2.93	2.70	2.54	2.43	2.35	2.28	2.22	2.18	2.14	2.10	2.05	2.00	1.94	1.90	1.85	1.80	1.77	1.73	1.71	1.68	1.65	1.64
	7.60	5.42	4.54	4.04	3.73	3.50	3.33	3.20	3.08	3.00	2.92	2.87	2.77	2.68	2.57	2.49	2.41	2.32	2.27	2.19	2.15	2.10	2.06	2.03
30	4.17	3.32	2.92	2.69	2.53	2.42	2.34	2.27	2.21	2.16	2.12	2.09	2.04	1.99	1.93	1.89	1.84	1.79	1.76	1.72	1.69	1.66	1.64	1.62
	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.06	2.98	2.90	2.84	2.74	2.66	2.55	2.47	2.38	2.29	2.24	2.16	2.13	2.07	2.03	2.01
32	4.15	3.30	2.90	2.67	2.51	2.40	2.32	2.25	2.19	2.14	2.10	2.07	2.02	1.97	1.91	1.86	1.82	1.76	1.74	1.69	1.67	1.64	1.61	1.59
	7.50	5.34	4.46	3.97	3.66	3.42	3.25	3.12	3.01	2.94	2.86	2.80	2.70	2.62	2.51	2.42	2.34	2.25	2.20	2.12	2.08	2.02	1.98	1.96
34	4.13	3.28	2.88	2.65	2.49	2.38	2.30	2.23	2.17	2.12	2.08	2.05	2.00	1.95	1.89	1.84	1.80	1.74	1.71	1.67	1.64	1.61	1.59	1.57
	7.44	5.29	4.42	3.93	3.61	3.38	3.21	3.08	2.97	2.89	2.82	2.76	2.66	2.58	2.47	2.38	2.30	2.21	2.15	2.08	2.04	1.98	1.94	1.91
36	4.11	3.26	2.86	2.63	2.48	2.36	2.28	2.21	2.15	2.10	2.06	2.03	1.98	1.93	1.87	1.82	1.78	1.72	1.69	1.65	1.62	1.59	1.56	1.55
	7.39	5.25	4.38	3.89	3.58	3.35	3.18	3.04	2.94	2.86	2.78	2.72	2.62	2.54	2.43	2.35	2.26	2.17	2.12	2.04	2.00	1.94	1.90	1.87
38	4.10	3.25	2.85	2.62	2.46	2.35	2.26	2.19	2.14	2.09	2.05	2.02	1.96	1.92	1.85	1.80	1.76	1.71	1.67	1.63	1.60	1.57	1.54	1.53
	7.35	5.21	4.34	3.86	3.54	3.32	3.15	3.02	2.91	2.82	2.75	2.69	2.59	2.51	2.40	2.32	2.22	2.14	2.08	2.00	1.97	1.90	1.86	1.84
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.07	2.04	2.00	1.95	1.90	1.84	1.79	1.74	1.69	1.66	1.61	1.59	1.55	1.53	1.51
	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.88	2.80	2.73	2.66	2.56	2.49	2.37	2.29	2.20	2.11	2.05	1.97	1.94	1.88	1.84	1.81
42	4.07	3.22	2.83	2.59	2.44	2.32	2.24	2.17	2.11	2.06	2.02	1.99	1.94	1.89	1.82	1.78	1.73	1.68	1.64	1.60	1.57	1.54	1.51	1.49
	7.27	5.15	4.29	3.80	3.49	3.26	3.10	2.96	2.86	2.77	2.70	2.64	2.54	2.46	2.35	2.26	2.17	2.08	2.02	1.94	1.91	1.85	1.80	1.78
44	4.06	3.21	2.82	2.58	2.43	2.31	2.23	2.16	2.10	2.05	2.01	1.98	1.92	1.88	1.81	1.76	1.72	1.66	1.63	1.58	1.56	1.52	1.50	1.48
	7.24	5.12	4.26	3.78	3.46	3.24	3.07	2.94	2.84	2.75	2.68	2.62	2.52	2.44	2.32	2.24	2.15	2.06	2.00	1.92	1.88	1.82	1.78	1.75
46	4.05	3.20	2.81	2.57	2.42	2.30	2.22	2.14	2.09	2.04	2.00	1.97	1.91	1.87	1.80	1.75	1.71	1.65	1.62	1.57	1.54	1.51	1.48	1.46
	7.21	5.10	4.24	3.76	3.44	3.22	3.05	2.92	2.82	2.73	2.66	2.60	2.50	2.42	2.30	2.22	2.13	2.04	1.98	1.90	1.86	1.80	1.76	1.72
48	4.04	3.19	2.80	2.56	2.41	2.30	2.21	2.14	2.08	2.03	1.99	1.96	1.90	1.86	1.79	1.74	1.70	1.64	1.61	1.56	1.53	1.50	1.47	1.45
	7.19	5.08	4.22	3.74	3.42	3.20	3.04	2.90	2.80	2.71	2.64	2.58	2.48	2.40	2.28	2.20	2.11	2.02	1.96	1.88	1.84	1.78	1.73	1.70
50	4.03	3.18	2.79	2.56	2.40	2.29	2.20	2.13	2.07	2.02	1.98	1.95	1.90	1.85	1.78	1.74	1.69	1.63	1.60	1.55	1.52	1.48	1.46	1.44
	7.17	5.06	4.20	3.72	3.41	3.18	3.02	2.88	2.78	2.70	2.62	2.56	2.46	2.39	2.26	2.18	2.10	2.00	1.94	1.86	1.82	1.76	1.71	1.68
55	4.02	3.17	2.78	2.54	2.38	2.27	2.18	2.11	2.05	2.00	1.97	1.93	1.88	1.83	1.76	1.72	1.67	1.61	1.58	1.52	1.50	1.46	1.43	1.41
	7.12	5.01	4.16	3.68	3.37	3.15	2.98	2.85	2.75	2.66	2.59	2.53	2.43	2.35	2.23	2.15	2.06	1.96	1.90	1.82	1.78	1.71	1.66	1.64
60	4.00	3.15	2.76	2.52	2.37	2.25	2.17	2.10	2.04	1.99	1.95	1.92	1.86	1.81	1.75	1.70	1.65	1.59	1.56	1.50	1.48	1.44	1.41	1.39
	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72	2.63	2.56	2.50	2.40	2.32	2.20	2.12	2.03	1.93	1.87	1.79	1.74	1.68	1.63	1.60
65	3.99	3.14	2.75	2.51	2.36	2.24	2.15	2.08	2.02	1.98	1.94	1.90	1.85	1.80	1.73	1.68	1.63	1.57	1.54	1.49	1.46	1.42	1.39	1.37
	7.04	4.95	4.10	3.62	3.31	3.09	2.93	2.79	2.70	2.61	2.54	2.47	2.37	2.30	2.18	2.09	2.00	1.90	1.84	1.76	1.71	1.64	1.60	1.56
70	3.98	3.13	2.74	2.50	2.35	2.23	2.14	2.07	2.01	1.97	1.93	1.89	1.84	1.79	1.72	1.67	1.62	1.56	1.53	1.47	1.45	1.40	1.37	1.35
	7.01	4.92	4.08	3.60	3.29	3.07	2.91	2.77	2.67	2.59	2.51	2.45	2.35	2.28	2.15	2.07	1.98	1.88	1.82	1.74	1.69	1.62	1.56	1.53
80	3.96	3.11	2.72	2.48	2.33	2.21	2.12	2.05	1.99	1.95	1.91	1.88	1.82	1.77	1.70	1.65	1.60	1.54	1.51	1.45	1.42	1.38	1.35	1.32
	6.96	4.88	4.04	3.56	3.25	3.04	2.87	2.74	2.64	2.55	2.48	2.41	2.32	2.24	2.11	2.03	1.94	1.84	1.78	1.70	1.65	1.57	1.52	1.49

Table F (Continued)

Degrees of Freedom: Denominator	Degrees of Freedom: Numerator																						
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*14*	*16*	*20*	*24*	*30*	*40*	*50*	*75*	*100*	*200*	*500*	∞
100	3.94	3.09	2.70	2.46	2.30	2.19	2.10	2.03	1.97	1.92	1.88	1.85	1.79	1.75	1.68	1.63	1.57	1.51	1.48	1.42	1.39	1.34	1.30	1.28
	6.90	**4.82**	**3.98**	**3.51**	**3.20**	**2.99**	**2.82**	**2.69**	**2.59**	**2.51**	**2.43**	**2.36**	**2.26**	**2.19**	**2.06**	**1.98**	**1.89**	**1.79**	**1.73**	**1.64**	**1.59**	**1.51**	**1.46**	**1.43**
125	3.92	3.07	2.68	2.44	2.29	2.17	2.08	2.01	1.95	1.90	1.86	1.83	1.77	1.72	1.65	1.60	1.55	1.49	1.45	1.39	1.36	1.31	1.27	1.25
	6.84	**4.78**	**3.94**	**3.47**	**3.17**	**2.95**	**2.79**	**2.65**	**2.56**	**2.47**	**2.40**	**2.33**	**2.23**	**2.15**	**2.03**	**1.94**	**1.85**	**1.75**	**1.68**	**1.59**	**1.54**	**1.46**	**1.40**	**1.37**
150	3.91	3.06	2.67	2.43	2.27	2.16	2.07	2.00	1.94	1.89	1.85	1.82	1.76	1.71	1.64	1.59	1.54	1.47	1.44	1.37	1.34	1.29	1.25	1.22
	6.81	**4.75**	**3.91**	**3.44**	**3.14**	**2.92**	**2.76**	**2.62**	**2.53**	**2.44**	**2.37**	**2.30**	**2.20**	**2.12**	**2.00**	**1.91**	**1.83**	**1.72**	**1.66**	**1.56**	**1.51**	**1.43**	**1.37**	**1.33**
200	3.89	3.04	2.65	2.41	2.26	2.14	2.05	1.98	1.92	1.87	1.83	1.80	1.74	1.69	1.62	1.57	1.52	1.45	1.42	1.35	1.32	1.26	1.22	1.19
	6.76	**4.71**	**3.88**	**3.41**	**3.11**	**2.90**	**2.73**	**2.60**	**2.50**	**2.41**	**2.34**	**2.28**	**2.17**	**2.09**	**1.97**	**1.88**	**1.79**	**1.69**	**1.62**	**1.53**	**1.48**	**1.39**	**1.33**	**1.28**
400	3.86	3.02	2.62	2.39	2.23	2.12	2.03	1.96	1.90	1.85	1.81	1.78	1.72	1.67	1.60	1.54	1.49	1.42	1.38	1.32	1.28	1.22	1.16	1.13
	6.70	**4.66**	**3.83**	**3.36**	**3.06**	**2.85**	**2.69**	**2.55**	**2.46**	**2.37**	**2.29**	**2.23**	**2.12**	**2.04**	**1.92**	**1.84**	**1.74**	**1.64**	**1.57**	**1.47**	**1.42**	**1.32**	**1.24**	**1.19**
1000	3.85	3.00	2.61	2.38	2.22	2.10	2.02	1.95	1.89	1.84	1.80	1.76	1.70	1.65	1.58	1.53	1.47	1.41	1.36	1.30	1.26	1.19	1.13	1.08
	6.66	**4.62**	**3.80**	**3.34**	**3.04**	**2.82**	**2.66**	**2.53**	**2.43**	**2.34**	**2.26**	**2.20**	**2.09**	**2.01**	**1.89**	**1.81**	**1.71**	**1.61**	**1.54**	**1.44**	**1.38**	**1.28**	**1.19**	**1.11**
∞	3.84	2.99	2.60	2.37	2.21	2.09	2.01	1.94	1.88	1.83	1.79	1.75	1.69	1.64	1.57	1.52	1.46	1.40	1.35	1.28	1.24	1.17	1.11	1.00
	6.64	**4.60**	**3.78**	**3.32**	**3.02**	**2.80**	**2.64**	**2.51**	**2.41**	**2.32**	**2.24**	**2.18**	**2.07**	**1.99**	**1.87**	**1.79**	**1.69**	**1.59**	**1.52**	**1.41**	**1.36**	**1.25**	**1.15**	**1.00**

Table Q Random Numbers

	1	2	3	4	5	6	7	8	9
1	32942	95416	42339	59045	26693	49057	87496	20624	14819
2	07410	99859	83828	21409	29094	65114	36701	25762	12827
3	59981	68155	45673	76210	58219	45738	29550	24736	09574
4	46251	25437	69654	99716	11563	08803	86027	51867	12116
5	65558	51904	93123	27887	53138	21488	09095	787-i	71240
6	99187	19258	86421	16401	19397	83297	40111	49326	81686
7	35641	00301	16096	34775	21562	97983	45040	19200	16383
8	14031	00936	81518	48440	02218	04756	19506	60695	88494
9	60677	15076	92554	26042	23472	69869	62877	19584	39576
10	66314	05212	67859	89356	20056	30648	87349	10389	53805
11	20416	87410	75646	64176	82752	63606	37011	37346	69512
12	28701	56992	70423	62415	10807	98086	58850	28968	45297
13	74579	33844	33426	07570	00728	07079	19322	56325	84819
14	62615	52342	82968	75540	80045	53069	20665	21282	07768
15	93945	06293	22879	08161	01442	75071	21427	94842	26210
16	75689	76131	96837	67450	44511	50424	82848	41975	71663
17	02921	16919	35424	93209	52133	87327	95897	65171	10376
18	14295	34969	14216	03191	61647	30296	66667	10101	63203
19	05303	91109	82403	40312	62191	67023	90073	33205	71344
20	57071	90357	12901	08899	91039	67251	28701	03846	94589
21	78471	57741	13599	84390	32146	00871	09354	22745	65806
22	89242	79337	59293	47481	07740	43345	25716	70020	54005
23	14955	59592	97035	90430	87220	06392	79028	57123	52872
24	42446	41880	37415	47472	04513	49494	08860	08038	43624
25	18534	22346	54556	17558	73689	14894	05030	19561	56517
26	39284	33737	42512	86411	23753	29690	26096	81361	93099
27	33922	37329	89911	55876	28379	81031	22058	21487	54613
28	78355	54013	50774	30666	61205	42574	47773	36027	27174
29	08845	99145	94316	88974	29828	97069	90327	61842	29604
30	01769	71825	55957	98271	02784	66731	40311	88495	18821
31	17639	38284	59478	90409	21997	56199	30068	82800	69692
32	05851	58653	99949	63505	40409	85551	90729	64938	52403
33	42396	40112	11469	03476	03328	84238	26570	51790	42122
34	13318	14192	98167	75631	74141	22369	36757	89117	54998
35	60571	54786	26281	01855	30706	66578	32019	65884	58485
36	09531	81853	59334	70929	03544	18510	89541	13555	21168
37	72865	16829	86542	00396	20363	13010	69645	49608	54738
38	56324	31093	77924	28622	83543	28912	15059	80192	a3964
39	78192	21626	91399	07235	07104	73652	64425	85149	75409
40	64666	34767	97298	92708	01994	53188	78476	07804	62404
41	82201	75694	02808	65983	74373	66693	13094	74183	73020
42	15360	73776	40914	85190	54278	99054	62944	47351	89098
43	68142	67957	70896	37983	20487	95350	16371	03426	i3895
44	19138	31200	30616	14639	44406	44236	57360	81644	94761
45	28155	03521	36415	78452	92359	81091	56513	88321	97910
46	87971	29031	51780	27376	81056	86155	55488	50590	74514
47	58147	68841	53625	02059	75223	16783	19272	61994	71090
48	18875	52809	70594	41649	32935	26430	82096	01605	65846
49	75109	56474	74111	31966	29969	70093	98901	84550	25769
50	35983	03742	76822	12073	59463	X4420	15868	99505	11426

							07469	42341	98173
							09343	70278	67331
							05610	53750	95938
			24127				73977	95218	96074
				23045			1597	60012	98866
							51378	08360	95946
			02238		21219		87817	41705	95785
						83612	4 1540	86492	Oh447
					78185	62154	77930	67663	29529
			07779	04157	41172	36473	42123	43929	50533
			06596	48416	69770	68797	56080	14223	59199
			62742	14891	39247	51242	98832	69533	91174
			54976	48957	74599	0875')	78494	52785	'68576
			78033	66885	13936	42117	71831	22961	94225
			53850	32827	81647	80820	00420	63555	74489
			88562	70745	23701	45630	65891	58'20	35442
			'7384	90199	79210	76965	99546	30323	31664
			48951	53674	17880	45260	08575	49321	36191
			84221	78902	82010	30847	62329	63898	23268
			69704	82267	14751	13151	931 IS	01437	56945
			4846:	59278	4418.1	29616	76531	19589	83139
			14073	07026	25264	08388	27182	22557	61501
			57181	10238	3hR7.1	28546	37444	80824	63981
			86245	32623	78858	08143	60377	42925	42815
			13592	60642	17904	99718	63432	88642	37858
			23900	48761	44860	92467	31742	87142	03607
			07489	85986	74420	2,744	977 I I	36648	35620
			03711	63824	07953	85965	87089	11687	92414
			91946	78437	34365	87469	12430	·84754	19354
			27534	88913	49055	19218	47712	67677	51889
	08833	42549	93981	94051	:X382	83725	72643	64233	97252
		11139	47479	00931	9 1560	95372	97642	33856	54825
	62032		75478	47431	52726	30289	42411	91886	51818
35			53116	04118	58301	24375	65609	85810	18620
	91611		60128	35609	63698	78356	50662	22505	01692
			86314	49174	93582	73604	78614	78849	23096
38			74091	53994	10970	86'57	65661	41854	26037
39		02955	90288	82136	83646	94435	06560	78029	9876X
?0		55608	82767	60890	74646	79485	13619	98866	40857
?1	1783!		79473	75945	28394	79334	70577	38048	03607
?2			07585	18128	1117X	326[illegible]1	27994	05641	22600
?3		31343	14576	9770h	16039	47517	43300	59080	80392
?4			40103	95635	05635	81673	68657	09559	23510
?5		52934	26499	09821	67331	80993	61299	36979	73599
?6		58552	07678	56619	6537	30705	99582	53390.	46357
?7			87131	35530	47946	09854	18080	02321	OS809
?8			44916	11322	89717	88189	30143	52687	19420
?9	98642	89822	71691	51573	83666	61642	46683	3376 I	47542
30	60139	25601	93663	2'547	02654	94829	48672	28736	84994