Figure 13.13g. *97.5th* PERCENTILES FOR THE *F* DISTRIBUTION [F_{ν_1,ν_2}]

[Calculated with *qf* in **R** Version 3.2.2 using 17-digit arithmetic; the accuracy of all digits in the table entries has *not* been verified]

Each table entry is the value (y) of the random variable $Y \sim F_{\nu_1,\nu_2}$ such that $\Pr(Y \le y) = 0.975$ (ν_1 is the numerator, ν_2 the denominator, degrees of freedom)

F_{ν_1,ν_2} .975

Df → ↓ ν_2 / ν_1	1	2	3	4	5	6	7	8	9	10	12	15	20	25	30	40	50	60	75	100	175	350	1,000	
1	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28	968.63	976.71	984.87	993.10	998.08	1001.41	1005.60	1008.12	1009.80	1011.49	1013.17	1015.35	1016.80	1017.75	1
2	38.506	39.000	39.165	39.248	39.298	39.331	39.355	39.373	39.387	39.398	39.415	39.431	39.448	39.458	39.465	39.473	39.478	39.481	39.485	39.488	39.492	39.495	39.497	
3	17.443	16.044	15.439	15.101	14.885	14.735	14.624	14.540	14.473	14.419	14.337	14.253	14.167	14.115	14.081	14.037	14.010	13.992	13.974	13.956	13.933	13.918	13.908	
4	12.2179	10.6491	9.9792	9.6045	9.3645	9.1973	9.0741	8.9796	8.9047	8.8439	8.7512	8.6565	8.5599	8.5010	8.4613	8.4111	8.3808	8.3604	8.3400	8.3195	8.2929	8.2752	8.2636	
5	10.0070	8.4336	7.7636	7.3879	7.1464	6.9777	6.8531	6.7572	6.6811	6.6192	6.5245	6.4277	6.3286	6.2679	6.2269	6.1750	6.1436	6.1225	6.1013	6.0800	6.0524	6.0339	6.0218	5
6	8.8131	7.2599	6.5988	6.2272	5.9876	5.8198	5.6955	5.5996	5.5234	5.4613	5.3662	5.2687	5.1684	5.1069	5.0652	5.0125	4.9804	4.9589	4.9372	4.9154	4.8871	4.8682	4.8558	
7	8.0727	6.5415	5.8898	5.5226	5.2852	5.1186	4.9949	4.8993	4.8232	4.7611	4.6658	4.5678	4.4667	4.4045	4.3624	4.3089	4.2763	4.2544	4.2323	4.2101	4.1812	4.1619	4.1492	
8	7.5709	6.0595	5.4160	5.0526	4.8173	4.6517	4.5286	4.4333	4.3572	4.2951	4.1997	4.1012	3.9995	3.9367	3.8940	3.8398	3.8067	3.7844	3.7620	3.7393	3.7099	3.6901	3.6772	
9	7.2093	5.7147	5.0781	4.7181	4.4844	4.3197	4.1970	4.1020	4.0260	3.9639	3.8682	3.7694	3.6669	3.6035	3.5604	3.5055	3.4719	3.4493	3.4265	3.4034	3.3734	3.3532	3.3400	
10	6.9367	5.4564	4.8256	4.4683	4.2361	4.0721	3.9498	3.8549	3.7790	3.7168	3.6209	3.5217	3.4185	3.3546	3.3110	3.2554	3.2214	3.1984	3.1752	3.1517	3.1212	3.1006	3.0871	10
11	6.7241	5.2559	4.6300	4.2751	4.0440	3.8807	3.7586	3.6638	3.5879	3.5257	3.4296	3.3299	3.2261	3.1616	3.1176	3.0613	3.0268	3.0035	2.9800	2.9561	2.9250	2.9040	2.8902	
12	6.5538	5.0959	4.4742	4.1212	3.8911	3.7283	3.6065	3.5118	3.4358	3.3736	3.2773	3.1772	3.0728	3.0077	2.9633	2.9063	2.8714	2.8478	2.8238	2.7996	2.7680	2.7466	2.7325	
13	6.4143	4.9653	4.3472	3.9959	3.7667	3.6043	3.4827	3.3880	3.3120	3.2497	3.1532	3.0527	2.9477	2.8821	2.8372	2.7797	2.7443	2.7204	2.6961	2.6715	2.6393	2.6175	2.6032	
14	6.2979	4.8567	4.2417	3.8919	3.6634	3.5014	3.3799	3.2853	3.2093	3.1469	3.0502	2.9493	2.8437	2.7777	2.7324	2.6742	2.6384	2.6142	2.5895	2.5646	2.5319	2.5097	2.4951	
15	6.1995	4.7650	4.1528	3.8043	3.5764	3.4147	3.2934	3.1987	3.1227	3.0602	2.9633	2.8621	2.7559	2.6894	2.6437	2.5850	2.5488	2.5242	2.4993	2.4739	2.4408	2.4182	2.4034	15
16	6.1151	4.6867	4.0768	3.7294	3.5021	3.3406	3.2194	3.1248	3.0488	2.9862	2.8890	2.7875	2.6808	2.6138	2.5678	2.5085	2.4719	2.4471	2.4218	2.3961	2.3624	2.3395	2.3245	
17	6.0420	4.6189	4.0112	3.6648	3.4379	3.2767	3.1556	3.0610	2.9849	2.9222	2.8249	2.7230	2.6158	2.5484	2.5020	2.4422	2.4053	2.3801	2.3545	2.3285	2.2943	2.2711	2.2558	
18	5.9781	4.5597	3.9539	3.6083	3.3820	3.2209	3.0999	3.0053	2.9291	2.8664	2.7689	2.6667	2.5590	2.4912	2.4445	2.3842	2.3468	2.3214	2.2956	2.2692	2.2346	2.2110	2.1954	
19	5.9216	4.5075	3.9034	3.5587	3.3327	3.1718	3.0509	2.9563	2.8801	2.8172	2.7196	2.6171	2.5089	2.4408	2.3937	2.3329	2.2952	2.2696	2.2434	2.2167	2.1816	2.1577	2.1419	
20	5.8715	4.4613	3.8587	3.5147	3.2891	3.1283	3.0074	2.9128	2.8365	2.7737	2.6758	2.5731	2.4645	2.3959	2.3486	2.2873	2.2493	2.2234	2.1969	2.1699	2.1344	2.1101	2.0941	20
22	5.7863	4.3828	3.7829	3.4401	3.2151	3.0546	2.9338	2.8392	2.7628	2.6998	2.6017	2.4984	2.3890	2.3198	2.2718	2.2097	2.1710	2.1446	2.1176	2.0901	2.0536	2.0287	2.0122	
24	5.7166	4.3187	3.7211	3.3794	3.1548	2.9946	2.8738	2.7791	2.7027	2.6396	2.5411	2.4374	2.3273	2.2574	2.2090	2.1460	2.1067	2.0799	2.0524	2.0243	1.9870	1.9615	1.9445	
26	5.6586	4.2655	3.6697	3.3289	3.1048	2.9447	2.8240	2.7293	2.6528	2.5896	2.4908	2.3867	2.2759	2.2054	2.1565	2.0928	2.0530	2.0257	1.9978	1.9691	1.9311	1.9049	1.8876	
28	5.6096	4.2205	3.6264	3.2863	3.0626	2.9027	2.7820	2.6872	2.6106	2.5473	2.4484	2.3438	2.2324	2.1615	2.1121	2.0477	2.0073	1.9797	1.9513	1.9221	1.8834	1.8566	1.8389	
30	5.5675	4.1821	3.5894	3.2499	3.0265	2.8667	2.7460	2.6513	2.5746	2.5112	2.4120	2.3072	2.1952	2.1237	2.0739	2.0089	1.9681	1.9400	1.9112	1.8816	1.8421	1.8148	1.7967	30
35	5.4848	4.1065	3.5166	3.1785	2.9557	2.7961	2.6755	2.5807	2.5039	2.4403	2.3406	2.2350	2.1218	2.0493	1.9986	1.9321	1.8902	1.8613	1.8316	1.8009	1.7598	1.7312	1.7121	
40	5.4239	4.0510	3.4633	3.1261	2.9037	2.7444	2.6238	2.5289	2.4519	2.3882	2.2882	2.1819	2.0677	1.9943	1.9429	1.8752	1.8324	1.8028	1.7722	1.7405	1.6979	1.6682	1.6481	
45	5.3773	4.0085	3.4224	3.0860	2.8640	2.7048	2.5842	2.4892	2.4122	2.3483	2.2480	2.1412	2.0262	1.9521	1.9000	1.8313	1.7876	1.7574	1.7261	1.6935	1.6496	1.6187	1.5979	
50	5.3403	3.9749	3.3902	3.0544	2.8327	2.6736	2.5530	2.4579	2.3808	2.3168	2.2162	2.1090	1.9933	1.9186	1.8659	1.7963	1.7520	1.7211	1.6892	1.6558	1.6107	1.5788	1.5572	50
60	5.2856	3.9253	3.3425	3.0077	2.7863	2.6274	2.5068	2.4117	2.3344	2.2702	2.1692	2.0613	1.9445	1.8687	1.8152	1.7440	1.6985	1.6668	1.6337	1.5990	1.5517	1.5180	1.4950	
70	5.2470	3.8903	3.3090	2.9748	2.7537	2.5949	2.4743	2.3791	2.3017	2.2374	2.1361	2.0277	1.9100	1.8334	1.7792	1.7069	1.6604	1.6279	1.5939	1.5581	1.5089	1.4736	1.4493	
80	5.2184	3.8643	3.2841	2.9504	2.7295	2.5708	2.4502	2.3549	2.2775	2.2130	2.1115	2.0026	1.8843	1.8071	1.7523	1.6790	1.6318	1.5987	1.5639	1.5271	1.4763	1.4396	1.4141	
90	5.1962	3.8443	3.2649	2.9315	2.7109	2.5522	2.4316	2.3363	2.2588	2.1942	2.0925	1.9833	1.8644	1.7867	1.7315	1.6574	1.6095	1.5758	1.5404	1.5028	1.4506	1.4126	1.3860	
100	5.1786	3.8284	3.2496	2.9166	2.6961	2.5374	2.4168	2.3215	2.2439	2.1793	2.0773	1.9679	1.8486	1.7705	1.7148	1.6401	1.5917	1.5575	1.5215	1.4833	1.4298	1.3906	1.3630	100
125	5.1471	3.7999	3.2224	2.8899	2.6696	2.5110	2.3904	2.2950	2.2173	2.1526	2.0503	1.9404	1.8202	1.7413	1.6850	1.6090	1.5595	1.5244	1.4873	1.4476	1.3915	1.3498	1.3200	
150	5.1263	3.7811	3.2044	2.8722	2.6521	2.4936	2.3730	2.2775	2.1998	2.1349	2.0325	1.9222	1.8014	1.7220	1.6651	1.5882	1.5379	1.5022	1.4642	1.4234	1.3653	1.3215	1.2898	
175	5.1115	3.7677	3.1916	2.8597	2.6397	2.4812	2.3606	2.2651	2.1873	2.1224	2.0198	1.9093	1.7880	1.7082	1.6509	1.5733	1.5225	1.4862	1.4476	1.4059	1.3462	1.3007	1.2673	
200	5.1004	3.7578	3.1820	2.8503	2.6304	2.4720	2.3513	2.2558	2.1780	2.1130	2.0103	1.8996	1.7780	1.6978	1.6403	1.5621	1.5108	1.4742	1.4350	1.3927	1.3316	1.2846	1.2498	
250	5.0849	3.7439	3.1687	2.8373	2.6175	2.4591	2.3384	2.2429	2.1650	2.0999	1.9971	1.8861	1.7640	1.6834	1.6254	1.5465	1.4945	1.4573	1.4174	1.3739	1.3108	1.2614	1.2241	250
300	5.0747	3.7346	3.1599	2.8286	2.6089	2.4505	2.3299	2.2343	2.1563	2.0913	1.9883	1.8771	1.7547	1.6738	1.6155	1.5360	1.4836	1.4459	1.4055	1.3613	1.2966	1.2453	1.2060	
350	5.0674	3.7280	3.1536	2.8225	2.6028	2.4444	2.3238	2.2282	2.1502	2.0851	1.9820	1.8707	1.7481	1.6669	1.6084	1.5286	1.4758	1.4378	1.3969	1.3522	1.2862	1.2335	1.1924	
400	5.0619	3.7231	3.1489	2.8179	2.5983	2.4399	2.3192	2.2236	2.1456	2.0805	1.9773	1.8659	1.7431	1.6618	1.6031	1.5230	1.4699	1.4317	1.3905	1.3453	1.2784	1.2244	1.1819	
450	5.0577	3.7193	3.1452	2.8143	2.5947	2.4364	2.3157	2.2201	2.1420	2.0769	1.9737	1.8622	1.7393	1.6578	1.5990	1.5186	1.4653	1.4269	1.3854	1.3399	1.2722	1.2173	1.1734	
500	5.0543	3.7162	3.1423	2.8114	2.5919	2.4335	2.3129	2.2172	2.1392	2.0740	1.9708	1.8592	1.7362	1.6546	1.5957	1.5151	1.4616	1.4231	1.3814	1.3356	1.2672	1.2114	1.1664	500
600	5.0492	3.7117	3.1379	2.8071	2.5876	2.4293	2.3086	2.2130	2.1349	2.0697	1.9664	1.8548	1.7316	1.6498	1.5907	1.5099	1.4561	1.4173	1.3753	1.3290	1.2597	1.2024	1.1555	
700	5.0456	3.7084	3.1348	2.8041	2.5846	2.4263	2.3056	2.2099	2.1319	2.0666	1.9633	1.8516	1.7282	1.6464	1.5872	1.5061	1.4522	1.4132	1.3710	1.3243	1.2542	1.1959	1.1474	
800	5.0429	3.7059	3.1324	2.8018	2.5823	2.4240	2.3033	2.2077	2.1296	2.0643	1.9610	1.8492	1.7258	1.6438	1.5845	1.5033	1.4492	1.4101	1.3677	1.3208	1.2501	1.1909	1.1412	
900	5.0407	3.7040	3.1306	2.8000	2.5806	2.4223	2.3016	2.2059	2.1278	2.0626	1.9592	1.8473	1.7238	1.6418	1.5825	1.5011	1.4469	1.4077	1.3651	1.3180	1.2468	1.1870	1.1362	
1,000	5.0391	3.7025	3.1292	2.7986	2.5792	2.4208	2.3002	2.2045	2.1264	2.0611	1.9577	1.8459	1.7223	1.6402	1.5808	1.4993	1.4451	1.4058	1.3631	1.3158	1.2442	1.1838	1.1320	1,000
2,000	5.0315	3.6957	3.1226	2.7922	2.5728	2.4145	2.2938	2.1981	2.1200	2.0547	1.9512	1.8392	1.7154	1.6330	1.5734	1.4915	1.4368	1.3971	1.3538	1.3058	1.2323	1.1691	1.1123	
3,000	5.0289	3.6934	3.1205	2.7901	2.5707	2.4124	2.2917	2.1960	2.1179	2.0526	1.9490	1.8370	1.7131	1.6306	1.5709	1.4888	1.4340	1.3941	1.3507	1.3024	1.2283	1.1640	1.1051	
4,000	5.0277	3.6923	3.1194	2.7890	2.5697	2.4114	2.2907	2.1950	2.1168	2.0515	1.9480	1.8359	1.7119	1.6294	1.5697	1.4875	1.4326	1.3927	1.3492	1.3007	1.2263	1.1614	1.1014	
5,000	5.0269	3.6916	3.1187	2.7884	2.5690	2.4107	2.2901	2.1943	2.1162	2.0509	1.9473	1.8352	1.7112	1.6287	1.5689	1.4867	1.4317	1.3918	1.3483	1.2997	1.2251	1.1598	1.0991	
7,500	5.0259	3.6907	3.1179	2.7875	2.5682	2.4099	2.2892	2.1935	2.1153	2.0500	1.9465	1.8343	1.7103	1.6278	1.5680	1.4857	1.4306	1.3906	1.3470	1.2983	1.2234	1.1577	1.0960	
10,000	5.0254	3.6902	3.1174	2.7871	2.5678	2.4095	2.2888	2.1931	2.1149	2.0496	1.9460	1.8339	1.7099	1.6273	1.5675	1.4851	1.4301	1.3900	1.3464	1.2977	1.2226	1.1567	1.0944	10,000
	1	2	3	4	5	6	7	8	9	10	12	15	20	25	30	40	50	60	75	100	175	350	1,000	

F_{ν_1,ν_2} .975