Figure 13.13f. 95*th* PERCENTILES FOR THE *F* DISTRIBUTION [F_{ν_1,ν_2}]

[Calculated with *qf* in **R** Version 2.0.1 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 $\Pr(Y \le y) = 0.95$ (ν_1 is the numerator, ν_2 the denominator, degrees of freedom)

$F^{\nu_1,\nu_2}_{.95}$

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	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54	241.88	243.91	245.95	248.01	249.26	250.10	251.14	251.77	252.20	252.62	253.04	253.59	253.95	254.19	1
2	18.513	19.000	19.164	19.247	19.296	19.330	19.353	19.371	19.385	19.396	19.413	19.429	19.446	19.456	19.462	19.471	19.476	19.479	19.482	19.486	19.490	19.493	19.495	
3	10.128	9.5521	9.2766	9.1172	9.0135	8.9406	8.8867	8.8452	8.8123	8.7855	8.7446	8.7029	8.6602	8.6341	8.6166	8.5944	8.5810	8.5720	8.5630	8.5539	8.5422	8.5343	8.5292	
4	7.7086	6.9443	6.5914	6.3882	6.2561	6.1631	6.0942	6.0410	5.9988	5.9644	5.9117	5.8578	5.8025	5.7687	5.7459	5.7170	5.6995	5.6877	5.6759	5.6641	5.6487	5.6384	5.6317	
5	6.6079	5.7861	5.4095	5.1922	5.0503	4.9503	4.8759	4.8183	4.7725	4.7351	4.6777	4.6188	4.5581	4.5209	4.4957	4.4638	4.4444	4.4314	4.4183	4.4051	4.3880	4.3765	4.3690	5
6	5.9874	5.1433	4.7571	4.5337	4.3874	4.2839	4.2067	4.1468	4.0990	4.0600	3.9999	3.9381	3.8742	3.8348	3.8082	3.7743	3.7537	3.7398	3.7258	3.7117	3.6935	3.6812	3.6732	
7	5.5914	4.7374	4.3468	4.1203	3.9715	3.8660	3.7870	3.7257	3.6767	3.6365	3.5747	3.5107	3.4445	3.4036	3.3758	3.3404	3.3189	3.3043	3.2897	3.2749	3.2557	3.2428	3.2343	
8	5.3177	4.4590	4.0662	3.8379	3.6875	3.5806	3.5005	3.4381	3.3881	3.3472	3.2839	3.2184	3.1503	3.1081	3.0794	3.0428	3.0204	3.0053	2.9901	2.9747	2.9547	2.9412	2.9324	
9	5.1174	4.2565	3.8625	3.6331	3.4817	3.3738	3.2927	3.2296	3.1789	3.1373	3.0729	3.0061	2.9365	2.8932	2.8637	2.8259	2.8028	2.7872	2.7715	2.7556	2.7348	2.7208	2.7116	
10	4.9646	4.1028	3.7083	3.4780	3.3258	3.2172	3.1355	3.0717	3.0204	2.9782	2.9130	2.8450	2.7740	2.7298	2.6996	2.6609	2.6371	2.6211	2.6048	2.5884	2.5670	2.5525	2.5430	10
11	4.8443	3.9823	3.5874	3.3567	3.2039	3.0946	3.0123	2.9480	2.8962	2.8536	2.7876	2.7186	2.6464	2.6014	2.5705	2.5309	2.5066	2.4901	2.4734	2.4566	2.4345	2.4196	2.4098	
12	4.7472	3.8853	3.4903	3.2592	3.1059	2.9961	2.9134	2.8486	2.7964	2.7534	2.6866	2.6169	2.5436	2.4977	2.4663	2.4259	2.4010	2.3842	2.3671	2.3498	2.3271	2.3118	2.3017	
13	4.6672	3.8056	3.4105	3.1791	3.0254	2.9153	2.8321	2.7669	2.7144	2.6710	2.6037	2.5331	2.4589	2.4123	2.3803	2.3392	2.3138	2.2966	2.2791	2.2614	2.2382	2.2224	2.2121	
14	4.6001	3.7389	3.3439	3.1122	2.9582	2.8477	2.7642	2.6987	2.6458	2.6022	2.5342	2.4630	2.3879	2.3407	2.3082	2.2664	2.2405	2.2229	2.2051	2.1870	2.1632	2.1471	2.1365	
15	4.5431	3.6823	3.2874	3.0556	2.9013	2.7905	2.7066	2.6408	2.5876	2.5437	2.4753	2.4034	2.3275	2.2797	2.2468	2.2043	2.1780	2.1601	2.1419	2.1234	2.0992	2.0826	2.0718	15
16	4.4940	3.6337	3.2389	3.0069	2.8524	2.7413	2.6572	2.5911	2.5377	2.4935	2.4247	2.3522	2.2756	2.2272	2.1938	2.1507	2.1240	2.1058	2.0873	2.0685	2.0437	2.0268	2.0157	
17	4.4513	3.5915	3.1968	2.9647	2.8100	2.6987	2.6143	2.5480	2.4943	2.4499	2.3807	2.3077	2.2304	2.1815	2.1477	2.1040	2.0769	2.0584	2.0396	2.0204	1.9952	1.9779	1.9666	
18	4.4139	3.5546	3.1599	2.9277	2.7729	2.6613	2.5767	2.5102	2.4563	2.4117	2.3421	2.2686	2.1906	2.1413	2.1071	2.0629	2.0354	2.0166	1.9975	1.9780	1.9523	1.9348	1.9232	
19	4.3807	3.5219	3.1274	2.8951	2.7401	2.6283	2.5435	2.4768	2.4227	2.3779	2.3080	2.2341	2.1555	2.1057	2.0712	2.0264	1.9986	1.9795	1.9601	1.9403	1.9142	1.8963	1.8845	
20	4.3512	3.4928	3.0984	2.8661	2.7109	2.5990	2.5140	2.4471	2.3928	2.3479	2.2776	2.2033	2.1242	2.0739	2.0391	1.9938	1.9656	1.9464	1.9267	1.9066	1.8800	1.8618	1.8497	20
22	4.3009	3.4434	3.0491	2.8167	2.6613	2.5491	2.4638	2.3965	2.3419	2.2967	2.2258	2.1508	2.0707	2.0196	1.9842	1.9380	1.9092	1.8894	1.8692	1.8486	1.8212	1.8024	1.7899	
24	4.2597	3.4028	3.0088	2.7763	2.6207	2.5082	2.4226	2.3551	2.3002	2.2547	2.1834	2.1077	2.0267	1.9750	1.9390	1.8920	1.8625	1.8424	1.8217	1.8005	1.7723	1.7529	1.7401	
26	4.2252	3.3690	2.9752	2.7426	2.5868	2.4741	2.3883	2.3205	2.2655	2.2197	2.1479	2.0716	1.9898	1.9375	1.9010	1.8533	1.8233	1.8027	1.7816	1.7599	1.7310	1.7111	1.6978	
28	4.1960	3.3404	2.9467	2.7141	2.5581	2.4453	2.3593	2.2913	2.2360	2.1900	2.1179	2.0411	1.9586	1.9057	1.8687	1.8203	1.7898	1.7689	1.7473	1.7251	1.6956	1.6752	1.6615	
30	4.1709	3.3158	2.9223	2.6896	2.5336	2.4205	2.3343	2.2662	2.2107	2.1646	2.0921	2.0148	1.9317	1.8782	1.8409	1.7918	1.7609	1.7396	1.7176	1.6950	1.6648	1.6439	1.6299	30
35	4.1213	3.2674	2.8742	2.6415	2.4851	2.3718	2.2852	2.2167	2.1608	2.1143	2.0411	1.9629	1.8784	1.8239	1.7856	1.7351	1.7032	1.6811	1.6583	1.6347	1.6030	1.5809	1.5661	
40	4.0847	3.2317	2.8387	2.6060	2.4495	2.3359	2.2490	2.1802	2.1240	2.0772	2.0035	1.9245	1.8389	1.7835	1.7444	1.6928	1.6600	1.6373	1.6137	1.5892	1.5562	1.5331	1.5175	
45	4.0566	3.2043	2.8115	2.5787	2.4221	2.3083	2.2212	2.1521	2.0958	2.0487	1.9745	1.8949	1.8084	1.7522	1.7126	1.6599	1.6264	1.6031	1.5789	1.5536	1.5194	1.4953	1.4790	
50	4.0343	3.1826	2.7900	2.5572	2.4004	2.2864	2.1992	2.1299	2.0734	2.0261	1.9515	1.8714	1.7841	1.7273	1.6872	1.6337	1.5995	1.5757	1.5508	1.5249	1.4896	1.4647	1.4477	50
60	4.0012	3.1504	2.7581	2.5252	2.3683	2.2541	2.1665	2.0970	2.0401	1.9926	1.9174	1.8364	1.7480	1.6902	1.6491	1.5943	1.5590	1.5343	1.5085	1.4814	1.4442	1.4176	1.3994	
70	3.9778	3.1277	2.7355	2.5027	2.3456	2.2312	2.1435	2.0737	2.0166	1.9689	1.8932	1.8117	1.7223	1.6638	1.6220	1.5661	1.5300	1.5046	1.4779	1.4498	1.4110	1.3831	1.3638	
80	3.9604	3.1108	2.7188	2.4859	2.3287	2.2142	2.1263	2.0564	1.9991	1.9512	1.8753	1.7932	1.7032	1.6440	1.6017	1.5449	1.5081	1.4821	1.4548	1.4259	1.3857	1.3565	1.3362	
90	3.9469	3.0977	2.7058	2.4729	2.3157	2.2011	2.1131	2.0430	1.9856	1.9376	1.8613	1.7789	1.6883	1.6286	1.5859	1.5284	1.4910	1.4645	1.4366	1.4070	1.3656	1.3353	1.3140	
100	3.9361	3.0873	2.6955	2.4626	2.3053	2.1906	2.1025	2.0323	1.9748	1.9267	1.8503	1.7675	1.6764	1.6163	1.5733	1.5151	1.4772	1.4504	1.4220	1.3917	1.3492	1.3179	1.2958	100
125	3.9169	3.0687	2.6771	2.4442	2.2868	2.1719	2.0836	2.0133	1.9556	1.9072	1.8304	1.7471	1.6551	1.5943	1.5505	1.4912	1.4524	1.4247	1.3953	1.3638	1.3191	1.2856	1.2616	
150	3.9042	3.0564	2.6649	2.4320	2.2745	2.1595	2.0711	2.0006	1.9428	1.8943	1.8172	1.7335	1.6410	1.5796	1.5354	1.4752	1.4357	1.4074	1.3773	1.3448	1.2984	1.2631	1.2375	
175	3.8951	3.0476	2.6562	2.4233	2.2658	2.1507	2.0622	1.9916	1.9337	1.8851	1.8078	1.7239	1.6309	1.5691	1.5245	1.4637	1.4237	1.3950	1.3643	1.3311	1.2832	1.2465	1.2195	
200	3.8884	3.0411	2.6498	2.4168	2.2592	2.1441	2.0556	1.9849	1.9269	1.8783	1.8008	1.7166	1.6233	1.5612	1.5164	1.4551	1.4146	1.3856	1.3545	1.3206	1.2716	1.2336	1.2054	
250	3.8789	3.0319	2.6407	2.4078	2.2501	2.1350	2.0463	1.9756	1.9174	1.8687	1.7910	1.7065	1.6127	1.5502	1.5049	1.4430	1.4019	1.3723	1.3405	1.3058	1.2550	1.2150	1.1847	250
300	3.8726	3.0258	2.6347	2.4017	2.2441	2.1289	2.0402	1.9693	1.9112	1.8623	1.7845	1.6998	1.6057	1.5428	1.4973	1.4349	1.3934	1.3634	1.3312	1.2958	1.2436	1.2021	1.1700	
350	3.8682	3.0215	2.6304	2.3975	2.2398	2.1245	2.0358	1.9649	1.9067	1.8578	1.7799	1.6950	1.6006	1.5376	1.4919	1.4291	1.3873	1.3571	1.3244	1.2885	1.2353	1.1925	1.1590	
400	3.8648	3.0183	2.6272	2.3942	2.2366	2.1212	2.0325	1.9616	1.9033	1.8544	1.7764	1.6914	1.5969	1.5337	1.4878	1.4247	1.3827	1.3522	1.3193	1.2831	1.2290	1.1852	1.1504	
450	3.8622	3.0158	2.6247	2.3918	2.2340	2.1187	2.0299	1.9590	1.9007	1.8517	1.7737	1.6887	1.5939	1.5306	1.4846	1.4213	1.3791	1.3485	1.3153	1.2788	1.2241	1.1794	1.1435	
500	3.8601	3.0138	2.6227	2.3898	2.2320	2.1167	2.0279	1.9569	1.8986	1.8496	1.7715	1.6864	1.5916	1.5282	1.4821	1.4186	1.3762	1.3455	1.3122	1.2753	1.2201	1.1746	1.1378	500
600	3.8570	3.0107	2.6198	2.3868	2.2290	2.1137	2.0248	1.9538	1.8955	1.8465	1.7683	1.6831	1.5881	1.5245	1.4782	1.4145	1.3719	1.3409	1.3073	1.2701	1.2140	1.1674	1.1289	
700	3.8548	3.0086	2.6176	2.3847	2.2269	2.1115	2.0226	1.9516	1.8932	1.8442	1.7660	1.6807	1.5856	1.5219	1.4755	1.4116	1.3688	1.3377	1.3039	1.2664	1.2096	1.1621	1.1223	
800	3.8531	3.0070	2.6160	2.3831	2.2253	2.1099	2.0210	1.9500	1.8916	1.8425	1.7643	1.6789	1.5837	1.5199	1.4735	1.4094	1.3665	1.3353	1.3013	1.2635	1.2063	1.1580	1.1172	
900	3.8518	3.0057	2.6148	2.3818	2.2240	2.1086	2.0197	1.9487	1.8903	1.8412	1.7629	1.6775	1.5822	1.5184	1.4719	1.4077	1.3647	1.3334	1.2993	1.2613	1.2037	1.1548	1.1131	
1,000	3.8508	3.0047	2.6138	2.3808	2.2231	2.1076	2.0187	1.9476	1.8892	1.8402	1.7618	1.6764	1.5811	1.5171	1.4706	1.4063	1.3632	1.3318	1.2976	1.2596	1.2016	1.1522	1.1097	1,000
2,000	3.8461	3.0002	2.6094	2.3764	2.2186	2.1031	2.0142	1.9430	1.8846	1.8354	1.7570	1.6714	1.5758	1.5116	1.4648	1.4001	1.3567	1.3250	1.2903	1.2516	1.1920	1.1402	1.0935	
3,000	3.8446	2.9987	2.6079	2.3749	2.2171	2.1016	2.0126	1.9415	1.8830	1.8339	1.7554	1.6697	1.5740	1.5098	1.4629	1.3981	1.3545	1.3227	1.2878	1.2489	1.1887	1.1361	1.0875	
4,000	3.8438	2.9980	2.6071	2.3742	2.2163	2.1009	2.0119	1.9407	1.8822	1.8331	1.7546	1.6689	1.5732	1.5089	1.4620	1.3971	1.3534	1.3215	1.2866	1.2475	1.1871	1.1340	1.0845	
5,000	3.8433	2.9975	2.6067	2.3737	2.2159	2.1004	2.0114	1.9403	1.8818	1.8326	1.7541	1.6684	1.5726	1.5083	1.4614	1.3964	1.3527	1.3208	1.2859	1.2467	1.1861	1.1327	1.0826	
7,500	3.8427	2.9969	2.6061	2.3731	2.2153	2.0998	2.0108	1.9396	1.8811	1.8320	1.7535	1.6677	1.5719	1.5076	1.4606	1.3956	1.3519	1.3199	1.2849	1.2456	1.1848	1.1310	1.0800	
10,000	3.8424	2.9966	2.6058	2.3728	2.2150	2.0995	2.0105	1.9393	1.8808	1.8316	1.7531	1.6674	1.5716	1.5072	1.4602	1.3952	1.3514	1.3194	1.2844	1.2451	1.1841	1.1301	1.0787	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	

$F^{\nu_1,\nu_2}_{.95}$