Figure 13.13b. *65th* PERCENTILES FOR THE *F* DISTRIBUTION $[F_{\nu_1,\nu_2}]$

[Calculated with *qf* in **R** Version 3.3.2 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 $\Pr(Y \le y) = 0.65$ (ν_1 is the numerator, ν_2 the denominator, degrees of freedom)

$F^{\nu_1,\nu_2}_{.65}$

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	2.6629	3.5816	3.9632	4.1703	4.2999	4.3885	4.4528	4.5017	4.5400	4.5709	4.6175	4.6646	4.7120	4.7407	4.7599	4.7839	4.7984	4.8081	4.8178	4.8275	4.8400	4.8484	4.8538	1
2	1.4632	1.8571	2.0040	2.0803	2.1271	2.1587	2.1814	2.1986	2.2120	2.2228	2.2390	2.2553	2.2717	2.2816	2.2882	2.2964	2.3014	2.3047	2.3080	2.3114	2.3156	2.3185	2.3204	
3	1.2200	1.5203	1.6243	1.6761	1.7070	1.7275	1.7420	1.7529	1.7613	1.7680	1.7780	1.7880	1.7980	1.8039	1.8079	1.8128	1.8157	1.8177	1.8197	1.8216	1.8242	1.8258	1.8269	
4	1.1179	1.3806	1.4671	1.5087	1.5328	1.5484	1.5594	1.5674	1.5736	1.5784	1.5856	1.5927	1.5996	1.6037	1.6063	1.6097	1.6116	1.6129	1.6142	1.6155	1.6172	1.6183	1.6190	
5	1.0620	1.3046	1.3817	1.4176	1.4378	1.4507	1.4595	1.4659	1.4707	1.4744	1.4799	1.4852	1.4902	1.4931	1.4950	1.4973	1.4986	1.4995	1.5004	1.5012	1.5023	1.5030	1.5035	5
6	1.0269	1.2570	1.3280	1.3603	1.3781	1.3891	1.3965	1.4017	1.4057	1.4087	1.4129	1.4169	1.4206	1.4227	1.4240	1.4255	1.4264	1.4269	1.4275	1.4280	1.4287	1.4291	1.4294	
7	1.0027	1.2243	1.2912	1.3210	1.3370	1.3467	1.3531	1.3575	1.3608	1.3632	1.3666	1.3696	1.3723	1.3737	1.3745	1.3755	1.3760	1.3763	1.3766	1.3768	1.3772	1.3773	1.3774	
8	.98514	1.2005	1.2645	1.2923	1.3070	1.3157	1.3213	1.3252	1.3279	1.3299	1.3326	1.3349	1.3367	1.3376	1.3380	1.3385	1.3387	1.3388	1.3388	1.3389	1.3389	1.3389	1.3389	
9	.97176	1.1824	1.2441	1.2705	1.2842	1.2921	1.2971	1.3004	1.3027	1.3044	1.3065	1.3082	1.3093	1.3097	1.3099	1.3099	1.3098	1.3098	1.3096	1.3095	1.3093	1.3091	1.3089	
10	.96123	1.1682	1.2281	1.2533	1.2662	1.2735	1.2780	1.2809	1.2829	1.2842	1.2859	1.2870	1.2876	1.2876	1.2875	1.2872	1.2869	1.2866	1.2863	1.2860	1.2855	1.2852	1.2849	10
11	.95274	1.1567	1.2151	1.2395	1.2517	1.2585	1.2626	1.2651	1.2668	1.2679	1.2692	1.2699	1.2699	1.2696	1.2692	1.2686	1.2681	1.2677	1.2672	1.2668	1.2661	1.2656	1.2653	
12	.94575	1.1473	1.2045	1.2280	1.2397	1.2460	1.2498	1.2521	1.2535	1.2544	1.2553	1.2556	1.2552	1.2546	1.2540	1.2531	1.2524	1.2519	1.2513	1.2507	1.2498	1.2492	1.2487	
13	.93988	1.1394	1.1956	1.2185	1.2296	1.2356	1.2391	1.2411	1.2423	1.2430	1.2436	1.2436	1.2428	1.2419	1.2412	1.2399	1.2391	1.2384	1.2377	1.2370	1.2359	1.2352	1.2347	
14	.93490	1.1326	1.1880	1.2103	1.2211	1.2268	1.2299	1.2317	1.2328	1.2333	1.2337	1.2333	1.2322	1.2311	1.2301	1.2287	1.2276	1.2269	1.2261	1.2252	1.2240	1.2231	1.2225	
15	.93061	1.1268	1.1815	1.2033	1.2137	1.2191	1.2220	1.2237	1.2245	1.2250	1.2251	1.2244	1.2230	1.2217	1.2205	1.2189	1.2177	1.2168	1.2159	1.2149	1.2136	1.2126	1.2119	15
16	.92688	1.1218	1.1758	1.1972	1.2073	1.2124	1.2152	1.2166	1.2174	1.2176	1.2175	1.2167	1.2149	1.2134	1.2121	1.2103	1.2090	1.2080	1.2070	1.2059	1.2044	1.2033	1.2026	
17	.92361	1.1174	1.1708	1.1919	1.2017	1.2066	1.2092	1.2105	1.2110	1.2112	1.2109	1.2098	1.2078	1.2061	1.2047	1.2026	1.2012	1.2002	1.1991	1.1979	1.1962	1.1950	1.1942	
18	.92072	1.1135	1.1664	1.1871	1.1967	1.2014	1.2038	1.2050	1.2054	1.2055	1.2050	1.2038	1.2015	1.1996	1.1981	1.1959	1.1943	1.1932	1.1920	1.1907	1.1889	1.1876	1.1867	
19	.91814	1.1100	1.1625	1.1829	1.1922	1.1968	1.1990	1.2001	1.2004	1.2004	1.1998	1.1983	1.1959	1.1938	1.1922	1.1898	1.1881	1.1869	1.1856	1.1842	1.1823	1.1809	1.1800	
20	.91582	1.1069	1.1590	1.1791	1.1882	1.1926	1.1948	1.1957	1.1960	1.1958	1.1951	1.1934	1.1908	1.1886	1.1868	1.1842	1.1825	1.1812	1.1798	1.1784	1.1763	1.1749	1.1739	20
22	.91185	1.1016	1.1529	1.1726	1.1814	1.1855	1.1874	1.1881	1.1882	1.1880	1.1869	1.1850	1.1819	1.1795	1.1775	1.1747	1.1727	1.1713	1.1698	1.1682	1.1659	1.1643	1.1631	
24	.90856	1.0971	1.1479	1.1672	1.1757	1.1796	1.1813	1.1818	1.1818	1.1814	1.1801	1.1779	1.1746	1.1719	1.1698	1.1667	1.1645	1.1630	1.1613	1.1595	1.1571	1.1553	1.1541	
26	.90578	1.0934	1.1437	1.1626	1.1709	1.1746	1.1761	1.1765	1.1764	1.1759	1.1744	1.1720	1.1683	1.1654	1.1631	1.1598	1.1575	1.1559	1.1541	1.1522	1.1495	1.1476	1.1462	
28	.90342	1.0902	1.1401	1.1588	1.1668	1.1703	1.1717	1.1720	1.1717	1.1711	1.1695	1.1669	1.1630	1.1599	1.1575	1.1539	1.1515	1.1497	1.1478	1.1458	1.1429	1.1408	1.1394	
30	.90137	1.0874	1.1369	1.1554	1.1632	1.1666	1.1679	1.1681	1.1677	1.1670	1.1652	1.1624	1.1583	1.1551	1.1525	1.1488	1.1462	1.1443	1.1423	1.1402	1.1371	1.1349	1.1334	30
35	.89731	1.0820	1.1307	1.1487	1.1562	1.1593	1.1603	1.1602	1.1597	1.1588	1.1567	1.1536	1.1490	1.1454	1.1425	1.1384	1.1355	1.1334	1.1312	1.1288	1.1253	1.1228	1.1211	
40	.89427	1.0779	1.1261	1.1437	1.1509	1.1538	1.1546	1.1544	1.1537	1.1527	1.1504	1.1469	1.1419	1.1380	1.1350	1.1305	1.1274	1.1251	1.1227	1.1200	1.1162	1.1135	1.1116	
45	.89192	1.0747	1.1225	1.1399	1.1468	1.1495	1.1502	1.1498	1.1490	1.1479	1.1454	1.1417	1.1364	1.1323	1.1290	1.1243	1.1210	1.1186	1.1159	1.1131	1.1090	1.1060	1.1039	
50	.89005	1.0722	1.1197	1.1368	1.1436	1.1461	1.1466	1.1462	1.1453	1.1441	1.1414	1.1375	1.1320	1.1277	1.1243	1.1193	1.1158	1.1132	1.1104	1.1074	1.1030	1.0998	1.0975	50
60	.88725	1.0684	1.1154	1.1322	1.1387	1.1410	1.1414	1.1408	1.1397	1.1383	1.1354	1.1313	1.1253	1.1207	1.1171	1.1117	1.1079	1.1051	1.1020	1.0987	1.0939	1.0902	1.0876	
70	.88526	1.0657	1.1124	1.1289	1.1352	1.1374	1.1376	1.1369	1.1357	1.1342	1.1312	1.1268	1.1206	1.1157	1.1118	1.1061	1.1021	1.0992	1.0959	1.0923	1.0871	1.0831	1.0802	
80	.88377	1.0637	1.1101	1.1265	1.1327	1.1347	1.1348	1.1340	1.1327	1.1312	1.1280	1.1234	1.1170	1.1119	1.1079	1.1020	1.0978	1.0946	1.0912	1.0874	1.0818	1.0775	1.0744	
90	.88262	1.0622	1.1084	1.1245	1.1306	1.1326	1.1326	1.1317	1.1304	1.1288	1.1255	1.1208	1.1142	1.1090	1.1048	1.0987	1.0943	1.0911	1.0875	1.0835	1.0776	1.0730	1.0697	
100	.88170	1.0609	1.1069	1.1230	1.1290	1.1309	1.1309	1.1299	1.1285	1.1269	1.1235	1.1187	1.1119	1.1066	1.1023	1.0960	1.0915	1.0882	1.0845	1.0803	1.0742	1.0694	1.0658	100
125	.88004	1.0587	1.1044	1.1203	1.1261	1.1279	1.1277	1.1266	1.1252	1.1235	1.1199	1.1149	1.1078	1.1023	1.0978	1.0912	1.0865	1.0829	1.0790	1.0745	1.0678	1.0624	1.0585	
150	.87894	1.0572	1.1027	1.1185	1.1242	1.1258	1.1256	1.1245	1.1229	1.1212	1.1175	1.1123	1.1051	1.0994	1.0948	1.0880	1.0831	1.0793	1.0752	1.0705	1.0633	1.0576	1.0532	
175	.87815	1.0561	1.1015	1.1172	1.1228	1.1244	1.1241	1.1229	1.1213	1.1195	1.1158	1.1105	1.1032	1.0973	1.0927	1.0856	1.0806	1.0768	1.0725	1.0676	1.0601	1.0540	1.0493	
200	.87756	1.0554	1.1006	1.1162	1.1218	1.1233	1.1230	1.1218	1.1201	1.1183	1.1145	1.1092	1.1017	1.0958	1.0910	1.0839	1.0787	1.0748	1.0704	1.0653	1.0576	1.0512	1.0462	
250	.87674	1.0542	1.0994	1.1148	1.1204	1.1218	1.1214	1.1202	1.1185	1.1166	1.1127	1.1073	1.0996	1.0936	1.0887	1.0814	1.0761	1.0720	1.0674	1.0622	1.0540	1.0471	1.0416	250
300	.87619	1.0535	1.0985	1.1139	1.1194	1.1208	1.1204	1.1191	1.1173	1.1154	1.1115	1.1060	1.0982	1.0921	1.0872	1.0797	1.0743	1.0701	1.0654	1.0600	1.0515	1.0442	1.0383	
350	.87580	1.0530	1.0979	1.1133	1.1187	1.1201	1.1196	1.1183	1.1166	1.1146	1.1107	1.1051	1.0973	1.0911	1.0861	1.0785	1.0730	1.0688	1.0640	1.0584	1.0497	1.0421	1.0358	
400	.87551	1.0526	1.0975	1.1128	1.1182	1.1196	1.1191	1.1177	1.1160	1.1140	1.1100	1.1044	1.0965	1.0903	1.0852	1.0776	1.0720	1.0678	1.0629	1.0573	1.0483	1.0405	1.0339	
450	.87528	1.0523	1.0972	1.1124	1.1178	1.1191	1.1186	1.1173	1.1155	1.1135	1.1095	1.1039	1.0959	1.0897	1.0846	1.0769	1.0713	1.0670	1.0621	1.0563	1.0472	1.0392	1.0323	
500	.87510	1.0520	1.0969	1.1121	1.1175	1.1188	1.1183	1.1169	1.1151	1.1132	1.1091	1.1034	1.0955	1.0892	1.0841	1.0763	1.0707	1.0663	1.0614	1.0556	1.0463	1.0381	1.0310	500
600	.87482	1.0517	1.0965	1.1117	1.1170	1.1183	1.1178	1.1164	1.1146	1.1126	1.1085	1.1028	1.0948	1.0884	1.0833	1.0755	1.0698	1.0654	1.0603	1.0545	1.0450	1.0365	1.0290	
700	.87463	1.0514	1.0962	1.1114	1.1167	1.1179	1.1174	1.1160	1.1142	1.1122	1.1081	1.1023	1.0943	1.0879	1.0827	1.0749	1.0691	1.0647	1.0596	1.0536	1.0440	1.0353	1.0275	
800	.87448	1.0512	1.0959	1.1111	1.1164	1.1177	1.1171	1.1157	1.1139	1.1119	1.1078	1.1020	1.0939	1.0875	1.0823	1.0744	1.0686	1.0642	1.0590	1.0530	1.0432	1.0344	1.0264	
900	.87437	1.0510	1.0958	1.1109	1.1162	1.1175	1.1169	1.1155	1.1136	1.1116	1.1075	1.1017	1.0936	1.0872	1.0820	1.0741	1.0682	1.0637	1.0586	1.0525	1.0427	1.0337	1.0254	
1,000	.87428	1.0509	1.0956	1.1108	1.1160	1.1173	1.1167	1.1153	1.1134	1.1114	1.1073	1.1015	1.0934	1.0870	1.0817	1.0738	1.0679	1.0634	1.0582	1.0522	1.0422	1.0331	1.0247	1,000
2,000	.87387	1.0504	1.0950	1.1101	1.1153	1.1165	1.1159	1.1145	1.1126	1.1106	1.1064	1.1006	1.0924	1.0858	1.0806	1.0725	1.0665	1.0619	1.0567	1.0504	1.0401	1.0304	1.0210	
3,000	.87373	1.0502	1.0948	1.1099	1.1151	1.1163	1.1157	1.1142	1.1123	1.1103	1.1061	1.1002	1.0920	1.0855	1.0802	1.0721	1.0661	1.0615	1.0561	1.0498	1.0393	1.0294	1.0196	
4,000	.87366	1.0501	1.0947	1.1098	1.1150	1.1162	1.1156	1.1141	1.1122	1.1101	1.1060	1.1001	1.0918	1.0853	1.0800	1.0718	1.0659	1.0612	1.0559	1.0495	1.0390	1.0289	1.0189	
5,000	.87362	1.0500	1.0946	1.1097	1.1149	1.1161	1.1155	1.1140	1.1121	1.1101	1.1059	1.1000	1.0917	1.0852	1.0799	1.0717	1.0657	1.0611	1.0557	1.0493	1.0388	1.0287	1.0185	
7,500	.87357	1.0500	1.0945	1.1096	1.1148	1.1160	1.1154	1.1139	1.1120	1.1099	1.1057	1.0999	1.0916	1.0850	1.0797	1.0715	1.0655	1.0609	1.0555	1.0491	1.0385	1.0283	1.0179	
10,000	.87354	1.0499	1.0945	1.1096	1.1148	1.1159	1.1153	1.1138	1.1119	1.1099	1.1057	1.0998	1.0915	1.0850	1.0796	1.0715	1.0654	1.0608	1.0554	1.0490	1.0383	1.0281	1.0176	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	

$F^{\nu_1,\nu_2}_{.65}$