99.5*th* PERCENTILES FOR THE *F* DISTRIBUTION $[F_{\nu_1,\nu_2}]$

[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 $\Pr(Y \le y) = 0.995$ (ν_1 is the numerator, ν_2 the denominator, degrees of freedom)

F_{ν_1,ν_2} .995

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	16211	19999	21615	22500	23056	23437	23715	23925	24091	24224	24426	24630	24836	24960	25044	25148	25211	25253	25295	25337	25392	25428	25452	1
2	198.50	199.00	199.17	199.25	199.30	199.33	199.36	199.37	199.39	199.40	199.42	199.43	199.45	199.46	199.47	199.47	199.48	199.48	199.49	199.49	199.49	199.50	199.50	
3	55.552	49.799	47.467	46.195	45.392	44.838	44.434	44.126	43.882	43.686	43.387	43.085	42.778	42.591	42.466	42.308	42.213	42.149	42.086	42.022	41.939	41.884	41.848	
4	31.333	26.284	24.259	23.155	22.456	21.975	21.622	21.352	21.139	20.967	20.705	20.438	20.167	20.002	19.892	19.752	19.667	19.611	19.554	19.497	19.423	19.374	19.342	
5	22.785	18.314	16.530	15.556	14.940	14.513	14.200	13.961	13.772	13.618	13.384	13.146	12.903	12.755	12.656	12.530	12.454	12.402	12.351	12.300	12.233	12.188	12.159	5
6	18.6350	14.5441	12.9166	12.0275	11.4637	11.0730	10.7859	10.5658	10.3915	10.2500	10.0343	9.8140	9.5888	9.4511	9.3582	9.2408	9.1697	9.1219	9.0739	9.0257	8.9633	8.9214	8.8941	
7	16.2356	12.4040	10.8824	10.0505	9.5221	9.1553	8.8854	8.6781	8.5138	8.3803	8.1764	7.9678	7.7540	7.6230	7.5345	7.4224	7.3544	7.3088	7.2628	7.2165	7.1567	7.1165	7.0902	
8	14.6882	11.0424	9.5965	8.8051	8.3018	7.9520	7.6941	7.4959	7.3386	7.2106	7.0149	6.8143	6.6082	6.4817	6.3961	6.2875	6.2215	6.1772	6.1325	6.0875	6.0292	5.9900	5.9644	
9	13.6136	10.1067	8.7171	7.9559	7.4712	7.1339	6.8849	6.6933	6.5411	6.4172	6.2274	6.0325	5.8318	5.7084	5.6248	5.5186	5.4539	5.4104	5.3666	5.3223	5.2650	5.2264	5.2012	
10	12.8265	9.4270	8.0807	7.3428	6.8724	6.5446	6.3025	6.1159	5.9676	5.8467	5.6613	5.4707	5.2740	5.1528	5.0706	4.9659	4.9022	4.8592	4.8159	4.7721	4.7153	4.6771	4.6521	10
11	12.2263	8.9122	7.6004	6.8809	6.4217	6.1016	5.8648	5.6821	5.5368	5.4183	5.2363	5.0489	4.8552	4.7356	4.6543	4.5508	4.4876	4.4450	4.4020	4.3585	4.3020	4.2640	4.2390	
12	11.7542	8.5096	7.2258	6.5211	6.0711	5.7570	5.5245	5.3451	5.2021	5.0855	4.9062	4.7213	4.5299	4.4115	4.3309	4.2282	4.1653	4.1229	4.0801	4.0368	3.9804	3.9424	3.9174	
13	11.3735	8.1865	6.9258	6.2335	5.7910	5.4819	5.2529	5.0761	4.9351	4.8199	4.6429	4.4600	4.2703	4.1528	4.0727	3.9704	3.9078	3.8655	3.8228	3.7795	3.7231	3.6850	3.6601	
14	11.0603	7.9216	6.6804	5.9984	5.5623	5.2574	5.0313	4.8566	4.7173	4.6034	4.4281	4.2468	4.0585	3.9417	3.8619	3.7600	3.6975	3.6552	3.6125	3.5692	3.5127	3.4745	3.4494	
15	10.7980	7.7008	6.4760	5.8029	5.3721	5.0708	4.8473	4.6744	4.5364	4.4235	4.2497	4.0698	3.8826	3.7662	3.6867	3.5850	3.5225	3.4803	3.4375	3.3941	3.3374	3.2991	3.2739	15
16	10.5755	7.5138	6.3034	5.6378	5.2117	4.9134	4.6920	4.5207	4.3838	4.2719	4.0994	3.9205	3.7342	3.6182	3.5389	3.4372	3.3747	3.3324	3.2895	3.2460	3.1891	3.1506	3.1253	
17	10.3842	7.3536	6.1556	5.4967	5.0746	4.7789	4.5594	4.3894	4.2535	4.1424	3.9709	3.7929	3.6073	3.4916	3.4124	3.3108	3.2482	3.2058	3.1628	3.1192	3.0620	3.0233	2.9978	
18	10.2181	7.2148	6.0278	5.3746	4.9560	4.6627	4.4448	4.2759	4.1410	4.0305	3.8599	3.6827	3.4977	3.3822	3.3030	3.2014	3.1387	3.0962	3.0531	3.0093	2.9518	2.9128	2.8871	
19	10.0725	7.0935	5.9161	5.2681	4.8526	4.5614	4.3448	4.1770	4.0428	3.9329	3.7631	3.5866	3.4020	3.2867	3.2075	3.1058	3.0430	3.0004	2.9571	2.9131	2.8554	2.8161	2.7902	
20	9.9439	6.9865	5.8177	5.1743	4.7616	4.4721	4.2569	4.0900	3.9564	3.8470	3.6779	3.5020	3.3178	3.2025	3.1234	3.0215	2.9586	2.9159	2.8724	2.8282	2.7702	2.7306	2.7046	20
22	9.7271	6.8064	5.6524	5.0168	4.6088	4.3225	4.1094	3.9440	3.8116	3.7030	3.5350	3.3600	3.1764	3.0613	2.9821	2.8799	2.8167	2.7736	2.7298	2.6852	2.6264	2.5864	2.5599	
24	9.5513	6.6609	5.5190	4.8898	4.4857	4.2019	3.9905	3.8264	3.6949	3.5870	3.4199	3.2456	3.0624	2.9472	2.8679	2.7654	2.7018	2.6585	2.6143	2.5692	2.5098	2.4692	2.4423	
26	9.4059	6.5409	5.4091	4.7852	4.3844	4.1027	3.8928	3.7297	3.5989	3.4916	3.3252	3.1515	2.9685	2.8533	2.7738	2.6709	2.6070	2.5633	2.5188	2.4733	2.4131	2.3719	2.3446	
28	9.2838	6.4403	5.3170	4.6977	4.2996	4.0197	3.8110	3.6487	3.5186	3.4117	3.2460	3.0727	2.8899	2.7746	2.6949	2.5916	2.5273	2.4834	2.4384	2.3925	2.3316	2.2898	2.2621	
30	9.1797	6.3547	5.2388	4.6234	4.2276	3.9492	3.7416	3.5801	3.4505	3.3440	3.1787	3.0057	2.8230	2.7076	2.6278	2.5241	2.4594	2.4151	2.3699	2.3234	2.2619	2.2195	2.1914	30
35	8.9763	6.1878	5.0865	4.4788	4.0876	3.8123	3.6066	3.4466	3.3180	3.2123	3.0480	2.8756	2.6930	2.5772	2.4969	2.3922	2.3266	2.2816	2.2355	2.1880	2.1248	2.0810	2.0518	
40	8.8279	6.0664	4.9758	4.3738	3.9860	3.7129	3.5088	3.3498	3.2220	3.1167	2.9531	2.7811	2.5984	2.4823	2.4015	2.2958	2.2295	2.1838	2.1369	2.0884	2.0236	1.9785	1.9483	
45	8.7148	5.9741	4.8918	4.2941	3.9090	3.6376	3.4346	3.2764	3.1492	3.0443	2.8811	2.7094	2.5266	2.4101	2.3288	2.2224	2.1553	2.1090	2.0613	2.0119	1.9456	1.8993	1.8682	
50	8.6258	5.9016	4.8259	4.2316	3.8486	3.5785	3.3765	3.2189	3.0920	2.9875	2.8247	2.6531	2.4702	2.3533	2.2717	2.1644	2.0967	2.0499	2.0015	1.9512	1.8836	1.8361	1.8040	50
60	8.4946	5.7950	4.7290	4.1399	3.7599	3.4918	3.2911	3.1344	3.0083	2.9042	2.7419	2.5705	2.3872	2.2697	2.1874	2.0789	2.0100	1.9622	1.9126	1.8609	1.7907	1.7410	1.7073	
70	8.4027	5.7204	4.6613	4.0758	3.6980	3.4313	3.2315	3.0755	2.9498	2.8460	2.6840	2.5127	2.3291	2.2112	2.1283	2.0186	1.9488	1.9002	1.8496	1.7966	1.7242	1.6726	1.6373	
80	8.3346	5.6652	4.6113	4.0285	3.6524	3.3867	3.1876	3.0320	2.9066	2.8031	2.6413	2.4700	2.2862	2.1678	2.0845	1.9739	1.9033	1.8540	1.8025	1.7484	1.6742	1.6208	1.5840	
90	8.2822	5.6228	4.5728	3.9922	3.6173	3.3524	3.1538	2.9986	2.8735	2.7701	2.6085	2.4373	2.2532	2.1345	2.0507	1.9394	1.8681	1.8182	1.7660	1.7109	1.6350	1.5800	1.5419	
100	8.2406	5.5892	4.5424	3.9634	3.5895	3.3252	3.1271	2.9722	2.8472	2.7440	2.5825	2.4113	2.2270	2.1080	2.0239	1.9119	1.8400	1.7896	1.7367	1.6809	1.6034	1.5470	1.5076	100
125	8.1665	5.5294	4.4882	3.9122	3.5400	3.2769	3.0796	2.9252	2.8006	2.6975	2.5363	2.3651	2.1804	2.0607	1.9760	1.8628	1.7897	1.7383	1.6841	1.6266	1.5459	1.4864	1.4442	
150	8.1177	5.4900	4.4525	3.8785	3.5075	3.2452	3.0483	2.8942	2.7698	2.6669	2.5059	2.3346	2.1496	2.0295	1.9444	1.8302	1.7563	1.7041	1.6490	1.5901	1.5070	1.4449	1.4003	
175	8.0830	5.4620	4.4273	3.8546	3.4845	3.2227	3.0262	2.8723	2.7481	2.6453	2.4843	2.3131	2.1278	2.0074	1.9219	1.8070	1.7325	1.6797	1.6238	1.5639	1.4788	1.4145	1.3678	
200	8.0572	5.4412	4.4084	3.8368	3.4674	3.2059	3.0097	2.8560	2.7319	2.6292	2.4683	2.2970	2.1116	1.9909	1.9051	1.7897	1.7147	1.6614	1.6049	1.5442	1.4574	1.3912	1.3426	
250	8.0212	5.4122	4.3822	3.8121	3.4435	3.1826	2.9867	2.8333	2.7094	2.6068	2.4459	2.2746	2.0889	1.9679	1.8817	1.7655	1.6897	1.6358	1.5784	1.5163	1.4269	1.3577	1.3059	250
300	7.9973	5.3930	4.3649	3.7957	3.4277	3.1672	2.9716	2.8183	2.6945	2.5919	2.4311	2.2598	2.0739	1.9526	1.8661	1.7494	1.6731	1.6187	1.5606	1.4976	1.4062	1.3347	1.2802	
350	7.9803	5.3793	4.3525	3.7841	3.4165	3.1562	2.9608	2.8076	2.6839	2.5814	2.4206	2.2493	2.0633	1.9418	1.8551	1.7379	1.6612	1.6064	1.5478	1.4842	1.3913	1.3178	1.2611	
400	7.9676	5.3691	4.3433	3.7754	3.4081	3.1480	2.9527	2.7996	2.6759	2.5735	2.4128	2.2414	2.0553	1.9336	1.8468	1.7293	1.6523	1.5972	1.5382	1.4741	1.3799	1.3050	1.2463	
450	7.9577	5.3612	4.3361	3.7686	3.4015	3.1417	2.9464	2.7934	2.6698	2.5673	2.4066	2.2353	2.0491	1.9273	1.8403	1.7226	1.6453	1.5901	1.5308	1.4661	1.3711	1.2948	1.2344	
500	7.9498	5.3549	4.3304	3.7632	3.3963	3.1366	2.9414	2.7885	2.6649	2.5625	2.4018	2.2304	2.0441	1.9223	1.8352	1.7172	1.6398	1.5843	1.5248	1.4598	1.3639	1.2865	1.2247	500
600	7.9381	5.3454	4.3219	3.7551	3.3886	3.1290	2.9339	2.7811	2.6575	2.5551	2.3945	2.2231	2.0367	1.9147	1.8275	1.7092	1.6315	1.5757	1.5158	1.4502	1.3530	1.2738	1.2095	
700	7.9296	5.3386	4.3158	3.7494	3.3830	3.1236	2.9286	2.7758	2.6523	2.5499	2.3893	2.2178	2.0314	1.9093	1.8220	1.7035	1.6255	1.5696	1.5094	1.4434	1.3452	1.2646	1.1983	
800	7.9233	5.3336	4.3112	3.7451	3.3788	3.1195	2.9246	2.7719	2.6483	2.5460	2.3854	2.2139	2.0274	1.9053	1.8178	1.6992	1.6211	1.5650	1.5045	1.4382	1.3393	1.2576	1.1897	
900	7.9184	5.3296	4.3076	3.7417	3.3756	3.1164	2.9215	2.7688	2.6453	2.5430	2.3824	2.2109	2.0244	1.9021	1.8146	1.6958	1.6176	1.5614	1.5008	1.4342	1.3347	1.2521	1.1827	
1,000	7.9145	5.3265	4.3048	3.7390	3.3730	3.1138	2.9190	2.7663	2.6429	2.5405	2.3800	2.2085	2.0219	1.8996	1.8121	1.6932	1.6148	1.5585	1.4978	1.4310	1.3310	1.2477	1.1771	1,000
2,000	7.8970	5.3124	4.2921	3.7270	3.3615	3.1025	2.9079	2.7553	2.6319	2.5297	2.3691	2.1976	2.0109	1.8884	1.8006	1.6812	1.6023	1.5455	1.4841	1.4164	1.3141	1.2271	1.1500	
3,000	7.8911	5.3077	4.2878	3.7230	3.3576	3.0988	2.9042	2.7517	2.6283	2.5260	2.3655	2.1940	2.0072	1.8846	1.7967	1.6772	1.5981	1.5412	1.4796	1.4115	1.3083	1.2200	1.1402	
4,000	7.8882	5.3053	4.2857	3.7210	3.3557	3.0969	2.9024	2.7498	2.6265	2.5242	2.3637	2.1922	2.0053	1.8827	1.7948	1.6752	1.5961	1.5390	1.4773	1.4091	1.3055	1.2164	1.1351	
5,000	7.8864	5.3039	4.2845	3.7198	3.3545	3.0958	2.9012	2.7488	2.6254	2.5232	2.3626	2.1911	2.0042	1.8816	1.7937	1.6740	1.5948	1.5377	1.4760	1.4076	1.3037	1.2142	1.1320	
7,500	7.8841	5.3021	4.2828	3.7183	3.3530	3.0943	2.8998	2.7473	2.6239	2.5217	2.3612	2.1896	2.0028	1.8801	1.7921	1.6724	1.5931	1.5360	1.4741	1.4056	1.3014	1.2113	1.1277	
10,000	7.8829	5.3011	4.2819	3.7175	3.3522	3.0935	2.8990	2.7466	2.6232	2.5210	2.3605	2.1889	2.0020	1.8794	1.7914	1.6715	1.5923	1.5351	1.4732	1.4046	1.3003	1.2099	1.1256	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} .995

University of Waterloo

W. H. Cherry

2017-02-20