

Figure 13.13i. 99.5th PERCENTILES FOR THE F DISTRIBUTION $[F_{v_1, v_2}]$

[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 $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = 0.995$ (v_1 is the numerator, v_2 the denominator, degrees of freedom)

$\downarrow$ $v_2 \backslash v_1$	Each table entry is the value (y) of the random variable $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = 0.995$ (v_1 is the numerator, v_2 the denominator, degrees of freedom)																								
	1	2	3	4	5	6	7	8	9	10	12	15	20	25	30	40	50	60	75	100	175	350	1,000		
2017-02-20	1	16.211	19.999	21.615	22.500	23.056	23.437	23.715	23.925	24.091	24.224	24.426	24.630	24.836	24.960	25.044	25.148	25.211	25.253	25.295	25.337	25.392	25.428	25.452	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	497.99	474.67	461.95	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	9.1977	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						