99.9995*th* 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 $\Pr(Y \le y) = 0.999\,995$ (ν_1 is the numerator, ν_2 the denominator, degrees of freedom)

$Df \rightarrow$ / 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	1621138938^2	1999999999^3	2161518584^3	2249999999^3	2305619823^3	2343749999^3	2371494675^4	2392578124^4	2409137448^4	2422485351^5	2442672729^5	2463056070^5	2483632090^5	2496068711^9	2504397211^5	2514849490^2	2521142879^1	2525347578^6	2529559524^6	2533778683^1	2539213858^2	2542843864^3	2545206168^3	1
2	199998.5	199999.0	199999.2	199999.2	199999.3	199999.3	199999.4	199999.4	199999.4	199999.4	199999.4	199999.4	199999.4	199999.5	199999.5	199999.5	199999.5	199999.5	199999.5	199999.5	199999.5	199999.5	199999.5	
3	5791.9	5128.4	4865.7	4723.7	4634.5	4573.2	4528.6	4494.5	4467.7	4446.1	4413.3	4380.1	4346.4	4325.9	4312.2	4295.0	4284.6	4277.6	4270.6	4263.6	4254.6	4248.6	4244.7	
4	1092.11	892.43	814.94	773.26	747.13	729.19	716.09	706.11	698.24	691.89	682.24	672.46	662.52	656.49	652.44	647.34	644.26	642.20	640.13	638.06	635.38	633.59	632.42	
5	424.00	327.38	290.42	270.63	258.23	249.72	243.51	238.77	235.04	232.02	227.43	222.77	218.04	215.16	213.22	210.78	209.31	208.32	207.33	206.33	205.05	204.19	203.63	5
6	232.867	172.441	149.578	137.371	129.733	124.490	120.661	117.740	115.437	113.573	110.741	107.862	104.933	103.149	101.949	100.435	99.519	98.905	98.289	97.670	96.870	96.334	95.985	
7	154.675	110.958	94.549	85.810	80.347	76.596	73.857	71.766	70.117	68.782	66.752	64.687	62.583	61.300	60.436	59.345	58.685	58.242	57.797	57.350	56.772	56.385	56.132	
8	115.158	80.590	67.694	60.839	56.556	53.616	51.469	49.829	48.535	47.487	45.893	44.270	42.614	41.603	40.922	40.061	39.539	39.189	38.837	38.484	38.026	37.719	37.519	
9	92.253	63.298	52.549	46.844	43.281	40.835	39.048	37.683	36.606	35.733	34.404	33.050	31.668	30.823	30.253	29.532	29.094	28.801	28.506	28.209	27.824	27.566	27.398	
10	77.655	52.435	43.108	38.164	35.077	32.958	31.410	30.227	29.293	28.536	27.383	26.207	25.005	24.269	23.773	23.144	22.762	22.506	22.248	21.989	21.652	21.426	21.279	10
11	67.688	45.104	36.778	32.369	29.618	27.728	26.348	25.292	24.459	23.783	22.753	21.702	20.627	19.968	19.523	18.959	18.616	18.386	18.154	17.921	17.618	17.415	17.282	
12	60.520	39.883	32.295	28.280	25.775	24.054	22.797	21.836	21.076	20.460	19.521	18.562	17.579	16.977	16.570	16.053	15.739	15.528	15.315	15.100	14.822	14.635	14.513	
13	55.153	36.007	28.981	25.267	22.950	21.358	20.195	19.305	18.602	18.031	17.161	16.272	15.360	14.801	14.422	13.942	13.649	13.452	13.254	13.054	12.794	12.619	12.505	
14	51.003 0	33.030 2	26.447 7	22.969 3	20.799 4	19.309 4	18.219 5	17.386 1	16.727 1	16.192 5	15.376 8	14.542 3	13.686 0	13.160 1	12.803 8	12.351 3	12.075 7	11.890 1	11.702 9	11.514 0	11.268 6	11.103 3	10.995 1	
15	47.709 7	30.682 6	24.456 2	21.167 7	19.116 5	17.707 7	16.677 2	15.888 9	15.265 5	14.759 6	13.987 4	13.196 9	12.385 1	11.886 1	11.547 7	11.117 6	10.855 5	10.678 8	10.500 5	10.320 6	10.086 6	9.928 8	9.825 5	15
16	45.039 2	28.789 1	22.855 0	19.722 1	17.768 2	16.426 2	15.444 2	14.693 0	14.098 7	13.616 3	12.879 7	12.125 3	11.349 9	10.872 7	10.549 0	10.137 2	9.886 0	9.716 5	9.545 5	9.372 8	9.148 0	8.996 3	8.896 9	
17	42.834 3	27.233 0	21.542 7	18.539 7	16.666 9	15.380 4	14.439 0	13.718 6	13.148 6	12.685 8	11.978 9	11.254 4	10.509 2	10.050 3	9.738 7	9.342 0	9.099 8	8.936 4	8.771 3	8.604 5	8.387 2	8.240 5	8.144 3	
18	40.985 5	25.933 8	20.449 8	17.556 5	15.752 2	14.512 8	13.605 6	12.911 3	12.361 8	11.915 5	11.233 7	10.534 6	9.814 8	9.371 2	9.069 8	8.685 9	8.451 2	8.292 8	8.132 7	7.970 8	7.759 8	7.617 2	7.523 6	
19	39.414 9	24.834 2	19.526 8	16.727 5	14.981 9	13.782 6	12.904 7	12.232 7	11.700 8	11.268 7	10.608 2	9.930 8	9.232 8	8.802 3	8.509 5	8.136 3	7.901 8	7.753 9	7.598 0	7.440 3	7.234 5	7.095 4	7.004 0	
20	38.065 2	23.892 5	18.737 8	16.019 9	14.325 0	13.160 5	12.308 0	11.655 2	11.138 5	10.718 6	10.076 7	9.417 9	8.738 7	8.319 4	8.034 1	7.670 2	7.447 4	7.296 9	7.144 5	6.990 3	6.789 0	6.652 8	6.563 3	20
22	35.868 0	22.366 0	17.462 4	14.877 9	13.266 4	12.158 9	11.348 0	10.726 8	10.234 9	9.835 1	9.223 6	8.595 3	7.946 8	7.545 9	7.272 8	6.923 9	6.710 0	6.565 3	6.418 7	6.270 1	6.075 9	5.944 3	5.857 7	
24	34.158 4	21.184 4	16.478 1	13.998 5	12.452 3	11.389 7	10.611 4	10.015 1	9.542 7	9.158 7	8.570 9	7.966 6	7.342 0	6.955 4	6.691 8	6.354 5	6.147 4	6.007 1	5.864 9	5.720 6	5.531 7	5.403 5	5.319 0	
26	32.792 2	20.244 1	15.696 8	13.301 7	11.808 3	10.781 8	10.029 7	9.453 4	8.996 7	8.625 3	8.056 7	7.471 6	6.866 3	6.491 1	6.234 9	5.906 9	5.705 2	5.568 4	5.429 6	5.288 6	5.103 8	4.978 0	4.895 1	
28	31.676 4	19.479 0	15.062 6	12.736 9	11.286 8	10.289 9	9.559 5	8.999 6	8.555 9	8.194 9	7.641 9	7.072 6	6.483 0	6.117 1	5.867 1	5.546 4	5.349 0	5.215 1	5.079 0	4.940 6	4.758 9	4.635 0	4.553 3	
30	30.748 7	18.844 9	14.537 8	12.270 3	10.856 4	9.884 4	9.172 0	8.625 8	8.192 8	7.840 5	7.300 7	6.744 5	6.168 0	5.809 8	5.564 9	5.250 3	5.056 5	4.924 8	4.790 9	4.654 5	4.475 3	4.352 9	4.272 0	30
35	28.996 4	17.652 3	13.553 7	11.396 7	10.051 8	9.127 0	8.448 9	7.928 9	7.516 4	7.180 6	6.665 6	6.134 4	5.582 7	5.239 0	5.003 5	4.700 3	4.512 9	4.385 3	4.255 3	4.122 5	3.947 4	3.827 3	3.747 8	35
40	27.766 7	16.819 8	12.868 8	10.790 2	9.494 1	8.602 7	7.949 0	7.447 4	7.044 9	6.725 3	6.227 9	5.711 3	5.179 8	4.846 3	4.617 3	4.321 9	4.138 7	4.013 8	3.886 2	3.755 7	3.582 8	3.463 9	3.384 8	40
45	26.857 3	16.206 5	12.365 5	10.345 2	9.085 5	8.219 0	7.583 4	7.095 5	6.708 3	6.392 9	5.908 5	5.407 9	4.886 3	4.560 2	4.335 9	4.046 0	3.865 9	3.742 8	3.616 8	3.487 7	3.316 0	3.197 5	3.118 5	45
50	26.157 8	15.736 3	11.980 4	10.005 2	8.773 6	7.926 3	7.304 7	6.827 5	6.448 6	6.139 8	5.665 6	5.175 0	4.663 2	4.342 8	4.122 1	3.836 3	3.658 4	3.536 5	3.411 7	3.283 4	3.112 3	2.993 8	2.914 5	50
60	25.153 3	15.063 2	11.430 3	9.520 3	8.329 3	7.509 8	6.908 4	6.446 5	6.079 6	5.780 5	5.320 8	4.844 7	4.346 9	4.034 5	3.818 9	3.533 8	3.363 8	3.243 5	3.120 0	2.992 5	2.821 6	2.702 3	2.621 9	
70	24.467 0	14.605 1	11.056 7	9.191 5	8.028 4	7.228 0	6.640 4	6.189 1	5.830 5	5.538 0	5.088 2	4.622 0	4.133 8	3.826 8	3.614 5	3.338 1	3.164 8	3.045 5	2.922 5	2.795 3	2.623 7	2.503 2	2.421 4	
80	23.968 7	14.273 2	10.786 5	8.954 0	7.811 3	7.024 8	6.447 3	6.003 7	5.651 1	5.363 4	4.920 9	4.461 8	3.980 6	3.677 5	3.467 5	3.193 7	3.021 6	2.902 8	2.780 0	2.652 6	2.480 1	2.358 1	2.274 9	
90	23.590 5	14.021 9	10.582 2	8.774 5	7.647 3	6.871 4	6.301 6	5.863 8	5.515 8	5.231 8	4.794 8	4.341 2	3.865 2	3.565 0	3.356 8	3.084 8	2.913 4	2.794 9	2.672 3	2.544 6	2.371 0	2.247 5	2.162 8	
100	23.293 7	13.825 0	10.422 2	8.634 1	7.519 1	6.751 5	6.187 8	5.754 6	5.410 2	5.129 1	4.696 4	4.247 1	3.775 2	3.477 3	3.270 4	2.999 7	2.829 0	2.710 7	2.588 0	2.460 0	2.285 2	2.160 1	2.073 9	100
125	22.772 0	13.479 5	10.141 9	8.388 4	7.294 9	6.542 0	5.989 0	5.563 8	5.225 8	4.949 8	4.524 7	4.082 9	3.618 1	3.324 2	3.119 6	2.851 2	2.681 2	2.563 1	2.440 1	2.311 2	2.133 6	2.005 0	1.919 1	
150	22.433 0	13.255 5	9.960 4	8.229 4	7.149 9	6.406 5	5.860 5	5.440 7	5.106 7	4.834 1	4.414 0	3.977 0	3.516 9	3.225 4	3.022 4	2.755 3	2.585 7	2.467 6	2.344 2	2.214 4	2.034 3	1.902 5	1.809 3	
175	22.195 1	13.098 4	9.833 3	8.118 1	7.048 4	6.311 9	5.770 7	5.354 6	5.023 6	4.753 3	4.336 6	3.903 1	3.446 3	3.156 5	2.954 4	2.688 3	2.518 9	2.400 6	2.276 9	2.146 3	1.964 0	1.829 4	1.733 1	
200	22.018 9	12.982 3	9.739 3	8.035 9	6.973 5	6.242 0	5.704 5	5.291 1	4.962 2	4.693 6	4.279 6	3.848 6	3.394 1	3.105 7	2.904 3	2.638 8	2.469 5	2.351 2	2.227 1	2.095 7	1.911 6	1.774 4	1.675 4	
250	21.775 3	12.821 9	9.609 6	7.922 5	6.870 3	6.145 6	5.613 2	5.203 6	4.877 7	4.611 5	4.201 0	3.773 5	3.322 4	3.035 7	2.835 3	2.570 6	2.401 4	2.282 8	2.158 2	2.025 7	1.838 5	1.697 1	1.593 3	250
300	21.615 0	12.716 4	9.524 4	7.848 0	6.802 5	6.082 4	5.553 3	5.146 2	4.822 3	4.557 7	4.149 6	3.724 4	3.275 4	2.989 8	2.790 1	2.525 8	2.356 7	2.237 9	2.112 8	1.979 4	1.789 9	1.645 1	1.537 2	
350	21.501 5	12.641 8	9.464 2	7.795 4	6.754 6	6.037 7	5.510 9	5.105 7	4.783 2	4.519 6	4.113 2	3.689 6	3.242 2	2.957 4	2.758 1	2.494 2	2.325 0	2.206 1	2.080 7	1.946 6	1.755 1	1.607 6	1.496 2	
400	21.416 9	12.586 2	9.419 3	7.756 2	6.718 9	6.004 5	5.479 4	5.075 5	4.754 0	4.491 3	4.086 1	3.663 8	3.217 5	2.933 3	2.734 3	2.470 6	2.301 5	2.182 4	2.056 7	1.922 0	1.729 0	1.579 2	1.464 8	
450	21.351 4	12.543 2	9.384 6	7.725 9	6.691 3	5.978 8	5.455 1	5.052 2	4.731 5	4.469 5	4.065 2	3.643 8	3.198 4	2.914 7	2.715 9	2.452 4	2.283 2	2.164 0	2.038 1	1.903 0	1.708 7	1.557 0	1.439 9	
500	21.299 2	12.509 0	9.357 0	7.701 7	6.669 4	5.958 3	5.435 7	5.033 6	4.713 6	4.452 1	4.048 6	3.627 9	3.183 2	2.899 9	2.701 3	2.437 9	2.268 7	2.149 4	2.023 2	1.887 7	1.692 4	1.539 1	1.419 6	500
600	21.221 3	12.457 8	9.315 7	7.665 7	6.636 6	5.927 7	5.406 8	5.005 9	4.686 8	4.426 1	4.023 7	3.604 2	3.160 6	2.877 8	2.679 5	2.416 3	2.247 0	2.127 6	2.001 1	1.865 0	1.668 0	1.512 0	1.388 5	
700	21.165 8	12.421 4	9.286 3	7.640 1	6.613 3	5.906 0	5.386 2	4.986 2	4.667 8	4.407 6	4.006 1	3.587 4	3.144 5	2.862 0	2.663 9	2.400 9	2.231 6	2.112 0	1.985 3	1.848 8	1.650 5	1.492 4	1.365 7	
800	21.124 4	12.394 2	9.264 4	7.620 9	6.595 9	5.889 8	5.370 8	4.971 5	4.653 6	4.393 8	3.999 2	3.574 8	3.132 4	2.850 3	2.652 4	2.389 4	2.220 1	2.100 4	1.973 5	1.836 6	1.637 3	1.477 6	1.348 2	
900	21.092 2	12.373 1	9.247 4	7.606 1	6.582 4	5.877 2	5.358 9	4.960 1	4.642 6	4.383 2	3.982 7	3.565 0	3.123 1	2.841 2	2.643 4	2.380 5	2.211 1	2.091 4	1.964 3	1.827 2	1.627 1	1.466 0	1.334 3	
1,000	21.066 5	12.356 3	9.233 8	7.594 2	6.571 6	5.867 2	5.349 4	4.951 0	4.633 9	4.374 6	3.974 6	3.557 3	3.115 7	2.833 9	2.636 2	2.373 4	2.204 0	2.084 2	1.957 0	1.819 6	1.618 9	1.456 6	1.323 0	1,000
2,000	20.951 5	12.280 9	9.173 0	7.541 2	6.523 4	5.822 3	5.306 9	4.910 3	4.594 6	4.336 5	3.938 1	3.522 5	3.082 4	2.801 5	2.604 1	2.341 5	2.172 0	2.052 0	1.924 2	1.785 7	1.581 8	1.413 9	1.269 6	
3,000	20.913 3	12.255 9	9.152 9	7.523 6	6.507 4	5.807 4	5.292 8	4.896 8	4.581 6	4.323 8	3.926 0	3.510 9	3.071 4	2.790 7	2.593 5	2.331 0	2.161 4	2.041 3	1.913 3	1.774 4	1.569 4	1.399 4	1.250 6	
4,000	20.894 3	12.243 4	9.142 9	7.514 8	6.499 5	5.800 0	5.285 8	4.890 1	4.575 1	4.317 5	3.920 0	3.505 2	3.065 9	2.785 3	2.588 2	2.325 7	2.156 1	2.035 9	1.907 8	1.768 8	1.563 2	1.392 1	1.240 8	
5,000	20.882 9	12.235 9	9.136 8	7.509 6	6.494 7	5.795 5	5.281 6	4.886 1	4.571 2	4.313 8	3.916 4	3.501 7	3.062 6	2.782 1	2.585 0	2.322 6	2.153 0	2.032 7	1.904 6	1.765 4	1.559 4	1.387 6	1.234 8	
7,500	20.867 7	12.226 0	9.128 8	7.502 6	6.488 3	5.789 6	5.276 0	4.880 7	4.566 0	4.308 7	3.911 6	3.497 2	3.058 2	2.777 8	2.580 8	2.318 4	2.148 7	2.028 4	1.900 2	1.760 9	1.554 4	1.382 7	1.227 6	
10,000	20.860 1	12.222 0	9.124 8	7.499 1	6.485 1	5.786 6	5.273 2	4.878 0	4.563 4	4.306 2	3.909 2	3.494 9	3.056 0	2.775 7	2.578 7	2.316 3	2.146 6	2.026 3	1.898 1	1.758 6	1.551 9	1.378 7	1.222 6	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	

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2017-02-20

University of Waterloo

W.H. Cherry