

Figure 13.13. SIX PERCENTILES FOR THE F DISTRIBUTION [F_{v_1, v_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]

$df \rightarrow v_1$		Each table entry is the value (y) of the random variable $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = p^*$ ($p^* = 0.9, \dots, .9999$)																				$(v_1 \text{ is the numerator, } v_2 \text{ the denominator, degrees of freedom})$									
$v_2 \downarrow$	p^*	v_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						
2017-02-20	1	.9	39.863	49.500	53.593	55.833	57.240	58.204	58.906	59.439	59.858	60.195	60.705	61.220	61.740	62.055	62.265	62.529	62.688	62.794	62.901	63.007	63.145	63.236	63.296	1					
	.95	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							
	.975	64.779	79.950	86.416	89.958	92.185	93.711	94.822	95.666	96.328	96.863	97.671	98.487	99.310	99.808	100.141	100.560	100.812	100.980	101.149	101.317	101.535	101.680	101.775							
	.99	405.2.2	499.9.5	540.3.4	562.4.6	576.3.6	585.9.0	592.8.4	598.1.1	602.2.5	605.5.8	610.6.3	615.7.3	620.8.7	623.9.8	626.0.6	628.6.8	630.2.5	631.3.0	632.3.6	633.4.1	634.7.7	635.6.8	636.2.7							
	.999	405.284	499.999	540.379	562.500	576.405	585.937	592.873	598.144	602.284	605.621	610.668	615.764	620.908	624.017	626.099	628.712	630.285	631.337	632.390	633.444	634.803	635.711	636.301							
.9999	405284.73	500000.00	540379.64	562500.00	576404.95	585937.50	592873.67	598144.53	602284.36	605621.33	610668.88	615764.01	620908.02	624017.17	626099.30	628712.37	630285.72	631333.68	632398.88	633444.67	634803.46	635710.96	636301.54								
2	.9	8.5263	9.0000	9.1618	9.2434	9.2926	9.3255	9.3491	9.3668	9.3805	9.3916	9.4081	9.4247	9.4413	9.4513	9.4579	9.4662	9.4712	9.4746	9.4779	9.4812	9.4855	9.4884	9.4902	2						
.95	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								
.975	38.506	39.000	39.165	39.248	39.298	39.331	39.355	39.373	39.387	39.398	39.415	39.431	39.448	39.458	39.465	39.473	39.478	39.481	39.485	39.488	39.492	39.495	39.497								
.99	98.503	99.000	99.166	99.249	99.299	99.333	99.356	99.374	99.388	99.399	99.416	99.433	99.449	99.459	99.466	99.474	99.479	99.482	99.486	99.489	99.493	99.496	99.498								
.999	998.500	999.000	999.167	999.250	999.300	999.333	999.356	999.374	999.388	999.400	999.416	999.433	999.449	999.459	999.466	999.474	999.479	999.482	999.486	999.489	999.493	999.496	999.498								
.9999	9998.5	9999.0	9999.2	9999.2	9999.3	9999.3	9999.4	9999.4	9999.4	9999.4	9999.4	9999.4	9999.4	9999.5	9999.5	9999.5	9999.5	9999.5	9999.5	9999.5	9999.5	9999.5	9999.5								
3	.9	5.5383	5.4624	5.3908	5.3426	5.3092	5.2847	5.2662	5.2517	5.2400	5.2304	5.2156	5.2003	5.1845	5.1747	5.1681	5.1597	5.1546	5.1512	5.1477	5.1443	5.1398	5.1367	5.1348	3						
.95	10.1280	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								
.975	17.443	16.044	15.439	15.101	14.885	14.735	14.624	14.540	14.473	14.419	14.337	14.253	14.167	14.115	14.081	14.037	14.010	13.992	13.974	13.956	13.933	13.918	13.908								
.99	34.116	30.817	29.457	28.710	28.237	27.911	27.672	27.489	27.345	27.229	27.052	26.872	26.690	26.579	26.505	26.411	26.354	26.316	26.278	26.240	26.191	26.158	26.137								
.999	167.03	148.50	141.11	137.10	134.58	132.85	131.58	130.62	129.86	129.25	128.32	127.37	126.42	125.84	125.45	124.96	124.66	124.47	124.27	124.07	123.81	123.64	123.53								
.9999	784.01	694.74	659.34	640.19	628.17	619.91	613.88	609.29	605.67	602.75	598.33	593.84	589.30	586.54	584.69	582.36	580.96	580.02	579.08	578.13	576.91	576.10	575.57								
4	.9	4.5448	4.3246	4.1909	4.1072	4.0506	4.0097	3.9790	3.9549	3.9357	3.9199	3.8955	3.8704	3.8443	3.8283	3.8174	3.8036	3.7952	3.7896	3.7839	3.7782	3.7707	3.7657	3.7625	4						
.95	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								
.975	12.2179	10.6491	9.9792	9.6045	9.3645	9.1973	9.0741	8.9796	8.9047	8.8439	8.7512	8.6565	8.5599	8.5010	8.4613	8.4111	8.3808	8.3604	8.3400	8.3195	8.2929	8.2752	8.2636								
.99	21.198	18.000	16.694	15.977	15.522	15.207	14.976	14.799	14.659	14.546	14.374	14.198	14.020	13.911	13.838	13.745	13.690	13.652	13.615	13.577	13.528	13.496	13.475								
.999	74.137	61.246	56.177	53.436	51.712	50.525	49.658	48.996	48.475	48.053	47.412	46.761	46.100	45.699	45.429	45.089	44.883	44.746	44.608	44.469	44.290	44.171	44.093								
.9999	241.62	198.00	181.02	171.87	166.13	162.19	159.31	157.11	155.38	153.98	151.86	149.71	147.52	146.19	145.30	144.18	143.50	143.05	142.59	142.13	141.54	141.15	140.89								
5	.9	4.0604	3.7797	3.6195	3.5202	3.4530	3.4045	3.3679	3.3393	3.3163	3.2974	3.2682	3.2380	3.2067	3.1873	3.1741	3.1573	3.1471	3.1402	3.1333	3.1263	3.1172	3.1111	3.1072	5						
.95	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								
.975	10.0070	8.4336	7.7636	7.3879	7.1464	6.9777	6.8531	6.7572	6.6811	6.6192	6.5245	6.4277	6.3286	6.2679	6.2269	6.1750	6.1436	6.1225	6.1013	6.0800	6.0524	6.0339	6.0218								
.99	16.2582	13.2739	12.0600	11.3919	10.9670	10.6723	10.4555	10.2893	10.1578	10.0510	9.8883	9.7222	9.5526	9.4491	9.3793	9.2912	9.2378	9.2020	9.1660	9.1299	9.0832	9.0519	9.0314								
.999	47.181	37.122	33.202	31.085	29.752	28.834	28.163	27.649	27.244	26.917	26.418	25.911	25.395	25.080	24.869	24.602	24.441	24.333	24.224	24.115	23.974	23.880	23.819								
.9999	124.941	97.027	86.292	80.527	76.911	74.426	72.611	71.226	70.133	69.250	67.908	66.544	65.157	64.313	63.746	63.031	62.598	62.309	62.018	61.726	61.349	61.097	60.933								
6	.9	3.7759	3.4633	3.2888	3.1808	3.1075	3.0546	3.0145	2.9830	2.9577	2.9369	2.9047	2.8712	2.8363	2.8147	2.8000	2.7812	2.7697	2.7620	2.7541	2.7463	2.7360	2.7291	2.7246	6						
.95	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								
.975	8.8131	7.2599	6.5988	6.2272	5.9876	5.8198	5.6955	5.5996	5.5234	5.4613	5.3662	5.2687	5.1684	5.1069	5.0652	5.0125	4.9804	4.9589	4.9372	4.9154	4.8871	4.8682	4.8558								
.99	13.7450	10.9248	9.7795	9.1483	8.7459	8.4661	8.2600	8.1017	7.9761	7.8741	7.7183	7.5590	7.3958	7.2960	7.2285	7.1432	7.0915	7.0567	7.0218	6.9867	6.9412	6.9107	6.8908								
.999	35.507	27.000	23.073	21.924	20.803	20.030	19.453	19.030	18.688	18.411	17.989	17.559	17.120	16.853	16.672	16.445	16.307	16.214	16.121	16.028	15.907	15.826	15.754								
.9999	82.489	61.633	53.680	49.419	46.747	44.909	43.566	42.541	41.732	41.077	40.081	39.068	38.036	37.407	36.984	36.450	36.127	35.910	35.693	35.474	35.192	35.002	34.879								
7	.9	3.5894	3.2574	3.0741	2.9605	2.8833	2.8274	2.7849	2.7516	2.7247	2.7025	2.6681	2.6322	2.5947	2.5714	2.5555	2.5351	2.5226	2.5142	2.5057	2.4971	2.4859	2.4784	2.4735	7						
.95	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								
.975	8.0727	6.5415	5.8898	5.5226	5.2852	5.1186	4.9949	4.8993	4.8232	4.7611	4.6658	4.5678	4.4667	4.4045	4.3624	4.3089	4.2763	4.2544	4.2323	4.2101	4.1812	4.1619	4.1492								
.99	12.2464	9.5466	8.4513	7.8466	7.4604	7.1914	6.9928	6.8400	6.7188	6.6201	6.4691	6.3143	6.1554	6.0580	5.9920	5.9084	5.8577	5.8236	5.7892	5.7547	5.7099	5.6798	5.6601								
.999	29.245	21.689	18.772	17.198	16.206	15.521	15.019	14.634	14.330	14.083	13.707	13.324	12.932	12.692	12.530	12.326	12.202	12.119	12.035	11.951	11.842	11.769	11.722								
.9999	62.167	45.132	38.676	35.222	33.056	31.567	30.477	29.644	28.987	28.455	27.644	26.819	25.977	25.464	25.118	24.680	24.416	24.238	24.059	23.880	23.648	23.492	23.391								
8	.9	3.4579	3.1131	2.9238	2.8064	2.7264	2.6683	2.6241	2.5893	2.5612	2.5380	2.5020	2.4642	2.4246	2.3999	2.3830	2.3614	2.3481	2.3391	2.3300	2.3208	2.3088	2.3007	2.2954	8						
.95	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									

Figure 13.13. SIX PERCENTILES FOR THE F DISTRIBUTION [F_{v_1, v_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]

$df \rightarrow v_1$		Each table entry is the value (y) of the random variable $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = p^*$ ($p^* = 0.9, \dots, .9999$) (v_1 is the numerator, v_2 the denominator, degrees of freedom)																				University of Waterloo				
v_2	p^*	v_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
2017-02-20	11	.9	3.2252	2.8595	2.6602	2.5362	2.4512	2.3891	2.3416	2.3040	2.2735	2.2482	2.2087	2.1671	2.1230	2.0953	2.0762	2.0516	2.0364	2.0261	2.0157	2.0050	1.9911	1.9817	1.9755	11
	.95	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		
	.975	6.7241	5.2559	4.6300	4.2751	4.0440	3.8807	3.7586	3.6638	3.5879	3.5257	3.4296	3.3299	3.2261	3.1616	3.1176	3.0613	3.0268	3.0035	2.9800	2.9561	2.9250	2.9040	2.8902		
	.99	9.6460	7.2057	6.2167	5.6683	5.3160	5.0692	4.8861	4.7445	4.6315	4.5393	4.3974	4.2509	4.0990	4.0051	3.9411	3.8596	3.8097	3.7761	3.7421	3.7077	3.6630	3.6329	3.6131		
	.999	19.6868	13.8116	11.5611	10.3461	9.5784	9.0466	8.6553	8.3548	8.1163	7.9224	7.6256	7.3210	7.0076	6.8147	6.6839	6.5178	6.4165	6.3483	6.2795	6.2102	6.1201	6.0595	6.0198		
.9999	35.0605	23.8518	19.6585	17.4211	16.0178	15.0511	14.3425	13.7999	13.3706	13.0221	12.4901	11.9458	11.3877	11.0452	10.8134	10.5194	10.3406	10.2203	10.0991	9.9769	9.8185	9.7119	9.6422			
12	.9	3.1765	2.8068	2.6055	2.4801	2.3940	2.3310	2.2828	2.2446	2.2135	2.1878	2.1474	2.1049	2.0597	2.0312	2.0115	1.9861	1.9704	1.9597	1.9489	1.9379	1.9234	1.9136	1.9071	12	
	.95	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		
	.975	6.5538	5.0959	4.4742	4.1212	3.8911	3.7283	3.6065	3.5118	3.4358	3.3736	3.2773	3.1772	3.0728	3.0077	2.9633	2.9063	2.8714	2.8478	2.8238	2.7996	2.7680	2.7466	2.7325		
	.99	9.3302	6.9266	5.9525	5.4120	5.0643	4.8206	4.6395	4.4994	4.3875	4.2961	4.1553	4.0096	3.8584	3.7647	3.7008	3.6192	3.5692	3.5355	3.5014	3.4668	3.4219	3.3915	3.3716		
	.999	18.6433	12.9737	10.8042	9.6327	8.8921	8.3788	8.0009	7.7104	7.4797	7.2920	7.0046	6.7092	6.4048	6.2172	6.0898	5.9278	5.8290	5.7623	5.6951	5.6272	5.5390	5.4795	5.4406		
.9999	32.4269	21.8495	17.8995	15.7926	14.4710	13.5602	12.8924	12.3807	11.9757	11.6467	11.1443	10.6298	10.1015	9.7769	9.5570	9.2778	9.1078	8.9933	8.8780	8.7616	8.6106	8.5089	8.4423			
13	.9	3.1362	2.7632	2.5603	2.4337	2.3467	2.2830	2.2341	2.1953	2.1638	2.1376	2.0966	2.0532	2.0070	1.9778	1.9576	1.9315	1.9153	1.9043	1.8931	1.8817	1.8667	1.8565	1.8498	13	
	.95	4.6672	3.8056	3.4105	3.1791	3.0254	2.9153	2.8321	2.7669	2.7144	2.6710	2.6037	2.5312	2.4589	2.4123	2.3803	2.3392	2.3138	2.2966	2.2791	2.2614	2.2382	2.2224	2.2121		
	.975	6.4143	4.9653	4.3472	3.9959	3.7667	3.6043	3.4827	3.3880	3.3120	3.2497	3.1532	3.0527	2.9477	2.8821	2.8372	2.7797	2.7443	2.7204	2.6961	2.6715	2.6393	2.6175	2.6032		
	.99	9.0738	6.7010	5.7394	5.2053	4.8616	4.6204	4.4410	4.3021	4.1911	4.1003	3.9603	3.8154	3.6646	3.5710	3.5070	3.4253	3.3752	3.3413	3.3070	3.2723	3.2270	3.1964	3.1763		
	.999	17.8154	12.3127	10.2089	9.0727	8.3541	7.8557	7.4886	7.2061	6.9818	6.7992	6.5192	6.2312	5.9340	5.7505	5.6258	5.4670	5.3700	5.3046	5.2385	5.1718	5.0849	5.0263	4.9879		
.9999	30.3878	20.3101	16.5523	14.5485	13.2913	12.4247	11.7889	11.3017	10.9158	10.6022	10.1231	9.6319	9.1270	8.8164	8.6058	8.3381	8.1750	8.0651	7.9542	7.8423	7.6969	7.5989	7.5348			
14	.9	3.1022	2.7265	2.5222	2.3947	2.3069	2.2426	2.1931	2.1539	2.1220	2.0954	2.0537	2.0095	1.9625	1.9326	1.9119	1.8852	1.8686	1.8572	1.8457	1.8340	1.8185	1.8080	1.8011	14	
	.95	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		
	.975	6.2979	4.8567	4.2417	3.8919	3.6634	3.5014	3.3799	3.2853	3.2093	3.1469	3.0502	2.9493	2.8437	2.7777	2.7324	2.6742	2.6384	2.6142	2.5895	2.5646	2.5319	2.5097	2.4951		
	.99	8.8616	6.5149	5.5639	5.0354	4.6950	4.4558	4.2779	4.1399	4.0297	3.9394	3.8001	3.6557	3.5052	3.4116	3.3476	3.2656	3.2153	3.1813	3.1468	3.1118	3.0662	3.0353	3.0150		
	.999	17.1434	11.7789	9.7294	8.6223	7.9218	7.4358	7.0775	6.8017	6.5826	6.4041	6.1302	5.8483	5.5568	5.3767	5.2542	5.0979	5.0023	4.9378	4.8726	4.8067	4.7208	4.6629	4.6248		
.9999	28.7662	19.0932	15.4908	13.5703	12.3653	11.5343	10.9245	10.4569	10.0865	9.7853	9.3249	8.8526	8.3664	8.0670	7.8638	7.6053	7.4476	7.3412	7.2339	7.1255	6.9845	6.8895	6.8272			
15	.9	3.0732	2.6952	2.4898	2.3614	2.2730	2.2081	2.1582	2.1185	2.0862	2.0593	2.0171	1.9722	1.9243	1.8939	1.8728	1.8454	1.8284	1.8168	1.8049	1.7929	1.7770	1.7661	1.7589	15	
	.95	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		
	.975	6.1995	4.7650	4.1528	3.8043	3.5764	3.4147	3.2934	3.1987	3.1227	3.0602	2.9633	2.8621	2.7559	2.6894	2.6437	2.5850	2.5488	2.5242	2.4993	2.4739	2.4408	2.4182	2.4034		
	.99	8.6831	6.3589	5.4170	4.8932	4.5556	4.3183	4.1415	4.0045	3.8948	3.8049	3.6662	3.5222	3.3719	3.2782	3.2141	3.1319	3.0814	3.0471	3.0124	2.9772	2.9312	2.9000	2.8795		
	.999	16.5874	11.3391	9.3353	8.2527	7.5674	7.0917	6.7408	6.4707	6.2559	6.0808	5.8121	5.5351	5.2484	5.0710	4.9502	4.7959	4.7015	4.6377	4.5732	4.5079	4.4228	4.3652	4.3275		
.9999	27.4480	18.1091	14.6350	12.7832	11.6211	10.8194	10.2310	9.7796	9.4218	9.1309	8.6859	8.2290	7.7582	7.4679	7.2707	7.0197	6.8663	6.7628	6.6583	6.5527	6.4153	6.3225	6.2617			
16	.9	3.0481	2.6682	2.4618	2.3327	2.2438	2.1783	2.1280	2.0880	2.0553	2.0281	1.9854	1.9399	1.8913	1.8603	1.8388	1.8108	1.7934	1.7816	1.7694	1.7570	1.7407	1.7296	1.7222	16	
	.95	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		
	.975	6.1151	4.6867	4.0768	3.7294	3.5021	3.3406	3.2194	3.1248	3.0488	2.9862	2.8890	2.7875	2.6808	2.6138	2.5678	2.5085	2.4719	2.4471	2.4218	2.3961	2.3624	2.3395	2.3245		
	.99	8.5310	6.2262	5.2922	4.7726	4.4374	4.2016	4.0259	3.8896	3.7804	3.6909	3.5527	3.4089	3.2587	3.1650	3.1007	3.0182	2.9675	2.9330	2.8981	2.8627	2.8163	2.7848	2.7641		
	.999	16.1202	10.9710	9.0059	7.9442	7.2719	6.8049	6.4604	6.1950	5.9839	5.8117	5.5473	5.2745	4.9918	4.8167	4.6972	4.5446	4.4511	4.3878	4.3238	4.2590	4.1744	4.1172	4.0796		
.9999	26.3569	17.2982	13.9315	12.1372	11.0111	10.2340	9.6634	9.2256	8.8784	8.5961	8.1639	7.7198	7.2618	6.9791	6.7869	6.5419	6.3922	6.2911	6.1889	6.0855	5.9595	5.8599				

Figure 13.13. SIX PERCENTILES FOR THE F DISTRIBUTION [F_{v_1, v_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]

$df \rightarrow v_1$ $\downarrow v_2$		Each table entry is the value (y) of the random variable $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = p^*$ ($p^* = 0.9, \dots, .9999$) (v_1 is the numerator, v_2 the denominator, degrees of freedom)																									University of Waterloo
p^*	v_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			
2017-02-20	21	.9	2.96 10	2.57 46	2.36 49	2.23 33	2.14 23	2.07 51	2.02 33	1.98 19	1.94 80	1.91 97	1.87 50	1.82 71	1.77 56	1.74 24	1.71 93	1.68 90	1.67 00	1.65 69	1.64 35	1.62 98	1.61 16	1.59 90	1.59 07	21	
	.95	4.32 48	3.46 68	3.07 25	2.84 01	2.68 48	2.57 27	2.48 76	2.42 05	2.36 60	2.32 10	2.25 04	2.17 57	2.09 60	2.04 54	2.01 02	1.96 45	1.93 60	1.91 65	1.89 65	1.87 61	1.84 91	1.83 06	1.81 84			
	.975	5.82 66	4.41 99	3.81 88	3.47 54	3.25 01	3.08 95	2.96 86	2.87 40	2.79 77	2.73 48	2.63 68	2.53 38	2.42 47	2.35 58	2.30 82	2.24 65	2.20 81	2.18 19	2.15 52	2.12 80	2.09 20	2.06 74	2.05 11			
	.99	8.01 66	5.78 04	4.87 40	4.36 88	4.04 21	3.81 17	3.63 96	3.50 56	3.39 81	3.30 98	3.17 30	3.03 00	2.87 96	2.78 50	2.72 00	2.63 59	2.58 38	2.54 84	2.51 23	2.47 55	2.42 71	2.39 40	2.37 22			
	.999	14.58 69	9.77 23	7.93 83	6.94 67	6.31 79	5.88 05	5.55 71	5.30 76	5.10 87	4.94 62	4.69 60	4.43 69	4.16 70	3.99 88	3.88 36	3.73 57	3.64 45	3.58 27	3.51 99	3.45 60	3.37 23	3.31 54	3.27 79			
	.9999	22.88 55	14.74 30	11.72 67	10.11 99	9.11 07	8.41 37	7.90 12	7.50 74	7.19 47	6.94 00	6.54 93	6.14 67	5.72 95	5.47 08	5.29 42	5.06 81	4.92 92	4.83 52	4.73 99	4.64 32	4.51 66	4.43 07	4.37 42			
	22	.9	2.94 86	2.56 13	2.35 12	2.21 93	2.12 79	2.06 05	2.00 84	1.96 68	1.93 27	1.90 43	1.85 93	1.81 11	1.75 90	1.72 55	1.70 21	1.67 14	1.65 21	1.63 89	1.62 53	1.61 13	1.59 27	1.57 99	1.57 14	22	
	.95	4.30 09	3.44 34	3.04 91	2.81 67	2.66 13	2.54 91	2.46 38	2.39 65	2.34 19	2.29 67	2.22 58	2.15 08	2.07 07	2.01 96	1.98 42	1.93 80	1.90 92	1.88 94	1.86 92	1.84 86	1.82 12	1.80 24	1.78 99			
	.975	5.78 63	4.38 28	3.78 29	3.44 01	3.21 51	3.05 46	2.93 38	2.83 92	2.76 28	2.69 98	2.60 17	2.49 84	2.38 90	2.31 98	2.27 18	2.20 97	2.17 10	2.14 46	2.11 76	2.09 01	2.05 36	2.02 87	2.01 22			
	.99	7.94 54	5.71 90	4.81 66	4.31 34	3.98 80	3.75 83	3.58 67	3.45 30	3.34 58	3.25 76	3.12 09	2.97 79	2.82 74	2.73 28	2.66 75	2.58 31	2.53 08	2.49 51	2.45 88	2.42 17	2.37 29	2.33 95	2.31 75			
	.999	14.38 03	9.61 20	7.79 60	6.81 42	6.19 14	5.75 80	5.43 76	5.19 01	4.99 29	4.83 17	4.58 35	4.32 62	4.05 79	3.89 06	3.77 59	3.62 85	3.53 76	3.47 59	3.41 31	3.34 93	3.26 56	3.20 86	3.17 10			
	.9999	22.43 09	14.41 14	11.44 21	9.86 03	8.86 68	8.18 04	7.67 57	7.28 78	6.97 97	6.72 86	6.34 35	5.94 63	5.53 45	5.27 88	5.10 42	4.88 05	4.74 30	4.64 98	4.55 53	4.45 94	4.33 37	4.24 83	4.19 21			
	23	.9	2.93 74	2.54 93	2.33 87	2.20 65	2.11 49	2.04 72	1.99 49	1.95 31	1.91 89	1.89 03	1.84 50	1.79 64	1.74 39	1.71 01	1.68 64	1.65 54	1.63 58	1.62 24	1.60 86	1.59 44	1.57 55	1.56 24	1.55 38	23	
	.95	4.27 93	3.42 21	3.02 80	2.79 55	2.64 00	2.52 77	2.44 22	2.37 48	2.32 01	2.27 47	2.20 36	2.12 82	2.04 76	1.99 63	1.96 05	1.91 39	1.88 48	1.86 48	1.84 44	1.82 34	1.79 57	1.77 66	1.76 39			
	.975	5.74 98	4.34 92	3.75 05	3.40 83	3.18 35	3.02 32	2.90 23	2.80 77	2.73 13	2.66 82	2.56 99	2.46 65	2.35 67	2.28 71	2.23 89	2.17 63	2.13 74	2.11 07	2.08 35	2.05 57	2.01 88	1.99 36	1.97 69			
	.99	7.88 11	5.66 37	4.76 49	4.26 36	3.93 92	3.71 02	3.53 90	3.40 57	3.29 86	3.21 06	3.07 40	2.93 11	2.78 05	2.68 56	2.62 02	2.53 55	2.48 29	2.44 71	2.41 05	2.37 32	2.32 39	2.29 03	2.26 80			
	.999	14.19 50	9.46 85	7.66 88	6.69 57	6.07 83	5.64 86	5.33 08	5.08 53	4.88 96	4.72 96	4.48 31	4.22 74	3.96 06	3.79 40	3.67 98	3.53 28	3.44 21	3.38 04	3.31 77	3.25 39	3.17 01	3.11 30	3.07 53			
	.9999	22.02 60	14.11 67	11.18 94	9.63 01	8.65 06	7.97 38	7.47 60	7.09 33	6.78 93	6.54 16	6.16 14	5.76 91	5.36 20	5.10 91	4.93 62	4.71 46	4.57 83	4.48 58	4.39 20	4.29 67	4.17 17	4.08 68	4.03 08			
	24	.9	2.92 71	2.53 83	2.32 74	2.19 49	2.10 30	2.03 51	1.98 26	1.94 07	1.90 63	1.87 75	1.83 19	1.78 31	1.73 02	1.69 60	1.67 21	1.64 07	1.62 09	1.60 73	1.59 33	1.57 88	1.55 96	1.54 64	1.53 75	24	
	.95	4.25 97	3.40 28	3.00 88	2.77 63	2.62 07	2.50 82	2.42 26	2.35 51	2.30 02	2.25 47	2.18 34	2.10 77	2.02 67	1.97 50	1.93 90	1.89 20	1.86 25	1.84 24	1.82 17	1.80 05	1.77 23	1.75 29	1.74 01			
	.975	5.71 66	4.31 87	3.72 11	3.37 94	3.15 48	2.99 46	2.87 38	2.77 91	2.70 27	2.63 96	2.54 11	2.43 74	2.32 73	2.25 74	2.20 90	2.14 60	2.10 67	2.07 99	2.05 24	2.02 43	1.98 70	1.96 15	1.94 45			
	.99	7.82 29	5.61 36	4.71 81	4.21 84	3.89 51	3.66 67	3.49 59	3.36 29	3.25 60	3.16 81	3.03 16	2.88 87	2.73 80	2.64 30	2.57 73	2.49 23	2.43 95	2.40 35	2.36 67	2.32 91	2.27 94	2.24 55	2.22 30			
	.999	14.02 80	9.33 94	7.55 45	6.58 92	5.97 68	5.55 04	5.23 49	4.99 12	4.79 68	4.63 79	4.39 29	4.13 87	3.87 32	3.70 73	3.59 35	3.44 68	3.35 62	3.29 46	3.23 20	3.16 81	3.08 42	3.02 69	2.98 91			
	.9999	21.66 33	13.85 32	10.96 37	9.42 46	8.45 78	7.78 96	7.29 80	6.92 01	6.61 97	6.37 50	5.99 92	5.61 12	5.20 84	4.95 80	4.78 67	4.56 69	4.43 16	4.33 97	4.24 65	4.15 17	4.02 74	3.94 28	3.88 70			
F_{v_1, v_2}	25	.9	2.91 77	2.52 83	2.31 70	2.18 42	2.09 22	2.02 41	1.97 14	1.92 92	1.89 47	1.86 58	1.82 00	1.77 08	1.71 75	1.68 31	1.65 89	1.62 72	1.60 72	1.59 34	1.57 92	1.56 45	1.54 50	1.53 15	1.52 25	25	
	.95	4.24 17	3.38 52	2.99 12	2.75 87	2.60 30	2.49 04	2.40 47	2.33 71	2.28 21	2.23 65	2.16 49	2.08 89	2.00 75	1.95 54	1.91 92	1.87 18	1.84 21	1.82 17	1.80 08	1.77 94	1.75 08	1.73 12	1.71 81			
	.975	5.68 64	4.29 09	3.69 43	3.35 30	3.12 87	2.96 85	2.84 78	2.75 31	2.67 66	2.61 35	2.51 49	2.41 10	2.30 05	2.23 03	2.18 16	2.11 83	2.07 87	2.05 16	2.02 39	1.99 55	1.95 79	1.93 21	1.91 49			
	.99	7.76 98	5.56 80	4.67 55	4.17 74	3.85 50	3.62 72	3.45 68	3.32 39	3.21 72	3.12 94	2.99 31	2.85 02	2.69 93	2.60 41	2.53 83	2.45 30	2.39 99	2.36 37	2.32 67	2.28 88	2.23 88	2.20 45	2.18 18			
	.999	13.87 67	9.22 25	7.45 11	6.49 31	5.88 51	5.46 17	5.14 84	4.90 63	4.71 31	4.55 51	4.31 16	4.05 87	3.79 44	3.62 91	3.51 55	3.36 92	3.27 87	3.21 71	3.15 44	3.09 05	3.00 64	2.94 90	2.91 11			
	.9999	21.33 64	13.61 62	10.76 09	9.24 01	8.28 47	7.62 43	7.13 84	6.76 47	6.46 77	6.22 56	5.85 38	5.46 98	5.07 08	4.82 25	4.65 26	4.43 45	4.30 01	4.20 88	4.11 61	4.02 18	3.89 79	3.81 36	3.75 79			
	26	.9	2.90 91	2.51 91	2.30 75	2.17 45	2.08 22	2.01 39	1.96 10	1.91 88	1.88 41	1.85 50	1.80 90	1.75 96	1.70 59	1.67 12	1.64 68	1.61 47	1.59 45	1.58 05	1.56 61	1.55 13	1.53 15	1.51 78	1.50 86	26	
	.95	4.22 52	3.36 90	2.97 52	2.74 26	2.58 68	2.47 41	2.38 83	2.32 05	2.26 55	2.21 97	2.14 79	2.07 16	1.98 98	1.93 75	1.90 10	1.85 33	1.82 33	1.80 27	1.78 16	1.75 99	1.73 10	1.71 11	1.69 78			
	.975	5.65 86	4.26 55	3.66 97	3.32 89	3.10 48	2.94 47	2.82 40	2.72 93	2.65 28	2.58 96	2.49 08	2.38 67	2.27 59	2.20 54	2.15 65	2.09 28	2.05 30	2.02 57	1.99 78	1.96 91	1.9					

Figure 13.13. SIX PERCENTILES FOR THE F DISTRIBUTION [F_{v_1, v_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]

$df \rightarrow v_1$		Each table entry is the value (y) of the random variable $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = p^*$ ($p^* = 0.9, \dots, .9999$) (v_1 is the numerator, v_2 the denominator, degrees of freedom)																						University of Waterloo		
v_2	p^*	v_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
2017-02-20	35	.9	2.8547	2.4609	2.2474	2.1128	2.0191	1.9496	1.8957	1.8524	1.8168	1.7869	1.7394	1.6880	1.6317	1.5950	1.5691	1.5346	1.5127	1.4975	1.4817	1.4653	1.4431	1.4277	1.4172	35
		.95	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	
		.975	5.4848	4.1065	3.5166	3.1785	2.9557	2.7961	2.6755	2.5807	2.5039	2.4403	2.3406	2.2350	2.1218	2.0493	1.9986	1.9321	1.8902	1.8613	1.8316	1.8009	1.7598	1.7312	1.7121	
		.99	7.4191	5.2679	4.3957	3.9082	3.5919	3.3679	3.2000	3.0687	2.9630	2.8758	2.7400	2.5970	2.4448	2.3480	2.2806	2.1926	2.1374	2.0994	2.0604	2.0202	1.9666	1.9294	1.9046	
		.999	12.8963	8.4697	6.7870	5.8764	5.2978	4.8942	4.5950	4.3634	4.1782	4.0265	3.7920	3.5474	3.2903	3.1283	3.0163	2.8711	2.7806	2.7187	2.6552	2.5902	2.5038	2.4443	2.4046	
	.9999	19.2615	12.1217	9.4873	8.0844	7.2025	6.5923	6.1427	5.7964	5.5209	5.2959	4.9495	4.5906	4.2156	3.9808	3.8193	3.6106	3.4812	3.3928	3.3025	3.2102	3.0880	3.0040	2.9482		
	40	.9	2.8354	2.4404	2.2261	2.0909	1.9968	1.9269	1.8725	1.8289	1.7929	1.7627	1.7146	1.6624	1.6052	1.5677	1.5411	1.5056	1.4830	1.4672	1.4507	1.4336	1.4104	1.3941	1.3830	40
		.95	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	
		.975	5.4239	4.0510	3.4633	3.1261	2.9037	2.7444	2.6238	2.5289	2.4519	2.3882	2.2882	2.1819	2.0677	1.9943	1.9429	1.8752	1.8324	1.8028	1.7722	1.7405	1.6979	1.6682	1.6481	
		.99	7.3141	5.1785	4.3126	3.8283	3.5138	3.2910	3.1238	2.9930	2.8876	2.8005	2.6648	2.5216	2.3689	2.2714	2.2034	2.1142	2.0581	2.0194	1.9795	1.9383	1.8831	1.8447	1.8189	
		.999	12.6094	8.2508	6.5945	5.6981	5.1283	4.7306	4.4355	4.2070	4.0243	3.8744	3.6425	3.4003	3.1450	2.9838	2.8721	2.7268	2.6360	2.5737	2.5097	2.4439	2.3562	2.2955	2.2549	
		.9999	18.6684	11.6979	9.1278	7.7592	6.8987	6.3031	5.8640	5.5257	5.2564	5.0363	4.6973	4.3455	3.9772	3.7461	3.5868	3.3804	3.2520	3.1642	3.0742	2.9820	2.8594	2.7749	2.7185	
	45	.9	2.8205	2.4245	2.2097	2.0742	1.9796	1.9094	1.8547	1.8107	1.7745	1.7440	1.6954	1.6426	1.5846	1.5464	1.5193	1.4830	1.4597	1.4434	1.4264	1.4087	1.3845	1.3674	1.3558	45
		.95	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	
		.975	5.3773	4.0085	3.4224	3.0860	2.8640	2.7048	2.5842	2.4892	2.4122	2.3483	2.2480	2.1412	2.0262	1.9521	1.9000	1.8313	1.7876	1.7574	1.7261	1.6935	1.6496	1.6187	1.5979	
		.99	7.2339	5.1103	4.2492	3.7674	3.4544	3.2325	3.0658	2.9353	2.8301	2.7432	2.6076	2.4642	2.3109	2.2129	2.1443	2.0542	1.9972	1.9579	1.9172	1.8751	1.8185	1.7788	1.7521	
		.999	12.3922	8.0855	6.4495	5.5639	5.0007	4.6075	4.3157	4.0895	3.9086	3.7601	3.5301	3.2897	3.0357	2.8750	2.7635	2.6180	2.5268	2.4640	2.3995	2.3330	2.2439	2.1820	2.1404	
		.9999	18.2240	11.3813	8.8598	7.5172	6.6728	6.0881	5.6571	5.3248	5.0601	4.8437	4.5102	4.1637	3.8004	3.5720	3.4142	3.2094	3.0817	2.9940	2.9042	2.8118	2.6886	2.6033	2.5462	
	50	.9	2.8087	2.4120	2.1967	2.0608	1.9660	1.8954	1.8405	1.7963	1.7598	1.7291	1.6802	1.6269	1.5681	1.5294	1.5018	1.4648	1.4409	1.4242	1.4068	1.3885	1.3634	1.3456	1.3334	50
		.95	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	
		.975	5.3403	3.9749	3.3902	3.0544	2.8327	2.6736	2.5530	2.4579	2.3808	2.3168	2.2162	2.1090	1.9933	1.9186	1.8659	1.7963	1.7520	1.7211	1.6892	1.6558	1.6107	1.5788	1.5572	
		.99	7.1706	5.0566	4.1993	3.7195	3.4077	3.1864	3.0202	2.8900	2.7850	2.6981	2.5625	2.4190	2.2652	2.1667	2.0976	2.0066	1.9490	1.9090	1.8677	1.8248	1.7667	1.7260	1.6984	
		.999	12.2221	7.9564	6.3364	5.4593	4.9013	4.5117	4.2224	3.9980	3.8185	3.6711	3.4426	3.2035	2.9506	2.7902	2.6787	2.5329	2.4413	2.3782	2.3131	2.2458	2.1555	2.0924	2.0499	
		.9999	17.8786	11.1360	8.6524	7.3301	6.4983	5.9222	5.4974	5.1698	4.9087	4.6952	4.3660	4.0237	3.6642	3.4378	3.2811	3.0774	2.9500	2.8625	2.7726	2.6799	2.5559	2.4697	2.4118	
F_{v_1, v_2}	60	.9	2.7911	2.3933	2.1774	2.0410	1.9457	1.8747	1.8194	1.7748	1.7380	1.7070	1.6574	1.6034	1.5435	1.5039	1.4755	1.4373	1.4126	1.3952	1.3769	1.3576	1.3311	1.3120	1.2988	60
		.95	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	
		.975	5.2856	3.9253	3.3425	3.0077	2.7863	2.6274	2.5068	2.4117	2.3344	2.2702	2.1692	2.0613	1.9445	1.8687	1.8152	1.7440	1.6985	1.6668	1.6337	1.5990	1.5517	1.5180	1.4950	
		.99	7.0771	4.9774	4.1259	3.6490	3.3389	3.1187	2.9530	2.8233	2.7185	2.6318	2.4961	2.3523	2.1978	2.0984	2.0285	1.9360	1.8772	1.8363	1.7937	1.7493	1.6889	1.6461	1.6169	
		.999	11.9730	7.7678	6.1712	5.3067	4.7565	4.3721	4.0864	3.8648	3.6873	3.5415	3.3153	3.0781	2.8266	2.6665	2.5045	2.4086	2.3162	2.2523	2.1862	2.1175	2.0247	1.9593	1.9150	
	.9999	17.3769	10.7807	8.3526	7.0599	6.2465	5.6830	5.2672	4.9465	4.6907	4.4815	4.1585	3.8221	3.4681	3.2445	3.0894	2.8870	2.7599	2.6723	2.5820	2.4886	2.3628	2.2746	2.2150		
	70	.9	2.7786	2.3800	2.1637	2.0269	1.9313	1.8600	1.8044	1.7596	1.7225	1.6913	1.6413	1.5866	1.5259	1.4857	1.4567	1.4176	1.3922	1.3742	1.3552	1.3352	1.3073	1.2871	1.2730	70
		.95	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	
		.975	5.2470	3.8903	3.3090	2.9748	2.7537	2.5949	2.4743	2.3791	2.3017	2.2374	2.1361	2.0277	1.9100	1.8334	1.7792	1.7069	1.6604	1.6279	1.5973	1.5581	1.5089	1.4736	1.4493	
		.99	7.0114	4.9219	4.0744	3.5996	3.2907	3.0712	2.9060	2.7765	2.6719	2.5852	2.4496	2.3055	2.1504	2.0503	1.9797	1.8861	1.8263	1.7846	1.7410	1.6954	1.6329	1.5882	1.5576	
		.999	11.7993	7.6366	6.0566	5.2008	4.6561	4.2753	3.9922	3.7735	3.5964	3.4517	3.2271	2.9912	2.7405	2.5807	2.4689	2.3220	2.2289	2.1643	2.0972	2.0274	1.9323	1.8649	1.8188	
		.9999	17.0302	10.5359	8.1465	6.8743	6.0738	5.5190	5.1095	4.7935	4.5414	4.3351	4													

Figure 13.13. SIX PERCENTILES FOR THE F DISTRIBUTION [F_{v_1, v_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]

$df \rightarrow v_1$		Each table entry is the value (y) of the random variable $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = p^*$ ($p^* = 0.9, \dots, .9999$)																				$(v_1 \text{ is the numerator, } v_2 \text{ the denominator, degrees of freedom})$				
v_2	p^*	v_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	
2017-02-20	150	.9	2.7393	2.3383	2.1207	1.9827	1.8861	1.8138	1.7572	1.7115	1.6736	1.6416	1.5901	1.5334	1.4698	1.4271	1.3960	1.3534	1.3251	1.3048	1.2831	1.2595	1.2255	1.1995	1.1805	150
	.95	3.9042	3.0564	2.6649	2.4320	2.2745	2.1595	2.0711	2.0006	1.9428	1.8943	1.8493	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	
	.975	5.1263	3.7811	3.2044	2.8722	2.6521	2.4936	2.3730	2.2775	2.1998	2.1349	2.0325	1.9222	1.8014	1.7220	1.6651	1.5882	1.5379	1.5022	1.4642	1.4234	1.3653	1.3215	1.2898		
	.99	6.8069	4.7495	3.9149	3.4467	3.1416	2.9244	2.7606	2.6319	2.5277	2.4412	2.3053	2.1603	2.0028	1.9001	1.8270	1.7286	1.6648	1.6195	1.5716	1.5204	1.4478	1.3934	1.3542		
	.999	11.2666	7.2359	5.7072	4.8788	4.3510	3.9815	3.7064	3.4926	3.3209	3.1795	2.9595	2.7274	2.4789	2.3189	2.2062	2.0560	1.9595	1.8915	1.8201	1.7441	1.6375	1.5583	1.5017		
.9999	15.9822	9.7998	7.5284	6.3192	5.5578	5.0298	4.6395	4.3379	4.0970	3.8996	3.5939	3.2739	2.9344	2.7176	2.5657	2.3648	2.2364	2.1465	2.0524	1.9528	1.8138	1.7113	1.6385			
175	.9	2.7344	2.3331	2.1153	1.9773	1.8805	1.8081	1.7514	1.7056	1.6676	1.6354	1.5837	1.5268	1.4628	1.4197	1.3884	1.3452	1.3165	1.2959	1.2736	1.2494	1.2143	1.1872	1.1671	175	
	.95	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		
	.975	5.1115	3.7677	3.1916	2.8597	2.6397	2.4812	2.3606	2.2651	2.1873	2.1224	2.0198	1.9093	1.7880	1.7082	1.6509	1.5733	1.5225	1.4862	1.4476	1.4059	1.3462	1.3007	1.2673		
	.99	6.7819	4.7285	3.8955	3.4282	3.1235	2.9066	2.7429	2.6143	2.5101	2.4237	2.2878	2.1426	1.9848	1.8817	1.8081	1.7091	1.6446	1.5988	1.5502	1.4980	1.4235	1.3671	1.3259		
	.999	11.2023	7.1877	5.6653	4.8403	4.3145	3.9464	3.6723	3.4591	3.2880	3.1470	2.9275	2.6958	2.4476	2.2875	2.1746	2.0239	1.9267	1.8582	1.7859	1.7089	1.6000	1.5183	1.4593		
.9999	15.8575	9.7126	7.4554	6.2537	5.4971	4.9722	4.5843	4.2844	4.0449	3.8485	3.5444	3.2258	2.8875	2.6712	2.5195	2.3185	2.1897	2.0994	2.0046	1.9039	1.7626	1.6574	1.5818			
200	.9	2.7308	2.3293	2.1114	1.9732	1.8763	1.8038	1.7470	1.7011	1.6630	1.6308	1.5789	1.5218	1.4575	1.4142	1.3826	1.3390	1.3100	1.2891	1.2665	1.2418	1.2058	1.1776	1.1566	200	
	.95	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		
	.975	5.1004	3.7578	3.1820	2.8503	2.6304	2.4720	2.3513	2.2558	2.1780	2.1130	2.0103	1.8996	1.7780	1.6978	1.6403	1.5621	1.5108	1.4742	1.4350	1.3927	1.3316	1.2846	1.2498		
	.99	6.7633	4.7129	3.8810	3.4143	3.1100	2.8933	2.7298	2.6012	2.4971	2.4106	2.2747	2.1294	1.9713	1.8679	1.7941	1.6945	1.6295	1.5833	1.5341	1.4811	1.4050	1.3469	1.3040		
	.999	11.1545	7.1519	5.6341	4.8116	4.2874	3.9203	3.6469	3.4343	3.2635	3.1228	2.9038	2.6724	2.4243	2.2642	2.1510	1.9999	1.9022	1.8333	1.7604	1.6824	1.5717	1.4879	1.4266		
.9999	15.7648	9.6478	7.4012	6.2052	5.4521	4.9296	4.5433	4.2448	4.0062	3.8106	3.5077	3.1902	2.8527	2.6369	2.4853	2.2841	2.1551	2.0644	1.9690	1.8674	1.7241	1.6165	1.5384			
250	.9	2.7257	2.3239	2.1058	1.9675	1.8704	1.7978	1.7409	1.6949	1.6567	1.6244	1.5723	1.5149	1.4501	1.4064	1.3745	1.3304	1.3009	1.2795	1.2564	1.2310	1.1935	1.1638	1.1411	250	
	.95	3.8789	3.0319	2.6407	2.4078	2.2501	2.1350	2.0463	1.9756	1.9174	1.8687	1.7910	1.7056	1.6127	1.5502	1.5049	1.4430	1.4019	1.3723	1.3405	1.3058	1.2550	1.2150	1.1847		
	.975	5.0849	3.7439	3.1687	2.8373	2.6175	2.4591	2.3384	2.2429	2.1650	2.0999	1.9971	1.8861	1.7640	1.6834	1.6254	1.5465	1.4945	1.4573	1.4174	1.3739	1.3108	1.2614	1.2241		
	.99	6.7373	4.6911	3.8609	3.3950	3.0912	2.8748	2.7114	2.5830	2.4789	2.3925	2.2565	2.1110	1.9525	1.8487	1.7744	1.6740	1.6083	1.5614	1.5113	1.4571	1.3787	1.3178	1.2720		
	.999	11.0880	7.1022	5.5909	4.7719	4.2497	3.8841	3.6117	3.3998	3.2296	3.0893	2.8708	2.6399	2.3920	2.2317	2.1183	1.9665	1.8681	1.7985	1.7247	1.6453	1.5316	1.4443	1.3793		
.9999	15.6364	9.5582	7.3262	6.1380	5.3898	4.8706	4.4867	4.1900	3.9528	3.7583	3.4569	3.1409	2.8047	2.5893	2.4379	2.2365	2.1070	2.0157	1.9194	1.8165	1.6700	1.5585	1.4760			
300	.9	2.7223	2.3203	2.1021	1.9637	1.8666	1.7938	1.7369	1.6908	1.6525	1.6201	1.5679	1.5102	1.4452	1.4012	1.3691	1.3246	1.2947	1.2730	1.2495	1.2236	1.1851	1.1541	1.1301	300	
	.95	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		
	.975	5.0747	3.7346	3.1599	2.8286	2.6089	2.4505	2.3299	2.2343	2.1563	2.0913	1.9883	1.8771	1.7547	1.6738	1.6155	1.5360	1.4836	1.4459	1.4055	1.3613	1.2966	1.2453	1.2060		
	.99	6.7201	4.6766	3.8475	3.3823	3.0787	2.8625	2.6993	2.5709	2.4668	2.3804	2.2444	2.0988	1.9401	1.8359	1.7614	1.6604	1.5942	1.5468	1.4961	1.4410	1.3608	1.2977	1.2495		
	.999	11.0440	7.0693	5.5623	4.7456	4.2249	3.8601	3.5884	3.3771	3.2072	3.0672	2.8490	2.6184	2.3706	2.2102	2.0967	1.9444	1.8455	1.7754	1.7008	1.6205	1.5046	1.4145	1.3464		
.9999	15.5515	9.4990	7.2768	6.0937	5.3487	4.8317	4.4495	4.1539	3.9176	3.7238	3.4235	3.1085	2.7730	2.5580	2.4066	2.2051	2.0752	1.9835	1.8866	1.7826	1.6338	1.5191	1.4330			
350	.9	2.7199	2.3178	2.0995	1.9610	1.8638	1.7910	1.7340	1.6878	1.6495	1.6170	1.5647	1.5069	1.4417	1.3975	1.3652	1.3204	1.2903	1.2684	1.2446	1.2183	1.1789	1.1470	1.1218	350	
	.95	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		
	.975	5.0674	3.7280	3.1536	2.8225	2.6028	2.4444	2.3238	2.2282	2.1502	2.0851	1.9820	1.8707	1.7481	1.6669	1.6084	1.5286	1.4758	1.4378	1.3969	1.3522	1.2862	1.2335	1.1924		
	.99	6.7078	4.6663	3.8380	3.3732	3.0699	2.8538	2.6906	2.5623	2.4582	2.3718	2.2358	2.0901	1.9312	1.8268	1.7521	1.6507	1.5840	1.5363	1.4852	1.4295	1.3478	1.2830	1.2327		
	.999	11.0127	7.0459	5.5420	4.7269	4.2072	3.8431	3.5719	3.3609	3.1913	3.0515	2.8336	2.6031	2.3554	2.1950	2.0813	1.9286	1.8294	1.7589	1.6838	1.6027	1.4851	1.3928	1.3221		
.9999	15.4913	9.4570	7.2417	6.0623	5.3196	4.8042	4.4230	4.1283	3.8927	3.6994	3.3998	3.0855	2.7506	2.5358	2.3845	2.1828	2.0526	1.9607	1.8632	1.7584	1.6077	1.4906	1.4014			
400	.9	2.7181																								

Figure 13.13. SIX PERCENTILES FOR THE F DISTRIBUTION [F_{v_1, v_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]

$\downarrow$ v_2 p^*		Each table entry is the value (y) of the random variable $Y \sim F_{v_1, v_2}$ such that $\Pr(Y \leq y) = p^*$ ($p^* = 0.9, \dots, .9999$) (v_1 is the numerator, v_2 the denominator, degrees of freedom)																								
		v_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	
2017-02-20	700 .9		2.7127	2.3102	2.0916	1.9529	1.8555	1.7825	1.7253	1.6790	1.6405	1.6079	1.5552	1.4970	1.4312	1.3864	1.3536	1.3078	1.2769	1.2543	1.2296	1.2020	1.1598	1.1241	1.0940	700
	.95		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	
	.975		5.0456	3.7084	3.1348	2.8041	2.5846	2.4263	2.3056	2.2099	2.1319	2.0666	1.9633	1.8516	1.7282	1.6464	1.5872	1.5061	1.4522	1.4132	1.3710	1.3243	1.2542	1.1959	1.1474	
	.99		6.6712	4.6356	3.8097	3.3460	3.0434	2.8277	2.6649	2.5367	2.4327	2.3463	2.2102	2.0642	1.9047	1.7996	1.7242	1.6215	1.5536	1.5048	1.4521	1.3942	1.3077	1.2364	1.1774	
	.999		10.9196	6.9764	5.4816	4.6714	4.1547	3.7927	3.5229	3.3129	3.1440	3.0048	2.7877	2.5578	2.3102	2.1496	2.0354	1.8816	1.7812	1.7095	1.6327	1.5489	1.4253	1.3248	1.2427	
.9999		15.3126	9.3326	7.1378	5.9694	5.2334	4.7226	4.3448	4.0526	3.8189	3.6272	3.3298	3.0175	2.6843	2.4701	2.3188	2.1166	1.9856	1.8925	1.7934	1.6859	1.5286	1.4019	1.2994		
800 .9		2.7118	2.3092	2.0906	1.9519	1.8545	1.7815	1.7243	1.6779	1.6394	1.6067	1.5540	1.4958	1.4298	1.3850	1.3521	1.3062	1.2752	1.2525	1.2277	1.1999	1.1573	1.1211	1.0901	800	
.95		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		
.975		5.0429	3.7059	3.1324	2.8018	2.5823	2.4240	2.3033	2.2077	2.1296	2.0643	1.9610	1.8492	1.7258	1.6438	1.5845	1.5033	1.4492	1.4101	1.3677	1.3208	1.2501	1.1909	1.1412		
.99		6.6667	4.6318	3.8062	3.3427	3.0401	2.8245	2.6617	2.5335	2.4295	2.3431	2.2070	2.0610	1.9013	1.7962	1.7207	1.6178	1.5498	1.5008	1.4480	1.3897	1.3026	1.2302	1.1698		
.999		10.9080	6.9677	5.4741	4.6645	4.1482	3.7864	3.5168	3.3069	3.1381	2.9990	2.7820	2.5522	2.3047	2.1440	2.0297	1.8758	1.7752	1.7033	1.6263	1.5422	1.4177	1.3159	1.2318		
.9999		15.2904	9.3172	7.1250	5.9579	5.2228	4.7126	4.3352	4.0433	3.8098	3.6182	3.3211	3.0091	2.6761	2.4619	2.3107	2.1084	1.9772	1.8840	1.7847	1.6768	1.5186	1.3904	1.2856		
900 .9		2.7111	2.3085	2.0899	1.9511	1.8537	1.7807	1.7234	1.6770	1.6385	1.6058	1.5531	1.4948	1.4288	1.3839	1.3510	1.3050	1.2739	1.2512	1.2262	1.1982	1.1554	1.1187	1.0870	900	
.95		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		
.975		5.0407	3.7040	3.1306	2.8000	2.5806	2.4223	2.3016	2.2059	2.1278	2.0626	1.9592	1.8473	1.7238	1.6418	1.5825	1.5011	1.4469	1.4077	1.3651	1.3180	1.2468	1.1870	1.1362		
.99		6.6631	4.6288	3.8034	3.3400	3.0376	2.8220	2.6592	2.5310	2.4270	2.3406	2.2045	2.0585	1.8988	1.7936	1.7180	1.6150	1.5468	1.4978	1.4447	1.3863	1.2985	1.2254	1.1636		
.999		10.8990	6.9610	5.4683	4.6592	4.1432	3.7816	3.5121	3.3023	3.1336	2.9945	2.7776	2.5478	2.3003	2.1396	2.0253	1.8712	1.7705	1.6985	1.6213	1.5369	1.4118	1.3089	1.2232		
.9999		15.2733	9.3052	7.1150	5.9490	5.2145	4.7047	4.3277	4.0360	3.8027	3.6113	3.3144	3.0026	2.6697	2.4556	2.3044	2.1021	1.9708	1.8775	1.7779	1.6698	1.5108	1.3814	1.2746		
1,000 .9		2.7106	2.3079	2.0893	1.9505	1.8530	1.7800	1.7228	1.6764	1.6378	1.6051	1.5524	1.4941	1.4280	1.3831	1.3501	1.3040	1.2729	1.2500	1.2250	1.1969	1.1538	1.1167	1.0845	1,000	
.95		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		
.975		5.0391	3.7025	3.1292	2.7986	2.5792	2.4208	2.3002	2.2045	2.1264	2.0611	1.9577	1.8459	1.7223	1.6402	1.5808	1.4993	1.4451	1.4058	1.3631	1.3158	1.2442	1.1838	1.1320		
.99		6.6603	4.6264	3.8012	3.3380	3.0355	2.8200	2.6572	2.5290	2.4250	2.3386	2.2025	2.0565	1.8967	1.7915	1.7158	1.6127	1.5445	1.4953	1.4421	1.3835	1.2953	1.2215	1.1586		
.999		10.8919	6.9557	5.4637	4.6549	4.1391	3.7777	3.5083	3.2986	3.1300	2.9909	2.7740	2.5443	2.2968	2.1361	2.0218	1.8676	1.7668	1.6947	1.6173	1.5327	1.4070	1.3033	1.2161		
.9999		15.2595	9.2957	7.1070	5.9418	5.2079	4.6985	4.3217	4.0302	3.7971	3.6058	3.3091	2.9973	2.6647	2.4506	2.2994	2.0970	1.9656	1.8722	1.7725	1.6641	1.5045	1.3741	1.2656		
2,000 .9		2.7081	2.3052	2.0865	1.9477	1.8502	1.7771	1.7197	1.6733	1.6347	1.6019	1.5491	1.4906	1.4243	1.3792	1.3460	1.2996	1.2681	1.2450	1.2196	1.1910	1.1466	1.1077	1.0721	2,000	
.95		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		
.975		5.0315	3.6957	3.1226	2.7922	2.5728	2.4145	2.2938	2.1981	2.1200	2.0547	1.9512	1.8392	1.7154	1.6330	1.5734	1.4915	1.4368	1.3971	1.3538	1.3058	1.2323	1.1691	1.1123		
.99		6.6476	4.6158	3.7914	3.3285	3.0264	2.8110	2.6482	2.5201	2.4162	2.3298	2.1936	2.0475	1.8875	1.7820	1.7061	1.6025	1.5338	1.4842	1.4304	1.3708	1.2805	1.2033	1.1346		
.999		10.8596	6.9317	5.4428	4.6358	4.1210	3.7603	3.4914	3.2820	3.1137	2.9748	2.7582	2.5287	2.2812	2.1204	2.0059	1.8513	1.7500	1.6774	1.5993	1.5137	1.3853	1.2772	1.1823		
.9999		15.1979	9.2529	7.0713	5.9099	5.1783	4.6705	4.2949	4.0042	3.7718	3.5810	3.2850	2.9740	2.6419	2.4280	2.2768	2.0742	1.9424	1.8486	1.7482	1.6387	1.4760	1.3406	1.2230		
3,000 .9		2.7072	2.3044	2.0856	1.9467	1.8492	1.7761	1.7187	1.6722	1.6336	1.6008	1.5480	1.4894	1.4231	1.3779	1.3446	1.2981	1.2665	1.2433	1.2178	1.1890	1.1442	1.1045	1.0676	3,000	
.95		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		
.975		5.0289	3.6934	3.1205	2.7901	2.5707	2.4124	2.2917	2.1960	2.1179	2.0526	1.9490	1.8370	1.7131	1.6306	1.5709	1.4888	1.4340	1.3941	1.3507	1.3024	1.2283	1.1640	1.1051		
.99		6.6433	4.6122	3.7881	3.3254	3.0233	2.8080	2.6453	2.5172	2.4132	2.3268	2.1907	2.0445	1.8844	1.7789	1.7029	1.5991	1.5302	1.4804	1.4265	1.3666	1.2755	1.1971	1.1259		
.999		10.8489	6.9237	5.4359	4.6294	4.1150	3.7545	3.4858	3.2765	3.1083	2.9695	2.7529	2.5235	2.2761	2.1152	2.0006	1.8459	1.7444	1.6717	1.5933	1.5073	1.3779	1.2683	1.1702		
.9999		15.1775	9.2387	7.0595	5.8993	5.1685	4.6612	4.2860	3.9956	3.7634	3.5728	3.2771	2.9663	2.6343	2.4205	2.2693	2.0667	1.9347	1.8407	1.7401	1.6302	1.4665	1.3292	1.2077		
4,000 .9		2.7068	2.3039	2.0852	1.9463	1.8487	1.7756	1.7182	1.6717	1.6331	1.6003	1.5474	1.4889</													