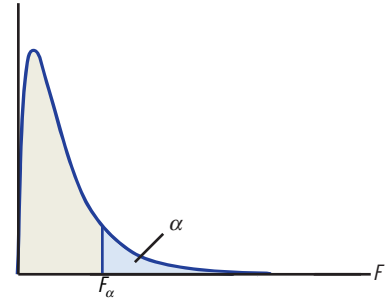


Critical Values of the F -Distribution ($\alpha = 0.025$)

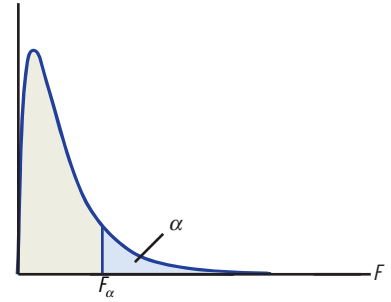


Numerator Degrees of Freedom

	1	2	3	4	5	6	7	8	9
1	647.7890	799.5000	864.1630	899.5833	921.8479	937.1111	948.2169	956.6562	963.2846
2	38.5063	39.0000	39.1655	39.2484	39.2982	39.3315	39.3552	39.3730	39.3869
3	17.4434	16.0441	15.4392	15.1010	14.8848	14.7347	14.6244	14.5399	14.4731
4	12.2179	10.6491	9.9792	9.6045	9.3645	9.1973	9.0741	8.9796	8.9047
5	10.0070	8.4336	7.7636	7.3879	7.1464	6.9777	6.8531	6.7572	6.6811
6	8.8131	7.2599	6.5988	6.2272	5.9876	5.8198	5.6955	5.5996	5.5234
7	8.0727	6.5415	5.8898	5.5226	5.2852	5.1186	4.9949	4.8993	4.8232
8	7.5709	6.0595	5.4160	5.0526	4.8173	4.6517	4.5286	4.4333	4.3572
9	7.2093	5.7147	5.0781	4.7181	4.4844	4.3197	4.1970	4.1020	4.0260
10	6.9367	5.4564	4.8256	4.4683	4.2361	4.0721	3.9498	3.8549	3.7790
11	6.7241	5.2559	4.6300	4.2751	4.0440	3.8807	3.7586	3.6638	3.5879
12	6.5538	5.0959	4.4742	4.1212	3.8911	3.7283	3.6065	3.5118	3.4358
13	6.4143	4.9653	4.3472	3.9959	3.7667	3.6043	3.4827	3.3880	3.3120
14	6.2979	4.8567	4.2417	3.8919	3.6634	3.5014	3.3799	3.2853	3.2093
15	6.1995	4.7650	4.1528	3.8043	3.5764	3.4147	3.2934	3.1987	3.1227
16	6.1151	4.6867	4.0768	3.7294	3.5021	3.3406	3.2194	3.1248	3.0488
17	6.0420	4.6189	4.0112	3.6648	3.4379	3.2767	3.1556	3.0610	2.9849
18	5.9781	4.5597	3.9539	3.6083	3.3820	3.2209	3.0999	3.0053	2.9291
19	5.9216	4.5075	3.9034	3.5587	3.3327	3.1718	3.0509	2.9563	2.8801
20	5.8715	4.4613	3.8587	3.5147	3.2891	3.1283	3.0074	2.9128	2.8365
21	5.8266	4.4199	3.8188	3.4754	3.2501	3.0895	2.9686	2.8740	2.7977
22	5.7863	4.3828	3.7829	3.4401	3.2151	3.0546	2.9338	2.8392	2.7628
23	5.7498	4.3492	3.7505	3.4083	3.1835	3.0232	2.9023	2.8077	2.7313
24	5.7166	4.3187	3.7211	3.3794	3.1548	2.9946	2.8738	2.7791	2.7027
25	5.6864	4.2909	3.6943	3.3530	3.1287	2.9685	2.8478	2.7531	2.6766
26	5.6586	4.2655	3.6697	3.3289	3.1048	2.9447	2.8240	2.7293	2.6528
27	5.6331	4.2421	3.6472	3.3067	3.0828	2.9228	2.8021	2.7074	2.6309
28	5.6096	4.2205	3.6264	3.2863	3.0626	2.9027	2.7820	2.6872	2.6106
29	5.5878	4.2006	3.6072	3.2674	3.0438	2.8840	2.7633	2.6686	2.5919
30	5.5675	4.1821	3.5894	3.2499	3.0265	2.8667	2.7460	2.6513	2.5746
40	5.4239	4.0510	3.4633	3.1261	2.9037	2.7444	2.6238	2.5289	2.4519
60	5.2856	3.9253	3.3425	3.0077	2.7863	2.6274	2.5068	2.4117	2.3344
120	5.1523	3.8046	3.2269	2.8943	2.6740	2.5154	2.3948	2.2994	2.2217
∞	5.0239	3.6889	3.1161	2.7858	2.5665	2.4082	2.2875	2.1918	2.1136

Denominator Degrees of Freedom

Critical Values of the F -Distribution ($\alpha = 0.025$) (continued)

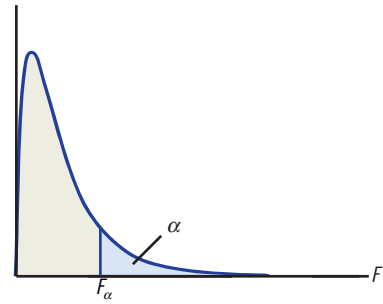


Numerator Degrees of Freedom

		10	11	12	13	14	15	16	17	18
Denominator Degrees of Freedom	1	968.6274	973.0252	976.7079	979.8368	982.5278	984.8668	986.9187	988.7331	990.3490
	2	39.3980	39.4071	39.4146	39.4210	39.4265	39.4313	39.4354	39.4391	39.4424
	3	14.4189	14.3742	14.3366	14.3045	14.2768	14.2527	14.2315	14.2127	14.1960
	4	8.8439	8.7935	8.7512	8.7150	8.6838	8.6565	8.6326	8.6113	8.5924
	5	6.6192	6.5678	6.5245	6.4876	6.4556	6.4277	6.4032	6.3814	6.3619
	6	5.4613	5.4098	5.3662	5.3290	5.2968	5.2687	5.2439	5.2218	5.2021
	7	4.7611	4.7095	4.6658	4.6285	4.5961	4.5678	4.5428	4.5206	4.5008
	8	4.2951	4.2434	4.1997	4.1622	4.1297	4.1012	4.0761	4.0538	4.0338
	9	3.9639	3.9121	3.8682	3.8306	3.7980	3.7694	3.7441	3.7216	3.7015
	10	3.7168	3.6649	3.6209	3.5832	3.5504	3.5217	3.4963	3.4737	3.4534
	11	3.5257	3.4737	3.4296	3.3917	3.3588	3.3299	3.3044	3.2816	3.2612
	12	3.3736	3.3215	3.2773	3.2393	3.2062	3.1772	3.1515	3.1286	3.1081
	13	3.2497	3.1975	3.1532	3.1150	3.0819	3.0527	3.0269	3.0039	2.9832
	14	3.1469	3.0946	3.0502	3.0119	2.9786	2.9493	2.9234	2.9003	2.8795
	15	3.0602	3.0078	2.9633	2.9249	2.8915	2.8621	2.8360	2.8128	2.7919
	16	2.9862	2.9337	2.8890	2.8506	2.8170	2.7875	2.7614	2.7380	2.7170
	17	2.9222	2.8696	2.8249	2.7863	2.7526	2.7230	2.6968	2.6733	2.6522
	18	2.8664	2.8137	2.7689	2.7302	2.6964	2.6667	2.6404	2.6168	2.5956
	19	2.8172	2.7645	2.7196	2.6808	2.6469	2.6171	2.5907	2.5670	2.5457
	20	2.7737	2.7209	2.6758	2.6369	2.6030	2.5731	2.5465	2.5228	2.5014
	21	2.7348	2.6819	2.6368	2.5978	2.5638	2.5338	2.5071	2.4833	2.4618
	22	2.6998	2.6469	2.6017	2.5626	2.5285	2.4984	2.4717	2.4478	2.4262
	23	2.6682	2.6152	2.5699	2.5308	2.4966	2.4665	2.4396	2.4157	2.3940
	24	2.6396	2.5865	2.5411	2.5019	2.4677	2.4374	2.4105	2.3865	2.3648
	25	2.6135	2.5603	2.5149	2.4756	2.4413	2.4110	2.3840	2.3599	2.3381
	26	2.5896	2.5363	2.4908	2.4515	2.4171	2.3867	2.3597	2.3355	2.3137
	27	2.5676	2.5143	2.4688	2.4293	2.3949	2.3644	2.3373	2.3131	2.2912
	28	2.5473	2.4940	2.4484	2.4089	2.3743	2.3438	2.3167	2.2924	2.2704
	29	2.5286	2.4752	2.4295	2.3900	2.3554	2.3248	2.2976	2.2732	2.2512
	30	2.5112	2.4577	2.4120	2.3724	2.3378	2.3072	2.2799	2.2554	2.2334
40	2.3882	2.3343	2.2882	2.2481	2.2130	2.1819	2.1542	2.1293	2.1068	
60	2.2702	2.2159	2.1692	2.1286	2.0929	2.0613	2.0330	2.0076	1.9846	
120	2.1570	2.1021	2.0548	2.0136	1.9773	1.9450	1.9161	1.8900	1.8663	
∞	2.0483	1.9927	1.9447	1.9027	1.8656	1.8326	1.8028	1.7759	1.7515	

Critical Values of the F -Distribution ($\alpha = 0.025$)

(continued)



Numerator Degrees of Freedom

Denominator Degrees of Freedom	Numerator Degrees of Freedom						
	19	20	24	30	40	60	120
1	991.7973	993.1028	997.2492	1001.4144	1005.5981	1009.8001	1014.0202
2	39.4453	39.4479	39.4562	39.4646	39.4729	39.4812	39.4896
3	14.1810	14.1674	14.1241	14.0805	14.0365	13.9921	13.9473
4	8.5753	8.5599	8.5109	8.4613	8.4111	8.3604	8.3092
5	6.3444	6.3286	6.2780	6.2269	6.1750	6.1225	6.0693
6	5.1844	5.1684	5.1172	5.0652	5.0125	4.9589	4.9044
7	4.4829	4.4667	4.4150	4.3624	4.3089	4.2544	4.1989
8	4.0158	3.9995	3.9472	3.8940	3.8398	3.7844	3.7279
9	3.6833	3.6669	3.6142	3.5604	3.5055	3.4493	3.3918
10	3.4351	3.4185	3.3654	3.3110	3.2554	3.1984	3.1399
11	3.2428	3.2261	3.1725	3.1176	3.0613	3.0035	2.9441
12	3.0896	3.0728	3.0187	2.9633	2.9063	2.8478	2.7874
13	2.9646	2.9477	2.8932	2.8372	2.7797	2.7204	2.6590
14	2.8607	2.8437	2.7888	2.7324	2.6742	2.6142	2.5519
15	2.7730	2.7559	2.7006	2.6437	2.5850	2.5242	2.4611
16	2.6980	2.6808	2.6252	2.5678	2.5085	2.4471	2.3831
17	2.6331	2.6158	2.5598	2.5020	2.4422	2.3801	2.3153
18	2.5764	2.5590	2.5027	2.4445	2.3842	2.3214	2.2558
19	2.5265	2.5089	2.4523	2.3937	2.3329	2.2696	2.2032
20	2.4821	2.4645	2.4076	2.3486	2.2873	2.2234	2.1562
21	2.4424	2.4247	2.3675	2.3082	2.2465	2.1819	2.1141
22	2.4067	2.3890	2.3315	2.2718	2.2097	2.1446	2.0760
23	2.3745	2.3567	2.2989	2.2389	2.1763	2.1107	2.0415
24	2.3452	2.3273	2.2693	2.2090	2.1460	2.0799	2.0099
25	2.3184	2.3005	2.2422	2.1816	2.1183	2.0516	1.9811
26	2.2939	2.2759	2.2174	2.1565	2.0928	2.0257	1.9545
27	2.2713	2.2533	2.1946	2.1334	2.0693	2.0018	1.9299
28	2.2505	2.2324	2.1735	2.1121	2.0477	1.9797	1.9072
29	2.2313	2.2131	2.1540	2.0923	2.0276	1.9591	1.8861
30	2.2134	2.1952	2.1359	2.0739	2.0089	1.9400	1.8664
40	2.0864	2.0677	2.0069	1.9429	1.8752	1.8028	1.7242
60	1.9636	1.9445	1.8817	1.8152	1.7440	1.6668	1.5810
120	1.8447	1.8249	1.7597	1.6899	1.6141	1.5299	1.4327
∞	1.7291	1.7085	1.6402	1.5660	1.4835	1.3883	1.2684