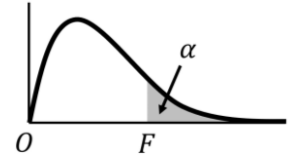


# F 分布表(パーセント点)

以下の表は、F分布の分布曲線  $f_{k_1, k_2}(x)$  における右図の灰色部分の面積(確率)  $\alpha = 0.050, 0.025$  と自由度  $k_1, k_2$  に対応する  $F$  の値を示したものである。



面積  $\alpha : 0.050$

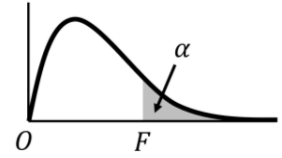
自由度 $k_2$	自由度 $k_1$																								
	1	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50	60	70	80	90	100	110	120	150	$\infty$
1	161.448	199.500	215.707	224.583	230.162	233.986	236.768	238.883	240.543	241.882	245.950	248.013	249.260	250.095	251.143	251.774	252.196	252.497	252.724	252.900	253.041	253.157	253.253	253.465	254.314
2	18.513	19.000	19.164	19.247	19.296	19.330	19.353	19.371	19.385	19.396	19.429	19.446	19.456	19.462	19.471	19.476	19.479	19.481	19.483	19.485	19.486	19.487	19.487	19.489	19.496
3	10.128	9.552	9.277	9.117	9.013	8.941	8.887	8.845	8.812	8.786	8.703	8.660	8.634	8.617	8.594	8.581	8.572	8.566	8.561	8.557	8.554	8.551	8.549	8.545	8.526
4	7.709	6.944	6.591	6.388	6.256	6.163	6.094	6.041	5.999	5.964	5.858	5.803	5.769	5.746	5.717	5.699	5.688	5.679	5.673	5.668	5.664	5.661	5.658	5.652	5.628
5	6.608	5.786	5.409	5.192	5.050	4.950	4.876	4.818	4.772	4.735	4.619	4.558	4.521	4.496	4.464	4.444	4.431	4.422	4.415	4.409	4.405	4.401	4.398	4.392	4.365
10	4.965	4.103	3.708	3.478	3.326	3.217	3.135	3.072	3.020	2.978	2.845	2.774	2.730	2.700	2.664	2.637	2.621	2.610	2.601	2.594	2.588	2.584	2.580	2.572	2.538
15	4.543	3.682	3.287	3.056	2.901	2.790	2.707	2.641	2.588	2.544	2.403	2.328	2.280	2.247	2.204	2.178	2.160	2.147	2.137	2.130	2.123	2.118	2.114	2.105	2.066
20	4.351	3.493	3.098	2.866	2.711	2.599	2.514	2.447	2.393	2.348	2.203	2.124	2.074	2.039	1.994	1.966	1.946	1.932	1.922	1.913	1.907	1.901	1.896	1.886	1.843
25	4.242	3.385	2.991	2.759	2.603	2.490	2.405	2.337	2.282	2.236	2.089	2.007	1.955	1.919	1.872	1.842	1.822	1.807	1.796	1.787	1.779	1.773	1.768	1.757	1.711
30	4.171	3.316	2.922	2.690	2.534	2.421	2.334	2.266	2.211	2.165	2.015	1.932	1.878	1.841	1.792	1.761	1.740	1.724	1.712	1.703	1.695	1.689	1.683	1.672	1.622
40	4.085	3.232	2.839	2.606	2.449	2.336	2.249	2.180	2.124	2.077	1.924	1.839	1.783	1.744	1.693	1.660	1.637	1.621	1.608	1.597	1.589	1.582	1.577	1.564	1.509
50	4.034	3.183	2.790	2.557	2.400	2.286	2.199	2.130	2.073	2.026	1.871	1.784	1.727	1.687	1.634	1.599	1.576	1.558	1.544	1.534	1.525	1.518	1.511	1.498	1.438
60	4.001	3.150	2.758	2.525	2.368	2.254	2.167	2.097	2.040	1.993	1.836	1.748	1.690	1.649	1.594	1.559	1.534	1.516	1.502	1.491	1.481	1.474	1.467	1.453	1.389
70	3.978	3.128	2.736	2.503	2.346	2.231	2.143	2.074	2.017	1.969	1.812	1.722	1.664	1.622	1.566	1.530	1.505	1.486	1.471	1.459	1.450	1.442	1.435	1.420	1.353
80	3.960	3.111	2.719	2.486	2.329	2.214	2.126	2.056	1.999	1.951	1.793	1.703	1.644	1.602	1.545	1.508	1.482	1.463	1.448	1.436	1.426	1.418	1.411	1.395	1.325
90	3.947	3.098	2.706	2.473	2.316	2.201	2.113	2.043	1.986	1.938	1.779	1.688	1.629	1.586	1.528	1.491	1.465	1.445	1.429	1.417	1.407	1.399	1.391	1.375	1.302
100	3.936	3.087	2.696	2.463	2.305	2.191	2.103	2.032	1.975	1.927	1.768	1.676	1.616	1.573	1.515	1.477	1.450	1.430	1.415	1.402	1.392	1.383	1.376	1.359	1.283
120	3.920	3.072	2.680	2.447	2.290	2.175	2.087	2.016	1.959	1.910	1.750	1.659	1.598	1.554	1.495	1.457	1.429	1.408	1.392	1.379	1.369	1.360	1.352	1.334	1.254

面積  $\alpha : 0.025$

自由度 $k_2$	自由度 $k_1$																								
	1	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50	60	70	80	90	100	110	120	150	$\infty$
1	647.789	799.500	864.163	899.583	921.848	937.111	948.217	956.656	963.285	968.627	984.867	993.103	998.081	1001.41	1005.60	1008.12	1009.80	1011.00	1011.91	1012.61	1013.17	1013.64	1014.02	1014.87	1018.26
2	38.506	39.000	39.165	39.248	39.298	39.331	39.355	39.373	39.387	39.398	39.431	39.448	39.458	39.465	39.473	39.478	39.481	39.484	39.485	39.487	39.488	39.489	39.490	39.491	39.498
3	17.443	16.044	15.439	15.101	14.885	14.735	14.624	14.540	14.473	14.419	14.253	14.167	14.115	14.081	14.037	14.010	13.992	13.979	13.970	13.962	13.956	13.951	13.947	13.938	13.902
4	12.218	10.649	9.979	9.605	9.364	9.197	9.074	8.980	8.905	8.844	8.657	8.560	8.501	8.461	8.411	8.381	8.360	8.346	8.335	8.326	8.319	8.314	8.309	8.299	8.257
5	10.007	8.434	7.764	7.388	7.146	6.978	6.853	6.757	6.681	6.619	6.428	6.329	6.268	6.227	6.175	6.144	6.123	6.107	6.096	6.087	6.080	6.074	6.069	6.059	6.015
10	6.937	5.456	4.826	4.468	4.236	4.072	3.950	3.855	3.779	3.717	3.522	3.419	3.355	3.311	3.255	3.221	3.198	3.182	3.169	3.160	3.152	3.145	3.140	3.128	3.080
15	6.200	4.765	4.153	3.804	3.576	3.415	3.293	3.199	3.123	3.060	2.862	2.756	2.689	2.644	2.585	2.549	2.524	2.506	2.493	2.482	2.474	2.467	2.461	2.448	2.395
20	5.871	4.461	3.859	3.515	3.289	3.128	3.007	2.913	2.837	2.774	2.573	2.464	2.396	2.349	2.287	2.249	2.223	2.205	2.190	2.179	2.170	2.162	2.156	2.142	2.085
25	5.686	4.291	3.694	3.353	3.129	2.969	2.848	2.753	2.677	2.613	2.411	2.300	2.230	2.182	2.118	2.079	2.052	2.032	2.017	2.005	1.996	1.988	1.981	1.966	1.906
30	5.568	4.182	3.589	3.250	3.026	2.867	2.746	2.651	2.575	2.511	2.307	2.195	2.124	2.074	2.009	1.968	1.940	1.920	1.904	1.892	1.882	1.873	1.866	1.851	1.787
40	5.424	4.051	3.463	3.126	2.904	2.744	2.624	2.529	2.452	2.388	2.182	2.068	1.994	1.943	1.875	1.832	1.803	1.781	1.764	1.751	1.741	1.732	1.724	1.708	1.637
50	5.340	3.975	3.390	3.054	2.833	2.674	2.553	2.458	2.381	2.317	2.109	1.993	1.919	1.866	1.796	1.752	1.721	1.698	1.681	1.667	1.656	1.647	1.639	1.621	1.545
60	5.286	3.925	3.343	3.008	2.786	2.627	2.507	2.412	2.334	2.270	2.061	1.944	1.869	1.815	1.744	1.699	1.667	1.643	1.625	1.611	1.599	1.589	1.581	1.563	1.482
70	5.247	3.890	3.309	2.975	2.754	2.595	2.474	2.379	2.302	2.237	2.028	1.910	1.833	1.779	1.707	1.660	1.628	1.604	1.585	1.570	1.558	1.548	1.539	1.520	1.436
80	5.218	3.864	3.284	2.950	2.730	2.571	2.450	2.355	2.277	2.213	2.003	1.884	1.807	1.752	1.679	1.632	1.599	1.574	1.555	1.540	1.527	1.517	1.508	1.488	1.400
90	5.196	3.844	3.265	2.932	2.711	2.552	2.432	2.336	2.259	2.194	1.983	1.864	1.787	1.731	1.657	1.610	1.576	1.551	1.531	1.516	1.503	1.492	1.483	1.463	1.371
100	5.179	3.828	3.250	2.917	2.696	2.537	2.417	2.321	2.244	2.179	1.968	1.849	1.770	1.715	1.640	1.592	1.558	1.532	1.512	1.496	1.483	1.472	1.463	1.442	1.347
120	5.152	3.805	3.227	2.894	2.674	2.515	2.395	2.299	2.222	2.157	1.945	1.825	1.746	1.690	1.614	1.565	1.530	1.504	1.483	1.467	1.454	1.442	1.433	1.411	1.310

# F 分布表(パーセント点)

以下の表は、F分布の分布曲線  $f_{k_1, k_2}(x)$  における右図の灰色部分の面積(確率)  $\alpha = 0.010, 0.005$  と自由度  $k_1, k_2$  に対応する  $F$  の値を示したものである。



面積  $\alpha : 0.010$

自由度 $k_2$	自由度 $k_1$																								
	1	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50	60	70	80	90	100	110	120	150	$\infty$
1	4052.18	4999.500	5403.352	5624.583	5763.650	5858.986	5928.356	5981.070	6022.473	6055.847	6157.285	6208.730	6239.825	6260.649	6286.782	6302.517	6313.030	6320.550	6326.197	6330.592	6334.110	6336.990	6339.391	6344.677	6365.86
2	98.503	99.000	99.166	99.249	99.299	99.333	99.356	99.374	99.388	99.399	99.433	99.449	99.459	99.466	99.474	99.479	99.482	99.485	99.487	99.488	99.489	99.490	99.491	99.492	99.499
3	34.116	30.817	29.457	28.710	28.237	27.911	27.672	27.489	27.345	27.229	26.872	26.690	26.579	26.505	26.411	26.354	26.316	26.289	26.269	26.253	26.240	26.230	26.221	26.202	26.125
4	21.198	18.000	16.694	15.977	15.522	15.207	14.976	14.799	14.659	14.546	14.198	14.020	13.911	13.838	13.745	13.690	13.652	13.625	13.605	13.590	13.577	13.567	13.558	13.539	13.463
5	16.258	13.274	12.060	11.392	10.967	10.672	10.456	10.289	10.158	10.051	9.722	9.553	9.449	9.379	9.291	9.238	9.202	9.176	9.157	9.142	9.130	9.120	9.112	9.094	9.020
10	10.044	7.559	6.552	5.994	5.636	5.386	5.200	5.057	4.942	4.849	4.558	4.405	4.311	4.247	4.165	4.115	4.082	4.058	4.039	4.025	4.014	4.004	3.996	3.979	3.909
15	8.683	6.359	5.417	4.893	4.556	4.318	4.142	4.004	3.895	3.805	3.522	3.372	3.278	3.214	3.132	3.081	3.047	3.022	3.004	2.989	2.977	2.968	2.959	2.942	2.868
20	8.096	5.849	4.938	4.431	4.103	3.871	3.699	3.564	3.457	3.368	3.088	2.938	2.843	2.778	2.695	2.643	2.608	2.582	2.563	2.548	2.535	2.525	2.517	2.498	2.421
25	7.770	5.568	4.675	4.177	3.855	3.627	3.457	3.324	3.217	3.129	2.850	2.699	2.604	2.538	2.453	2.400	2.364	2.337	2.317	2.302	2.289	2.278	2.270	2.250	2.169
30	7.562	5.390	4.510	4.018	3.699	3.473	3.304	3.173	3.067	2.979	2.700	2.549	2.453	2.386	2.299	2.245	2.208	2.181	2.160	2.144	2.131	2.120	2.111	2.091	2.006
40	7.314	5.179	4.313	3.828	3.514	3.291	3.124	2.993	2.888	2.801	2.522	2.369	2.271	2.203	2.114	2.058	2.019	1.991	1.969	1.952	1.938	1.927	1.917	1.896	1.805
50	7.171	5.057	4.199	3.720	3.408	3.186	3.020	2.890	2.785	2.698	2.419	2.265	2.167	2.098	2.007	1.949	1.909	1.880	1.857	1.839	1.825	1.813	1.803	1.780	1.683
60	7.077	4.977	4.126	3.649	3.339	3.119	2.953	2.823	2.718	2.632	2.352	2.198	2.098	2.028	1.936	1.877	1.836	1.806	1.783	1.764	1.749	1.737	1.726	1.703	1.601
70	7.011	4.922	4.074	3.600	3.291	3.071	2.906	2.777	2.672	2.585	2.306	2.150	2.050	1.980	1.886	1.826	1.785	1.754	1.730	1.711	1.695	1.683	1.672	1.647	1.540
80	6.963	4.881	4.036	3.563	3.255	3.036	2.871	2.742	2.637	2.551	2.271	2.115	2.015	1.944	1.849	1.788	1.746	1.714	1.690	1.671	1.655	1.642	1.630	1.605	1.494
90	6.925	4.849	4.007	3.535	3.228	3.009	2.845	2.715	2.611	2.524	2.244	2.088	1.987	1.916	1.820	1.759	1.716	1.684	1.659	1.639	1.623	1.610	1.598	1.572	1.457
100	6.895	4.824	3.984	3.513	3.206	2.988	2.823	2.694	2.590	2.503	2.223	2.067	1.965	1.893	1.797	1.735	1.692	1.659	1.634	1.614	1.598	1.584	1.572	1.546	1.427
120	6.851	4.787	3.949	3.480	3.174	2.956	2.792	2.663	2.559	2.472	2.192	2.035	1.932	1.860	1.763	1.700	1.656	1.623	1.597	1.576	1.559	1.545	1.533	1.506	1.381

面積  $\alpha : 0.005$

自由度 $k_2$	自由度 $k_1$																								
	1	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50	60	70	80	90	100	110	120	150	$\infty$
1	16210.7	19999.5	21614.7	22499.6	23055.8	23437.1	23714.6	23925.4	24091.0	24224.5	24630.2	24836.0	24960.3	25043.6	25148.2	25211.1	25253.1	25283.2	25305.8	25323.4	25337.5	25349.0	25358.6	25379.7	25464.5
2	198.501	199.000	199.166	199.250	199.300	199.333	199.357	199.375	199.388	199.400	199.433	199.450	199.460	199.466	199.475	199.480	199.483	199.485	199.487	199.488	199.490	199.490	199.491	199.493	199.500
3	55.552	49.799	47.467	46.195	45.392	44.838	44.434	44.126	43.882	43.686	43.085	42.778	42.591	42.466	42.308	42.213	42.149	42.104	42.070	42.043	42.022	42.004	41.989	41.957	41.828
4	31.333	26.284	24.259	23.155	22.456	21.975	21.622	21.352	21.139	20.967	20.438	20.167	20.002	19.892	19.752	19.667	19.611	19.570	19.540	19.516	19.497	19.481	19.468	19.440	19.325
5	22.785	18.314	16.530	15.556	14.940	14.513	14.200	13.961	13.772	13.618	13.146	12.903	12.755	12.656	12.530	12.454	12.402	12.366	12.338	12.317	12.300	12.285	12.274	12.248	12.144
10	12.826	9.427	8.081	7.343	6.872	6.545	6.302	6.116	5.968	5.847	5.471	5.274	5.153	5.071	4.966	4.902	4.859	4.828	4.805	4.787	4.772	4.760	4.750	4.728	4.639
15	10.798	7.701	6.476	5.803	5.372	5.071	4.847	4.674	4.536	4.424	4.070	3.883	3.766	3.687	3.585	3.523	3.480	3.450	3.427	3.409	3.394	3.382	3.372	3.350	3.260
20	9.944	6.986	5.818	5.174	4.762	4.472	4.257	4.090	3.956	3.847	3.502	3.318	3.203	3.123	3.022	2.959	2.916	2.885	2.861	2.843	2.828	2.816	2.806	2.783	2.690
25	9.475	6.598	5.462	4.835	4.433	4.150	3.939	3.776	3.645	3.537	3.196	3.013	2.898	2.819	2.716	2.652	2.609	2.577	2.553	2.534	2.519	2.507	2.496	2.473	2.377
30	9.180	6.355	5.239	4.623	4.228	3.949	3.742	3.580	3.450	3.344	3.006	2.823	2.708	2.628	2.524	2.459	2.415	2.383	2.358	2.339	2.323	2.311	2.300	2.276	2.176
40	8.828	6.066	4.976	4.374	3.986	3.713	3.509	3.350	3.222	3.117	2.781	2.598	2.482	2.401	2.296	2.230	2.184	2.150	2.125	2.105	2.088	2.075	2.064	2.038	1.932
50	8.626	5.902	4.826	4.232	3.849	3.579	3.376	3.219	3.092	2.988	2.653	2.470	2.353	2.272	2.164	2.097	2.050	2.015	1.989	1.968	1.951	1.937	1.925	1.899	1.786
60	8.495	5.795	4.729	4.140	3.760	3.492	3.291	3.134	3.008	2.904	2.570	2.387	2.270	2.187	2.079	2.010	1.962	1.927	1.900	1.878	1.861	1.846	1.834	1.807	1.689
70	8.403	5.720	4.661	4.076	3.698	3.431	3.232	3.076	2.950	2.846	2.513	2.329	2.211	2.128	2.019	1.949	1.900	1.864	1.837	1.815	1.797	1.782	1.769	1.741	1.618
80	8.335	5.665	4.611	4.029	3.652	3.387	3.188	3.032	2.907	2.803	2.470	2.286	2.168	2.084	1.974	1.903	1.854	1.817	1.789	1.767	1.748	1.733	1.720	1.691	1.563
90	8.282	5.623	4.573	3.992	3.617	3.352	3.154	2.999	2.873	2.770	2.437	2.253	2.134	2.051	1.939	1.868	1.818	1.781	1.752	1.730	1.711	1.695	1.682	1.652	1.520
100	8.241	5.589	4.542	3.963	3.589	3.325	3.127	2.972	2.847	2.744	2.411	2.227	2.108	2.024	1.912	1.840	1.790	1.752	1.723	1.700	1.681	1.665	1.652	1.621	1.485
120	8.179	5.539	4.497	3.921	3.548	3.285	3.087	2.933	2.808	2.705	2.373	2.188	2.069	1.984	1.871	1.798	1.747	1.709	1.679	1.655	1.636	1.619	1.606	1.574	1.431