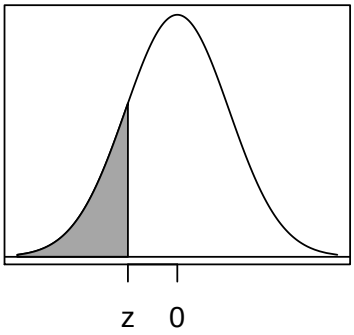
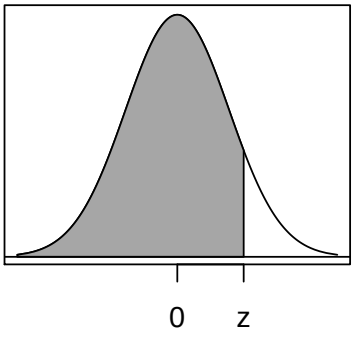
Standard Normal Distribution



Cumulative probabilities for **NEGATIVE** z-values are shown in the following table:

Z	**.00**	**.01**	**.02**	**.03**	**.04**	**.05**	**.06**	**.07**	**.08**	**.09**
−3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
−3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
−3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
−3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
−3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
−2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
−2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
−2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
−2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
−2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
−2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
−2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
−2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
−2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
−2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
−1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
−1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
−1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
−1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
−1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
−1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
−1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
−1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
−1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
−1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
−.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
−.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
−.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
−.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
−.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
−.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
−.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
−.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
−.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
−.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641

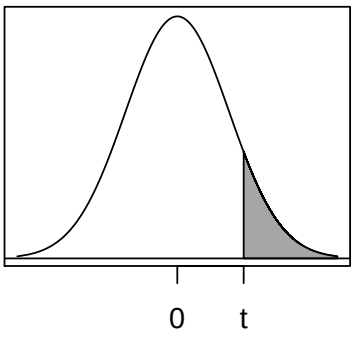
Standard Normal Distribution



Cumulative probabilities for **POSITIVE** z-values are shown in the following table:

Z	**.00**	**.01**	**.02**	**.03**	**.04**	**.05**	**.06**	**.07**	**.08**	**.09**
.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

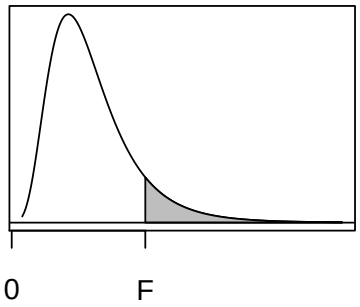
t Distribution



t-values for selected UPPER TAIL probabilities are shown in the following table:

		90%	**95%**		**99%**	← For **this** CI
df	**.10**	**.05**	**.025**	**.01**	**.005**	← Upper tail probability
1	3.078	6.314	12.706	31.821	63.657	
2	1.886	2.920	4.303	6.965	9.925	
3	1.638	2.353	3.182	4.541	5.841	
4	1.533	2.132	2.776	3.747	4.604	
5	1.476	2.015	2.571	3.365	4.032	
6	1.440	1.943	2.447	3.143	3.707	
7	1.415	1.895	2.365	2.998	3.499	
8	1.397	1.860	2.306	2.896	3.355	
9	1.383	1.833	2.262	2.821	3.250	
10	1.372	1.812	2.228	2.764	3.169	
11	1.363	1.796	2.201	2.718	3.106	
12	1.356	1.782	2.179	2.681	3.055	
13	1.350	1.771	2.160	2.650	3.012	
14	1.345	1.761	2.145	2.624	2.977	
15	1.341	1.753	2.131	2.602	2.947	
16	1.337	1.746	2.120	2.583	2.921	
17	1.333	1.740	2.110	2.567	2.898	
18	1.330	1.734	2.101	2.552	2.878	
19	1.328	1.729	2.093	2.539	2.861	
20	1.325	1.725	2.086	2.528	2.845	
21	1.323	1.721	2.080	2.518	2.831	
22	1.321	1.717	2.074	2.508	2.819	
23	1.319	1.714	2.069	2.500	2.807	
24	1.318	1.711	2.064	2.492	2.797	
25	1.316	1.708	2.060	2.485	2.787	
26	1.315	1.706	2.056	2.479	2.779	
27	1.314	1.703	2.052	2.473	2.771	
28	1.313	1.701	2.048	2.467	2.763	
29	1.311	1.699	2.045	2.462	2.756	
30	1.310	1.697	2.042	2.457	2.750	
40	1.303	1.684	2.021	2.423	2.704	
50	1.299	1.676	2.009	2.403	2.678	
60	1.296	1.671	2.000	2.390	2.660	
70	1.294	1.667	1.994	2.381	2.648	
80	1.292	1.664	1.990	2.374	2.639	
90	1.291	1.662	1.987	2.368	2.632	
100	1.290	1.660	1.984	2.364	2.626	
∞	1.282	1.645	1.960	2.326	2.576	← Same as **z-values**

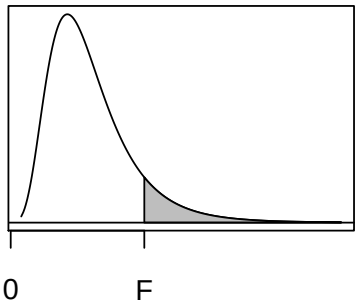
F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df										
		1	2	3	4	5	6	7	8	9	10	11
1	0.10	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86	60.19	60.47
	0.05	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54	241.88	242.98
	0.025	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28	968.63	973.03
	0.01	4052.18	4999.50	5403.35	5624.58	5763.65	5858.99	5928.36	5981.07	6022.47	6055.85	6083.32
2	0.10	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38	9.39	9.40
	0.05	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38	19.40	19.40
	0.025	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39	39.40	39.41
	0.01	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39	99.40	99.41
3	0.10	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24	5.23	5.22
	0.05	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.76
	0.025	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47	14.42	14.37
	0.01	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35	27.23	27.13
4	0.10	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94	3.92	3.91
	0.05	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.94
	0.025	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90	8.84	8.79
	0.01	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66	14.55	14.45
5	0.10	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32	3.30	3.28
	0.05	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.70
	0.025	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68	6.62	6.57
	0.01	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16	10.05	9.96
6	0.10	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96	2.94	2.92
	0.05	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.03
	0.025	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52	5.46	5.41
	0.01	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98	7.87	7.79
7	0.10	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72	2.70	2.68
	0.05	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.60
	0.025	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82	4.76	4.71
	0.01	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72	6.62	6.54
8	0.10	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56	2.54	2.52
	0.05	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.31
	0.025	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36	4.30	4.24
	0.01	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91	5.81	5.73
9	0.10	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44	2.42	2.40
	0.05	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.10
	0.025	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03	3.96	3.91
	0.01	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35	5.26	5.18

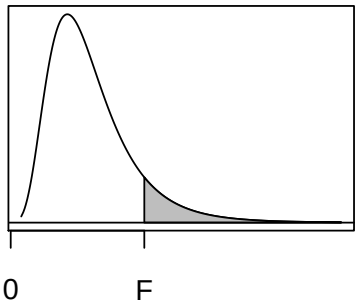
F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df 1	2	3	4	5	6	7	8	9	10	11
10	0.10	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35	2.32	2.30
	0.05	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.94
	0.025	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78	3.72	3.66
	0.01	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94	4.85	4.77
11	0.10	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27	2.25	2.23
	0.05	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.82
	0.025	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59	3.53	3.47
	0.01	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63	4.54	4.46
12	0.10	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21	2.19	2.17
	0.05	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.72
	0.025	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44	3.37	3.32
	0.01	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39	4.30	4.22
13	0.10	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16	2.14	2.12
	0.05	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.63
	0.025	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31	3.25	3.20
	0.01	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19	4.10	4.02
14	0.10	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12	2.10	2.07
	0.05	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.57
	0.025	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21	3.15	3.09
	0.01	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03	3.94	3.86
15	0.10	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09	2.06	2.04
	0.05	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.51
	0.025	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12	3.06	3.01
	0.01	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89	3.80	3.73
16	0.10	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06	2.03	2.01
	0.05	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.46
	0.025	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05	2.99	2.93
	0.01	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69	3.62
17	0.10	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03	2.00	1.98
	0.05	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.41
	0.025	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98	2.92	2.87
	0.01	8.40	6.11	5.18	4.67	4.34	4.10	3.93	3.79	3.68	3.59	3.52
18	0.10	3.01	2.62	2.42	2.29	2.20	2.13	2.08	2.04	2.00	1.98	1.95
	0.05	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.37
	0.025	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93	2.87	2.81
	0.01	8.29	6.01	5.09	4.58	4.25	4.01	3.84	3.71	3.60	3.51	3.43

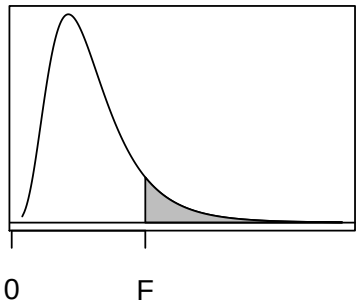
F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df 1	2	3	4	5	6	7	8	9	10	11
19	0.10	2.99	2.61	2.40	2.27	2.18	2.11	2.06	2.02	1.98	1.96	1.93
	0.05	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.34
	0.025	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88	2.82	2.76
	0.01	8.18	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52	3.43	3.36
20	0.10	2.97	2.59	2.38	2.25	2.16	2.09	2.04	2.00	1.96	1.94	1.91
	0.05	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.31
	0.025	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84	2.77	2.72
	0.01	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46	3.37	3.29
21	0.10	2.96	2.57	2.36	2.23	2.14	2.08	2.02	1.98	1.95	1.92	1.90
	0.05	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.28
	0.025	5.83	4.42	3.82	3.48	3.25	3.09	2.97	2.87	2.80	2.73	2.68
	0.01	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40	3.31	3.24
22	0.10	2.95	2.56	2.35	2.22	2.13	2.06	2.01	1.97	1.93	1.90	1.88
	0.05	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.26
	0.025	5.79	4.38	3.78	3.44	3.22	3.05	2.93	2.84	2.76	2.70	2.65
	0.01	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26	3.18
23	0.10	2.94	2.55	2.34	2.21	2.11	2.05	1.99	1.95	1.92	1.89	1.87
	0.05	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27	2.24
	0.025	5.75	4.35	3.75	3.41	3.18	3.02	2.90	2.81	2.73	2.67	2.62
	0.01	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21	3.14
24	0.10	2.93	2.54	2.33	2.19	2.10	2.04	1.98	1.94	1.91	1.88	1.85
	0.05	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.22
	0.025	5.72	4.32	3.72	3.38	3.15	2.99	2.87	2.78	2.70	2.64	2.59
	0.01	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.26	3.17	3.09
25	0.10	2.92	2.53	2.32	2.18	2.09	2.02	1.97	1.93	1.89	1.87	1.84
	0.05	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.20
	0.025	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68	2.61	2.56
	0.01	7.77	5.57	4.68	4.18	3.85	3.63	3.46	3.32	3.22	3.13	3.06
26	0.10	2.91	2.52	2.31	2.17	2.08	2.01	1.96	1.92	1.88	1.86	1.83
	0.05	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18
	0.025	5.66	4.27	3.67	3.33	3.10	2.94	2.82	2.73	2.65	2.59	2.54
	0.01	7.72	5.53	4.64	4.14	3.82	3.59	3.42	3.29	3.18	3.09	3.02
27	0.10	2.90	2.51	2.30	2.17	2.07	2.00	1.95	1.91	1.87	1.85	1.82
	0.05	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20	2.17
	0.025	5.63	4.24	3.65	3.31	3.08	2.92	2.80	2.71	2.63	2.57	2.51
	0.01	7.68	5.49	4.60	4.11	3.78	3.56	3.39	3.26	3.15	3.06	2.99

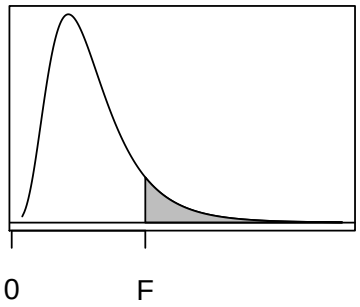
F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df 1	2	3	4	5	6	7	8	9	10	11
28	0.10	2.89	2.50	2.29	2.16	2.06	2.00	1.94	1.90	1.87	1.84	1.81
	0.05	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.15
	0.025	5.61	4.22	3.63	3.29	3.06	2.90	2.78	2.69	2.61	2.55	2.49
	0.01	7.64	5.45	4.57	4.07	3.75	3.53	3.36	3.23	3.12	3.03	2.96
29	0.10	2.89	2.50	2.28	2.15	2.06	1.99	1.93	1.89	1.86	1.83	1.80
	0.05	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18	2.14
	0.025	5.59	4.20	3.61	3.27	3.04	2.88	2.76	2.67	2.59	2.53	2.48
	0.01	7.60	5.42	4.54	4.04	3.73	3.50	3.33	3.20	3.09	3.00	2.93
30	0.10	2.88	2.49	2.28	2.14	2.05	1.98	1.93	1.88	1.85	1.82	1.79
	0.05	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.13
	0.025	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57	2.51	2.46
	0.01	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07	2.98	2.91
40	0.10	2.84	2.44	2.23	2.09	2.00	1.93	1.87	1.83	1.79	1.76	1.74
	0.05	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.04
	0.025	5.42	4.05	3.46	3.13	2.90	2.74	2.62	2.53	2.45	2.39	2.33
	0.01	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.89	2.80	2.73
60	0.10	2.79	2.39	2.18	2.04	1.95	1.87	1.82	1.77	1.74	1.71	1.68
	0.05	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.95
	0.025	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33	2.27	2.22
	0.01	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72	2.63	2.56
100	0.10	2.76	2.36	2.14	2.00	1.91	1.83	1.78	1.73	1.69	1.66	1.64
	0.05	3.94	3.09	2.70	2.46	2.31	2.19	2.10	2.03	1.97	1.93	1.89
	0.025	5.18	3.83	3.25	2.92	2.70	2.54	2.42	2.32	2.24	2.18	2.12
	0.01	6.90	4.82	3.98	3.51	3.21	2.99	2.82	2.69	2.59	2.50	2.43
1000	0.10	2.71	2.31	2.09	1.95	1.85	1.78	1.72	1.68	1.64	1.61	1.58
	0.05	3.85	3.00	2.61	2.38	2.22	2.11	2.02	1.95	1.89	1.84	1.80
	0.025	5.04	3.70	3.13	2.80	2.58	2.42	2.30	2.20	2.13	2.06	2.01
	0.01	6.66	4.63	3.80	3.34	3.04	2.82	2.66	2.53	2.43	2.34	2.27

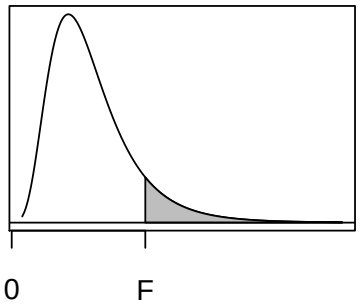
F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df										
		12	13	14	15	20	25	30	40	60	100	1000
1	0.10	60.71	60.90	61.07	61.22	61.74	62.05	62.26	62.53	62.79	63.01	63.30
	0.05	243.91	244.69	245.36	245.95	248.01	249.26	250.10	251.14	252.20	253.04	254.19
	0.025	976.71	979.84	982.53	984.87	993.10	998.08	1001.41	1005.60	1009.80	1013.17	1017.75
	0.01	6106.32	6125.86	6142.67	6157.28	6208.73	6239.83	6260.65	6286.78	6313.03	6334.11	6362.68
2	0.10	9.41	9.41	9.42	9.42	9.44	9.45	9.46	9.47	9.47	9.48	9.49
	0.05	19.41	19.42	19.42	19.43	19.45	19.46	19.46	19.47	19.48	19.49	19.49
	0.025	39.41	39.42	39.43	39.43	39.45	39.46	39.46	39.47	39.48	39.49	39.50
	0.01	99.42	99.42	99.43	99.43	99.45	99.46	99.47	99.47	99.48	99.49	99.50
3	0.10	5.22	5.21	5.20	5.20	5.18	5.17	5.17	5.16	5.15	5.14	5.13
	0.05	8.74	8.73	8.71	8.70	8.66	8.63	8.62	8.59	8.57	8.55	8.53
	0.025	14.34	14.30	14.28	14.25	14.17	14.12	14.08	14.04	13.99	13.96	13.91
	0.01	27.05	26.98	26.92	26.87	26.69	26.58	26.50	26.41	26.32	26.24	26.14
4	0.10	3.90	3.89	3.88	3.87	3.84	3.83	3.82	3.80	3.79	3.78	3.76
	0.05	5.91	5.89	5.87	5.86	5.80	5.77	5.75	5.72	5.69	5.66	5.63
	0.025	8.75	8.71	8.68	8.66	8.56	8.50	8.46	8.41	8.36	8.32	8.26
	0.01	14.37	14.31	14.25	14.20	14.02	13.91	13.84	13.75	13.65	13.58	13.47
5	0.10	3.27	3.26	3.25	3.24	3.21	3.19	3.17	3.16	3.14	3.13	3.11
	0.05	4.68	4.66	4.64	4.62	4.56	4.52	4.50	4.46	4.43	4.41	4.37
	0.025	6.52	6.49	6.46	6.43	6.33	6.27	6.23	6.18	6.12	6.08	6.02
	0.01	9.89	9.82	9.77	9.72	9.55	9.45	9.38	9.29	9.20	9.13	9.03
6	0.10	2.90	2.89	2.88	2.87	2.84	2.81	2.80	2.78	2.76	2.75	2.72
	0.05	4.00	3.98	3.96	3.94	3.87	3.83	3.81	3.77	3.74	3.71	3.67
	0.025	5.37	5.33	5.30	5.27	5.17	5.11	5.07	5.01	4.96	4.92	4.86
	0.01	7.72	7.66	7.60	7.56	7.40	7.30	7.23	7.14	7.06	6.99	6.89
7	0.10	2.67	2.65	2.64	2.63	2.59	2.57	2.56	2.54	2.51	2.50	2.47
	0.05	3.57	3.55	3.53	3.51	3.44	3.40	3.38	3.34	3.30	3.27	3.23
	0.025	4.67	4.63	4.60	4.57	4.47	4.40	4.36	4.31	4.25	4.21	4.15
	0.01	6.47	6.41	6.36	6.31	6.16	6.06	5.99	5.91	5.82	5.75	5.66
8	0.10	2.50	2.49	2.48	2.46	2.42	2.40	2.38	2.36	2.34	2.32	2.30
	0.05	3.28	3.26	3.24	3.22	3.15	3.11	3.08	3.04	3.01	2.97	2.93
	0.025	4.20	4.16	4.13	4.10	4.00	3.94	3.89	3.84	3.78	3.74	3.68
	0.01	5.67	5.61	5.56	5.52	5.36	5.26	5.20	5.12	5.03	4.96	4.87
9	0.10	2.38	2.36	2.35	2.34	2.30	2.27	2.25	2.23	2.21	2.19	2.16
	0.05	3.07	3.05	3.03	3.01	2.94	2.89	2.86	2.83	2.79	2.76	2.71
	0.025	3.87	3.83	3.80	3.77	3.67	3.60	3.56	3.51	3.45	3.40	3.34
	0.01	5.11	5.05	5.01	4.96	4.81	4.71	4.65	4.57	4.48	4.41	4.32

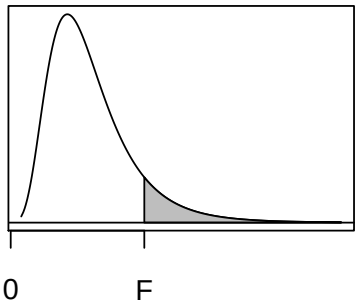
F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df 12	13	14	15	20	25	30	40	60	100	1000
10	0.10	2.28	2.27	2.26	2.24	2.20	2.17	2.16	2.13	2.11	2.09	2.06
	0.05	2.91	2.89	2.86	2.85	2.77	2.73	2.70	2.66	2.62	2.59	2.54
	0.025	3.62	3.58	3.55	3.52	3.42	3.35	3.31	3.26	3.20	3.15	3.09
	0.01	4.71	4.65	4.60	4.56	4.41	4.31	4.25	4.17	4.08	4.01	3.92
11	0.10	2.21	2.19	2.18	2.17	2.12	2.10	2.08	2.05	2.03	2.01	1.98
	0.05	2.79	2.76	2.74	2.72	2.65	2.60	2.57	2.53	2.49	2.46	2.41
	0.025	3.43	3.39	3.36	3.33	3.23	3.16	3.12	3.06	3.00	2.96	2.89
	0.01	4.40	4.34	4.29	4.25	4.10	4.01	3.94	3.86	3.78	3.71	3.61
12	0.10	2.15	2.13	2.12	2.10	2.06	2.03	2.01	1.99	1.96	1.94	1.91
	0.05	2.69	2.66	2.64	2.62	2.54	2.50	2.47	2.43	2.38	2.35	2.30
	0.025	3.28	3.24	3.21	3.18	3.07	3.01	2.96	2.91	2.85	2.80	2.73
	0.01	4.16	4.10	4.05	4.01	3.86	3.76	3.70	3.62	3.54	3.47	3.37
13	0.10	2.10	2.08	2.07	2.05	2.01	1.98	1.96	1.93	1.90	1.88	1.85
	0.05	2.60	2.58	2.55	2.53	2.46	2.41	2.38	2.34	2.30	2.26	2.21
	0.025	3.15	3.12	3.08	3.05	2.95	2.88	2.84	2.78	2.72	2.67	2.60
	0.01	3.96	3.91	3.86	3.82	3.66	3.57	3.51	3.43	3.34	3.27	3.18
14	0.10	2.05	2.04	2.02	2.01	1.96	1.93	1.91	1.89	1.86	1.83	1.80
	0.05	2.53	2.51	2.48	2.46	2.39	2.34	2.31	2.27	2.22	2.19	2.14
	0.025	3.05	3.01	2.98	2.95	2.84	2.78	2.73	2.67	2.61	2.56	2.50
	0.01	3.80	3.75	3.70	3.66	3.51	3.41	3.35	3.27	3.18	3.11	3.02
15	0.10	2.02	2.00	1.99	1.97	1.92	1.89	1.87	1.85	1.82	1.79	1.76
	0.05	2.48	2.45	2.42	2.40	2.33	2.28	2.25	2.20	2.16	2.12	2.07
	0.025	2.96	2.92	2.89	2.86	2.76	2.69	2.64	2.59	2.52	2.47	2.40
	0.01	3.67	3.61	3.56	3.52	3.37	3.28	3.21	3.13	3.05	2.98	2.88
16	0.10	1.99	1.97	1.95	1.94	1.89	1.86	1.84	1.81	1.78	1.76	1.72
	0.05	2.42	2.40	2.37	2.35	2.28	2.23	2.19	2.15	2.11	2.07	2.02
	0.025	2.89	2.85	2.82	2.79	2.68	2.61	2.57	2.51	2.45	2.40	2.32
	0.01	3.55	3.50	3.45	3.41	3.26	3.16	3.10	3.02	2.93	2.86	2.76
17	0.10	1.96	1.94	1.93	1.91	1.86	1.83	1.81	1.78	1.75	1.73	1.69
	0.05	2.38	2.35	2.33	2.31	2.23	2.18	2.15	2.10	2.06	2.02	1.97
	0.025	2.82	2.79	2.75	2.72	2.62	2.55	2.50	2.44	2.38	2.33	2.26
	0.01	3.46	3.40	3.35	3.31	3.16	3.07	3.00	2.92	2.83	2.76	2.66
18	0.10	1.93	1.92	1.90	1.89	1.84	1.80	1.78	1.75	1.72	1.70	1.66
	0.05	2.34	2.31	2.29	2.27	2.19	2.14	2.11	2.06	2.02	1.98	1.92
	0.025	2.77	2.73	2.70	2.67	2.56	2.49	2.44	2.38	2.32	2.27	2.20
	0.01	3.37	3.32	3.27	3.23	3.08	2.98	2.92	2.84	2.75	2.68	2.58

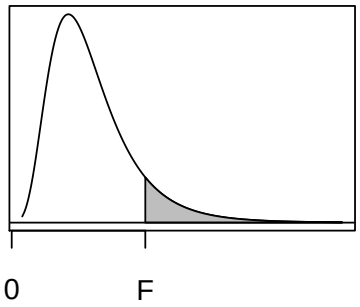
F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df 12	13	14	15	20	25	30	40	60	100	1000
19	0.10	1.91	1.89	1.88	1.86	1.81	1.78	1.76	1.73	1.70	1.67	1.64
	0.05	2.31	2.28	2.26	2.23	2.16	2.11	2.07	2.03	1.98	1.94	1.88
	0.025	2.72	2.68	2.65	2.62	2.51	2.44	2.39	2.33	2.27	2.22	2.14
	0.01	3.30	3.24	3.19	3.15	3.00	2.91	2.84	2.76	2.67	2.60	2.50
20	0.10	1.89	1.87	1.86	1.84	1.79	1.76	1.74	1.71	1.68	1.65	1.61
	0.05	2.28	2.25	2.22	2.20	2.12	2.07	2.04	1.99	1.95	1.91	1.85
	0.025	2.68	2.64	2.60	2.57	2.46	2.40	2.35	2.29	2.22	2.17	2.09
	0.01	3.23	3.18	3.13	3.09	2.94	2.84	2.78	2.69	2.61	2.54	2.43
21	0.10	1.87	1.86	1.84	1.83	1.78	1.74	1.72	1.69	1.66	1.63	1.59
	0.05	2.25	2.22	2.20	2.18	2.10	2.05	2.01	1.96	1.92	1.88	1.82
	0.025	2.64	2.60	2.56	2.53	2.42	2.36	2.31	2.25	2.18	2.13	2.05
	0.01	3.17	3.12	3.07	3.03	2.88	2.79	2.72	2.64	2.55	2.48	2.37
22	0.10	1.86	1.84	1.83	1.81	1.76	1.73	1.70	1.67	1.64	1.61	1.57
	0.05	2.23	2.20	2.17	2.15	2.07	2.02	1.98	1.94	1.89	1.85	1.79
	0.025	2.60	2.56	2.53	2.50	2.39	2.32	2.27	2.21	2.14	2.09	2.01
	0.01	3.12	3.07	3.02	2.98	2.83	2.73	2.67	2.58	2.50	2.42	2.32
23	0.10	1.84	1.83	1.81	1.80	1.74	1.71	1.69	1.66	1.62	1.59	1.55
	0.05	2.20	2.18	2.15	2.13	2.05	2.00	1.96	1.91	1.86	1.82	1.76
	0.025	2.57	2.53	2.50	2.47	2.36	2.29	2.24	2.18	2.11	2.06	1.98
	0.01	3.07	3.02	2.97	2.93	2.78	2.69	2.62	2.54	2.45	2.37	2.27
24	0.10	1.83	1.81	1.80	1.78	1.73	1.70	1.67	1.64	1.61	1.58	1.54
	0.05	2.18	2.15	2.13	2.11	2.03	1.97	1.94	1.89	1.84	1.80	1.74
	0.025	2.54	2.50	2.47	2.44	2.33	2.26	2.21	2.15	2.08	2.02	1.94
	0.01	3.03	2.98	2.93	2.89	2.74	2.64	2.58	2.49	2.40	2.33	2.22
25	0.10	1.82	1.80	1.79	1.77	1.72	1.68	1.66	1.63	1.59	1.56	1.52
	0.05	2.16	2.14	2.11	2.09	2.01	1.96	1.92	1.87	1.82	1.78	1.72
	0.025	2.51	2.48	2.44	2.41	2.30	2.23	2.18	2.12	2.05	2.00	1.91
	0.01	2.99	2.94	2.89	2.85	2.70	2.60	2.54	2.45	2.36	2.29	2.18
26	0.10	1.81	1.79	1.77	1.76	1.71	1.67	1.65	1.61	1.58	1.55	1.51
	0.05	2.15	2.12	2.09	2.07	1.99	1.94	1.90	1.85	1.80	1.76	1.70
	0.025	2.49	2.45	2.42	2.39	2.28	2.21	2.16	2.09	2.03	1.97	1.89
	0.01	2.96	2.90	2.86	2.81	2.66	2.57	2.50	2.42	2.33	2.25	2.14
27	0.10	1.80	1.78	1.76	1.75	1.70	1.66	1.64	1.60	1.57	1.54	1.50
	0.05	2.13	2.10	2.08	2.06	1.97	1.92	1.88	1.84	1.79	1.74	1.68
	0.025	2.47	2.43	2.39	2.36	2.25	2.18	2.13	2.07	2.00	1.94	1.86
	0.01	2.93	2.87	2.82	2.78	2.63	2.54	2.47	2.38	2.29	2.22	2.11

F Distribution



F-values for selected UPPER TAIL probabilities are shown in the following table:

Denom. df	Upper tail area	Numerator df										
		12	13	14	15	20	25	30	40	60	100	1000
28	0.10	1.79	1.77	1.75	1.74	1.69	1.65	1.63	1.59	1.56	1.53	1.48
	0.05	2.12	2.09	2.06	2.04	1.96	1.91	1.87	1.82	1.77	1.73	1.66
	0.025	2.45	2.41	2.37	2.34	2.23	2.16	2.11	2.05	1.98	1.92	1.84
	0.01	2.90	2.84	2.79	2.75	2.60	2.51	2.44	2.35	2.26	2.19	2.08
29	0.10	1.78	1.76	1.75	1.73	1.68	1.64	1.62	1.58	1.55	1.52	1.47
	0.05	2.10	2.08	2.05	2.03	1.94	1.89	1.85	1.81	1.75	1.71	1.65
	0.025	2.43	2.39	2.36	2.32	2.21	2.14	2.09	2.03	1.96	1.90	1.82
	0.01	2.87	2.81	2.77	2.73	2.57	2.48	2.41	2.33	2.23	2.16	2.05
30	0.10	1.77	1.75	1.74	1.72	1.67	1.63	1.61	1.57	1.54	1.51	1.46
	0.05	2.09	2.06	2.04	2.01	1.93	1.88	1.84	1.79	1.74	1.70	1.63
	0.025	2.41	2.37	2.34	2.31	2.20	2.12	2.07	2.01	1.94	1.88	1.80
	0.01	2.84	2.79	2.74	2.70	2.55	2.45	2.39	2.30	2.21	2.13	2.02
40	0.10	1.71	1.70	1.68	1.66	1.61	1.57	1.54	1.51	1.47	1.43	1.38
	0.05	2.00	1.97	1.95	1.92	1.84	1.78	1.74	1.69	1.64	1.59	1.52
	0.025	2.29	2.25	2.21	2.18	2.07	1.99	1.94	1.88	1.80	1.74	1.65
	0.01	2.66	2.61	2.56	2.52	2.37	2.27	2.20	2.11	2.02	1.94	1.82
60	0.10	1.66	1.64	1.62	1.60	1.54	1.50	1.48	1.44	1.40	1.36	1.30
	0.05	1.92	1.89	1.86	1.84	1.75	1.69	1.65	1.59	1.53	1.48	1.40
	0.025	2.17	2.13	2.09	2.06	1.94	1.87	1.82	1.74	1.67	1.60	1.49
	0.01	2.50	2.44	2.39	2.35	2.20	2.10	2.03	1.94	1.84	1.75	1.62
100	0.10	1.61	1.59	1.57	1.56	1.49	1.45	1.42	1.38	1.34	1.29	1.22
	0.05	1.85	1.82	1.79	1.77	1.68	1.62	1.57	1.52	1.45	1.39	1.30
	0.025	2.08	2.04	2.00	1.97	1.85	1.77	1.71	1.64	1.56	1.48	1.36
	0.01	2.37	2.31	2.27	2.22	2.07	1.97	1.89	1.80	1.69	1.60	1.45
1000	0.10	1.55	1.53	1.51	1.49	1.43	1.38	1.35	1.30	1.25	1.20	1.08
	0.05	1.76	1.73	1.70	1.68	1.58	1.52	1.47	1.41	1.33	1.26	1.11
	0.025	1.96	1.92	1.88	1.85	1.72	1.64	1.58	1.50	1.41	1.32	1.13
	0.01	2.20	2.15	2.10	2.06	1.90	1.79	1.72	1.61	1.50	1.38	1.16