

Table 1: Upper critical points of t-distribution

The table gives values $t_n(\alpha)$ such that $P(T \geq t_n(\alpha)) = \alpha$, where T has t -distribution with n degrees of freedom.

DF	α				
	0.1	0.05	0.025	0.01	0.005
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
31	1.309	1.696	2.040	2.453	2.744
32	1.309	1.694	2.037	2.449	2.738
33	1.308	1.692	2.035	2.445	2.733
34	1.307	1.691	2.032	2.441	2.728
35	1.306	1.690	2.030	2.438	2.724
36	1.306	1.688	2.028	2.434	2.719
37	1.305	1.687	2.026	2.431	2.715
38	1.304	1.686	2.024	2.429	2.712
39	1.304	1.685	2.023	2.426	2.708
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
110	1.289	1.659	1.982	2.361	2.621
120	1.289	1.658	1.980	2.358	2.617
∞	1.282	1.645	1.960	2.326	2.576

Table 2: Upper and lower critical points of chi-squared distribution

The table gives values $\chi^2_\nu(\alpha)$ such that $P(X \geq \chi^2_\nu(\alpha)) = \alpha$, where X has chi-squared distribution with ν degrees of freedom.

DF	α			
	0.975	0.95	0.05	0.025
1	0.00	0.00	3.84	5.02
2	0.05	0.10	5.99	7.38
3	0.22	0.35	7.82	9.35
4	0.48	0.71	9.49	11.14
5	0.83	1.15	11.07	12.83
6	1.24	1.64	12.59	14.45
7	1.69	2.17	14.07	16.01
8	2.18	2.73	15.51	17.54
9	2.70	3.33	16.92	19.02
10	3.25	3.94	18.31	20.48
11	3.82	4.58	19.68	21.92
12	4.40	5.23	21.03	23.34
13	5.01	5.89	22.36	24.74
14	5.63	6.57	23.68	26.12
15	6.26	7.26	25.00	27.49
16	6.91	7.96	26.30	28.84
17	7.56	8.67	27.59	30.19
18	8.23	9.39	28.87	31.53
19	8.91	10.12	30.14	32.85
20	9.59	10.85	31.41	34.17
21	10.28	11.59	32.67	35.48
22	10.98	12.34	33.92	36.78
23	11.69	13.09	35.17	38.08
24	12.40	13.85	36.42	39.36
25	13.12	14.61	37.65	40.65
26	13.84	15.38	38.88	41.92
27	14.57	16.15	40.11	43.20
28	15.31	16.93	41.34	44.46
29	16.05	17.71	42.56	45.72
30	16.79	18.49	43.77	46.98

Table 3: F-distribution
Upper 0.05 critical points – Page 1

The following 2 tables give values $F_{\nu_1, \nu_2}(0.05)$ such that $P(X \geq F_{\nu_1, \nu_2}(0.05)) = 0.05$, where X is F-distributed with ν_1 (numerator) and ν_2 (denominator) degrees of freedom.

$F_{\nu_1, \nu_2}(0.05)$									
ν_2	ν_1								
	1	2	3	4	5	6	7	8	9
1	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96
∞	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88

Table 3: F-distribution
Upper 0.05 critical points – Page 2

$F_{\nu_1, \nu_2}(0.05)$									
ν_2	ν_1								
	10	15	20	25	30	40	60	120	∞
1	241.88	245.95	248.01	249.26	250.10	251.14	252.20	253.25	254.31
2	19.40	19.43	19.45	19.46	19.46	19.47	19.48	19.49	19.50
3	8.79	8.70	8.66	8.63	8.62	8.59	8.57	8.55	8.53
4	5.96	5.86	5.80	5.77	5.75	5.72	5.69	5.66	5.63
5	4.74	4.62	4.56	4.52	4.50	4.46	4.43	4.40	4.36
6	4.06	3.94	3.87	3.83	3.81	3.77	3.74	3.70	3.67
7	3.64	3.51	3.44	3.40	3.38	3.34	3.30	3.27	3.23
8	3.35	3.22	3.15	3.11	3.08	3.04	3.01	2.97	2.93
9	3.14	3.01	2.94	2.89	2.86	2.83	2.79	2.75	2.71
10	2.98	2.85	2.77	2.73	2.70	2.66	2.62	2.58	2.54
11	2.85	2.72	2.65	2.60	2.57	2.53	2.49	2.45	2.40
12	2.75	2.62	2.54	2.50	2.47	2.43	2.38	2.34	2.30
13	2.67	2.53	2.46	2.41	2.38	2.34	2.30	2.25	2.21
14	2.60	2.46	2.39	2.34	2.31	2.27	2.22	2.18	2.13
15	2.54	2.40	2.33	2.28	2.25	2.20	2.16	2.11	2.07
16	2.49	2.35	2.28	2.23	2.19	2.15	2.11	2.06	2.01
17	2.45	2.31	2.23	2.18	2.15	2.10	2.06	2.01	1.96
18	2.41	2.27	2.19	2.14	2.11	2.06	2.02	1.97	1.92
19	2.38	2.23	2.16	2.11	2.07	2.03	1.98	1.93	1.88
20	2.35	2.20	2.12	2.07	2.04	1.99	1.95	1.90	1.84
21	2.32	2.18	2.10	2.05	2.01	1.96	1.92	1.87	1.81
22	2.30	2.15	2.07	2.02	1.98	1.94	1.89	1.84	1.78
23	2.27	2.13	2.05	2.00	1.96	1.91	1.86	1.81	1.76
24	2.25	2.11	2.03	1.97	1.94	1.89	1.84	1.79	1.73
25	2.24	2.09	2.01	1.96	1.92	1.87	1.82	1.77	1.71
26	2.22	2.07	1.99	1.94	1.90	1.85	1.80	1.75	1.69
27	2.20	2.06	1.97	1.92	1.88	1.84	1.79	1.73	1.67
28	2.19	2.04	1.96	1.91	1.87	1.82	1.77	1.71	1.65
29	2.18	2.03	1.94	1.89	1.85	1.81	1.75	1.70	1.64
30	2.16	2.01	1.93	1.88	1.84	1.79	1.74	1.68	1.62
40	2.08	1.92	1.84	1.78	1.74	1.69	1.64	1.58	1.51
60	1.99	1.84	1.75	1.69	1.65	1.59	1.53	1.47	1.39
120	1.91	1.75	1.66	1.60	1.55	1.50	1.43	1.35	1.25
∞	1.83	1.67	1.57	1.51	1.46	1.39	1.32	1.22	1.00

Table 4: F-distribution**Upper 0.025 critical points – Page 1**

The following 2 tables give values $F_{\nu_1, \nu_2}(0.025)$ such that $P(X \geq F_{\nu_1, \nu_2}(0.025)) = 0.025$, where X is F-distributed with ν_1 (numerator) and ν_2 (denominator) degrees of freedom.

$F_{\nu_1, \nu_2}(0.025)$									
ν_2	ν_1								
	1	2	3	4	5	6	7	8	9
1	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28
2	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39
3	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47
4	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90
5	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68
6	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52
7	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82
8	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36
9	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03
10	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78
11	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59
12	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44
13	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31
14	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21
15	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12
16	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05
17	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98
18	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93
19	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88
20	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84
21	5.83	4.42	3.82	3.48	3.25	3.09	2.97	2.87	2.80
22	5.79	4.38	3.78	3.44	3.22	3.05	2.93	2.84	2.76
23	5.75	4.35	3.75	3.41	3.18	3.02	2.90	2.81	2.73
24	5.72	4.32	3.72	3.38	3.15	2.99	2.87	2.78	2.70
25	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68
26	5.66	4.27	3.67	3.33	3.10	2.94	2.82	2.73	2.65
27	5.63	4.24	3.65	3.31	3.08	2.92	2.80	2.71	2.63
28	5.61	4.22	3.63	3.29	3.06	2.90	2.78	2.69	2.61
29	5.59	4.20	3.61	3.27	3.04	2.88	2.76	2.67	2.59
30	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57
40	5.42	4.05	3.46	3.13	2.90	2.74	2.62	2.53	2.45
60	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33
120	5.15	3.80	3.23	2.89	2.67	2.52	2.39	2.30	2.22
∞	5.02	3.69	3.12	2.79	2.57	2.41	2.29	2.19	2.11

Table 4: F-distribution
Upper 0.025 critical points – Page 2

$F_{\nu_1, \nu_2}(0.025)$									
ν_2	ν_1								
	10	15	20	25	30	40	60	120	∞
1	968.63	984.87	993.10	998.08	1001.41	1005.60	1009.80	1014.02	1018.26
2	39.40	39.43	39.45	39.46	39.46	39.47	39.48	39.49	39.50
3	14.42	14.25	14.17	14.12	14.08	14.04	13.99	13.95	13.90
4	8.84	8.66	8.56	8.50	8.46	8.41	8.36	8.31	8.26
5	6.62	6.43	6.33	6.27	6.23	6.18	6.12	6.07	6.02
6	5.46	5.27	5.17	5.11	5.07	5.01	4.96	4.90	4.85
7	4.76	4.57	4.47	4.40	4.36	4.31	4.25	4.20	4.14
8	4.30	4.10	4.00	3.94	3.89	3.84	3.78	3.73	3.67
9	3.96	3.77	3.67	3.60	3.56	3.51	3.45	3.39	3.33
10	3.72	3.52	3.42	3.35	3.31	3.26	3.20	3.14	3.08
11	3.53	3.33	3.23	3.16	3.12	3.06	3.00	2.94	2.88
12	3.37	3.18	3.07	3.01	2.96	2.91	2.85	2.79	2.72
13	3.25	3.05	2.95	2.88	2.84	2.78	2.72	2.66	2.60
14	3.15	2.95	2.84	2.78	2.73	2.67	2.61	2.55	2.49
15	3.06	2.86	2.76	2.69	2.64	2.59	2.52	2.46	2.40
16	2.99	2.79	2.68	2.61	2.57	2.51	2.45	2.38	2.32
17	2.92	2.72	2.62	2.55	2.50	2.44	2.38	2.32	2.25
18	2.87	2.67	2.56	2.49	2.44	2.38	2.32	2.26	2.19
19	2.82	2.62	2.51	2.44	2.39	2.33	2.27	2.20	2.13
20	2.77	2.57	2.46	2.40	2.35	2.29	2.22	2.16	2.09
21	2.73	2.53	2.42	2.36	2.31	2.25	2.18	2.11	2.04
22	2.70	2.50	2.39	2.32	2.27	2.21	2.14	2.08	2.00
23	2.67	2.47	2.36	2.29	2.24	2.18	2.11	2.04	1.97
24	2.64	2.44	2.33	2.26	2.21	2.15	2.08	2.01	1.94
25	2.61	2.41	2.30	2.23	2.18	2.12	2.05	1.98	1.91
26	2.59	2.39	2.28	2.21	2.16	2.09	2.03	1.95	1.88
27	2.57	2.36	2.25	2.18	2.13	2.07	2.00	1.93	1.85
28	2.55	2.34	2.23	2.16	2.11	2.05	1.98	1.91	1.83
29	2.53	2.32	2.21	2.14	2.09	2.03	1.96	1.89	1.81
30	2.51	2.31	2.20	2.12	2.07	2.01	1.94	1.87	1.79
40	2.39	2.18	2.07	1.99	1.94	1.88	1.80	1.72	1.64
60	2.27	2.06	1.94	1.87	1.82	1.74	1.67	1.58	1.48
120	2.16	1.94	1.82	1.75	1.69	1.61	1.53	1.43	1.31
∞	2.05	1.83	1.71	1.63	1.57	1.48	1.39	1.27	1.00