



t Distribution: Critical t Values

Degrees of Freedom	Area in One Tail					Degrees of Freedom
	0.005	0.01	0.025	0.05	0.10	
Degrees of Freedom	Area in Two Tails		0.05	0.10	0.20	Degrees of Freedom
	0.01	0.02				
1	63.657	31.821	12.706	6.314	3.078	1
2	9.925	6.965	4.303	2.920	1.886	2
3	5.841	4.541	3.182	2.353	1.638	3
4	4.604	3.747	2.776	2.132	1.533	4
5	4.032	3.365	2.571	2.015	1.476	5
6	3.707	3.143	2.447	1.943	1.440	6
7	3.499	2.998	2.365	1.895	1.415	7
8	3.355	2.896	2.306	1.860	1.397	8
9	3.250	2.821	2.262	1.833	1.383	9
10	3.169	2.764	2.228	1.812	1.372	10
11	3.106	2.718	2.201	1.796	1.363	11
12	3.055	2.681	2.179	1.782	1.356	12
13	3.012	2.650	2.160	1.771	1.350	13
14	2.977	2.624	2.145	1.761	1.345	14
15	2.947	2.602	2.131	1.753	1.341	15
16	2.921	2.583	2.120	1.746	1.337	16
17	2.898	2.567	2.110	1.740	1.333	17
18	2.878	2.552	2.101	1.734	1.330	18
19	2.861	2.539	2.093	1.729	1.328	19
20	2.845	2.528	2.086	1.725	1.325	20
21	2.831	2.518	2.080	1.721	1.323	21
22	2.819	2.508	2.074	1.717	1.321	22
23	2.807	2.500	2.069	1.714	1.319	23
24	2.797	2.492	2.064	1.711	1.318	24
25	2.787	2.485	2.060	1.708	1.316	25
26	2.779	2.479	2.056	1.706	1.315	26
27	2.771	2.473	2.052	1.703	1.314	27
28	2.763	2.467	2.048	1.701	1.313	28
29	2.756	2.462	2.045	1.699	1.311	29
30	2.750	2.457	2.042	1.697	1.310	30
31	2.744	2.453	2.040	1.696	1.309	31
32	2.738	2.449	2.037	1.694	1.309	32
33	2.733	2.445	2.035	1.692	1.308	33
34	2.728	2.441	2.032	1.691	1.307	34
35	2.724	2.438	2.030	1.690	1.306	35
36	2.719	2.434	2.028	1.688	1.306	36
37	2.715	2.431	2.026	1.687	1.305	37
38	2.712	2.429	2.024	1.686	1.304	38
39	2.708	2.426	2.023	1.685	1.304	39
40	2.704	2.423	2.021	1.684	1.303	40
45	2.690	2.412	2.014	1.679	1.301	45
50	2.678	2.403	2.009	1.676	1.299	50
60	2.660	2.390	2.000	1.671	1.296	60
70	2.648	2.381	1.994	1.667	1.294	70
80	2.639	2.374	1.990	1.664	1.292	80
90	2.632	2.368	1.987	1.662	1.291	90
100	2.626	2.364	1.984	1.660	1.290	100
200	2.601	2.345	1.972	1.653	1.286	200
300	2.592	2.339	1.968	1.650	1.284	300
400	2.588	2.336	1.966	1.649	1.284	400
500	2.586	2.334	1.965	1.648	1.283	500
1000	2.581	2.330	1.962	1.646	1.282	1000
2000	2.578	2.328	1.961	1.646	1.282	2000
Large	2.575	2.326	1.960	1.645	1.282	Large