

Student's t critical value table

Find degrees of freedom (df) in the first column, then choose the header for your test.
Entries are positive critical magnitudes, rounded to three decimals. Use a negative cutoff for a left-tailed test.

Example: df = 19, two-tail alpha = 0.05 (0.025 in each tail) gives +/-2.093.
The same column gives the multiplier for a 95% confidence interval.
For a right-tailed test with df = 19 and alpha = 0.05, use 1.729.

One-tail alpha	0.25	0.1	0.05	0.025	0.02	0.01	0.005	0.002	0.001
Two-tail alpha	0.5	0.2	0.1	0.05	0.04	0.02	0.01	0.004	0.002
Confidence	50%	80%	90%	95%	96%	98%	99%	99.6%	99.8%
1	1.000	3.078	6.314	12.706	15.895	31.821	63.657	159.153	318.309
2	0.816	1.886	2.920	4.303	4.849	6.965	9.925	15.764	22.327
3	0.765	1.638	2.353	3.182	3.482	4.541	5.841	8.053	10.215
4	0.741	1.533	2.132	2.776	2.999	3.747	4.604	5.951	7.173
5	0.727	1.476	2.015	2.571	2.757	3.365	4.032	5.030	5.893
6	0.718	1.440	1.943	2.447	2.612	3.143	3.707	4.524	5.208
7	0.711	1.415	1.895	2.365	2.517	2.998	3.499	4.207	4.785
8	0.706	1.397	1.860	2.306	2.449	2.896	3.355	3.991	4.501
9	0.703	1.383	1.833	2.262	2.398	2.821	3.250	3.835	4.297
10	0.700	1.372	1.812	2.228	2.359	2.764	3.169	3.716	4.144
11	0.697	1.363	1.796	2.201	2.328	2.718	3.106	3.624	4.025
12	0.695	1.356	1.782	2.179	2.303	2.681	3.055	3.550	3.930
13	0.694	1.350	1.771	2.160	2.282	2.650	3.012	3.489	3.852
14	0.692	1.345	1.761	2.145	2.264	2.624	2.977	3.438	3.787
15	0.691	1.341	1.753	2.131	2.249	2.602	2.947	3.395	3.733
16	0.690	1.337	1.746	2.120	2.235	2.583	2.921	3.358	3.686
17	0.689	1.333	1.740	2.110	2.224	2.567	2.898	3.326	3.646
18	0.688	1.330	1.734	2.101	2.214	2.552	2.878	3.298	3.610
19	0.688	1.328	1.729	2.093	2.205	2.539	2.861	3.273	3.579
20	0.687	1.325	1.725	2.086	2.197	2.528	2.845	3.251	3.552
21	0.686	1.323	1.721	2.080	2.189	2.518	2.831	3.231	3.527
22	0.686	1.321	1.717	2.074	2.183	2.508	2.819	3.214	3.505
23	0.685	1.319	1.714	2.069	2.177	2.500	2.807	3.198	3.485
24	0.685	1.318	1.711	2.064	2.172	2.492	2.797	3.183	3.467
25	0.684	1.316	1.708	2.060	2.167	2.485	2.787	3.170	3.450
26	0.684	1.315	1.706	2.056	2.162	2.479	2.779	3.158	3.435
27	0.684	1.314	1.703	2.052	2.158	2.473	2.771	3.147	3.421
28	0.683	1.313	1.701	2.048	2.154	2.467	2.763	3.136	3.408
29	0.683	1.311	1.699	2.045	2.150	2.462	2.756	3.127	3.396
30	0.683	1.310	1.697	2.042	2.147	2.457	2.750	3.118	3.385
40	0.681	1.303	1.684	2.021	2.123	2.423	2.704	3.055	3.307
50	0.679	1.299	1.676	2.009	2.109	2.403	2.678	3.018	3.261
60	0.679	1.296	1.671	2.000	2.099	2.390	2.660	2.994	3.232
70	0.678	1.294	1.667	1.994	2.093	2.381	2.648	2.977	3.211
80	0.678	1.292	1.664	1.990	2.088	2.374	2.639	2.964	3.195
90	0.677	1.291	1.662	1.987	2.084	2.368	2.632	2.954	3.183
100	0.677	1.290	1.660	1.984	2.081	2.364	2.626	2.946	3.174
200	0.676	1.286	1.653	1.972	2.067	2.345	2.601	2.912	3.131
500	0.675	1.283	1.648	1.965	2.059	2.334	2.586	2.892	3.107
1000	0.675	1.282	1.646	1.962	2.056	2.330	2.581	2.885	3.098
Normal limit	0.674	1.282	1.645	1.960	2.054	2.326	2.576	2.878	3.090

One-sample or paired t-test: df = n - 1 (n is the number of pairs for paired data).
Welch df can be fractional. Use the online lookup for df or levels not printed here.
The normal-limit row is not an exact replacement for finite degrees of freedom.