

## A.4: Table of critical values of Student's t-distribution

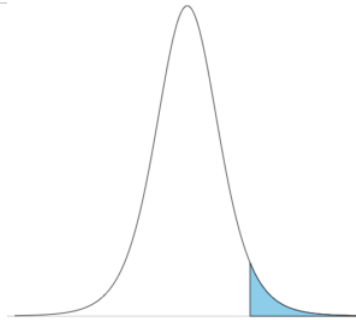


Figure A.4. 1.

$\alpha$ (1)	0.25	0.1	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
$\alpha$ (2)	0.50	0.2	0.10	0.05	0.02	0.01	0.005	0.001	0.0005
D F/ 1	1.000	3.078	6.314	12.706	31.821	63.657	127.321	318.309	636.619
2	0.816	1.886	2.920	4.303	6.965	9.925	14.089	21.009	31.599
3	0.765	1.638	2.353	3.182	4.541	5.841	7.453	10.135	12.924
4	0.741	1.533	2.132	2.776	3.747	4.604	5.598	7.707	9.600
5	0.727	1.476	2.015	2.571	3.365	4.032	4.773	6.608	8.599
6	0.718	1.440	1.943	2.447	3.143	3.707	4.317	5.958	7.879

$\alpha$ (1 )	0.25	0.1	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
$\alpha$ (2 )	0.50	0.2	0.10	0.05	0.02	0.01	0.005	0.0025	0.001
7	0.711	1.415	1.895	2.365	2.998	3.499	4.029	4.755	5.408
8	0.706	1.397	1.860	2.306	2.896	3.355	3.833	4.501	5.041
9	0.703	1.383	1.833	2.262	2.821	3.250	3.690	4.297	4.781
10	0.700	1.372	1.812	2.228	2.764	3.169	3.581	4.144	4.587
11	0.697	1.363	1.796	2.201	2.718	3.106	3.497	4.025	4.437
12	0.695	1.356	1.782	2.179	2.681	3.055	3.428	3.930	4.318
13	0.694	1.350	1.771	2.160	2.650	3.012	3.372	3.852	4.221
14	0.692	1.345	1.761	2.145	2.624	2.977	3.326	3.787	4.140
15	0.691	1.341	1.753	2.131	2.602	2.947	3.286	3.733	4.073
16	0.690	1.337	1.746	2.120	2.583	2.921	3.252	3.686	4.015

$\alpha$ (1)	0.25	0.1	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
$\alpha$ (2)	0.50	0.2	0.10	0.05	0.02	0.01	0.005	0.002	0.001
17	0.689	1.333	1.740	2.110	2.567	2.898	3.222	3.646	3.965
18	0.688	1.330	1.734	2.101	2.552	2.878	3.197	3.610	3.922
19	0.688	1.328	1.729	2.093	2.539	2.861	3.174	3.579	3.883
20	0.687	1.325	1.725	2.086	2.528	2.845	3.153	3.552	3.850
21	0.686	1.323	1.721	2.080	2.518	2.831	3.135	3.527	3.819
22	0.686	1.321	1.717	2.074	2.508	2.819	3.119	3.505	3.792
23	0.685	1.319	1.714	2.069	2.500	2.807	3.104	3.485	3.768
24	0.685	1.318	1.711	2.064	2.492	2.797	3.091	3.467	3.745
25	0.684	1.316	1.708	2.060	2.485	2.787	3.078	3.450	3.725
26	0.684	1.315	1.706	2.056	2.479	2.779	3.067	3.435	3.707

$\alpha$ (1 )	0.25	0.1	0.05	0.025	0.01	0.005	0.0025	0.001	0.0005
$\alpha$ (2 )	0.50	0.2	0.10	0.05	0.02	0.01	0.005	0.001	0.0005
2 7	0.684	1.314	1.703	2.052	2.473	2.771	3.057	3.421	3.690
2 8	0.683	1.313	1.701	2.048	2.467	2.763	3.047	3.408	3.674
2 9	0.683	1.311	1.699	2.045	2.462	2.756	3.038	3.396	3.659
3 0	0.683	1.310	1.697	2.042	2.457	2.750	3.030	3.385	3.646
3 5	0.682	1.306	1.690	2.030	2.438	2.724	2.996	3.340	3.591
4 0	0.681	1.303	1.684	2.021	2.423	2.704	2.971	3.307	3.551
5 0	0.679	1.299	1.676	2.009	2.403	2.678	2.937	3.261	3.496

Note: Here's the table at [Wikipedia \(Links to an external site.\)](#).

R command used to generate this table:

```
qt(c(alpha), df=df, lower.tail=FALSE)
```

where `alpha` is one-tailed probability, `df` is number of degrees of freedom, and `lower.tail=FALSE` means each cell is to be read as equal to or greater than the critical value.

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