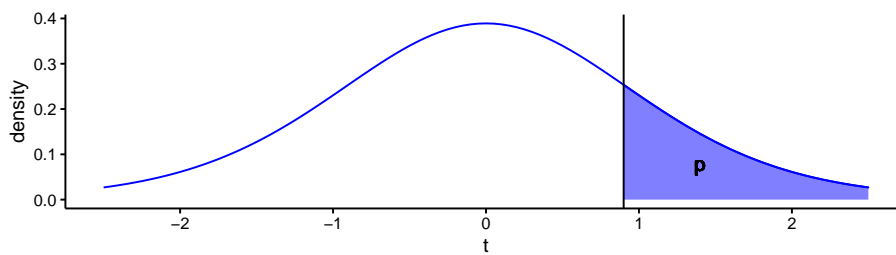# Appendix B

Critical values for the t-distribution

Table B.1: Values of the t-distribution, given the degrees of freedom (rows) and tail probability p (columns). These can be used for critical values for a given confidence level.

df	0.15	0.10	0.05	0.025	0.02	0.01	0.005	0.0025	0.001	0.0005
1	1.963	3.078	6.314	12.71	15.90	31.82	63.66	127.3	318.3	636.6
2	1.386	1.886	2.920	4.303	4.849	6.965	9.925	14.09	22.33	31.60
3	1.250	1.638	2.353	3.182	3.482	4.541	5.841	7.453	10.22	12.92
4	1.190	1.533	2.132	2.776	2.999	3.747	4.604	5.598	7.173	8.610
5	1.156	1.476	2.015	2.571	2.757	3.365	4.032	4.773	5.893	6.869
6	1.134	1.440	1.943	2.447	2.612	3.143	3.707	4.317	5.208	5.959
7	1.119	1.415	1.895	2.365	2.517	2.998	3.499	4.029	4.785	5.408
8	1.108	1.397	1.860	2.306	2.449	2.896	3.355	3.833	4.501	5.041
9	1.100	1.383	1.833	2.262	2.398	2.821	3.250	3.690	4.297	4.781
10	1.093	1.372	1.812	2.228	2.359	2.764	3.169	3.581	4.144	4.587
11	1.088	1.363	1.796	2.201	2.328	2.718	3.106	3.497	4.025	4.437
12	1.083	1.356	1.782	2.179	2.303	2.681	3.055	3.428	3.930	4.318
13	1.079	1.350	1.771	2.160	2.282	2.650	3.012	3.372	3.852	4.221
14	1.076	1.345	1.761	2.145	2.264	2.624	2.977	3.326	3.787	4.140
15	1.074	1.341	1.753	2.131	2.249	2.602	2.947	3.286	3.733	4.073
16	1.071	1.337	1.746	2.120	2.235	2.583	2.921	3.252	3.686	4.015
17	1.069	1.333	1.740	2.110	2.224	2.567	2.898	3.222	3.646	3.965
18	1.067	1.330	1.734	2.101	2.214	2.552	2.878	3.197	3.610	3.922
19	1.066	1.328	1.729	2.093	2.205	2.539	2.861	3.174	3.579	3.883
20	1.064	1.325	1.725	2.086	2.197	2.528	2.845	3.153	3.552	3.850
21	1.063	1.323	1.721	2.080	2.189	2.518	2.831	3.135	3.527	3.819
22	1.061	1.321	1.717	2.074	2.183	2.508	2.819	3.119	3.505	3.792
23	1.060	1.319	1.714	2.069	2.177	2.500	2.807	3.104	3.485	3.768
24	1.059	1.318	1.711	2.064	2.172	2.492	2.797	3.091	3.467	3.745
25	1.058	1.316	1.708	2.060	2.167	2.485	2.787	3.078	3.450	3.725
26	1.058	1.315	1.706	2.056	2.162	2.479	2.779	3.067	3.435	3.707
27	1.057	1.314	1.703	2.052	2.158	2.473	2.771	3.057	3.421	3.690
28	1.056	1.313	1.701	2.048	2.154	2.467	2.763	3.047	3.408	3.674
29	1.055	1.311	1.699	2.045	2.150	2.462	2.756	3.038	3.396	3.659
30	1.055	1.310	1.697	2.042	2.147	2.457	2.750	3.030	3.385	3.646
40	1.050	1.303	1.684	2.021	2.123	2.423	2.704	2.971	3.307	3.551
50	1.047	1.299	1.676	2.009	2.109	2.403	2.678	2.937	3.261	3.496
60	1.045	1.296	1.671	2.000	2.099	2.390	2.660	2.915	3.232	3.460
120	1.041	1.289	1.658	1.980	2.076	2.358	2.617	2.860	3.160	3.373
10000	1.036	1.282	1.645	1.960	2.054	2.327	2.576	2.808	3.091	3.291
	70%	80%	90%	95%	96%	98%	99%	99.5%	99.8%	99.9%

Confidence level