



**Table A.4** Critical Values of the *t*-Distribution

<i>v</i>	$\alpha$						
	<b>0.40</b>	<b>0.30</b>	<b>0.20</b>	<b>0.15</b>	<b>0.10</b>	<b>0.05</b>	<b>0.025</b>
<b>1</b>	0.325	0.727	1.376	1.963	3.078	6.314	12.706
<b>2</b>	0.289	0.617	1.061	1.386	1.886	2.920	4.303
<b>3</b>	0.277	0.584	0.978	1.250	1.638	2.353	3.182
<b>4</b>	0.271	0.569	0.941	1.190	1.533	2.132	2.776
<b>5</b>	0.267	0.559	0.920	1.156	1.476	2.015	2.571
<b>6</b>	0.265	0.553	0.906	1.134	1.440	1.943	2.447
<b>7</b>	0.263	0.549	0.896	1.119	1.415	1.895	2.365
<b>8</b>	0.262	0.546	0.889	1.108	1.397	1.860	2.306
<b>9</b>	0.261	0.543	0.883	1.100	1.383	1.833	2.262
<b>10</b>	0.260	0.542	0.879	1.093	1.372	1.812	2.228
<b>11</b>	0.260	0.540	0.876	1.088	1.363	1.796	2.201
<b>12</b>	0.259	0.539	0.873	1.083	1.356	1.782	2.179
<b>13</b>	0.259	0.538	0.870	1.079	1.350	1.771	2.160
<b>14</b>	0.258	0.537	0.868	1.076	1.345	1.761	2.145
<b>15</b>	0.258	0.536	0.866	1.074	1.341	1.753	2.131
<b>16</b>	0.258	0.535	0.865	1.071	1.337	1.746	2.120
<b>17</b>	0.257	0.534	0.863	1.069	1.333	1.740	2.110
<b>18</b>	0.257	0.534	0.862	1.067	1.330	1.734	2.101
<b>19</b>	0.257	0.533	0.861	1.066	1.328	1.729	2.093
<b>20</b>	0.257	0.533	0.860	1.064	1.325	1.725	2.086
<b>21</b>	0.257	0.532	0.859	1.063	1.323	1.721	2.080
<b>22</b>	0.256	0.532	0.858	1.061	1.321	1.717	2.074
<b>23</b>	0.256	0.532	0.858	1.060	1.319	1.714	2.069
<b>24</b>	0.256	0.531	0.857	1.059	1.318	1.711	2.064
<b>25</b>	0.256	0.531	0.856	1.058	1.316	1.708	2.060
<b>26</b>	0.256	0.531	0.856	1.058	1.315	1.706	2.056
<b>27</b>	0.256	0.531	0.855	1.057	1.314	1.703	2.052
<b>28</b>	0.256	0.530	0.855	1.056	1.313	1.701	2.048
<b>29</b>	0.256	0.530	0.854	1.055	1.311	1.699	2.045
<b>30</b>	0.256	0.530	0.854	1.055	1.310	1.697	2.042
<b>40</b>	0.255	0.529	0.851	1.050	1.303	1.684	2.021
<b>60</b>	0.254	0.527	0.848	1.045	1.296	1.671	2.000
<b>120</b>	0.254	0.526	0.845	1.041	1.289	1.658	1.980
$\infty$	0.253	0.524	0.842	1.036	1.282	1.645	1.960

Table A.4 (continued) Critical Values of the  $t$ -Distribution

$v$	$\alpha$						
	0.02	0.015	0.01	0.0075	0.005	0.0025	0.0005
1	15.894	21.205	31.821	42.433	63.656	127.321	636.578
2	4.849	5.643	6.965	8.073	9.925	14.089	31.600
3	3.482	3.896	4.541	5.047	5.841	7.453	12.924
4	2.999	3.298	3.747	4.088	4.604	5.598	8.610
5	2.757	3.003	3.365	3.634	4.032	4.773	6.869
6	2.612	2.829	3.143	3.372	3.707	4.317	5.959
7	2.517	2.715	2.998	3.203	3.499	4.029	5.408
8	2.449	2.634	2.896	3.085	3.355	3.833	5.041
9	2.398	2.574	2.821	2.998	3.250	3.690	4.781
10	2.359	2.527	2.764	2.932	3.169	3.581	4.587
11	2.328	2.491	2.718	2.879	3.106	3.497	4.437
12	2.303	2.461	2.681	2.836	3.055	3.428	4.318
13	2.282	2.436	2.650	2.801	3.012	3.372	4.221
14	2.264	2.415	2.624	2.771	2.977	3.326	4.140
15	2.249	2.397	2.602	2.746	2.947	3.286	4.073
16	2.235	2.382	2.583	2.724	2.921	3.252	4.015
17	2.224	2.368	2.567	2.706	2.898	3.222	3.965
18	2.214	2.356	2.552	2.689	2.878	3.197	3.922
19	2.205	2.346	2.539	2.674	2.861	3.174	3.883
20	2.197	2.336	2.528	2.661	2.845	3.153	3.850
21	2.189	2.328	2.518	2.649	2.831	3.135	3.819
22	2.183	2.320	2.508	2.639	2.819	3.119	3.792
23	2.177	2.313	2.500	2.629	2.807	3.104	3.768
24	2.172	2.307	2.492	2.620	2.797	3.091	3.745
25	2.167	2.301	2.485	2.612	2.787	3.078	3.725
26	2.162	2.296	2.479	2.605	2.779	3.067	3.707
27	2.158	2.291	2.473	2.598	2.771	3.057	3.689
28	2.154	2.286	2.467	2.592	2.763	3.047	3.674
29	2.150	2.282	2.462	2.586	2.756	3.038	3.660
30	2.147	2.278	2.457	2.581	2.750	3.030	3.646
40	2.123	2.250	2.423	2.542	2.704	2.971	3.551
60	2.099	2.223	2.390	2.504	2.660	2.915	3.460
120	2.076	2.196	2.358	2.468	2.617	2.860	3.373
$\infty$	2.054	2.170	2.326	2.432	2.576	2.807	3.290