68 ______ Tafeln

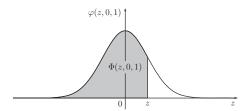


Tabelle T.1: Verteilung $\Phi(z,0,1)$ der standardisierten Normalverteilung $\mathcal{N}(0,1)$

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.5	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
3.6	0.9998	0.9998	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.7	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.8	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Tafeln ______ 69

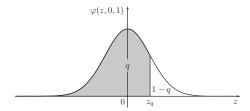


Tabelle T.2: Die q-Quantile z_q der standardisierten Normalverteilung $\mathcal{N}(0,1)$. Es gilt $z_{1-q}=-z_q$.

q	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.50	0.000	0.003	0.005	0.008	0.010	0.013	0.015	0.018	0.020	0.023
0.51	0.025	0.028	0.030	0.033	0.035	0.038	0.040	0.043	0.045	0.048
0.52	0.050	0.053	0.055	0.058	0.060	0.063	0.065	0.068	0.070	0.073
0.53	0.075	0.078	0.080	0.083	0.085	0.088	0.090	0.093	0.095	0.098
0.54	0.100	0.103	0.105	0.108	0.111	0.113	0.116	0.118	0.121	0.123
0.55	0.126	0.128	0.131	0.133	0.136	0.138	0.141	0.143	0.146	0.148
0.56	0.151	0.154	0.156	0.159	0.161	0.164	0.166	0.169	0.171	0.174
0.57	0.176	0.179	0.181	0.184	0.187	0.189	0.192	0.194	0.197	0.199
0.58	0.202	0.204	0.207	0.210	0.212	0.215	0.217	0.220	0.222	0.225
0.59	0.228	0.230	0.233	0.235	0.238	0.240	0.243	0.246	0.248	0.251
0.60	0.253	0.256	0.259	0.261	0.264	0.266	0.269	0.272	0.274	0.277
0.61	0.279	0.282	0.285	0.287	0.290	0.292	0.295	0.298	0.300	0.303
0.62	0.305	0.308	0.311	0.313	0.316	0.319	0.321	0.324	0.327	0.329
0.63	0.332	0.335	0.337	0.340	0.342	0.345	0.348	0.350	0.353	0.356
0.64	0.358	0.361	0.364	0.366	0.369	0.372	0.375	0.377	0.380	0.383
0.65	0.385	0.388	0.391	0.393	0.396	0.399	0.402	0.404	0.407	0.410
0.66	0.412	0.415	0.418	0.421	0.423	0.426	0.429	0.432	0.434	0.437
0.67	0.440	0.443	0.445	0.448	0.451	0.454	0.457	0.459	0.462	0.465
0.68	0.468	0.470	0.473	0.476	0.479	0.482	0.485	0.487	0.490	0.493
0.69	0.496	0.499	0.502	0.504	0.507	0.510	0.513	0.516	0.519	0.522
0.70	0.524	0.527	0.530	0.533	0.536	0.539	0.542	0.545	0.548	0.550
0.71	0.553	0.556	0.559	0.562	0.565	0.568	0.571	0.574	0.577	0.580
0.72	0.583	0.586	0.589	0.592	0.595	0.598	0.601	0.604	0.607	0.610
0.73	0.613	0.616	0.619	0.622	0.625	0.628	0.631	0.634	0.637	0.640
0.74	0.643	0.646	0.650	0.653	0.656	0.659	0.662	0.665	0.668	0.671
0.75	0.674	0.678	0.681	0.684	0.687	0.690	0.693	0.697	0.700	0.703
0.76	0.706	0.710	0.713	0.716	0.719	0.722	0.726	0.729	0.732	0.736
0.77	0.739	0.742	0.745	0.749	0.752	0.755	0.759	0.762	0.765	0.769
0.78	0.772	0.776	0.779	0.782	0.786	0.789	0.793	0.796	0.800	0.803
0.79	0.806	0.810	0.813	0.817	0.820	0.824	0.827	0.831	0.834	0.838
0.80	0.842	0.845	0.849	0.852	0.856	0.860	0.863	0.867	0.871	0.874
0.81	0.878	0.882	0.885	0.889	0.893	0.896	0.900	0.904	0.908	0.912
0.82	0.915	0.919	0.923	0.927	0.931	0.935	0.938	0.942	0.946	0.950
0.83	0.954	0.958	0.962	0.966	0.970	0.974	0.978	0.982	0.986	0.990
0.84	0.994	0.999	1.003	1.007	1.011	1.015	1.019	1.024	1.028	1.032
0.85	1.036	1.041	1.045	1.049	1.054	1.058	1.063	1.067	1.071	1.076
0.86	1.080	1.085	1.089	1.094	1.098	1.103	1.108	1.112	1.117	1.122
0.87	1.126	1.131	1.136	1.141	1.146	1.150	1.155	1.160	1.165	1.170
0.88	1.175	1.180	1.185	1.190	1.195	1.200	1.206	1.211	1.216	1.221
0.89	1.227	1.232	1.237	1.243	1.248	1.254	1.259	1.265	1.270	1.276
0.90	1.282	1.287	1.293	1.299	1.305	1.311	1.317	1.323	1.329	1.335
0.91	1.341	1.347	1.353	1.359	1.366	1.372	1.379	1.385	1.392	1.398
0.92	1.405	1.412	1.419	1.426	1.433	1.440	1.447	1.454	1.461	1.468
0.93	1.476	1.483	1.491	1.499	1.506	1.514	1.522	1.530	1.538	1.546
0.94	1.555	1.563	1.572	1.580	1.589	1.598	1.607	1.616	1.626	1.635
0.95	1.645	1.655	1.665	1.675	1.685	1.695	1.706	1.717	1.728	1.739
0.96	1.751	1.762	1.774	1.787	1.799	1.812	1.825	1.838	1.852	1.866
0.97	1.881	1.896	1.911	1.927	1.943	1.960	1.977	1.995	2.014	2.034
0.98	2.054	2.075	2.097	2.120	2.144	2.170	2.197	2.226	2.257	2.290
0.99	2.326	2.366	2.409	2.457	2.512	2.576	2.652	2.748	2.878	3.090

70 ______ Tafeln

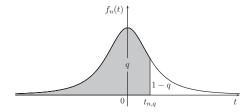


Tabelle T.3: q-Quantile $t_{n,q}$ der **Student**-t-**Verteilung** mit n Freiheitsgraden. Da die Dichte symmetrisch ist, gilt $t_{n,1-q}=-t_{n,q}$.

	q								
n	0.9000	0.9500	0.9750	0.9900	0.9950	0.9990	0.9995	n	
1	3.078	6.314	12.706	31.821	63.656	318.289	636.578	1	
2	1.886	2.920	4.303	6.965	9.925	22.328	31.600	2	
3	1.638	2.353	3.182	4.541	5.841	10.214	12.924	3	
4	1.533	2.132	2.776	3.747	4.604	7.173	8.610	4	
5	1.476	2.015	2.571	3.365	4.032	5.894	6.869	5	
6	1.440	1.943	2.447	3.143	3.707	5.208	5.959	6	
7	1.415	1.895	2.365	2.998	3.499	4.785	5.408	7	
8	1.397	1.860	2.306	2.896	3.355	4.501	5.041	8	
9	1.383	1.833	2.262	2.821	3.250	4.297	4.781	9	
10	1.372	1.812	2.228	2.764	3.169	4.144	4.587	10	
11	1.363	1.796	2.201	2.718	3.106	4.025	4.437	11	
12	1.356	1.782	2.179	2.681	3.055	3.930	4.318	12	
13	1.350	1.771	2.160	2.650	3.012	3.852	4.221	13	
14	1.345	1.761	2.145	2.624	2.977	3.787	4.140	14	
15	1.341	1.753	2.131	2.602	2.947	3.733	4.073	15	
16	1.337	1.746	2.120	2.583	2.921	3.686	4.015	16	
17	1.333	1.740	2.110	2.567	2.898	3.646	3.965	17	
18	1.330	1.734	2.101	2.552	2.878	3.610	3.922	18	
19	1.328	1.729	2.093	2.539	2.861	3.579	3.883	19	
20	4 005	4 = 0 =	2 000	0 = 00	0.045		0.050		
20	1.325	1.725	2.086	2.528	2.845	3.552	3.850	20	
21	1.323	1.721	2.080	2.518	2.831	3.527	3.819	21	
22	1.321	1.717	2.074	2.508	2.819	3.505	3.792	22	
23	1.319	1.714	2.069	2.500	2.807	3.485	3.768	23	
24	1.318	1.711	2.064	2.492	2.797	3.467	3.745	24	
25	1.316	1.708	2.060	2.485	2.787	3.450	3.725	25	
26 27	1.315 1.314	1.706 1.703	2.056 2.052	2.479 2.473	2.779 2.771	3.435 3.421	3.707 3.689	26 27	
28	1.314	1.703	$\frac{2.032}{2.048}$	2.473	2.771	$\frac{3.421}{3.408}$	3.674	28	
28 29	1.313	1.699	2.048 2.045	2.467 2.462	2.756	3.396	3.660	29	
29	1.311	1.099	2.040	2.402	2.750	3.390	3.000	29	
30	1.310	1.697	2.042	2.457	2.750	3.385	3.646	30	
40	1.303	1.684	2.042	2.423	2.704	3.307	3.551	40	
50	1.299	1.676	2.009	2.423	2.678	3.261	3.496	50	
60	1.296	1.671	2.000	2.390	2.660	3.232	3.460	60	
70	1.294	1.667	1.994	2.381	2.648	3.211	3.435	70	
80	1.292	1.664	1.990	2.374	2.639	3.195	3.416	80	
90	1.291	1.662	1.987	2.368	2.632	3.183	3.402	90	
						0.200	0		
100	1.290	1.660	1.984	2.364	2.626	3.174	3.390	100	
150	1.287	1.655	1.976	2.351	2.609	3.145	3.357	150	
200	1.286	1.653	1.972	2.345	2.601	3.131	3.340	200	
300	1.284	1.650	1.968	2.339	2.592	3.118	3.323	300	
400	1.284	1.649	1.966	2.336	2.588	3.111	3.315	400	
500	1.283	1.648	1.965	2.334	2.586	3.107	3.310	500	
600	1.283	1.647	1.964	2.333	2.584	3.104	3.307	600	
800	1.283	1.647	1.963	2.331	2.582	3.100	3.303	800	
1000	1.282	1.646	1.962	2.330	2.581	3.098	3.300	1000	
∞	1.282	1.645	1.960	2.326	2.576	3.090	3.291	∞	

Tafeln ______ 71

Tabelle T.4: Faktoren zur Konstruktion von Kontrollkarten. Quellen: [7], p. 732. und [1], p. 580.

	\bar{x} -Karte			R-Karte						
\overline{n}	A_1	A_2	A_3	D_3	D_4	d_2	B_3	B_4	c_4	n
2	3.760	1.880	2.659	0.000	3.267	1.128	0.000	3.267	0.7979	2
3	2.394	1.023	1.954	0.000	2.575	1.693	0.000	2.568	0.8862	3
4	1.880	0.729	1.628	0.000	2.282	2.059	0.000	2.266	0.9213	4
5	1.596	0.577	1.427	0.000	2.115	2.326	0.000	2.089	0.9400	5
6	1.410	0.483	1.287	0.000	2.004	2.534	0.030	1.970	0.9515	6
7	1.277	0.419	1.182	0.076	1.924	2.704	0.118	1.882	0.9594	7
8	1.175	0.373	1.099	0.136	1.864	2.847	0.185	1.815	0.9650	8
9	1.094	0.337	1.032	0.184	1.816	2.970	0.239	1.761	0.9693	9
10	1.028	0.308	0.975	0.223	1.777	3.078	0.284	1.716	0.9727	10
11	0.973	0.285	0.927	0.256	1.744	3.173	0.321	1.679	0.9754	11
12	0.925	0.266	0.886	0.284	1.716	3.258	0.354	1.646	0.9776	12
13	0.884	0.249	0.850	0.308	1.692	3.336	0.382	1.618	0.9794	13
14	0.848	0.235	0.817	0.329	1.671	3.407	0.406	1.594	0.9810	14
15	0.816	0.223	0.789	0.348	1.652	3.472	0.428	1.572	0.9823	15
16	0.788	0.212	0.763	0.364	1.636	3.532	0.448	1.552	0.9835	16
17	0.762	0.203	0.739	0.379	1.621	3.588	0.466	1.534	0.9845	17
18	0.738	0.194	0.718	0.392	1.608	3.640	0.482	1.518	0.9854	18
19	0.717	0.187	0.698	0.404	1.596	3.689	0.497	1.503	0.9862	19
20	0.697	0.180	0.680	0.414	1.586	3.735	0.510	1.490	0.9869	20
21	0.679	0.173	0.663	0.425	1.575	3.778	0.523	1.477	0.9876	21
22	0.662	0.167	0.647	0.434	1.566	3.819	0.534	1.466	0.9882	22
23	0.647	0.162	0.633	0.443	1.557	3.858	0.545	1.455	0.9887	23
24	0.632	0.157	0.619	0.452	1.548	3.895	0.555	1.445	0.9892	24
25	0.619	0.153	0.606	0.459	1.541	3.931	0.565	1.435	0.9896	25