

UPPER TAIL PROBABILITIES $Q(z)$ OF THE
NORMAL DISTRIBUTION $N(0,1)$

z											SUBTRACT								
	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641	4	8	12	16	20	24	28	32	36
0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247	4	8	12	16	20	24	28	32	36
0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859	4	8	12	15	19	23	27	31	35
0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483	4	7	11	15	19	22	26	30	34
0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121	4	7	11	14	18	22	25	29	32
0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776	3	7	10	14	17	20	24	27	31
0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451	3	7	10	13	16	19	23	26	29
0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148	3	6	9	12	15	18	21	24	27
0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867	3	5	8	11	14	16	19	22	25
0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611	3	5	8	10	13	15	18	20	23
1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379	2	5	7	9	12	14	16	19	21
1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170	2	4	6	8	10	12	14	16	18
1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985	2	4	6	7	9	11	13	15	17
1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823	2	3	5	6	8	10	11	13	14
1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681	1	3	4	6	7	8	10	11	13
1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559	1	2	4	5	6	7	8	10	11
1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455	1	2	3	4	5	6	7	8	9
1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367	1	2	3	4	4	5	6	7	8
1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294	1	1	2	3	4	4	5	6	6
1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233	1	1	2	2	3	4	4	5	5
2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183	0	1	1	2	2	3	3	4	4
2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143	0	1	1	2	2	2	3	3	4
2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110	0	1	1	1	2	2	2	3	3
2.3	.0107	.0104	.0102		.02990	.02964	.02939	.02914			0	1	1	1	1	2	2	2	2
								.02889	.02866	.02842	3	5	8	10	13	15	18	20	23
2.4	.02820	.02798	.02776	.02755	.02734						2	5	7	9	12	14	16	18	21
					.02714	.02695		.02676	.02657	.02639	2	4	6	8	11	13	15	17	19
2.5	.02621	.02604	.02587	.02570	.02554	.02539	.02523	.02508	.02494	.02480	2	3	5	6	8	9	11	12	14
2.6	.02466	.02453	.02440	.02427	.02415	.02402	.02391	.02379	.02368	.02357	1	2	3	5	6	7	8	9	10
2.7	.02347	.02336	.02326	.02317	.02307	.02298	.02289	.02280	.02272	.02264	1	2	3	4	5	6	7	8	9
2.8	.02256	.02248	.02240	.02233	.02226	.02219	.02212	.02205	.02199	.02193	1	1	2	3	4	4	5	6	6
2.9	.02187	.02181	.02175	.02169	.02164	.02159	.02154	.02149	.02144	.02139	0	1	1	2	2	3	3	4	4
3.0	.02135	.02131	.02126	.02122	.02118	.02114	.02111	.02107	.02104	.02100	0	1	1	2	2	2	3	3	4
3.1	.020968	.020935	.020904		.020874	.020845	.020816	.020789			3	6	9	13	16	19	22	25	28
											3	6	8	11	14	17	20	22	25
3.2	.020687	.020664	.020641	.020619	.020598			.020577	.020557		2	5	7	10	12	15	17	20	22
											2	4	7	9	11	13	15	18	20
3.3	.020483	.020466	.020450	.020434	.020419	.020399	.020380	.020362	.020349		2	4	6	8	9	11	13	15	17
						.0203404	.0203300	.0203176	.0203062	.0202949	2	3	5	6	8	10	11	13	14
3.4	.020337	.020325	.020313	.020302	.020291	.020280	.020270	.020260	.020251	.020242	1	3	4	5	7	8	9	10	12
											1	2	3	4	5	6	7	8	9
3.5	.020233	.020224	.020216	.020208	.020200	.020193	.020185	.020178	.020172	.020165	1	1	2	3	4	4	5	6	7
3.6	.020159	.020153	.020147	.020142	.020136	.020131	.020126	.020121	.020117	.020112	0	1	1	2	2	3	3	4	5
3.7	.020108	.020104	.020100	.020096	.020092	.020088	.020085	.020082	.020078	.020075									
3.8	.020072	.020069	.020067	.020064	.020062	.020059	.020057	.020054	.020052	.020050									
3.9	.020048	.020046	.020044	.020042	.020041	.020039	.020037	.020036	.020034	.020033									

For negative z use the relation:

$$Q(z) = 1 - Q(-z) = P(-z)$$

Example: if $u \sim N(0,1)$, find (a) Prob ($u > 2$), (b) Prob ($0 < u < 2$), (c) Prob ($|u| > 2$), (d) Prob ($|u| < 2$). The desired probabilities are (a) $Q(2) = .0228$, (b) $Q(0) - Q(2) = .5000 - .0228 = .4772$, (c) $2Q(2) = .0456$, (d) $1 - 2Q(2) = .9544$.

If $v \sim N(\mu, \sigma^2)$, Prob ($v > x$) is given by $Q(z)$ with $z = (x - \mu)/\sigma$.