

Präzisionsprobleme bei Gleitkomma-Arithmetik in Computern

N	2^N	WURZEL(2;2^N)	gerundet	(WURZEL(2;2^N))^2^N	nicht gerundet (echte interne Darstellung)	Korrekt wäre
0	1	2		2	2,000000000000000000000000000000E+00	2
1	2	1,414213562		2	2,000000000000000000000000000000E+00	2
2	4	1,189207115		2	2,000000000000000000000000000000E+00	2
3	8	1,090507733		2	2,000000000000000000000000000000E+00	2
4	16	1,044273782		2	2,000000000000000000000000000000E+00	2
5	32	1,021897149		2	2,000000000000000000000000000000E+00	2
6	64	1,010889286		2	2,000000000000000000000000000000E+00	2
7	128	1,005429901		2	1,999999999999700000000000000000E+00	2
8	256	1,002711275		2	2,000000000000020000000000000000E+00	2
9	512	1,00135472		2	2,000000000000020000000000000000E+00	2
10	1024	1,000677131		2	2,000000000000020000000000000000E+00	2
11	2048	1,000338508		2	2,000000000000020000000000000000E+00	2
12	4096	1,00016924		2	1,999999999991300000000000000000E+00	2
13	8192	1,000084616		2	2,000000000000930000000000000000E+00	2
14	16384	1,000042307		2	1,999999999997330000000000000000E+00	2
15	32768	1,000021153		2	1,999999999997330000000000000000E+00	2
16	65536	1,000010577		2	2,000000000011770000000000000000E+00	2
17	131072	1,000005288		2	2,000000000408600000000000000000E+00	2
18	262144	1,000002644		2	2,000000000408600000000000000000E+00	2
19	524288	1,000001322		2	2,000000001573600000000000000000E+00	2
20	1048576	1,000000661		2	2,000000001573600000000000000000E+00	2
21	2097152	1,000000331		2	2,000000001573600000000000000000E+00	2
22	4194304	1,000000165	1,999999999	2	1,999999999226200000000000000000E+00	2
23	8388608	1,000000083	1,999999999	2	1,999999999226200000000000000000E+00	2
24	16777216	1,000000041	1,999999999	2	1,999999999226200000000000000000E+00	2
25	33554432	1,000000021	2,000000007	2	2,000000006677170000000000000000E+00	2
26	67108864	1,00000001	1,999999992	2	1,999999991777550000000000000000E+00	2
27	134217728	1,000000005	1,999999992	2	1,999999991777550000000000000000E+00	2
28	268435456	1,000000003	1,999999992	2	1,999999991777550000000000000000E+00	2
29	536870912	1,000000001	1,999999992	2	1,999999991777550000000000000000E+00	2
30	1073741824	1,000000001	1,999999992	2	1,999999991777550000000000000000E+00	2
31	2147483648	1	1,999999992	2	1,999999991777550000000000000000E+00	2