

VI. Pierwiastki kwadratowe (\sqrt{x})

x	0	δ	1	δ	2	δ	3	δ	4	δ
1,0	1,00000	499	1,00499	496	1,00995	494	1,01489	491	1,01980	490
1,1	1,04881	476	1,05357	473	1,05830	471	1,06301	470	1,06771	467
1,2	1,09545	455	1,10000	454	1,10454	451	1,10905	450	1,11355	448
1,3	1,14018	437	1,14455	436	1,14891	435	1,15326	432	1,15758	432
1,4	1,18322	421	1,18743	421	1,19164	419	1,19583	417	1,20000	416
1,5	1,22474	408	1,22882	406	1,23288	405	1,23693	404	1,24097	402
1,6	1,26491	395	1,26886	393	1,27279	392	1,27671	391	1,28062	390
1,7	1,30384	383	1,30767	382	1,31149	380	1,31529	380	1,31909	379
1,8	1,34164	372	1,34536	371	1,34907	370	1,35277	370	1,35647	363
1,9	1,37840	363	1,38203	361	1,38564	360	1,38924	360	1,39284	358
2,0	1,41421	353	1,41774	353	1,42127	351	1,42478	351	1,42829	349
2,1	1,44914	344	1,45258	344	1,45602	343	1,45945	342	1,46287	342
2,2	1,48324	337	1,48661	336	1,48997	335	1,49332	334	1,49666	334
2,3	1,51658	329	1,51987	328	1,52315	328	1,52643	328	1,52971	326
2,4	1,54919	323	1,55242	321	1,55563	322	1,55885	320	1,56205	320
2,5	1,58114	316	1,58430	315	1,58745	315	1,59060	314	1,59374	313
2,6	1,61245	310	1,61555	309	1,61864	309	1,62173	308	1,62481	307
2,7	1,64317	304	1,64621	303	1,64924	303	1,65227	302	1,65529	302
2,8	1,67332	299	1,67631	298	1,67929	297	1,68226	297	1,68523	296
2,9	1,70294	293	1,70587	293	1,70880	292	1,71172	292	1,71464	292
3,0	1,73205	289	1,73494	287	1,73781	288	1,74069	287	1,74356	286
3,1	1,76068	284	1,76352	283	1,76635	283	1,76918	282	1,77200	282
3,2	1,78885	280	1,79165	279	1,79444	278	1,79722	278	1,80000	278
3,3	1,81659	275	1,81934	275	1,82209	274	1,82483	274	1,82757	273
3,4	1,84391	271	1,84662	270	1,84932	271	1,85203	269	1,85472	270
3,5	1,87083	267	1,87350	267	1,87617	266	1,87883	266	1,88149	265
3,6	1,89737	263	1,90000	263	1,90263	263	1,90526	262	1,90788	262
3,7	1,92354	260	1,92614	259	1,92873	259	1,93132	259	1,93391	258
3,8	1,94936	256	1,95192	256	1,95448	256	1,95704	255	1,95959	255
3,9	1,97484	253	1,97737	253	1,97990	252	1,98242	252	1,98494	252
4,0	2,00000	250	2,00250	249	2,00499	250	2,00749	249	2,00998	248
4,1	2,02485	246	2,02731	247	2,02978	246	2,03224	246	2,03470	245
4,2	2,04939	244	2,05183	243	2,05426	244	2,05670	243	2,05913	242
4,3	2,07364	241	2,07605	241	2,07846	241	2,08087	240	2,08327	240
4,4	2,09762	238	2,10000	238	2,10238	238	2,10476	237	2,10713	237
4,5	2,12132	236	2,12368	235	2,12603	235	2,12838	235	2,13073	234
4,6	2,14476	233	2,14709	233	2,14942	232	2,15174	233	2,15407	232
4,7	2,16795	230	2,17025	231	2,17256	230	2,17486	229	2,17715	230
4,8	2,19089	228	2,19317	228	2,19545	228	2,19773	227	2,20000	227
4,9	2,21359	226	2,21585	226	2,21811	225	2,22036	225	2,22261	225
5,0	2,23607	223	2,23830	224	2,24054	223	2,24277	222	2,24499	223
5,1	2,25832	221	2,26053	221	2,26274	221	2,26495	221	2,26716	220
5,2	2,28035	219	2,28254	219	2,28473	219	2,28692	218	2,28910	219
5,3	2,30217	217	2,30434	217	2,30651	217	2,30868	216	2,31084	217
5,4	2,32379	215	2,32594	215	2,32809	215	2,33024	214	2,33238	214
5,5	2,34521	213	2,34734	213	2,34947	213	2,35160	212	2,35372	212
5,6	2,36643	211	2,36854	211	2,37065	211	2,37276	211	2,37487	210
5,7	2,38747	209	2,38956	209	2,39165	209	2,39374	209	2,39583	209
5,8	2,40832	207	2,41039	208	2,41247	207	2,41454	207	2,41661	207
5,9	2,42899	206	2,43105	206	2,43311	205	2,43516	205	2,43721	205

Błąd przybliżeń podanych na str. 94 i 95 jest nie większy niż 0,000005, a błąd przybliżenia otrzymanego przez interpolację liniową jest mniejszy niż 0,00000785 + błąd zaokrąglenia wyniku.

Przykład interpolacji na str. 104.

VI. Square roots (\sqrt{x})

5	δ	6	δ	7	δ	8	δ	9	δ	x
1,02470	486	1,02956	485	1,03441	482	1,03923	480	1,04403	478	1,0
1,07238	465	1,07703	464	1,08167	461	1,08628	459	1,09087	458	1,1
1,11803	447	1,12250	444	1,12694	443	1,13137	441	1,13578	440	1,2
1,16190	429	1,16619	428	1,17047	426	1,17473	425	1,17898	424	1,3
1,20416	414	1,20830	414	1,21244	411	1,21655	411	1,22066	408	1,4
1,24499	401	1,24900	400	1,25300	398	1,25698	397	1,26095	396	1,5
1,28452	389	1,28841	387	1,29228	387	1,29615	385	1,30000	384	1,6
1,32288	377	1,32665	376	1,33041	376	1,33417	374	1,33791	373	1,7
1,36015	367	1,36382	366	1,36748	365	1,37113	364	1,37477	363	1,8
1,39642	358	1,40000	357	1,40357	355	1,40712	355	1,41067	354	1,9
1,43178	349	1,43527	348	1,43875	347	1,44222	346	1,44568	346	2,0
1,46629	340	1,46969	340	1,47309	339	1,47648	338	1,47986	338	2,1
1,50000	333	1,50333	332	1,50665	332	1,50997	330	1,51327	331	2,2
1,53297	326	1,53623	325	1,53948	324	1,54272	324	1,54596	323	2,3
1,56525	319	1,56844	318	1,57162	318	1,57480	317	1,57797	317	2,4
1,59687	313	1,60000	312	1,60312	312	1,60624	311	1,60935	310	2,5
1,62788	307	1,63095	306	1,63401	306	1,63707	305	1,64012	305	2,6
1,65831	301	1,66132	301	1,66433	300	1,66733	300	1,67033	299	2,7
1,68819	296	1,69115	296	1,69411	295	1,69706	294	1,70000	294	2,8
1,71756	291	1,72047	290	1,72337	290	1,72627	289	1,72916	289	2,9
1,74642	287	1,74929	285	1,75214	285	1,75499	285	1,75784	284	3,0
1,77482	282	1,77764	281	1,78045	281	1,78326	280	1,78606	279	3,1
1,80278	277	1,80555	276	1,80831	277	1,81108	276	1,81384	275	3,2
1,83030	273	1,83303	273	1,83576	272	1,83848	272	1,84120	271	3,3
1,85742	269	1,86011	268	1,86279	269	1,86548	267	1,86815	268	3,4
1,88414	266	1,88680	264	1,88944	265	1,89209	264	1,89473	264	3,5
1,91050	261	1,91311	261	1,91572	261	1,91833	261	1,92094	260	3,6
1,93649	258	1,93907	258	1,94165	257	1,94422	257	1,94679	257	3,7
1,96214	255	1,96469	254	1,96723	254	1,96977	254	1,97231	253	3,8
1,98746	251	1,98997	252	1,99249	250	1,99499	251	1,99750	250	3,9
2,01246	248	2,01494	248	2,01742	248	2,01990	247	2,02237	248	4,0
2,03715	246	2,03961	245	2,04206	244	2,04450	245	2,04695	244	4,1
2,06155	243	2,06398	242	2,06640	242	2,06882	241	2,07123	241	4,2
2,08567	239	2,08806	239	2,09045	239	2,09284	239	2,09523	239	4,3
2,10950	237	2,11187	237	2,11424	236	2,11660	236	2,11896	236	4,4
2,13307	235	2,13542	234	2,13776	233	2,14009	234	2,14243	233	4,5
2,15639	231	2,15870	232	2,16102	231	2,16333	231	2,16564	231	4,6
2,17945	229	2,18174	229	2,18403	229	2,18632	229	2,18861	228	4,7
2,20227	227	2,20454	227	2,20681	226	2,20907	226	2,21133	226	4,8
2,22486	225	2,22711	224	2,22935	224	2,23159	224	2,23383	224	4,9
2,24722	222	2,24944	223	2,25167	222	2,25389	221	2,25610	222	5,0
2,26936	220	2,27156	220	2,27376	220	2,27596	220	2,27816	219	5,1
2,29129	218	2,29347	218	2,29565	218	2,29783	217	2,30000	217	5,2
2,31301	216	2,31517	216	2,31733	215	2,31948	216	2,32164	215	5,3
2,33452	214	2,33666	214	2,33880	214	2,34094	213	2,34307	214	5,4
2,35584	213	2,35797	211	2,36008	212	2,36220	212	2,36432	211	5,5
2,37697	211	2,37908	210	2,38118	210	2,38328	209	2,38537	210	5,6
2,39792	208	2,40000	208	2,40208	208	2,40416	208	2,40624	208	5,7
2,41868	206	2,42074	207	2,42281	206	2,42487	206	2,42693	206	5,8
2,43926	205	2,44131	205	2,44336	204	2,44540	205	2,44745	204	5,9

\sqrt{x}

The error of the approximations given on pp. 94 and 95 is not greater than 0,000005 and the error of an approximation obtained by linear interpolation is less than 0,00000785 + the error of rounding off the result.

An example of interpolation is given on p. 105.

VI. Pierwiastki kwadratowe (\sqrt{x})

x	0	δ	1	δ	2	δ	3	δ	4	δ
6,0	2,44949	204	2,45153	204	2,45357	204	2,45561	203	2,45764	203
6,1	2,46982	202	2,47184	202	2,47386	202	2,47588	202	2,47790	202
6,2	2,48998	201	2,49199	200	2,49399	201	2,49600	200	2,49800	200
6,3	2,50998	199	2,51197	199	2,51396	199	2,51595	199	2,51794	198
6,4	2,52982	198	2,53180	197	2,53377	197	2,53574	198	2,53772	197
6,5	2,54951	196	2,55147	196	2,55343	196	2,55539	195	2,55734	196
6,6	2,56905	194	2,57099	195	2,57294	194	2,57488	194	2,57682	194
6,7	2,58844	193	2,59037	193	2,59230	192	2,59422	193	2,59615	193
6,8	2,60768	192	2,60960	191	2,61151	192	2,61343	191	2,61534	191
6,9	2,62679	190	2,62869	190	2,63059	190	2,63249	190	2,63439	190
7,0	2,64575	189	2,64764	189	2,64953	188	2,65141	189	2,65330	188
7,1	2,66458	188	2,66646	187	2,66833	188	2,67021	187	2,67208	187
7,2	2,68328	186	2,68514	187	2,68701	186	2,68887	185	2,69072	186
7,3	2,70185	185	2,70370	185	2,70555	185	2,70740	184	2,70924	185
7,4	2,72029	184	2,72213	184	2,72397	183	2,72580	184	2,72764	183
7,5	2,73861	183	2,74044	182	2,74226	182	2,74408	183	2,74591	182
7,6	2,75681	181	2,75862	181	2,76043	182	2,76225	180	2,76405	181
7,7	2,77489	180	2,77669	180	2,77849	180	2,78029	180	2,78209	179
7,8	2,79285	179	2,79464	179	2,79643	178	2,79821	179	2,80000	179
7,9	2,81069	178	2,81247	178	2,81425	178	2,81603	177	2,81780	177
8,0	2,82843	176	2,83019	177	2,83196	177	2,83373	176	2,83549	176
8,1	2,84605	176	2,84781	175	2,84956	176	2,85132	175	2,85307	175
8,2	2,86356	175	2,86531	174	2,86705	175	2,86880	174	2,87054	174
8,3	2,88097	174	2,88271	173	2,88444	173	2,88617	174	2,88791	173
8,4	2,89828	172	2,90000	172	2,90172	173	2,90345	172	2,90517	172
8,5	2,91548	171	2,91719	171	2,91890	172	2,92062	171	2,92233	171
8,6	2,93258	170	2,93428	170	2,93598	171	2,93769	170	2,93939	170
8,7	2,94958	169	2,95127	169	2,95296	170	2,95466	169	2,95635	169
8,8	2,96648	168	2,96816	169	2,96985	168	2,97153	168	2,97321	168
8,9	2,98329	167	2,98496	168	2,98664	167	2,98831	167	2,98998	168
9,0	3,00000	167	3,00167	166	3,00333	167	3,00500	166	3,00666	166
9,1	3,01662	166	3,01828	165	3,01993	166	3,02159	165	3,02324	166
9,2	3,03315	165	3,03480	165	3,03645	164	3,03809	165	3,03974	164
9,3	3,04959	164	3,05123	164	3,05287	163	3,05450	164	3,05614	164
9,4	3,06594	163	3,06757	163	3,06920	163	3,07083	163	3,07246	163
9,5	3,08221	162	3,08383	162	3,08545	162	3,08707	162	3,08869	162
9,6	3,09839	161	3,10000	161	3,10161	161	3,10322	161	3,10483	161
9,7	3,11448	161	3,11609	160	3,11769	160	3,11929	161	3,12090	160
9,8	3,13050	159	3,13209	160	3,13369	159	3,13528	160	3,13688	159
9,9	3,14643	159	3,14802	158	3,14960	159	3,15119	159	3,15278	158
10,0	3,16228	158	3,16386	158	3,16544	158	3,16702	158	3,16860	157
10,1	3,17805	157	3,17962	157	3,18119	158	3,18277	157	3,18434	157
10,2	3,19374	157	3,19531	156	3,19687	157	3,19844	156	3,20000	156
10,3	3,20936	156	3,21092	156	3,21248	155	3,21403	156	3,21559	155
10,4	3,22490	155	3,22645	155	3,22800	155	3,22955	155	3,23110	155
10,5	3,24037	154	3,24191	154	3,24345	155	3,24500	154	3,24654	154
10,6	3,25576	154	3,25730	153	3,25883	154	3,26037	153	3,26190	153
10,7	3,27109	152	3,27261	153	3,27414	153	3,27567	152	3,27719	153
10,8	3,28634	152	3,28786	152	3,28938	152	3,29090	152	3,29242	151
10,9	3,30151	152	3,30303	151	3,30454	152	3,30606	151	3,30757	151

Błąd przybliżeń podanych na str. 96 i 97 jest nie większy niż 0,000005, a błąd przybliżenia otrzymanego przez interpolację liniową jest mniejszy niż 0,00000522 + błąd zaokrąglenia wyniku.

Przykład interpolacji na str. 104.

VI. Square roots (\sqrt{x})

5	δ	6	δ	7	δ	8	δ	9	δ	x
2,45967	204	2,46171	203	2,46374	203	2,46577	202	2,46779	203	6,0
2,47992	201	2,48193	202	2,48395	201	2,48596	201	2,48797	201	6,1
2,50000	200	2,50200	200	2,50400	199	2,50599	200	2,50799	199	6,2
2,51992	198	2,52190	199	2,52389	198	2,52587	197	2,52784	198	6,3
2,53969	196	2,54165	197	2,54362	196	2,54558	197	2,54755	196	6,4
2,55930	195	2,56125	195	2,56320	195	2,56515	195	2,56710	195	6,5
2,57876	194	2,58070	193	2,58263	194	2,58457	193	2,58650	194	6,6
2,59808	192	2,60000	192	2,60192	192	2,60384	192	2,60576	192	6,7
2,61725	191	2,61916	191	2,62107	191	2,62298	190	2,62488	191	6,8
2,63629	189	2,63818	190	2,64008	189	2,64197	189	2,64386	189	6,9
2,65518	189	2,65707	188	2,65895	188	2,66083	188	2,66271	187	7,0
2,67395	187	2,67582	187	2,67769	186	2,67955	187	2,68142	186	7,1
2,69258	186	2,69444	185	2,69629	186	2,69815	185	2,70000	185	7,2
2,71109	184	2,71293	184	2,71477	185	2,71662	184	2,71846	183	7,3
2,72947	183	2,73130	183	2,73313	183	2,73496	183	2,73679	182	7,4
2,74773	182	2,74955	181	2,75136	182	2,75318	182	2,75500	181	7,5
2,76586	181	2,76767	181	2,76948	180	2,77128	180	2,77308	181	7,6
2,78388	180	2,78568	179	2,78747	180	2,78927	179	2,79106	179	7,7
2,80179	178	2,80357	178	2,80535	178	2,80713	178	2,80891	178	7,8
2,81957	178	2,82135	177	2,82312	177	2,82489	177	2,82666	177	7,9
2,83725	176	2,83901	176	2,84077	176	2,84253	176	2,84429	176	8,0
2,85482	175	2,85657	175	2,85832	175	2,86007	175	2,86182	174	8,1
2,87228	174	2,87402	174	2,87576	174	2,87750	174	2,87924	173	8,2
2,88964	173	2,89137	173	2,89310	172	2,89482	173	2,89655	173	8,3
2,90689	172	2,90861	172	2,91033	171	2,91204	172	2,91376	172	8,4
2,92404	171	2,92575	171	2,92746	170	2,92916	171	2,93087	171	8,5
2,94109	170	2,94279	170	2,94449	169	2,94618	170	2,94788	170	8,6
2,95804	169	2,95973	169	2,96142	169	2,96311	168	2,96479	169	8,7
2,97489	169	2,97658	167	2,97825	168	2,97993	168	2,98161	168	8,8
2,99166	167	2,99333	167	2,99500	166	2,99666	167	2,99833	167	8,9
3,00832	166	3,00998	166	3,01164	166	3,01330	166	3,01496	166	9,0
3,02490	165	3,02655	165	3,02820	165	3,02985	165	3,03150	165	9,1
3,04138	164	3,04302	165	3,04467	164	3,04631	164	3,04795	164	9,2
3,05778	163	3,05941	164	3,06105	163	3,06268	163	3,06431	163	9,3
3,07409	162	3,07571	163	3,07734	162	3,07896	162	3,08058	163	9,4
3,09031	161	3,09192	162	3,09354	162	3,09516	161	3,09677	162	9,5
3,10644	161	3,10805	161	3,10966	161	3,11127	161	3,11288	160	9,6
3,12250	160	3,12410	160	3,12570	160	3,12730	160	3,12890	160	9,7
3,13847	159	3,14006	160	3,14166	159	3,14325	159	3,14484	159	9,8
3,15436	159	3,15595	158	3,15753	158	3,15911	159	3,16070	158	9,9
3,17017	158	3,17175	158	3,17333	157	3,17490	158	3,17648	157	10,0
3,18591	157	3,18748	156	3,18904	157	3,19061	157	3,19218	156	10,1
3,20156	156	3,20312	156	3,20468	156	3,20624	156	3,20780	156	10,2
3,21714	156	3,21870	155	3,22025	155	3,22180	155	3,22335	155	10,3
3,23265	154	3,23419	155	3,23574	154	3,23728	155	3,23883	154	10,4
3,24808	154	3,24962	153	3,25115	154	3,25269	154	3,25423	153	10,5
3,26343	154	3,26497	153	3,26650	153	3,26803	153	3,26956	153	10,6
3,27872	152	3,28024	153	3,28177	152	3,28329	152	3,28481	153	10,7
3,29393	152	3,29545	152	3,29697	151	3,29848	152	3,30000	151	10,8
3,30908	151	3,31059	151	3,31210	151	3,31361	151	3,31512	150	10,9

\sqrt{x}

The error of the approximations given on pp. 96 and 97 is not greater than 0,000005 and the error of an approximation obtained by linear interpolation is less than 0,00000522 + the error of rounding off the result.

An example of interpolation is given on p. 105.

VI. Pierwiastki kwadratowe (\sqrt{x})

x	0	δ	1	δ	2	δ	3	δ	4	δ
11,0	3,31662	151	3,31813	151	3,31964	150	3,32114	151	3,32265	150
11,1	3,33167	150	3,33317	150	3,33467	150	3,33617	149	3,33766	150
11,2	3,34664	149	3,34813	150	3,34963	149	3,35112	149	3,35261	149
11,3	3,36155	148	3,36303	149	3,36452	149	3,36601	148	3,36749	149
11,4	3,37639	148	3,37787	148	3,37935	148	3,38083	148	3,38231	147
11,5	3,39116	148	3,39264	147	3,39411	148	3,39559	147	3,39706	147
11,6	3,40588	147	3,40735	146	3,40881	147	3,41028	146	3,41174	147
11,7	3,42053	146	3,42199	146	3,42345	146	3,42491	146	3,42637	146
11,8	3,43511	146	3,43657	145	3,43802	146	3,43948	145	3,44093	145
11,9	3,44964	145	3,45109	145	3,45254	144	3,45398	145	3,45543	145
12,0	3,46410	144	3,46554	145	3,46699	144	3,46843	144	3,46987	144
12,1	3,47851	143	3,47994	144	3,48138	143	3,48281	144	3,48425	144
12,2	3,49285	143	3,49428	143	3,49571	143	3,49714	143	3,49857	143
12,3	3,50714	142	3,50856	143	3,50999	142	3,51141	142	3,51283	143
12,4	3,52136	142	3,52278	142	3,52420	142	3,52562	142	3,52704	142
12,5	3,53553	142	3,53695	141	3,53836	141	3,53977	142	3,54119	141
12,6	3,54965	141	3,55106	140	3,55246	141	3,55387	141	3,55528	140
12,7	3,56371	140	3,56511	140	3,56651	140	3,56791	140	3,56931	140
12,8	3,57771	140	3,57911	139	3,58050	140	3,58190	139	3,58329	140
12,9	3,59166	139	3,59305	139	3,59444	139	3,59583	139	3,59722	139
13,0	3,60555	139	3,60694	138	3,60832	139	3,60971	138	3,61109	139
13,1	3,61939	138	3,62077	138	3,62215	138	3,62353	138	3,62491	138
13,2	3,63318	138	3,63456	137	3,63593	138	3,63731	137	3,63868	137
13,3	3,64692	137	3,64829	137	3,64966	137	3,65103	137	3,65240	137
13,4	3,66060	137	3,66197	136	3,66333	137	3,66470	136	3,66606	136
13,5	3,67423	137	3,67560	136	3,67696	135	3,67831	136	3,67967	136
13,6	3,68782	135	3,68917	136	3,69053	135	3,69188	136	3,69324	135
13,7	3,70135	135	3,70270	135	3,70405	135	3,70540	135	3,70675	135
13,8	3,71484	134	3,71618	135	3,71753	134	3,71887	135	3,72022	134
13,9	3,72827	134	3,72961	134	3,73095	134	3,73229	134	3,73363	134
14,0	3,74166	133	3,74299	134	3,74433	133	3,74566	134	3,74700	133
14,1	3,75500	133	3,75633	133	3,75766	133	3,75899	133	3,76032	133
14,2	3,76829	133	3,76962	132	3,77094	133	3,77227	132	3,77359	133
14,3	3,78153	133	3,78286	132	3,78418	132	3,78550	132	3,78682	132
14,4	3,79473	132	3,79605	132	3,79737	131	3,79868	132	3,80000	132
14,5	3,80789	131	3,80920	131	3,81051	131	3,81182	132	3,81314	131
14,6	3,82099	131	3,82230	131	3,82361	131	3,82492	131	3,82623	130
14,7	3,83406	130	3,83536	131	3,83667	130	3,83797	130	3,83927	130
14,8	3,84708	130	3,84838	130	3,84968	129	3,85097	130	3,85227	130
14,9	3,86005	130	3,86135	129	3,86264	130	3,86394	129	3,86523	129
15,0	3,87298	129	3,87427	129	3,87556	129	3,87685	129	3,87814	129
15,1	3,88587	129	3,88716	128	3,88844	129	3,88973	129	3,89102	128
15,2	3,89872	128	3,90000	128	3,90128	128	3,90256	128	3,90384	128
15,3	3,91152	128	3,91280	128	3,91408	127	3,91535	128	3,91663	128
15,4	3,92428	128	3,92556	127	3,92683	127	3,92810	128	3,92938	127
15,5	3,93700	127	3,93827	127	3,93954	127	3,94081	127	3,94208	127
15,6	3,94968	127	3,95095	126	3,95221	127	3,95348	126	3,95474	127
15,7	3,96232	126	3,96358	127	3,96485	126	3,96611	126	3,96737	126
15,8	3,97492	126	3,97618	126	3,97744	125	3,97869	126	3,97995	126
15,9	3,98748	125	3,98873	126	3,98999	125	3,99124	125	3,99249	126

Błąd przybliżeń podanych na str. 98 i 99 jest nie większy niż 0,000005, a błąd przybliżenia otrzymanego przez interpolację liniową jest mniejszy niż 0,00000509 + błąd zaokrąglenia wyniku.

Przykład interpolacji na str. 104.

VI. Square roots (\sqrt{x})

5	δ	6	δ	7	δ	8	δ	9	δ	x
3,32415	151	3,32566	150	3,32716	150	3,32866	151	3,33017	150	11,0
3,33916	150	3,34066	149	3,34215	150	3,34365	150	3,34515	149	11,1
3,35410	149	3,35559	149	3,35708	149	3,35857	149	3,36006	149	11,2
3,36898	148	3,37046	148	3,37194	149	3,37343	148	3,37491	148	11,3
3,38378	148	3,38526	148	3,38674	147	3,38821	148	3,38969	147	11,4
3,39853	147	3,40000	147	3,40147	147	3,40294	147	3,40441	147	11,5
3,41321	146	3,41467	147	3,41614	146	3,41760	146	3,41906	147	11,6
3,42783	146	3,42929	145	3,43074	146	3,43220	146	3,43366	145	11,7
3,44238	146	3,44384	145	3,44529	145	3,44674	145	3,44819	145	11,8
3,45688	144	3,45832	145	3,45977	144	3,46121	145	3,46266	144	11,9
3,47131	144	3,47275	144	3,47419	144	3,47563	144	3,47707	144	12,0
3,48569	143	3,48712	143	3,48855	144	3,48999	143	3,49142	143	12,1
3,50000	143	3,50143	143	3,50286	142	3,50428	143	3,50571	143	12,2
3,51426	142	3,51568	142	3,51710	142	3,51852	142	3,51994	142	12,3
3,52846	141	3,52987	142	3,53129	141	3,53270	142	3,53412	141	12,4
3,54260	141	3,54401	141	3,54542	141	3,54683	141	3,54824	141	12,5
3,55668	141	3,55809	140	3,55949	141	3,56090	140	3,56230	141	12,6
3,57071	140	3,57211	140	3,57351	140	3,57491	140	3,57631	140	12,7
3,58469	139	3,58608	140	3,58748	139	3,58887	139	3,59026	140	12,8
3,59861	139	3,60000	139	3,60139	139	3,60278	138	3,60416	139	12,9
3,61248	138	3,61386	139	3,61525	138	3,61663	138	3,61801	138	13,0
3,62629	138	3,62767	138	3,62905	138	3,63043	137	3,63180	138	13,1
3,64005	138	3,64143	137	3,64280	137	3,64417	138	3,64555	137	13,2
3,65377	136	3,65513	137	3,65650	137	3,65787	136	3,65923	137	13,3
3,66742	137	3,66879	136	3,67015	136	3,67151	136	3,67287	136	13,4
3,68103	136	3,68239	136	3,68375	136	3,68511	135	3,68646	136	13,5
3,69459	135	3,69594	136	3,69730	135	3,69865	135	3,70000	135	13,6
3,70810	135	3,70945	135	3,71080	134	3,71214	135	3,71349	135	13,7
3,72156	134	3,72290	134	3,72424	135	3,72559	134	3,72693	134	13,8
3,73497	134	3,73631	134	3,73765	133	3,73898	134	3,74032	134	13,9
3,74833	134	3,74967	133	3,75100	133	3,75233	133	3,75366	134	14,0
3,76165	133	3,76298	133	3,76431	132	3,76563	133	3,76696	133	14,1
3,77492	132	3,77624	133	3,77757	132	3,77889	132	3,78021	132	14,2
3,78814	132	3,78946	132	3,79078	132	3,79210	132	3,79342	131	14,3
3,80132	131	3,80263	132	3,80395	131	3,80526	131	3,80657	132	14,4
3,81445	131	3,81576	131	3,81707	131	3,81838	131	3,81969	130	14,5
3,82753	131	3,82884	130	3,83014	131	3,83145	130	3,83275	131	14,6
3,84057	130	3,84187	131	3,84318	130	3,84448	130	3,84578	130	14,7
3,85357	130	3,85487	129	3,85616	130	3,85746	130	3,85876	129	14,8
3,86652	130	3,86782	129	3,86911	129	3,87040	129	3,87169	129	14,9
3,87943	129	3,88072	129	3,88201	129	3,88330	128	3,88458	129	15,0
3,89230	128	3,89358	129	3,89487	128	3,89615	129	3,89744	128	15,1
3,90512	128	3,90640	128	3,90768	128	3,90896	128	3,91024	128	15,2
3,91791	127	3,91918	128	3,92046	127	3,92173	128	3,92301	127	15,3
3,93065	127	3,93192	127	3,93319	127	3,93446	127	3,93573	127	15,4
3,94335	127	3,94462	126	3,94588	127	3,94715	127	3,94842	126	15,5
3,95601	126	3,95727	127	3,95854	126	3,95980	126	3,96106	126	15,6
3,96863	126	3,96989	126	3,97115	125	3,97240	126	3,97366	126	15,7
3,98121	125	3,98246	126	3,98372	125	3,98497	126	3,98623	125	15,8
3,99375	125	3,99500	125	3,99625	125	3,99750	125	3,99875	125	15,9

\sqrt{x}

The error of the approximations given on pp. 98 and 99 is not greater than 0,000005 and the error of an approximation obtained by linear interpolation is less than 0,00000509 + the error of rounding off the result.

An example of interpolation is given on p. 105.

VI. Pierwiastki kwadratowe (\sqrt{x})

x	0	δ	1	δ	2	δ	3	δ	4	δ
16,0	4,00000	125	4,00125	125	4,00250	125	4,00375	125	4,00500	125
16,1	4,01248	125	4,01373	124	4,01497	125	4,01622	124	4,01746	125
16,2	4,02492	124	4,02616	125	4,02741	124	4,02865	124	4,02989	124
16,3	4,03733	123	4,03856	124	4,03980	124	4,04104	124	4,04228	123
16,4	4,04969	124	4,05093	123	4,05216	123	4,05339	124	4,05463	123
16,5	4,06202	123	4,06325	123	4,06448	123	4,06571	123	4,06694	123
16,6	4,07431	123	4,07554	122	4,07676	123	4,07799	123	4,07922	122
16,7	4,08656	123	4,08779	122	4,08901	122	4,09023	122	4,09145	123
16,8	4,09878	122	4,10000	122	4,10122	122	4,10244	122	4,10366	122
16,9	4,11096	122	4,11218	121	4,11339	122	4,11461	121	4,11582	122
17,0	4,12311	121	4,12432	121	4,12553	121	4,12674	121	4,12795	121
17,1	4,13521	121	4,13642	121	4,13763	121	4,13884	121	4,14005	121
17,2	4,14729	120	4,14849	121	4,14970	120	4,15090	121	4,15211	120
17,3	4,15933	120	4,16053	120	4,16173	120	4,16293	120	4,16413	120
17,4	4,17133	120	4,17253	120	4,17373	120	4,17493	119	4,17612	120
17,5	4,18330	120	4,18450	119	4,18569	119	4,18688	120	4,18808	119
17,6	4,19524	119	4,19643	119	4,19762	119	4,19881	119	4,20000	119
17,7	4,20714	119	4,20833	118	4,20951	119	4,21070	119	4,21189	118
17,8	4,21900	119	4,22019	118	4,22137	119	4,22256	118	4,22374	119
17,9	4,23084	118	4,23202	118	4,23320	118	4,23438	118	4,23556	118
18,0	4,24264	118	4,24382	118	4,24500	117	4,24617	118	4,24735	118
18,1	4,25441	117	4,25558	118	4,25676	117	4,25793	118	4,25911	117
18,2	4,26615	117	4,26732	117	4,26849	117	4,26966	117	4,27083	117
18,3	4,27785	117	4,27902	117	4,28019	116	4,28135	117	4,28252	117
18,4	4,28952	117	4,29069	116	4,29185	117	4,29302	116	4,29418	117
18,5	4,30116	116	4,30232	117	4,30349	116	4,30465	116	4,30581	116
18,6	4,31277	116	4,31393	116	4,31509	116	4,31625	116	4,31741	115
18,7	4,32435	116	4,32551	115	4,32666	116	4,32782	115	4,32897	116
18,8	4,33590	115	4,33705	115	4,33820	115	4,33935	116	4,34051	115
18,9	4,34741	115	4,34856	115	4,34971	115	4,35086	115	4,35201	115
19,0	4,35890	115	4,36005	114	4,36119	115	4,36234	114	4,36348	115
19,1	4,37035	115	4,37150	114	4,37264	115	4,37379	114	4,37493	114
19,2	4,38178	114	4,38292	114	4,38406	114	4,38520	114	4,38634	114
19,3	4,39318	113	4,39431	114	4,39545	114	4,39659	114	4,39773	113
19,4	4,40454	114	4,40568	113	4,40681	114	4,40795	113	4,40908	114
19,5	4,41588	113	4,41701	113	4,41814	114	4,41928	113	4,42041	113
19,6	4,42719	113	4,42832	113	4,42945	113	4,43058	112	4,43170	113
19,7	4,43847	112	4,43959	113	4,44072	113	4,44185	112	4,44297	113
19,8	4,44972	112	4,45084	113	4,45197	112	4,45309	112	4,45421	112
19,9	4,46094	112	4,46206	112	4,46318	112	4,46430	112	4,46542	112
20,0	4,47214	111	4,47325	112	4,47437	112	4,47549	112	4,47661	111
20,1	4,48330	112	4,48442	111	4,48553	112	4,48665	111	4,48776	112
20,2	4,49444	111	4,49555	112	4,49667	111	4,49778	111	4,49889	111
20,3	4,50555	111	4,50666	111	4,50777	111	4,50888	111	4,50999	111
20,4	4,51664	110	4,51774	111	4,51885	111	4,51996	110	4,52106	111
20,5	4,52769	111	4,52880	110	4,52990	110	4,53100	111	4,53211	110
20,6	4,53872	110	4,53982	111	4,54093	110	4,54203	110	4,54313	110
20,7	4,54973	109	4,55082	110	4,55192	110	4,55302	110	4,55412	110
20,8	4,56070	110	4,56180	109	4,56289	110	4,56399	109	4,56508	110
20,9	4,57165	110	4,57275	109	4,57384	109	4,57493	109	4,57602	110

Błąd przybliżeń podanych na str. 100 i 101 jest nie większy niż 0,000005, a błąd przybliżenia otrzymanego przez interpolację liniową jest mniejszy niż 0,00000505 + błąd zaokrąglenia wyniku.

Przykład interpolacji na str. 104.

VI. Square roots (\sqrt{x})

5	δ	6	δ	7	δ	8	δ	9	δ	x
4,00625	124	4,00749	125	4,00874	125	4,00999	124	4,01123	125	16,0
4,01871	124	4,01995	124	4,02119	125	4,02244	124	4,02368	124	16,1
4,03113	124	4,03237	124	4,03361	124	4,03485	124	4,03609	124	16,2
4,04351	124	4,04475	124	4,04599	123	4,04722	124	4,04846	123	16,3
4,05586	123	4,05709	123	4,05832	124	4,05956	123	4,06079	123	16,4
4,06817	123	4,06940	123	4,07063	122	4,07185	123	4,07308	123	16,5
4,08044	123	4,08167	122	4,08289	123	4,08412	122	4,08534	122	16,6
4,09268	122	4,09390	122	4,09512	122	4,09634	122	4,09756	122	16,7
4,10488	121	4,10609	122	4,10731	122	4,10853	121	4,10974	122	16,8
4,11704	121	4,11825	122	4,11947	121	4,12068	121	4,12189	122	16,9
4,12916	122	4,13038	121	4,13159	121	4,13280	121	4,13401	120	17,0
4,14126	120	4,14246	121	4,14367	121	4,14488	120	4,14608	121	17,1
4,15331	121	4,15452	120	4,15572	120	4,15692	120	4,15812	121	17,2
4,16533	120	4,16653	120	4,16773	120	4,16893	120	4,17013	120	17,3
4,17732	120	4,17852	119	4,17971	120	4,18091	119	4,18210	120	17,4
4,18927	120	4,19047	119	4,19166	119	4,19285	119	4,19404	120	17,5
4,20119	119	4,20238	119	4,20357	119	4,20476	119	4,20595	119	17,6
4,21307	119	4,21426	119	4,21545	118	4,21663	119	4,21782	118	17,7
4,22493	118	4,22611	118	4,22729	118	4,22847	119	4,22966	118	17,8
4,23674	118	4,23792	118	4,23910	118	4,24028	118	4,24146	118	17,9
4,24853	118	4,24971	117	4,25088	118	4,25206	117	4,25323	118	18,0
4,26028	118	4,26146	117	4,26263	117	4,26380	117	4,26497	118	18,1
4,27200	117	4,27317	117	4,27434	117	4,27551	117	4,27668	117	18,2
4,28369	117	4,28486	116	4,28602	117	4,28719	117	4,28836	116	18,3
4,29535	116	4,29651	116	4,29767	117	4,29884	116	4,30000	116	18,4
4,30697	116	4,30813	116	4,30929	116	4,31045	116	4,31161	116	18,5
4,31856	116	4,31972	116	4,32088	116	4,32204	115	4,32319	116	18,6
4,33013	115	4,33128	116	4,33244	115	4,33359	115	4,33474	116	18,7
4,34166	115	4,34281	115	4,34396	115	4,34511	115	4,34626	115	18,8
4,35316	115	4,35431	115	4,35546	114	4,35660	115	4,35775	115	18,9
4,36463	115	4,36578	114	4,36692	115	4,36807	114	4,36921	114	19,0
4,37607	114	4,37721	115	4,37836	114	4,37950	114	4,38064	114	19,1
4,38748	114	4,38862	114	4,38976	114	4,39090	114	4,39204	114	19,2
4,39886	114	4,40000	114	4,40114	113	4,40227	114	4,40341	113	19,3
4,41022	113	4,41135	113	4,41248	114	4,41362	113	4,41475	113	19,4
4,42154	113	4,42267	113	4,42380	113	4,42493	113	4,42606	113	19,5
4,43283	113	4,43396	113	4,43509	112	4,43621	113	4,43734	113	19,6
4,44410	112	4,44522	113	4,44635	112	4,44747	113	4,44860	112	19,7
4,45533	113	4,45646	112	4,45758	112	4,45870	112	4,45982	112	19,8
4,46654	112	4,46766	112	4,46878	112	4,46990	112	4,47102	112	19,9
4,47772	112	4,47884	112	4,47996	111	4,48107	112	4,48219	111	20,0
4,48888	111	4,48999	111	4,49110	112	4,49222	111	4,49333	111	20,1
4,50000	111	4,50111	111	4,50222	111	4,50333	111	4,50444	111	20,2
4,51110	111	4,51221	110	4,51331	111	4,51442	111	4,51553	111	20,3
4,52217	110	4,52327	111	4,52438	110	4,52548	111	4,52659	110	20,4
4,53321	110	4,53431	111	4,53542	110	4,53652	110	4,53762	110	20,5
4,54423	110	4,54533	110	4,54643	110	4,54753	110	4,54863	110	20,6
4,55522	109	4,55631	110	4,55741	110	4,55851	110	4,55961	109	20,7
4,56618	109	4,56727	110	4,56837	109	4,56946	110	4,57056	109	20,8
4,57712	109	4,57821	109	4,57930	109	4,58039	109	4,58148	110	20,9

The error of the approximations given on pp. 100 and 101 is not greater than 0,000005 and the error of an approximation obtained by linear interpolation is less than 0,00000505 + the error of rounding off the result.

An example of interpolation is given on p. 105.

VI. Pierwiastki kwadratowe (\sqrt{x})

x	0	δ	1	δ	2	δ	3	δ	4	δ
21,0	4,58258	109	4,58367	109	4,58476	109	4,58585	109	4,58694	109
21,1	4,59347	109	4,59456	109	4,59565	109	4,59674	109	4,59783	108
21,2	4,60435	108	4,60543	109	4,60652	108	4,60760	109	4,60869	108
21,3	4,61519	109	4,61628	108	4,61736	108	4,61844	108	4,61952	109
21,4	4,62601	108	4,62709	108	4,62817	108	4,62925	108	4,63033	108
21,5	4,63681	108	4,63789	108	4,63897	107	4,64004	108	4,64112	108
21,6	4,64758	108	4,64866	107	4,64973	108	4,65081	107	4,65188	108
21,7	4,65833	107	4,65940	107	4,66047	107	4,66154	108	4,66262	107
21,8	4,66905	107	4,67012	107	4,67119	107	4,67226	107	4,67333	107
21,9	4,67974	107	4,68081	107	4,68188	107	4,68295	107	4,68402	106
22,0	4,69042	106	4,69148	107	4,69255	106	4,69361	107	4,69468	106
22,1	4,70106	107	4,70213	106	4,70319	106	4,70425	107	4,70532	106
22,2	4,71169	106	4,71275	106	4,71381	106	4,71487	106	4,71593	106
22,3	4,72229	106	4,72335	105	4,72440	106	4,72546	106	4,72652	106
22,4	4,73286	106	4,73392	106	4,73498	105	4,73603	106	4,73709	105
22,5	4,74342	105	4,74447	105	4,74552	106	4,74658	105	4,74763	105
22,6	4,75395	105	4,75500	105	4,75605	105	4,75710	105	4,75815	105
22,7	4,76445	105	4,76550	105	4,76655	105	4,76760	105	4,76865	105
22,8	4,77493	105	4,77598	105	4,77703	104	4,77807	105	4,77912	105
22,9	4,78539	105	4,78644	104	4,78748	105	4,78853	104	4,78957	105
23,0	4,79583	104	4,79687	105	4,79792	104	4,79896	104	4,80000	104
23,1	4,80625	104	4,80729	104	4,80833	104	4,80937	104	4,81041	103
23,2	4,81664	104	4,81768	103	4,81871	104	4,81975	104	4,82079	104
23,3	4,82701	103	4,82804	104	4,82908	103	4,83011	104	4,83115	103
23,4	4,83735	104	4,83839	103	4,83942	103	4,84045	104	4,84149	103
23,5	4,84768	103	4,84871	103	4,84974	103	4,85077	103	4,85180	103
23,6	4,85798	103	4,85901	103	4,86004	103	4,86107	103	4,86210	103
23,7	4,86826	103	4,86929	103	4,87032	102	4,87134	103	4,87237	103
23,8	4,87852	103	4,87955	102	4,88057	103	4,88160	102	4,88262	103
23,9	4,88876	103	4,88979	102	4,89081	102	4,89183	102	4,89285	102
24,0	4,89898	102	4,90000	102	4,90102	102	4,90204	102	4,90306	102
24,1	4,90918	101	4,91019	102	4,91121	102	4,91223	102	4,91325	101
24,2	4,91935	102	4,92037	101	4,92138	102	4,92240	101	4,92341	102
24,3	4,92950	102	4,93052	101	4,93153	101	4,93254	102	4,93356	101
24,4	4,93964	101	4,94065	101	4,94166	101	4,94267	101	4,94368	101
24,5	4,94975	101	4,95076	101	4,95177	101	4,95278	101	4,95379	101
24,6	4,95984	101	4,96085	100	4,96185	101	4,96286	101	4,96387	101
24,7	4,96991	101	4,97092	100	4,97192	101	4,97293	100	4,97393	101
24,8	4,97996	100	4,98096	101	4,98197	100	4,98297	100	4,98397	101
24,9	4,98999	100	4,99099	100	4,99199	101	4,99300	100	4,99400	100
25,0	5,00000	100	5,00100	100	5,00200	100	5,00300	100	5,00400	100
25,1	5,00999	100	5,01099	100	5,01199	099	5,01298	100	5,01398	100
25,2	5,01996	100	5,02096	099	5,02195	100	5,02295	099	5,02394	100
25,3	5,02991	099	5,03090	100	5,03190	099	5,03289	100	5,03389	099
25,4	5,03984	099	5,04083	100	5,04183	099	5,04282	099	5,04381	099
25,5	5,04975	099	5,05074	099	5,05173	099	5,05272	099	5,05371	099
25,6	5,05964	099	5,06063	099	5,06162	099	5,06261	099	5,06360	098
25,7	5,06952	098	5,07050	099	5,07149	098	5,07247	099	5,07346	099
25,8	5,07937	098	5,08035	099	5,08134	098	5,08232	099	5,08331	098
25,9	5,08920	099	5,09019	098	5,09117	098	5,09215	098	5,09313	098

Błąd przybliżeń podanych na str. 102 i 103 jest nie większy niż 0,000005, a błąd przybliżenia otrzymanego przez interpolację liniową jest mniejszy niż 0,00000504 + błąd zaokrąglenia wyniku.

Przykład interpolacji na str. 104.

VI. Square roots (\sqrt{x})

5	δ	6	δ	7	δ	8	δ	9	δ	x
4,58803	109	4,58912	109	4,59021	109	4,59130	109	4,59239	108	21,0
4,59891	109	4,60000	109	4,60109	108	4,60217	109	4,60326	109	21,1
4,60977	109	4,61086	108	4,61194	109	4,61303	108	4,61411	108	21,2
4,62061	108	4,62169	108	4,62277	108	4,62385	108	4,62493	108	21,3
4,63141	108	4,63249	108	4,63357	108	4,63465	108	4,63573	108	21,4
4,64220	107	4,64327	108	4,64435	108	4,64543	107	4,64650	108	21,5
4,65296	107	4,65403	107	4,65510	108	4,65618	107	4,65725	108	21,6
4,66369	107	4,66476	107	4,66583	107	4,66690	108	4,66798	107	21,7
4,67440	107	4,67547	107	4,67654	107	4,67761	107	4,67868	106	21,8
4,68508	107	4,68615	107	4,68722	106	4,68828	107	4,68935	107	21,9
4,69574	107	4,69681	106	4,69787	107	4,69894	106	4,70000	106	22,0
4,70638	106	4,70744	106	4,70850	106	4,70956	107	4,71063	106	22,1
4,71699	106	4,71805	106	4,71911	106	4,72017	106	4,72123	106	22,2
4,72758	106	4,72864	105	4,72969	106	4,73075	106	4,73181	105	22,3
4,73814	106	4,73920	105	4,74025	106	4,74131	105	4,74236	106	22,4
4,74868	106	4,74974	105	4,75079	105	4,75184	105	4,75289	106	22,5
4,75920	105	4,76025	105	4,76130	105	4,76235	105	4,76340	105	22,6
4,76970	104	4,77074	105	4,77179	105	4,77284	105	4,77389	104	22,7
4,78017	104	4,78121	105	4,78226	104	4,78330	105	4,78435	104	22,8
4,79062	104	4,79166	104	4,79270	105	4,79375	104	4,79479	104	22,9
4,80104	104	4,80208	104	4,80312	104	4,80416	105	4,80521	104	23,0
4,81144	104	4,81248	104	4,81352	104	4,81456	104	4,81560	104	23,1
4,82183	103	4,82286	104	4,82390	104	4,82494	103	4,82597	104	23,2
4,83218	104	4,83322	103	4,83425	104	4,83529	103	4,83632	103	23,3
4,84252	103	4,84355	103	4,84458	104	4,84562	103	4,84665	103	23,4
4,85283	103	4,85386	103	4,85489	103	4,85592	103	4,85695	103	23,5
4,86313	102	4,86415	103	4,86518	103	4,86621	103	4,86724	102	23,6
4,87340	102	4,87442	103	4,87545	102	4,87647	103	4,87750	102	23,7
4,88365	102	4,88467	102	4,88569	103	4,88672	102	4,88774	102	23,8
4,89387	103	4,89490	102	4,89592	102	4,89694	102	4,89796	102	23,9
4,90408	102	4,90510	102	4,90612	102	4,90714	102	4,90816	102	24,0
4,91426	102	4,91528	102	4,91630	102	4,91732	101	4,91833	102	24,1
4,92443	101	4,92544	102	4,92646	101	4,92747	102	4,92849	101	24,2
4,93457	102	4,93559	101	4,93660	101	4,93761	101	4,93862	102	24,3
4,94469	102	4,94571	101	4,94672	101	4,94773	101	4,94874	101	24,4
4,95480	100	4,95580	101	4,95681	101	4,95782	101	4,95883	101	24,5
4,96488	100	4,96588	101	4,96689	101	4,96790	100	4,96890	101	24,6
4,97494	100	4,97594	101	4,97695	100	4,97795	101	4,97896	100	24,7
4,98498	100	4,98598	100	4,98698	101	4,98799	100	4,98899	100	24,8
4,99500	100	4,99600	100	4,99700	100	4,99800	100	4,99900	100	24,9
5,00500	100	5,00600	100	5,00700	099	5,00799	100	5,00899	100	25,0
5,01498	099	5,01597	100	5,01697	100	5,01797	099	5,01896	100	25,1
5,02494	099	5,02593	100	5,02693	099	5,02792	100	5,02892	099	25,2
5,03488	099	5,03587	099	5,03686	100	5,03786	099	5,03885	099	25,3
5,04480	099	5,04579	099	5,04678	099	5,04777	099	5,04876	099	25,4
5,05470	099	5,05569	099	5,05668	099	5,05767	099	5,05866	098	25,5
5,06458	099	5,06557	099	5,06656	098	5,06754	099	5,06853	099	25,6
5,07445	098	5,07543	099	5,07642	098	5,07740	099	5,07839	098	25,7
5,08429	098	5,08527	099	5,08626	098	5,08724	098	5,08822	098	25,8
5,09411	099	5,09510	098	5,09608	098	5,09706	098	5,09804	098	25,9

The error of the approximations given on pp. 102 and 103 is not greater than 0,000005 and the error of an approximation obtained by linear interpolation is less than 0,00000504 + the error of rounding off the result.

An example of interpolation is given on p. 105.

VI. Pierwiastki kwadratowe (\sqrt{x})

x	0	δ	1	δ	2	δ	3	δ	4	δ
26,0	5,09902	098	5,10000	098	5,10098	098	5,10196	098	5,10294	098
26,1	5,10882	097	5,10979	098	5,11077	098	5,11175	098	5,11273	098
26,2	5,11859	098	5,11957	098	5,12055	097	5,12152	098	5,12250	098
26,3	5,12835	098	5,12933	097	5,13030	098	5,13128	097	5,13225	098
26,4	5,13809	098	5,13907	097	5,14004	097	5,14101	097	5,14198	098
26,5	5,14782	097	5,14879	097	5,14976	097	5,15073	097	5,15170	097
26,6	5,15752	097	5,15849	097	5,15946	097	5,16043	097	5,16140	096
26,7	5,16720	097	5,16817	097	5,16914	097	5,17011	096	5,17107	097
26,8	5,17687	097	5,17784	096	5,17880	097	5,17977	096	5,18073	097
26,9	5,18652	096	5,18748	097	5,18845	096	5,18941	097	5,19038	096
27,0	5,19615	096	5,19711	097	5,19808	096	5,19904	096	5,20000	096
27,1	5,20577	096	5,20673	096	5,20769	096	5,20865	096	5,20961	096
27,2	5,21536	096	5,21632	096	5,21728	096	5,21824	096	5,21920	095
27,3	5,22494	096	5,22590	095	5,22685	096	5,22781	096	5,22877	095
27,4	5,23450	096	5,23546	095	5,23641	096	5,23737	095	5,23832	095
27,5	5,24404	096	5,24500	095	5,24595	095	5,24690	096	5,24786	095
27,6	5,25357	095	5,25452	095	5,25547	095	5,25642	096	5,25738	095
27,7	5,26308	095	5,26403	095	5,26498	095	5,26593	095	5,26688	095
27,8	5,27257	095	5,27352	095	5,27447	094	5,27541	095	5,27636	095
27,9	5,28205	094	5,28299	095	5,28394	094	5,28488	095	5,28583	095
28,	5,29150	944	5,30094	943	5,31037	940	5,31977	940	5,32917	937
29,	5,38516	928	5,39444	926	5,40370	925	5,41295	923	5,42218	921
30,	5,47723	912	5,48635	910	5,49545	909	5,50454	908	5,51362	906
31,	5,56776	898	5,57674	896	5,58570	894	5,59464	893	5,60357	892
32,	5,65685	884	5,66569	881	5,67450	881	5,68331	879	5,69210	878
33,	5,74456	870	5,75326	868	5,76194	868	5,77062	865	5,77927	865
34,	5,83095	857	5,83952	856	5,84808	854	5,85662	853	5,86515	852
35,	5,91608	845	5,92453	843	5,93296	842	5,94138	841	5,94979	840
36,	6,00000	833	6,00833	831	6,01664	831	6,02495	829	6,03324	828
37,	6,08276	822	6,09098	820	6,09918	819	6,10737	818	6,11555	817
38,	6,16441	811	6,17252	809	6,18061	809	6,18870	807	6,19677	807
39,	6,24500	800	6,25300	799	6,26099	798	6,26897	797	6,27694	796
40,	6,32456	790	6,33246	789	6,34035	788	6,34823	787	6,35610	786
41,	6,40312	781	6,41093	779	6,41872	779	6,42651	777	6,43428	777
42,	6,48074	771	6,48845	770	6,49615	770	6,50385	768	6,51153	767
43,	6,55744	762	6,56506	761	6,57267	760	6,58027	760	6,58787	758
44,	6,63325	753	6,64078	753	6,64831	751	6,65582	751	6,66333	750
45,	6,70820	745	6,71565	744	6,72309	744	6,73053	742	6,73795	742
46,	6,78233	737	6,78970	736	6,79706	735	6,80441	734	6,81175	734
47,	6,85565	729	6,86294	729	6,87023	727	6,87750	727	6,88477	725
48,	6,92820	722	6,93542	720	6,94262	720	6,94982	719	6,95701	718
49,	7,00000	714	7,00714	713	7,01427	713	7,02140	711	7,02851	711

Błąd przybliżeń podanych na str. 104 i 105 jest nie większy niż 0,000005. Błąd przybliżenia otrzymanego przez interpolację liniową jest dla $26 < x < 28$ mniejszy niż 0,00000503 + błąd zaokrąglenia wyniku, a dla $28 < x < 50$ mniejszy niż 0,00000711 + błąd zaokrąglenia wyniku.

Przykład. Należy obliczyć $\sqrt{27,1828}$. W tym celu odczytujemy w tablicy, że $\sqrt{27,18} \approx 5,21344$ i $\delta = 096$, a w tablicy poprawek dla $\delta = 096$ i cyfr 2 i 8 liczby 19,2 i 76,8. Zatem $\sqrt{27,1828} \approx 5,21344 + 0,000192 + 0,0000768 = 5,2137088$ z dokładnością do 0,00000503, a stąd $\sqrt{27,1828} \approx 5,21371$ z dokładnością do 0,0000063. (Poprawkę do liczby $\sqrt{27,18} \approx 5,21344$ można również obliczyć mnożąc $0,28 \cdot \delta = 0,28 \cdot 096 = 26,88$. Mamy wtedy $\sqrt{27,1828} \approx 5,21344 + 0,0002688 = 5,2137088$, jak poprzednio).

VI. Square roots (\sqrt{x})

5	δ	6	δ	7	δ	8	δ	9	δ	x
5,10392	098	5,10490	098	5,10588	098	5,10686	098	5,10784	098	26,0
5,11371	097	5,11468	098	5,11566	098	5,11664	098	5,11762	097	26,1
5,12348	097	5,12445	098	5,12543	097	5,12640	098	5,12738	097	26,2
5,13323	097	5,13420	097	5,13517	098	5,13615	097	5,13712	097	26,3
5,14296	097	5,14393	097	5,14490	097	5,14587	097	5,14684	098	26,4
5,15267	097	5,15364	097	5,15461	097	5,15558	097	5,15655	097	26,5
5,16236	097	5,16333	097	5,16430	097	5,16527	097	5,16624	096	26,6
5,17204	097	5,17301	096	5,17397	097	5,17494	097	5,17591	096	26,7
5,18170	096	5,18266	097	5,18363	096	5,18459	097	5,18556	096	26,8
5,19134	096	5,19230	096	5,19326	097	5,19423	096	5,19519	096	26,9
5,20096	096	5,20192	096	5,20288	096	5,20384	097	5,20481	096	27,0
5,21057	096	5,21153	096	5,21249	095	5,21344	096	5,21440	096	27,1
5,22015	096	5,22111	096	5,22207	096	5,22303	095	5,22398	096	27,2
5,22972	096	5,23068	095	5,23163	096	5,23259	096	5,23355	095	27,3
5,23927	096	5,24023	095	5,24118	096	5,24214	095	5,24309	095	27,4
5,24881	095	5,24976	095	5,25071	096	5,25167	095	5,25262	095	27,5
5,25833	095	5,25928	095	5,26023	095	5,26118	095	5,26213	095	27,6
5,26783	095	5,26878	094	5,26972	095	5,27067	095	5,27162	095	27,7
5,27731	095	5,27826	094	5,27920	095	5,28015	095	5,28110	095	27,8
5,28678	094	5,28772	095	5,28867	094	5,28961	095	5,29056	094	27,9
5,33854	936	5,34790	934	5,35724	932	5,36656	931	5,37587	929	28,
5,43139	920	5,44059	918	5,44977	917	5,45894	915	5,46809	914	29,
5,52268	905	5,53173	903	5,54076	901	5,54977	901	5,55878	898	30,
5,61249	890	5,62139	889	5,63028	887	5,63915	886	5,64801	884	31,
5,70088	876	5,70964	875	5,71839	874	5,72713	872	5,73585	871	32,
5,78792	863	5,79655	862	5,80517	861	5,81378	859	5,82237	858	33,
5,87367	851	5,88218	849	5,89067	848	5,89915	847	5,90762	846	34,
5,95819	838	5,96657	838	5,97495	836	5,98331	835	5,99166	834	35,
6,04152	827	6,04979	826	6,05805	825	6,06630	824	6,07454	822	36,
6,12372	816	6,13188	815	6,14003	814	6,14817	813	6,15630	811	37,
6,20484	805	6,21289	804	6,22093	803	6,22896	803	6,23699	801	38,
6,28490	795	6,29285	794	6,30079	793	6,30872	792	6,31664	792	39,
6,36396	785	6,37181	785	6,37966	783	6,38749	782	6,39531	781	40,
6,44205	776	6,44981	774	6,45755	774	6,46529	773	6,47302	772	41,
6,51920	767	6,52687	765	6,53452	765	6,54217	764	6,54981	763	42,
6,59545	758	6,60303	757	6,61060	756	6,61816	755	6,62571	754	43,
6,67083	749	6,67832	749	6,68581	747	6,69328	747	6,70075	745	44,
6,74537	741	6,75278	740	6,76018	739	6,76757	738	6,77495	738	45,
6,81909	733	6,82642	732	6,83374	731	6,84105	731	6,84836	729	46,
6,89202	726	6,89928	724	6,90652	723	6,91375	723	6,92098	722	47,
6,96419	718	6,97137	717	6,97854	716	6,98570	715	6,99285	715	48,
7,03562	711	7,04273	709	7,04982	709	7,05691	708	7,06399	708	49,

The error of the approximations given on pp. 104 and 105 is not greater than 0,000005 and the error of an approximation obtained by linear interpolation is for $26 < x < 28$ less than 0,00000503 + the error of rounding off the result and for $28 < x < 50$ less than 0,00000711 + the error of rounding off the result.

Example. To find $\sqrt{27,1828}$ we read in the table that $\sqrt{27,18} \approx 5,21344$ and $\delta = 096$ and find in the table of proportional parts for $\delta = 096$ and the figures 2 and 8 the numbers 19,2 and 76,8. Consequently $\sqrt{27,1828} \approx 5,21344 + 0,000192 + 0,0000768 = 5,2137088$ with error less than 0,00000503, whence $\sqrt{27,1828} \approx 5,21371$ with error less than 0,0000063. (The correction for the number $\sqrt{27,18} \approx 5,21344$ can also be found by multiplying $0,28 \cdot \delta = 0,28 \cdot 096 = 26,88$. We then have $\sqrt{27,1828} \approx 5,21344 + 0,0002688 = 5,2137088$ as before).

VI. Pierwiastki kwadratowe (\sqrt{x})

x	0	δ	1	δ	2	δ	3	δ	4	δ
50,	7,07107	707	7,07814	706	7,08520	705	7,09225	705	7,09930	704
51,	7,14143	700	7,14843	699	7,15542	698	7,16240	698	7,16938	697
52,	7,21110	693	7,21803	693	7,22496	691	7,23187	691	7,23878	691
53,	7,28011	686	7,28697	686	7,29383	685	7,30068	685	7,30753	684
54,	7,34847	680	7,35527	679	7,36206	679	7,36885	679	7,37564	677
55,	7,41620	674	7,42294	673	7,42967	673	7,43640	672	7,44312	671
56,	7,48331	668	7,48999	668	7,49667	666	7,50333	666	7,50999	666
57,	7,54983	662	7,55645	662	7,56307	661	7,56968	660	7,57628	660
58,	7,61577	657	7,62234	655	7,62889	655	7,63544	655	7,64199	654
59,	7,68115	650	7,68765	650	7,69415	650	7,70065	649	7,70714	648
60,	7,74597	645	7,75242	645	7,75887	644	7,76531	643	7,77174	643
61,	7,81025	640	7,81665	639	7,82304	639	7,82943	639	7,83582	637
62,	7,87401	635	7,88036	634	7,88670	633	7,89303	634	7,89937	632
63,	7,93725	630	7,94355	629	7,94984	629	7,95613	628	7,96241	628
64,	8,00000	625	8,00625	624	8,01249	624	8,01873	623	8,02496	623
65,	8,06226	620	8,06846	619	8,07465	619	8,08084	619	8,08703	618
66,	8,12404	615	8,13019	615	8,13634	614	8,14248	614	8,14862	613
67,	8,18535	611	8,19146	610	8,19756	610	8,20366	609	8,20975	609
68,	8,24621	606	8,25227	606	8,25833	605	8,26438	605	8,27043	604
69,	8,30662	602	8,31264	601	8,31865	601	8,32466	601	8,33067	600
70,	8,36660	597	8,37257	597	8,37854	597	8,38451	596	8,39047	596
71,	8,42615	593	8,43208	593	8,43801	592	8,44393	592	8,44985	592
72,	8,48528	589	8,49117	589	8,49706	588	8,50294	588	8,50882	587
73,	8,54400	585	8,54985	585	8,55570	584	8,56154	584	8,56738	583
74,	8,60233	581	8,60814	580	8,61394	580	8,61974	580	8,62554	580
75,	8,66025	578	8,66603	576	8,67179	577	8,67756	576	8,68332	575
76,	8,71780	573	8,72353	573	8,72926	573	8,73499	572	8,74071	572
77,	8,77496	570	8,78066	569	8,78635	569	8,79204	569	8,79773	568
78,	8,83176	566	8,83742	566	8,84308	565	8,84873	565	8,85438	564
79,	8,88819	563	8,89382	562	8,89944	561	8,90505	562	8,91067	561
80,	8,94427	559	8,94986	559	8,95545	558	8,96103	557	8,96660	558
81,	9,00000	555	9,00555	555	9,01110	555	9,01665	554	9,02219	555
82,	9,05539	552	9,06091	551	9,06642	551	9,07193	551	9,07744	551
83,	9,11043	549	9,11592	548	9,12140	548	9,12688	548	9,13236	547
84,	9,16515	546	9,17061	545	9,17606	544	9,18150	545	9,18695	544
85,	9,21954	543	9,22497	541	9,23038	542	9,23580	541	9,24121	541
86,	9,27362	539	9,27901	539	9,28440	538	9,28978	538	9,29516	538
87,	9,32738	536	9,33274	535	9,33809	536	9,34345	535	9,34880	534
88,	9,38083	533	9,38616	533	9,39149	532	9,39681	532	9,40213	531
89,	9,43398	530	9,43928	530	9,44458	529	9,44987	529	9,45516	528
90,	9,48683	527	9,49210	527	9,49737	526	9,50263	526	9,50789	526
91,	9,53939	524	9,54463	524	9,54987	523	9,55510	523	9,56033	523
92,	9,59166	521	9,59687	521	9,60208	521	9,60729	520	9,61249	520
93,	9,64365	518	9,64883	518	9,65401	518	9,65919	518	9,66437	517
94,	9,69536	516	9,70052	515	9,70567	515	9,71082	515	9,71597	514
95,	9,74679	513	9,75192	513	9,75705	512	9,76217	512	9,76729	512
96,	9,79796	510	9,80306	510	9,80816	510	9,81326	509	9,81835	509
97,	9,84886	507	9,85393	508	9,85901	507	9,86408	506	9,86914	507
98,	9,89949	505	9,90454	505	9,90959	505	9,91464	504	9,91968	504
99,	9,94987	503	9,95490	502	9,95992	502	9,96494	501	9,96995	502

Błąd przybliżeń podanych na str. 106 i 107 jest nie większy niż 0,000005, a błąd przybliżenia otrzymanego przez interpolację liniową jest mniejszy niż 0,00000589 + błąd zaokrąglenia wyniku.

Przykład interpolacji na str. 104.

VI. Square roots (\sqrt{x})

5	δ	6	δ	7	δ	8	δ	9	δ	x
7,10634	703	7,11337	702	7,12039	702	7,12741	701	7,13442	701	50,
7,17635	696	7,18331	696	7,19027	695	7,19722	695	7,20417	693	51,
7,24569	690	7,25259	689	7,25948	688	7,26636	688	7,27324	687	52,
7,31437	683	7,32120	683	7,32803	682	7,33485	681	7,34166	681	53,
7,38241	677	7,38918	676	7,39594	676	7,40270	675	7,40945	675	54,
7,44983	671	7,45654	670	7,46324	670	7,46994	669	7,47663	668	55,
7,51665	665	7,52330	664	7,52994	664	7,53658	663	7,54321	662	56,
7,58288	659	7,58947	658	7,59605	658	7,60263	657	7,60920	657	57,
7,64853	653	7,65506	653	7,66159	653	7,66812	651	7,67463	652	58,
7,71362	648	7,72010	648	7,72658	647	7,73305	646	7,73951	646	59,
7,77817	643	7,78460	642	7,79102	642	7,79744	641	7,80385	640	60,
7,84219	638	7,84857	636	7,85493	637	7,86130	636	7,86766	635	61,
7,90569	633	7,91202	631	7,91833	632	7,92465	630	7,93095	630	62,
7,96869	627	7,97496	627	7,98123	626	7,98749	626	7,99375	625	63,
8,03119	622	8,03741	622	8,04363	621	8,04984	621	8,05605	621	64,
8,09321	617	8,09938	617	8,10555	617	8,11172	616	8,11788	616	65,
8,15475	613	8,16088	613	8,16701	612	8,17313	611	8,17924	611	66,
8,21584	608	8,22192	608	8,22800	608	8,23408	607	8,24015	606	67,
8,27647	604	8,28251	604	8,28855	603	8,29458	602	8,30060	602	68,
8,33667	599	8,34266	599	8,34865	599	8,35464	598	8,36062	598	69,
8,39643	595	8,40238	595	8,40833	594	8,41427	594	8,42021	594	70,
8,45577	591	8,46168	591	8,46759	590	8,47349	590	8,47939	589	71,
8,51469	587	8,52056	587	8,52643	586	8,53229	586	8,53815	585	72,
8,57321	583	8,57904	583	8,58487	582	8,59069	582	8,59651	582	73,
8,63134	579	8,63713	579	8,64292	578	8,64870	578	8,65448	577	74,
8,68907	576	8,69483	574	8,70057	575	8,70632	574	8,71206	574	75,
8,74643	571	8,75214	571	8,75785	571	8,76356	570	8,76926	570	76,
8,80341	568	8,80909	567	8,81476	567	8,82043	567	8,82610	566	77,
8,86002	564	8,86566	564	8,87130	564	8,87694	563	8,88257	562	78,
8,91628	560	8,92188	561	8,92749	559	8,93308	560	8,93868	559	79,
8,97218	557	8,97775	557	8,98332	556	8,98888	556	8,99444	556	80,
9,02774	553	9,03327	554	9,03881	553	9,04434	552	9,04986	553	81,
9,08295	550	9,08845	550	9,09395	550	9,09945	549	9,10494	549	82,
9,13783	547	9,14330	547	9,14877	546	9,15423	546	9,15969	546	83,
9,19239	544	9,19783	543	9,20326	543	9,20869	543	9,21412	542	84,
9,24662	541	9,25203	540	9,25743	540	9,26283	540	9,26823	539	85,
9,30054	537	9,30591	537	9,31128	537	9,31665	537	9,32202	536	86,
9,35414	535	9,35949	534	9,36483	534	9,37017	533	9,37550	533	87,
9,40744	532	9,41276	531	9,41807	531	9,42338	530	9,42868	530	88,
9,46044	529	9,46573	528	9,47101	528	9,47629	527	9,48156	527	89,
9,51315	525	9,51840	525	9,52365	525	9,52890	525	9,53415	524	90,
9,56556	523	9,57079	522	9,57601	522	9,58123	522	9,58645	521	91,
9,61769	520	9,62289	519	9,62808	520	9,63328	518	9,63846	519	92,
9,66954	517	9,67471	517	9,67988	516	9,68504	516	9,69020	516	93,
9,72111	514	9,72625	514	9,73139	514	9,73653	513	9,74166	513	94,
9,77241	512	9,77753	511	9,78264	511	9,78775	510	9,79285	511	95,
9,82344	509	9,82853	509	9,83362	508	9,83870	508	9,84378	508	96,
9,87421	506	9,87927	506	9,88433	506	9,88939	505	9,89444	505	97,
9,92472	503	9,92975	504	9,93479	503	9,93982	503	9,94485	502	98,
9,97497	501	9,97998	501	9,98499	500	9,98999	501	9,99500	500	99,

The error of the approximations given an pp. 106 and 107 is not greater than 0,000005 and the error of an approximation obtained by linear interpolation is less than 0,00000589 + the error of rounding off the result.

An example of interpolation is given on p. 105.