

内流空气动力学手册

第三册

[美] F. K. 利特尔 等 编

钱翼稷 赵鹤书 宋宪耕 邹盛铨 潘杰元 译

国防工业出版社

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内 容 简 介

本手册较全面地论述了有关飞行器进气及排气系统内流空气动力学理论及工程估算方法,共分三个分册。

第一分册包括第一~七章,分别论述了有关进气道的设计、损失、附面层、阻力、稳定性、控制以及次流系统的设计与计算问题。

第二分册包括第八~十章,第八章全面地讨论了各种型式喷管的工作原理、性能分析估算及稳定性问题,对于引射喷管的论述尤为详尽;第九章主要讨论有喷流和无喷流时后机身及排气系统阻力的分析及工程估算方法;第十章讨论高涵道比涡轮风扇发动机在飞机上的安装及确定安装性能的计算和实验方法。

第三分册全部为数值表,包括基本热力学关系、正激波、斜激波、圆锥激波及锥型流、换算流量和推力参数等。

书中收集了大量的资料,包括大量的计算图线及实验数据,内容丰富,可供从事飞机、发动机设计和空气动力学研究的工程技术人员以及高等院校师生使用和参考。

INTERNAL AERODYNAMICS MANUAL

F.K. Little, et al

AD 723 841

North American Rockwell Corporation

Columbus, Ohio

June 1970

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译 序

本手册原来是美国海空军系统司令部要求北美洛克威尔公司编写的，其目的是为了使设计人员能够准确而可靠地确定内流对飞机性能的影响。

本手册取材丰富，全面论述了进气道、尾喷管、次流系统以及与飞机上动力装置安装有关的气动问题。本手册原来是按情报资料发表的，而不是按正式书刊出版的，因而全书使用的符号不够统一，在材料的组织、文字叙述方面不够细致。但总起来说，就译者所见，本手册是迄今为止有关飞机内流问题的一本较全面的书。

本手册的另一特点是理论方法与实验研究相结合。在飞机上，与动力装置及其安装有关的许多空气动力学问题是极其复杂的，到目前为止，完全用理论的方法来解决这些问题是根本不可能的。本手册根据空气动力学的基本理论，以及大量的实验研究结果，提出了一套分析、计算内流系统的方法。因此，非常适用于从事飞机设计及气动分析工作的人员。特别是在初步设计阶段，本手册对于内流系统的设计分析、动力装置安装性能的确定以及飞机-发动机整体分析各方面，都有很大的参考价值。

对于从事空气动力学理论研究的人员来说，他们可从本手册中了解到许多实际内流问题、内流现象以及基本理论在内流问题中的具体应用。因此，在确定理论研究课题，建立简化的理论模型等方面，必将从本手册中受到启发。

本手册由潘杰元、钱翼稷、赵鹤书、邹盛铨、宋宪耕等人合译。先由邹盛铨、宋宪耕二同志译出初稿，再由潘杰元、钱翼稷、赵鹤书三同志分章重新校译，最后由潘杰元同志统一全书的译稿。在本手册的翻译过程中，赵中璧同志参加了部分工作。最后，对参加本手册绘图工作的同志致以深切的谢意。

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表一● 基本热力学关系

本表包括下列一些常用的基本热力学关系:

1. 总压与静压之比, p_t/p
2. 总温与静温之比, T_t/T
3. 流管关系式, A/A^*
4. 可压流动压与总压之比, q_c/p_t
5. 当地速度与马赫数为 1.0 时的速度之比, V/a^*

1. 总压与静压之比 p_t/p 的数值表。比值按照同马赫数的函数关系列出。

p_t/p

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.000	1.00000	1.00000	1.00000	1.00001	1.00001	1.00002	1.00003	1.00003	1.00004	1.00006
0.010	1.00007	1.00008	1.00010	1.00012	1.00014	1.00016	1.00018	1.00020	1.00023	1.00025
0.020	1.00028	1.00031	1.00034	1.00037	1.00040	1.00044	1.00047	1.00051	1.00055	1.00059
0.030	1.00063	1.00067	1.00072	1.00076	1.00081	1.00086	1.00091	1.00096	1.00101	1.00107
0.040	1.00112	1.00118	1.00124	1.00129	1.00136	1.00142	1.00148	1.00155	1.00161	1.00168
0.050	1.00175	1.00182	1.00189	1.00197	1.00204	1.00212	1.00220	1.00228	1.00236	1.00244
0.060	1.00252	1.00261	1.00269	1.00278	1.00287	1.00296	1.00305	1.00315	1.00324	1.00334
0.070	1.00343	1.00353	1.00363	1.00374	1.00384	1.00394	1.00405	1.00416	1.00427	1.00438
0.080	1.00449	1.00460	1.00471	1.00483	1.00495	1.00507	1.00519	1.00531	1.00543	1.00556
0.090	1.00568	1.00581	1.00594	1.00607	1.00620	1.00633	1.00647	1.00660	1.00674	1.00688
0.100	1.00702	1.00716	1.00730	1.00745	1.00759	1.00774	1.00789	1.00804	1.00819	1.00834
0.110	1.00850	1.00865	1.00881	1.00897	1.00913	1.00929	1.00945	1.00962	1.00978	1.00995
0.120	1.01012	1.01029	1.01046	1.01063	1.01080	1.01098	1.01116	1.01134	1.01152	1.01170
0.130	1.01188	1.01206	1.01225	1.01244	1.01263	1.01282	1.01301	1.01320	1.01339	1.01359
0.140	1.01379	1.01399	1.01419	1.01439	1.01459	1.01480	1.01500	1.01521	1.01542	1.01563
0.150	1.01584	1.01605	1.01627	1.01648	1.01670	1.01692	1.01714	1.01736	1.01758	1.01781
0.160	1.01803	1.01826	1.01849	1.01872	1.01895	1.01919	1.01942	1.01966	1.01990	1.02014
0.170	1.02038	1.02062	1.02086	1.02111	1.02135	1.02160	1.02185	1.02210	1.02236	1.02261
0.180	1.02286	1.02312	1.02338	1.02364	1.02390	1.02416	1.02443	1.02469	1.02496	1.02523
0.190	1.02550	1.02577	1.02604	1.02632	1.02659	1.02687	1.02715	1.02743	1.02771	1.02800
0.200	1.02828	1.02857	1.02886	1.02914	1.02944	1.02973	1.03002	1.03032	1.03061	1.03091
0.210	1.03121	1.03151	1.03182	1.03212	1.03243	1.03273	1.03304	1.03335	1.03366	1.03398
0.220	1.03429	1.03461	1.03493	1.03525	1.03557	1.03589	1.03621	1.03654	1.03686	1.03719
0.230	1.03752	1.03785	1.03819	1.03852	1.03886	1.03919	1.03953	1.03987	1.04022	1.04056
0.240	1.04090	1.04125	1.04160	1.04195	1.04230	1.04265	1.04301	1.04336	1.04372	1.04408
0.250	1.04444	1.04480	1.04516	1.04553	1.04589	1.04626	1.04663	1.04700	1.04738	1.04775
0.260	1.04813	1.04850	1.04888	1.04926	1.04964	1.05003	1.05041	1.05080	1.05119	1.05158
0.270	1.05197	1.05236	1.05275	1.05315	1.05355	1.05395	1.05435	1.05475	1.05515	1.05556
0.280	1.05596	1.05637	1.05678	1.05719	1.05761	1.05802	1.05844	1.05886	1.05927	1.05970
0.290	1.06012	1.06054	1.06097	1.06140	1.06182	1.06225	1.06269	1.06312	1.06356	1.06399

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.300	1.06443	1.06487	1.06531	1.06575	1.06620	1.06665	1.06709	1.06754	1.06799	1.06845
0.310	1.06890	1.06936	1.06982	1.07027	1.07074	1.07120	1.07166	1.07213	1.07259	1.07306
0.320	1.07353	1.07401	1.07448	1.07496	1.07543	1.07591	1.07639	1.07687	1.07736	1.07784
0.330	1.07833	1.07882	1.07931	1.07980	1.08029	1.08079	1.08128	1.08178	1.08228	1.08278
0.340	1.08329	1.08379	1.08430	1.08481	1.08531	1.08583	1.08634	1.08685	1.08737	1.08789
0.350	1.08841	1.08893	1.08945	1.08998	1.09050	1.09103	1.09156	1.09209	1.09263	1.09316
0.360	1.09370	1.09424	1.09478	1.09532	1.09586	1.09641	1.09695	1.09750	1.09805	1.09860
0.370	1.09915	1.09971	1.10027	1.10083	1.10139	1.10195	1.10251	1.10308	1.10364	1.10421
0.380	1.10478	1.10535	1.10593	1.10650	1.10708	1.10766	1.10824	1.10882	1.10941	1.10999
0.390	1.11058	1.11117	1.11176	1.11235	1.11295	1.11354	1.11414	1.11474	1.11534	1.11595
0.400	1.11655	1.11716	1.11777	1.11838	1.11899	1.11960	1.12022	1.12084	1.12146	1.12208
0.410	1.12270	1.12332	1.12395	1.12458	1.12521	1.12584	1.12647	1.12711	1.12774	1.12838
0.420	1.12902	1.12966	1.13031	1.13095	1.13160	1.13225	1.13290	1.13355	1.13421	1.13487
0.430	1.13552	1.13618	1.13685	1.13751	1.13818	1.13884	1.13951	1.14018	1.14086	1.14153
0.440	1.14221	1.14289	1.14357	1.14425	1.14493	1.14562	1.14630	1.14699	1.14768	1.14838
0.450	1.14907	1.14977	1.15047	1.15117	1.15187	1.15257	1.15328	1.15399	1.15470	1.15541
0.460	1.15612	1.15684	1.15755	1.15827	1.15899	1.15972	1.16044	1.16117	1.16190	1.16263
0.470	1.16336	1.16409	1.16483	1.16557	1.16631	1.16705	1.16779	1.16854	1.16928	1.17003
0.480	1.17079	1.17154	1.17229	1.17305	1.17381	1.17457	1.17533	1.17610	1.17686	1.17763
0.490	1.17840	1.17917	1.17995	1.18072	1.18150	1.18228	1.18307	1.18385	1.18463	1.18542
0.500	1.18621	1.18700	1.18780	1.18859	1.18939	1.19019	1.19099	1.19180	1.19260	1.19341
0.510	1.19422	1.19503	1.19584	1.19666	1.19748	1.19830	1.19912	1.19994	1.20077	1.20159
0.520	1.20242	1.20326	1.20409	1.20492	1.20576	1.20660	1.20744	1.20829	1.20913	1.20998
0.530	1.21083	1.21168	1.21253	1.21339	1.21425	1.21511	1.21597	1.21683	1.21770	1.21857
0.540	1.21944	1.22031	1.22118	1.22206	1.22294	1.22382	1.22470	1.22559	1.22647	1.22736
0.550	1.22825	1.22914	1.23004	1.23094	1.23184	1.23274	1.23364	1.23455	1.23545	1.23636
0.560	1.23727	1.23819	1.23910	1.24002	1.24094	1.24186	1.24279	1.24372	1.24464	1.24558
0.570	1.24651	1.24744	1.24838	1.24932	1.25026	1.25120	1.25215	1.25310	1.25405	1.25500
0.580	1.25596	1.25691	1.25787	1.25883	1.25980	1.26076	1.26173	1.26270	1.26367	1.26464
0.590	1.26562	1.26660	1.26758	1.26856	1.26955	1.27053	1.27152	1.27252	1.27351	1.27451
0.600	1.27550	1.27650	1.27751	1.27851	1.27952	1.28053	1.28154	1.28255	1.28357	1.28459
0.610	1.28561	1.28663	1.28766	1.28869	1.28972	1.29075	1.29178	1.29282	1.29386	1.29490
0.620	1.29594	1.29699	1.29804	1.29909	1.30014	1.30119	1.30225	1.30331	1.30437	1.30544
0.630	1.30650	1.30757	1.30864	1.30972	1.31079	1.31187	1.31295	1.31403	1.31512	1.31621
0.640	1.31730	1.31839	1.31948	1.32058	1.32168	1.32278	1.32388	1.32499	1.32610	1.32721
0.650	1.32832	1.32944	1.33056	1.33168	1.33280	1.33393	1.33505	1.33618	1.33732	1.33845
0.660	1.33959	1.34073	1.34187	1.34301	1.34416	1.34531	1.34646	1.34762	1.34877	1.34993
0.670	1.35110	1.35226	1.35343	1.35460	1.35577	1.35694	1.35812	1.35930	1.36048	1.36166
0.680	1.36285	1.36404	1.36523	1.36642	1.36762	1.36882	1.37002	1.37122	1.37243	1.37364
0.690	1.37485	1.37606	1.37728	1.37850	1.37972	1.38094	1.38217	1.38340	1.38463	1.38586
0.700	1.38710	1.38834	1.38958	1.39083	1.39207	1.39332	1.39458	1.39583	1.39709	1.39835
0.710	1.39961	1.40088	1.40214	1.40341	1.40469	1.40596	1.40724	1.40852	1.40980	1.41109
0.720	1.41238	1.41367	1.41496	1.41626	1.41756	1.41886	1.42017	1.42147	1.42278	1.42410
0.730	1.42541	1.42673	1.42805	1.42937	1.43070	1.43203	1.43336	1.43469	1.43603	1.43737
0.740	1.43871	1.44005	1.44140	1.44275	1.44410	1.44546	1.44682	1.44818	1.44954	1.45091
0.750	1.45228	1.45365	1.45503	1.45640	1.45778	1.45917	1.46055	1.46194	1.46333	1.46473
0.760	1.46612	1.46752	1.46893	1.47033	1.47174	1.47315	1.47457	1.47598	1.47740	1.47882
0.770	1.48025	1.48168	1.48311	1.48454	1.48598	1.48742	1.48886	1.49030	1.49175	1.49320
0.780	1.49466	1.49611	1.49757	1.49904	1.50050	1.50197	1.50344	1.50491	1.50639	1.50787
0.790	1.50935	1.51084	1.51233	1.51382	1.51531	1.51681	1.51831	1.51981	1.52132	1.52283
0.800	1.52434	1.52586	1.52737	1.52889	1.53042	1.53194	1.53347	1.53501	1.53654	1.53808
0.810	1.53962	1.54117	1.54272	1.54427	1.54582	1.54738	1.54894	1.55050	1.55207	1.55364
0.820	1.55521	1.55679	1.55836	1.55994	1.56153	1.56312	1.56471	1.56630	1.56790	1.56950
0.830	1.57110	1.57271	1.57432	1.57593	1.57754	1.57916	1.58078	1.58241	1.58404	1.58567
0.840	1.58730	1.58894	1.59058	1.59222	1.59387	1.59552	1.59717	1.59883	1.60049	1.60215
0.850	1.60382	1.60549	1.60716	1.60884	1.61051	1.61220	1.61388	1.61557	1.61726	1.61896
0.860	1.62066	1.62236	1.62406	1.62577	1.62748	1.62920	1.63091	1.63263	1.63436	1.63609
0.870	1.63782	1.63955	1.64129	1.64303	1.64477	1.64652	1.64827	1.65003	1.65178	1.65354
0.880	1.65531	1.65708	1.65885	1.66062	1.66240	1.66418	1.66596	1.66775	1.66954	1.67134
0.890	1.67314	1.67494	1.67674	1.67855	1.68036	1.68218	1.68400	1.68582	1.68764	1.68947
0.900	1.69130	1.69314	1.69498	1.69682	1.69867	1.70052	1.70237	1.70423	1.70609	1.70795
0.910	1.70982	1.71169	1.71356	1.71544	1.71732	1.71920	1.72109	1.72298	1.72488	1.72678
0.920	1.72868	1.73059	1.73250	1.73441	1.73633	1.73825	1.74017	1.74210	1.74403	1.74596
0.930	1.74790	1.74984	1.75179	1.75374	1.75569	1.75765	1.75961	1.76157	1.76354	1.76551
0.940	1.76749	1.76946	1.77145	1.77343	1.77542	1.77742	1.77941	1.78141	1.78342	1.78543

P_i/P

(续)

M	0.010	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.950	1.78744	1.78945	1.79147	1.79350	1.79552	1.79755	1.79959	1.80163	1.80367	1.80571
0.960	1.80776	1.80982	1.81187	1.81394	1.81600	1.81807	1.82014	1.82222	1.82430	1.82638
0.970	1.82847	1.83056	1.83266	1.83476	1.83686	1.83897	1.84108	1.84319	1.84531	1.84744
0.980	1.84956	1.85169	1.85383	1.85597	1.85811	1.86026	1.86241	1.86456	1.86672	1.86888
0.990	1.87105	1.87322	1.87539	1.87757	1.87975	1.88194	1.88413	1.88632	1.88852	1.89072
1.000	1.89293	1.89514	1.89735	1.89957	1.90180	1.90402	1.90625	1.90849	1.91073	1.91297
1.010	1.91522	1.91747	1.91972	1.92198	1.92425	1.92651	1.92879	1.93106	1.93334	1.93563
1.020	1.93792	1.94021	1.94251	1.94481	1.94711	1.94942	1.95174	1.95405	1.95638	1.95870
1.030	1.96193	1.96337	1.96571	1.96805	1.97040	1.97275	1.97511	1.97747	1.97983	1.98220
1.040	1.98458	1.98695	1.98934	1.99172	1.99411	1.99651	1.99891	2.00131	2.00372	2.00613
1.050	2.00855	2.01097	2.01340	2.01583	2.01826	2.02070	2.02314	2.02559	2.02804	2.03050
1.060	2.03296	2.03543	2.03790	2.04037	2.04285	2.04533	2.04782	2.05031	2.05281	2.05531
1.070	2.05782	2.06033	2.06284	2.06536	2.06789	2.07042	2.07295	2.07549	2.07803	2.08058
1.080	2.08313	2.08568	2.08825	2.09081	2.09338	2.09596	2.09853	2.10112	2.10371	2.10630
1.090	2.10890	2.11150	2.11411	2.11672	2.11934	2.12196	2.12458	2.12722	2.12985	2.13249
1.100	2.13514	2.13779	2.14044	2.14310	2.14576	2.14843	2.15111	2.15379	2.15647	2.15916
1.110	2.16185	2.16455	2.16725	2.16996	2.17267	2.17539	2.17811	2.18084	2.18357	2.18630
1.120	2.18905	2.19179	2.19454	2.19730	2.20006	2.20283	2.20560	2.20837	2.21116	2.21394
1.130	2.21673	2.21953	2.22233	2.22514	2.22795	2.23076	2.23358	2.23641	2.23924	2.24208
1.140	2.24492	2.24776	2.25062	2.25347	2.25633	2.25920	2.26207	2.26495	2.26783	2.27072
1.150	2.27361	2.27651	2.27941	2.28232	2.28523	2.28815	2.29107	2.29400	2.29693	2.29987
1.160	2.30282	2.30577	2.30872	2.31168	2.31465	2.31762	2.32059	2.32357	2.32656	2.32955
1.170	2.33255	2.33555	2.33856	2.34157	2.34459	2.34761	2.35064	2.35368	2.35671	2.35976
1.180	2.36281	2.36587	2.36893	2.37199	2.37507	2.37814	2.38123	2.38432	2.38741	2.39051
1.190	2.39361	2.39672	2.39984	2.40296	2.40609	2.40922	2.41236	2.41550	2.41865	2.42181
1.200	2.42497	2.42813	2.43130	2.43448	2.43766	2.44085	2.44404	2.44724	2.45045	2.45366
1.210	2.45688	2.46010	2.46333	2.46656	2.46980	2.47304	2.47629	2.47955	2.48281	2.48608
1.220	2.48935	2.49263	2.49592	2.49921	2.50251	2.50581	2.50912	2.51243	2.51575	2.51908
1.230	2.52241	2.52575	2.52909	2.53244	2.53579	2.53916	2.54252	2.54590	2.54927	2.55266
1.240	2.55605	2.55945	2.56285	2.56626	2.56967	2.57309	2.57652	2.57995	2.58339	2.58684
1.250	2.59029	2.59374	2.59721	2.60067	2.60415	2.60763	2.61112	2.61461	2.61811	2.62162
1.260	2.62513	2.62865	2.63217	2.63570	2.63924	2.64278	2.64633	2.64988	2.65344	2.65701
1.270	2.66058	2.66416	2.66775	2.67134	2.67494	2.67855	2.68216	2.68577	2.68940	2.69303
1.280	2.69667	2.70031	2.70396	2.70761	2.71128	2.71494	2.71862	2.72230	2.72599	2.72968
1.290	2.73338	2.73709	2.74080	2.74452	2.74825	2.75198	2.75572	2.75947	2.76322	2.76698
1.300	2.77074	2.77452	2.77830	2.78208	2.78587	2.78967	2.79348	2.79729	2.80111	2.80493
1.310	2.80876	2.81260	2.81645	2.82030	2.82416	2.82802	2.83189	2.83577	2.83966	2.84355
1.320	2.84745	2.85135	2.85527	2.85919	2.86311	2.86704	2.87098	2.87493	2.87888	2.88284
1.330	2.88681	2.89079	2.89477	2.89875	2.90275	2.90675	2.91076	2.91477	2.91880	2.92283
1.340	2.92686	2.93091	2.93496	2.93901	2.94308	2.94715	2.95123	2.95532	2.95941	2.96351
1.350	2.96761	2.97173	2.97585	2.97998	2.98411	2.98826	2.99241	2.99656	3.00073	3.00490
1.360	3.00908	3.01326	3.01746	3.02166	3.02586	3.03008	3.03430	3.03853	3.04277	3.04701
1.370	3.05126	3.05552	3.05979	3.06406	3.06834	3.07263	3.07693	3.08123	3.08554	3.08986
1.380	3.09418	3.09852	3.10286	3.10720	3.11156	3.11592	3.12029	3.12467	3.12905	3.13345
1.390	3.13785	3.14226	3.14667	3.15110	3.15553	3.15997	3.16441	3.16887	3.17333	3.17780
1.400	3.18227	3.18676	3.19125	3.19575	3.20026	3.20477	3.20930	3.21383	3.21837	3.22291
1.410	3.22747	3.23203	3.23660	3.24118	3.24577	3.25036	3.25496	3.25957	3.26419	3.26881
1.420	3.27345	3.27809	3.28274	3.28739	3.29206	3.29673	3.30142	3.30610	3.31080	3.31551
1.430	3.32022	3.32494	3.32967	3.33441	3.33916	3.34391	3.34867	3.35344	3.35822	3.36301
1.440	3.36780	3.37261	3.37742	3.38224	3.38707	3.39190	3.39675	3.40160	3.40646	3.41133
1.450	3.41621	3.42110	3.42599	3.43089	3.43580	3.44072	3.44565	3.45059	3.45553	3.46049
1.460	3.46545	3.47042	3.47540	3.48039	3.48538	3.49039	3.49540	3.50042	3.50545	3.51049
1.470	3.51554	3.52059	3.52566	3.53073	3.53581	3.54090	3.54600	3.55111	3.55623	3.56135
1.480	3.56649	3.57163	3.57678	3.58194	3.58711	3.59229	3.59748	3.60267	3.60788	3.61309
1.490	3.61831	3.62355	3.62879	3.63404	3.63929	3.64456	3.64984	3.65512	3.66042	3.66572
1.500	3.67103	3.67635	3.68168	3.68702	3.69237	3.69773	3.70310	3.70847	3.71386	3.71925
1.510	3.72465	3.73007	3.73549	3.74092	3.74636	3.75181	3.75727	3.76273	3.76821	3.77370
1.520	3.77919	3.78470	3.79021	3.79574	3.80127	3.80681	3.81236	3.81793	3.82350	3.82908
1.530	3.83467	3.84027	3.84588	3.85149	3.85712	3.86276	3.86841	3.87406	3.87973	3.88540
1.540	3.89109	3.89679	3.90249	3.90820	3.91393	3.91966	3.92541	3.93116	3.93692	3.94269
1.550	3.94848	3.95427	3.96007	3.96588	3.97170	3.97754	3.98338	3.98923	3.99509	4.00096
1.560	4.00684	4.01273	4.01863	4.02455	4.03047	4.03640	4.04234	4.04829	4.05425	4.06022
1.570	4.06620	4.07219	4.07820	4.08421	4.09023	4.09626	4.10230	4.10836	4.11442	4.12049
1.580	4.12658	4.13267	4.13877	4.14489	4.15101	4.15715	4.16329	4.16945	4.17561	4.18179
1.590	4.18797	4.19417	4.20038	4.20660	4.21282	4.21906	4.22531	4.23157	4.23784	4.24412

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
1.600	4.25042	4.25672	4.26303	4.26935	4.27569	4.28203	4.28839	4.29475	4.30113	4.30752
1.610	4.31392	4.32033	4.32675	4.33318	4.33962	4.34607	4.35253	4.35901	4.36549	4.37199
1.620	4.37850	4.38501	4.39154	4.39808	4.40463	4.41119	4.41777	4.42435	4.43095	4.43755
1.630	4.44417	4.45080	4.45744	4.46409	4.47075	4.47742	4.48410	4.49080	4.49751	4.50422
1.640	4.51095	4.51769	4.52444	4.53121	4.53798	4.54477	4.55156	4.55837	4.56519	4.57202
1.650	4.57886	4.58572	4.59258	4.59946	4.60635	4.61325	4.62016	4.62708	4.63402	4.64097
1.660	4.64792	4.65489	4.66188	4.66887	4.67587	4.68289	4.68992	4.69696	4.70401	4.71107
1.670	4.71815	4.72524	4.73233	4.73945	4.74657	4.75370	4.76085	4.76801	4.77518	4.78236
1.680	4.78956	4.79676	4.80398	4.81121	4.81845	4.82571	4.83298	4.84025	4.84755	4.85485
1.690	4.86216	4.86949	4.87683	4.88418	4.89155	4.89893	4.90631	4.91372	4.92113	4.92856
1.700	4.93599	4.94345	4.95091	4.95838	4.96587	4.97337	4.98089	4.98841	4.99595	5.00350
1.710	5.01106	5.01864	5.02623	5.03383	5.04144	5.04907	5.05671	5.06436	5.07203	5.07970
1.720	5.08739	5.09510	5.10281	5.11054	5.11828	5.12604	5.13380	5.14158	5.14938	5.15718
1.730	5.16500	5.17283	5.18068	5.18854	5.19641	5.20429	5.21219	5.22010	5.22802	5.23596
1.740	5.24391	5.25187	5.25985	5.26784	5.27584	5.28386	5.29189	5.29993	5.30798	5.31605
1.750	5.32414	5.33223	5.34034	5.34847	5.35660	5.36475	5.37291	5.38109	5.38928	5.39749
1.760	5.40570	5.41394	5.42218	5.43044	5.43871	5.44700	5.45530	5.46361	5.47194	5.48028
1.770	5.48863	5.49700	5.50538	5.51378	5.52219	5.53061	5.53905	5.54750	5.55597	5.56445
1.780	5.57294	5.58145	5.58997	5.59851	5.60706	5.61562	5.62420	5.63279	5.64140	5.65002
1.790	5.65866	5.66731	5.67597	5.68465	5.69334	5.70205	5.71077	5.71951	5.72826	5.73702
1.800	5.74580	5.75459	5.76340	5.77222	5.78106	5.78991	5.79878	5.80766	5.81655	5.82546
1.810	5.83439	5.84333	5.85228	5.86125	5.87023	5.87923	5.88824	5.89727	5.90631	5.91537
1.820	5.92444	5.93353	5.94263	5.95175	5.96088	5.97003	5.97920	5.98837	5.99757	6.00677
1.830	6.01600	6.02523	6.03449	6.04376	6.05304	6.06234	6.07165	6.08098	6.09033	6.09969
1.840	6.10906	6.11845	6.12786	6.13728	6.14672	6.15617	6.16564	6.17513	6.18462	6.19414
1.850	6.20367	6.21322	6.22278	6.23236	6.24195	6.25156	6.26118	6.27082	6.28048	6.29015
1.860	6.29984	6.30954	6.31926	6.32900	6.33875	6.34852	6.35830	6.36810	6.37792	6.38775
1.870	6.39760	6.40746	6.41734	6.42724	6.43715	6.44708	6.45702	6.46699	6.47696	6.48696
1.880	6.49697	6.50699	6.51704	6.52710	6.53717	6.54726	6.55737	6.56750	6.57764	6.58780
1.890	6.59797	6.60816	6.61837	6.62860	6.63884	6.64910	6.65937	6.66966	6.67997	6.69030
1.900	6.70064	6.71100	6.72137	6.73177	6.74218	6.75260	6.76305	6.77351	6.78399	6.79448
1.910	6.80499	6.81552	6.82607	6.83663	6.84721	6.85781	6.86842	6.87906	6.88971	6.90037
1.920	6.91106	6.92176	6.93248	6.94322	6.95397	6.96474	6.97553	6.98634	6.99716	7.00800
1.930	7.01886	7.02974	7.04063	7.05155	7.06248	7.07343	7.08439	7.09538	7.10638	7.11740
1.940	7.12843	7.13949	7.15056	7.16165	7.17276	7.18389	7.19503	7.20620	7.21738	7.22858
1.950	7.23980	7.25103	7.26229	7.27356	7.28485	7.29616	7.30748	7.31883	7.33019	7.34158
1.960	7.35298	7.36440	7.37583	7.38729	7.39876	7.41026	7.42177	7.43330	7.44485	7.45642
1.970	7.46800	7.47961	7.49123	7.50288	7.51454	7.52622	7.53792	7.54964	7.56138	7.57313
1.980	7.58491	7.59670	7.60852	7.62035	7.63220	7.64407	7.65596	7.66787	7.67980	7.69175
1.990	7.70371	7.71570	7.72771	7.73973	7.75178	7.76384	7.77592	7.78803	7.80015	7.81229
2.000	7.82445	7.83663	7.84883	7.86105	7.87330	7.88555	7.89783	7.91013	7.92245	7.93479
2.010	7.94715	7.95953	7.97193	7.98435	7.99679	8.00925	8.02172	8.03422	8.04674	8.05928
2.020	8.07184	8.08442	8.09702	8.10964	8.12228	8.13494	8.14762	8.16032	8.17305	8.18579
2.030	8.19855	8.21133	8.22414	8.23696	8.24981	8.26267	8.27556	8.28847	8.30139	8.31434
2.040	8.32731	8.34030	8.35331	8.36634	8.37940	8.39247	8.40556	8.41868	8.43182	8.44497
2.050	8.45815	8.47135	8.48457	8.49782	8.51108	8.52436	8.53767	8.55100	8.56435	8.57772
2.060	8.59111	8.60452	8.61796	8.63141	8.64489	8.65839	8.67191	8.68545	8.69901	8.71260
2.070	8.72621	8.73984	8.75349	8.76716	8.78085	8.79457	8.80831	8.82207	8.83585	8.84965
2.080	8.86348	8.87733	8.89120	8.90509	8.91901	8.93294	8.94690	8.96088	8.97489	8.98891
2.090	9.00296	9.01703	9.03113	9.04524	9.05938	9.07354	9.08773	9.10193	9.11616	9.13041
2.100	9.14469	9.15898	9.17330	9.18765	9.20201	9.21640	9.23081	9.24525	9.25970	9.27418
2.110	9.28869	9.30321	9.31776	9.33233	9.34693	9.36155	9.37619	9.39086	9.40554	9.42026
2.120	9.43499	9.44975	9.46453	9.47934	9.49417	9.50902	9.52390	9.53880	9.55372	9.56867
2.130	9.58364	9.59863	9.61365	9.62870	9.64376	9.65885	9.67397	9.68911	9.70427	9.71945
2.140	9.73466	9.74990	9.76516	9.78044	9.79575	9.81108	9.82643	9.84181	9.85722	9.87265
2.150	9.88810	9.90358	9.91908	9.93461	9.95016	9.96573	9.98134	9.99696	10.01261	10.02829
2.160	10.04398	10.05971	10.07546	10.09123	10.10703	10.12286	10.13870	10.15458	10.17048	10.18640
2.170	10.20235	10.21833	10.23433	10.25035	10.26640	10.28248	10.29858	10.31470	10.33086	10.34703
2.180	10.36324	10.37947	10.39572	10.41200	10.42831	10.44464	10.46099	10.47738	10.49379	10.51022
2.190	10.52668	10.54317	10.55968	10.57622	10.59278	10.60937	10.62599	10.64263	10.65930	10.67599
2.200	10.69272	10.70946	10.72624	10.74304	10.75987	10.77672	10.79360	10.81050	10.82744	10.84440
2.210	10.86138	10.87840	10.89544	10.91250	10.92960	10.94672	10.96386	10.98104	10.99824	11.01547
2.220	11.03272	11.05000	11.06731	11.08465	11.10201	11.11940	11.13682	11.15427	11.17174	11.18924
2.230	11.20677	11.22432	11.24190	11.25951	11.27715	11.29482	11.31251	11.33023	11.34798	11.36576
2.240	11.38356	11.40139	11.41925	11.43714	11.45506	11.47300	11.49097	11.50897	11.52700	11.54506

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M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
2.250	11.56314	11.58125	11.59940	11.61756	11.63576	11.65399	11.67224	11.69053	11.70884	11.72718
2.260	11.74555	11.76395	11.78237	11.80083	11.81931	11.83783	11.85637	11.87494	11.89354	11.91217
2.270	11.93083	11.94951	11.96823	11.98698	12.00575	12.02456	12.04339	12.06225	12.08114	12.10006
2.280	12.11902	12.13800	12.15701	12.17605	12.19511	12.21421	12.23334	12.25250	12.27169	12.29091
2.290	12.31016	12.32943	12.34874	12.36808	12.38745	12.40685	12.42627	12.44573	12.46522	12.48474
2.300	12.50429	12.52387	12.54348	12.56312	12.58279	12.60249	12.62222	12.64199	12.66178	12.68161
2.310	12.70146	12.72135	12.74126	12.76121	12.78119	12.80120	12.82124	12.84131	12.86141	12.88155
2.320	12.90171	12.92191	12.94214	12.96239	12.98269	13.00301	13.02336	13.04374	13.06416	13.08461
2.330	13.10509	13.12560	13.14614	13.16672	13.18732	13.20796	13.22863	13.24933	13.27007	13.29084
2.340	13.31163	13.33246	13.35333	13.37422	13.39515	13.41611	13.43710	13.45813	13.47918	13.50027
2.350	13.52139	13.54255	13.56374	13.58496	13.60621	13.62749	13.64881	13.67016	13.69155	13.71296
2.360	13.73441	13.75590	13.77741	13.79896	13.82054	13.84216	13.86381	13.88549	13.90721	13.92896
2.370	13.95074	13.97256	13.99441	14.01629	14.03821	14.06016	14.08214	14.10416	14.12621	14.14830
2.380	14.17042	14.19257	14.21476	14.23698	14.25924	14.28153	14.30386	14.32621	14.34861	14.37104
2.390	14.39350	14.41600	14.43853	14.46109	14.48369	14.50633	14.52900	14.55170	14.57444	14.59722
2.400	14.62003	14.64287	14.66575	14.68866	14.71161	14.73460	14.75762	14.78067	14.80376	14.82689
2.410	14.85005	14.87325	14.89648	14.91975	14.94305	14.96639	14.98976	15.01318	15.03662	15.06010
2.420	15.08362	15.10718	15.13077	15.15439	15.17805	15.20175	15.22549	15.24926	15.27306	15.29691
2.430	15.32079	15.34470	15.36866	15.39265	15.41667	15.44074	15.46484	15.48897	15.51314	15.53735
2.440	15.56160	15.58588	15.61021	15.63456	15.65896	15.68339	15.70786	15.73237	15.75691	15.78149
2.450	15.80611	15.83077	15.85546	15.88019	15.90496	15.92977	15.95461	15.97950	16.00442	16.02937
2.460	16.05437	16.07940	16.10448	16.12959	16.15473	16.17992	16.20515	16.23041	16.25571	16.28105
2.470	16.30643	16.33185	16.35730	16.38280	16.40833	16.43390	16.45951	16.48516	16.51085	16.53658
2.480	16.56234	16.58815	16.61399	16.63988	16.66580	16.69176	16.71776	16.74380	16.76988	16.79600
2.490	16.82216	16.84836	16.87460	16.90088	16.92720	16.95356	16.97995	17.00639	17.03287	17.05939
2.500	17.08595	17.11254	17.13918	17.16586	17.19258	17.21934	17.24614	17.27298	17.29986	17.32678
2.510	17.35375	17.38075	17.40779	17.43488	17.46200	17.48917	17.51638	17.54362	17.57091	17.59824
2.520	17.62562	17.65303	17.68048	17.70798	17.73552	17.76310	17.79072	17.81838	17.84608	17.87383
2.530	17.90161	17.92944	17.95731	17.98523	18.01318	18.04118	18.06922	18.09730	18.12542	18.15359
2.540	18.18180	18.21005	18.23834	18.26668	18.29505	18.32348	18.35194	18.38045	18.40900	18.43759
2.550	18.46622	18.49490	18.52362	18.55239	18.58119	18.61004	18.63894	18.66788	18.69686	18.72588
2.560	18.75495	18.78406	18.81321	18.84241	18.87166	18.90094	18.93027	18.95965	18.98906	19.01853
2.570	19.04803	19.07758	19.10718	19.13682	19.16650	19.19623	19.22600	19.25582	19.28568	19.31558
2.580	19.34554	19.37553	19.40557	19.43566	19.46579	19.49596	19.52618	19.55645	19.58676	19.61712
2.590	19.64752	19.67797	19.70846	19.73900	19.76958	19.80021	19.83088	19.86160	19.89237	19.92318
2.600	19.95404	19.98494	20.01589	20.04689	20.07793	20.10902	20.14016	20.17134	20.20257	20.23384
2.610	20.26516	20.29653	20.32795	20.35941	20.39092	20.42247	20.45407	20.48572	20.51742	20.54916
2.620	20.58095	20.61279	20.64467	20.67661	20.70859	20.74061	20.77269	20.80481	20.83698	20.86920
2.630	20.90147	20.93378	20.96614	20.99855	21.03101	21.06352	21.09607	21.12867	21.16132	21.19402
2.640	21.22677	21.25957	21.29241	21.32531	21.35825	21.39124	21.42428	21.45737	21.49051	21.52370
2.650	21.55693	21.59022	21.62355	21.65694	21.69037	21.72385	21.75739	21.79097	21.82460	21.85828
2.660	21.89202	21.92580	21.95963	21.99351	22.02744	22.06142	22.09545	22.12954	22.16367	22.19785
2.670	22.23208	22.26637	22.30070	22.33509	22.36952	22.40401	22.43855	22.47314	22.50778	22.54247
2.680	22.57721	22.61200	22.64684	22.68174	22.71669	22.75168	22.78673	22.82184	22.85699	22.89219
2.690	22.92745	22.96276	22.99812	23.03353	23.06900	23.10452	23.14009	23.17571	23.21138	23.24711
2.700	23.28289	23.31872	23.35460	23.39054	23.42653	23.46257	23.49867	23.53482	23.57102	23.60727
2.710	23.64358	23.67994	23.71636	23.75282	23.78935	23.82592	23.86255	23.89923	23.93597	23.97276
2.720	24.00960	24.04650	24.08345	24.12046	24.15752	24.19464	24.23180	24.26903	24.30631	24.34364
2.730	24.38103	24.41847	24.45597	24.49352	24.53112	24.56879	24.60650	24.64427	24.68210	24.71998
2.740	24.75792	24.79591	24.83396	24.87207	24.91023	24.94844	24.98671	25.02504	25.06343	25.10186
2.750	25.14036	25.17891	25.21752	25.25618	25.29490	25.33368	25.37252	25.41141	25.45035	25.48936
2.760	25.52842	25.56753	25.60671	25.64594	25.68523	25.72457	25.76398	25.80344	25.84296	25.88253
2.770	25.92216	25.96186	26.00160	26.04141	26.08127	26.12120	26.16118	26.20121	26.24131	26.28147
2.780	26.32168	26.36195	26.40228	26.44267	26.48312	26.52362	26.56419	26.60481	26.64549	26.68623
2.790	26.72704	26.76790	26.80881	26.84979	26.89083	26.93193	26.97309	27.01430	27.05558	27.09691
2.800	27.13831	27.17977	27.22128	27.26286	27.30450	27.34619	27.38795	27.42977	27.47165	27.51358
2.810	27.55558	27.59764	27.63976	27.68195	27.72419	27.76648	27.80886	27.85128	27.89377	27.93632
2.820	27.97893	28.02160	28.06434	28.10713	28.14999	28.19291	28.23589	28.27893	28.32203	28.36520
2.830	28.40843	28.45172	28.49508	28.53849	28.58197	28.62551	28.66912	28.71279	28.75652	28.80031
2.840	28.84417	28.88809	28.93207	28.97611	29.02022	29.06440	29.10863	29.15293	29.19730	29.24173
2.850	29.28622	29.33077	29.37539	29.42008	29.46482	29.50964	29.55451	29.59945	29.64446	29.68953
2.860	29.73466	29.77986	29.82513	29.87046	29.91585	29.96131	30.00684	30.05243	30.09808	30.14381
2.870	30.18959	30.23544	30.28136	30.32735	30.37340	30.41951	30.46569	30.51194	30.55826	30.60464
2.880	30.65108	30.69760	30.74418	30.79082	30.83754	30.88432	30.93116	30.97808	31.02506	31.07211
2.890	31.11922	31.16641	31.21366	31.26098	31.30836	31.35581	31.40333	31.45092	31.49858	31.54631

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
2.900	31.59410	31.64196	31.68989	31.73789	31.78595	31.83409	31.88229	31.93056	31.97890	32.02731
2.910	32.07579	32.12434	32.17296	32.22164	32.27040	32.31923	32.36812	32.41708	32.46612	32.51522
2.920	32.56440	32.61364	32.66295	32.71234	32.76179	32.81132	32.86091	32.91058	32.96031	33.01012
2.930	33.06000	33.10994	33.15996	33.21005	33.26022	33.31045	33.36075	33.41113	33.46157	33.51209
2.940	33.56268	33.61334	33.66408	33.71488	33.76576	33.81671	33.86773	33.91883	33.96999	34.02123
2.950	34.07255	34.12393	34.17539	34.22692	34.27852	34.33020	34.38195	34.43377	34.48566	34.53763
2.960	34.58968	34.64179	34.69398	34.74625	34.79858	34.85100	34.90348	34.95604	35.00868	35.06138
2.970	35.11417	35.16703	35.21996	35.27296	35.32605	35.37920	35.43243	35.48574	35.53912	35.59258
2.980	35.64611	35.69972	35.75340	35.80716	35.86100	35.91491	35.96890	36.02296	36.07710	36.13131
2.990	36.18561	36.23997	36.29442	36.34894	36.40354	36.45821	36.51297	36.56779	36.62270	36.67768
3.000	36.7327	36.7879	36.8431	36.8984	36.9537	37.0092	37.0647	37.1203	37.1760	37.2318
3.010	37.2876	37.3435	37.3995	37.4556	37.5117	37.5680	37.6243	37.6807	37.7371	37.7937
3.020	37.8503	37.9070	37.9638	38.0207	38.0776	38.1346	38.1917	38.2489	38.3062	38.3635
3.030	38.4210	38.4785	38.5361	38.5937	38.6515	38.7093	38.7672	38.8252	38.8833	38.9414
3.040	38.9996	39.0580	39.1164	39.1748	39.2334	39.2920	39.3508	39.4096	39.4684	39.5274
3.050	39.5865	39.6456	39.7048	39.7641	39.8235	39.8830	39.9425	40.0021	40.0619	40.1217
3.060	40.1815	40.2415	40.3015	40.3617	40.4219	40.4822	40.5426	40.6030	40.6636	40.7242
3.070	40.7849	40.8457	40.9066	40.9676	41.0287	41.0898	41.1510	41.2123	41.2737	41.3352
3.080	41.3968	41.4584	41.5202	41.5820	41.6439	41.7059	41.7680	41.8302	41.8924	41.9548
3.090	42.0172	42.0797	42.1423	42.2050	42.2678	42.3306	42.3936	42.4566	42.5197	42.5829
3.100	42.6462	42.7096	42.7731	42.8367	42.9003	42.9640	43.0279	43.0918	43.1558	43.2199
3.110	43.2841	43.3483	43.4127	43.4771	43.5417	43.6063	43.6710	43.7358	43.8007	43.8657
3.120	43.9307	43.9959	44.0612	44.1265	44.1919	44.2574	44.3231	44.3888	44.4546	44.5204
3.130	44.5864	44.6525	44.7186	44.7849	44.8512	44.9176	44.9842	45.0508	45.1175	45.1843
3.140	45.2512	45.3182	45.3852	45.4524	45.5197	45.5870	45.6544	45.7220	45.7896	45.8573
3.150	45.9251	45.9930	46.0610	46.1291	46.1973	46.2656	46.3340	46.4025	46.4710	46.5397
3.160	46.6084	46.6773	46.7462	46.8152	46.8844	46.9536	47.0229	47.0923	47.1618	47.2314
3.170	47.3011	47.3709	47.4408	47.5108	47.5809	47.6511	47.7213	47.7917	47.8622	47.9327
3.180	48.0034	48.0742	48.1450	48.2160	48.2870	48.3581	48.4294	48.5007	48.5722	48.6437
3.190	48.7153	48.7870	48.8589	48.9308	49.0028	49.0749	49.1472	49.2195	49.2919	49.3644
3.200	49.4370	49.5097	49.5825	49.6555	49.7285	49.8016	49.8748	49.9481	50.0215	50.0950
3.210	50.1686	50.2423	50.3161	50.3901	50.4641	50.5382	50.6124	50.6867	50.7611	50.8356
3.220	50.9103	50.9850	51.0598	51.1347	51.2097	51.2849	51.3601	51.4354	51.5108	51.5864
3.230	51.6620	51.7378	51.8136	51.8895	51.9656	52.0417	52.1180	52.1943	52.2708	52.3474
3.240	52.4240	52.5008	52.5777	52.6547	52.7318	52.8089	52.8862	52.9636	53.0411	53.1187
3.250	53.1965	53.2743	53.3522	53.4302	53.5084	53.5866	53.6649	53.7434	53.8220	53.9006
3.260	53.9794	54.0583	54.1372	54.2163	54.2955	54.3748	54.4542	54.5338	54.6134	54.6931
3.270	54.7730	54.8529	54.9330	55.0131	55.0934	55.1738	55.2543	55.3349	55.4156	55.4964
3.280	55.5773	55.6583	55.7395	55.8207	55.9021	55.9835	56.0651	56.1468	56.2286	56.3105
3.290	56.3925	56.4746	56.5569	56.6392	56.7217	56.8043	56.8869	56.9697	57.0526	57.1357
3.300	57.2188	57.3020	57.3854	57.4688	57.5524	57.6361	57.7199	57.8038	57.8878	57.9719
3.310	58.0562	58.1406	58.2250	58.3096	58.3943	58.4791	58.5641	58.6491	58.7343	58.8195
3.320	58.9049	58.9904	59.0760	59.1617	59.2476	59.3335	59.4196	59.5058	59.5921	59.6785
3.330	59.7650	59.8517	59.9384	60.0253	60.1123	60.1994	60.2867	60.3740	60.4615	60.5490
3.340	60.6367	60.7245	60.8125	60.9005	60.9887	61.0770	61.1654	61.2539	61.3425	61.4313
3.350	61.5201	61.6091	61.6982	61.7874	61.8768	61.9662	62.0558	62.1455	62.2354	62.3253
3.360	62.4154	62.5055	62.5958	62.6863	62.7768	62.8674	62.9582	63.0491	63.1402	63.2313
3.370	63.3226	63.4139	63.5054	63.5971	63.6888	63.7807	63.8727	63.9648	64.0570	64.1494
3.380	64.2419	64.3345	64.4272	64.5201	64.6130	64.7061	64.7994	64.8927	64.9862	65.0798
3.390	65.1735	65.2673	65.3613	65.4554	65.5496	65.6439	65.7384	65.8329	65.9277	66.0225
3.400	66.1175	66.2125	66.3078	66.4031	66.4986	66.5941	66.6899	66.7857	66.8817	66.9778
3.410	67.0740	67.1703	67.2668	67.3634	67.4602	67.5570	67.6540	67.7511	67.8484	67.9457
3.420	68.0432	68.1409	68.2386	68.3365	68.4345	68.5327	68.6309	68.7293	68.8279	68.9265
3.430	69.0253	69.1242	69.2233	69.3225	69.4218	69.5212	69.6208	69.7205	69.8203	69.9203
3.440	70.0204	70.1206	70.2210	70.3215	70.4221	70.5228	70.6237	70.7247	70.8259	70.9272
3.450	71.0286	71.1302	71.2318	71.3337	71.4356	71.5377	71.6399	71.7423	71.8447	71.9474
3.460	72.0501	72.1530	72.2560	72.3592	72.4625	72.5659	72.6695	72.7732	72.8770	72.9810
3.470	73.0851	73.1893	73.2937	73.3982	73.5029	73.6077	73.7126	73.8177	73.9229	74.0282
3.480	74.1337	74.2393	74.3450	74.4509	74.5570	74.6631	74.7694	74.8759	74.9824	75.0892
3.490	75.1960	75.3030	75.4102	75.5174	75.6249	75.7324	75.8401	75.9479	76.0559	76.1640
3.500	76.2723	76.3807	76.4892	76.5979	76.7067	76.8157	76.9248	77.0341	77.1434	77.2530
3.510	77.3627	77.4725	77.5824	77.6925	77.8028	77.9132	78.0237	78.1344	78.2452	78.3562
3.520	78.4673	78.5785	78.6899	78.8014	78.9131	79.0250	79.1369	79.2490	79.3613	79.4737
3.530	79.5863	79.6990	79.8118	79.9248	80.0379	80.1512	80.2647	80.3782	80.4920	80.6058
3.540	80.7199	80.8340	80.9483	81.0628	81.1774	81.2922	81.4071	81.5221	81.6373	81.7527

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(续)

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
3.550	81.8632	81.9838	82.0996	82.2156	82.3317	82.4479	82.5643	82.6809	82.7976	82.9144
3.560	83.0314	83.1486	83.2659	83.3833	83.5009	83.6187	83.7366	83.8547	83.9729	84.0912
3.570	84.2098	84.3284	84.4472	84.5662	84.6853	84.8046	84.9241	85.0436	85.1634	85.2833
3.580	85.4033	85.5235	85.6439	85.7644	85.8851	86.0059	86.1269	86.2480	86.3693	86.4907
3.590	86.6123	86.7341	86.8560	86.9781	87.1003	87.2227	87.3452	87.4679	87.5908	87.7138
3.600	87.8369	87.9603	88.0837	88.2074	88.3312	88.4551	88.5792	88.7035	88.8280	88.9525
3.610	89.0773	89.2022	89.3273	89.4525	89.5779	89.7035	89.8292	89.9550	90.0811	90.2073
3.620	90.3336	90.4601	90.5868	90.7137	90.8407	90.9678	91.0952	91.2226	91.3503	91.4781
3.630	91.6061	91.7342	91.8625	91.9910	92.1196	92.2484	92.3774	92.5065	92.6358	92.7652
3.640	92.8949	93.0246	93.1546	93.2847	93.4150	93.5454	93.6760	93.8068	93.9378	94.0689
3.650	94.2001	94.3316	94.4632	94.5950	94.7269	94.8590	94.9913	95.1237	95.2564	95.3891
3.660	95.5221	95.6552	95.7885	95.9220	96.0556	96.1894	96.3234	96.4575	96.5918	96.7263
3.670	96.8609	96.9957	97.1307	97.2659	97.4012	97.5367	97.6724	97.8082	97.9443	98.0804
3.680	98.2168	98.3533	98.4900	98.6269	98.7640	98.9012	99.0386	99.1762	99.3139	99.4518
3.690	99.5899	99.7282	99.8666	100.0053	100.1441	100.2830	100.4222	100.5615	100.7010	100.8407
3.700	100.9805	101.1205	101.2607	101.4011	101.5417	101.6824	101.8233	101.9644	102.1056	102.2471
3.710	102.3887	102.5305	102.6725	102.8146	102.9570	103.0995	103.2422	103.3851	103.5281	103.6713
3.720	103.8147	103.9583	104.1021	104.2461	104.3902	104.5345	104.6790	104.8237	104.9685	105.1136
3.730	105.2588	105.4042	105.5498	105.6956	105.8415	105.9877	106.1340	106.2805	106.4272	106.5740
3.740	106.7211	106.8683	107.0158	107.1634	107.3112	107.4591	107.6073	107.7556	107.9042	108.0529
3.750	108.2018	108.3509	108.5002	108.6496	108.7993	108.9491	109.0992	109.2494	109.3998	109.5504
3.760	109.7011	109.8521	110.0033	110.1546	110.3061	110.4579	110.6098	110.7619	110.9142	111.0666
3.770	111.2193	111.3722	111.5252	111.6785	111.8319	111.9855	112.1393	112.2934	112.4476	112.6019
3.780	112.7565	112.9113	113.0663	113.2214	113.3768	113.5323	113.6881	113.8440	114.0002	114.1565
3.790	114.3130	114.4697	114.6266	114.7837	114.9410	115.0985	115.2562	115.4141	115.5722	115.7304
3.800	115.8889	116.0476	116.2065	116.3655	116.5248	116.6842	116.8439	117.0038	117.1638	117.3241
3.810	117.4845	117.6452	117.8060	117.9671	118.1283	118.2898	118.4514	118.6132	118.7753	118.9375
3.820	119.1000	119.2626	119.4255	119.5885	119.7518	119.9153	120.0789	120.2428	120.4068	120.5711
3.830	120.7356	120.9002	121.0651	121.2302	121.3955	121.5610	121.7267	121.8926	122.0587	122.2250
3.840	122.3915	122.5582	122.7251	122.8922	123.0596	123.2271	123.3949	123.5628	123.7310	123.8993
3.850	124.0679	124.2367	124.4057	124.5749	124.7443	124.9139	125.0837	125.2538	125.4240	125.5945
3.860	125.7651	125.9360	126.1071	126.2784	126.4499	126.6216	126.7935	126.9656	127.1380	127.3105
3.870	127.4833	127.6563	127.8295	128.0029	128.1765	128.3503	128.5244	128.6987	128.8731	129.0478
3.880	129.2227	129.3978	129.5732	129.7487	129.9245	130.1004	130.2766	130.4530	130.6297	130.8065
3.890	130.9836	131.1608	131.3383	131.5160	131.6939	131.8721	132.0504	132.2290	132.4078	132.5868
3.900	132.7661	132.9455	133.1252	133.3051	133.4852	133.6655	133.8461	134.0268	134.2078	134.3891
3.910	134.5705	134.7521	134.9340	135.1161	135.2984	135.4810	135.6637	135.8467	136.0299	136.2134
3.920	136.3970	136.5809	136.7650	136.9494	137.1339	137.3187	137.5037	137.6889	137.8744	138.0601
3.930	138.2460	138.4321	138.6185	138.8050	138.9919	139.1789	139.3662	139.5537	139.7414	139.9293
3.940	140.1175	140.3059	140.4945	140.6834	140.8725	141.0618	141.2514	141.4412	141.6312	141.8214
3.950	142.0119	142.2026	142.3935	142.5847	142.7761	142.9677	143.1596	143.3517	143.5440	143.7366
3.960	143.9294	144.1224	144.3157	144.5092	144.7029	144.8969	145.0911	145.2855	145.4802	145.6751
3.970	145.8702	146.0656	146.2612	146.4571	146.6531	146.8495	147.0460	147.2428	147.4399	147.6371
3.980	147.8346	148.0324	148.2304	148.4286	148.6271	148.8258	149.0247	149.2239	149.4233	149.6230
3.990	149.8229	150.0230	150.2234	150.4240	150.6249	150.8260	151.0274	151.2290	151.4308	151.6329
4.000	151.8352	152.0378	152.2406	152.4437	152.6470	152.8505	153.0543	153.2583	153.4626	153.6671
4.010	153.8719	154.0769	154.2822	154.4877	154.6935	154.8995	155.1057	155.3122	155.5190	155.7259
4.020	155.9332	156.1407	156.3484	156.5564	156.7646	156.9731	157.1819	157.3909	157.6001	157.8096
4.030	158.0193	158.2293	158.4396	158.6501	158.8608	159.0718	159.2831	159.4946	159.7063	159.9183
4.040	160.1306	160.3431	160.5559	160.7689	160.9822	161.1957	161.4095	161.6235	161.8378	162.0524
4.050	162.2672	162.4823	162.6976	162.9132	163.1290	163.3451	163.5615	163.7781	163.9950	164.2121
4.060	164.4295	164.6471	164.8650	165.0832	165.3016	165.5203	165.7393	165.9585	166.1780	166.3977
4.070	166.6177	166.8379	167.0585	167.2792	167.5003	167.7216	167.9431	168.1650	168.3871	168.6094
4.080	168.8321	169.0549	169.2781	169.5015	169.7252	169.9491	170.1734	170.3978	170.6226	170.8476
4.090	171.0729	171.2984	171.5242	171.7503	171.9767	172.2033	172.4302	172.6573	172.8848	173.1125
4.100	173.3404	173.5687	173.7972	174.0259	174.2550	174.4843	174.7139	174.9438	175.1739	175.4043
4.110	175.6350	175.8659	176.0971	176.3286	176.5604	176.7925	177.0248	177.2574	177.4902	177.7234
4.120	177.9568	178.1905	178.4245	178.6587	178.8932	179.1280	179.3631	179.5985	179.8341	180.0700
4.130	180.3062	180.5427	180.7794	181.0164	181.2537	181.4913	181.7292	181.9673	182.2058	182.4445
4.140	182.6835	182.9227	183.1623	183.4021	183.6422	183.8826	184.1233	184.3642	184.6055	184.8470
4.150	185.0888	185.3309	185.5733	185.8160	186.0589	186.3022	186.5457	186.7895	187.0336	187.2780
4.160	187.5226	187.7676	188.0128	188.2584	188.5042	188.7503	188.9967	189.2434	189.4903	189.7376
4.170	189.9852	190.2330	190.4811	190.7296	190.9783	191.2273	191.4766	191.7262	191.9760	192.2262
4.180	192.4767	192.7274	192.9785	193.2298	193.4815	193.7334	193.9856	194.2382	194.4910	194.7441
4.190	194.9975	195.2512	195.5052	195.7595	196.0141	196.2690	196.5242	196.7797	197.0355	197.2916

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
4.200	197.5479	197.8046	198.0616	198.3189	198.5765	198.8343	199.0925	199.3510	199.6098	199.8689
4.210	200.1283	200.3880	200.6480	200.9082	201.1688	201.4297	201.6910	201.9525	202.2143	202.4764
4.220	202.7388	203.0015	203.2646	203.5279	203.7916	204.0555	204.3198	204.5843	204.8492	205.1144
4.230	205.3799	205.6457	205.9118	206.1782	206.4449	206.7119	206.9793	207.2469	207.5149	207.7832
4.240	208.0517	208.3206	208.5898	208.8594	209.1292	209.3993	209.6698	209.9406	210.2116	210.4830
4.250	210.7547	211.0268	211.2991	211.5718	211.8447	212.1180	212.3916	212.6655	212.9398	213.2143
4.260	213.4892	213.7644	214.0399	214.3157	214.5919	214.8683	215.1451	215.4222	215.6996	215.9774
4.270	216.2554	216.5338	216.8125	217.0915	217.3709	217.6505	217.9305	218.2108	218.4915	218.7724
4.280	219.0537	219.3353	219.6173	219.8995	220.1821	220.4650	220.7482	221.0318	221.3157	221.5999
4.290	221.8844	222.1693	222.4545	222.7400	223.0259	223.3120	223.5985	223.8854	224.1726	224.4600
4.300	224.7479	225.0360	225.3245	225.6133	225.9025	226.1920	226.4818	226.7719	227.0624	227.3532
4.310	227.6444	227.9358	228.2277	228.5198	228.8123	229.1051	229.3983	229.6918	229.9856	230.2797
4.320	230.5742	230.8691	231.1643	231.4598	231.7556	232.0518	232.3483	232.6452	232.9424	233.2400
4.330	233.5379	233.8361	234.1346	234.4336	234.7328	235.0324	235.3323	235.6326	235.9332	236.2342
4.340	236.5355	236.8372	237.1392	237.4415	237.7442	238.0472	238.3506	238.6543	238.9584	239.2628
4.350	239.5676	239.8727	240.1781	240.4839	240.7901	241.0966	241.4034	241.7106	242.0182	242.3261
4.360	242.6343	242.9429	243.2519	243.5612	243.8709	244.1809	244.4912	244.8019	245.1130	245.4244
4.370	245.7362	246.0483	246.3608	246.6737	246.9869	247.3004	247.6143	247.9286	248.2432	248.5582
4.380	248.8735	249.1892	249.5052	249.8216	250.1384	250.4555	250.7730	251.0909	251.4091	251.7276
4.390	252.0466	252.3658	252.6855	253.0055	253.3259	253.6466	253.9677	254.2892	254.6110	254.9332
4.400	255.2557	255.5787	255.9020	256.2256	256.5496	256.8740	257.1988	257.5239	257.8494	258.1752
4.410	258.5014	258.8280	259.1550	259.4823	259.8100	260.1380	260.4665	260.7953	261.1245	261.4540
4.420	261.7839	262.1142	262.4449	262.7759	263.1073	263.4391	263.7713	264.1038	264.4367	264.7700
4.430	265.1036	265.4377	265.7721	266.1069	266.4420	266.7776	267.1135	267.4498	267.7864	268.1235
4.440	268.4609	268.7987	269.1369	269.4755	269.8144	270.1538	270.4935	270.8336	271.1740	271.5149
4.450	271.8561	272.1978	272.5398	272.8822	273.2249	273.5681	273.9116	274.2556	274.5999	274.9446
4.460	275.2897	275.6351	275.9810	276.3272	276.6739	277.0209	277.3683	277.7161	278.0643	278.4129
4.470	278.7618	279.1112	279.4610	279.8111	280.1616	280.5126	280.8639	281.2156	281.5677	281.9202
4.480	282.2731	282.6264	282.9800	283.3341	283.6886	284.0435	284.3987	284.7544	285.1104	285.4669
4.490	285.8238	286.1810	286.5387	286.8967	287.2551	287.6140	287.9732	288.3329	288.6929	289.0534
4.500	289.4142	289.7755	290.1371	290.4992	290.8617	291.2245	291.5878	291.9515	292.3155	292.6800
4.510	293.0449	293.4102	293.7759	294.1420	294.5085	294.8754	295.2428	295.6105	295.9787	296.3472
4.520	296.7162	297.0855	297.4553	297.8255	298.1961	298.5671	298.9386	299.3104	299.6827	300.0553
4.530	300.4284	300.8019	301.1758	301.5501	301.9249	302.3000	302.6756	303.0516	303.4280	303.8048
4.540	304.1820	304.5597	304.9377	305.3162	305.6951	306.0745	306.4542	306.8344	307.2150	307.5960
4.550	307.9774	308.3592	308.7415	309.1242	309.5073	309.8909	310.2748	310.6592	311.0440	311.4293
4.560	311.8149	312.2010	312.5875	312.9745	313.3618	313.7496	314.1379	314.5265	314.9156	315.3051
4.570	315.6950	316.0854	316.4762	316.8674	317.2591	317.6512	318.0437	318.4367	318.8301	319.2239
4.580	319.6181	320.0128	320.4080	320.8035	321.1995	321.5959	321.9928	322.3901	322.7878	323.1860
4.590	323.5846	323.9837	324.3832	324.7831	325.1835	325.5842	325.9855	326.3872	326.7893	327.1919
4.600	327.5949	327.9984	328.4023	328.8066	329.2114	329.6166	330.0223	330.4284	330.8350	331.2420
4.610	331.6494	332.0573	332.4657	332.8744	333.2837	333.6934	334.1035	334.5141	334.9251	335.3366
4.620	335.7485	336.1609	336.5738	336.9871	337.4008	337.8150	338.2296	338.6447	339.0603	339.4763
4.630	339.8928	340.3097	340.7270	341.1449	341.5631	341.9819	342.4011	342.8207	343.2408	343.6614
4.640	344.0824	344.5039	344.9259	345.3483	345.7712	346.1945	346.6183	347.0425	347.4672	347.8924
4.650	348.3180	348.7442	349.1707	349.5978	350.0252	350.4532	350.8816	351.3105	351.7399	352.1697
4.660	352.6000	353.0308	353.4620	353.8937	354.3259	354.7585	355.1916	355.6252	356.0592	356.4938
4.670	356.9288	357.3642	357.8002	358.2366	358.6735	359.1108	359.5486	359.9870	360.4257	360.8650
4.680	361.3047	361.7449	362.1856	362.6268	363.0684	363.5106	363.9532	364.3962	364.8398	365.2839
4.690	365.7284	366.1734	366.6189	367.0648	367.5113	367.9582	368.4056	368.8535	369.3019	369.7508
4.700	370.2001	370.6500	371.1003	371.5511	372.0024	372.4542	372.9065	373.3592	373.8125	374.2662
4.710	374.7205	375.1752	375.6304	376.0861	376.5423	376.9990	377.4562	377.9138	378.3720	378.8307
4.720	379.2898	379.7495	380.2096	380.6703	381.1314	381.5930	382.0552	382.5178	382.9809	383.4445
4.730	383.9087	384.3733	384.8384	385.3040	385.7701	386.2368	386.7039	387.1715	387.6396	388.1083
4.740	388.5774	389.0471	389.5172	389.9879	390.4590	390.9307	391.4028	391.8755	392.3487	392.8224
4.750	393.2966	393.7713	394.2465	394.7222	395.1985	395.6752	396.1525	396.6303	397.1085	397.5873
4.760	398.0666	398.5465	399.0268	399.5076	399.9890	400.4709	400.9533	401.4362	401.9196	402.4036
4.770	402.8880	403.3730	403.8585	404.3445	404.8311	405.3181	405.8057	406.2938	406.7824	407.2716
4.780	407.7612	408.2514	408.7421	409.2334	409.7251	410.2174	410.7102	411.2036	411.6974	412.1918
4.790	412.6867	413.1822	413.6782	414.1747	414.6717	415.1692	415.6673	416.1660	416.6651	417.1648
4.800	417.6650	418.1658	418.6670	419.1689	419.6712	420.1741	420.6775	421.1815	421.6860	422.1910
4.810	422.6966	423.2027	423.7093	424.2165	424.7242	425.2325	425.7413	426.2506	426.7605	427.2709
4.820	427.7819	428.2934	428.8054	429.3180	429.8311	430.3448	430.8590	431.3738	431.8891	432.4050
4.830	432.9214	433.4384	433.9559	434.4739	434.9925	435.5117	436.0314	436.5516	437.0724	437.5938
4.840	438.1157	438.6382	439.1612	439.6847	440.2088	440.7335	441.2588	441.7845	442.3109	442.8378

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
4.850	443.3652	443.8932	444.4218	444.9509	445.4806	446.0109	446.5417	447.0730	447.6050	448.1375
4.860	448.6705	449.2041	449.7383	450.2730	450.8083	451.3442	451.8807	452.4177	452.9552	453.4934
4.870	454.0321	454.5713	455.1112	455.6516	456.1925	456.7341	457.2762	457.8189	458.3621	458.9060
4.880	459.4504	459.9953	460.5409	461.0870	461.6337	462.1810	462.7298	463.2772	463.8262	464.3758
4.890	464.9260	465.4767	466.0280	466.5799	467.1324	467.6854	468.2390	468.7932	469.3480	469.9034
4.900	470.4594	471.0159	471.5730	472.1307	472.6890	473.2479	473.8074	474.3674	474.9281	475.4893
4.910	476.0511	476.6135	477.1765	477.7401	478.3042	478.8690	479.4344	480.0003	480.5668	481.1340
4.920	481.7017	482.2700	482.8389	483.4084	483.9785	484.5492	485.1205	485.6924	486.2649	486.8380
4.930	487.4117	487.9860	488.5608	489.1363	489.7124	490.2891	490.8664	491.4443	492.0228	492.6019
4.940	493.1816	493.7619	494.3428	494.9243	495.5064	496.0892	496.6725	497.2565	497.8410	498.4262
4.950	499.0119	499.5983	500.1853	500.7729	501.3611	501.9500	502.5394	503.1295	503.7201	504.3114
4.960	504.9033	505.4958	506.0890	506.6827	507.2771	507.8721	508.4677	509.0639	509.6607	510.2582
4.970	510.8562	511.4549	512.0543	512.6542	513.2548	513.8560	514.4578	515.0602	515.6633	516.2670
4.980	516.8713	517.4762	518.0818	518.6880	519.2948	519.9023	520.5103	521.1191	521.7284	522.3384
4.990	522.9490	523.5602	524.1721	524.7846	525.3977	526.0115	526.6259	527.2409	527.8566	528.4729
5.00	529.09	535.29	541.56	547.90	554.30	560.76	567.29	573.89	580.56	587.30
5.10	594.10	600.98	607.92	614.94	622.02	629.18	636.42	643.72	651.10	658.55
5.20	666.08	673.69	681.37	689.13	696.97	704.88	712.88	720.95	729.11	737.35
5.30	745.66	754.07	762.55	771.12	779.78	788.51	797.34	806.25	815.25	824.34
5.40	833.52	842.79	852.15	861.60	871.14	880.78	890.51	900.33	910.25	920.27
5.50	930.33	940.59	950.90	961.31	971.82	982.43	993.14	1003.96	1014.87	1025.90
5.60	1037.02	1048.26	1059.60	1071.05	1082.60	1094.27	1106.05	1117.93	1129.93	1142.05
5.70	1154.27	1166.62	1179.07	1191.65	1204.34	1217.15	1230.09	1243.14	1256.31	1269.61
5.80	1283.02	1296.57	1310.24	1324.03	1337.95	1352.01	1366.19	1380.50	1394.94	1409.51
5.90	1424.22	1439.06	1454.04	1469.16	1484.41	1499.80	1515.33	1531.00	1546.82	1562.78
6.00	1578.88	1595.12	1611.52	1628.06	1644.75	1661.59	1678.58	1695.72	1713.01	1730.46
6.10	1748.07	1765.83	1783.75	1801.83	1820.07	1838.47	1857.04	1875.76	1894.66	1913.72
6.20	1932.94	1952.34	1971.91	1991.65	2011.56	2031.64	2051.90	2072.34	2092.95	2113.75
6.30	2134.72	2155.88	2177.22	2198.74	2220.45	2242.35	2264.44	2286.71	2309.18	2331.84
6.40	2354.70	2377.75	2401.00	2424.44	2448.09	2471.94	2495.99	2520.24	2544.70	2569.37
6.50	2594.25	2619.33	2644.63	2670.15	2695.87	2721.82	2747.98	2774.36	2800.96	2827.78
6.60	2854.83	2882.11	2909.61	2937.34	2965.30	2993.49	3021.92	3050.58	3079.48	3108.62
6.70	3138.00	3167.62	3197.48	3227.59	3257.95	3288.55	3319.41	3350.52	3381.88	3413.50
6.80	3445.38	3477.52	3509.91	3542.57	3575.50	3608.69	3642.15	3675.88	3709.89	3744.16
6.90	3778.72	3813.55	3848.66	3884.05	3919.72	3955.68	3991.93	4028.47	4065.30	4102.42
7.00	4139.84	4177.55	4215.56	4253.88	4292.50	4331.42	4370.65	4410.19	4450.04	4490.20
7.10	4530.68	4571.48	4612.60	4654.03	4695.80	4737.89	4780.30	4823.05	4866.13	4909.55
7.20	4953.30	4997.39	5041.82	5086.60	5131.72	5177.19	5223.01	5269.18	5315.71	5362.59
7.30	5409.84	5457.45	5505.42	5553.75	5602.46	5651.54	5700.99	5750.82	5801.03	5851.61
7.40	5902.58	5953.94	6005.69	6057.82	6110.35	6163.28	6216.60	6270.33	6324.45	6378.99
7.50	6433.93	6489.29	6545.05	6601.24	6657.84	6714.87	6772.31	6830.19	6888.50	6947.23
7.60	7006.41	7066.02	7126.07	7186.56	7247.50	7308.89	7370.73	7433.03	7495.78	7558.99
7.70	7622.67	7686.81	7751.42	7816.50	7882.06	7948.09	8014.60	8081.60	8149.08	8217.05
7.80	8285.52	8354.47	8423.93	8493.89	8564.35	8635.32	8706.80	8778.79	8851.30	8924.33
7.90	8997.88	9071.96	9146.57	9221.71	9297.38	9373.59	9450.35	9527.65	9605.50	9683.90
8.00	9762.86	9842.37	9922.45	10003.09	10084.30	10166.08	10248.44	10331.37	10414.89	10498.99
8.10	10583.68	10668.97	10754.85	10841.33	10928.41	11016.10	11104.40	11193.31	11282.84	11372.99
8.20	11463.76	11555.17	11647.20	11739.87	11833.18	11927.13	12021.73	12116.98	12212.88	12309.44
8.30	12406.66	12504.55	12603.11	12702.34	12802.24	12902.83	13004.10	13106.07	13208.72	13312.07
8.40	13416.12	13520.88	13626.34	13732.52	13839.41	13947.03	14055.37	14164.44	14274.24	14384.78
8.50	14496.06	14608.08	14720.86	14834.39	14948.68	15063.73	15179.55	15296.13	15413.50	15531.64
8.60	15650.57	15770.29	15890.80	16012.10	16134.21	16257.13	16380.80	16505.39	16630.76	16756.94
8.70	16883.96	17011.80	17140.49	17270.02	17400.39	17531.62	17663.70	17796.65	17930.46	18065.14
8.80	18200.70	18337.14	18474.46	18612.68	18751.79	18891.79	19032.71	19174.53	19317.27	19460.92
8.90	19605.51	19751.02	19897.46	20044.84	20193.17	20342.45	20492.69	20643.88	20796.04	20949.17
9.00	21103.27	21258.36	21414.43	21571.49	21729.55	21888.61	22048.68	22209.76	22371.85	22534.98
9.10	22699.13	22864.31	23030.53	23197.80	23366.12	23535.50	23705.94	23877.44	24050.02	24223.68
9.20	24398.42	24574.25	24751.18	24929.21	25108.34	25288.59	25469.96	25652.45	25836.07	26020.83
9.30	26206.73	26393.78	26581.99	26771.35	26961.88	27153.59	27346.47	27540.53	27735.79	27932.24
9.40	28129.90	28328.76	28528.84	28730.14	28932.67	29136.44	29341.44	29547.69	29755.19	29963.96
9.50	30173.98	30385.29	30597.87	30811.73	31026.89	31243.34	31461.10	31680.17	31900.56	32122.28
9.60	32345.32	32569.71	32795.44	33022.52	33250.96	33480.76	33711.94	33944.50	34178.44	34413.77
9.70	34650.51	34888.65	35128.21	35369.19	35611.59	35855.43	36100.71	36347.45	36595.64	36845.29
9.80	37096.41	37349.02	37603.10	37858.68	38115.77	38374.36	38634.46	38896.09	39159.25	39423.94
9.90	39690.18	39957.98	40227.33	40498.25	40770.75	41044.83	41320.50	41597.77	41876.65	42157.14

2. 总温与静温之比 T_t/T 的数值表, 比值按照同马赫数的函数关系列出。 T_t/T

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00001	1.00001	1.00001	1.00002
0.010	1.00002	1.00002	1.00003	1.00003	1.00004	1.00005	1.00005	1.00006	1.00006	1.00007
0.020	1.00008	1.00009	1.00010	1.00011	1.00012	1.00013	1.00014	1.00015	1.00016	1.00017
0.030	1.00018	1.00019	1.00020	1.00022	1.00023	1.00025	1.00026	1.00027	1.00029	1.00030
0.040	1.00032	1.00034	1.00035	1.00037	1.00039	1.00041	1.00042	1.00044	1.00046	1.00048
0.050	1.00050	1.00052	1.00054	1.00056	1.00058	1.00061	1.00063	1.00065	1.00067	1.00070
0.060	1.00072	1.00074	1.00077	1.00079	1.00082	1.00085	1.00087	1.00090	1.00092	1.00095
0.070	1.00098	1.00101	1.00104	1.00107	1.00110	1.00113	1.00116	1.00119	1.00122	1.00125
0.080	1.00128	1.00131	1.00134	1.00138	1.00141	1.00145	1.00148	1.00151	1.00155	1.00158
0.090	1.00162	1.00166	1.00169	1.00173	1.00177	1.00181	1.00184	1.00188	1.00192	1.00196
0.100	1.00200	1.00204	1.00208	1.00212	1.00216	1.00221	1.00225	1.00229	1.00233	1.00238
0.110	1.00242	1.00246	1.00251	1.00255	1.00260	1.00265	1.00269	1.00274	1.00278	1.00283
0.120	1.00288	1.00293	1.00298	1.00303	1.00308	1.00313	1.00318	1.00323	1.00328	1.00333
0.130	1.00338	1.00343	1.00348	1.00354	1.00359	1.00365	1.00370	1.00375	1.00381	1.00386
0.140	1.00392	1.00398	1.00403	1.00409	1.00415	1.00421	1.00426	1.00432	1.00438	1.00444
0.150	1.00450	1.00456	1.00462	1.00468	1.00474	1.00481	1.00487	1.00493	1.00499	1.00506
0.160	1.00512	1.00518	1.00525	1.00531	1.00538	1.00545	1.00551	1.00558	1.00564	1.00571
0.170	1.00578	1.00585	1.00592	1.00599	1.00606	1.00613	1.00620	1.00627	1.00634	1.00641
0.180	1.00648	1.00655	1.00662	1.00670	1.00677	1.00685	1.00692	1.00699	1.00707	1.00714
0.190	1.00722	1.00730	1.00737	1.00745	1.00753	1.00761	1.00768	1.00776	1.00784	1.00792
0.200	1.00800	1.00808	1.00816	1.00824	1.00832	1.00841	1.00849	1.00857	1.00865	1.00874
0.210	1.00882	1.00890	1.00899	1.00907	1.00916	1.00925	1.00933	1.00942	1.00950	1.00959
0.220	1.00968	1.00977	1.00986	1.00995	1.01004	1.01013	1.01022	1.01031	1.01040	1.01049
0.230	1.01058	1.01067	1.01076	1.01086	1.01095	1.01105	1.01114	1.01123	1.01133	1.01142
0.240	1.01152	1.01162	1.01171	1.01181	1.01191	1.01201	1.01210	1.01220	1.01230	1.01240
0.250	1.01250	1.01260	1.01270	1.01280	1.01290	1.01301	1.01311	1.01321	1.01331	1.01342
0.260	1.01352	1.01362	1.01373	1.01383	1.01394	1.01405	1.01415	1.01426	1.01436	1.01447
0.270	1.01458	1.01469	1.01480	1.01491	1.01502	1.01513	1.01524	1.01535	1.01546	1.01557
0.280	1.01568	1.01579	1.01590	1.01602	1.01613	1.01625	1.01636	1.01647	1.01659	1.01670
0.290	1.01682	1.01694	1.01705	1.01717	1.01729	1.01741	1.01752	1.01764	1.01776	1.01788
0.300	1.01800	1.01812	1.01824	1.01836	1.01848	1.01861	1.01873	1.01885	1.01897	1.01910
0.310	1.01922	1.01934	1.01947	1.01959	1.01972	1.01985	1.01997	1.02010	1.02022	1.02035
0.320	1.02048	1.02061	1.02074	1.02087	1.02100	1.02113	1.02126	1.02139	1.02152	1.02165
0.330	1.02178	1.02191	1.02204	1.02218	1.02231	1.02245	1.02258	1.02271	1.02285	1.02298
0.340	1.02312	1.02326	1.02339	1.02353	1.02367	1.02381	1.02394	1.02408	1.02422	1.02436
0.350	1.02450	1.02464	1.02478	1.02492	1.02506	1.02521	1.02535	1.02549	1.02563	1.02578
0.360	1.02592	1.02606	1.02621	1.02635	1.02650	1.02665	1.02679	1.02694	1.02708	1.02723
0.370	1.02738	1.02753	1.02768	1.02783	1.02798	1.02813	1.02828	1.02843	1.02858	1.02873
0.380	1.02888	1.02903	1.02918	1.02934	1.02949	1.02965	1.02980	1.02995	1.03011	1.03026
0.390	1.03042	1.03058	1.03073	1.03089	1.03105	1.03121	1.03136	1.03152	1.03168	1.03184
0.400	1.03200	1.03216	1.03232	1.03248	1.03264	1.03281	1.03297	1.03313	1.03329	1.03346
0.410	1.03362	1.03378	1.03395	1.03411	1.03428	1.03445	1.03461	1.03478	1.03494	1.03511
0.420	1.03528	1.03545	1.03562	1.03579	1.03596	1.03613	1.03630	1.03647	1.03664	1.03681
0.430	1.03698	1.03715	1.03732	1.03750	1.03767	1.03785	1.03802	1.03819	1.03837	1.03854
0.440	1.03872	1.03890	1.03907	1.03925	1.03943	1.03961	1.03978	1.03996	1.04014	1.04032
0.450	1.04050	1.04068	1.04086	1.04104	1.04122	1.04141	1.04159	1.04177	1.04195	1.04214
0.460	1.04232	1.04250	1.04269	1.04287	1.04306	1.04325	1.04343	1.04362	1.04380	1.04399
0.470	1.04418	1.04437	1.04456	1.04475	1.04494	1.04513	1.04532	1.04551	1.04570	1.04589
0.480	1.04608	1.04627	1.04646	1.04666	1.04685	1.04705	1.04724	1.04743	1.04763	1.04782
0.490	1.04802	1.04822	1.04841	1.04861	1.04881	1.04901	1.04920	1.04940	1.04960	1.04980
0.500	1.05000	1.05020	1.05040	1.05060	1.05080	1.05101	1.05121	1.05141	1.05161	1.05182
0.510	1.05202	1.05222	1.05243	1.05263	1.05284	1.05305	1.05325	1.05346	1.05366	1.05387
0.520	1.05408	1.05429	1.05450	1.05471	1.05492	1.05513	1.05534	1.05555	1.05576	1.05597
0.530	1.05618	1.05639	1.05660	1.05682	1.05703	1.05725	1.05746	1.05767	1.05789	1.05810
0.540	1.05832	1.05854	1.05875	1.05897	1.05919	1.05941	1.05962	1.05984	1.06006	1.06028
0.550	1.06050	1.06072	1.06094	1.06116	1.06138	1.06161	1.06183	1.06205	1.06227	1.06250
0.560	1.06272	1.06294	1.06317	1.06339	1.06362	1.06385	1.06407	1.06430	1.06452	1.06475
0.570	1.06498	1.06521	1.06544	1.06567	1.06590	1.06613	1.06636	1.06659	1.06682	1.06705
0.580	1.06728	1.06751	1.06774	1.06798	1.06821	1.06845	1.06868	1.06891	1.06915	1.06938
0.590	1.06962	1.06986	1.07009	1.07033	1.07057	1.07081	1.07104	1.07128	1.07152	1.07176

T_r/T

(续)

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.600	1.07200	1.07224	1.07248	1.07272	1.07296	1.07321	1.07345	1.07369	1.07393	1.07418
0.610	1.07442	1.07466	1.07491	1.07515	1.07540	1.07565	1.07589	1.07614	1.07638	1.07663
0.620	1.07688	1.07713	1.07738	1.07763	1.07788	1.07813	1.07838	1.07863	1.07888	1.07913
0.630	1.07938	1.07963	1.07988	1.08014	1.08039	1.08065	1.08090	1.08115	1.08141	1.08166
0.640	1.08192	1.08218	1.08243	1.08269	1.08295	1.08321	1.08346	1.08372	1.08398	1.08424
0.650	1.08450	1.08476	1.08502	1.08528	1.08554	1.08581	1.08607	1.08633	1.08659	1.08686
0.660	1.08712	1.08738	1.08765	1.08791	1.08818	1.08845	1.08871	1.08898	1.08924	1.08951
0.670	1.08978	1.09005	1.09032	1.09059	1.09086	1.09113	1.09140	1.09167	1.09194	1.09221
0.680	1.09248	1.09275	1.09302	1.09330	1.09357	1.09385	1.09412	1.09439	1.09467	1.09494
0.690	1.09522	1.09550	1.09577	1.09605	1.09633	1.09661	1.09688	1.09716	1.09744	1.09772
0.700	1.09800	1.09828	1.09856	1.09884	1.09912	1.09941	1.09969	1.09997	1.10025	1.10054
0.710	1.10082	1.10110	1.10139	1.10167	1.10196	1.10225	1.10253	1.10282	1.10310	1.10339
0.720	1.10368	1.10397	1.10426	1.10455	1.10484	1.10513	1.10542	1.10571	1.10600	1.10629
0.730	1.10658	1.10687	1.10716	1.10746	1.10775	1.10805	1.10834	1.10863	1.10893	1.10922
0.740	1.10952	1.10982	1.11011	1.11041	1.11071	1.11101	1.11130	1.11160	1.11190	1.11220
0.750	1.11250	1.11280	1.11310	1.11340	1.11370	1.11401	1.11431	1.11461	1.11491	1.11522
0.760	1.11552	1.11582	1.11613	1.11643	1.11674	1.11705	1.11735	1.11766	1.11796	1.11827
0.770	1.11858	1.11889	1.11920	1.11951	1.11982	1.12013	1.12044	1.12075	1.12106	1.12137
0.780	1.12168	1.12199	1.12230	1.12262	1.12293	1.12325	1.12356	1.12387	1.12419	1.12450
0.790	1.12482	1.12514	1.12545	1.12577	1.12609	1.12641	1.12672	1.12704	1.12736	1.12768
0.800	1.12800	1.12832	1.12864	1.12896	1.12928	1.12961	1.12993	1.13025	1.13057	1.13090
0.810	1.13122	1.13154	1.13187	1.13219	1.13252	1.13285	1.13317	1.13350	1.13382	1.13415
0.820	1.13448	1.13481	1.13514	1.13547	1.13580	1.13613	1.13646	1.13679	1.13712	1.13745
0.830	1.13778	1.13811	1.13844	1.13878	1.13911	1.13945	1.13978	1.14011	1.14045	1.14078
0.840	1.14112	1.14146	1.14179	1.14213	1.14247	1.14281	1.14314	1.14348	1.14382	1.14416
0.850	1.14459	1.14484	1.14518	1.14552	1.14586	1.14621	1.14655	1.14689	1.14723	1.14758
0.860	1.14792	1.14826	1.14861	1.14895	1.14930	1.14965	1.14999	1.15034	1.15068	1.15103
0.870	1.15138	1.15173	1.15208	1.15243	1.15278	1.15313	1.15348	1.15383	1.15418	1.15453
0.880	1.15488	1.15523	1.15558	1.15594	1.15629	1.15665	1.15700	1.15735	1.15771	1.15806
0.890	1.15842	1.15878	1.15913	1.15949	1.15985	1.16021	1.16056	1.16092	1.16128	1.16164
0.900	1.16200	1.16236	1.16272	1.16308	1.16344	1.16381	1.16417	1.16453	1.16489	1.16526
0.910	1.16562	1.16598	1.16635	1.16671	1.16708	1.16745	1.16781	1.16818	1.16854	1.16891
0.920	1.16928	1.16965	1.17002	1.17039	1.17076	1.17113	1.17150	1.17187	1.17224	1.17261
0.930	1.17298	1.17335	1.17372	1.17410	1.17447	1.17485	1.17522	1.17559	1.17597	1.17634
0.940	1.17672	1.17710	1.17747	1.17785	1.17823	1.17861	1.17898	1.17936	1.17974	1.18012
0.950	1.18050	1.18088	1.18126	1.18164	1.18202	1.18241	1.18279	1.18317	1.18355	1.18394
0.960	1.18432	1.18470	1.18509	1.18547	1.18586	1.18625	1.18663	1.18702	1.18740	1.18779
0.970	1.18818	1.18857	1.18896	1.18935	1.18974	1.19013	1.19052	1.19091	1.19130	1.19169
0.980	1.19208	1.19247	1.19286	1.19326	1.19365	1.19405	1.19444	1.19483	1.19523	1.19562
0.990	1.19602	1.19642	1.19681	1.19721	1.19761	1.19801	1.19840	1.19880	1.19920	1.19960
1.000	1.20000	1.20040	1.20080	1.20120	1.20160	1.20201	1.20241	1.20281	1.20321	1.20362
1.010	1.20402	1.20442	1.20483	1.20523	1.20564	1.20605	1.20645	1.20686	1.20726	1.20767
1.020	1.20808	1.20849	1.20890	1.20931	1.20972	1.21013	1.21054	1.21095	1.21136	1.21177
1.030	1.21218	1.21259	1.21300	1.21342	1.21383	1.21425	1.21466	1.21507	1.21549	1.21590
1.040	1.21632	1.21674	1.21715	1.21757	1.21799	1.21841	1.21882	1.21924	1.21966	1.22008
1.050	1.22050	1.22092	1.22134	1.22176	1.22218	1.22261	1.22303	1.22345	1.22387	1.22430
1.060	1.22472	1.22514	1.22557	1.22599	1.22642	1.22685	1.22727	1.22770	1.22812	1.22855
1.070	1.22898	1.22941	1.22984	1.23027	1.23070	1.23113	1.23156	1.23199	1.23242	1.23285
1.080	1.23328	1.23371	1.23414	1.23458	1.23501	1.23545	1.23588	1.23631	1.23675	1.23718
1.090	1.23762	1.23806	1.23849	1.23893	1.23937	1.23981	1.24024	1.24068	1.24112	1.24156
1.100	1.24200	1.24244	1.24288	1.24332	1.24376	1.24421	1.24465	1.24509	1.24553	1.24598
1.110	1.24642	1.24686	1.24731	1.24775	1.24820	1.24865	1.24909	1.24954	1.24998	1.25043
1.120	1.25088	1.25133	1.25178	1.25223	1.25268	1.25313	1.25358	1.25403	1.25448	1.25493
1.130	1.25538	1.25583	1.25628	1.25674	1.25719	1.25765	1.25810	1.25855	1.25901	1.25946
1.140	1.25992	1.26038	1.26083	1.26129	1.26175	1.26221	1.26266	1.26312	1.26358	1.26404
1.150	1.26450	1.26496	1.26542	1.26588	1.26634	1.26681	1.26727	1.26773	1.26819	1.26866
1.160	1.26912	1.26958	1.27005	1.27051	1.27098	1.27145	1.27191	1.27238	1.27284	1.27331
1.170	1.27378	1.27425	1.27472	1.27519	1.27566	1.27613	1.27660	1.27707	1.27754	1.27801
1.180	1.27848	1.27895	1.27942	1.27990	1.28037	1.28085	1.28132	1.28179	1.28227	1.28274
1.190	1.28322	1.28370	1.28417	1.28465	1.28513	1.28561	1.28608	1.28656	1.28704	1.28752
1.200	1.28800	1.28848	1.28896	1.28944	1.28992	1.29041	1.29089	1.29137	1.29185	1.29234
1.210	1.29282	1.29330	1.29379	1.29427	1.29476	1.29525	1.29573	1.29622	1.29670	1.29719
1.220	1.29768	1.29817	1.29866	1.29915	1.29964	1.30013	1.30062	1.30111	1.30160	1.30209
1.230	1.30258	1.30307	1.30356	1.30406	1.30455	1.30505	1.30554	1.30603	1.30653	1.30702
1.240	1.30752	1.30802	1.30851	1.30901	1.30951	1.31001	1.31050	1.31100	1.31150	1.31200

M	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
1.250	1.31250	1.31300	1.31350	1.31400	1.31450	1.31501	1.31551	1.31601	1.31651	1.31702
1.260	1.31752	1.31802	1.31853	1.31903	1.31954	1.32005	1.32055	1.32106	1.32156	1.32207
1.270	1.32258	1.32309	1.32360	1.32411	1.32462	1.32513	1.32564	1.32615	1.32666	1.32717
1.280	1.32768	1.32819	1.32870	1.32922	1.32973	1.33025	1.33076	1.33127	1.33179	1.33230
1.290	1.33282	1.33334	1.33385	1.33437	1.33489	1.33541	1.33592	1.33644	1.33696	1.33748
1.300	1.33800	1.33852	1.33904	1.33956	1.34008	1.34061	1.34113	1.34165	1.34217	1.34270
1.310	1.34322	1.34374	1.34427	1.34479	1.34532	1.34585	1.34637	1.34690	1.34742	1.34795
1.320	1.34848	1.34901	1.34954	1.35007	1.35060	1.35113	1.35166	1.35219	1.35272	1.35325
1.330	1.35378	1.35431	1.35484	1.35538	1.35591	1.35645	1.35698	1.35751	1.35805	1.35858
1.340	1.35912	1.35966	1.36019	1.36073	1.36127	1.36181	1.36234	1.36288	1.36342	1.36396
1.350	1.36450	1.36504	1.36558	1.36612	1.36666	1.36721	1.36775	1.36829	1.36883	1.36938
1.360	1.36992	1.37046	1.37101	1.37155	1.37210	1.37265	1.37319	1.37374	1.37428	1.37483
1.370	1.37538	1.37593	1.37648	1.37703	1.37758	1.37813	1.37868	1.37923	1.37978	1.38033
1.380	1.38088	1.38143	1.38198	1.38254	1.38309	1.38365	1.38420	1.38475	1.38531	1.38586
1.390	1.38642	1.38698	1.38753	1.38809	1.38865	1.38921	1.38976	1.39032	1.39088	1.39144
1.400	1.39200	1.39256	1.39312	1.39368	1.39424	1.39481	1.39537	1.39593	1.39649	1.39706
1.410	1.39762	1.39818	1.39875	1.39931	1.39988	1.40045	1.40101	1.40158	1.40214	1.40271
1.420	1.40328	1.40385	1.40442	1.40499	1.40556	1.40613	1.40670	1.40727	1.40784	1.40841
1.430	1.40898	1.40955	1.41012	1.41070	1.41127	1.41185	1.41242	1.41299	1.41357	1.41414
1.440	1.41472	1.41530	1.41587	1.41645	1.41703	1.41761	1.41818	1.41876	1.41934	1.41992
1.450	1.42050	1.42108	1.42166	1.42224	1.42282	1.42341	1.42399	1.42457	1.42515	1.42574
1.460	1.42632	1.42690	1.42749	1.42807	1.42866	1.42925	1.42983	1.43042	1.43100	1.43159
1.470	1.43218	1.43277	1.43336	1.43395	1.43454	1.43513	1.43572	1.43631	1.43690	1.43749
1.480	1.43808	1.43867	1.43926	1.43986	1.44045	1.44105	1.44164	1.44223	1.44283	1.44342
1.490	1.44402	1.44462	1.44521	1.44581	1.44641	1.44701	1.44760	1.44820	1.44880	1.44940
1.500	1.45000	1.45060	1.45120	1.45180	1.45240	1.45301	1.45361	1.45421	1.45481	1.45542
1.510	1.45602	1.45662	1.45723	1.45783	1.45844	1.45905	1.45965	1.46026	1.46086	1.46147
1.520	1.46208	1.46269	1.46330	1.46391	1.46452	1.46513	1.46574	1.46635	1.46696	1.46757
1.530	1.46818	1.46879	1.46940	1.47002	1.47063	1.47125	1.47186	1.47247	1.47309	1.47370
1.540	1.47432	1.47494	1.47555	1.47617	1.47679	1.47741	1.47802	1.47864	1.47926	1.47988
1.550	1.48050	1.48112	1.48174	1.48236	1.48298	1.48361	1.48423	1.48485	1.48547	1.48610
1.560	1.48672	1.48734	1.48797	1.48859	1.48922	1.48985	1.49047	1.49110	1.49172	1.49235
1.570	1.49298	1.49361	1.49424	1.49487	1.49550	1.49613	1.49676	1.49739	1.49802	1.49865
1.580	1.49928	1.49991	1.50054	1.50118	1.50181	1.50245	1.50308	1.50371	1.50435	1.50498
1.590	1.50562	1.50626	1.50689	1.50753	1.50817	1.50881	1.50944	1.51008	1.51072	1.51136
1.600	1.51200	1.51264	1.51328	1.51392	1.51456	1.51521	1.51585	1.51649	1.51713	1.51778
1.610	1.51842	1.51906	1.51971	1.52035	1.52100	1.52165	1.52229	1.52294	1.52358	1.52423
1.620	1.52488	1.52553	1.52618	1.52683	1.52748	1.52813	1.52878	1.52943	1.53008	1.53073
1.630	1.53138	1.53203	1.53268	1.53334	1.53399	1.53465	1.53530	1.53595	1.53661	1.53726
1.640	1.53792	1.53858	1.53923	1.53989	1.54055	1.54121	1.54186	1.54252	1.54318	1.54384
1.650	1.54450	1.54516	1.54582	1.54648	1.54714	1.54781	1.54847	1.54913	1.54979	1.55046
1.660	1.55112	1.55178	1.55245	1.55311	1.55378	1.55445	1.55511	1.55578	1.55644	1.55711
1.670	1.55773	1.55845	1.55912	1.55979	1.56046	1.56113	1.56180	1.56247	1.56314	1.56381
1.680	1.56448	1.56515	1.56582	1.56650	1.56717	1.56785	1.56852	1.56919	1.56987	1.57054
1.690	1.57122	1.57190	1.57257	1.57325	1.57393	1.57461	1.57528	1.57596	1.57664	1.57732
1.700	1.57800	1.57868	1.57936	1.58004	1.58072	1.58141	1.58209	1.58277	1.58345	1.58414
1.710	1.58482	1.58550	1.58619	1.58687	1.58756	1.58825	1.58893	1.58962	1.59030	1.59099
1.720	1.59168	1.59237	1.59306	1.59375	1.59444	1.59513	1.59582	1.59651	1.59720	1.59789
1.730	1.59858	1.59927	1.59996	1.60066	1.60135	1.60205	1.60274	1.60343	1.60413	1.60482
1.740	1.60552	1.60622	1.60691	1.60761	1.60831	1.60901	1.60970	1.61040	1.61110	1.61180
1.750	1.61250	1.61320	1.61390	1.61460	1.61530	1.61601	1.61671	1.61741	1.61811	1.61882
1.760	1.61952	1.62022	1.62093	1.62163	1.62234	1.62305	1.62375	1.62446	1.62516	1.62587
1.770	1.62658	1.62729	1.62800	1.62871	1.62942	1.63013	1.63084	1.63155	1.63226	1.63297
1.780	1.63368	1.63439	1.63510	1.63582	1.63653	1.63725	1.63796	1.63867	1.63939	1.64010
1.790	1.64082	1.64154	1.64225	1.64297	1.64369	1.64441	1.64512	1.64584	1.64656	1.64728
1.800	1.64800	1.64872	1.64944	1.65016	1.65088	1.65161	1.65233	1.65305	1.65377	1.65450
1.810	1.65522	1.65594	1.65667	1.65739	1.65812	1.65885	1.65957	1.66030	1.66102	1.66175
1.820	1.66248	1.66321	1.66394	1.66467	1.66540	1.66613	1.66686	1.66759	1.66832	1.66905
1.830	1.66978	1.67051	1.67124	1.67198	1.67271	1.67345	1.67418	1.67491	1.67565	1.67638
1.840	1.67712	1.67786	1.67859	1.67933	1.68007	1.68081	1.68154	1.68228	1.68302	1.68376