Isentropic Compressible Flow of an Ideal Gas with k=1.4 (e.g. Air)

Ma	P/P_0	ρ/ρ_0	T/T_0	A/A^*	Ma^*	Ma	P/P_0	ρ/ρ_0	T/T_0	A/A^*	Ma^*
0.00	1.0000	1.0000	1.0000	∞	0.0000	0.51	0.8374	0.8809	0.9506	1.3212	0.5447
0.01	0.9999	1.0000	1.0000	57.874	0.0110	0.52	0.8317	0.8766	0.9487	1.3034	0.5548
0.02	0.9997	0.9998	0.9999	28.942	0.0219	0.53	0.8259	0.8723	0.9468	1.2865	0.5649
0.03	0.9994	0.9996	0.9998	19.301	0.0329	0.54	0.8201	0.8679	0.9449	1.2703	0.5750
0.04	0.9989	0.9992	0.9997	14.481	0.0438	0.55	0.8142	0.8634	0.9430	1.2549	0.5851
0.05	0.9983	0.9988	0.9995	11.591	0.0548	0.56	0.8082	0.8589	0.9410	1.2403	0.5951
0.06	0.9975	0.9982	0.9993	9.6659	0.0657	0.57	0.8022	0.8544	0.9390	1.2263	0.6051
0.07	0.9966	0.9976	0.9990	8.2915	0.0766	0.58	0.7962	0.8498	0.9370	1.2130	0.6150
0.08	0.9955	0.9968	0.9987	7.2616	0.0876	0.59	0.7901	0.8451	0.9349	1.2003	0.6249
0.09	0.9944	0.9960	0.9984	6.4613	0.0985	0.60	0.7840	0.8405	0.9328	1.1882	0.6348
0.10	0.9930	0.9950	0.9980	5.8218	0.1094	0.61	0.7778	0.8357	0.9307	1.1767	0.6447
0.11	0.9916	0.9940	0.9976	5.2992	0.1204	0.62	0.7716	0.8310	0.9286	1.1656	0.6545
0.12	0.9900	0.9928	0.9971	4.8643	0.1313	0.63	0.7654	0.8262	0.9265	1.1552	0.6643
0.13	0.9883	0.9916	0.9966	4.4969	0.1422	0.64	0.7591	0.8213	0.9243	1.1451	0.6740
0.14	0.9864	0.9903	0.9961	4.1824	0.1531	0.65	0.7528	0.8164	0.9221	1.1356	0.6837
0.15	0.9844	0.9888	0.9955	3.9103	0.1639	0.66	0.7465	0.8115	0.9199	1.1265	0.6934
0.16	0.9823	0.9873	0.9949	3.6727	0.1748	0.67	0.7401	0.8066	0.9176	1.1179	0.7031
0.17	0.9800	0.9857	0.9943	3.4635	0.1857	0.68	0.7338	0.8016	0.9153	1.1097	0.7127
0.18	0.9776	0.9840	0.9936	3.2779	0.1965	0.69	0.7274	0.7966	0.9131	1.1018	0.7223
0.19	0.9751	0.9822	0.9928	3.1123	0.2074	0.70	0.7209	0.7916	0.9107	1.0944	0.7318
0.20	0.9725	0.9803	0.9921	2.9635	0.2182	0.71	0.7145	0.7865	0.9084	1.0873	0.7413
0.21	0.9697	0.9783	0.9913	2.8293	0.2290	0.72	0.7080	0.7814	0.9061	1.0806	0.7508
0.22	0.9668	0.9762	0.9904	2.7076	0.2398	0.73	0.7016	0.7763	0.9037	1.0742	0.7602
0.23	0.9638	0.9740	0.9895	2.5968	0.2506	0.74	0.6951	0.7712	0.9013	1.0681	0.7696
0.24	0.9607	0.9718	0.9886	2.4956	0.2614	0.75	0.6886	0.7660	0.8989	1.0624	0.7789
0.25	0.9575	0.9694	0.9877	2.4027	0.2722	0.76	0.6821	0.7609	0.8964	1.0570	0.7883
0.26	0.9541	0.9670	0.9867	2.3173	0.2829	0.77	0.6756	0.7557	0.8940	1.0519	0.7975
0.27	0.9506	0.9645	0.9856	2.2385	0.2936	0.78	0.6691	0.7505	0.8915	1.0471	0.8068
0.28	0.9470	0.9619	0.9846	2.1656	0.3043	0.79	0.6625	0.7452	0.8890	1.0425	0.8160
0.29	0.9433	0.9592	0.9835	2.0979	0.3150	0.80	0.6560	0.7400	0.8865	1.0382	0.8251
0.30	0.9395	0.9564	0.9823	2.0351	0.3257	0.81	0.6495	0.7347	0.8840	1.0342	0.8343
0.31	0.9355	0.9535	0.9811	1.9765	0.3364	0.82	0.6430	0.7295	0.8815	1.0305	0.8433
0.32	0.9315	0.9506	0.9799	1.9219	0.3470	0.83	0.6365	0.7242	0.8789	1.0270	0.8524
0.33	0.9274	0.9476	0.9787	1.8707	0.3576	0.84	0.6300	0.7189	0.8763	1.0237	0.8614
0.34	0.9231	0.9445	0.9774	1.8229	0.3682	0.85	0.6235	0.7136	0.8737	1.0207	0.8704
0.35	0.9188	0.9413	0.9761	1.7780	0.3788	0.86	0.6170	0.7083	0.8711	1.0179	0.8793
0.36	0.9143	0.9380	0.9747	1.7358	0.3893	0.87	0.6106	0.7030	0.8685	1.0153	0.8882
0.37	0.9098	0.9347	0.9733	1.6961	0.3999	0.88	0.6041	0.6977	0.8659	1.0129	0.8970
0.38	0.9052	0.9313	0.9719	1.6587	0.4104	0.89	0.5977	0.6924	0.8632	1.0108	0.9058
0.39	0.9004	0.9278	0.9705	1.6234	0.4209	0.90	0.5913	0.6870	0.8606	1.0089	0.9146
0.40	0.8956	0.9243	0.9690	1.5901	0.4313	0.91	0.5849	0.6817	0.8579	1.0071	0.9233
0.41	0.8907	0.9207	0.9675	1.5587	0.4418	0.92	0.5785	0.6764	0.8552	1.0056	0.9320
0.42	0.8857	0.9170	0.9659	1.5289	0.4522	0.93	0.5721	0.6711	0.8525	1.0043	0.9407
0.43	0.8807	0.9132	0.9643	1.5007	0.4626	0.94	0.5658	0.6658	0.8498	1.0031	0.9493
0.44	0.8755	0.9094	0.9627	1.4740	0.4729	0.95	0.5595	0.6604	0.8471	1.0021	0.9578
0.45	0.8703	0.9055	0.9611	1.4487	0.4833	0.96	0.5532	0.6551	0.8444	1.0014	0.9663
0.46	0.8650	0.9016	0.9594	1.4246	0.4936	0.97	0.5469	0.6498	0.8416	1.0008	0.9748
0.47	0.8596	0.8976	0.9577	1.4018	0.5038	0.98	0.5407	0.6445	0.8389	1.0003	0.9833
0.48	0.8541	0.8935	0.9559	1.3801	0.5141	0.99	0.5345	0.6392	0.8361	1.0001	0.9916
0.49	0.8486	0.8894	0.9542	1.3595	0.5243	1.00	0.5283	0.6339	0.8333	1.0000	1.0000
0.50	0.8430	0.8852	0.9524	1.3398	0.5345						

Isentropic Compressible Flow of an Ideal Gas with k=1.4 (e.g. Air)

Ma	P/P_0	ρ/ρ_0	T/T_0	A/A^*	Ma^*	Ma	P/P_0	ρ/ρ_0	T/T_0	A/A^*	Ma^*
1.00	0.5283	0.6339	0.8333	1.0000	1.0000	3.55	0.0122	0.0430	0.2841	7.1128	2.0726
1.05	0.4979	0.6077	0.8193	1.0020	1.0411	3.60	0.0114	0.0409	0.2784	7.4501	2.0808
1.10	0.4684	0.5817	0.8052	1.0079	1.0812	3.65	0.0106	0.0389	0.2729	7.8020	2.0887
1.15	0.4398	0.5562	0.7908	1.0175	1.1203	3.70	9.90E-03	0.0370	0.2675	8.1691	2.0964
1.20	0.4124	0.5311	0.7764	1.0304	1.1583	3.75	9.24E-03	0.0352	0.2623	8.5517	2.1039
1.25	0.3861	0.5067	0.7619	1.0468	1.1952	3.80	8.63E-03	0.0335	0.2572	8.9506	2.1111
1.30	0.3609	0.4829	0.7474	1.0663	1.2311	3.85	8.06E-03	0.0320	0.2522	9.3661	2.1182
1.35	0.3370	0.4598	0.7329	1.0890	1.2660	3.90	7.53E-03	0.0304	0.2474	9.7990	2.1250
1.40	0.3142	0.4374	0.7184	1.1149	1.2999	3.95	7.04E-03	0.0290	0.2427	10.2496	2.1316
1.45	0.2927	0.4158	0.7040	1.1440	1.3327	4.00	6.59E-03	0.0277	0.2381	10.7188	2.1381
1.50	0.2724	0.3950	0.6897	1.1762	1.3646	4.05	6.16E-03	0.0264	0.2336	11.2069	2.1444
1.55	0.2533	0.3750	0.6754	1.2116	1.3955	4.10	5.77E-03	0.0252	0.2293	11.7147	2.1505
1.60	0.2353	0.3557	0.6614	1.2502	1.4254	4.15	5.40E-03	0.0240	0.2250	12.2427	2.1564
1.65	0.2184	0.3373	0.6475	1.2922	1.4544	4.20	5.06E-03	0.0229	0.2208	12.7916	2.1622
1.70	0.2026	0.3197	0.6337	1.3376	1.4825	4.25	4.74E-03	0.0219	0.2168	13.3622	2.1678
1.75	0.1878	0.3029	0.6202	1.3865	1.5097	4.30	4.45E-03	0.0209	0.2129	13.9549	2.1732
1.80	0.1740	0.2868	0.6068	1.4390	1.5360	4.35	4.17E-03	0.0200	0.2090	14.5706	2.1785
1.85	0.1612	0.2715	0.5936	1.4952	1.5614	4.40	3.92E-03	0.0191	0.2053	15.2099	2.1837
1.90	0.1492	0.2570	0.5807	1.5553	1.5861	4.45	3.68E-03	0.0182	0.2016	15.8735	2.1887
1.95	0.1381	0.2432	0.5680	1.6193	1.6099	4.50	3.46E-03	0.0174	0.1980	16.5622	2.1936
2.00	0.1278	0.2300	0.5556	1.6875	1.6330	4.60	3.05E-03	0.0160	0.1911	18.0178	2.2030
2.05	0.1182	0.2176	0.5433	1.7600	1.6553	4.70	2.70E-03	0.0146	0.1846	19.5828	2.2119
2.10	0.1094	0.2058	0.5313	1.8369	1.6769	4.80	2.39E-03	0.0134	0.1783	21.2637	2.2204
2.15	0.1011	0.1946	0.5196	1.9185	1.6977	4.90	2.13E-03	0.0123	0.1724	23.0671	2.2284
2.20	0.0935	0.1841	0.5081	2.0050	1.7179	5.00	1.89E-03	0.0113	0.1667	25.0000	2.2361
2.25	0.0865	0.1740	0.4969	2.0964	1.7374	5.10	1.68E-03	0.0104	0.1612	27.0696	2.2433
2.30	0.0800	0.1646	0.4859	2.1931	1.7563	5.20	1.50E-03	9.62E-03	0.1561	29.2833	2.2503
2.35	0.0740	0.1556	0.4752	2.2953	1.7745	5.30	1.34E-03	8.88E-03	0.1511	31.6491	2.2569
2.40	0.0684	0.1472	0.4647	2.4031	1.7922	5.40	1.20E-03	8.20E-03	0.1464	34.1748	2.2631
2.45	0.0633	0.1392	0.4544	2.5168	1.8092	5.50	1.07E-03	7.58E-03	0.1418	36.8690	2.2691
2.50	0.0585	0.1317	0.4444	2.6367	1.8257	5.60	9.64E-04	7.01E-03	0.1375	39.7402	2.2748
2.55	0.0542	0.1246	0.4347	2.7630	1.8417	5.70	8.66E-04	6.50E-03	0.1334	42.7974	2.2803
2.60	0.0501	0.1179	0.4252	2.8960	1.8571	5.80	7.79E-04	6.02E-03	0.1294	46.0500	2.2855
2.65	0.0464	0.1115	0.4159	3.0359	1.8721	5.90	7.02E-04	5.59E-03	0.1256	49.5075	2.2905
2.70	0.0430	0.1056	0.4068	3.1830	1.8865	6.00	6.33E-04	5.19E-03	0.1220	53.1798	2.2953
2.75	0.0398	0.0999	0.3980	3.3377	1.9005	6.10	5.72E-04	4.83E-03	0.1185	57.0772	2.2998
2.80	0.0368	0.0946	0.3894	3.5001	1.9140	6.20	5.17E-04	4.49E-03	0.1151	61.2102	2.3042
2.85	0.0341	0.0896	0.3810	3.6707	1.9271	6.30	4.68E-04	4.19E-03	0.1119	65.5899	2.3084
2.90	0.0317	0.0849	0.3729	3.8498	1.9398	6.40	4.25E-04	3.90E-03	0.1088	70.2274	2.3124
2.95	0.0293	0.0804	0.3649	4.0376	1.9521	6.50	3.85E-04	3.64E-03	0.1058	75.1343	2.3163
3.00	0.0272	0.0762	0.3571	4.2346	1.9640	6.60	3.50E-04	3.40E-03	0.1030	80.3227	2.3200
3.05	0.0253	0.0723	0.3496	4.4410	1.9755	6.70	3.19E-04	3.18E-03	0.1002	85.8049	2.3235
3.10	0.0234	0.0685	0.3422	4.6573	1.9866	6.80	2.90E-04	2.97E-03	0.0976	91.5935	2.3269
3.15	0.0218	0.0650	0.3351	4.8838	1.9974	6.90	2.65E-04	2.78E-03	0.0950	97.7017	2.3302
3.20	0.0202	0.0617	0.3281	5.1210	2.0079	7.00	2.42E-04	2.61E-03	0.0926	104.143	2.3333
3.25	0.0188	0.0585	0.3213	5.3691	2.0180	7.50	1.55E-04	1.90E-03	0.0816	141.841	2.3474
3.30	0.0175	0.0555	0.3147	5.6286	2.0278	8.00	1.02E-04	1.41E-03	0.0725	190.109	2.3591
3.35	0.0163	0.0527	0.3082	5.9000	2.0373	8.50	6.90E-05	1.07E-03	0.0647	251.086	2.3689
3.40	0.0151	0.0501	0.3019	6.1837	2.0466	9.00	4.74E-05	8.15E-04	0.0581	327.189	2.3772
3.45	0.0141	0.0476	0.2958	6.4801	2.0555	9.50	3.31E-05	6.31E-04	0.0525	421.131	2.3843
3.50	0.0131	0.0452	0.2899	6.7896	2.0642	10.0	2.36E-05	4.95E-04	0.0476	535.938	2.3905