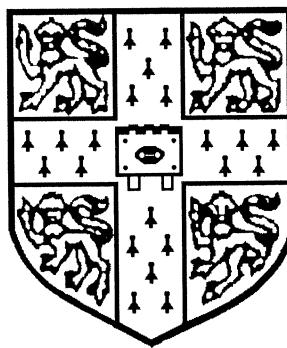


Compressible Flow Data Book

for Part II of the
Engineering Tripos

2009 Edition



Cambridge University Engineering Department

PERFECT GAS RELATIONS FOR COMPRESSIBLE FLOW

Ratios of stagnation to static quantities

$$\frac{T}{T_0} = \left(1 + \frac{\gamma-1}{2} M^2\right)^{-1}$$

$$\frac{p}{p_0} = \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{\gamma}{\gamma-1}}$$

$$\frac{\rho}{\rho_0} = \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{1}{\gamma-1}}$$

Notes:

- (1) $T_0 = \text{const.}$ in adiabatic flow with no shaft work
- (2) If flow is isentropic, $p_0 = \text{const.}$ and $\rho_0 = \text{const.}$ when $T_0 = \text{const.}$

Mach number relations (see tables)

$$\frac{V}{\sqrt{c_p T_0}} = \sqrt{\gamma-1} M \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{1}{2}}$$

$$\frac{\dot{m} \sqrt{c_p T_0}}{A p_0} = \frac{\gamma}{\sqrt{\gamma-1}} M \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{1}{2} \left(\frac{\gamma+1}{\gamma-1}\right)}$$

$$\frac{\dot{m} \sqrt{c_p T_0}}{A p} = \frac{\gamma}{\sqrt{\gamma-1}} M \left(1 + \frac{\gamma-1}{2} M^2\right)^{\frac{1}{2}}$$

$$\frac{F}{\dot{m} \sqrt{c_p T_0}} = \frac{\sqrt{\gamma-1}}{\gamma} \frac{1 + \gamma M^2}{M} \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{1}{2}} \quad \text{where} \quad F = (p + \rho V^2) A$$

$$\frac{\frac{1}{2} \rho V^2}{p_0} = \frac{1}{2} \gamma M^2 \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{\gamma}{\gamma-1}}$$

ONE-DIMENSIONAL FLOW OF A PERFECT GAS

Isentropic flow

$$\frac{A}{A^*} = \frac{1}{M} \left\{ \frac{2}{\gamma+1} \left(1 + \frac{\gamma-1}{2} M^2 \right) \right\}^{\frac{1}{2} \left(\frac{\gamma+1}{\gamma-1} \right)}$$

Adiabatic constant area flow

$$\frac{4c_f L_{\max}}{D} = \frac{1-M^2}{\gamma M^2} + \frac{\gamma+1}{2\gamma} \ln \left(\frac{(\gamma+1)M^2}{2 \left(1 + \frac{\gamma-1}{2} M^2 \right)} \right)$$

Normal shock waves in perfect gases

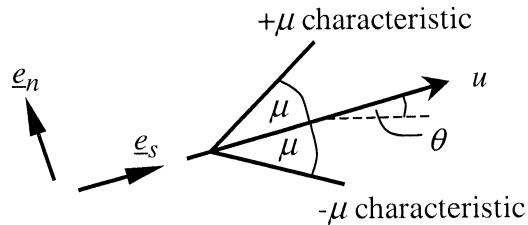
$$VV_s = a^*{}^2$$

$$\begin{aligned} M_s &= \left(\frac{1 + \frac{\gamma-1}{2} M^2}{\gamma M^2 - \frac{\gamma-1}{2}} \right)^{\frac{1}{2}} \\ \frac{p_{0s}}{p_0} &= \left(\frac{\frac{\gamma+1}{2} M^2}{1 + \frac{\gamma-1}{2} M^2} \right)^{\frac{\gamma}{\gamma-1}} \left(\frac{2\gamma}{\gamma+1} M^2 - \frac{\gamma-1}{\gamma+1} \right)^{\frac{1}{1-\gamma}} \\ \frac{p_s}{p} &= 1 + \frac{2\gamma}{\gamma+1} \left(M^2 - 1 \right) \\ \frac{p_{0s}}{p} &= \left(\frac{\gamma+1}{2} M^2 \right)^{\frac{\gamma}{\gamma-1}} \left(\frac{2\gamma}{\gamma+1} M^2 - \frac{\gamma-1}{\gamma+1} \right)^{\frac{1}{1-\gamma}} \\ \frac{T_s}{T} &= \frac{\gamma-1}{(\gamma+1)^2} \frac{2}{M^2} \left(1 + \frac{\gamma-1}{2} M^2 \right) \left(\frac{2\gamma}{\gamma-1} M^2 - 1 \right) \\ \frac{\rho_s}{\rho} &= \frac{(\gamma+1)M^2}{2 \left(1 + \frac{\gamma-1}{2} M^2 \right)} \end{aligned}$$

TWO DIMENSIONAL SUPERSONIC FLOW

Method of Characteristics for 2-D supersonic flow

Applicable to adiabatic ($h_0 = \text{constant}$), isentropic flow



Mach Number

$$M = u/c$$

Mach angle

$$\mu = \sin^{-1}\left(\frac{1}{M}\right)$$

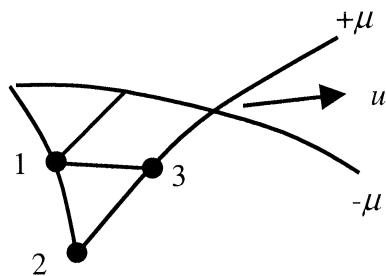
Prandtl-Meyer function

$$\nu = \int_1^M \sqrt{M^2 - 1} \frac{du}{u}$$

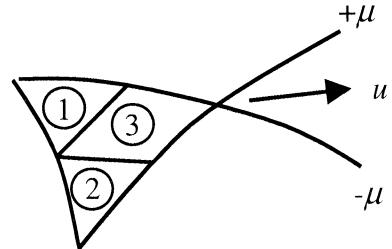
$$\nu = \sqrt{\frac{\gamma+1}{\gamma-1}} \tan^{-1} \sqrt{\frac{\gamma-1}{\gamma+1} (M^2 - 1)} - \tan^{-1} \sqrt{M^2 - 1} \quad \text{for a perfect gas}$$

Calculations

Lattice Method



Field (or wave) method



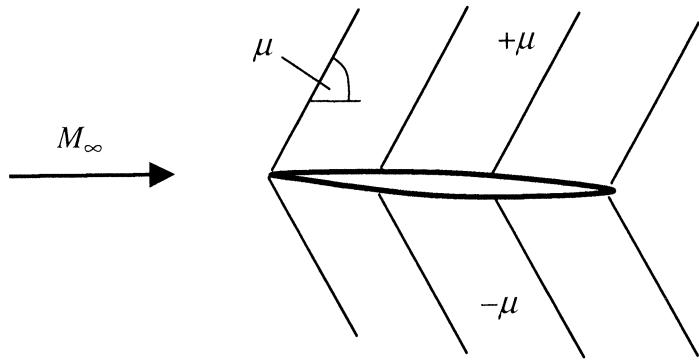
$$\nu_3 - \theta_3 = \nu_2 - \theta_2 \quad \text{along } +\mu$$

$$\nu_3 + \theta_3 = \nu_1 + \theta_1 \quad \text{along } -\mu$$

$$\nu_3 + \theta_3 = \nu_1 + \theta_1 \quad \text{across } +\mu$$

$$\nu_3 - \theta_3 = \nu_2 - \theta_2 \quad \text{across } -\mu$$

Linearised Method of Characteristics (thin film theory)

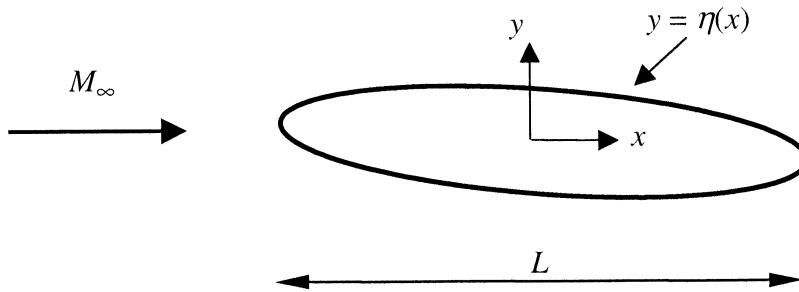


$$\mu \approx \sin^{-1}(1/M_\infty)$$

$$\Delta p \approx \pm \frac{\rho_\infty u_\infty^2 \Delta \theta}{\sqrt{M_\infty^2 - 1}} \quad \text{across } \pm \mu \text{ waves}$$

Pressure coefficient $c_p = \frac{p - p_\infty}{\frac{1}{2} \rho_\infty u_\infty^2} = \pm \frac{2\theta}{\sqrt{M_\infty^2 - 1}}$ on upper/lower surface

Prandtl-Glauert rule for linearised potential flow past geometrically similar bodies



Pressure coefficient $c_p = \frac{p - p_\infty}{\frac{1}{2} \rho_\infty u_\infty^2}$

For geometrically similar bodies with $\frac{\eta}{L} = f\left(\frac{x}{L}\right)$ and $c_p(M_\infty = 0) = c_{p0}$,

$$c_p = \frac{c_{p0}}{\sqrt{1 - M_\infty^2}} \quad \text{in subsonic flow}$$

$$c_p \propto \frac{1}{\sqrt{M_\infty^2 - 1}} \quad \text{in supersonic flow}$$

Oblique Shock Relations (see tables)

$$\frac{p_2}{p_1} = 1 + \frac{2\gamma}{\gamma+1} \left(M_1^2 \sin^2 \beta - 1 \right)$$

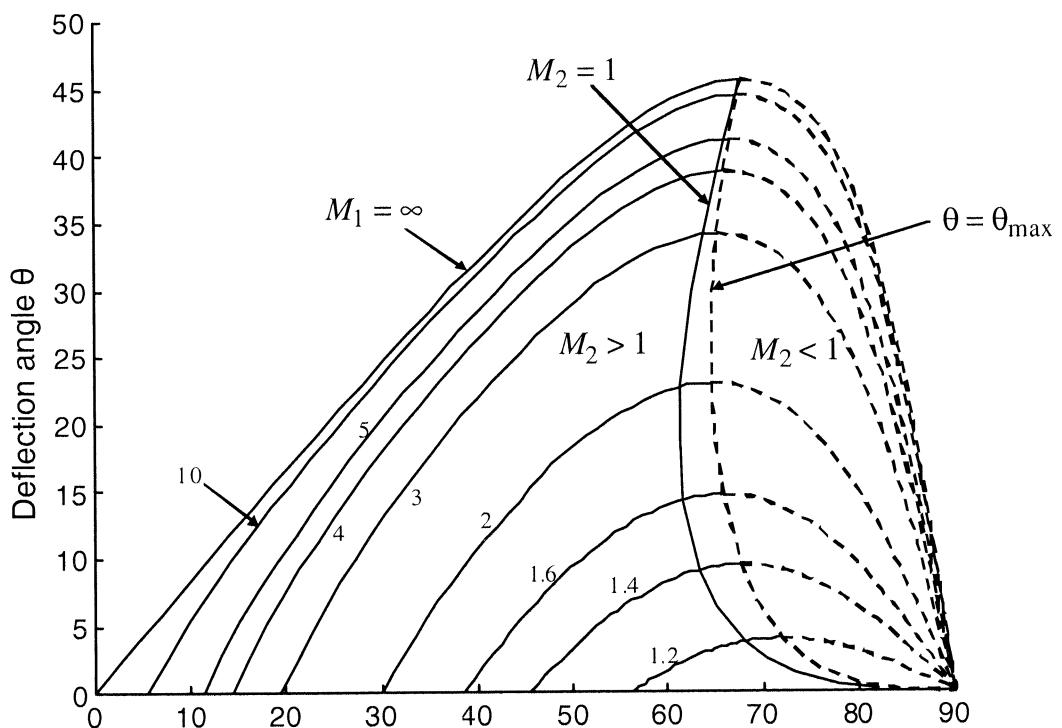
$$\frac{T_2}{T_1} = \frac{\gamma-1}{(\gamma+1)^2} \frac{2}{M_1^2 \sin^2 \beta} \left(1 + \frac{\gamma-1}{2} M_1^2 \sin^2 \beta \right) \left(\frac{2\gamma}{\gamma-1} M_1^2 \sin^2 \beta - 1 \right)$$

$$\frac{\rho_2}{\rho_1} = \frac{(\gamma+1)M_1^2 \sin^2 \beta}{2 \left[1 + \frac{\gamma-1}{2} M_1^2 \sin^2 \beta \right]}$$

$$M_2 \sin(\beta - \theta) = \left[\frac{1 + \frac{\gamma-1}{2} M_1^2 \sin^2 \beta}{\gamma M_1^2 \sin^2 \beta - \frac{\gamma-1}{2}} \right]^{\frac{1}{2}}$$

$$\frac{p_{02}}{p_{01}} = \left(\frac{\frac{\gamma+1}{2} M_1^2 \sin^2 \beta}{1 + \frac{\gamma-1}{2} M_1^2 \sin^2 \beta} \right)^{\frac{\gamma}{\gamma-1}} \left(\frac{2\gamma}{\gamma+1} M_1^2 \sin^2 \beta - \frac{\gamma-1}{\gamma+1} \right)^{\frac{1}{1-\gamma}}$$

$$\tan \theta = \frac{2 \cot \beta (M_1^2 \sin^2 \beta - 1)}{(\gamma+1)M_1^2 - 2(M_1^2 \sin^2 \beta - 1)}$$



Shock angle β

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GAS FLOW TABLES ($\gamma=1.400$): SUBSONIC FLOW

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap}$	$\frac{F}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{p_0}$
0.010	1.0000	0.9999	1.0000	0.0063	0.0221	0.0221	45.1813	7134.405	0.0001
0.020	0.9999	0.9997	0.9998	0.0126	0.0443	0.0443	22.5994	1778.450	0.0003
0.030	0.9998	0.9994	0.9996	0.0190	0.0664	0.0664	15.0761	787.0814	0.0006
0.040	0.9997	0.9989	0.9992	0.0253	0.0885	0.0886	11.3173	440.3522	0.0011
0.050	0.9995	0.9983	0.9988	0.0316	0.1105	0.1107	9.0644	280.0203	0.0017
0.060	0.9993	0.9975	0.9982	0.0379	0.1325	0.1329	7.5645	193.0311	0.0025
0.070	0.9990	0.9966	0.9976	0.0443	0.1545	0.1550	6.4947	140.6550	0.0034
0.080	0.9987	0.9955	0.9968	0.0506	0.1764	0.1772	5.6939	106.7182	0.0045
0.090	0.9984	0.9944	0.9960	0.0569	0.1983	0.1994	5.0723	83.4961	0.0056
0.100	0.9980	0.9930	0.9950	0.0632	0.2200	0.2216	4.5762	66.9216	0.0070
0.110	0.9976	0.9916	0.9940	0.0695	0.2417	0.2438	4.1714	54.6879	0.0084
0.120	0.9971	0.9900	0.9928	0.0758	0.2633	0.2660	3.8350	45.4080	0.0100
0.130	0.9966	0.9883	0.9916	0.0821	0.2849	0.2883	3.5513	38.2070	0.0117
0.140	0.9961	0.9864	0.9903	0.0884	0.3063	0.3105	3.3089	32.5113	0.0135
0.150	0.9955	0.9844	0.9888	0.0947	0.3276	0.3328	3.0996	27.9320	0.0155
0.160	0.9949	0.9823	0.9873	0.1009	0.3488	0.3551	2.9172	24.1978	0.0176
0.170	0.9943	0.9800	0.9857	0.1072	0.3699	0.3774	2.7569	21.1152	0.0198
0.180	0.9936	0.9776	0.9840	0.1135	0.3908	0.3997	2.6151	18.5427	0.0222
0.190	0.9928	0.9751	0.9822	0.1197	0.4116	0.4221	2.4889	16.3752	0.0246
0.200	0.9921	0.9725	0.9803	0.1260	0.4323	0.4445	2.3758	14.5333	0.0272
0.210	0.9913	0.9697	0.9783	0.1322	0.4528	0.4669	2.2740	12.9560	0.0299
0.220	0.9904	0.9668	0.9762	0.1385	0.4731	0.4893	2.1820	11.5961	0.0328
0.230	0.9895	0.9638	0.9740	0.1447	0.4933	0.5118	2.0985	10.4161	0.0357
0.240	0.9886	0.9607	0.9718	0.1509	0.5133	0.5343	2.0225	9.3865	0.0387
0.250	0.9877	0.9575	0.9694	0.1571	0.5332	0.5568	1.9530	8.4834	0.0419
0.260	0.9867	0.9541	0.9670	0.1633	0.5528	0.5794	1.8892	7.6876	0.0451
0.270	0.9856	0.9506	0.9645	0.1695	0.5723	0.6020	1.8306	6.9832	0.0485
0.280	0.9846	0.9470	0.9619	0.1757	0.5915	0.6246	1.7766	6.3572	0.0520
0.290	0.9835	0.9433	0.9592	0.1819	0.6106	0.6473	1.7267	5.7989	0.0555
0.300	0.9823	0.9395	0.9564	0.1881	0.6295	0.6700	1.6805	5.2993	0.0592
0.310	0.9811	0.9355	0.9535	0.1942	0.6481	0.6928	1.6377	4.8507	0.0629
0.320	0.9799	0.9315	0.9506	0.2003	0.6666	0.7156	1.5978	4.4467	0.0668
0.330	0.9787	0.9274	0.9476	0.2065	0.6848	0.7384	1.5608	4.0821	0.0707
0.340	0.9774	0.9231	0.9445	0.2126	0.7027	0.7613	1.5262	3.7520	0.0747
0.350	0.9761	0.9188	0.9413	0.2187	0.7205	0.7842	1.4939	3.4525	0.0788
0.360	0.9747	0.9143	0.9380	0.2248	0.7380	0.8072	1.4637	3.1801	0.0829
0.370	0.9733	0.9098	0.9347	0.2309	0.7553	0.8302	1.4354	2.9320	0.0872
0.380	0.9719	0.9052	0.9313	0.2369	0.7723	0.8532	1.4090	2.7054	0.0915
0.390	0.9705	0.9004	0.9278	0.2430	0.7891	0.8763	1.3841	2.4983	0.0959
0.400	0.9690	0.8956	0.9243	0.2490	0.8056	0.8995	1.3608	2.3085	0.1003
0.410	0.9675	0.8907	0.9207	0.2551	0.8219	0.9227	1.3388	2.1344	0.1048
0.420	0.9659	0.8857	0.9170	0.2611	0.8379	0.9460	1.3182	1.9744	0.1094
0.430	0.9643	0.8807	0.9132	0.2671	0.8536	0.9693	1.2988	1.8272	0.1140
0.440	0.9627	0.8755	0.9094	0.2730	0.8691	0.9927	1.2804	1.6915	0.1186
0.450	0.9611	0.8703	0.9055	0.2790	0.8843	1.0161	1.2632	1.5664	0.1234
0.460	0.9594	0.8650	0.9016	0.2850	0.8992	1.0396	1.2469	1.4509	0.1281
0.470	0.9577	0.8596	0.8976	0.2909	0.9138	1.0631	1.2315	1.3441	0.1329
0.480	0.9559	0.8541	0.8935	0.2968	0.9282	1.0867	1.2170	1.2453	0.1378
0.490	0.9542	0.8486	0.8894	0.3027	0.9423	1.1104	1.2033	1.1539	0.1426
0.500	0.9524	0.8430	0.8852	0.3086	0.9561	1.1341	1.1903	1.0691	0.1475

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap}$	$\frac{F}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{p_0}$
0.510	0.9506	0.8374	0.8809	0.3145	0.9696	1.1579	1.1781	0.9904	0.1525
0.520	0.9487	0.8317	0.8766	0.3203	0.9828	1.1818	1.1665	0.9174	0.1574
0.530	0.9468	0.8259	0.8723	0.3262	0.9958	1.2057	1.1556	0.8496	0.1624
0.540	0.9449	0.8201	0.8679	0.3320	1.0084	1.2297	1.1452	0.7866	0.1674
0.550	0.9430	0.8142	0.8634	0.3378	1.0208	1.2538	1.1354	0.7281	0.1724
0.560	0.9410	0.8082	0.8589	0.3436	1.0328	1.2779	1.1261	0.6736	0.1774
0.570	0.9390	0.8022	0.8544	0.3493	1.0446	1.3021	1.1173	0.6229	0.1825
0.580	0.9370	0.7962	0.8498	0.3551	1.0561	1.3264	1.1090	0.5757	0.1875
0.590	0.9349	0.7901	0.8451	0.3608	1.0672	1.3507	1.1011	0.5317	0.1925
0.600	0.9328	0.7840	0.8405	0.3665	1.0781	1.3751	1.0937	0.4908	0.1976
0.610	0.9307	0.7778	0.8357	0.3722	1.0887	1.3996	1.0867	0.4527	0.2026
0.620	0.9286	0.7716	0.8310	0.3779	1.0990	1.4242	1.0800	0.4172	0.2076
0.630	0.9265	0.7654	0.8262	0.3835	1.1090	1.4489	1.0737	0.3841	0.2127
0.640	0.9243	0.7591	0.8213	0.3891	1.1186	1.4736	1.0678	0.3533	0.2177
0.650	0.9221	0.7528	0.8164	0.3948	1.1280	1.4984	1.0621	0.3246	0.2226
0.660	0.9199	0.7465	0.8115	0.4003	1.1371	1.5233	1.0568	0.2979	0.2276
0.670	0.9176	0.7401	0.8066	0.4059	1.1459	1.5483	1.0518	0.2730	0.2326
0.680	0.9153	0.7338	0.8016	0.4115	1.1544	1.5733	1.0471	0.2498	0.2375
0.690	0.9131	0.7274	0.7966	0.4170	1.1626	1.5984	1.0426	0.2282	0.2424
0.700	0.9107	0.7209	0.7916	0.4225	1.1705	1.6237	1.0384	0.2081	0.2473
0.710	0.9084	0.7145	0.7865	0.4280	1.1782	1.6490	1.0344	0.1895	0.2521
0.720	0.9061	0.7080	0.7814	0.4335	1.1855	1.6744	1.0307	0.1721	0.2569
0.730	0.9037	0.7016	0.7763	0.4389	1.1925	1.6999	1.0272	0.1561	0.2617
0.740	0.9013	0.6951	0.7712	0.4443	1.1993	1.7254	1.0239	0.1411	0.2664
0.750	0.8989	0.6886	0.7660	0.4497	1.2058	1.7511	1.0208	0.1273	0.2711
0.760	0.8964	0.6821	0.7609	0.4551	1.2119	1.7768	1.0179	0.1145	0.2758
0.770	0.8940	0.6756	0.7557	0.4605	1.2178	1.8027	1.0152	0.1026	0.2804
0.780	0.8915	0.6691	0.7505	0.4658	1.2234	1.8286	1.0126	0.0917	0.2849
0.790	0.8890	0.6625	0.7452	0.4711	1.2288	1.8547	1.0103	0.0816	0.2894
0.800	0.8865	0.6560	0.7400	0.4764	1.2338	1.8808	1.0081	0.0723	0.2939
0.810	0.8840	0.6495	0.7347	0.4817	1.2386	1.9070	1.0060	0.0638	0.2983
0.820	0.8815	0.6430	0.7295	0.4869	1.2431	1.9333	1.0041	0.0559	0.3026
0.830	0.8789	0.6365	0.7242	0.4921	1.2474	1.9598	1.0024	0.0488	0.3069
0.840	0.8763	0.6300	0.7189	0.4973	1.2514	1.9863	1.0008	0.0423	0.3112
0.850	0.8737	0.6235	0.7136	0.5025	1.2551	2.0129	0.9993	0.0363	0.3153
0.860	0.8711	0.6170	0.7083	0.5077	1.2585	2.0396	0.9979	0.0310	0.3195
0.870	0.8685	0.6106	0.7030	0.5128	1.2617	2.0665	0.9967	0.0261	0.3235
0.880	0.8659	0.6041	0.6977	0.5179	1.2646	2.0934	0.9956	0.0218	0.3275
0.890	0.8632	0.5977	0.6924	0.5230	1.2673	2.1204	0.9946	0.0179	0.3314
0.900	0.8606	0.5913	0.6870	0.5280	1.2698	2.1476	0.9937	0.0145	0.3352
0.910	0.8579	0.5849	0.6817	0.5331	1.2719	2.1748	0.9929	0.0115	0.3390
0.920	0.8552	0.5785	0.6764	0.5381	1.2739	2.2021	0.9922	0.0089	0.3427
0.930	0.8525	0.5721	0.6711	0.5431	1.2756	2.2296	0.9916	0.0067	0.3464
0.940	0.8498	0.5658	0.6658	0.5481	1.2770	2.2572	0.9911	0.0048	0.3499
0.950	0.8471	0.5595	0.6604	0.5530	1.2783	2.2848	0.9907	0.0033	0.3534
0.960	0.8444	0.5532	0.6551	0.5579	1.2793	2.3126	0.9903	0.0021	0.3569
0.970	0.8416	0.5469	0.6498	0.5628	1.2800	2.3405	0.9901	0.0011	0.3602
0.980	0.8389	0.5407	0.6445	0.5677	1.2806	2.3685	0.9899	0.0005	0.3635
0.990	0.8361	0.5345	0.6392	0.5725	1.2809	2.3966	0.9898	0.0001	0.3667
1.000	0.8333	0.5283	0.6339	0.5774	1.2810	2.4249	0.9897	0.0000	0.3698

GAS FLOW TABLES ($\gamma=1.400$): SUPERSONIC FLOW

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap}$	$\frac{\dot{m} \sqrt{c_p T_0}}{\dot{m} \sqrt{c_p T_0}}$	$\frac{F}{D}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{p_0}$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{T_s}{T}$	v	M	
1.010	0.8306	0.5221	0.6287	0.5821	1.2809	2.4532	0.9398	0.0001	0.3728	0.9901	1.0000	1.0235	1.9152	1.0066	0.04	1.010	
1.020	0.8278	0.5160	0.6234	0.5869	1.2806	2.4817	0.9399	0.0005	0.3758	0.9805	1.0000	1.0471	1.9379	1.0132	0.13	1.020	
1.030	0.8250	0.5099	0.6181	0.5917	1.2801	2.5103	0.9900	0.0010	0.3787	0.9712	1.0000	1.0711	1.9610	1.0198	0.23	1.030	
1.040	0.8222	0.5039	0.6129	0.5964	1.2793	2.5390	0.9903	0.0018	0.3815	0.9620	0.9999	1.0952	1.9844	1.0263	0.35	1.040	
1.050	0.8193	0.4979	0.6077	0.6077	1.6011	1.2784	2.5678	0.9905	0.0027	0.3842	0.9531	0.9999	1.1196	2.0083	1.0328	0.49	1.050
1.060	0.8165	0.4919	0.6024	0.6058	1.2773	2.5967	0.9909	0.0038	0.3869	0.9444	0.9998	1.1442	2.0325	1.0393	0.64	1.060	
1.070	0.8137	0.4860	0.5972	0.6104	1.2760	2.6258	0.9913	0.0051	0.3895	0.9360	0.9996	1.1691	2.0570	1.0458	0.80	1.070	
1.080	0.8108	0.4800	0.5920	0.6151	1.2745	2.6549	0.9917	0.0066	0.3919	0.9277	0.9994	1.1941	2.0819	1.0522	0.97	1.080	
1.090	0.8080	0.4742	0.5869	0.6197	1.2728	2.6842	0.9922	0.0082	0.3944	0.9196	0.9992	1.2195	2.1072	1.0586	1.15	1.090	
1.100	0.8052	0.4684	0.5817	0.6243	1.2709	2.7136	0.9928	0.0099	0.3967	0.9118	0.9989	1.2450	2.1328	1.0649	1.34	1.100	
1.110	0.8023	0.4626	0.5766	0.6288	1.2689	2.7432	0.9934	0.0118	0.3990	0.9041	0.9996	1.2708	2.1588	1.0713	1.53	1.110	
1.120	0.7994	0.4568	0.5714	0.6333	1.2667	2.7728	0.9940	0.0138	0.4011	0.8966	0.9982	1.2968	2.1851	1.0776	1.74	1.120	
1.130	0.7966	0.4511	0.5663	0.6379	1.2643	2.8026	0.9947	0.0159	0.4032	0.8892	0.9978	1.3231	2.2118	1.0840	1.94	1.130	
1.140	0.7937	0.4455	0.5612	0.6423	1.2618	2.8325	0.9954	0.0182	0.4052	0.8820	0.9973	1.3495	2.2388	1.0903	2.16	1.140	
1.150	0.7908	0.4398	0.5562	0.6468	1.2590	2.8626	0.9961	0.0205	0.4072	0.8750	0.9967	1.3763	2.2661	1.0966	2.38	1.150	
1.160	0.7879	0.4343	0.5511	0.6512	1.2562	2.8927	0.9969	0.0230	0.4090	0.8682	0.9961	1.4032	2.2937	1.1029	2.61	1.160	
1.170	0.7851	0.4287	0.5461	0.6556	1.2531	2.9230	0.9978	0.0255	0.4108	0.8615	0.9953	1.4304	2.3217	1.1092	2.84	1.170	
1.180	0.7822	0.4232	0.5411	0.6600	1.2500	2.9534	0.9986	0.0281	0.4125	0.8549	0.9946	1.4578	2.3500	1.1154	3.07	1.180	
1.190	0.7793	0.4178	0.5361	0.6644	1.2466	2.9840	0.9995	0.0309	0.4141	0.8485	0.9937	1.4855	2.3786	1.1217	3.31	1.190	
1.200	0.7764	0.4124	0.5311	0.6687	1.2432	3.0147	1.0004	0.0336	0.4157	0.8422	0.9928	1.5133	2.4075	1.1280	3.56	1.200	
1.210	0.7735	0.4070	0.5262	0.6730	1.2396	3.0455	1.0014	0.0365	0.4171	0.8360	0.9918	1.5415	2.4367	1.1343	3.81	1.210	
1.220	0.7706	0.4017	0.5213	0.6773	1.2358	3.0764	1.0024	0.0394	0.4185	0.8300	0.9907	1.5698	2.4663	1.1405	4.06	1.220	
1.230	0.7677	0.3964	0.5164	0.6816	1.2319	3.1075	1.0034	0.0424	0.4198	0.8241	0.9896	1.5984	2.4961	1.1468	4.31	1.230	
1.240	0.7648	0.3912	0.5115	0.6858	1.2279	3.1387	1.0045	0.0455	0.4211	0.8183	0.9884	1.6272	2.5263	1.1531	4.57	1.240	
1.250	0.7619	0.3861	0.5067	0.6901	1.2238	3.1700	1.0055	0.0486	0.4223	0.8126	0.9871	1.6563	2.5568	1.1594	4.83	1.250	

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{m\sqrt{c_p T_0}}{Ap_0}$	$\frac{m\sqrt{c_p T_0}}{\dot{m}\sqrt{c_p T_0}}$	$\frac{F}{D}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2}\rho V^2}{p_0}$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{T_s}{T}$	v	M
1.260	0.7590	0.3809	0.5019	0.6943	1.2195	3.2015	1.0066	0.0517	0.4233	0.8071	0.9857	1.6855	2.5875	1.1657	5.09	1.260
1.270	0.7561	0.3759	0.4971	0.6984	1.2152	3.2331	1.0077	0.0549	0.4244	0.8016	0.9842	1.7151	2.6186	1.1720	5.36	1.270
1.280	0.7532	0.3708	0.4923	0.7026	1.2107	3.2648	1.0089	0.0582	0.4253	0.7963	0.9827	1.7448	2.6500	1.1783	5.63	1.280
1.290	0.7503	0.3658	0.4876	0.7067	1.2061	3.2967	1.0100	0.0615	0.4262	0.7911	0.9811	1.7748	2.6816	1.1846	5.90	1.290
1.300	0.7474	0.3609	0.4829	0.7108	1.2014	3.3287	1.0112	0.0648	0.4270	0.7860	0.9794	1.8050	2.7136	1.1909	6.17	1.300
1.310	0.7445	0.3560	0.4782	0.7149	1.1965	3.3608	1.0124	0.0682	0.4277	0.7809	0.9776	1.8355	2.7459	1.1972	6.44	1.310
1.320	0.7416	0.3512	0.4736	0.7189	1.1916	3.3931	1.0136	0.0716	0.4283	0.7760	0.9758	1.8661	2.7784	1.2035	6.72	1.320
1.330	0.7387	0.3464	0.4690	0.7229	1.1866	3.4255	1.0149	0.0750	0.4289	0.7712	0.9738	1.8971	2.8112	1.2099	7.00	1.330
1.340	0.7358	0.3417	0.4644	0.7270	1.1815	3.4581	1.0161	0.0785	0.4294	0.7664	0.9718	1.9282	2.8444	1.2162	7.28	1.340
1.350	0.7329	0.3370	0.4598	0.7309	1.1763	3.4907	1.0174	0.0820	0.4299	0.7618	0.9697	1.9596	2.8778	1.2226	7.56	1.350
1.360	0.7300	0.3323	0.4553	0.7349	1.1710	3.5236	1.0187	0.0855	0.4303	0.7572	0.9676	1.9912	2.9115	1.2290	7.84	1.360
1.370	0.7271	0.3227	0.4508	0.7388	1.1656	3.5566	1.0200	0.0890	0.4306	0.7527	0.9653	2.0231	2.9455	1.2354	8.13	1.370
1.380	0.7242	0.3232	0.4463	0.7427	1.1601	3.5897	1.0213	0.0926	0.4308	0.7483	0.9630	2.0551	2.9798	1.2418	8.41	1.380
1.390	0.7213	0.3187	0.4418	0.7466	1.1546	3.6229	1.0226	0.0962	0.4310	0.7440	0.9607	2.0875	3.0144	1.2482	8.70	1.390
1.400	0.7184	0.3142	0.4374	0.7505	1.1490	3.6563	1.0240	0.0997	0.4311	0.7397	0.9582	2.1200	3.0492	1.2547	8.99	1.400
1.410	0.7155	0.3098	0.4330	0.7543	1.1433	3.6899	1.0253	0.1033	0.4312	0.7355	0.9557	2.1528	3.0844	1.2612	9.28	1.410
1.420	0.7126	0.3055	0.4287	0.7581	1.1375	3.7236	1.0267	0.1069	0.4312	0.7314	0.9531	2.1858	3.1198	1.2676	9.57	1.420
1.430	0.7097	0.3012	0.4244	0.7619	1.1317	3.7574	1.0281	0.1106	0.4311	0.7274	0.9504	2.2191	3.1555	1.2741	9.86	1.430
1.440	0.7069	0.2969	0.4201	0.7657	1.1258	3.7914	1.0295	0.1142	0.4310	0.7235	0.9476	2.2525	3.1915	1.2807	10.15	1.440
1.450	0.7040	0.2927	0.4158	0.7694	1.1198	3.8255	1.0308	0.1178	0.4308	0.7196	0.9448	2.2863	3.2278	1.2872	10.44	1.450
1.460	0.7011	0.2886	0.4116	0.7732	1.1138	3.8598	1.0323	0.1215	0.4306	0.7157	0.9420	2.3202	3.2643	1.2938	10.73	1.460
1.470	0.6982	0.2845	0.4074	0.7769	1.1077	3.8942	1.0337	0.1251	0.4303	0.7120	0.9390	2.3544	3.3011	1.3003	11.02	1.470
1.480	0.6954	0.2804	0.4032	0.7805	1.1016	3.9287	1.0351	0.1288	0.4299	0.7083	0.9360	2.3888	3.3382	1.3069	11.32	1.480
1.490	0.6925	0.2764	0.3991	0.7842	1.0954	3.9634	1.0365	0.1324	0.4295	0.7047	0.9329	2.4235	3.3756	1.3136	11.61	1.490
1.500	0.6897	0.2724	0.3950	0.7878	1.0891	3.9983	1.0379	0.1361	0.4290	0.7011	0.9298	2.4583	3.4133	1.3202	11.91	1.500

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{m\sqrt{c_p T_0}}{Ap_0}$	$\frac{F}{m\sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2}\rho V^2}{p_0}$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{T_s}{T}$	V	M	
1.510	0.68688	0.2685	0.3909	0.7914	1.0829	4.0333	1.0394	0.1397	0.4285	0.6976	0.9266	2.4935	3.4512	1.3269	12.20	1.510
1.520	0.6840	0.2646	0.3869	0.7950	1.0765	4.0684	1.0408	0.1433	0.4279	0.6941	0.9233	2.5288	3.4894	1.3336	12.49	1.520
1.530	0.6811	0.2608	0.3829	0.7986	1.0702	4.1037	1.0423	0.1470	0.4273	0.6907	0.9200	2.5644	3.5279	1.3403	12.79	1.530
1.540	0.6783	0.2570	0.3789	0.8021	1.0638	4.1392	1.0437	0.1506	0.4266	0.6874	0.9166	2.6002	3.5667	1.3470	13.09	1.540
1.550	0.6754	0.2533	0.3750	0.8057	1.0573	4.1748	1.0452	0.1543	0.4259	0.6841	0.9132	2.6363	3.6057	1.3538	13.38	1.550
1.560	0.6726	0.2496	0.3710	0.8092	1.0508	4.2105	1.0467	0.1579	0.4252	0.6809	0.9097	2.6725	3.6450	1.3606	13.68	1.560
1.570	0.6698	0.2459	0.3672	0.8126	1.0443	4.2464	1.0481	0.1615	0.4243	0.6777	0.9062	2.7091	3.6846	1.3674	13.97	1.570
1.580	0.6670	0.2423	0.3633	0.8161	1.0378	4.2825	1.0496	0.1651	0.4235	0.6746	0.9026	2.7458	3.7244	1.3742	14.27	1.580
1.590	0.6642	0.2388	0.3595	0.8195	1.0312	4.3187	1.0511	0.1688	0.4226	0.6715	0.8989	2.7828	3.7646	1.3811	14.56	1.590
1.600	0.6614	0.2353	0.3557	0.8230	1.0246	4.3551	1.0526	0.1724	0.4216	0.6684	0.8952	2.8200	3.8050	1.3880	14.86	1.600
1.610	0.6586	0.2318	0.3520	0.8263	1.0180	4.3916	1.0541	0.1760	0.4206	0.6655	0.8915	2.8575	3.8456	1.3949	15.16	1.610
1.620	0.6558	0.2284	0.3483	0.8297	1.0114	4.4282	1.0555	0.1795	0.4196	0.6625	0.8877	2.8951	3.8866	1.4018	15.45	1.620
1.630	0.6530	0.2250	0.3446	0.8331	1.0047	4.4651	1.0570	0.1831	0.4185	0.6596	0.8838	2.9331	3.9278	1.4088	15.75	1.630
1.640	0.6502	0.2217	0.3409	0.8364	0.9980	4.5020	1.0585	0.1867	0.4174	0.6568	0.8799	2.9712	3.9693	1.4158	16.04	1.640
1.650	0.6475	0.2184	0.3373	0.8397	0.9913	4.5392	1.0600	0.1902	0.4162	0.6540	0.8760	3.0096	4.0110	1.4228	16.34	1.650
1.660	0.6447	0.2151	0.3337	0.8430	0.9846	4.5765	1.0615	0.1938	0.4150	0.6512	0.8720	3.0482	4.0531	1.4299	16.63	1.660
1.670	0.6419	0.2119	0.3302	0.8462	0.9779	4.6139	1.0630	0.1973	0.4138	0.6485	0.8680	3.0871	4.0953	1.4369	16.93	1.670
1.680	0.6392	0.2088	0.3266	0.8495	0.9712	4.6515	1.0645	0.2008	0.4125	0.6458	0.8639	3.1261	4.1379	1.4440	17.22	1.680
1.690	0.6364	0.2057	0.3232	0.8527	0.9644	4.6892	1.0660	0.2043	0.4112	0.6431	0.8599	3.1655	4.1807	1.4512	17.52	1.690
1.700	0.6337	0.2026	0.3197	0.8559	0.9577	4.7272	1.0674	0.2078	0.4098	0.6405	0.8557	3.2050	4.2238	1.4583	17.81	1.700
1.710	0.6310	0.1996	0.3163	0.8591	0.9509	4.7652	1.0689	0.2113	0.4085	0.6380	0.8516	3.2448	4.2672	1.4655	18.10	1.710
1.720	0.6283	0.1966	0.3129	0.8622	0.9442	4.8035	1.0704	0.2147	0.4071	0.6355	0.8474	3.2848	4.3108	1.4727	18.40	1.720
1.730	0.6256	0.1936	0.3095	0.8654	0.9374	4.8418	1.0719	0.2182	0.4056	0.6330	0.8431	3.3251	4.3547	1.4800	18.69	1.730
1.740	0.6229	0.1907	0.3062	0.8685	0.9307	4.8804	1.0734	0.2216	0.4041	0.6305	0.8389	3.3655	4.3989	1.4873	18.98	1.740
1.750	0.6202	0.1878	0.3029	0.8716	0.9239	4.9191	1.0749	0.2250	0.4026	0.6281	0.8346	3.4063	4.4433	1.4946	19.27	1.750

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{\dot{m} \sqrt{c_p T_0}}$	$\frac{F}{D}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{D}$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{P_s}{P}$	$\frac{T_s}{T}$	V	M
1.760	0.6175	0.1850	0.2996	0.8747	0.9172	4.9580	1.0764	0.2284	0.4011	0.6257	0.8302	3.4472	4.4880	1.5019	19.56	1.760	
1.770	0.6148	0.1822	0.2964	0.8777	0.9104	4.9970	1.0779	0.2318	0.3996	0.6234	0.8259	3.4884	4.5330	1.5093	19.86	1.770	
1.780	0.6121	0.1794	0.2931	0.8808	0.9037	5.0362	1.0793	0.2352	0.3980	0.6210	0.8215	3.5298	4.5782	1.5167	20.15	1.780	
1.790	0.6095	0.1767	0.2900	0.8838	0.8970	5.0755	1.0808	0.2385	0.3964	0.6188	0.8171	3.5715	4.6237	1.5241	20.44	1.790	
1.800	0.6068	0.1740	0.2868	0.8868	0.8902	5.1150	1.0823	0.2419	0.3947	0.6165	0.8127	3.6133	4.6695	1.5316	20.73	1.800	
1.810	0.6041	0.1714	0.2837	0.8898	0.8935	5.1547	1.0838	0.2452	0.3931	0.6143	0.8082	3.6555	4.7155	1.5391	21.01	1.810	
1.820	0.6015	0.1688	0.2806	0.8927	0.8768	5.1945	1.0852	0.2485	0.3914	0.6121	0.8038	3.6978	4.7618	1.5466	21.30	1.820	
1.830	0.5989	0.1662	0.2776	0.8957	0.8701	5.2345	1.0867	0.2518	0.3897	0.6099	0.7993	3.7404	4.8084	1.5541	21.59	1.830	
1.840	0.5963	0.1637	0.2745	0.8986	0.8634	5.2747	1.0882	0.2551	0.3879	0.6078	0.7948	3.7832	4.8552	1.5617	21.88	1.840	
1.850	0.5936	0.1612	0.2715	0.9015	0.8568	5.3150	1.0896	0.2583	0.3862	0.6057	0.7902	3.8263	4.9023	1.5693	22.16	1.850	
1.860	0.5910	0.1587	0.2686	0.9044	0.8501	5.3555	1.0911	0.2616	0.3844	0.6036	0.7857	3.8695	4.9497	1.5770	22.45	1.860	
1.870	0.5884	0.1563	0.2656	0.9072	0.8435	5.3962	1.0926	0.2648	0.3826	0.6016	0.7811	3.9131	4.9973	1.5847	22.73	1.870	
1.880	0.5859	0.1539	0.2627	0.9101	0.8368	5.4370	1.0940	0.2680	0.3808	0.5996	0.7765	3.9568	5.0452	1.5924	23.02	1.880	
1.890	0.5833	0.1516	0.2598	0.9129	0.8302	5.4780	1.0955	0.2712	0.3790	0.5976	0.7720	4.0008	5.0934	1.6001	23.30	1.890	
1.900	0.5807	0.1492	0.2570	0.9157	0.8237	5.5191	1.0969	0.2743	0.3771	0.5956	0.7674	4.0450	5.1418	1.6079	23.59	1.900	
1.910	0.5782	0.1470	0.2542	0.9185	0.8171	5.5604	1.0984	0.2775	0.3753	0.5937	0.7627	4.0895	5.1905	1.6157	23.87	1.910	
1.920	0.5756	0.1447	0.2514	0.9213	0.8106	5.6019	1.0998	0.2806	0.3734	0.5918	0.7581	4.1341	5.2394	1.6236	24.15	1.920	
1.930	0.5731	0.1425	0.2486	0.9240	0.8041	5.6435	1.1012	0.2837	0.3715	0.5899	0.7535	4.1791	5.2886	1.6314	24.43	1.930	
1.940	0.5705	0.1403	0.2459	0.9268	0.7976	5.6853	1.1027	0.2868	0.3696	0.5880	0.7488	4.2242	5.3381	1.6394	24.71	1.940	
1.950	0.5680	0.1381	0.2432	0.9295	0.7911	5.7273	1.1041	0.2899	0.3677	0.5862	0.7442	4.2696	5.3878	1.6473	24.99	1.950	
1.960	0.5655	0.1360	0.2405	0.9322	0.7846	5.7695	1.1055	0.2929	0.3657	0.5844	0.7395	4.3152	5.4378	1.6553	25.27	1.960	
1.970	0.5630	0.1339	0.2378	0.9349	0.7782	5.8118	1.1069	0.2960	0.3638	0.5826	0.7349	4.3611	5.4881	1.6633	25.55	1.970	
1.980	0.5605	0.1318	0.2352	0.9375	0.7771	5.8542	1.1084	0.2990	0.3618	0.5808	0.7302	4.4071	5.5386	1.6713	25.83	1.980	
1.990	0.5580	0.1298	0.2326	0.9402	0.7655	5.8969	1.1098	0.3020	0.3598	0.5791	0.7255	4.4535	5.5894	1.6794	26.10	1.990	
2.000	0.5556	0.1278	0.2300	0.9428	0.7591	5.9397	1.1112	0.3050	0.3579	0.5774	0.7209	4.5000	5.6404	1.6875	26.38	2.000	

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap}$	$\frac{F}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2}\rho V^2}{p_0}$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{T_s}{T}$	v	M
2.010	0.5531	0.1258	0.2275	0.9454	0.7528	5.9827	1.1126	0.3080	0.3559	0.5757	0.7162	4.5468	5.6918	1.6956	26.66	2.010
2.020	0.5506	0.1239	0.2250	0.9480	0.7465	6.0258	1.1140	0.3109	0.3539	0.5740	0.7115	4.5938	5.7433	1.7038	26.93	2.020
2.030	0.5482	0.1220	0.2225	0.9506	0.7403	6.0692	1.1154	0.3138	0.3518	0.5723	0.7069	4.6411	5.7952	1.7120	27.20	2.030
2.040	0.5458	0.1201	0.2200	0.9531	0.7340	6.1126	1.1167	0.3168	0.3498	0.5707	0.7022	4.6885	5.8473	1.7203	27.48	2.040
2.050	0.5433	0.1182	0.2176	0.9557	0.7279	6.1563	1.1181	0.3197	0.3478	0.5691	0.6975	4.7363	5.8996	1.7285	27.75	2.050
2.060	0.5409	0.1164	0.2152	0.9582	0.7217	6.2001	1.1195	0.3225	0.3458	0.5675	0.6928	4.7842	5.9523	1.7369	28.02	2.060
2.070	0.5385	0.1146	0.2128	0.9607	0.7156	6.2441	1.1209	0.3254	0.3437	0.5659	0.6882	4.8324	6.0051	1.7452	28.29	2.070
2.080	0.5361	0.1128	0.2104	0.9632	0.7095	6.2883	1.1222	0.3282	0.3417	0.5643	0.6835	4.8808	6.0583	1.7536	28.56	2.080
2.090	0.5337	0.1111	0.2081	0.9657	0.7034	6.3326	1.1236	0.3310	0.3396	0.5628	0.6739	4.9295	6.1117	1.7620	28.83	2.090
2.100	0.5313	0.1094	0.2058	0.9681	0.6974	6.3772	1.1250	0.3339	0.3376	0.5613	0.6742	4.9783	6.1654	1.7705	29.10	2.100
2.110	0.5290	0.1077	0.2035	0.9706	0.6914	6.4218	1.1263	0.3366	0.3355	0.5598	0.6696	5.0275	6.2193	1.7789	29.36	2.110
2.120	0.5266	0.1060	0.2013	0.9730	0.6854	6.4667	1.1276	0.3394	0.3334	0.5583	0.6649	5.0768	6.2735	1.7875	29.63	2.120
2.130	0.5243	0.1043	0.1990	0.9754	0.6795	6.5117	1.1290	0.3422	0.3314	0.5568	0.6693	5.1264	6.3280	1.7960	29.90	2.130
2.140	0.5219	0.1027	0.1968	0.9778	0.6736	6.5569	1.1303	0.3449	0.3293	0.5554	0.6557	5.1762	6.3827	1.8046	30.16	2.140
2.150	0.5196	0.1011	0.1946	0.9802	0.6677	6.6023	1.1317	0.3476	0.3272	0.5540	0.6511	5.2263	6.4377	1.8132	30.43	2.150
2.160	0.5173	0.0996	0.1925	0.9825	0.6619	6.6478	1.1330	0.3503	0.3252	0.5525	0.6464	5.2765	6.4929	1.8219	30.69	2.160
2.170	0.5150	0.0980	0.1903	0.9849	0.6561	6.6936	1.1343	0.3530	0.3231	0.5511	0.6419	5.3271	6.5484	1.8306	30.95	2.170
2.180	0.5127	0.0965	0.1882	0.9872	0.6503	6.7395	1.1356	0.3556	0.3210	0.5498	0.6373	5.3778	6.6042	1.8393	31.21	2.180
2.190	0.5104	0.0950	0.1861	0.9895	0.6446	6.7855	1.1369	0.3583	0.3189	0.5484	0.6327	5.4288	6.6602	1.8481	31.47	2.190
2.200	0.5081	0.0935	0.1841	0.9918	0.6389	6.8318	1.1382	0.3609	0.3169	0.5471	0.6281	5.4800	6.7165	1.8569	31.73	2.200
2.210	0.5059	0.0921	0.1820	0.9941	0.6333	6.8782	1.1395	0.3635	0.3148	0.5457	0.6236	5.5315	6.7730	1.8657	31.99	2.210
2.220	0.5036	0.0906	0.1800	0.9964	0.6277	6.9248	1.1408	0.3661	0.3127	0.5444	0.6191	5.5831	6.8298	1.8746	32.25	2.220
2.230	0.5014	0.0892	0.1780	0.9986	0.6221	6.9715	1.1421	0.3687	0.3106	0.5431	0.6145	5.6351	6.8869	1.8835	32.51	2.230
2.240	0.4991	0.0878	0.1760	1.0009	0.6165	7.0185	1.1434	0.3712	0.3085	0.5418	0.6100	5.6872	6.9442	1.8924	32.76	2.240
2.250	0.4969	0.0865	0.1740	1.0031	0.6110	7.0656	1.1446	0.3738	0.3065	0.5406	0.6055	5.7396	7.0018	1.9014	33.02	2.250

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{m\sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m}\sqrt{c_p T_0}}{m\sqrt{c_p T_0}}$	$\frac{F}{D}$	$\frac{4c_f L_{\max}}{D} \frac{1}{2} \rho V^2$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{T_s}{T}$	V	M	
2.260	0.4947	0.0851	0.1721	1.0053	0.6056	7.1129	1.1459	0.3763	0.3044	0.5393	0.6011	5.7922	7.0597	1.9104	33.27	2.260
2.270	0.4925	0.0838	0.1702	1.0075	0.6002	7.1603	1.1472	0.3788	0.3023	0.5381	0.5966	5.8451	7.1178	1.9194	33.53	2.270
2.280	0.4903	0.0825	0.1683	1.0097	0.5948	7.2080	1.1484	0.3813	0.3003	0.5368	0.5921	5.8981	7.1762	1.9285	33.78	2.280
2.290	0.4881	0.0812	0.1664	1.0118	0.5894	7.2558	1.1497	0.3838	0.2982	0.5356	0.5877	5.9515	7.2348	1.9376	34.03	2.290
2.300	0.4859	0.0800	0.1646	1.0140	0.5841	7.3038	1.1509	0.3862	0.2961	0.5344	0.5833	6.0050	7.2937	1.9468	34.28	2.300
2.310	0.4837	0.0787	0.1628	1.0161	0.5788	7.3520	1.1521	0.3887	0.2941	0.5332	0.5789	6.0588	7.3528	1.9560	34.53	2.310
2.320	0.4816	0.0775	0.1609	1.0182	0.5736	7.4003	1.1534	0.3911	0.2920	0.5321	0.5745	6.1128	7.4122	1.9652	34.78	2.320
2.330	0.4794	0.0763	0.1592	1.0204	0.5684	7.4488	1.1546	0.3935	0.2900	0.5309	0.5702	6.1671	7.4719	1.9745	35.03	2.330
2.340	0.4773	0.0751	0.1574	1.0224	0.5632	7.4975	1.1558	0.3959	0.2879	0.5297	0.5658	6.2215	7.5319	1.9838	35.28	2.340
2.350	0.4752	0.0740	0.1556	1.0245	0.5581	7.5464	1.1570	0.3983	0.2859	0.5286	0.5615	6.2763	7.5920	1.9931	35.53	2.350
2.360	0.4731	0.0728	0.1539	1.0266	0.5530	7.5955	1.1582	0.4006	0.2839	0.5275	0.5572	6.3312	7.6525	2.0025	35.77	2.360
2.370	0.4709	0.0717	0.1522	1.0286	0.5480	7.6447	1.1595	0.4030	0.2818	0.5264	0.5529	6.3864	7.7132	2.0119	36.02	2.370
2.380	0.4688	0.0706	0.1505	1.0307	0.5430	7.6941	1.1606	0.4053	0.2798	0.5253	0.5486	6.4418	7.7742	2.0213	36.26	2.380
2.390	0.4668	0.0695	0.1488	1.0327	0.5380	7.7437	1.1618	0.4076	0.2778	0.5242	0.5444	6.4975	7.8354	2.0308	36.50	2.390
2.400	0.4647	0.0684	0.1472	1.0347	0.5331	7.7935	1.1630	0.4099	0.2758	0.5231	0.5401	6.5533	7.8969	2.0403	36.75	2.400
2.410	0.4626	0.0673	0.1456	1.0367	0.5282	7.8434	1.1642	0.4122	0.2738	0.5221	0.5359	6.6095	7.9587	2.0499	36.99	2.410
2.420	0.4606	0.0663	0.1439	1.0387	0.5233	7.8935	1.1654	0.4144	0.2718	0.5210	0.5317	6.6658	8.0207	2.0595	37.23	2.420
2.430	0.4585	0.0653	0.1424	1.0407	0.5185	7.9438	1.1665	0.4167	0.2698	0.5200	0.5276	6.7224	8.0830	2.0691	37.47	2.430
2.440	0.4565	0.0643	0.1408	1.0426	0.5137	7.9943	1.1677	0.4189	0.2678	0.5189	0.5234	6.7792	8.1455	2.0788	37.71	2.440
2.450	0.4544	0.0633	0.1392	1.0446	0.5090	8.0450	1.1689	0.4211	0.2658	0.5179	0.5193	6.8363	8.2083	2.0885	37.95	2.450
2.460	0.4524	0.0623	0.1377	1.0465	0.5043	8.0958	1.1700	0.4233	0.2639	0.5169	0.5152	6.8935	8.2713	2.0982	38.18	2.460
2.470	0.4504	0.0613	0.1362	1.0484	0.4996	8.1468	1.1712	0.4255	0.2619	0.5159	0.5111	6.9511	8.3346	2.1080	38.42	2.470
2.480	0.4484	0.0604	0.1346	1.0503	0.4950	8.1980	1.1723	0.4277	0.2599	0.5149	0.5071	7.0088	8.3982	2.1178	38.66	2.480
2.490	0.4464	0.0594	0.1332	1.0522	0.4904	8.2494	1.1734	0.4298	0.2580	0.5140	0.5030	7.0668	8.4620	2.1276	38.89	2.490
2.500	0.4444	0.0585	0.1317	1.0541	0.4858	8.3010	1.1746	0.4320	0.2561	0.5130	0.4990	7.1250	8.5261	2.1375	39.12	2.500

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{p_0}$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{T_s}{T}$	V	M	
2.510	0.4425	0.0576	0.1302	1.0560	0.4813	8.3527	1.1757	0.4341	0.2541	0.4950	7.1835	8.5905	2.1474	39.36	2.510	
2.520	0.4405	0.0567	0.1288	1.0578	0.4768	8.4046	1.1768	0.4362	0.2522	0.5111	7.2421	8.6551	2.1574	39.59	2.520	
2.530	0.4386	0.0559	0.1274	1.0597	0.4724	8.4567	1.1779	0.4383	0.2503	0.5102	0.4871	7.3011	8.7200	2.1674	39.82	2.530
2.540	0.4366	0.0550	0.1260	1.0615	0.4680	8.5090	1.1790	0.4404	0.2484	0.5092	0.4832	7.3602	8.7851	2.1774	40.05	2.540
2.550	0.4347	0.0542	0.1246	1.0633	0.4636	8.5615	1.1801	0.4425	0.2465	0.5083	0.4793	7.4196	8.8505	2.1875	40.28	2.550
2.560	0.4328	0.0533	0.1232	1.0651	0.4593	8.6141	1.1812	0.4445	0.2446	0.5074	0.4754	7.4792	8.9161	2.1976	40.51	2.560
2.570	0.4309	0.0525	0.1218	1.0669	0.4550	8.6670	1.1823	0.4466	0.2427	0.5065	0.4715	7.5391	8.9820	2.2077	40.74	2.570
2.580	0.4289	0.0517	0.1205	1.0687	0.4507	8.7200	1.1834	0.4486	0.2409	0.5056	0.4677	7.5991	9.0482	2.2179	40.96	2.580
2.590	0.4271	0.0509	0.1192	1.0705	0.4465	8.7732	1.1844	0.4506	0.2390	0.5047	0.4639	7.6595	9.1146	2.2281	41.19	2.590
2.600	0.4252	0.0501	0.1179	1.0722	0.4423	8.8265	1.1855	0.4526	0.2371	0.5039	0.4601	7.7200	9.1813	2.2383	41.41	2.600
2.610	0.4233	0.0493	0.1166	1.0740	0.4382	8.8801	1.1866	0.4546	0.2353	0.5030	0.4564	7.7808	9.2483	2.2486	41.64	2.610
2.620	0.4214	0.0486	0.1153	1.0757	0.4341	8.9338	1.1876	0.4565	0.2335	0.5022	0.4526	7.8418	9.3155	2.2590	41.86	2.620
2.630	0.4196	0.0478	0.1140	1.0774	0.4300	8.9877	1.1887	0.4585	0.2317	0.5013	0.4489	7.9031	9.3829	2.2693	42.09	2.630
2.640	0.4177	0.0471	0.1128	1.0791	0.4260	9.0418	1.1897	0.4604	0.2298	0.5005	0.4452	7.9645	9.4506	2.2797	42.31	2.640
2.650	0.4159	0.0464	0.1115	1.0808	0.4220	9.0961	1.1908	0.4624	0.2280	0.4996	0.4416	8.0263	9.5186	2.2902	42.53	2.650
2.660	0.4141	0.0457	0.1103	1.0825	0.44180	9.1506	1.1918	0.4643	0.2262	0.4988	0.4379	8.0882	9.5869	2.3006	42.75	2.660
2.670	0.4122	0.0450	0.1091	1.0842	0.44141	9.2052	1.1928	0.4662	0.2245	0.4980	0.4343	8.1504	9.6554	2.3111	42.97	2.670
2.680	0.4104	0.0443	0.1079	1.0859	0.44102	9.2601	1.1939	0.4681	0.2227	0.4972	0.4307	8.2128	9.7241	2.3217	43.19	2.680
2.690	0.4086	0.0436	0.1067	1.0875	0.44063	9.3151	1.1949	0.4700	0.2209	0.4964	0.4271	8.2755	9.7931	2.3323	43.40	2.690
2.700	0.4068	0.0430	0.1056	1.0892	0.44025	9.3703	1.1959	0.4718	0.2192	0.4956	0.4236	8.3383	9.8624	2.3429	43.62	2.700
2.710	0.4051	0.0423	0.1044	1.0908	0.3987	9.4257	1.1969	0.4737	0.2174	0.4949	0.4201	8.4015	9.9319	2.3536	43.84	2.710
2.720	0.4033	0.0417	0.1033	1.0924	0.3949	9.4812	1.1979	0.4755	0.2157	0.4941	0.4166	8.4648	10.0017	2.3642	44.05	2.720
2.730	0.4015	0.0410	0.1022	1.0941	0.3912	9.5370	1.1989	0.4773	0.2140	0.4933	0.4131	8.5284	10.0718	2.3750	44.27	2.730
2.740	0.3998	0.0404	0.1010	1.0957	0.3875	9.5929	1.1999	0.4791	0.2123	0.4926	0.4097	8.5922	10.1421	2.3858	44.48	2.740
2.750	0.3980	0.0398	0.0999	1.0973	0.3858	9.6490	1.2009	0.4809	0.2106	0.4918	0.4062	8.6563	10.2127	2.3966	44.69	2.750

$\gamma=1.400$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{m\sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m}\sqrt{c_p T_0}}{Ap}$	$\frac{F}{m\sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2}\rho V^2}{p_0}$	M_s	$\frac{P_{0s}}{P_0}$	$\frac{P_s}{P}$	$\frac{P_{0s}}{P}$	$\frac{T_s}{T}$	V	M
2.760	0.3963	0.0392	0.0989	1.0988	0.38902	9.7053	1.2019	0.4827	0.2089	0.4911	0.4028	8.7205	10.2835	2.4074	44.91	2.760
2.770	0.3945	0.0386	0.0978	1.1004	0.3766	9.7618	1.2029	0.4845	0.2072	0.4903	0.3994	8.7851	10.3546	2.4183	45.12	2.770
2.780	0.3928	0.0380	0.0967	1.1020	0.3730	9.8185	1.2038	0.4863	0.2055	0.4896	0.3961	8.8498	10.4259	2.4292	45.33	2.780
2.790	0.3911	0.0374	0.0957	1.1035	0.3695	9.8753	1.2048	0.4880	0.2039	0.4889	0.3928	8.9148	10.4975	2.4402	45.54	2.790
2.800	0.3894	0.0368	0.0946	1.1051	0.3660	9.9324	1.2058	0.4898	0.2022	0.4882	0.3895	8.9800	10.5694	2.4512	45.75	2.800
2.810	0.3877	0.0363	0.0936	1.1066	0.3625	9.9896	1.2067	0.4915	0.2006	0.4875	0.3862	9.0455	10.6415	2.4622	45.95	2.810
2.820	0.3860	0.0357	0.0926	1.1081	0.3591	10.0470	1.2077	0.4932	0.1990	0.4868	0.3829	9.1111	10.7139	2.4733	46.16	2.820
2.830	0.3844	0.0352	0.0916	1.1096	0.3557	10.1046	1.2086	0.4949	0.1973	0.4861	0.3797	9.1771	10.7865	2.4844	46.37	2.830
2.840	0.3827	0.0347	0.0906	1.1111	0.3523	10.1624	1.2095	0.4966	0.1957	0.4854	0.3765	9.2432	10.8594	2.4955	46.57	2.840
2.850	0.3810	0.0341	0.0896	1.1126	0.3490	10.2204	1.2105	0.4983	0.1941	0.4847	0.3733	9.3096	10.9326	2.5067	46.78	2.850
2.860	0.3794	0.0336	0.0886	1.1141	0.3457	10.2785	1.2114	0.5000	0.1926	0.4840	0.3701	9.3762	11.0060	2.5179	46.98	2.860
2.870	0.3777	0.0331	0.0877	1.1156	0.3424	10.3368	1.2123	0.5016	0.1910	0.4833	0.3670	9.4431	11.0797	2.5292	47.19	2.870
2.880	0.3761	0.0326	0.0867	1.1171	0.3392	10.3954	1.2132	0.5033	0.1894	0.4827	0.3639	9.5101	11.1536	2.5405	47.39	2.880
2.890	0.3745	0.0321	0.0858	1.1185	0.3359	10.4541	1.2142	0.5049	0.1879	0.4820	0.3608	9.5775	11.2278	2.5518	47.59	2.890
2.900	0.3729	0.0317	0.0849	1.1199	0.3328	10.5130	1.2151	0.5065	0.1863	0.4814	0.3577	9.6450	11.3022	2.5632	47.79	2.900
2.910	0.3712	0.0312	0.0840	1.1214	0.3296	10.5720	1.2160	0.5081	0.1848	0.4807	0.3547	9.7128	11.3770	2.5746	47.99	2.910
2.920	0.3696	0.0307	0.0831	1.1228	0.3265	10.6313	1.2169	0.5097	0.1833	0.4801	0.3517	9.7808	11.4519	2.5861	48.19	2.920
2.930	0.3681	0.0302	0.0822	1.1242	0.3234	10.6908	1.2178	0.5113	0.1818	0.4795	0.3487	9.8491	11.5271	2.5976	48.39	2.930
2.940	0.3665	0.0298	0.0813	1.1256	0.3203	10.7504	1.2187	0.5129	0.1803	0.4788	0.3457	9.9175	11.6026	2.6091	48.59	2.940
2.950	0.3649	0.0293	0.0804	1.1270	0.3173	10.8102	1.2195	0.5145	0.1788	0.4782	0.3428	9.9863	11.6784	2.6206	48.78	2.950
2.960	0.3633	0.0289	0.0796	1.1284	0.3143	10.8702	1.2204	0.5160	0.1773	0.4776	0.3398	10.0552	11.7544	2.6322	48.98	2.960
2.970	0.3618	0.0285	0.0787	1.1298	0.3113	10.9304	1.2213	0.5176	0.1758	0.4770	0.3369	10.1244	11.8306	2.6439	49.18	2.970
2.980	0.3602	0.0281	0.0779	1.1312	0.3083	10.9908	1.2222	0.5191	0.1744	0.4764	0.3340	10.1938	11.9072	2.6555	49.37	2.980
2.990	0.3587	0.0276	0.0770	1.1325	0.3054	11.0514	1.2230	0.5206	0.1729	0.4758	0.3312	10.2635	11.9889	2.6673	49.56	2.990
3.000	0.3571	0.0272	0.0762	1.1339	0.3025	11.1122	1.2239	0.5222	0.1715	0.4752	0.3283	10.3333	12.0610	2.6790	49.76	3.000

GAS FLOW TABLES ($\gamma=1.333$): SUBSONIC FLOW

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{A p_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{A p}$	$\frac{F}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4 c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{p_0}$
0.010	1.0000	0.9999	1.0000	0.0058	0.0231	0.0231	43.2958	7493.200	0.0001
0.020	0.9999	0.9997	0.9998	0.0115	0.0462	0.0462	21.6560	1868.007	0.0003
0.030	0.9999	0.9994	0.9996	0.0173	0.0693	0.0693	14.4464	826.7890	0.0006
0.040	0.9997	0.9989	0.9992	0.0231	0.0923	0.0924	10.8442	462.6179	0.0011
0.050	0.9996	0.9983	0.9988	0.0288	0.1153	0.1155	8.6851	294.2161	0.0017
0.060	0.9994	0.9976	0.9982	0.0346	0.1383	0.1386	7.2475	202.8455	0.0024
0.070	0.9992	0.9967	0.9976	0.0404	0.1612	0.1618	6.2222	147.8292	0.0033
0.080	0.9989	0.9957	0.9968	0.0461	0.1841	0.1849	5.4546	112.1800	0.0042
0.090	0.9987	0.9946	0.9960	0.0519	0.2069	0.2080	4.8587	87.7848	0.0054
0.100	0.9983	0.9934	0.9950	0.0577	0.2297	0.2312	4.3831	70.3719	0.0066
0.110	0.9980	0.9920	0.9940	0.0634	0.2523	0.2544	3.9949	57.5186	0.0080
0.120	0.9976	0.9905	0.9928	0.0692	0.2749	0.2775	3.6724	47.7680	0.0095
0.130	0.9972	0.9888	0.9916	0.0749	0.2974	0.3007	3.4003	40.2012	0.0111
0.140	0.9967	0.9870	0.9903	0.0807	0.3197	0.3239	3.1678	34.2155	0.0129
0.150	0.9963	0.9851	0.9888	0.0864	0.3420	0.3471	2.9670	29.4027	0.0148
0.160	0.9958	0.9831	0.9873	0.0921	0.3641	0.3704	2.7920	25.4777	0.0168
0.170	0.9952	0.9810	0.9857	0.0979	0.3861	0.3936	2.6383	22.2372	0.0189
0.180	0.9946	0.9787	0.9840	0.1036	0.4080	0.4169	2.5022	19.5326	0.0211
0.190	0.9940	0.9763	0.9822	0.1093	0.4298	0.4402	2.3809	17.2536	0.0235
0.200	0.9934	0.9738	0.9803	0.1150	0.4514	0.4635	2.2724	15.3166	0.0260
0.210	0.9927	0.9711	0.9783	0.1207	0.4728	0.4869	2.1747	13.6578	0.0285
0.220	0.9920	0.9684	0.9762	0.1264	0.4941	0.5102	2.0863	12.2273	0.0312
0.230	0.9913	0.9655	0.9740	0.1321	0.5152	0.5336	2.0061	10.9859	0.0340
0.240	0.9905	0.9625	0.9717	0.1378	0.5362	0.5570	1.9330	9.9026	0.0370
0.250	0.9897	0.9594	0.9694	0.1435	0.5569	0.5805	1.8662	8.9522	0.0400
0.260	0.9889	0.9562	0.9669	0.1492	0.5775	0.6040	1.8049	8.1146	0.0431
0.270	0.9880	0.9529	0.9644	0.1549	0.5979	0.6275	1.7486	7.3731	0.0463
0.280	0.9871	0.9494	0.9618	0.1605	0.6181	0.6510	1.6966	6.7140	0.0496
0.290	0.9862	0.9459	0.9591	0.1662	0.6380	0.6746	1.6486	6.1261	0.0530
0.300	0.9852	0.9422	0.9563	0.1718	0.6578	0.6982	1.6042	5.5998	0.0565
0.310	0.9843	0.9384	0.9534	0.1775	0.6774	0.7218	1.5629	5.1272	0.0601
0.320	0.9832	0.9346	0.9505	0.1831	0.6967	0.7455	1.5245	4.7016	0.0638
0.330	0.9822	0.9306	0.9475	0.1887	0.7158	0.7692	1.4888	4.3173	0.0675
0.340	0.9811	0.9265	0.9444	0.1943	0.7347	0.7929	1.4555	3.9693	0.0714
0.350	0.9800	0.9224	0.9412	0.1999	0.7533	0.8167	1.4244	3.6535	0.0753
0.360	0.9789	0.9181	0.9379	0.2055	0.7717	0.8405	1.3953	3.3663	0.0793
0.370	0.9777	0.9137	0.9346	0.2111	0.7898	0.8644	1.3680	3.1046	0.0834
0.380	0.9765	0.9093	0.9311	0.2167	0.8077	0.8883	1.3425	2.8655	0.0875
0.390	0.9753	0.9047	0.9276	0.2223	0.8253	0.9122	1.3185	2.6469	0.0917
0.400	0.9741	0.9001	0.9241	0.2278	0.8427	0.9362	1.2959	2.4466	0.0960
0.410	0.9728	0.8954	0.9204	0.2334	0.8598	0.9603	1.2747	2.2627	0.1003
0.420	0.9715	0.8906	0.9167	0.2389	0.8766	0.9843	1.2548	2.0937	0.1047
0.430	0.9701	0.8857	0.9130	0.2444	0.8932	1.0085	1.2360	1.9382	0.1091
0.440	0.9688	0.8807	0.9091	0.2499	0.9095	1.0326	1.2183	1.7949	0.1136
0.450	0.9674	0.8757	0.9052	0.2554	0.9255	1.0569	1.2016	1.6627	0.1182
0.460	0.9660	0.8706	0.9012	0.2609	0.9412	1.0811	1.1858	1.5405	0.1228
0.470	0.9645	0.8654	0.8972	0.2664	0.9567	1.1055	1.1710	1.4276	0.1274
0.480	0.9631	0.8601	0.8931	0.2718	0.9718	1.1299	1.1569	1.3231	0.1321
0.490	0.9616	0.8548	0.8890	0.2773	0.9867	1.1543	1.1436	1.2263	0.1368
0.500	0.9600	0.8494	0.8847	0.2827	1.0012	1.1788	1.1310	1.1365	0.1415

$\gamma=1.333$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap}$	$\frac{F}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{1}{2} \rho V^2$
0.510	0.9585	0.8439	0.8805	0.2881	1.0155	1.2033	1.1192	1.0532	0.1463
0.520	0.9569	0.8384	0.8761	0.2935	1.0295	1.2279	1.1079	0.9759	0.1511
0.530	0.9553	0.8328	0.8717	0.2989	1.0431	1.2526	1.0973	0.9041	0.1559
0.540	0.9537	0.8271	0.8673	0.3043	1.0565	1.2773	1.0872	0.8373	0.1608
0.550	0.9520	0.8214	0.8628	0.3097	1.0696	1.3021	1.0777	0.7752	0.1656
0.560	0.9504	0.8157	0.8583	0.3150	1.0823	1.3269	1.0687	0.7174	0.1705
0.570	0.9487	0.8099	0.8537	0.3204	1.0948	1.3518	1.0601	0.6636	0.1754
0.580	0.9470	0.8040	0.8490	0.3257	1.1069	1.3768	1.0520	0.6136	0.1803
0.590	0.9452	0.7981	0.8443	0.3310	1.1188	1.4018	1.0444	0.5669	0.1852
0.600	0.9434	0.7921	0.8396	0.3363	1.1303	1.4269	1.0371	0.5235	0.1901
0.610	0.9417	0.7861	0.8348	0.3416	1.1415	1.4521	1.0303	0.4830	0.1950
0.620	0.9398	0.7801	0.8300	0.3469	1.1524	1.4773	1.0238	0.4452	0.1999
0.630	0.9380	0.7740	0.8252	0.3521	1.1630	1.5026	1.0176	0.4101	0.2048
0.640	0.9362	0.7679	0.8203	0.3573	1.1733	1.5280	1.0118	0.3773	0.2096
0.650	0.9343	0.7618	0.8153	0.3626	1.1833	1.5534	1.0063	0.3467	0.2145
0.660	0.9324	0.7556	0.8104	0.3678	1.1930	1.5789	1.0011	0.3183	0.2194
0.670	0.9305	0.7494	0.8054	0.3729	1.2023	1.6045	0.9962	0.2918	0.2242
0.680	0.9285	0.7431	0.8003	0.3781	1.2114	1.6301	0.9916	0.2671	0.2290
0.690	0.9266	0.7368	0.7953	0.3833	1.2201	1.6559	0.9872	0.2441	0.2338
0.700	0.9246	0.7306	0.7902	0.3884	1.2285	1.6817	0.9831	0.2227	0.2386
0.710	0.9226	0.7242	0.7850	0.3935	1.2367	1.7075	0.9792	0.2028	0.2433
0.720	0.9205	0.7179	0.7799	0.3986	1.2445	1.7335	0.9755	0.1843	0.2480
0.730	0.9185	0.7116	0.7747	0.4037	1.2520	1.7595	0.9721	0.1671	0.2527
0.740	0.9164	0.7052	0.7695	0.4088	1.2592	1.7856	0.9688	0.1512	0.2574
0.750	0.9144	0.6988	0.7643	0.4139	1.2661	1.8118	0.9658	0.1364	0.2620
0.760	0.9123	0.6924	0.7590	0.4189	1.2727	1.8381	0.9629	0.1227	0.2666
0.770	0.9102	0.6860	0.7537	0.4239	1.2790	1.8644	0.9603	0.1100	0.2711
0.780	0.9080	0.6796	0.7484	0.4289	1.2850	1.8908	0.9578	0.0983	0.2756
0.790	0.9059	0.6732	0.7431	0.4339	1.2907	1.9174	0.9554	0.0875	0.2800
0.800	0.9037	0.6668	0.7378	0.4389	1.2961	1.9440	0.9533	0.0776	0.2844
0.810	0.9015	0.6603	0.7325	0.4438	1.3013	1.9706	0.9513	0.0685	0.2888
0.820	0.8993	0.6539	0.7271	0.4487	1.3061	1.9974	0.9494	0.0601	0.2930
0.830	0.8971	0.6475	0.7217	0.4536	1.3107	2.0243	0.9477	0.0524	0.2973
0.840	0.8949	0.6411	0.7164	0.4585	1.3149	2.0512	0.9461	0.0454	0.3015
0.850	0.8926	0.6346	0.7110	0.4634	1.3189	2.0782	0.9446	0.0391	0.3056
0.860	0.8904	0.6282	0.7056	0.4683	1.3226	2.1053	0.9433	0.0333	0.3097
0.870	0.8881	0.6218	0.7002	0.4731	1.3260	2.1326	0.9420	0.0281	0.3137
0.880	0.8858	0.6154	0.6948	0.4779	1.3292	2.1599	0.9409	0.0235	0.3176
0.890	0.8835	0.6090	0.6893	0.4827	1.3321	2.1873	0.9399	0.0193	0.3215
0.900	0.8812	0.6026	0.6839	0.4875	1.3347	2.2147	0.9390	0.0156	0.3253
0.910	0.8788	0.5963	0.6785	0.4923	1.3370	2.2423	0.9383	0.0124	0.3291
0.920	0.8765	0.5899	0.6731	0.4970	1.3391	2.2700	0.9376	0.0096	0.3328
0.930	0.8741	0.5836	0.6676	0.5018	1.3410	2.2978	0.9370	0.0072	0.3364
0.940	0.8717	0.5773	0.6622	0.5065	1.3425	2.3256	0.9365	0.0052	0.3400
0.950	0.8694	0.5710	0.6568	0.5111	1.3439	2.3536	0.9360	0.0035	0.3435
0.960	0.8670	0.5647	0.6514	0.5158	1.3449	2.3817	0.9357	0.0022	0.3469
0.970	0.8646	0.5585	0.6459	0.5205	1.3458	2.4098	0.9354	0.0012	0.3502
0.980	0.8621	0.5522	0.6405	0.5251	1.3464	2.4381	0.9353	0.0005	0.3535
0.990	0.8597	0.5460	0.6351	0.5297	1.3467	2.4664	0.9351	0.0001	0.3567
1.000	0.8573	0.5398	0.6297	0.5343	1.3468	2.4949	0.9351	0.0000	0.3598

GAS FLOW TABLES ($\gamma=1.333$): SUPERSONIC FLOW

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap}$	$\frac{F}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{p_0}$
1.010	0.8548	0.5337	0.6243	0.5389	1.3467	2.5234	0.9351	0.0001	0.3628
1.020	0.8524	0.5276	0.6189	0.5434	1.3464	2.5521	0.9352	0.0005	0.3658
1.030	0.8499	0.5215	0.6136	0.5479	1.3458	2.5809	0.9354	0.0011	0.3687
1.040	0.8474	0.5154	0.6082	0.5525	1.3450	2.6097	0.9356	0.0019	0.3715
1.050	0.8449	0.5093	0.6028	0.5569	1.3440	2.6387	0.9359	0.0029	0.3743
1.060	0.8424	0.5033	0.5975	0.5614	1.3428	2.6678	0.9363	0.0042	0.3769
1.070	0.8399	0.4974	0.5922	0.5659	1.3414	2.6970	0.9367	0.0056	0.3795
1.080	0.8374	0.4914	0.5869	0.5703	1.3397	2.7263	0.9371	0.0071	0.3820
1.090	0.8349	0.4855	0.5816	0.5747	1.3379	2.7557	0.9376	0.0089	0.3845
1.100	0.8323	0.4796	0.5763	0.5791	1.3359	2.7852	0.9381	0.0108	0.3868
1.110	0.8298	0.4738	0.5710	0.5835	1.3337	2.8148	0.9387	0.0128	0.3891
1.120	0.8272	0.4680	0.5658	0.5878	1.3313	2.8446	0.9394	0.0150	0.3913
1.130	0.8247	0.4622	0.5605	0.5922	1.3287	2.8744	0.9401	0.0173	0.3934
1.140	0.8221	0.4565	0.5553	0.5965	1.3259	2.9043	0.9408	0.0197	0.3954
1.150	0.8195	0.4508	0.5501	0.6008	1.3229	2.9344	0.9415	0.0223	0.3974
1.160	0.8170	0.4452	0.5449	0.6050	1.3198	2.9646	0.9424	0.0250	0.3993
1.170	0.8144	0.4396	0.5398	0.6093	1.3165	2.9949	0.9432	0.0277	0.4011
1.180	0.8118	0.4340	0.5347	0.6135	1.3131	3.0253	0.9441	0.0306	0.4028
1.190	0.8092	0.4285	0.5295	0.6177	1.3094	3.0558	0.9450	0.0335	0.4044
1.200	0.8066	0.4230	0.5245	0.6219	1.3057	3.0864	0.9459	0.0366	0.4060
1.210	0.8040	0.4176	0.5194	0.6261	1.3017	3.1172	0.9469	0.0397	0.4075
1.220	0.8014	0.4122	0.5143	0.6302	1.2976	3.1481	0.9479	0.0429	0.4089
1.230	0.7988	0.4068	0.5093	0.6344	1.2934	3.1791	0.9489	0.0462	0.4102
1.240	0.7962	0.4015	0.5043	0.6385	1.2890	3.2102	0.9500	0.0495	0.4115
1.250	0.7936	0.3963	0.4994	0.6426	1.2845	3.2414	0.9511	0.0529	0.4127
1.260	0.7909	0.3911	0.4944	0.6466	1.2798	3.2727	0.9522	0.0564	0.4138
1.270	0.7883	0.3859	0.4895	0.6507	1.2751	3.3042	0.9533	0.0599	0.4148
1.280	0.7857	0.3808	0.4846	0.6547	1.2701	3.3358	0.9545	0.0634	0.4158
1.290	0.7830	0.3757	0.4798	0.6587	1.2651	3.3675	0.9557	0.0670	0.4167
1.300	0.7804	0.3706	0.4749	0.6627	1.2599	3.3993	0.9569	0.0707	0.4175
1.310	0.7778	0.3657	0.4701	0.6667	1.2547	3.4313	0.9581	0.0744	0.4182
1.320	0.7751	0.3607	0.4654	0.6706	1.2493	3.4633	0.9594	0.0781	0.4189
1.330	0.7725	0.3558	0.4606	0.6746	1.2438	3.4955	0.9606	0.0819	0.4195
1.340	0.7698	0.3510	0.4559	0.6785	1.2382	3.5279	0.9619	0.0857	0.4200
1.350	0.7672	0.3462	0.4512	0.6824	1.2325	3.5603	0.9632	0.0895	0.4205
1.360	0.7646	0.3414	0.4465	0.6862	1.2266	3.5929	0.9645	0.0934	0.4209
1.370	0.7619	0.3367	0.4419	0.6901	1.2207	3.6256	0.9659	0.0973	0.4212
1.380	0.7593	0.3320	0.4373	0.6939	1.2147	3.6584	0.9672	0.1012	0.4215
1.390	0.7566	0.3274	0.4328	0.6977	1.2086	3.6914	0.9686	0.1051	0.4216
1.400	0.7540	0.3229	0.4282	0.7015	1.2025	3.7245	0.9700	0.1091	0.4218
1.410	0.7513	0.3183	0.4237	0.7053	1.1962	3.7577	0.9714	0.1130	0.4218
1.420	0.7487	0.3139	0.4192	0.7090	1.1899	3.7910	0.9728	0.1170	0.4218
1.430	0.7460	0.3094	0.4148	0.7127	1.1835	3.8245	0.9742	0.1210	0.4217
1.440	0.7434	0.3051	0.4104	0.7164	1.1770	3.8581	0.9756	0.1250	0.4216
1.450	0.7407	0.3007	0.4060	0.7201	1.1704	3.8918	0.9771	0.1290	0.4214
1.460	0.7381	0.2965	0.4017	0.7238	1.1638	3.9257	0.9785	0.1331	0.4212
1.470	0.7354	0.2922	0.3974	0.7275	1.1571	3.9597	0.9800	0.1371	0.4209
1.480	0.7328	0.2880	0.3931	0.7311	1.1504	3.9938	0.9815	0.1411	0.4205
1.490	0.7301	0.2839	0.3888	0.7347	1.1435	4.0281	0.9829	0.1452	0.4201
1.500	0.7275	0.2798	0.3846	0.7383	1.1367	4.0625	0.9844	0.1492	0.4196

$\gamma=1.333$

M	$\frac{T}{T_0}$	$\frac{p}{p_0}$	$\frac{\rho}{\rho_0}$	$\frac{V}{\sqrt{c_p T_0}}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap_0}$	$\frac{\dot{m} \sqrt{c_p T_0}}{Ap}$	$\frac{F}{\dot{m} \sqrt{c_p T_0}}$	$\frac{4c_f L_{\max}}{D}$	$\frac{\frac{1}{2} \rho V^2}{p_0}$
1.510	0.7248	0.2758	0.3804	0.7419	1.1298	4.0970	0.9859	0.1532	0.4191
1.520	0.7222	0.2718	0.3763	0.7454	1.1228	4.1317	0.9874	0.1573	0.4185
1.530	0.7195	0.2678	0.3722	0.7489	1.1158	4.1665	0.9889	0.1613	0.4178
1.540	0.7169	0.2639	0.3681	0.7524	1.1087	4.2014	0.9905	0.1654	0.4171
1.550	0.7143	0.2600	0.3641	0.7559	1.1016	4.2365	0.9920	0.1694	0.4164
1.560	0.7116	0.2562	0.3600	0.7594	1.0945	4.2717	0.9935	0.1734	0.4156
1.570	0.7090	0.2524	0.3561	0.7629	1.0873	4.3070	0.9950	0.1775	0.4147
1.580	0.7064	0.2487	0.3521	0.7663	1.0801	4.3425	0.9966	0.1815	0.4138
1.590	0.7038	0.2450	0.3482	0.7697	1.0729	4.3782	0.9981	0.1855	0.4129
1.600	0.7011	0.2414	0.3443	0.7731	1.0656	4.4139	0.9997	0.1895	0.4119
1.610	0.6985	0.2378	0.3405	0.7765	1.0583	4.4498	1.0012	0.1935	0.4109
1.620	0.6959	0.2343	0.3367	0.7799	1.0510	4.4859	1.0028	0.1975	0.4098
1.630	0.6933	0.2308	0.3329	0.7832	1.0436	4.5220	1.0043	0.2015	0.4087
1.640	0.6907	0.2273	0.3291	0.7865	1.0363	4.5584	1.0059	0.2055	0.4075
1.650	0.6881	0.2239	0.3254	0.7898	1.0289	4.5948	1.0075	0.2094	0.4063
1.660	0.6855	0.2206	0.3217	0.7931	1.0215	4.6314	1.0090	0.2134	0.4051
1.670	0.6829	0.2172	0.3181	0.7964	1.0141	4.6682	1.0106	0.2173	0.4038
1.680	0.6803	0.2139	0.3145	0.7996	1.0066	4.7051	1.0122	0.2213	0.4025
1.690	0.6777	0.2107	0.3109	0.8028	0.9992	4.7421	1.0137	0.2252	0.4011
1.700	0.6751	0.2075	0.3074	0.8061	0.9918	4.7793	1.0153	0.2291	0.3997
1.710	0.6726	0.2044	0.3039	0.8093	0.9843	4.8166	1.0169	0.2330	0.3983
1.720	0.6700	0.2012	0.3004	0.8124	0.9769	4.8541	1.0184	0.2369	0.3968
1.730	0.6674	0.1982	0.2969	0.8156	0.9694	4.8917	1.0200	0.2407	0.3953
1.740	0.6649	0.1951	0.2935	0.8187	0.9620	4.9294	1.0216	0.2446	0.3938
1.750	0.6623	0.1922	0.2901	0.8218	0.9545	4.9673	1.0232	0.2484	0.3922
1.760	0.6597	0.1892	0.2868	0.8249	0.9471	5.0054	1.0247	0.2522	0.3906
1.770	0.6572	0.1863	0.2835	0.8280	0.9396	5.0435	1.0263	0.2560	0.3890
1.780	0.6546	0.1834	0.2802	0.8311	0.9322	5.0819	1.0279	0.2598	0.3874
1.790	0.6521	0.1806	0.2770	0.8341	0.9248	5.1204	1.0294	0.2636	0.3857
1.800	0.6496	0.1778	0.2737	0.8372	0.9173	5.1590	1.0310	0.2673	0.3840
1.810	0.6471	0.1751	0.2706	0.8402	0.9099	5.1978	1.0326	0.2711	0.3822
1.820	0.6445	0.1723	0.2674	0.8432	0.9025	5.2367	1.0341	0.2748	0.3805
1.830	0.6420	0.1697	0.2643	0.8461	0.8951	5.2758	1.0357	0.2785	0.3787
1.840	0.6395	0.1670	0.2612	0.8491	0.8878	5.3150	1.0373	0.2822	0.3769
1.850	0.6370	0.1644	0.2581	0.8521	0.8804	5.3544	1.0388	0.2858	0.3751
1.860	0.6345	0.1619	0.2551	0.8550	0.8731	5.3939	1.0404	0.2895	0.3732
1.870	0.6320	0.1593	0.2521	0.8579	0.8658	5.4336	1.0419	0.2931	0.3714
1.880	0.6295	0.1568	0.2491	0.8608	0.8585	5.4734	1.0435	0.2967	0.3695
1.890	0.6271	0.1544	0.2462	0.8636	0.8512	5.5134	1.0450	0.3003	0.3676
1.900	0.6246	0.1520	0.2433	0.8665	0.8439	5.5535	1.0466	0.3039	0.3656
1.910	0.6221	0.1496	0.2404	0.8693	0.8367	5.5938	1.0481	0.3074	0.3637
1.920	0.6197	0.1472	0.2376	0.8722	0.8295	5.6342	1.0497	0.3110	0.3617
1.930	0.6172	0.1449	0.2348	0.8750	0.8223	5.6748	1.0512	0.3145	0.3598
1.940	0.6148	0.1426	0.2320	0.8778	0.8152	5.7155	1.0527	0.3180	0.3578
1.950	0.6123	0.1404	0.2292	0.8805	0.8081	5.7564	1.0543	0.3215	0.3558
1.960	0.6099	0.1382	0.2265	0.8833	0.8010	5.7974	1.0558	0.3249	0.3537
1.970	0.6075	0.1360	0.2238	0.8860	0.7939	5.8386	1.0573	0.3284	0.3517
1.980	0.6051	0.1338	0.2212	0.8888	0.7869	5.8800	1.0588	0.3318	0.3497
1.990	0.6026	0.1317	0.2185	0.8915	0.7799	5.9215	1.0603	0.3352	0.3476
2.000	0.6002	0.1296	0.2159	0.8942	0.7729	5.9631	1.0619	0.3386	0.3455

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	M_2	$\frac{T_2}{T_1}$	$\frac{p_{02}}{p_{01}}$	
1.05	0.558	79.937	1.0803	1.0567	1.0223	0.9845	0.99995	1.40	8.000	75.893	1.9842	1.6163	1.2276	0.96806	
1.10	1.515	76.297	1.1658	1.1157	1.0449	0.9711	0.99963		6.000	80.485	2.0575	1.6562	1.2423	0.7762	0.96286
1.15	2.000	67.003	1.1408	1.0986	1.0384	1.0434	0.99777	1.45	2.000	46.004	1.1028	1.0723	1.0284	0.99990	
1.20	2.000	61.050	61.050	1.1197	1.0841	1.0329	1.1113	0.99985	4.000	48.679	1.2169	1.1503	1.0579	1.3091	0.99923
1.25	2.000	56.844	56.844	1.1110	1.0780	1.0306	1.1696	0.99988	6.000	51.755	1.3463	1.2357	1.0895	1.2325	0.99733
1.30	2.000	53.474	53.474	1.1065	1.0749	1.0294	1.2244	0.99989	10.000	61.046	1.5000	1.3533	1.1250	1.1460	0.99325
1.35	2.000	50.634	50.634	1.1042	1.0733	1.0287	1.2774	0.99990	1.55	2.000	44.065	1.1030	1.0725	1.0284	0.99990
1.40	2.000	48.173	48.173	1.1030	1.0725	1.0284	1.3295	0.99990	8.000	42.315	1.2173	1.1505	1.0580	1.4821	0.99990
1.42	2.000	47.716	47.716	1.1025	1.0719	1.0280	1.3625	0.99990	2.000	44.642	1.2366	1.1887	1.3414	1.09923	0.99923
1.44	2.000	47.359	47.359	1.1020	1.0714	1.0279	1.3774	0.99990	6.000	47.214	1.3450	1.2936	1.0887	0.99739	0.99739
1.46	2.000	47.002	47.002	1.1015	1.0709	1.0274	1.3924	0.99990	8.000	50.131	1.4845	1.3236	1.1215	1.2651	0.99375
1.48	2.000	46.745	46.745	1.1010	1.0704	1.0270	1.4074	0.99990	10.000	53.598	1.6491	1.4243	1.2155	1.1804	0.98738
1.50	2.000	46.588	46.588	1.1005	1.0700	1.0266	1.4224	0.99990	12.000	58.240	1.8597	1.5469	1.2022	1.0758	0.97615
1.52	2.000	46.431	46.431	1.1000	1.0695	1.0262	1.4374	0.99990	14.000	66.171	2.1787	1.7206	1.2663	0.9198	0.95362
1.54	2.000	46.374	46.374	1.0995	1.0690	1.0258	1.4524	0.99990	16.000	73.688	2.4151	1.8408	1.3120	0.8014	0.93367
1.56	2.000	46.317	46.317	1.0990	1.0685	1.0254	1.4674	0.99990	18.000	79.712	2.3746	1.8207	1.3042	0.7476	0.93725
1.58	2.000	46.260	46.260	1.0985	1.0680	1.0250	1.4824	0.99990	20.000	82.662	2.4155	1.8410	1.3121	0.7250	0.93363
1.60	2.000	46.203	46.203	1.0980	1.0675	1.0246	1.4974	0.99990	22.000	85.256	2.4404	1.8533	1.3168	0.7112	0.93141
1.62	2.000	46.146	46.146	1.0975	1.0670	1.0242	1.5124	0.99990	24.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.64	2.000	46.089	46.089	1.0970	1.0665	1.0238	1.5274	0.99990	26.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.66	2.000	46.032	46.032	1.0965	1.0660	1.0234	1.5424	0.99990	28.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.68	2.000	45.975	45.975	1.0960	1.0655	1.0230	1.5574	0.99990	30.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.70	2.000	45.918	45.918	1.0955	1.0650	1.0226	1.5724	0.99990	32.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.72	2.000	45.861	45.861	1.0950	1.0645	1.0222	1.5874	0.99990	34.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.74	2.000	45.804	45.804	1.0945	1.0640	1.0218	1.6024	0.99990	36.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.76	2.000	45.747	45.747	1.0940	1.0635	1.0214	1.6174	0.99990	38.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.78	2.000	45.690	45.690	1.0935	1.0630	1.0210	1.6324	0.99990	40.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.80	2.000	45.633	45.633	1.0930	1.0625	1.0206	1.6474	0.99990	42.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.82	2.000	45.576	45.576	1.0925	1.0620	1.0202	1.6624	0.99990	44.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.84	2.000	45.519	45.519	1.0920	1.0615	1.0198	1.6774	0.99990	46.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.86	2.000	45.462	45.462	1.0915	1.0610	1.0194	1.6924	0.99990	48.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.88	2.000	45.405	45.405	1.0910	1.0605	1.0190	1.7074	0.99990	50.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.90	2.000	45.348	45.348	1.0905	1.0600	1.0186	1.7224	0.99990	52.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.92	2.000	45.291	45.291	1.0900	1.0595	1.0182	1.7374	0.99990	54.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.94	2.000	45.234	45.234	1.0895	1.0590	1.0178	1.7524	0.99990	56.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.96	2.000	45.177	45.177	1.0890	1.0585	1.0174	1.7674	0.99990	58.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
1.98	2.000	45.120	45.120	1.0885	1.0580	1.0170	1.7824	0.99990	60.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.00	2.000	45.063	45.063	1.0880	1.0575	1.0166	1.7974	0.99990	62.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.02	2.000	44.996	44.996	1.0875	1.0570	1.0162	1.8124	0.99990	64.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.04	2.000	44.939	44.939	1.0870	1.0565	1.0158	1.8274	0.99990	66.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.06	2.000	44.882	44.882	1.0865	1.0560	1.0154	1.8424	0.99990	68.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.08	2.000	44.825	44.825	1.0860	1.0555	1.0150	1.8574	0.99990	70.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.10	2.000	44.768	44.768	1.0855	1.0550	1.0146	1.8724	0.99990	72.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.12	2.000	44.711	44.711	1.0850	1.0545	1.0142	1.8874	0.99990	74.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.14	2.000	44.654	44.654	1.0845	1.0540	1.0138	1.9024	0.99990	76.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.16	2.000	44.597	44.597	1.0840	1.0535	1.0134	1.9174	0.99990	78.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.18	2.000	44.540	44.540	1.0835	1.0530	1.0130	1.9324	0.99990	80.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.20	2.000	44.483	44.483	1.0830	1.0525	1.0126	1.9474	0.99990	82.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.22	2.000	44.426	44.426	1.0825	1.0520	1.0122	1.9624	0.99990	84.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.24	2.000	44.369	44.369	1.0820	1.0515	1.0118	1.9774	0.99990	86.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.26	2.000	44.312	44.312	1.0815	1.0510	1.0114	1.9924	0.99990	88.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.28	2.000	44.255	44.255	1.0810	1.0505	1.0110	2.0074	0.99990	90.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.30	2.000	44.198	44.198	1.0805	1.0500	1.0106	2.0224	0.99990	92.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.32	2.000	44.141	44.141	1.0800	1.0495	1.0102	2.0374	0.99990	94.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.34	2.000	44.084	44.084	1.0795	1.0490	1.0098	2.0524	0.99990	96.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.36	2.000	44.027	44.027	1.0790	1.0485	1.0094	2.0674	0.99990	98.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.38	2.000	43.970	43.970	1.0785	1.0480	1.0090	2.0824	0.99990	100.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.40	2.000	43.913	43.913	1.0780	1.0475	1.0086	2.0974	0.99990	102.000	87.668	2.4540	1.8599	1.3194	0.7035	0.93018
2.42	2.000	43.856	43.856	1.0775	1.0470	1.0082	2.1124	0.99990	104.000	87.					

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	
										ρ_2	ρ_1	T_2	T_1	M_2	p_{02}
1.60	2.000	40.724	1.1046	1.0736	1.0289	1.5323	0.99990	1.70	6.000	84.848	3.1778	2.1865	1.4534	0.6547	0.85856
	4.000	42.931	1.2189	1.1516	1.0584	1.4638	0.99921		4.000	86.619	3.1933	2.1929	1.4562	0.6467	0.85695
	6.000	45.344	1.3446	1.2346	1.0891	1.3934	0.99736		2.000	88.325	3.2021	2.1965	1.4578	0.6421	0.85602
	8.000	48.030	1.4843	1.3236	1.1215	1.3236	0.99376								
	10.000	51.116	1.6430	1.4207	1.1565	1.2397	0.98766								
	12.000	54.889	1.8320	1.5311	1.1965	1.1483	0.97781								
	14.000	60.537	2.0974	1.6777	1.2502	1.0232	0.95990								
	14.652	65.828	2.3192	1.7929	1.2936	0.9188	0.94204								
	14.000	70.895	2.5000	1.8824	1.3281	0.8320	0.92598								
	12.000	75.900	2.6428	1.9504	1.3550	0.7611	0.91256								
	10.000	79.102	2.7132	1.9831	1.3682	0.7250	0.90574								
	8.000	81.691	2.7576	2.0035	1.3764	0.7018	0.90139								
	6.000	83.967	2.7870	2.0168	1.3819	0.6862	0.98848								
	4.000	86.061	2.8059	2.0254	1.3854	0.6761	0.89660								
	2.000	88.054	2.8166	2.0302	1.3873	0.6703	0.89554								
	1.65	2.000	39.267	1.1058	1.0744	1.0292	1.5823	0.99990	14.000	76.988	3.2251	2.2060	1.4620	0.7175	0.85362
	4.000	41.377	1.2212	1.1531	1.0590	1.5140	0.99919	12.000	79.465	3.2868	2.2312	1.4731	0.6878	0.84714	
	6.000	43.665	1.3475	1.2365	1.0898	1.4444	0.99730	10.000	81.570	3.3295	2.2484	1.4808	0.6669	0.84266	
	8.000	46.181	1.4869	1.3252	1.1221	1.3720	0.99367	8.000	83.451	3.3598	2.2606	1.4862	0.6518	0.83947	
	10.000	49.007	1.6429	1.4206	1.1565	1.2952	0.98766	6.000	85.190	3.3811	2.2691	1.4901	0.6409	0.83722	
	12.000	52.312	1.8224	1.5257	1.1945	1.2104	0.97837	4.000	86.838	3.3954	2.2748	1.4926	0.6337	0.83571	
	14.000	56.541	2.0441	1.6490	1.2386	1.1090	0.96384	2.000	88.432	3.4036	2.2780	1.4941	0.6295	0.83485	
	15.855	65.547	2.4653	1.8655	1.3215	0.9184	0.92915								
	14.000	73.864	2.7642	2.0065	1.3776	0.7782	0.90073								
	12.000	77.411	2.8587	2.0491	1.3951	0.7317	0.89132	1.80	2.000	35.538	1.1104	1.0776	1.0304	1.7312	0.99998
	10.000	80.102	2.9157	2.0744	1.4056	0.7029	0.88557		4.000	37.444	1.2306	1.1594	1.0613	1.6624	0.99909
	8.000	82.389	2.9539	2.0911	1.4126	0.6833	0.88169		6.000	39.481	1.3615	1.2455	1.0931	1.5932	0.99970
	6.000	84.446	2.9798	2.1024	1.4174	0.6697	0.87904		8.000	41.673	1.5044	1.3360	1.1260	1.5225	0.999310
	4.000	86.364	2.9968	2.1097	1.4205	0.6607	0.87730		10.000	44.057	1.6611	1.4315	1.1604	1.4494	0.98683
	2.000	88.200	3.0065	2.1139	1.4222	0.6556	0.87631		12.000	46.686	1.8345	1.5326	1.1970	1.3725	0.97766
	1.70	2.000	37.927	1.1072	1.0754	1.0295	1.6320	0.99989	18.000	57.995	1.9072	1.3379	1.0766	0.92120	0.99999
	4.000	39.957	1.2239	1.1550	1.0597	1.5638	0.99916		19.183	64.987	2.9376	2.0839	1.4096	0.9195	0.88335
	6.000	42.145	1.3514	1.2390	1.0907	1.4946	0.99722		18.000	71.424	3.2297	2.2079	1.4628	0.7956	0.85313
	8.000	44.528	1.4914	1.3280	1.1231	1.4232	0.99853		16.000	75.324	3.3707	2.2650	1.4882	0.7327	0.83832
	10.000	47.167	1.6466	1.4228	1.1573	1.3482	0.98750		14.000	78.020	3.4505	2.2985	1.5025	0.6958	0.82990
	12.000	50.168	1.8216	1.5252	1.1943	1.2674	0.97541		12.000	80.214	3.5041	2.3174	1.5121	0.6703	0.82423
	14.000	53.771	2.0273	1.6399	1.2362	1.1757	0.96504		10.000	82.128	3.5424	2.3322	1.5189	0.6518	0.82018
	16.000	58.794	2.2999	1.7831	1.2898	1.0569	0.94369		8.000	83.865	3.5702	2.3428	1.5239	0.6381	0.81725
	17.012	65.319	2.6171	1.9383	1.3502	0.9185	0.91502		6.000	85.485	3.5899	2.3503	1.5274	0.6283	0.81516
	16.000	71.426	2.8629	2.0510	1.3959	0.8077	0.89090		4.000	87.028	3.6032	2.3554	1.5298	0.6216	0.81376
	14.000	75.670	2.9984	2.1104	1.4208	0.7439	0.87713		2.000	88.525	3.6108	2.3583	1.5311	0.6178	0.81295
	12.000	78.555	3.0722	2.1421	1.4342	0.7080	0.86953								
	10.000	80.906	3.1208	2.1626	1.4431	0.6838	0.86450								
	8.000	82.965	3.1544	2.1767	1.4492	0.6667	0.86100								

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	
1.85	2.000	34.466	1.1121	1.0309	1.7805	0.99988	1.95	2.000	32.528	1.1160	1.0319	1.8790	0.99987	
	4.000	36.323	1.2343	1.1619	1.0623	1.7114	0.99905	4.000	34.304	1.2424	1.0643	1.8085	0.99896	
	6.000	38.302	1.3672	1.2492	1.0945	1.6418	0.99689	6.000	36.191	1.3801	1.2575	1.0975	1.7380	0.99660
	8.000	40.424	1.5123	1.3409	1.1278	1.5711	0.99284	8.000	38.204	1.5302	1.3521	1.1318	1.6666	0.99221
	10.000	42.717	1.6709	1.4373	1.1625	1.4983	0.98638	10.000	40.360	1.6938	1.4509	1.1674	1.5938	0.98528
	12.000	45.223	1.8453	1.5388	1.1992	1.4224	0.97701	12.000	42.688	1.8726	1.5542	1.2049	1.5185	0.97535
	14.000	48.014	2.0395	1.6465	1.2387	1.3415	0.96417	14.000	45.230	2.0693	1.6625	1.2446	1.4396	0.96200
	16.000	51.232	2.2607	1.7631	1.2822	1.2524	0.94697	16.000	48.059	2.2879	1.7770	1.2875	1.3553	0.94470
	18.000	55.227	2.5275	1.8956	1.3333	1.1476	0.92345	18.000	51.320	2.5368	1.9001	1.3351	1.2622	0.92258
	20.000	62.099	2.9519	2.0902	1.4123	0.9818	0.88189	20.000	55.381	2.8378	2.0397	1.3913	1.1520	0.89342
	20.198	64.872	3.1062	2.1565	1.4404	0.9205	0.86601	22.000	62.860	3.3464	2.553	1.4838	0.9087	0.84087
	20.000	67.544	3.2437	2.2136	1.4653	0.8648	0.85167	22.092	64.716	3.4603	2.3003	1.5043	0.9229	0.82885
	18.000	73.440	3.5019	2.3165	1.5117	0.7560	0.82446	22.000	66.523	3.5655	2.3410	1.5231	0.8829	0.81774
	16.000	76.511	3.6090	2.3576	1.5308	0.7085	0.81314	20.000	72.926	3.8872	2.4601	1.5801	0.7555	0.78384
	14.000	78.861	3.6772	2.3833	1.5429	0.6773	0.80593	18.000	75.964	4.0086	2.5030	1.6015	0.7045	0.77114
	12.000	80.844	3.7252	2.4011	1.5514	0.6548	0.80088	16.000	78.253	4.0857	2.5297	1.6151	0.6710	0.76313
	10.000	82.606	3.7601	2.4140	1.5576	0.6381	0.79719	14.000	80.165	4.1401	2.5484	1.6246	0.6467	0.75750
	8.000	84.222	3.7858	2.4234	1.5622	0.6257	0.79449	12.000	81.849	4.1804	2.5620	1.6317	0.6283	0.75335
	6.000	85.740	3.8042	2.4301	1.5655	0.6166	0.79255	10.000	83.381	4.2106	2.5722	1.6370	0.6142	0.75024
	4.000	87.193	3.8167	2.4346	1.5677	0.6105	0.79124	8.000	84.808	4.2333	2.5798	1.6409	0.6036	0.74791
	2.000	88.606	3.8239	2.4373	1.5689	0.6069	0.79048	6.000	86.163	4.2497	2.5833	1.6438	0.5957	0.74623
1.90	2.000	33.466	1.0801	1.0314	1.8298	0.99987	2.00	2.000	31.647	33.390	1.2468	1.1702	1.0829	1.9280
	4.000	35.279	1.0633	1.1646	1.7600	0.99901	1.6901	0.99675	2.00	4.000	35.241	1.3871	1.2620	1.0991
	6.000	37.209	1.2533	1.3463	1.1297	1.6191	0.99254	6.000	37.210	1.5400	1.3581	1.1339	1.7138	0.99186
	8.000	39.272	1.5209	1.4438	1.1649	1.5464	0.98886	8.000	39.314	1.7066	1.4584	1.1702	1.6405	0.98464
	10.000	41.490	1.6818	1.8582	1.2019	1.4709	0.97624	10.000	41.575	1.8884	1.5631	1.2081	1.5651	0.97437
	12.000	43.898	1.8582	2.0477	1.3946	1.0835	0.89162	14.000	44.029	2.0876	1.6724	1.2483	1.4866	0.96064
	14.000	46.550	2.0530	2.2057	1.6538	1.2414	1.3913	0.96319	16.000	46.731	2.3076	1.7870	1.2913	1.4034
	16.000	49.544	2.2718	1.7688	1.2844	1.3052	0.94605	12.000	49.785	2.5546	1.9086	1.3384	1.3131	0.92092
	18.000	53.095	2.5263	1.8951	1.3331	1.2077	0.92356	18.000	53.423	2.8429	2.0420	1.3922	1.2102	0.89291
	20.000	57.900	2.8557	2.0477	1.3946	1.0835	0.89162	20.000	58.457	3.2228	2.2051	1.4616	1.0760	0.85385
	21.167	64.783	3.2805	2.2286	1.4720	0.9216	0.84781	22.000	64.669	3.6458	2.3713	1.5373	0.9243	0.80926
	20.000	71.057	3.6012	2.3546	1.5294	0.7935	0.81397	20.000	70.332	3.9714	2.4899	1.5950	0.8017	0.77503
	18.000	74.861	3.7578	2.4131	1.5572	0.7274	0.79744	16.000	74.270	4.1570	2.5541	1.6276	0.7278	0.75576
	16.000	77.463	3.8466	2.4455	1.5729	0.6884	0.78810	22.974	78.921	4.3277	2.6110	1.6574	0.6558	0.73827
	14.000	80.000	3.9068	2.4671	1.5836	0.6611	0.78178	22.000	80.684	4.3777	2.6274	1.6662	0.6337	0.73319
	12.000	81.383	3.9504	2.4826	1.5913	0.6409	0.777721	20.000	82.257	4.4153	2.6396	1.6727	0.6168	0.72939
	10.000	83.020	3.9828	2.4940	1.5970	0.6257	0.77383	18.000	83.700	4.4438	2.6487	1.6777	0.6037	0.72652
	8.000	84.534	4.0068	2.5024	1.6012	0.6142	0.77133	16.000	85.052	4.4653	2.6556	1.6815	0.5937	0.72436
	6.000	85.965	4.0241	2.5084	1.6042	0.6058	0.76953	14.000	86.339	4.4810	2.6606	1.6842	0.5864	0.72278
	4.000	87.338	4.0359	2.5125	1.6063	0.6001	0.76830	12.000	87.582	4.4917	2.6640	1.6861	0.5833	0.72171
	2.000	88.677	4.0428	2.5149	1.6075	0.5967	0.76759	10.000	88.798	4.4979	2.6660	1.6871	0.5783	0.72108

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{T_2}{T_1}$	$\frac{p_{02}}{p_{01}}$	
2.05	2.000	30.816	1.1200	1.0843	1.0330	1.9771	0.99985	2.10	4.000	87.778	4.9706	2.8097	1.7691	0.5648	
	4.000	32.532	1.2512	1.1732	1.0665	1.9050	0.99885		2.000	88.894	4.9764	2.8113	1.7701	0.5622	
	6.000	34.350	1.3943	1.2666	1.1008	1.8330	0.99627								0.67438
	8.000	36.281	1.5502	1.3644	1.1362	1.7605	0.99148								0.67494
	10.000	38.341	1.7201	1.4664	1.1730	1.6868	0.98396								0.67494
	12.000	40.547	1.9053	1.5726	1.2116	1.6111	0.97330								0.99874
	14.000	42.928	2.1076	1.6831	1.2522	1.5326	0.95914								0.99590
	16.000	45.528	2.3300	1.7983	1.2956	1.4500	0.94112								0.99065
	18.000	48.428	2.5774	1.9195	1.3427	1.3614	0.91878								0.98246
	20.000	51.785	2.8600	2.0497	1.3953	1.2630	0.89120								0.97093
	22.000	56.032	3.2057	2.1980	1.4585	1.1444	0.85565								0.95574
	23.814	64.638	3.8367	2.4419	1.5712	0.9257	0.78913								0.93666
	22.000	72.193	4.2777	2.5946	1.6487	0.7626	0.74336								0.91343
	20.000	75.324	4.4215	2.6416	1.6738	0.7056	0.72876								0.88564
	18.000	77.614	4.5107	2.6700	1.6894	0.6688	0.71981								0.85222
	16.000	79.498	4.5734	2.6898	1.7003	0.6422	0.71356								0.80932
	14.000	81.138	4.6199	2.7043	1.7084	0.6219	0.70894								0.74772
	12.000	82.617	4.6553	2.7152	1.7145	0.6062	0.70545								0.70458
	10.000	83.983	4.6824	2.7236	1.7192	0.5939	0.70278								0.68703
	8.000	85.269	4.7029	2.7299	1.7228	0.5846	0.70077								0.67889
	6.000	86.497	4.7179	2.7344	1.7254	0.5776	0.69930								0.66994
	4.000	87.665	4.7283	2.7376	1.7272	0.5728	0.69827								0.66484
	2.000	88.849	4.7343	2.7394	1.7282	0.5700	0.69770								0.66097
2.10	2.000	30.033	1.1222	1.0858	1.1222	2.0260	0.99984								0.65568
	4.000	31.723	1.2558	1.1763	1.0676	1.9530	0.98880								0.65392
	6.000	33.513	1.4017	1.2714	1.1025	1.8801	0.99609								0.65263
	8.000	35.412	1.5608	1.3709	1.1386	1.8069	0.99108								0.65174
	10.000	37.433	1.7342	1.4746	1.1760	1.7325	0.98324								0.65122
	12.000	39.592	1.9230	1.5825	1.2152	1.6564	0.97216								0.65122
	14.000	41.912	2.1290	1.6944	1.2565	1.5777	0.95750								0.65122
	16.000	44.430	2.3547	1.8107	1.3004	1.4954	0.93899								0.65122
	18.000	47.210	2.6041	1.9322	1.3478	1.4078	0.91626								0.65122
	20.000	50.365	2.8848	2.0607	1.3999	1.3122	0.88870								0.65122
	22.000	54.169	3.2152	2.2019	1.4602	1.2019	0.85466								0.65122
	24.000	59.767	3.6739	2.3820	1.5424	1.0493	0.80628								0.65122
	24.614	64.621	4.0332	2.5116	1.6058	0.9273	0.76858								0.65122
	24.000	69.104	4.3238	2.6098	1.6568	0.8245	0.73867								0.65122
	22.000	73.521	4.5644	2.6870	1.6987	0.7345	0.71445								0.65122
	20.000	76.189	4.6852	2.7244	1.7197	0.6870	0.70251								0.65122
	18.000	78.257	4.7652	2.7488	1.7336	0.6543	0.69468								0.65122
	16.000	80.001	4.8232	2.7662	1.7436	0.6299	0.68906								0.65122
	14.000	81.539	4.8669	2.7792	1.7512	0.6111	0.68484								0.65122
	12.000	82.938	4.9006	2.7892	1.7570	0.5964	0.68162								0.65122
	10.000	84.237	4.9264	2.7988	1.7615	0.5849	0.67914								0.65122
	8.000	85.463	4.9461	2.8025	1.7649	0.5760	0.67726								0.65122
	6.000	86.638	4.9606	2.8068	1.7674	0.5694	0.67588								0.65122

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	M_2	$\frac{T_2}{T_1}$	
2.20	20.000	77.549	5.2175	2.8799	1.8117	0.6568	0.65185	2.30	16.000	40.816	2.4701	1.3224	1.6676	
	18.000	79.308	5.2856	2.8987	1.8234	0.6296	0.64562		18.000	43.299	2.7360	1.9936	1.3724	
	16.000	80.839	5.3369	2.9127	1.8323	0.6086	0.64096		20.000	46.007	3.0276	2.1230	1.4261	
	14.000	82.216	5.3764	2.9235	1.8391	0.63739	0.63739		22.000	49.026	3.3514	2.2573	1.4847	
	12.000	84.483	5.4073	2.9318	1.8444	0.5789	0.63462		24.000	52.536	3.7216	2.3998	1.5508	
	10.000	84.670	5.4313	2.9382	1.8485	0.5686	0.63247		26.000	57.077	4.1819	2.5625	1.6319	
	8.000	85.798	5.4497	2.9431	1.8517	0.5605	0.63083		27.454	64.653	4.8739	2.7813	1.7524	
	6.000	86.883	5.4633	2.9468	1.8540	0.5545	0.62962		26.000	71.264	5.3682	2.9212	1.8377	
	4.000	87.938	5.4727	2.9493	1.8556	0.5503	0.62879		24.000	74.512	5.5649	2.9736	1.8714	
	2.000	88.973	5.4782	2.9507	1.8565	0.5479	0.62830		22.000	76.770	5.6817	3.0039	1.8915	
2.25	2.000	27.926		1.1288	1.0903	1.0353	2.1725	0.99982	16.000	80.133	5.8238	3.0396	1.9158	
	4.000	29.555	1.2703	1.1859	1.0712	2.0962	0.99861		14.000	81.509	5.8705	3.0515	1.9238	
	6.000	31.277	1.4254	1.2864	1.1080	2.0203	0.99548		12.000	82.764	5.9071	3.0606	1.9301	
	8.000	33.102	1.5949	1.3916	1.1461	1.9443	0.98973		10.000	83.928	5.9360	3.0677	1.9350	
	10.000	35.034	1.7798	1.5011	1.1856	1.8674	0.98079		8.000	85.026	5.9586	3.0732	1.9389	
	12.000	37.088	1.9812	1.6147	1.2270	1.7891	0.96827		6.000	86.074	5.9761	3.0775	1.9419	
	14.000	39.277	2.2004	1.7319	1.2705	1.7088	0.95189		4.000	87.085	5.9890	3.0807	1.9441	
	16.000	41.623	2.4392	1.8527	1.3166	1.6257	0.93152		2.000	88.070	5.9980	3.0828	1.9456	
	18.000	44.161	2.7000	1.9770	1.3657	1.5388	0.90703			6.0033	89.039	6.0384	1.9465	
	20.000	46.948	2.9871	2.1055	1.4187	1.4466	0.87829				1.0365	1.0935	1.0365	
	22.000	50.091	3.3085	2.2400	1.4770	1.3464	0.84486				2.000	26.692	1.1334	2.2698
	24.000	53.837	3.6830	2.3854	1.5440	1.2318	0.80532				4.000	28.289	1.2804	1.99846
	26.000	59.122	4.1839	2.5632	1.6323	1.0792	0.75298				6.000	29.979	1.4420	1.99502
	26.795	64.633	4.6556	2.7153	1.7145	0.9321	0.70542				8.000	31.765	1.6189	1.98872
	26.000	69.627	5.0238	2.8250	1.7783	0.8115	0.66891				10.000	33.657	1.8124	1.9124
	24.000	73.634	5.2707	2.8946	1.8209	0.7254	0.64698				12.000	35.662	2.0232	1.6376
	22.000	76.145	5.4009	2.9301	1.8433	0.6775	0.63519				14.000	37.790	2.2526	1.7589
	20.000	78.098	5.4884	2.9534	1.8583	0.6441	0.62739				16.000	40.060	2.5021	1.8833
	18.000	79.744	5.5523	2.9703	1.8693	0.6189	0.62175				18.000	42.497	2.7736	2.0108
	16.000	81.192	5.6011	2.9830	1.8776	0.5993	0.61749				20.000	45.140	3.0705	2.1413
	14.000	82.504	5.6391	2.9929	1.8842	0.5836	0.61418				22.000	48.059	3.3981	2.2759
	12.000	83.716	5.6688	3.0006	1.8893	0.5711	0.61161				24.000	51.393	3.7677	2.4168
	10.000	84.856	5.6921	3.0065	1.8932	0.5612	0.60960				26.000	55.500	4.2092	2.5717
	8.000	85.942	5.7100	3.0111	1.8963	0.5535	0.60806				28.000	62.973	4.9459	2.8024
	6.000	86.988	5.7233	3.0145	1.8986	0.5477	0.60692				30.000	64.679	5.0977	2.8462
	4.000	88.007	5.7324	3.0168	1.9002	0.5437	0.60614				32.000	66.328	5.2377	2.8855
	2.000	89.008	5.7378	3.0182	1.9011	0.5413	0.60568				34.000	56.907	5.3062	1.8930
2.30	2.000	27.294	1.1311	1.0359	1.0919	2.2212	0.99981				22.000	77.317	5.9657	3.0750
	4.000	28.906	1.2753	1.0724	1.1892	2.1437	0.99854				20.000	79.014	6.0423	3.0936
	6.000	30.611	1.4336	1.2916	1.1099	2.0667	0.99526				18.000	80.483	6.1001	3.1075
	8.000	32.415	1.6068	1.3988	1.1487	1.9896	0.98923				16.000	81.798	6.1451	3.1182
	10.000	34.326	1.7959	1.5104	1.1890	1.9117	0.97989				14.000	83.001	6.1806	3.1266
	12.000	36.354	2.0019	1.6260	1.2311	1.8324	0.96684				12.000	84.122	6.2087	3.1332
	14.000	38.510	2.2261	1.7452	1.2755	1.7514	0.94982				10.000	85.182	6.2308	3.1384

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$
2.35	6.000	87.174	6.2606	3.1453	1.9904	0.5353	0.56272	2.45	26.000	53.045	4.3053	2.6037	1.6535	0.74055
	4.000	88.129	6.2694	3.1474	1.9919	0.5315	0.56203		28.000	57.780	4.8455	2.7729	1.7475	0.68691
	2.000	89.068	6.2745	3.1486	1.9928	0.5293	0.56162		29.253	64.744	5.5614	2.9727	1.8708	0.9386
	2.40	2.000	26.120	1.1358	1.0951	1.0371	2.3184	0.99979	24.000	76.446	6.4516	3.1891	2.0230	0.6623
	4.000	27.702	1.2856	1.1960	1.0749	1.1540	2.0794	0.98818	20.000	78.236	6.5451	3.2101	2.0389	0.62095
	6.000	29.377	1.4505	1.3023	1.1138	2.1589	0.99478		70.828	6.0810	3.1029	1.9598	0.7837	0.57709
	8.000	31.149	1.6314	1.4137	1.1540	2.0794	0.98818		74.185	6.3161	3.1582	1.9999	0.7082	0.55836
	10.000	33.023	1.8292	1.5295	1.1959	1.9994	0.97797		16.000	82.299	6.7105	3.2464	2.0671	0.54787
	12.000	35.007	2.0450	1.6495	1.2398	1.9181	0.96377		14.000	83.416	6.7442	3.2536	2.0728	0.54076
	14.000	37.112	2.2798	1.7729	1.2860	1.8350	0.94538		12.000	84.462	6.7710	3.2254	2.0508	0.53555
2.40	16.000	39.351	2.5351	1.8993	1.3348	1.7497	0.92274		10.000	85.455	6.7923	3.2372	2.0599	0.5842
	18.000	41.748	2.8128	2.0285	1.3866	1.8613	0.89592		8.000	86.408	6.8088	3.2675	2.0838	0.5292
	20.000	44.336	3.1155	2.1604	1.4421	1.5689	0.86505		6.000	87.331	6.8211	3.2701	2.0859	0.5242
	22.000	47.174	3.4480	2.2955	1.5021	1.4709	0.83015		4.000	88.232	6.8296	3.2719	2.0873	0.5207
	24.000	50.371	3.8196	2.4357	1.5652	1.3644	0.79093		2.000	89.119	6.8346	3.2730	2.0882	0.5186
	26.000	54.184	4.2521	2.5861	1.6442	1.2426	0.74598							
	28.000	59.656	4.8382	2.7707	1.7462	1.0779	0.68761							
	28.681	64.710	5.3269	2.9100	1.8305	0.9370	0.64187							
	28.000	69.291	5.7130	3.0119	1.8988	0.8201	0.60781							
	26.000	73.400	6.0048	3.0845	1.9488	0.7260	0.58331							
2.45	24.000	75.889	6.1539	3.1203	1.9722	0.6751	0.57121							
	22.000	77.803	6.2534	3.1436	1.9892	0.6397	0.56329							
	20.000	79.402	6.3260	3.1605	2.0016	0.6129	0.55758							
	18.000	80.800	6.3816	3.1732	2.0111	0.5919	0.55326							
	16.000	82.059	6.4251	3.1831	2.0185	0.5751	0.54990							
	14.000	83.217	6.4596	3.1909	2.0244	0.5615	0.54726							
	12.000	84.299	6.4870	3.1971	2.0290	0.5505	0.54517							
	10.000	85.324	6.5087	3.2019	2.0327	0.5416	0.54352							
	8.000	86.306	6.5254	3.2057	2.0356	0.5348	0.54225							
	6.000	87.255	6.5379	3.2085	2.0377	0.5296	0.54131							
2.45	4.000	88.182	6.5466	3.2104	2.0392	0.5260	0.54065							
	2.000	89.094	6.5517	3.2115	2.0400	0.5238	0.54027							
	25.572	2.000	27.143	30.563	1.6440	1.4212	1.1567							
	28.805	32.422	1.8463	1.5393	1.1994	2.0428	0.97695							
	34.388	2.0672	1.6615	1.2442	1.9603	0.96215	14.000							
	36.472	2.3078	1.7871	1.2914	1.8762	0.94302	12.000							
	16.000	38.685	2.5692	1.9156	1.3412	1.7898	0.91955							
	18.000	41.047	2.8532	2.0466	1.3941	1.7006	0.89187							
	20.000	43.588	3.1623	2.1800	1.4506	1.6077	0.86018							
	22.000	46.358	3.5007	2.3160	1.5115	1.5097	0.82459							
	24.000	49.445	3.8759	2.4560	1.5781	1.4042	0.78502							

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	M_2	$\frac{T_2}{T_1}$	$\frac{p_{02}}{p_{01}}$
2.55	2.000	24.550	1.1429	1.1001	1.0390	2.4639	0.99976	2.60	30.814	64.866	6.2972	3.1538	1.9967	0.9433
	4.000	26.099	1.3015	1.2065	1.0788	2.3796	0.99814		30.000	69.778	6.7777	3.2609	2.0785	0.8111
	6.000	27.739	1.4768	1.3189	1.198	2.2961	0.99399		28.000	73.590	7.0906	3.3263	2.1317	0.7189
	8.000	29.474	1.6699	1.4367	1.1623	2.2128	0.98462		26.000	75.955	7.2555	3.3596	2.1596	0.6673
	10.000	31.307	1.8817	1.5593	1.2067	2.1288	0.97479		24.000	77.778	7.3665	3.3815	2.1785	0.6311
	12.000	33.244	2.1133	1.6861	1.2534	2.0438	0.95871		22.000	79.299	7.4481	3.3974	2.1923	0.6035
	14.000	35.293	2.3656	1.8162	1.3025	1.9573	0.93803		20.000	80.626	7.5108	3.4095	2.2029	0.5817
	16.000	37.463	2.6399	1.9490	1.3545	1.8687	0.91283		18.000	81.815	7.5602	3.4189	2.2113	0.5641
	18.000	39.770	2.9378	2.0840	1.4097	1.7776	0.88333		16.000	82.906	7.5997	3.4264	2.2180	0.5497
	20.000	42.236	3.2611	2.2207	1.4685	1.6832	0.84985		14.000	83.922	7.6316	3.4324	2.2234	0.5378
	22.000	44.899	3.6130	2.3591	1.5315	1.5845	0.81272		12.000	84.879	7.6572	3.4372	2.2277	0.5282
	24.000	47.822	4.0000	2.4998	1.5999	1.4797	0.77209		10.000	85.792	7.6775	3.4411	2.2312	0.5204
	26.000	51.130	4.4319	2.6449	1.6756	1.3655	0.72772		8.000	86.671	7.6934	3.4440	2.2338	0.5143
	28.000	55.131	4.9401	2.8007	1.7638	1.2334	0.67784		6.000	87.524	7.7053	3.4462	2.2359	0.5096
	30.000	61.449	5.6866	3.0051	1.8923	1.0385	0.61007		4.000	88.359	7.7135	3.4478	2.2372	0.5064
	30.317	64.823	6.0466	3.0946	1.9539	0.9418	0.57989		2.000	89.183	7.7184	3.4487	2.2381	0.5045
	30.000	67.966	6.3519	3.1664	2.0060	0.8568	0.55557							
	28.000	72.844	6.7595	3.2569	2.0754	0.7364	0.52487							
	26.000	75.440	6.9402	3.2952	2.1061	0.6793	0.51190							
	24.000	77.380	7.0575	3.3195	2.1200	0.6405	0.50368							
	22.000	78.978	7.1423	3.3368	2.1404	0.6115	0.49783							
	20.000	80.360	7.2068	3.3499	2.1514	0.5887	0.49343							
	18.000	81.594	7.2507	3.3600	2.1600	0.5703	0.49002							
	16.000	82.720	7.2978	3.3680	2.1668	0.5554	0.48732							
	14.000	83.766	7.3301	3.3744	2.1723	0.5432	0.48517							
	12.000	84.750	7.3561	3.3795	2.1767	0.5333	0.48345							
	10.000	85.688	7.3767	3.3835	2.1802	0.5253	0.48209							
	8.000	86.590	7.3927	3.3866	2.1829	0.5190	0.48104							
	6.000	87.464	7.4047	3.3890	2.1849	0.5142	0.48025							
	4.000	88.320	7.4131	3.3906	2.1864	0.5109	0.47971							
	2.000	89.163	7.4180	3.3916	2.1872	0.5090	0.47939							
	2.60	2.000	24.071	1.1454	1.1017	2.5123	0.99975							
	4.000	25.611	1.3070	1.2100	1.0801	2.4265	0.99805							
	6.000	27.241	1.4858	1.3245	1.1218	2.3416	0.99371							
	8.000	28.966	1.6831	1.4445	1.1651	2.2568	0.98579							
	10.000	30.789	1.8998	1.5695	1.2105	2.1715	0.97365							
	12.000	32.714	2.1369	1.6986	1.2580	2.0852	0.95690							
	14.000	34.749	2.3955	1.8311	1.3082	1.9973	0.93541							
	16.000	36.901	2.6767	1.9662	1.3613	1.9075	0.90930							
	18.000	39.185	2.9817	2.1032	1.4117	1.8152	0.87884							
	20.000	41.621	3.3126	2.2417	1.4778	1.7199	0.84443							
	22.000	44.242	3.6723	2.3814	1.5421	1.6205	0.80645							
	24.000	47.102	4.0658	2.5229	1.6116	1.5157	0.76520							
	26.000	50.305	4.5028	2.6675	1.6880	1.4025	0.72060							
	28.000	54.088	5.0067	2.8201	1.7754	1.2744	0.67151							
	30.000	59.352	5.6706	3.0010	1.8896	1.1062	0.61145							

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{P_{02}}{P_{01}}$	M_1	θ	β	$\frac{P_2}{P_1}$	$\frac{\rho_2}{\rho_1}$	M_2	$\frac{T_2}{T_1}$
2.65	4.000	88.396	8.0198	3.5035	2.2891	0.5021	0.44194	2.75	24.000	45.225	4.2794	2.5951	1.6181
	2.000	89.200	8.0247	3.5044	2.2899	0.5003	0.44165		26.000	48.206	4.7375	2.7404	1.6490
2.70	2.000	23.173	1.1503	1.1051	1.0409	2.6090	0.99972		30.000	55.674	5.2490	5.1579	1.7288
	4.000	24.696	1.3179	1.2172	1.0827	2.5201	0.99786		32.000	62.549	5.8507	5.8507	1.6056
6.000	6.000	26.311	1.5042	1.3360	1.1260	2.4321	0.99311		32.173	65.002	7.0807	7.0807	1.69739
8.000	14.000	28.019	1.7102	1.4605	1.1709	2.3444	0.98446		32.000	67.323	7.3448	7.3448	1.73832
10.000	16.000	29.824	1.9369	1.5902	1.2180	2.2561	0.97125		30.000	72.678	7.8741	7.8741	1.73832
12.000	14.000	31.728	2.1855	1.7241	1.2676	2.1669	0.95309		28.000	75.285	8.0870	8.0870	1.73832
14.000	16.000	33.739	2.4569	1.8614	1.3199	2.0763	0.92991		26.000	77.202	8.2233	8.2233	1.73832
16.000	18.000	35.862	2.7523	2.0010	1.3754	1.9838	0.90191		24.000	78.766	8.3214	8.3214	1.73832
18.000	20.000	38.109	3.0727	2.1423	1.4343	1.8890	0.86948		22.000	80.110	8.3960	8.3960	1.73832
20.000	22.000	40.496	3.4200	2.2845	1.4970	1.7915	0.83311		20.000	81.303	8.4545	8.4545	1.73832
22.000	24.000	43.049	3.7964	2.4273	1.5641	1.6905	0.79337		18.000	82.386	8.5014	8.5014	1.73832
24.000	26.000	45.809	4.2059	2.5706	1.6362	1.5848	0.75072		16.000	83.387	8.5392	8.5392	1.73832
26.000	28.000	48.852	4.6560	2.7155	1.7146	1.4723	0.70538		14.000	84.324	8.5699	8.5699	1.73832
28.000	30.000	52.334	5.1626	2.8645	1.8022	1.3488	0.65692		12.000	85.212	8.5948	8.5948	1.73832
30.000	31.741	56.687	5.7730	3.0271	1.9071	1.2018	0.60268		10.000	86.062	8.6146	8.6146	1.73832
32.000	30.000	64.956	6.8143	3.2687	2.0847	0.9462	0.52090		8.000	86.882	8.6301	8.6301	1.73832
34.000	32.000	71.913	3.4110	2.2042	0.7587	0.47286	0.4000		6.000	87.680	8.6418	8.6418	1.73832
36.000	34.000	74.790	7.7529	2.2439	0.6907	0.45808	0.3200		4.000	88.462	8.6499	8.6499	1.73832
38.000	36.000	76.828	7.8967	3.4814	2.2662	0.6468	0.44930		2.000	89.234	8.6547	8.6547	1.73832
40.000	38.000	78.466	7.9983	3.4997	2.2854	0.6145	0.44321						
42.000	40.000	79.862	8.0748	3.5133	2.2984	0.5893	0.43870	2.80	2.000	22.344	23.854	1.1553	1.1553
44.000	42.000	81.095	8.1345	3.5238	2.3095	0.5691	0.43522		4.000	25.455	1.3292	1.3292	1.2246
46.000	44.000	82.210	8.1821	3.5321	2.3165	0.5527	0.43247		6.000	27.150	1.5230	1.5230	1.3476
48.000	46.000	83.238	8.2204	3.5388	2.3230	0.5391	0.43027		8.000	28.940	1.7379	1.7379	1.4768
50.000	48.000	84.199	8.2515	3.5441	2.3222	0.5279	0.42850		10.000	30.830	2.2357	2.2357	1.6113
52.000	50.000	85.109	8.2765	3.5484	2.3324	0.5188	0.42708		12.000	32.822	1.8923	1.8923	1.72774
54.000	52.000	85.978	8.2965	3.5518	2.3398	0.5114	0.42595		14.000	34.923	2.0367	2.0367	1.7379
56.000	54.000	86.816	8.3121	3.5545	2.3385	0.5056	0.42506		16.000	36.923	2.2392	2.2392	1.7379
58.000	56.000	87.631	8.3238	3.5565	2.3404	0.5012	0.42441		18.000	37.141	2.1822	2.1822	1.7379
60.000	44.000	88.430	8.3319	3.5579	2.3418	0.4981	0.42395		20.000	39.490	2.3283	2.3283	1.7379
62.000	2.000	89.218	8.3367	3.5587	2.3426	0.4962	0.42368		22.000	41.990	2.4743	2.4743	1.7379
64.000	22.750	89.218	1.1528	1.1068	1.0415	2.6573	0.99971		24.000	44.676	4.3550	4.3550	1.7379
66.000	24.267	89.218	1.2209	1.0841	2.5667	0.99776	0.99279		26.000	47.604	4.8219	4.8219	1.7379
68.000	27.575	89.218	1.7239	1.4686	1.1738	2.3879	0.98377		28.000	50.887	5.3398	5.3398	1.7379
70.000	29.372	89.218	1.9558	1.6007	1.2219	2.2982	0.96999		30.000	54.786	5.9387	5.9387	1.7379
72.000	31.269	89.218	2.2104	1.7371	1.2724	2.2074	0.95109		32.000	60.433	6.7529	6.7529	1.7379
74.000	33.269	89.218	2.4885	1.8768	1.3259	0.92704	0.92704		32.587	65.050	7.3524	7.3524	1.7379
76.000	35.381	89.218	2.7912	2.0188	2.0213	0.89806	0.89806		69.211	78.2278	1.9358	1.9358	1.7379
78.000	37.612	89.218	3.1197	2.1622	1.4429	1.9253	0.86461		73.328	8.2272	3.5399	3.5399	1.7379
80.000	39.980	89.218	3.4757	2.3063	1.5070	1.8265	0.82724		28.000	75.728	4.2441	4.2441	1.7379
82.000	42.504	89.218	3.8610	2.4506	1.5755	1.7245	0.78559		26.000	77.543	8.5544	8.5544	1.7379
84.000	2.75	89.218	22.750	1.1528	1.1068	2.6573	0.99971		24.000	44.676	4.3550	4.3550	1.7379
86.000	4.000	89.218	24.267	1.3236	1.2209	2.4772	0.99279		26.000	47.604	4.8219	4.8219	1.7379
88.000	6.000	89.218	27.575	1.7239	1.4686	2.3879	0.98377		28.000	50.887	5.3398	5.3398	1.7379
90.000	10.000	89.218	29.372	1.9558	1.6007	2.2982	0.96999		30.000	54.786	5.9387	5.9387	1.7379
92.000	12.000	89.218	31.269	2.2104	1.7371	2.2074	0.95109		32.000	60.433	6.7529	6.7529	1.7379
94.000	14.000	89.218	33.269	2.4885	1.8768	1.3259	0.92704		32.587	65.050	7.3524	7.3524	1.7379
96.000	16.000	89.218	35.381	2.7912	2.0188	2.0213	0.89806		69.211	78.2278	1.9358	1.9358	1.7379
98.000	18.000	89.218	37.612	3.1197	2.1622	1.4429	1.9253		73.328	8.2272	3.5399	3.5399	1.7379
100.000	20.000	89.218	39.980	3.4757	2.3063	1.5070	1.8265		28.000	80.339	8.7224	8.7224	1.7379
102.000	22.000	89.218	42.504	3.8610	2.4506	1.5755	1.7245		26.000	81.496	8.7800	8.7800	1.7379

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	
2.80	18.000	82.550	8.8262	3.6393	2.4252	0.5425	0.39731	2.90	6.000	24.666	1.344	2.6117	0.99178	
	16.000	83.525	8.8637	3.6453	2.4316	0.5297	0.39538		8.000	26.350	1.4933	1.1828	2.5175	0.98153
	14.000	84.440	8.8942	3.6501	2.4367	0.5191	0.39382		10.000	28.129	1.6328	1.2336	2.4229	0.96597
	12.000	85.308	8.9188	3.6540	2.4449	0.5103	0.39256		12.000	30.007	1.7767	1.2874	2.3273	0.94475
	10.000	86.140	8.9385	3.6571	2.4442	0.5033	0.39156		14.000	31.985	1.9238	1.344	2.2304	0.91794
	8.000	86.943	8.9540	3.6595	2.4468	0.4977	0.39078		16.000	34.069	2.9123	2.0729	1.4050	2.1318
	6.000	87.725	8.9656	3.6613	2.4487	0.4935	0.39019		18.000	36.264	3.2663	2.2229	1.4694	2.0313
	4.000	88.492	8.9737	3.6626	2.4501	0.4905	0.38978		20.000	38.584	3.6496	2.3729	1.5380	0.80886
	2.000	89.248	8.9784	3.6633	2.4509	0.4887	0.38954		22.000	41.044	4.0638	2.5222	1.6112	0.76540
2.85	2.000	21.954	1.1579	1.1103	1.0429	2.7537	0.99968		28.000	46.515	4.5119	2.6704	1.6896	1.7138
	4.000	23.457	1.3349	1.2283	1.0868	2.6598	0.99755		30.000	53.274	6.1364	3.2824	2.0957	1.1827
	6.000	25.052	1.5325	1.3535	1.1323	2.5670	0.99213		32.000	57.931	6.8791	3.4841	2.2708	0.9516
	8.000	26.742	1.7520	1.4850	1.1798	2.4744	0.98230		33.363	65.145	7.9116	3.6085	2.3930	0.7771
	10.000	28.526	1.9946	1.6220	1.2297	2.3815	0.96735		32.000	71.287	8.6350	3.6565	2.4435	1.4788
	12.000	30.410	2.2613	1.7634	1.2824	2.2876	0.94692		30.000	74.392	8.9347	3.1161	1.9692	1.3453
	14.000	32.394	2.5532	1.9080	1.3382	2.1923	0.92105		28.000	76.490	9.1095	3.6836	2.4730	0.6500
	16.000	34.486	2.8712	2.0547	1.3974	2.0953	0.89006		26.000	78.142	9.2307	3.7020	2.4934	0.6149
	18.000	36.692	3.2165	2.2025	1.4604	1.9964	0.85451		24.000	79.533	9.3212	3.7156	2.5087	0.5878
	20.000	39.025	3.5904	2.3505	1.5275	1.8950	0.81511		22.000	80.750	9.3915	3.7260	2.5205	0.5660
	22.000	41.505	3.9948	2.4982	1.5991	1.7906	0.77258		20.000	81.843	9.4475	3.7343	2.5300	0.5482
	24.000	44.160	4.4325	2.6451	1.6737	1.6825	0.72766		18.000	82.845	9.4928	3.7409	2.5376	0.5335
	26.000	47.042	4.9089	2.7916	1.7585	1.5692	0.68081		16.000	83.775	9.5296	3.7462	2.5438	0.5212
	28.000	50.247	5.4345	2.9391	1.8490	1.4481	0.63219		14.000	84.651	9.5597	3.7506	2.5489	0.5111
	30.000	53.992	6.0344	3.0917	1.9518	1.3127	0.58089		12.000	85.484	9.5842	3.7541	2.5530	0.5027
	32.000	59.037	6.8013	3.2659	2.0825	1.1407	0.52183		10.000	86.283	9.6038	3.7570	2.5563	0.4959
	32.984	65.097	7.6294	3.4320	2.2230	0.9503	0.46580		8.000	87.055	9.6191	3.7592	2.5588	0.4906
	32.000	70.389	8.2421	3.5425	2.3266	0.8001	0.42903		6.000	87.808	9.6306	3.7608	2.5608	0.4865
	30.000	73.893	8.5802	3.5995	2.3837	0.7107	0.41030		4.000	88.546	9.6387	3.7620	2.5621	0.4836
	28.000	76.127	8.7648	3.6295	2.4149	0.6588	0.40050		2.000	89.275	9.6434	3.7626	2.5629	0.4819
	26.000	77.855	8.8902	3.6495	2.4360	0.6220	0.39402							0.35780
	24.000	79.297	8.9827	3.6640	2.4516	0.5938	0.38933							
	22.000	80.552	9.0543	3.6751	2.4637	0.5713	0.38574	2.95	2.000					
	20.000	81.676	9.1110	3.6838	2.4733	0.5530	0.38294							
	18.000	82.702	9.1567	3.6908	2.4810	0.5379	0.38069							
	16.000	83.655	9.1938	3.6964	2.4872	0.5253	0.37888							
	14.000	84.549	9.2241	3.7010	2.4923	0.5150	0.37741							
	12.000	85.399	9.2486	3.7047	2.4964	0.5064	0.37623							
	10.000	86.213	9.2683	3.7077	2.4998	0.4995	0.37528							
	8.000	87.001	9.2836	3.7100	2.5023	0.4940	0.37454							
	6.000	87.768	9.2952	3.7117	2.5043	0.4899	0.37399							
	4.000	88.520	9.3033	3.7129	2.5057	0.4870	0.37560							
	2.000	89.262	9.3080	3.7136	2.5065	0.4853	0.37338							
2.90	2.000	21.578	1.1604	1.1120	1.0435	2.8019	0.9966							
	4.000	23.076	1.3406	1.2320	1.0832	2.7062	0.99744							

Oblique Shock Tables ($\gamma = 1.4$)

θ	β	M_2	T_2 / T_1	ρ_2 / ρ_1	M_2	T_2 / T_1	ρ_2 / ρ_1
32.000	56.997	3.3023	2.1119	1.2199	0.50950	3.00	14.000
33.726	6.9741	3.5350	2.3194	0.9528	0.43150	12.000	84.837
32.000	65.193	9.1990	3.6696	2.4577	0.38752	10.000	85.638
30.000	72.020	9.0188	3.7947	0.7585	0.37416	8.000	86.408
30.000	74.838	9.2917	3.7112	2.5037	0.6877	6.000	87.154
28.000	76.821	9.4585	3.7359	2.5318	0.6420	4.000	87.881
26.000	78.407	9.5762	3.7530	2.5516	0.6084	2.000	88.594
24.000	79.752	9.6649	3.7657	2.5666	0.5821	89.299	10.3318
22.000	80.935	9.7342	3.7755	2.5782	0.5610	89.299	3.8569
20.000	82.000	9.7896	3.7834	2.5875	0.5437	3.05	20.530
18.000	82.978	9.8345	3.7896	2.5951	0.5238	0.34931	1.1681
16.000	83.889	9.8712	3.7947	2.6013	0.5173	4.000	22.014
14.000	84.747	9.9012	3.7989	2.6063	0.5074	6.000	23.591
12.000	85.563	9.9255	3.8023	2.6104	0.4992	8.000	25.263
10.000	86.348	9.9450	3.8050	2.6137	0.4925	10.000	27.031
8.000	87.106	9.9664	3.8071	2.6163	0.4872	12.000	28.895
6.000	87.845	9.9719	3.8087	2.6182	0.4832	14.000	30.859
4.000	88.571	9.9799	3.8098	2.6196	0.4804	16.000	32.923
2.000	89.288	9.9847	3.8104	2.6204	0.4788	18.000	35.095
2.000	20.867	1.1656	1.2395	1.5101	1.1888	2.6031	37.382
4.000	22.355	1.5616	1.3714	1.1387	1.2417	2.5050	22.000
6.000	23.936	1.0449	1.0909	2.7988	2.2977	2.4060	24.000
8.000	25.611	1.7953	1.6546	1.8036	1.2977	2.3056	26.000
10.000	27.383	2.0545	2.3404	1.8036	1.3571	1.4204	28.000
12.000	29.251	1.1155	1.3714	1.5101	1.2417	2.2087	30.000
14.000	31.218	1.6550	1.9556	1.2977	1.2977	1.2977	32.000
16.000	33.288	2.9964	2.1095	1.2962	1.2962	1.2962	34.000
18.000	35.467	3.3685	2.2641	1.4878	2.1000	0.83855	32.000
20.000	37.764	3.7713	2.4181	1.5596	1.9941	0.79602	30.000
22.000	40.192	4.2064	2.5708	1.6562	1.8858	0.75068	28.000
24.000	42.775	4.6761	2.7216	1.7181	1.7744	0.70340	26.000
26.000	45.552	5.1844	2.8706	1.8060	1.6589	0.65491	24.000
28.000	48.586	5.7388	3.0184	1.9012	1.5374	0.60560	22.000
30.000	52.014	6.3559	3.1673	2.0067	1.4059	0.55526	20.000
32.000	56.182	6.3559	3.3244	2.1300	1.2541	0.50205	18.000
34.000	63.673	6.2682	3.5470	2.3310	1.0029	0.42755	16.000
36.000	65.241	8.4917	3.5848	2.3688	0.9540	0.41510	14.000
38.000	66.749	8.6971	3.6186	2.4035	0.9083	0.40406	12.000
40.000	72.642	9.3988	3.7271	2.5217	0.7428	0.36908	10.000
42.000	75.239	9.6517	3.7638	2.5643	0.6779	0.35743	8.000
44.000	77.126	9.8121	3.7865	2.5913	0.6345	0.35029	6.000
46.000	78.652	9.9268	3.8024	2.6106	0.6022	0.34530	4.000
48.000	79.956	10.0139	3.8144	2.6253	0.5768	0.34157	2.000
50.000	81.106	10.0824	3.8237	2.6388	0.5363	0.33868	89.310
52.000	82.147	10.1373	3.8311	2.6460	0.5394	0.33638	3.10
54.000	82.147	10.1819	3.8311	2.6460	0.5253	0.33453	2.000
56.000	83.103	8.8371	2.6536	0.5136	0.5136	0.33302	4.000

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{M_2}{M_1}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{P_{02}}{P_{01}}$	M_2	$\frac{T_2}{T_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{P_{02}}{P_{01}}$
3.10	6.000	23.258	1.5815	1.1431	0.99027	3.15	28.000	47.216	3.1000	6.0688	1.9577	1.6194	0.57808	1.6194	0.57808
	8.000	24.927	1.8249	1.5271	0.97822		30.000	50.449	6.7158	3.2475	2.0680	1.4886	0.52806	1.4886	0.52806
	10.000	26.692	2.0956	1.6767	0.95604		32.000	54.201	7.4487	3.3975	2.1924	1.3441	0.47738	1.3441	0.47738
	12.000	28.554	2.3949	1.8308	0.93546		34.000	59.196	8.3736	3.5650	2.3489	1.1632	0.42162	1.1632	0.42162
	14.000	30.513	2.7236	1.9879	0.90473		35.033	65.382	9.4008	3.7274	2.5221	0.9575	0.38988	0.9575	0.38988
	16.000	32.574	3.0831	2.1467	0.86841		34.000	70.1474	10.1474	3.8325	2.6478	0.7974	0.33596	0.7974	0.33596
	18.000	34.739	3.4740	2.3057	0.82741		32.000	74.089	10.5396	3.8839	2.7137	0.7064	0.32016	0.7064	0.32016
	20.000	37.017	3.8973	2.4637	0.78278		30.000	76.244	10.7550	3.9111	2.7499	0.6531	0.31190	0.6531	0.31190
	22.000	39.421	4.3543	2.6198	0.73556		28.000	77.906	10.9014	3.9292	2.7745	0.6152	0.30644	0.6152	0.30644
	24.000	41.968	4.8470	2.7733	0.68676		26.000	79.289	11.0097	3.9424	2.7927	0.5860	0.30248	0.5860	0.30248
	26.000	44.692	5.3788	2.9241	0.63718		24.000	80.490	11.0936	3.9524	2.8068	0.5627	0.29947	0.5627	0.29947
	28.000	47.646	5.9563	3.0727	0.58731		22.000	81.560	11.1602	3.9604	2.8180	0.5436	0.29710	0.5436	0.29710
	30.000	50.935	6.5922	3.2205	0.53722		20.000	82.535	11.2142	3.9668	2.8270	0.5278	0.29520	0.5278	0.29520
	32.000	54.800	7.3197	3.3723	0.48586		18.000	83.436	11.2583	3.9720	2.8344	0.5145	0.29366	0.5145	0.29366
	34.000	60.205	8.2768	3.5485	0.42706		16.000	84.279	11.2945	3.9762	2.8405	0.5035	0.29240	0.5035	0.29240
	34.726	65.335	9.0925	3.6810	0.4701		14.000	85.076	11.3243	3.9797	2.8455	0.4942	0.29138	0.4942	0.29138
	34.000	69.872	9.7174	3.7732	0.35449		12.000	85.838	11.3486	3.9825	2.8496	0.4865	0.29054	0.4865	0.29054
	32.000	73.661	10.1577	3.8339	0.33553		10.000	86.571	11.3682	3.9848	2.8529	0.4803	0.28987	0.4803	0.28987
	30.000	75.938	10.3831	3.8636	0.32634		8.000	87.281	11.3835	3.9866	2.8555	0.4754	0.28935	0.4754	0.28935
	28.000	77.666	10.5334	3.8831	0.32040		6.000	87.976	11.3951	3.9879	2.8574	0.4716	0.28895	0.4716	0.28895
	26.000	79.091	10.6435	3.8971	0.31614		4.000	88.657	11.4032	3.9889	2.8588	0.4690	0.28867	0.4690	0.28867
	24.000	80.324	10.7282	3.9077	0.31291		2.000	89.330	11.4080	3.9894	2.8596	0.4674	0.28851	0.4674	0.28851
	22.000	81.419	10.7954	3.9161	0.27567										
	20.000	82.413	10.8496	3.9228	0.5314										
	18.000	83.331	10.8938	3.9282	0.27732										
	16.000	84.189	10.9301	3.9327	0.5067										
	14.000	85.001	10.9599	3.9363	0.4973										
	12.000	85.775	10.9842	3.9393	0.48895										
	10.000	86.520	11.0037	3.9416	0.4832										
	8.000	87.242	11.0190	3.9435	0.4781										
	6.000	87.945	11.0306	3.9449	0.4743										
	4.000	88.637	11.0387	3.9458	0.4716										
	2.000	89.321	11.0434	3.9464	0.4701										
3.15	2.000	19.891	1.1734	1.0469	0.99958	24.000	21.059	1.1760	1.1760	1.3759	1.2548	1.0475	0.99957	1.0475	0.99957
	4.000	21.366	1.2510	1.0951	0.9371	26.000	22.628	1.3958	1.3958	1.4017	1.475	1.2876	0.99670	1.2876	0.99670
	6.000	22.937	1.5915	1.3896	1.1453	28.000	24.292	1.8552	1.8552	1.9013	1.5443	1.27725	0.97642	1.27725	0.97642
	8.000	24.603	1.8399	1.5357	1.1981	30.000	26.052	2.1377	2.1377	1.6990	1.2582	2.6670	0.95684	2.6670	0.95684
	10.000	26.366	2.1166	1.6878	1.2540	32.000	27.909	2.4507	2.4507	1.8583	1.3188	2.5605	0.93048	2.5605	0.93048
	12.000	28.225	2.4226	1.8445	1.3134	34.000	29.863	2.7952	2.7952	2.0206	1.3834	2.4528	0.89766	2.4528	0.89766
	14.000	30.181	2.7592	2.0042	1.3767	36.000	31.915	3.1723	3.1723	2.1842	1.4524	2.3437	0.85914	2.3437	0.85914
	16.000	32.238	3.1273	2.1654	1.4443	38.000	34.071	3.5828	3.5828	2.3476	1.5261	2.3239	0.81591	2.3239	0.81591
	18.000	34.398	3.5279	2.3266	1.5163	40.000	36.335	4.0273	4.0273	2.5095	1.6048	2.1205	0.76919	2.1205	0.76919
	20.000	36.668	3.9617	2.4866	1.5933	42.000	38.718	4.5073	4.5073	2.6690	1.6888	2.0061	0.72014	2.0061	0.72014
	22.000	39.061	4.4302	2.6444	1.6753	44.000	41.238	5.0245	5.0245	2.8232	1.7784	1.8893	0.66984	1.8893	0.66984
	24.000	41.594	4.9349	2.7992	1.7629	46.000	43.920	5.5816	5.5816	2.9780	1.8743	1.7695	0.61919	1.7695	0.61919
	26.000	44.296	5.4793	2.9510	1.8567	48.000	46.811	6.1840	6.1840	3.1274	1.9774	1.6454	0.56880	1.6454	0.56880

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{P_{02}}{P_{01}}$	M_1	θ	β	$\frac{P_2}{P_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{P_{02}}{P_{01}}$
											$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{P_{02}}{P_{01}}$
3.20	22.000	81.694	11.5307	4.0035	2.8802	0.5398	0.28438	3.30	2.000	19.009	1.1812	1.1262	3.1858	0.99953
	20.000	82.649	11.5844	4.0096	2.8892	0.5243	0.28260		4.000	20.475	1.3880	1.2626	3.0748	0.99642
	18.000	83.533	11.6285	4.0146	2.8966	0.5113	0.28115		6.000	22.039	1.6222	1.1520	2.9653	0.98858
	16.000	84.363	11.6647	4.0220	2.9076	0.4913	0.27899		8.000	23.699	1.8859	1.5617	2.8563	0.97453
	14.000	85.147	11.6945	4.0247	2.9117	0.4837	0.27780		10.000	25.457	2.1807	1.7216	2.7468	0.95347
	12.000	85.897	11.7188	4.0247	2.9150	0.4776	0.27757		12.000	27.310	2.5078	1.8861	2.6364	0.92526
	10.000	86.619	11.7385	4.0269	2.9176	0.4727	0.27707		14.000	29.261	2.8688	2.0536	2.5248	0.89031
	8.000	87.320	11.7539	4.0286	2.9196	0.4690	0.27669		16.000	31.308	3.2640	2.2219	1.4690	0.84954
	6.000	88.003	11.7655	4.0299	2.9209	0.4664	0.27643		18.000	33.456	3.6947	2.3898	1.5460	0.80409
	4.000	88.675	11.7736	4.0308	2.9217	0.4649	0.27628		20.000	35.710	4.1617	2.5557	1.6284	0.75527
	2.000	89.340	11.7784	4.0313					22.000	38.077	4.6655	2.7184	1.7163	0.70444
3.25	2.000	19.293	1.1786	1.1244	1.0482	3.1380	0.99955	28.000	40.000	47.573	5.2081	2.8773	1.8101	1.9439
	4.000	20.762	1.3818	1.2586	1.0972	3.0290	0.99656	30.000	49.163	56.062	6.4212	3.1822	2.0178	1.6955
	6.000	22.328	1.6119	1.4019	1.1498	2.9215	0.98902	32.000	52.667	60.000	7.1057	3.3294	2.1342	1.5638
	8.000	23.990	1.8704	1.5530	1.2044	2.8145	0.97549	34.000	56.963	64.722	8.7658	3.4758	2.2630	1.4218
	10.000	25.749	2.1590	1.7103	1.2624	2.7070	0.95518	35.882	65.518	73.000	10.3564	3.8602	2.6299	1.4144
	12.000	27.604	2.4791	1.8722	1.3242	2.5986	0.92789	34.000	72.501	80.000	11.3896	3.9873	2.8565	1.7057
	14.000	29.556	2.8318	2.0370	1.3901	2.4889	0.89402	32.000	75.148	82.000	11.7036	4.0230	2.9092	1.6797
	16.000	31.606	3.2179	2.2030	1.4607	2.3779	0.85437	30.000	77.029	84.000	11.8983	4.0445	2.9418	1.6336
	18.000	33.757	3.6384	2.3687	1.5360	2.2653	0.81004	28.000	78.535	85.000	12.0364	4.0595	2.9650	1.5993
	20.000	36.016	4.0940	2.5326	1.6165	2.1511	0.76227	26.000	79.812	86.000	12.1408	4.0765	2.9825	1.5725
	22.000	38.390	4.5858	2.6937	1.7024	2.0350	0.71232	24.000	80.932	87.000	12.2227	4.0793	2.9963	1.5507
	24.000	40.898	5.1156	2.8513	1.7941	1.9168	0.66129	22.000	81.938	88.000	12.2884	4.0862	3.0073	0.5328
	26.000	43.563	5.6858	3.0049	1.8922	1.7958	0.61015	20.000	82.859	88.000	12.3420	4.0918	3.0163	0.5178
	28.000	46.426	6.3015	3.1548	1.9974	1.6707	0.55950	18.000	83.714	88.000	12.3860	4.0964	3.0236	0.5052
	30.000	49.566	6.9727	3.3020	2.1116	1.5394	0.50960	16.000	84.517	89.000	12.4223	4.1001	3.0297	0.4946
	32.000	53.141	7.7223	3.4494	2.2387	1.3970	0.45998	14.000	85.278	90.000	12.4523	4.1032	3.0348	0.4858
	34.000	57.616	8.6213	3.6062	2.3907	1.2287	0.40809	12.000	86.007	92.000	12.4767	4.1057	3.0389	0.4785
	35.610	65.473	10.0327	3.8170	2.6285	0.9596	0.34078	10.000	86.708	92.000	12.4964	4.1077	3.0422	0.4725
	34.000	71.993	10.9786	3.9386	2.7875	0.7636	0.30361	8.000	87.390	92.000	12.5120	4.1093	3.0448	0.4677
	32.000	74.827	11.3120	3.9783	2.8434	0.6878	0.29180	6.000	88.056	92.000	12.5237	4.1105	3.0467	0.4641
	30.000	76.787	11.5124	4.0014	2.8771	0.6396	0.28499	4.000	88.710	92.000	12.5319	4.1114	3.0481	0.4616
	28.000	78.339	11.6529	4.0173	2.9007	0.6043	0.28035	2.000	89.357	92.000	12.5367	4.1119	3.0489	0.4601
	26.000	79.649	11.7584	4.0291	2.9184	0.5767	0.27692							
	24.000	80.793	11.8408	4.0382	2.9322	0.5445	0.27429							
	22.000	81.819	11.9067	4.0454	2.9433	0.5362	0.27220							
	20.000	82.757	11.9604	4.0513	2.9523	0.5210	0.27052							
	18.000	83.626	12.0044	4.0560	2.9596	0.5082	0.26916							
	16.000	84.442	12.0407	4.0599	2.9657	0.4974	0.26804							
	14.000	85.214	12.0705	4.0631	2.9707	0.4885	0.26712							
	12.000	85.953	12.0949	4.0658	2.9748	0.4810	0.26637							
	10.000	86.665	12.1145	4.0679	2.9781	0.4750	0.26577							
	8.000	87.356	12.1300	4.0695	2.9807	0.4702	0.26530							
	6.000	88.030	12.1417	4.0707	2.9827	0.4665	0.26495							
	4.000	88.693	12.1498	4.0716	2.9840	0.4639	0.26470							
	2.000	89.348	12.1547	4.0721	2.9848	0.4624	0.26455							

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$
3.35	24.000	40.264	5.3024	1.8263	1.9704	0.64409	3.40	34.000	73.352	12.2131	2.9046	4.0783	0.26279
	26.000	42.898	5.8998	1.9288	1.8468	0.59200		32.000	75.717	12.4992	4.1080	3.0426	0.6653
	28.000	45.716	6.5433	2.2097	2.0386	1.7198	0.54090		77.467	12.6849	4.1268	3.0738	0.6225
	30.000	48.782	7.2416	3.2568	2.1573	1.5874	0.49109		28.000	78.891	12.8193	4.1402	3.0963
	32.000	52.225	8.0134	3.5024	2.2880	1.4458	0.44232		26.000	80.110	12.9221	4.1503	3.1135
	34.000	56.375	8.9114	3.6528	2.4396	1.2844	0.39294		24.000	81.185	13.0033	4.1582	3.1271
	36.000	63.380	10.2976	3.8524	2.6730	1.0339	0.32979		22.000	82.156	13.0688	4.1645	3.1381
	38.143	65.562	10.6853	3.9023	2.7382	0.9616	0.31454		20.000	83.047	13.1224	4.1697	3.1471
	36.000	67.623	11.0286	3.9446	2.7958	0.8957	0.30180		18.000	83.876	13.1665	4.1739	3.1545
	34.000	72.950	11.8006	4.0338	2.9255	0.7384	0.27557		16.000	84.656	13.2030	4.1774	3.1606
	32.000	75.444	12.0992	4.0662	2.9755	0.6723	0.26624		14.000	85.396	13.2331	4.1802	3.1657
	30.000	77.255	4.0863	3.0074	0.6279	0.26053	0.26053		12.000	86.105	13.2578	4.1826	3.1698
	28.000	78.719	12.4252	4.1004	3.0302	0.5946	0.25653		10.000	86.759	13.2777	4.1844	3.1731
	26.000	79.965	12.5287	4.1110	3.0476	0.5684	0.25355		8.000	87.453	13.2934	4.1859	3.1757
	24.000	81.062	12.6102	4.1193	3.0612	0.5471	0.25124		6.000	88.103	13.3052	4.1870	3.1777
	22.000	82.050	12.6758	4.1259	3.0722	0.5295	0.24939		4.000	88.741	13.3135	4.1878	3.1791
	20.000	82.956	12.7293	4.1313	3.0812	0.5148	0.24790		2.000	89.372	13.3184	4.1883	3.1799
	18.000	83.798	12.7734	4.1357	3.0886	0.5024	0.24668						
	16.000	84.588	12.8098	4.1393	3.0947	0.4920	0.24568						
	14.000	85.339	4.1422	3.0997	0.4832	0.24486	0.24486						
	12.000	86.057	12.8644	4.1446	3.1038	0.4760	0.24420						
	10.000	86.750	12.8644	4.1466	3.1072	0.4701	0.24366						
	8.000	87.422	12.8998	4.1481	3.1098	0.4654	0.24324						
	6.000	88.080	12.9116	4.1493	3.1118	0.4618	0.24292						
	4.000	88.726	12.9198	4.1501	3.1131	0.4593	0.24270						
	2.000	89.365	12.9246	4.1506	3.1140	0.4578	0.24256						
3.40	2.000	18.467	1.9128	1.4001	2.2600	1.4860	2.4788	0.83962	34.000	55.344	3.7018	2.4932	1.3339
	4.000	19.928	21.498	1.6430	1.4207	1.1565	3.05227	0.98766	24.000	39.683	5.4951	2.9552	1.8595
	6.000	23.147	1.9173	1.5793	1.2140	2.9395	0.97253	0.97253	26.000	42.292	6.1211	3.1125	1.9666
	8.000	24.902	2.2245	1.7444	1.2752	2.8260	0.94995		28.000	45.073	6.7941	3.2644	2.0813
	10.000	26.755	2.5664	1.9143	1.3407	2.7115	0.91981		30.000	48.080	7.5215	3.4115	2.2047
	12.000	37.489	4.8289	1.7446	2.1195	1.4108	2.5958	0.88269	32.000	51.420	8.3194	3.5558	2.3397
	14.000	28.702	2.9440	2.0868	2.7679	1.7446	2.1195	0.68851	34.000	55.344	9.2294	3.7018	2.4932
	16.000	30.746	3.3583	2.2600	2.4788	1.4860	2.4788	0.83962	36.000	60.903	10.4358	3.8705	2.4932
	18.000	32.889	3.8100	2.4322	1.5665	2.3604	2.6526	0.79194	36.000	65.647	11.3584	3.9837	2.8512
	20.000	35.133	2.6019	2.4998	2.74110	0.74110	2.6526	0.79194	36.635	69.850	12.0718	4.0633	2.9709
	22.000	37.489	4.8289	2.7679	1.7446	2.1195	0.68851	0.68851	36.000	73.716	12.6278	4.1211	3.0642
	24.000	39.967	5.3980	2.9293	1.8428	1.9466	0.65546	0.65546	34.000	75.970	12.9035	4.1485	3.1104
	26.000	42.588	6.0096	3.0857	1.9476	1.8716	0.58292	0.58292	32.000	77.665	13.0858	4.1662	3.1410
	28.000	45.386	6.6675	3.2370	2.0598	1.7435	0.53162	0.53162	30.000	79.054	13.2189	4.1789	3.1633
	30.000	48.422	7.3802	3.3842	2.1808	1.6105	0.48186	0.48186	28.000	80.246	13.3210	4.1885	3.1804
	32.000	51.810	8.1645	3.5290	2.3135	1.4690	0.45348	0.45348	26.000	81.302	13.4020	4.1961	3.1939
	34.000	55.838	9.0673	3.6771	2.4659	1.3098	0.38509	0.38509	24.000	82.256	13.4675	4.2021	3.2049
	36.000	61.914	10.3308	3.8568	2.6786	1.0874	0.32845	0.32845	22.000	83.134	13.5211	4.2071	3.2139
	36.393	65.605	11.0193	3.9435	2.7943	0.9625	0.30214	0.30214	20.000	83.951	13.5654	4.2111	3.2213
	36.960	68.960	11.5817	4.0093	2.8887	0.8560	0.293269	0.293269	18.000				0.4971

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	
3.45	16.000	84.720	13.6020	4.2145	3.2275	0.4869	0.22521	3.55	2.000	17.715	1.1947	1.1353	0.99943	
	14.000	85.451	13.6322	4.2172	3.2325	0.4784	0.22448		4.000	19.170	1.4187	1.2822	1.1065	0.99566
	12.000	86.151	13.6570	4.2195	3.2367	0.4714	0.22388		6.000	20.726	1.6748	1.4396	1.1634	0.98619
	10.000	86.826	13.6770	4.2213	3.2407	0.4656	0.22340		8.000	22.383	1.9653	1.6059	1.2238	0.96935
	8.000	87.482	13.6928	4.2227	3.2427	0.4610	0.22302		10.000	24.138	2.2920	1.7791	1.2883	0.94435
	6.000	88.125	13.7047	4.2238	3.2447	0.4575	0.22273		12.000	25.989	2.6566	1.9569	1.3576	0.91123
	4.000	88.756	13.7130	4.2245	3.2461	0.4551	0.22253		14.000	27.936	3.0603	2.1370	1.4321	0.87077
	2.000	89.379	13.7180	4.2250	3.2469	0.4536	0.22241		16.000	29.977	3.5040	2.3174	1.5121	0.82424
3.50	2.000	17.958	1.1920	1.1335	1.0516	3.3769	0.99945		18.000	32.115	3.9887	2.4961	1.5980	2.4526
	4.000	19.415	1.4125	1.2783	1.1050	3.2574	0.99582		20.000	34.352	4.5148	2.6714	1.6901	2.3271
	6.000	20.972	1.6642	1.4333	1.1611	3.1396	0.98669		22.000	36.692	5.0827	2.8419	1.7885	2.2025
	8.000	22.629	1.9491	1.5970	1.2205	3.0222	0.97044		28.000	44.488	7.0535	3.3187	2.1254	1.8117
	10.000	24.384	2.2693	1.7675	1.2839	2.9044	0.94626		30.000	47.447	7.8120	3.4660	2.2539	1.6762
	12.000	26.236	2.6262	1.9426	1.3519	2.7856	0.91415		32.000	50.705	8.6392	3.6092	2.3937	1.5342
	14.000	28.182	3.0211	2.1202	1.4249	2.6657	0.87481		34.000	54.463	9.5691	3.7520	2.5504	1.3790
	16.000	30.225	3.4549	2.2982	1.5033	2.5445	0.82942		36.000	59.399	10.7262	3.9075	2.7450	1.1885
	18.000	32.363	3.9283	2.4747	1.5874	2.4222	0.77952		37.091	65.729	12.0520	4.0612	2.9676	0.9651
	20.000	34.602	4.4421	2.6482	1.6774	2.2986	0.72668		38.000	71.121	12.9969	4.1576	3.1261	0.7943
	22.000	36.947	4.9969	2.8173	1.7737	2.1739	0.67245		39.000	71.353	13.4667	4.2021	3.2048	0.7018
	24.000	39.410	5.5926	2.9811	1.8764	2.0478	0.61813		32.000	76.427	13.7265	4.2257	3.2483	0.6473
	26.000	42.009	6.2345	3.1392	1.9860	1.9199	0.56478		30.000	78.025	13.9033	4.2415	3.2779	0.6083
	28.000	44.774	6.9227	3.2916	2.1032	1.7894	0.51313		28.000	79.351	14.0342	4.2530	3.2998	0.5782
	30.000	47.755	7.6654	3.4388	2.2291	1.6549	0.46353		26.000	80.497	14.1355	4.2618	3.3168	0.5541
	32.000	51.053	8.4777	3.5825	2.3664	1.5131	0.41586		24.000	81.517	14.2163	4.2687	3.3303	0.5343
	34.000	54.888	9.3968	3.7268	2.5214	1.3570	0.36917		22.000	82.442	14.2819	4.2743	3.3413	0.5178
	36.000	60.090	10.5715	3.8879	2.7191	1.1594	0.31891		20.000	83.294	14.3358	4.2789	3.3503	0.5039
	36.867	65.689	11.7027	4.0229	2.9000	0.9643	0.29782		18.000	84.090	14.3804	4.2827	3.3578	0.4922
	36.000	70.545	12.5396	4.1121	3.0494	0.8105	0.25324		16.000	84.839	14.4173	4.2858	3.3640	0.4823
	34.000	74.048	13.0455	4.1623	3.1342	0.7098	0.23934		14.000	85.552	14.4478	4.2883	3.3691	0.4740
	32.000	76.207	13.3126	4.1873	3.1730	0.6529	0.23241		12.000	86.235	14.4729	4.2904	3.3733	0.4671
	30.000	77.851	13.4920	4.2044	3.2000	0.6128	0.22791		10.000	86.895	14.4931	4.2921	3.3767	0.4615
	28.000	79.207	13.6238	4.2165	3.2311	0.5820	0.22468		8.000	87.537	14.5091	4.2934	3.3794	0.4570
	26.000	80.375	13.7255	4.2256	3.2481	0.5574	0.22223		6.000	88.165	14.5212	4.2944	3.3814	0.4535
	24.000	81.413	13.8064	4.2329	3.2617	0.5373	0.22031		4.000	88.782	14.5296	4.2951	3.3828	0.4511
	22.000	82.352	13.8719	4.2387	3.2727	0.5205	0.21877		2.000	89.392	14.5346	4.2956	3.3836	0.4497
	20.000	83.216	13.9256	4.2435	3.2817	0.5065	0.21751							
	18.000	84.022	13.9700	4.2474	3.2891	0.4946	0.21649							
	16.000	84.781	14.0067	4.2506	3.2952	0.4846	0.21564							
	14.000	85.503	14.0371	4.2532	3.3003	0.4762	0.21494							
	12.000	86.194	14.0620	4.2554	3.3045	0.4692	0.21438							
	10.000	86.862	14.0822	4.2572	3.3079	0.4635	0.21392							
	8.000	87.510	14.0980	4.2585	3.3105	0.4590	0.21356							
	6.000	88.145	14.1100	4.2596	3.3125	0.4555	0.21329							
	4.000	88.769	14.1184	4.2603	3.3139	0.4531	0.21310							
	2.000	89.386	14.1234	4.2607	3.3148	0.4516	0.21298							

0.76685

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$		
3.60	20.000	34.110	2.6945	1.7029	2.3552	0.71207	3.65	37.513	65.808	12.7662	4.1349	3.0874	0.24688		
	22.000	36.448	2.8666	1.8035	2.2927	0.65625	36.000	72.054	13.9006	4.2413	3.2775	0.7684	0.21810		
	24.000	38.898	5.1699	5.7953	3.0327	1.9109	0.60079	34.000	74.894	14.3206	4.2776	3.3478	0.6877	0.20857	
	26.000	41.478	6.4663	3.1924	2.0255	1.9664	0.54674	32.000	76.827	14.5690	4.2984	3.3894	0.6371	0.20324	
	28.000	44.215	7.1862	3.3457	2.1479	1.8335	0.49483	30.000	78.345	14.7420	4.3126	3.483	0.6000	0.19962	
	30.000	47.153	7.9610	3.4930	2.2791	1.6971	0.44543	28.000	79.617	14.8713	4.3231	3.4400	0.5712	0.19697	
	32.000	50.376	8.8038	3.6357	2.4215	1.5547	0.39847	26.000	80.723	14.9723	4.3311	3.4569	0.5480	0.19493	
	34.000	54.066	9.7460	3.7772	2.5802	1.4002	0.35321	24.000	81.712	15.0533	4.3376	3.4705	0.5287	0.19332	
	36.000	58.793	10.8943	3.9283	2.7733	1.2149	0.30670	22.000	82.610	15.1191	4.3427	3.485	0.5127	0.19202	
	37.306	65.769	12.4065	4.0985	3.0271	0.9660	0.25708	20.000	83.440	15.1734	4.3470	3.4906	0.4992	0.19096	
	36.000	71.617	13.4496	4.2005	3.2019	0.7805	0.22897	18.000	84.215	15.2184	4.3505	3.4981	0.4877	0.19009	
	34.000	74.634	13.8916	4.2405	3.2760	0.6945	0.21831	16.000	84.947	15.2557	4.3534	3.5043	0.4781	0.18937	
	32.000	76.633	14.1452	4.2626	3.3184	0.6420	0.21249	14.000	85.644	15.2866	4.3558	3.5095	0.4699	0.18878	
	30.000	78.190	14.3199	4.2776	3.3477	0.6041	0.20861	12.000	86.313	15.3120	4.3577	3.537	0.4632	0.18829	
	28.000	79.487	14.4500	4.2885	3.3695	0.5746	0.20578	10.000	86.959	15.3325	4.3593	3.5172	0.4576	0.18790	
	26.000	80.614	14.5512	4.2969	3.3864	0.5510	0.20362	8.000	87.587	15.3487	4.3606	3.5199	0.4532	0.18759	
	24.000	81.617	14.6320	4.3036	3.3999	0.5315	0.20191	6.000	88.201	15.3609	4.3615	3.5219	0.4499	0.18736	
	22.000	82.528	14.6976	4.3090	3.4109	0.5152	0.20054	4.000	88.807	15.3695	4.3622	3.5234	0.4475	0.18720	
	20.000	83.369	14.7517	4.3134	3.4200	0.5015	0.19942	2.000	89.405	15.3746	4.3625	3.5242	0.4461	0.18710	
	18.000	84.154	14.7965	4.3170	3.4275	0.4899	0.19849								
	16.000	84.894	14.8336	4.3200	3.4337	0.4801	0.19774	3.70	2.000	17.027	1.2029	1.1408	0.99936	0.99936	
	14.000	85.599	14.8643	4.3225	3.4388	0.4719	0.19711								
	12.000	86.275	14.8895	4.3245	3.4430	0.4651	0.19660	4.000	18.478	1.4377	1.2942	1.1108	3.4388	0.99515	
	10.000	86.928	14.9099	4.3262	3.4465	0.4595	0.19619	6.000	20.032	1.7073	1.4589	1.1703	3.3121	0.98461	
	8.000	87.562	14.9260	4.3274	3.4491	0.4551	0.19586	8.000	21.688	2.0146	1.6330	1.2337	3.1858	0.96594	
	6.000	88.184	14.9381	4.3284	3.4512	0.4517	0.19562	10.000	23.444	2.3615	1.8141	1.3017	3.0591	0.93840	
	4.000	88.794	14.9466	4.3291	3.4526	0.4493	0.19545	12.000	25.297	2.7496	1.9998	1.3749	2.9315	0.92148	
	2.000	89.398	14.9517	4.3295	3.4534	0.4479	0.19535	14.000	27.246	3.1808	2.1877	1.4539	2.8026	0.85825	
								16.000	29.287	3.6554	2.3751	1.5391	2.6728	0.80824	
								18.000	31.423	4.1745	2.5600	1.6306	2.5420	0.75395	
								20.000	33.653	4.7382	2.7406	1.7289	2.4105	0.69731	
										35.985	5.3474	2.9156	1.8341	2.2783	0.64001
										38.426	6.0027	3.0840	1.9464	2.1453	0.58349
										40.991	6.7053	3.2452	2.0662	2.0114	0.52883
										43.704	7.4580	3.3993	2.1940	1.8758	0.47677
										46.605	8.2664	3.5467	2.3307	1.7375	0.42765
										49.768	9.1422	3.6886	2.4785	1.5940	0.38140
										53.344	10.1123	3.8277	2.6418	1.4404	0.33742
										57.760	11.2596	3.9721	2.8346	1.2623	0.29362
										65.847	13.1309	4.1705	3.1485	0.9675	0.23710
										72.443	14.3517	4.2802	3.3530	0.7577	0.20791
										75.135	14.7539	4.3136	3.4203	0.6814	0.19937
										77.009	14.9979	4.3332	3.4612	0.6324	0.19442
										78.492	15.1693	4.3467	3.4899	0.5962	0.19104
										80.000	15.2993	4.3567	3.5115	0.5680	0.18855
										80.828	15.3992	4.3644	3.5283	0.5451	0.18664
										81.802	15.4802	4.3706	3.5419	0.5261	0.18552
										82.688	15.5463	4.3756	3.5530	0.5103	0.18389

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{\rho_2}{\rho_1}$	$\frac{p_02}{p_{01}}$	M_2	$\frac{p_02}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{T_2}{T_1}$	
3.70	20.000	83.507	15.6008	4.3797	3.5621	0.4969	0.18289	3.75	2.000	89.416	16.2379	4.4261	3.6687	0.4428	
	18.000	84.274	15.6460	4.3831	3.5696	0.4856	0.18206								0.17169
	16.000	84.998	15.6836	4.3859	3.5759	0.4760	0.18138								
	14.000	85.687	15.7147	4.3882	3.5811	0.4680	0.18082								
	12.000	86.348	15.7402	4.3901	3.5854	0.4613	0.18035								
	10.000	86.988	15.7609	4.3916	3.5889	0.4558	0.17998								
	8.000	87.610	15.7772	4.3928	3.5916	0.4515	0.17969								
	6.000	88.219	15.7896	4.3937	3.5937	0.4481	0.17947								
	4.000	88.817	15.7982	4.3944	3.5951	0.4458	0.17932								
	2.000	89.411	15.8033	4.3947	3.5960	0.4444	0.17922								
3.75	2.000	16.810	1.2055	1.1426	1.0551	3.6149	0.99933								
	4.000	18.260	1.4440	1.2982	1.1123	3.4840	0.99497								
	6.000	19.814	1.7184	1.4654	1.1727	3.3550	0.98405								
	8.000	21.470	2.0312	1.6420	1.2370	3.2264	0.96476								
	10.000	23.227	2.3849	1.8258	1.3062	3.0974	0.93634								
	12.000	25.081	2.7813	2.0142	1.3808	2.9674	0.89905								
	14.000	27.030	3.2217	2.2046	1.4614	2.8363	0.85397								
	16.000	29.072	3.7069	2.3943	1.5482	2.7042	0.80280								
	18.000	31.207	4.2379	2.5813	1.6417	2.5712	0.74744								
	20.000	33.438	4.8148	2.7637	1.7422	2.4376	0.68987								
	22.000	35.767	5.4382	2.9401	1.8497	2.3034	0.63185								
	24.000	38.204	6.1086	3.1095	1.9645	2.1688	0.57486								
	26.000	40.762	6.8272	3.2714	2.0889	2.0333	0.51996								
	28.000	43.464	7.5969	3.4259	2.2175	1.8964	0.46786								
	30.000	46.350	8.4228	3.5733	2.3572	1.7570	0.41888								
	32.000	49.486	9.3159	3.7148	2.5078	1.6129	0.37300								
	34.000	53.014	10.3013	3.8529	2.6736	1.4594	0.32964								
	36.000	57.310	11.4538	3.9947	2.8672	1.2839	0.28696								
	37.906	65.884	13.5007	4.2052	3.2170	0.9683	0.22270								
	36.000	72.794	14.8041	4.3176	3.4287	0.7481	0.19834								
	34.000	75.361	15.1917	4.3484	3.4936	0.6755	0.19061								
	32.000	77.180	15.4318	4.3669	3.5338	0.6280	0.18602								
	30.000	78.631	15.6021	4.3798	3.5623	0.5926	0.18286								
	28.000	79.856	15.7307	4.3894	3.5838	0.5649	0.18053								
	26.000	80.927	15.8316	4.3968	3.6007	0.5423	0.17872								
	24.000	81.887	15.9128	4.4028	3.6143	0.5237	0.17728								
	22.000	82.762	15.9792	4.4076	3.6254	0.5080	0.17612								
	20.000	83.572	16.0329	4.4115	3.6345	0.4948	0.17517								
	18.000	84.330	16.0794	4.4148	3.6422	0.4836	0.17439								
	16.000	85.045	16.1172	4.4175	3.6485	0.4741	0.17374								
	14.000	85.727	16.1485	4.4198	3.6537	0.4662	0.17321								
	12.000	86.382	16.1743	4.4216	3.6580	0.4595	0.17277								
	10.000	87.016	16.1951	4.4231	3.6615	0.4541	0.17242								
	8.000	87.632	16.2116	4.4242	3.6643	0.4498	0.17214								
	6.000	88.235	16.2240	4.4251	3.6663	0.4465	0.17193								
4.000		88.829	16.2327	4.4257	3.6678	0.4441	0.17178								

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{T_2}{T_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{P_2}{P_1}$	M_2	$\frac{P_{02}}{P_{01}}$	M_1	θ	β	$\frac{P_2}{P_1}$	M_2	$\frac{T_2}{T_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{P_{02}}{P_{01}}$
3.85	10.000	22.812	2.4328	1.8495	1.3153	0.93209	3.1734	0.93209	3.90	24.000	37.584	6.4345	3.1853	2.0201	2.2371	0.54918
	12.000	24.668	2.8456	2.0432	1.3927	0.89264	3.0386	0.89264	26.000	40.126	7.2035	3.3492	2.0968	2.1508	2.2901	0.49666
	14.000	26.619	3.3050	2.2386	1.4764	0.84523	2.9028	0.84523	28.000	42.802	8.0258	3.5046	1.9558	2.19558	0.44158	
	16.000	28.664	3.8121	2.4330	1.5668	0.79172	2.7661	0.79172	30.000	45.646	9.8536	3.6519	2.4387	1.8131	0.39322	
	18.000	30.799	4.3670	2.6239	1.6643	0.73428	2.6287	0.73428	32.000	48.716	9.7923	3.5983	2.5983	1.6668	0.34848	
	20.000	33.028	4.9706	2.8097	1.7691	0.67493	2.4909	0.67493	34.000	52.126	10.8901	3.9278	2.7726	1.5130	0.30686	
	22.000	35.353	5.6230	2.9887	1.8814	0.61558	2.3529	0.61558	36.000	56.149	12.0723	4.0633	2.9710	1.3425	0.26706	
	24.000	37.783	6.3245	3.1601	2.0013	0.55770	2.2146	0.55770	38.000	62.087	13.6897	4.2224	3.2421	1.1106	0.22309	
	26.000	40.330	7.0764	3.3234	2.1293	0.50236	2.0760	0.50236	38.445	65.991	14.6407	4.3043	3.4014	0.9704	0.20173	
	28.000	43.014	7.8808	3.4785	2.2656	0.45026	1.9364	0.45026	38.000	69.501	15.4023	4.3647	3.5289	0.8527	0.18658	
	30.000	45.871	8.7425	3.6259	2.4111	0.40167	1.7948	0.40167	36.000	73.678	16.1768	4.4218	3.6584	0.7240	0.17273	
	32.000	48.961	9.6715	3.7666	2.5677	0.35654	1.6493	0.35654	34.000	75.956	16.5334	4.4468	3.7181	0.6600	0.16682	
	34.000	52.407	10.6904	3.9030	2.7390	0.31434	1.4957	0.31434	32.000	77.640	16.7653	4.4626	3.7569	0.6160	0.16313	
	36.000	56.508	11.8605	4.0404	2.9355	0.27366	1.3239	0.27366	30.000	79.006	16.9330	4.4738	3.7849	0.5828	0.16052	
	38.000	62.939	13.5472	4.2095	3.2183	0.22655	1.0767	0.22655	28.000	80.172	17.0613	4.4823	3.8064	0.5563	0.15857	
	38.272	65.956	14.2556	4.2721	3.3369	0.9697	0.21003	0.21003	26.000	81.199	17.1629	4.4890	3.8234	0.5347	0.15705	
	38.000	68.733	14.8512	4.3214	3.4366	0.8764	0.19738	0.19738	24.000	82.121	17.2449	4.4943	3.8371	0.5168	0.15583	
	36.000	73.407	15.7160	4.3883	3.5814	0.7314	0.18079	0.18079	22.000	82.966	17.3122	4.4986	3.8483	0.5016	0.15485	
	34.000	75.770	16.0813	4.4150	3.6425	0.6649	0.17436	0.17436	20.000	83.749	17.3680	4.5022	3.8576	0.4888	0.15404	
	32.000	77.495	16.3155	4.4316	3.6816	0.6198	0.17039	0.17039	18.000	84.483	17.4143	4.5052	3.8654	0.4780	0.15337	
	30.000	78.888	16.4839	4.4433	3.7098	0.5859	0.16762	0.16762	16.000	85.177	17.4529	4.5076	3.8718	0.4688	0.15281	
	28.000	80.072	16.6122	4.4522	3.7313	0.5591	0.16555	0.16555	14.000	85.840	17.4850	4.5097	3.8772	0.4610	0.15235	
	26.000	81.112	16.7135	4.4591	3.7482	0.5372	0.16394	0.16394	12.000	86.477	17.5113	4.5114	3.8816	0.4545	0.15198	
	24.000	82.047	16.7952	4.4646	3.7619	0.5190	0.16266	0.16266	10.000	87.093	17.5327	4.5127	3.8852	0.4492	0.15167	
	22.000	82.901	16.8622	4.4691	3.7731	0.5037	0.16162	0.16162	8.000	87.693	17.5496	4.5138	3.8880	0.4450	0.15143	
	20.000	83.692	16.9175	4.4728	3.7823	0.4907	0.16076	0.16076	6.000	88.280	17.5623	4.5146	3.8901	0.4418	0.15125	
	18.000	84.434	16.9636	4.4758	3.7900	0.4798	0.16006	0.16006	4.000	88.858	17.5713	4.5151	3.8916	0.4395	0.15113	
	16.000	85.136	17.0019	4.4784	3.7964	0.4705	0.15947	0.15947	2.000	89.430	17.5766	4.5155	3.8925	0.4382	0.15105	
	14.000	85.804	17.0337	4.4805	3.8017	0.4627	0.15899	0.15899								
	12.000	86.447	17.0598	4.4822	3.8061	0.4561	0.15859	0.15859								
	10.000	87.068	17.0910	4.4836	3.8097	0.4508	0.15827	0.15827	3.95	2.000	16.001	1.2166	1.1500	1.0578	0.99923	
	8.000	87.674	17.0978	4.4847	3.8125	0.4465	0.15802	0.15802		4.000	17.447	1.4697	1.3144	1.1182	0.99421	
	6.000	88.266	17.1104	4.4855	3.8146	0.4433	0.15783	0.15783		6.000	19.001	1.7630	1.4915	1.1821	0.98171	
	4.000	88.849	17.1193	4.4861	3.8161	0.4410	0.15770	0.15770		8.000	20.660	2.0992	1.6786	1.2506	0.95977	
	2.000	89.426	17.1245	4.4865	3.8169	0.4397	0.15762	0.15762		10.000	22.422	2.4815	1.8734	1.3246	0.92768	
3.90	2.000	16.196	1.2138	1.1482	1.0571	0.99226	0.99441	0.99441		12.000	24.280	2.9112	2.0724	1.4048	3.1090	0.88602
	4.000	17.642	1.4633	1.3104	1.1167	0.98232	0.9830	0.9830		14.000	26.234	3.3902	2.2727	1.4917	2.9684	0.83626
	6.000	19.196	1.7517	1.4849	1.1797	0.96105	0.96105	0.96105		16.000	28.281	3.9194	2.4716	1.5858	2.8270	0.78046
	8.000	20.854	2.0821	1.6694	1.2472	0.93473	0.92990	0.92990		18.000	30.417	4.4992	2.6664	1.6874	2.6851	0.72095
	10.000	22.614	2.4570	1.8614	1.3200	0.92111	0.92111	0.92111		20.000	34.969	5.8125	3.0370	1.9139	2.4010	0.59933
	12.000	24.472	2.8783	2.0578	1.3987	0.8739	0.88935	0.88935		22.000	37.393	6.5462	3.2103	2.0391	2.2591	0.54068
	14.000	26.424	3.3474	2.2557	1.4840	0.84077	0.84077	0.84077		24.000	39.929	7.3323	3.3748	2.1172	2.1172	0.48503
	16.000	28.469	3.8655	2.4523	1.5763	0.78611	0.78611	0.78611		26.000	42.598	8.1726	3.5304	2.3149	1.9748	0.43302
	18.000	30.605	4.4329	2.6452	1.6758	0.72761	0.72761	0.72761		28.000	45.431	9.0717	3.6778	2.4666	1.8310	0.38488
	20.000	32.834	5.0501	2.8826	1.7828	0.66743	0.66743	0.66743		30.000	48.483	10.0386	3.8178	2.6294	1.6838	0.34053
	22.000	35.157	5.7171	3.0129	1.8975	0.60746	0.60746	0.60746		32.000	51.859	11.0931	3.9524	2.8067	1.5299	0.29949
										36.000	55.812	12.2888	3.0073	3.0073	1.3604	0.26054

Oblique Shock Tables ($\gamma = 1.4$)

M_1	θ	β	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	M_1	θ	β	$\frac{p_2}{p_1}$	$\frac{\rho_2}{\rho_1}$	$\frac{T_2}{T_1}$	M_2	$\frac{p_{02}}{p_{01}}$	
3.95	38.000	61.406	13.8667	4.2383	3.2718	0.21889	4.00	28.000	80.359	17.9765	4.5402	3.9594	0.5513	0.14555	
	38.612	66.026	15.0309	4.3358	3.4667	0.9711	0.19376	26.000	81.359	18.0787	4.5464	3.9765	0.5302	0.14419	
	38.000	70.101	15.9275	4.4038	3.6167	0.8345	0.17703	24.000	82.261	18.1615	4.5514	3.9903	0.5126	0.14310	
	36.000	73.928	16.6412	4.4541	3.7361	0.7172	0.16509	22.000	83.087	18.2296	4.5555	4.0017	0.4978	0.14221	
	34.000	76.131	16.9904	4.4776	3.7945	0.6554	0.15965	20.000	83.854	18.2861	4.5588	4.0111	0.4852	0.14148	
	32.000	77.777	17.22203	4.4927	3.8330	0.6125	0.15620	18.000	84.574	18.3331	4.5616	4.0190	0.4746	0.14087	
	30.000	79.120	17.38777	4.5035	3.8609	0.5798	0.15375	16.000	85.256	18.3723	4.5639	4.0255	0.4655	0.14037	
	28.000	80.268	17.5161	4.5117	3.8824	0.5537	0.15191	14.000	85.907	18.4049	4.5659	4.0310	0.4579	0.13996	
	26.000	81.281	17.6179	4.5181	3.8994	0.5324	0.15047	12.000	86.533	18.4317	4.5674	4.0355	0.4515	0.13962	
	24.000	82.192	17.7003	4.5232	3.9132	0.5147	0.14932	10.000	87.139	18.4535	4.5687	4.0391	0.4463	0.13934	
	22.000	83.028	17.7680	4.5274	3.9245	0.4997	0.14838	8.000	87.730	18.4707	4.5697	4.0420	0.4421	0.13912	
	20.000	83.803	17.8241	4.5309	3.9339	0.4870	0.14761	6.000	88.307	18.4837	4.5705	4.0442	0.4390	0.13896	
	18.000	84.529	17.8708	4.5338	3.9417	0.4762	0.14698	4.000	88.876	18.4928	4.5710	4.0457	0.4367	0.13885	
	16.000	85.218	17.9097	4.5362	3.9482	0.4671	0.14645	2.000	89.439	18.4982	4.5713	4.0466	0.4354	0.13878	
	14.000	85.874	17.9420	4.5381	3.9536	0.4594	0.14601								
	12.000	86.505	17.9686	4.5398	3.9581	0.4530	0.14566								
	10.000	87.116	17.9902	4.5411	3.9617	0.4477	0.14537								
	8.000	87.711	18.0072	4.5421	3.9645	0.4435	0.14514								
	6.000	88.294	18.0201	4.5429	3.9667	0.4404	0.14497								
	4.000	88.868	18.0291	4.5434	3.9682	0.4381	0.14485								
	2.000	89.435	18.0345	4.5438	3.9691	0.4368	0.14478								
4.00	2.000	15.813	1.2194	2.1166	1.6879	1.2540	3.4273	0.95845	1.0586	3.8521	0.99920	0.99401	0.98110		
	4.000	4.000	17.258	1.4763	1.7743	1.4980	1.1844	3.5679	3.7089	3.7089	0.99401	0.99401	0.98110		
	6.000	18.812	2.0471	2.5061	1.8853	1.3233	1.3233	3.2860	3.2860	3.2860	0.92542	0.98264	0.98264		
	8.000	22.234	24.095	2.9445	2.0870	1.4109	1.4109	3.1439	3.1439	3.1439	0.83170	0.83170	0.83170		
	12.000	26.050	3.4334	3.4334	2.2898	1.4994	1.4994	2.8570	2.8570	2.8570	0.77474	0.77474	0.77474		
	14.000	28.098	3.9741	2.4909	1.5954	1.6991	1.6991	2.7128	2.7128	2.7128	0.71422	0.71422	0.71422		
	16.000	30.236	4.5667	2.6877	2.8782	1.8107	1.8107	2.5686	2.5686	2.5686	0.65240	0.59123	0.59123		
	20.000	32.464	5.2116	3.0611	1.9304	1.9304	1.9304	2.4246	2.4246	2.4246	0.53224	0.53224	0.53224		
	22.000	34.786	5.9090	10.2259	6.6592	3.2352	2.0583	2.2809	2.2809	2.2809	0.47648	0.47648	0.47648		
	24.000	37.208	6.6592	7.4625	3.4002	2.1947	2.1947	2.1374	2.1374	2.1374	0.42453	0.42453	0.42453		
	26.000	39.740	8.3215	3.5561	3.7034	2.3401	2.3401	1.9935	1.9935	1.9935	0.37666	0.37666	0.37666		
	28.000	42.402	9.2397	4.2556	3.4843	2.4949	2.4949	1.8485	1.8485	1.8485	0.33272	0.33272	0.33272		
	30.000	45.224	14.0647	15.4261	3.8430	2.6609	1.7006	1.7006	0.8196	0.8196	0.8196	0.16833	0.16833	0.16833	
	32.000	48.258	16.4407	16.4407	4.4403	3.7026	2.8413	2.8413	0.29223	0.29223	0.29223	0.14729	0.14729	0.14729	
	34.000	51.605	11.2995	12.5100	4.1091	3.0444	1.3776	1.3776	0.25409	0.25409	0.25409	0.14419	0.14419	0.14419	
	36.000	55.495	14.0647	14.0647	4.2556	3.3049	1.1637	1.1637	0.21432	0.21432	0.21432	0.14310	0.14310	0.14310	
	38.000	60.827	15.4261	15.4261	4.3665	3.5329	0.9717	0.9717	0.18613	0.18613	0.18613	0.14221	0.14221	0.14221	
	38.774	66.059	17.1095	17.1095	4.4403	3.7026	0.8196	0.8196	0.15785	0.15785	0.15785	0.14148	0.14148	0.14148	
	36.000	74.161	17.4525	17.4525	4.4855	3.8144	0.7109	0.7109	0.15282	0.15282	0.15282	0.14087	0.14087	0.14087	
	34.000	76.297	17.6808	17.6808	4.5220	3.9099	0.6090	0.6090	0.14959	0.14959	0.14959	0.13934	0.13934	0.13934	
	32.000	77.908	17.8477	17.8477	4.5324	3.9379	0.5769	0.5769	0.14729	0.14729	0.14729	0.13878	0.13878	0.13878	