TABLE 18 Neurons, Weights and Biases for the Second Hidden Layer of the Reduced (Refractive Index & Sound Velocity) ANN Model

	First Hidden Layer																			
Second Hidden Layer Neuron	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	-0.1130	0.2500	0.3210	-0.2440	-0.0862	0.2500	0.1120	0.1610	-0.0157	-0.0831	0.0158	-0.0696	-0.1380	-0.5570	-0.2110	-0.3910	0.0779	-0.0925	0.2760	0.2720
2	0.1920	0.0169	-0.0515	-0.0243	0.2800	0.1490	0.0796	0.0199	-0.0004	-0.3660	0.0374	-0.2410	0.0160	-0.0773	0.1210	0.1660	-0.4440	-0.3050	0.2660	-0.0588
3	0.3380	0.0986	-0.2280	0.1810	0.0651	0.2510	-0.1890	-0.2970	-0.0560	-0.3270	0.1470	-0.3060	-0.0109	0.0110	-0.0519	0.3530	0.0070	-0.1130	0.0289	0.0852
4	0.0029	-0.2870	-0.1520	0.2410	-0.0852	-0.2720	-0.3080	0.2290	0.0400	-0.3450	-0.1940	-0.2340	-0.2220	0.2550	-0.2780	-0.1950	-0.2800	-0.3630	0.1030	0.2020
5	-0.0007	0.1900	-0.3000	0.3990	0.0803	-0.0425	-0.0978	0.0110	-0.1940	-0.1910	0.2480	-0.1630	-0.4170	0.3800	-0.0309	0.1470	0.3210	-0.0858	-0.3130	0.0712
6	0.0756	-0.3330	0.3130	-0.3870	0.3590	0.0350	0.3970	0.3560	-0.0578	0.1760	0.3720	0.3200	0.2500	0.1930	-0.2960	-0.2860	0.2310	0.0960	-0.1210	0.0331
7	0.1040	-0.2420	0.4010	0.2160	0.0436	-0.0560	0.1370	0.2910	-0.1320	-0.0003	0.2710	-0.3060	-0.0497	0.1310	-0.1280	0.3250	-0.3770	0.2800	0.1590	0.2920
8	-0.4420	-0.0948	0.2920	0.1810	0.4170	0.0836	-0.3010	0.2410	0.4190	-0.2300	0.3710	-0.3380	-0.1050	0.3020	-0.1650	0.1830	-0.0523	0.2230	0.1380	-0.4550
9	-0.2180	0.0290	0.3720	0.0618	-0.2620	0.1110	0.4140	-0.2540	-0.2210	-0.0907	-0.0221	0.0773	-0.4180	-0.0377	0.0335	0.0189	-0.5090	0.2020	0.3530	-0.3040
10	-0.2720	0.2590	-0.1100	-0.1360	0.2760	0.2640	-0.1120	-0.2390	-0.2080	0.1240	0.4520	0.3210	0.2330	-0.0212	0.0116	-0.1730	-0.3350	0.1470	-0.1530	0.3590
11	-0.2510	0.3300	-0.2370	-0.0599	0.1830	-0.2230	-0.0796	-0.2410	-0.0792	0.1490	0.0378	0.3650	-0.2550	-0.4200	-0.0699	0.3110	-0.3300	-0.4470	-0.3490	0.1100
12	0.0316	0.3330	-0.3090	-0.1350	0.0516	0.2210	0.0025	-0.2220	0.3730	-0.1260	-0.1940	-0.2900	-0.1520	0.3920	0.0601	-0.1390	0.2470	0.0685	-0.0674	0.1090
13	-0.0388	-0.3170	-0.2070	-0.1660	0.2590	-0.2280	-0.2220	-0.1330	0.1220	0.3330	-0.1190	0.1020	0.0698	0.1670	0.1320	0.1160	-0.0554	-0.2800	0.1730	-0.0591
14	0.0190	0.0555	0.1490	0.1250	0.0242	-0.3140	0.0072	0.1240	-0.0191	0.2440	0.0171	-0.1740	-0.3590	-0.4420	0.2790	-0.4100	-0.0249	-0.3060	0.0589	-0.2580
15	-0.2480	-0.1440	0.1710	0.0332	0.2420	-0.3640	0.2500	0.3490	0.2740	-0.2760	-0.1150	-0.1000	0.1400	-0.3710	-0.2810	-0.0389	-0.0917	-0.4830	-0.0861	-0.3190
16	0.2560	-0.3850	-0.1730	-0.2310	-0.2540	-0.2530	0.4930	0.0831	-0.1310	-0.3690	-0.1120	-0.3630	-0.3610	-0.1680	-0.0180	0.1160	0.2210	0.0690	-0.1470	-0.4690
17	-0.0384	-0.3590	0.5390	-0.2420	-0.3240	-0.0394	0.2010	0.3080	-0.4700	0.2240	0.0091	0.0401	0.0514	0.1080	-0.2060	0.0955	-0.4210	0.3750	-0.0885	0.2980
18	-0.2950	-0.3000	-0.1890	0.1410	-0.2440	0.0490	-0.2770	-0.2220	-0.2540	-0.1050	0.2530	-0.3600	0.0608	0.1560	-0.3110	0.1850	-0.1350	0.3540	0.0164	0.4220
19	-0.2430	-0.3460	0.0064	-0.0890	0.1500	-0.1740	0.3440	-0.2930	0.3920	-0.1010	0.2510	0.0933	-0.1920	-0.2670	-0.2180	-0.0743	-0.0221	-0.2540	0.0888	-0.0590
20	0.3380	-0.1120	0.0249	-0.2560	-0.2260	0.0755	-0.0957	0.0723	0.1660	-0.3140	-0.1740	-0.1030	0.2620	-0.0429	0.3520	-0.0546	-0.5240	-0.3140	-0.2880	0.2930

21	0.3230	-0.2700	-0.1200	0.3670	-0.1290	0.2630	0.1230	0.0128	0.1540	0.1810	0.3660	-0.2640	0.0532	0.2870	0.2850	-0.3410	-0.0020	-0.1740	-0.1340	-0.0187
22	0.0352	-0.0088	0.5040	-0.2230	-0.0909	-0.0749	0.3040	-0.1270	-0.1930	-0.2020	-0.1280	0.1080	0.3320	-0.0513	0.0652	-0.4480	-0.1390	0.2900	-0.3190	0.4650
23	0.1490	-0.0417	-0.0190	0.0193	0.1130	0.4670	-0.3390	-0.0389	-0.6830	0.1560	-0.2640	0.3310	0.1060	-0.5160	-0.0698	-0.1700	0.0358	0.0629	-0.3860	0.3450
24	-0.2800	0.3840	-0.2310	0.2820	-0.0917	-0.3810	0.1120	-0.4170	0.4020	0.2990	-0.1880	0.1770	0.1130	-0.1740	0.3190	0.4320	-0.1500	-0.1340	0.1130	-0.3120
25	0.1340	-0.2330	0.3780	0.1480	0.3840	0.0049	0.4240	0.3490	-0.1530	0.0334	0.1990	0.0184	0.1930	0.4150	0.0104	-0.1710	-0.2410	-0.2550	0.2260	-0.0698
26	0.1170	-0.0838	0.2580	-0.1580	-0.1960	0.2170	0.0862	0.1630	0.0054	-0.1030	-0.3430	0.1080	0.3290	0.0529	-0.2430	-0.0290	0.1090	-0.2080	0.0738	-0.0798
27	-0.0954	-0.2500	-0.2370	0.0241	0.2720	-0.4600	-0.2940	-0.0971	0.0194	0.2640	0.3480	-0.3600	0.2010	0.1520	-0.0396	0.1520	0.2660	-0.2790	-0.0808	-0.1420
28	-0.4080	-0.0986	0.1700	-0.0138	0.1070	-0.3740	-0.0988	0.1680	-0.3900	-0.2110	0.2860	-0.4180	0.2430	0.4610	0.3830	-0.2890	-0.1340	-0.1910	-0.1510	-0.3600
29	0.2320	-0.1360	0.0196	-0.1240	-0.2440	-0.1990	0.3110	0.0540	0.2630	0.1390	0.0372	-0.0138	0.1140	-0.3000	-0.3360	0.3680	-0.0042	0.2600	-0.3650	0.2610
30	-0.2010	-0.3090	0.0304	0.1500	-0.1350	-0.0872	0.0809	-0.0779	0.3430	-0.1970	0.2830	-0.0369	0.2690	-0.1400	-0.3710	0.3700	0.3680	0.0276	0.0356	0.0485
31	-0.0109	0.2620	0.0684	-0.3730	0.3830	-0.3660	0.1570	0.0693	-0.3550	-0.1110	0.0335	0.0252	0.0903	-0.2630	-0.1930	0.3330	0.2560	-0.2560	-0.0864	0.0487
32	0.1300	0.1450	0.2550	-0.1580	0.3840	0.2800	0.0257	0.3190	0.3320	-0.3570	0.0169	0.0013	-0.2150	0.2470	-0.3410	0.3160	-0.3590	-0.3670	-0.0673	-0.2200
33	0.1370	-0.3300	0.5440	-0.3770	-0.1580	0.0080	0.2370	0.1800	-0.5010	-0.1450	-0.4210	0.0773	0.0540	-0.3490	-0.1650	-0.3110	-0.1160	0.2390	-0.0323	-0.1220
34	0.3330	0.1900	0.1750	-0.1040	-0.3110	0.3150	-0.2790	-0.4850	-0.0676	0.1020	0.3610	-0.2340	0.1930	-0.2300	-0.2990	0.2350	0.0459	0.0252	0.3210	-0.1690
35	-0.2650	-0.3780	0.2790	0.0695	-0.0657	-0.1310	0.0574	0.1130	0.2480	0.0132	0.0252	-0.4200	-0.0322	0.1710	0.2310	-0.2350	0.3410	-0.3970	-0.0309	-0.5530
36	-0.4190	0.1270	0.2730	-0.2380	0.2420	0.1230	0.4570	0.0449	-0.1700	0.0361	0.4880	-0.2730	-0.2990	-0.1060	-0.1830	0.0858	-0.0591	0.1280	-0.2980	0.0320
37	0.1960	-0.3640	-0.3330	0.3330	-0.0504	0.0437	-0.1210	-0.0168	-0.2780	0.4350	-0.2780	0.0938	-0.3890	-0.2170	0.2900	0.3750	0.3900	0.1480	0.0185	0.2540
38	-0.1250	0.1690	0.3140	-0.3080	0.3440	-0.1110	-0.3820	-0.1420	-0.0428	0.1510	0.3200	-0.0004	-0.3230	-0.2000	0.3560	-0.2130	-0.2230	-0.1290	-0.1020	-0.2820
39	0.2530	-0.3750	0.1610	-0.3010	0.4360	0.0415	0.1960	0.1800	0.1160	-0.0007	0.2630	-0.0127	-0.8470	0.3670	-0.2930	0.1230	0.0762	0.1090	-0.2980	0.2700

Second Hidden Layer

Neuron	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Bias
1	-0.2730	0.0241	0.0586	0.1230	-0.3640	0.4180	-0.0802	0.3160	-0.2580	0.2790	0.0292	0.0445	0.0115	0.2910	0.0121	0.4050	-0.1890	0.2620	0.2830	-0.2870	-0.1300
2	-0.1890	-0.2880	-0.1730	-0.2920	-0.4680	0.0963	0.1120	-0.1130	-0.2070	-0.0012	-0.3620	0.1670	0.1280	0.3690	-0.0649	-0.1080	0.0911	-0.3640	0.1360	0.0472	-0.0060

3	0.0824	-0.3320	0.0834	0.0689	0.2140	0.2460	-0.3180	-0.1520	0.0215	0.2540	-0.1190	-0.2150	0.1340	0.2970	-0.2680	0.0341	-0.1290	-0.1840	-0.3580	0.2840	-0.2810
4	0.0893	0.2420	0.0307	0.3120	0.1910	0.3050	0.3240	0.3570	0.1880	0.3640	-0.2310	-0.2110	-0.2420	-0.0009	-0.2650	0.2470	-0.2180	-0.3790	0.2430	-0.2340	0.1110
5	0.2660	-0.3340	0.1300	-0.3480	0.3930	-0.3470	-0.3070	0.4240	0.2150	0.3310	0.2440	0.2470	-0.0926	-0.2160	0.1730	0.0244	0.5080	-0.0909	0.2340	-0.0719	0.3590
6	0.2710	0.0494	-0.3220	-0.3120	0.0197	-0.0076	-0.1170	-0.0111	-0.2800	0.1310	0.3040	0.3420	-0.0285	0.2520	0.2470	-0.3650	0.2370	-0.5280	0.2230	0.3720	-0.2220
7	-0.0358	-0.0607	0.2880	0.1010	-0.1510	0.1890	-0.0261	-0.0277	0.3520	-0.2860	0.3980	0.2860	-0.0266	0.2570	-0.4420	-0.3840	-0.0780	-0.0569	0.2790	0.1100	0.3390
8	0.1120	-0.0708	0.1320	0.2400	-0.2110	-0.0409	0.2030	0.2640	-0.2500	0.1240	0.2240	0.1500	-0.2300	-0.1210	-0.2290	0.1440	-0.2230	-0.0033	0.3100	0.3630	-0.1380
9	-0.2270	0.2440	0.1670	0.0033	-0.1700	-0.3710	-0.1400	0.1080	-0.2710	0.2220	0.1310	0.1720	-0.3310	0.4130	0.1710	0.0056	0.2040	-0.0890	0.0505	0.1320	0.4180
10	0.0282	-0.2740	-0.0571	-0.0259	-0.3390	0.2080	0.3370	0.4490	0.2060	0.2130	-0.0665	-0.1800	-0.2940	-0.2830	-0.0382	0.1600	0.3900	-0.4600	0.2140	0.3370	-0.0764
11	-0.0297	0.2340	-0.1780	0.2200	0.2170	0.0996	-0.1510	0.1020	-0.2890	-0.1040	0.4440	-0.3110	-0.2700	0.1840	-0.1570	0.1150	-0.2330	-0.1200	-0.2480	0.1060	0.3660
12	0.3220	-0.2130	0.4240	-0.3430	0.0036	0.2010	-0.3630	0.2500	0.0003	0.5270	0.0604	-0.1120	0.0187	0.0065	0.0328	-0.3520	0.5280	-0.0426	0.1910	0.2680	-0.0493
13	0.3570	0.3450	0.3840	-0.1080	0.5010	0.3540	-0.2540	0.3480	0.4640	0.1770	0.2810	-0.0030	0.0358	0.2670	-0.0289	-0.2560	-0.1920	0.1600	0.3160	0.3140	-0.2050
14	-0.0115	0.4120	-0.0639	-0.0970	0.1810	0.3550	-0.3820	-0.3680	0.0968	-0.2860	-0.1490	0.2160	-0.1550	0.2590	-0.5380	-0.1340	0.1890	-0.1370	-0.1760	-0.3930	0.4180
15	0.0546	-0.2080	-0.2710	0.2860	-0.2560	-0.1530	-0.2860	-0.1730	-0.3360	0.1330	0.1880	-0.0471	0.2890	-0.1130	-0.1450	0.1470	-0.2460	0.1130	-0.2760	-0.2520	-0.0389
16	-0.1790	-0.4350	-0.2260	0.0623	-0.1380	-0.2760	0.1010	0.3770	0.4480	0.3390	-0.2290	0.4560	-0.1200	0.4730	0.3230	0.2110	-0.1630	0.0827	0.1550	-0.1650	0.4360
17	-0.0218	0.2120	-0.0201	0.2200	-0.0996	-0.0491	0.1340	-0.0855	0.0624	-0.0366	-0.2980	-0.0259	-0.0883	0.3030	0.0039	-0.2320	0.1990	0.1650	0.2060	0.1050	-0.0284
18	-0.1460	-0.0002	0.2940	0.1470	-0.3310	0.0808	-0.0047	0.2240	0.3140	0.1410	-0.0268	-0.3220	0.2880	0.2940	0.0685	-0.0824	-0.2120	0.0935	0.2750	-0.0016	-0.0134
19	-0.1430	0.3190	0.4000	-0.4270	-0.0802	-0.3670	-0.1450	0.3060	0.0910	-0.3340	0.2900	-0.1600	-0.2540	0.1960	0.3460	-0.0326	0.0948	0.0627	0.1100	-0.0681	-0.0467
20	-0.0757	0.2630	0.4100	0.1670	-0.0939	0.3280	0.0689	-0.1040	0.2590	0.2390	-0.1910	-0.0578	0.0517	0.3660	0.2950	-0.5640	0.2400	-0.2340	0.2460	0.0994	-0.2430
21	-0.3380	0.3370	0.2970	0.2730	0.3100	0.1590	-0.1330	-0.3640	0.2090	-0.2960	-0.3620	0.2770	-0.0921	0.2440	0.2370	-0.4540	0.4140	-0.0264	0.3810	0.1650	0.3660
22	-0.0518	0.2050	-0.0306	0.3290	0.0575	-0.3510	0.0622	0.1970	-0.1130	-0.1160	-0.1040	-0.2270	0.3280	-0.2470	0.0266	0.1070	-0.4230	0.0395	-0.3440	-0.0499	-0.2410
23	0.0831	0.1980	-0.0057	0.1180	0.4100	0.1190	0.2250	-0.0615	-0.4070	0.2060	-0.0358	-0.3850	-0.2600	0.1350	-0.3720	0.0546	0.0049	0.3020	-0.3770	-0.3620	0.3520
24	0.1650	-0.3540	-0.0870	0.1900	0.1660	-0.3150	-0.3580	0.2960	0.1360	0.2370	0.1390	0.3780	0.2800	-0.0392	0.2460	-0.1910	-0.1820	-0.3840	0.1600	0.0449	-0.1320
25	0.0142	-0.1400	0.0656	0.1770	0.1780	0.0130	-0.2910	-0.0520	0.2430	0.1050	-0.0088	0.1500	-0.2160	0.4340	0.0893	0.0348	0.0881	0.0479	0.1570	-0.0406	-0.0833
26	0.1350	0.1630	0.0975	0.1040	-0.2940	0.2350	-0.0977	-0.0799	0.2770	-0.3640	0.1580	0.0133	-0.2110	0.0938	0.0750	-0.1290	-0.2430	0.0005	0.0342	0.1580	0.2940

27	0.2840	0.1460	-0.2810	-0.0268	-0.1660	0.2460	-0.0308	0.2130	0.2660	0.0197	0.2720	0.4390	-0.1730	0.4530	0.0600	-0.1360	0.2340	-0.3820	-0.0679	0.4550	-0.0389
28	-0.0367	0.3100	-0.0807	0.1320	-0.3480	0.3960	-0.0883	-0.2700	-0.2210	-0.0311	-0.0597	0.0086	0.1270	0.2940	0.2920	0.3870	0.4010	-0.1280	-0.2870	0.3280	0.4150
29	0.1880	0.2810	-0.1410	-0.3250	-0.3330	0.3290	-0.2420	-0.3820	-0.1540	0.1030	-0.5220	0.0084	-0.0021	-0.0271	-0.3290	-0.0818	0.2060	0.1660	0.2080	-0.1210	0.3650
30	-0.2180	-0.3470	0.4060	-0.0490	-0.1130	-0.0974	0.2960	-0.2990	-0.1380	0.0404	0.1530	0.3010	-0.2890	0.2020	0.0073	0.2320	0.5000	0.0542	0.0797	0.3700	0.3550
31	0.3260	0.2310	0.0774	-0.0236	-0.2220	-0.2830	-0.3340	0.0838	0.1500	-0.2440	0.1750	0.1870	-0.3610	-0.1330	0.3800	-0.0907	-0.0522	0.2330	0.4460	-0.1470	-0.0919
32	0.3100	0.1300	0.0115	0.0298	0.2330	-0.2130	-0.3090	-0.1380	0.2270	0.2880	-0.3850	0.2100	-0.3050	-0.2590	0.1610	0.2330	0.4720	0.0809	-0.2720	0.0171	0.4060
33	0.2420	0.2010	0.2560	0.5010	0.5700	-0.4740	0.0251	-0.3590	-0.4110	-0.0292	-0.0418	-0.3860	0.1180	-0.1380	-0.2850	-0.1780	-0.4230	-0.2220	-0.2670	0.1840	-0.0154
34	-0.1170	0.3720	-0.1490	0.3640	-0.0036	0.0038	-0.2390	0.1490	-0.2370	0.2480	-0.3150	-0.1940	-0.3910	-0.0069	-0.0771	-0.4080	-0.2070	-0.1090	0.2070	-0.1420	0.3260
35	-0.3790	-0.0276	0.1140	-0.3410	0.1120	0.3910	-0.0957	-0.0765	0.3670	0.2200	0.1070	-0.2050	0.2610	-0.0786	0.1930	-0.3680	0.0401	-0.4460	0.3450	0.2160	0.4100
36	-0.0678	0.2650	0.0287	-0.2950	-0.4210	0.4100	0.0842	0.2690	0.2560	0.2190	0.0226	-0.0609	-0.1530	0.0761	0.4220	-0.1060	-0.1370	-0.1380	0.3630	0.4110	-0.0845
37	-0.0603	-0.1800	0.1390	-0.0983	0.1170	0.0986	0.1820	-0.1960	-0.0012	-0.1290	-0.2580	0.4070	-0.1000	0.3660	-0.1360	-0.6470	0.3620	-0.1590	-0.1610	0.0724	0.4610
38	0.2140	-0.0106	-0.3590	0.3200	0.2470	0.0174	-0.0384	-0.1490	-0.3600	0.3110	-0.3310	-0.1590	0.3370	-0.1420	-0.0017	0.0373	-0.3480	0.3090	-0.0060	-0.3920	-0.1270
39	0.4130	0.3740	0.0496	-0.0222	0.2280	-0.0449	-0.0397	0.5130	0.2090	0.2650	-0.5730	0.0793	0.1410	-0.1630	-0.2370	-0.4570	0.4560	0.0582	0.5070	0.2690	0.3590