Experimental numerical results of the paper: A Perry–type derivative–free algorithm for solving convex constrained nonlinear monotone equations and minimizing ℓ_1 regularized problem. Submitted to Optimization

The following tables contain the numerical experimental results of the paper titled "A Perry–type derivative–free algorithm for solving convex constrained nonlinear monotone equations and minimizing ℓ_1 regularized problem" by A. M. Awwal, P. Kumam, H. Mohammad, W. Watthayu and A. B. Abubakar.

Tables 1–4 contain the numerical results for general nonlinear equations 5.1.1–5.1.7 while tables 5–13 contain the numerical results for monotone nonlinear equations 5.2.1–5.2.10.

Table 1: Numerical results for problems 5.1.1 and 5.1.2

			DPP				MPD				LSQNONLIN			
Problem	**DIM**	**IP**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**
5.1.1	1000	x1	422	845	0.6254	9.94E-07	-	-	-	-	13	140014	1.0406	1.30E-11
		x2	646	1293	1.9086	9.8E-07	-	-	-	-	15	16016	1.2815	9.61E-11
		x3	545	1091	0.5862	9.92E-07	-	-	-	-	15	16016	1.2442	1.62E-13
		x4	849	1699	2.3312	9.71E-07	-	-	-	-	18	19019	1.4558	4.42E-10
		x5	916	1833	1.8609	9.65E-07	-	-	-	-	10	11011	0.9140	1.72E-09
		x6	466	933	0.7681	9.94E-07	-	-	-	-	6	7007	0.5468	2.24E-11
		x7	520	1041	1.4007	9.14E-07	-	-	-	-	14	15015	1.2059	7.13E-10
		x9	458	917	1.0327	9.55E-07	-	-	-	-	7	8008	0.6124	1.30E-07
		x10	447	895	0.5158	9.88E-07	-	-	-	-	7	8008	1.4998	6.52E-08
		x11	385	771	0.4513	9.08E-07	-	-	-	-	-	-	-	-
		x12	536	1073	1.4636	9.28E-07	-	-	-	-	-	-	-	-
		x13	637	1275	0.6998	4.91E-07	-	-	-	-	9	10010	0.8008	1.09E-10
		x14	420	841	0.7197	5.94E-07	-	-	-	-	14	15015	1.1930	1.70E-09
		x15	488	977	0.55751	8.05E-07	-	-	-	-	26	27027	1.0801	1.56E-07
	5000	x1	466	933	4.2844	6.52E-07	-	-	-	-	10	55011	20.0229	2.70E-10
		x2	531	1063	4.1997	9.76E-07	-	-	-	-	16	85017	32.2950	3.35E-10
		x3	759	1519	8.4600	9.94E-07	-	-	-	-	13	70014	28.3132	3.20E-09
		x4	712	1425	6.3864	9.37E-07	-	-	-	-	17	90018	33.2679	1.64E-09
		x5	516	1033	3.8582	9.83E-07	-	-	-	-	13	70014	25.4307	1.82E-12
		x6	440	881	3.2306	9.41E-07	-	-	-	-	6	35007	13.1260	2.64E-07
		x7	720	1441	6.6270	9.58E-07	-	-	-	-	15	80016	31.3672	1.20E-09
		x9	407	815	4.4749	9.96E-07	-	-	-	-	8	45009	14.8810	1.24E-09
		x10	333	667	3.2233	6.64E-07	-	-	-	-	6	35007	12.4793	2.14E-08
		x11	332	665	3.0836	8.77E-07	-	-	-	-	-	-	-	-
		x12	513	1027	5.1906	9.37E-07	-	-	-	-	-	-	-	-
		x13	498	997	4.0878	9.56E-07	-	-	-	-	-	-	-	-
		x14	392	785	3.0830	9.91E-07	-	-	-	-	-	-	-	-
		x15	404	809	2.1516	9.53E-07	-	-	-	-	41	210042	27.0551	6.03E-11
5.1.2	1000	x1	475	951	1.5427	9.69E-07	-	-	-	-	8	9009	1.2899	4.15E-09
		x2	457	915	0.7763	8.1E-07	-	-	-	-	20	21021	2.1792	1.97E-11
		x3	556	1113	1.3289	8.42E-07	968	1937	1.2227	9.47E-07	18	19019	1.8844	1.40E-11
		x4	660	1321	1.5753	9.9E-07	970	1941	2.2063	6.9E-07	17	18018	1.8523	3.63E-08
		x5	638	1277	1.9164	9.85E-07	-	-	-	-	11	12012	1.2107	7.75E-10
		x6	529	1059	1.6887	9.83E-07	600	1201	0.7557	7.42E-07	6	7007	0.7255	8.02E-11
		x7	596	1193	1.5967	9.2E-07	-	-	-	-	25	26026	2.6066	1.64E-07
		x9	532	1065	1.4394	9.05E-07	-	-	-	-	8	7007	0.8060	5.29E-07
		x10	491	983	1.3261	9.56E-07	806	1613	1.0458	5.38E-07	7	8008	0.8046	7.73E-08
		x11	350	701	0.9660	9.53E-07	-	-	-	-	-	-	-	-
		x12	559	1119	1.1710	8.29E-07	824	1649	1.4994	6.2E-07	10	11011	1.1084	3.56E-07
		x13	412	825	1.6665	9.04E-07	815	1631	1.1767	9.94E-07	9	10010	1.0299	7.64E-10
		x14	512	1025	1.2701	8.41E-07	816	1633	1.9014	8.83E-07	-	-	-	-
		x15	507	1015	0.78963	8.99E-07	-	-	-	-	33	34034	1.2013	7.59E-13
	5000	x1	476	953	7.2773	9.38E-07	865	1731	8.3414	5.22E-07	10	55011	36.1470	6.36E-09
		x2	586	1173	7.3841	8.11E-07	-	-	-	-	23	120024	74.8632	1.70E-10
		x3	596	1193	7.8625	9.65E-07	-	-	-	-	19	100020	60.7995	7.34E-09
		x4	702	1405	8.6168	9.65E-07	995	1991	7.8182	6.59E-07	15	80016	47.4654	2.97E-07
		x5	665	1331	8.0973	8.4E-07	-	-	-	-	16	85017	50.2866	4.76E-12
		x6	511	1023	5.6933	9.6E-07	624	1249	5.5355	5.75E-07	6	35007	16.5406	2.33E-07
		x7	586	1173	6.0457	9.57E-07	-	-	-	-	-	-	-	-
		x9	533	1067	6.8590	9.58E-07	-	-	-	-	8	45009	22.2349	1.85E-09
		x10	500	1001	5.2751	9.85E-07	790	1581	6.0865	5.75E-07	6	35007	16.5315	1.97E-07
		x11	362	725	3.9470	9.07E-07	650	1301	5.0070	7.82E-07	25	130026	72.2535	2.06E-09
		x12	485	971	5.1688	3.27E-07	803	1607	6.3100	6.97E-07	11	60012	31.6845	3.16E-08
		x13	499	999	4.7399	9.12E-07	-	-	-	-	-	-	-	-
		x14	529	1059	6.2710	9.27E-07	840	1681	6.3684	6.96E-07	37	190038	107.6571	2.02E-08
		x15	467	935	3.9788	9.28E-07	874	1749	5.3678	7.53E-07	14	75015	71.0122	2.05E+13

Table 2: Numerical results for problems 5.1.3 and 5.1.4

			DPP				MPD				LSQNONLIN			
Problem	**DIM**	**IP**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**
5.1.3		x1	30	61	1.3230	5.42E-07	143	287	4.3716	9.06E-07	4	5005	10.3934	1.89E-12
		x2	46	93	3.4917	3.93E-07	116	233	3.6699	9.53E-07	14	15015	32.2641	2.91E-08
		x3	39	79	2.9297	6.4E-07	120	241	4.5149	8.29E-07	7	8008	15.9070	1.42E-08
		x4	34	69	1.3477	7.84E-07	169	339	7.1546	9.73E-07	7	10010	19.8610	1.21E-12
		x5	45	91	3.6360	3.34E-07	162	325	3.4402	9.49E-07	6	7007	12.9047	1.44E-13
		x6	49	99	3.9800	7.11E-07	104	209	2.9332	9.52E-07	7	8008	15.7993	5.27E-08
		x7	46	93	3.7980	8.1E-07	177	355	4.5541	9.56E-07	13	14014	27.2606	2.15E-07
	1000	x8	32	65	4.6242	3.26E-07	183	367	4.0275	9.99E-07	6	7007	13.7751	6.09E-07
		x9	34	69	1.9857	5.34E-07	83	167	2.0925	9.08E-07	8	9009	17.8692	1.37E-08
		x10	28	57	1.7806	4.75E-07	168	337	6.8842	9.5E-07	5	6006	11.2337	5.64E-08
		x11	28	57	3.2888	3.99E-07	102	205	3.6440	6.44E-07	6	7007	12.7857	3.79E-10
		x12	57	115	3.8454	5.56E-07	196	393	5.2430	9.1E-07	10	11011	20.8603	2.53E-08
		x13	26	53	2.1978	2.61E-07	87	175	2.9585	6.75E-07	4	5005	9.1988	3.92E-10
		x14	23	47	1.6613	9.12E-07	83	167	2.8920	7.17E-07	7	8008	14.5198	7.07E-07
		x15	49	99	1.724	2.85E-07	118	237	2.4933	9.87E-07	7	8008	13.2411	3.81E-10
		x1	28	57	10.7954	4.83E-07	131	263	21.2707	9.39E-07	4	25005	228.2259	1.89E-12
		x2	94	189	36.5803	8.33E-07	153	307	25.8935	8.94E-07	15	80016	721.2084	1.44E-07
		x3	67	135	19.5590	2.58E-07	132	265	24.4659	7.94E-07	8	45009	407.8396	8.65E-10
		x4	30	61	6.7214	5.23E-07	151	303	27.1983	9.49E-07	10	55011	545.5740	2.37E-13
		x5	52	105	11.8423	3.55E-07	116	233	17.2172	9.66E-07	6	35007	347.4983	9.60E-08
		x6	85	171	26.7619	9.18E-07	187	375	24.1148	9.73E-07	8	45009	453.3148	5.35E-09
		x7	52	105	13.8590	7.62E-07	105	211	15.7544	8.76E-07	15	80016	920.7487	9.94E-14
	5000	x8	32	65	6.8817	9.12E-07	169	339	20.3689	9.11E-07	7	40008	442.9817	5.56E-08
		x9	43	87	9.7835	3.65E-07	120	241	17.0023	7.55E-07	9	50010	541.5937	5.67E-09
		x10	31	63	8.5254	8.93E-07	165	331	20.0570	9.99E-07	6	35007	421.9235	3.67E-12
		x11	25	51	6.0765	8.06E-07	171	343	23.7837	9.83E-07	7	40008	434.6823	4.64E-13
		x12	119	239	43.6141	5.85E-07	117	235	20.8932	9.81E-07	11	60012	732.2555	1.63E-08
		x13	25	51	6.2327	5.57E-07	76	153	7.4901	8.54E-07	5	30006	332.2781	2.50E-14
		x14	27	55	6.4885	9.25E-07	169	339	24.2997	9.87E-07	8	45009	519.3971	2.70E-08
		x15	50	101	8.381	3.15E-07	118	237	12.4321	7.09E-07	8	45009	511.2201	2.71E-12
5.1.4		x1	12	25	0.0255	9.41E-07	27	55	0.0138	6.39E-07	5	6006	0.5721	5.37E-14
		x2	13	27	0.0517	9.55E-07	29	59	0.0155	5.46E-07	6	7007	0.6249	9.75E-12
		x3	13	27	0.0180	5.02E-07	28	57	0.0177	5.55E-07	5	6006	0.5204	1.99E-12
		x4	18	37	0.0295	3.24E-07	24	49	0.0150	5.35E-07	6	7007	0.6463	2.04E-13
		x5	13	27	0.0172	3.95E-07	27	55	0.0130	8.75E-07	5	6006	0.5336	7.11E-13
		x6	12	25	0.0719	4.2E-07	26	53	0.0132	5.73E-07	3	4004	0.3701	8.91E-07
		x7	13	27	0.0565	7.53E-07	28	57	0.0258	8.56E-07	6	7007	0.6183	3.38E-12
	1000	x8	12	25	0.1002	5.93E-07	26	53	0.0308	8.08E-07	4	5005	0.4197	1.20E-13
		x9	11	23	0.0154	8.09E-07	25	51	0.0277	6.76E-07	3	4004	0.3425	3.55E-14
		x10	12	25	0.0140	7.67E-07	27	55	0.0149	5.22E-07	4	5005	0.4534	3.93E-13
		x11	12	25	0.0150	7.74E-07	27	55	0.0128	5.26E-07	4	5005	0.4346	1.34E-12
		x12	12	25	0.0147	4.39E-07	26	53	0.0160	6.03E-07	4	5005	0.4283	2.22E-14
		x13	12	25	0.0257	9.06E-07	27	55	0.0136	6.16E-07	5	6006	0.5375	3.29E-14
		x14	12	25	0.0163	5.65E-07	26	53	0.0138	7.69E-07	4	5005	0.4555	5.19E-13
		x15	13	27	0.009719	3.06E-07	27	55	0.011096	6.8E-07	5	6006	0.6521	2.66E-13
		x1	13	27	0.0655	6.46E-07	28	57	0.0791	7.16E-07	5	30006	10.5951	1.82E-07
		x2	14	29	0.1470	6.74E-07	30	61	0.0614	6.11E-07	7	40008	14.0736	1.30E-11
		x3	14	29	0.1568	3.43E-07	29	59	0.1371	6.21E-07	6	35007	12.4250	8.39E-14
		x4	18	37	0.1909	7.21E-07	24	49	0.1121	5.36E-07	6	35007	12.3974	9.59E-07
		x5	13	27	0.0859	8.84E-07	28	57	0.1447	9.79E-07	6	35007	11.6380	5.20E-14
		x6	12	25	0.0534	9.46E-07	27	55	0.0690	6.42E-07	4	25005	8.2832	3.30E-08
		x7	14	29	0.1798	5.29E-07	29	59	0.0678	9.59E-07	7	40008	13.2578	4.63E-12
	5000	x8	13	27	0.0624	4.08E-07	27	55	0.0850	9.05E-07	4	25005	8.3649	2.71E-07
		x9	12	25	0.0540	5.58E-07	26	53	0.0507	7.57E-07	3	20004	6.5951	4.70E-08
		x10	13	27	0.1295	5.27E-07	28	57	0.0782	5.84E-07	5	30006	9.9280	6.66E-15
		x11	13	27	0.2050	5.32E-07	28	57	0.1010	5.89E-07	5	30006	9.7382	4.89E-14
		x12	12	25	0.1176	9.95E-07	27	55	0.1651	6.75E-07	4	25005	8.3623	8.60E-07
		x13	13	27	0.0597	6.22E-07	28	57	0.1289	6.9E-07	7	35006	11.5420	4.44E-15
		x14	13	27	0.1074	3.89E-07	27	55	0.1301	8.62E-07	4	25005	8.1616	6.63E-07
		x15	13	27	0.049022	6.88E-07	28	57	0.065137	7.63E-07	5	30006	10.2896	3.66E-07

Table 3: Numerical results for problems 5.1.5 and 5.1.6

			DPP				MPD				LSQNONLIN			
Problem	**DIM**	**IP**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**
5.1.5		x1	17	35	0.0146	8.09E-07	26	53	0.0126	8.91E-07	2	3003	0.2503	3.84E-10
		x2	-	-	-	-	93	187	0.8534	8.82E-07	-	-	-	-
		x3	35	71	0.0662	9.86E-07	57	115	0.1719	6.63E-07	12	13013	1.1547	1.78E-15
		x4	35	71	0.0355	9.22E-07	71	143	0.2575	6.69E-07	22	23023	2.0100	1.72E-15
		x5	32	65	0.0279	5.54E-07	39	79	0.0314	7.49E-07	4	5005	0.4438	4.42E-14
		x6	43	87	0.0661	7.29E-07	144	289	0.2051	8.42E-07	7	8008	0.7162	6.30E-09
		x7	38	77	0.0863	9.39E-07	72	145	0.1630	8.8E-07	92	93093	8.1511	2.44E-09
	1000	x8	32	65	0.0710	8.47E-07	39	79	0.0323	8.37E-07	4	5005	0.4116	1.21E-11
		x9	37	75	0.0516	9.5E-07	61	123	0.2147	7.45E-07	12	13013	1.1359	2.46E-09
		x10	30	61	0.0373	5.33E-07	39	79	0.0689	9.57E-07	3	4004	0.3614	4.24E-11
		x11	31	63	0.0654	8.08E-07	40	81	0.0688	7.53E-07	3	4004	0.3724	1.10E-07
		x12	33	67	0.1238	8.58E-07	61	123	0.1517	8.73E-07	32	33033	4.0013	2.44E-09
		x13	30	61	0.0719	7.1E-07	55	111	0.0345	7.15E-07	2	3003	0.2615	3.49E-10
		x14	94	189	0.6520	8.44E-07	102	205	0.2729	9.53E-07	16	17017	1.4661	3.47E-18
		x15	28	57	0.024471	9.45E-07	35	71	0.024564	7.52E-07	4	5005	1.2014	1.65E-14
		x1	17	35	0.0881	8.04E-07	26	53	0.0652	8.87E-07	2	15003	5.0671	3.34E-14
		x2	44	89	0.5841	6.14E-07	82	165	2.8911	7.32E-07	-	-	-	-
		x3	47	95	1.1229	8.28E-07	39	79	0.1397	8.64E-07	9	50010	19.9945	6.76E-12
		x4	54	109	0.3754	9.98E-07	65	131	0.6102	6.91E-07	19	100020	39.9828	5.49E-12
		x5	30	61	0.1402	7.11E-07	38	77	0.1185	8.12E-07	4	25005	9.2630	3.30E-10
		x6	35	71	0.1876	8.03E-07	40	81	0.1296	9.8E-07	6	35007	14.0282	6.60E-11
		x7	-	-	-	-	87	175	1.9213	8.12E-07	89	450090	180.9928	4.74E-11
	5000	x8	30	61	0.2498	6.34E-07	38	77	0.1016	9.03E-07	4	25005	9.7429	4.12E-10
		x9	36	73	0.7128	9.6E-07	570	1141	8.7491	6.51E-07	9	50010	18.1894	5.93E-11
		x10	34	69	0.3866	8.13E-07	38	77	0.1050	9.47E-07	4	25005	10.4435	3.75E-15
		x11	30	61	0.3215	5.79E-07	40	81	0.1215	8.43E-07	4	25005	9.0540	6.67E-14
		x12	53	107	1.0391	8.94E-07	97	195	2.7151	7.53E-07	29	150030	57.1945	4.71E-11
		x13	32	65	0.1479	5.47E-07	45	91	0.2618	8.75E-07	2	15003	4.6077	3.17E-14
		x14	113	227	4.0425	8.26E-07	112	225	1.7131	7.58E-07	12	65013	26.2234	1.17E-14
		x15	28	57	0.1085	6.81E-07	35	71	0.078578	7.24E-07	4	25005	5.1051	2.05E-10
5.1.6		x2	-	-	-	-	-	-	-	-	5	6006	0.3292	6.72E-08
		x3	15	31	0.0086	6.54E-07	26	53	0.0057	6.45E-07	5	6005	0.3188	6.71E-08
		x4	16	33	0.0065	3.44E-07	26	53	0.0059	8.07E-07	6	7007	0.3867	7.98E-09
		x5	14	29	0.0063	5.9E-07	25	51	0.0072	7.76E-07	4	5005	0.2662	2.82E-09
		x6	-	-	-	-	4	9	0.0034	2.08E-11	5	6006	0.3260	1.34E-09
		x8	16	33	0.0090	5.69E-07	4	9	0.0021	3.16E-14	4	5005	0.2706	8.42E-09
	1000	x9	-	-	-	-	4	9	0.0018	2.07E-09	5	6006	0.3197	3.63E-07
		x10	15	31	0.0116	9.94E-07	3	7	0.0010	1.24E-08	4	5005	0.2655	1.53E-13
		x11	16	33	0.0095	3.64E-07	25	51	0.0144	5.16E-07	4	5005	0.2843	3.13E-10
		x12	16	33	0.0061	5.72E-07	5	11	0.0015	5.83E-11	7	8008	0.4293	2.51E-10
		x13	14	29	0.0128	6.5E-07	3	7	0.0013	3.16E-14	2	3003	0.1673	1.04E-07
		x14	-	-	-	-	25	51	0.0058	9.65E-07	5	6006	0.3316	1.84E-07
		x15	13	27	0.005518	8.46E-07	38	77	0.00676	8.83E-07	4	5005	0.3289	5.03E-09
		x2	-	-	-	-	-	-	-	-	6	35007	7.6255	5.02E-08
		x3	16	33	0.0321	4.47E-07	27	55	0.0684	7.21E-07	6	35007	7.8077	5.02E-08
		x4	16	33	0.0302	7.68E-07	27	55	0.0681	9.03E-07	7	40008	9.0358	1.81E-08
		x5	15	31	0.0368	4.04E-07	26	53	0.0718	8.68E-07	5	30006	6.7700	7.72E-10
		x6	-	-	-	-	4	9	0.0128	4.64E-11	6	35007	7.9447	6.96E-10
		x8	17	35	0.0423	3.89E-07	4	9	0.0125	7.07E-14	5	30006	6.9963	1.94E-09
	5000	x9	-	-	-	-	4	9	0.0096	4.63E-09	6	35007	8.2785	2.54E-07
		x10	16	33	0.0297	6.8E-07	3	7	0.0161	2.76E-08	4	25005	5.7580	3.39E-08
		x11	16	33	0.0394	8.04E-07	25	51	0.0589	9.72E-07	5	30006	7.5145	4.08E-12
		x12	17	35	0.0362	3.91E-07	5	11	0.0104	1.3E-10	8	45009	10.4847	6.73E-10
		x13	15	31	0.0321	4.45E-07	3	7	0.0084	7.07E-14	2	15003	3.3157	1.04E-07
		x14	-	-	-	-	27	55	0.0829	5.33E-07	6	35007	8.3699	1.01E-07
		x15	14	29	0.057251	5.91E-07	37	75	0.025964	9.99E-07	5	30006	6.7582	1.24E-09

Table 4: Numerical results for problems 5.1.7

			DPP				MPD				LSQNONLIN			
Problem	**DIM**	**IP**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**	**ITER**	**FVAL**	**TIME**	**NORM**
5.1.7		x1	16	33	0.0403	2.2E-07	53	107	0.0838	8.58E-07	1	1001	0.0694	0
		x2	78	157	0.1092	8.1E-07	102	205	0.1094	7.94E-07	15	16016	1.0620	2.69E-08
		x3	79	159	0.0561	9.47E-07	87	175	0.1028	8.5E-07	14	15015	0.9762	8.13E-10
		x4	62	125	0.0508	5.55E-07	115	231	0.1277	9.69E-07	14	15015	0.9578	2.69E-08
		x5	55	111	0.0728	6.84E-07	91	183	0.1025	8.95E-07	9	10010	0.6540	8.26E-08
		x6	100	201	0.0722	6.72E-07	96	193	0.0912	8.64E-07	7	8008	0.5226	8.44E-07
		x7	72	145	0.0827	9.67E-07	115	231	0.1095	7.74E-07	14	15015	0.9879	2.77E-08
	1000	x8	82	165	0.0563	7.07E-07	98	197	0.0403	8.68E-07	6	7007	0.4713	2.34E-10
		x9	36	73	0.1009	9.51E-07	95	191	0.0507	9.57E-07	8	9009	0.5823	1.49E-07
		x10	79	159	0.1934	6.64E-07	90	181	0.0382	8.66E-07	5	6006	0.3974	1.27E-08
		x11	15	31	0.0256	5.23E-07	43	87	0.0190	6.56E-07	16	17017	1.1032	1.30E-09
		x12	86	173	0.0724	9.72E-07	111	223	0.0562	9.53E-07	11	12012	0.7930	3.78E-10
		x13	40	81	0.0342	9.84E-07	70	141	0.0751	8.44E-07	10	11011	0.7204	7.38E-13
		x14	47	95	0.0659	9.21E-07	72	145	0.0727	7.73E-07	13	14014	0.9028	1.22E-12
		x15	47	95	0.039078	7.16E-07	107	215	0.060134	8.5E-07	7	8008	0.8521	2.43E-07
		x1	17	35	0.0655	2.83E-07	63	127	0.2859	8.33E-07	1	5001	1.2046	0.00E+00
		x2	116	233	0.5070	7.08E-07	169	339	0.8942	9.87E-07	16	85017	24.8629	1.06E-07
		x3	72	145	0.6564	8.83E-07	95	191	0.6958	7.66E-07	14	75015	21.8448	7.10E-07
		x4	120	241	0.9315	7.52E-07	107	215	0.7671	8.35E-07	14	75015	24.2092	4.64E-13
		x5	47	95	0.1700	8.85E-07	99	199	0.5073	8.51E-07	9	50010	13.9868	7.51E-13
		x6	117	235	0.5739	6.85E-07	95	191	0.5010	9.49E-07	8	45009	12.9194	1.55E-07
		x7	127	255	1.5801	8.04E-07	132	265	0.9161	9.75E-07	15	80016	24.5737	3.54E-08
	5000	x8	47	95	0.3584	6.12E-07	97	195	0.5110	9.98E-07	7	40008	11.2833	3.13E-12
		x9	38	77	0.3818	9.3E-07	96	193	0.2038	9.85E-07	9	50010	14.3557	4.65E-08
		x10	88	177	0.3205	9.28E-07	103	207	0.2142	9.89E-07	5	30006	8.3952	1.27E-08
		x11	17	35	0.0637	9.85E-08	39	79	0.0999	7.18E-07	19	100020	30.4028	6.98E-08
		x12	86	173	0.2797	8.71E-07	100	201	0.4045	9.96E-07	12	65013	18.2419	2.90E-10
		x13	69	139	0.4708	8.77E-07	72	145	0.3740	8.61E-07	9	50010	14.0725	8.74E-12
		x14	22	45	0.1985	7.04E-07	60	121	0.3506	9.6E-07	18	95019	25.7369	4.29E-08
		x15	75	151	0.266	9.67E-07	109	219	0.25697	8.39E-07	8	45009	7.2015	4.33E-09

Table 5: Numerical results for problems 5.2.1

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.1	1000	x1	2	5	0.0035	0	9	20	0.0947	5.72E-07	36	74	0.0536	3.49E-07
		x2	4	9	0.0028	7.15E-08	11	23	0.0278	2.53E-07	42	85	0.0215	8.84E-07
		x3	2	5	0.0016	0	11	24	0.0045	2.99E-07	46	94	0.0155	2.21E-08
		x4	2	5	0.0015	0	9	20	0.0073	8.46E-07	40	82	0.0128	3.16E-07
		x5	1	3	0.0009	0	11	24	0.0218	6.1E-07	51	104	0.0243	9.89E-07
		x6	1	3	0.0010	0	11	24	0.0048	6.07E-07	54	110	0.0167	7.06E-07
		x7	3	7	0.019563	1.96E-08	12	26	0.032634	2.27E-07	25	52	0.029216	6.13E-07
	5000	x1	2	5	0.0054	0	10	22	0.0141	2.54E-07	27	56	0.0303	1.3E-08
		x2	4	9	0.0112	7.15E-08	11	23	0.0168	2.53E-07	42	85	0.0643	8.84E-07
		x3	2	5	0.0070	0	11	24	0.0331	3.91E-07	28	58	0.0675	4.05E-07
		x4	2	5	0.0068	0	9	20	0.0110	8.46E-07	36	74	0.0623	3.44E-07
		x5	1	3	0.0027	0	12	26	0.0194	2.68E-07	51	104	0.1057	7.98E-07
		x6	1	3	0.0030	0	12	26	0.0182	2.69E-07	50	102	0.0650	8.02E-07
		x7	3	7	0.034749	9.53E-09	12	26	0.02115	3.63E-07	26	54	0.047353	6.93E-07
	10000	x1	2	5	0.0093	0	10	22	0.0296	3.59E-07	29	60	0.1036	2.14E-08
		x2	4	9	0.0227	7.15E-08	11	23	0.0307	2.53E-07	42	85	0.1206	8.84E-07
		x3	2	5	0.0111	0	11	24	0.0326	5.01E-07	31	64	0.1170	1.18E-07
		x4	2	5	0.0093	0	9	20	0.0250	8.46E-07	41	84	0.1155	1.1E-07
		x5	1	3	0.0049	0	12	26	0.0351	3.78E-07	47	95	0.1782	5.62E-07
		x6	1	3	0.0094	0	12	26	0.0341	3.78E-07	46	94	0.1467	5.59E-07
		x7	3	7	0.017296	6.83E-09	12	26	0.037283	4.77E-07	26	54	0.087295	9.82E-07
	50000	x1	2	5	0.0763	0	10	22	0.1361	8.03E-07	28	58	0.3599	8.48E-08
		x2	4	9	0.1808	7.15E-08	11	23	0.2346	2.53E-07	42	85	0.5511	8.84E-07
		x3	2	5	0.0825	0	12	26	0.1608	2.05E-07	44	90	1.0946	2.61E-07
		x4	2	5	0.0413	0	9	20	0.1499	8.46E-07	45	92	0.7007	2.84E-07
		x5	1	3	0.0141	0	12	26	0.1680	8.43E-07	51	104	0.6174	6.27E-07
		x6	1	3	0.0196	0	12	26	0.1298	8.43E-07	49	100	0.6005	6.26E-07
		x7	6	13	0.13314	2.99E-09	12	26	0.12438	9.91E-07	28	58	0.33771	6.43E-07
	100000	x1	2	5	0.0774	0	11	24	0.3029	2.27E-07	21	44	0.7041	7.7E-07
		x2	4	9	0.2129	7.15E-08	11	23	0.2955	2.53E-07	42	85	1.5025	8.84E-07
		x3	2	5	0.1169	0	12	26	0.3713	2.86E-07	37	76	1.1488	4.43E-08
		x4	2	5	0.0957	0	9	20	0.2441	8.46E-07	32	66	0.6929	7.38E-07
		x5	1	3	0.0681	0	13	28	0.4874	2.38E-07	51	104	1.6804	7.08E-07
		x6	1	3	0.0500	0	13	28	0.5627	2.38E-07	49	100	1.4841	7.08E-07
		x7	6	13	0.39183	4.23E-09	13	28	0.25888	2.77E-07	29	60	1.0541	6.43E-07

Table 6: Numerical results for problems 5.2.2

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.2	1000	x1	13	28	0.0223	7.07E-07	3	8	0.0433	1.49E-07	2	6	0.0021	5.17E-07
		x2	12	26	0.0115	4.65E-07	9	20	0.0108	4.62E-07	18	38	0.0071	4.14E-07
		x3	14	30	0.0123	4.96E-07	6	14	0.0033	4.36E-09	5	12	0.0042	1.74E-08
		x4	14	29	0.0290	9.32E-07	14	30	0.0090	4.75E-07	20	42	0.0085	8.06E-07
		x5	29	60	0.0882	9.68E-07	8	18	0.0306	5.58E-08	27	56	0.0105	1.81E-07
		x6	69	140	0.3084	3.91E-07	7	16	0.0147	1.41E-07	17	36	0.0077	1.1E-07
		x7	15	32	0.016075	4.56E-07	12	26	0.062709	3.75E-07	24	50	0.013574	4.79E-07
	5000	x1	14	30	0.0483	5.03E-07	3	8	0.0085	3.89E-08	2	6	0.0051	1.75E-07
		x2	12	26	0.0420	4.86E-07	10	22	0.0159	8.73E-08	30	62	0.0440	1.54E-07
		x3	15	32	0.0929	3.61E-07	6	14	0.0135	3.39E-10	5	12	0.0125	2.36E-09
		x4	14	30	0.0527	3.55E-07	12	26	0.0186	3.16E-07	18	38	0.0211	5.88E-08
		x5	27	56	0.1085	7.95E-07	11	24	0.0272	5.09E-07	22	46	0.0464	8.16E-07
		x6	45	92	0.1595	3.6E-07	9	20	0.0227	9.09E-07	29	60	0.0911	4.18E-07
		x7	16	34	0.061952	4.23E-07	15	32	0.029267	9.02E-07	16	34	0.033741	4.93E-07
	10000	x1	14	30	0.2332	7.16E-07	3	8	0.0152	2.52E-08	2	6	0.0166	1.21E-07
		x2	12	26	0.2246	4.88E-07	11	24	0.0343	3.07E-08	28	58	0.1648	1.05E-07
		x3	16	34	0.1051	9.36E-07	6	14	0.0244	1.35E-10	5	12	0.0341	3.62E-09
		x4	14	30	0.0871	3.6E-07	13	28	0.0438	1.12E-07	15	32	0.1042	5.56E-07
		x5	17	36	0.1077	8.75E-07	11	24	0.0374	2.85E-07	25	52	0.0697	9E-07
		x6	17	36	0.1610	8.75E-07	11	24	0.0853	2.81E-07	22	46	0.1037	2.8E-07
		x7	16	34	0.15031	6.54E-07	19	40	0.087761	3.15E-07	14	30	0.056115	7.31E-07
	50000	x1	15	32	0.5547	4.92E-07	3	8	0.0609	1.09E-08	2	6	0.0294	6.32E-08
		x2	12	26	0.5452	4.9E-07	15	32	0.1840	6.34E-10	21	44	0.3342	6.18E-10
		x3	16	34	0.5829	5.32E-07	6	14	0.1117	2.58E-11	6	14	0.0781	9.31E-09
		x4	14	30	0.3279	3.64E-07	16	34	0.2418	5.27E-09	15	32	0.3077	2.59E-07
		x5	15	32	0.3538	5.79E-07	14	30	0.1818	3.16E-08	23	48	0.5426	1.82E-07
		x6	15	32	0.8437	5.11E-07	14	30	0.4377	3.21E-08	24	50	0.4941	5.15E-07
		x7	16	34	0.45146	9.4E-07	20	42	0.29844	7.54E-08	16	34	0.27335	9.16E-08
	100000	x1	15	32	0.7980	6.96E-07	3	8	0.1821	8.03E-09	2	6	0.0512	5.4E-08
		x2	12	26	0.5381	4.91E-07	16	34	0.6858	2.03E-10	29	60	0.7758	6.52E-08
		x3	16	34	1.4319	7.53E-07	6	14	0.1629	1.54E-11	7	16	0.4030	1.1E-09
		x4	14	30	0.5969	3.65E-07	18	38	0.4598	7.16E-10	15	32	0.6093	2.34E-07
		x5	15	32	1.2120	7.21E-07	15	32	0.5378	1.48E-08	20	42	0.6005	3.99E-07
		x6	15	32	1.0270	7.21E-07	15	32	0.9451	1.58E-08	18	38	0.4942	7.66E-07
		x7	17	36	0.89842	3.95E-07	22	46	0.64874	1.51E-08	17	36	0.73163	1.03E-07

Table 7: Numerical results for problems 5.2.3

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.3		x1	2	5	0.0017	0	29	60	0.0614	6.98E-07	21	44	0.0116	7.52E-07
		x2	1	3	0.0011	0	25	52	0.0090	9.52E-07	19	40	0.0149	5.27E-07
		x3	1	3	0.0024	0	34	70	0.0114	6.28E-07	24	50	0.0215	8.19E-07
	1000	x4	1	3	0.0032	0	27	56	0.0112	7.07E-07	20	42	0.0218	5.35E-07
		x5	1	3	0.0041	0	32	66	0.0116	7.89E-07	23	48	0.0354	9.58E-07
		x6	1	3	0.0024	0	32	66	0.0112	7.79E-07	23	48	0.0155	9.62E-07
		x7	2	5	0.002736	0	33	68	0.011254	7.8E-07	24	50	0.009124	6.55E-07
		x1	2	5	0.0058	0	30	62	0.0714	9.36E-07	22	46	0.0321	2.34E-22
		x2	1	3	0.0033	0	25	52	0.0381	9.52E-07	19	40	0.0244	5.27E-07
		x3	2	5	0.0054	0	35	72	0.1222	0	26	54	0.0512	9.45E-07
	5000	x4	1	3	0.0034	0	27	56	0.1080	7.08E-07	20	42	0.0194	5.35E-07
		x5	1	3	0.0018	0	34	70	0.0987	6.36E-07	25	52	0.0340	5.36E-07
		x6	1	3	0.0045	0	34	70	0.1021	6.38E-07	25	52	0.0403	5.31E-07
		x7	2	5	0.005641	0	35	72	0.11423	0	25	52	0.043758	7.4E-07
		x1	2	5	0.0090	0	31	64	0.1447	0	22	46	0.0500	3.31E-22
		x2	1	3	0.0042	0	25	52	0.0617	9.52E-07	19	40	0.0491	5.27E-07
		x3	2	5	0.0103	0	35	72	0.1617	0	27	56	0.2452	6.68E-07
	10000	x4	1	3	0.0039	0	27	56	0.0731	7.08E-07	20	42	0.1893	5.35E-07
		x5	1	3	0.0047	0	34	70	0.1369	8.99E-07	25	52	0.1644	7.58E-07
		x6	1	3	0.0090	0	34	70	0.0866	8.99E-07	25	52	0.0661	7.55E-07
		x7	2	5	0.009806	0	35	72	0.09615	0	26	54	0.15627	9.33E-20
		x1	2	5	0.0702	0	31	64	0.7288	0	24	50	0.2259	6.65E-07
		x2	1	3	0.0277	0	25	52	0.5251	9.52E-07	19	40	0.1999	5.27E-07
		x3	4	9	0.1842	0	35	72	0.4154	0	27	56	0.3348	2.37E-20
	50000	x4	1	3	0.0143	0	27	56	0.3102	7.08E-07	20	42	0.5169	5.35E-07
		x5	1	3	0.0102	0	35	72	0.5859	0	26	54	0.5025	8.48E-07
		x6	1	3	0.0389	0	35	72	0.8709	0	26	54	0.3384	8.47E-07
		x7	6	13	0.10647	3.44E-07	35	72	0.5175	0	27	56	0.31698	9.01E-07
		x1	2	5	0.0771	0	31	64	0.7165	0	19	40	0.4021	3.35E-20
		x2	1	3	0.0305	0	25	52	0.7960	9.52E-07	19	40	0.3788	5.27E-07
		x3	5	11	0.4825	0	35	72	1.0854	0	34	70	1.3969	5.62E-07
	100000	x4	1	3	0.0417	0	27	56	0.5418	7.08E-07	20	42	0.3753	5.35E-07
		x5	2	5	0.1054	0	35	72	1.0416	0	27	56	0.5500	9.24E-07
		x6	2	5	0.0998	0	35	72	1.0976	0	26	54	0.9390	3.53E-22
		x7	3	7	0.13034	0	35	72	0.75288	0	28	58	0.6749	9.39E-07

Table 8: Numerical results for problems 5.2.4

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.4	1000	x1	1	3	0.0020	0	29	60	0.0111	6.43E-07	21	44	0.0151	6.82E-07
		x2	1	3	0.0024	2.22E-16	25	52	0.0093	6.83E-07	19	39	0.0070	7.03E-07
		x3	1	3	0.0017	0	33	68	0.0276	6.08E-07	23	48	0.0082	9.98E-07
		x4	2	5	0.0021	0	26	54	0.0063	6.75E-07	19	40	0.0069	8.45E-07
		x5	2	5	0.0024	0	31	64	0.0109	7.49E-07	23	48	0.0112	5.48E-07
		x6	2	5	0.0028	0	31	64	0.0164	7.61E-07	23	48	0.0105	5.46E-07
		x7	2	5	0.001954	0	32	66	0.009784	6.59E-07	24	50	0.009663	7.16E-07
	5000	x1	1	3	0.0051	0	30	62	0.0319	8.63E-07	22	46	0.0180	7.62E-07
		x2	1	3	0.0042	2.22E-16	25	52	0.0750	6.83E-07	19	39	0.0223	7.03E-07
		x3	2	5	0.0119	0	34	70	0.0855	8.16E-07	23	48	0.0220	6.33E-07
		x4	2	5	0.0103	0	26	54	0.0736	6.75E-07	19	40	0.0235	8.45E-07
		x5	2	5	0.0101	0	33	68	0.1872	6.03E-07	24	50	0.0666	6.13E-07
		x6	2	5	0.0045	0	33	68	0.0410	6.02E-07	24	50	0.0724	6.14E-07
		x7	3	7	0.019657	0	33	68	0.037543	8.92E-07	25	52	0.034708	8.23E-07
	10000	x1	1	3	0.0028	0	31	64	0.0639	7.32E-07	23	48	0.1033	5.39E-07
		x2	1	3	0.0034	2.22E-16	25	52	0.0482	6.83E-07	19	39	0.1043	7.03E-07
		x3	2	5	0.0095	0	35	72	0.0689	6.92E-07	26	54	0.0548	9.36E-07
		x4	2	5	0.0081	0	26	54	0.1097	6.76E-07	19	40	0.0448	8.45E-07
		x5	2	5	0.0090	0	33	68	0.0694	8.53E-07	24	50	0.0542	8.66E-07
		x6	2	5	0.0079	0	33	68	0.0908	8.55E-07	24	50	0.0822	8.72E-07
		x7	5	11	0.021961	1.59E-08	34	70	0.066519	7.58E-07	25	52	0.052607	7.67E-07
	50000	x1	1	3	0.0174	0	32	66	0.5095	0	24	50	0.1716	0
		x2	1	3	0.0194	2.22E-16	25	52	0.5458	6.83E-07	19	39	0.1304	7.03E-07
		x3	3	7	0.1799	0	1000	2001	20.3478	Inf	29	60	0.4948	0
		x4	2	5	0.0665	0	26	54	0.3440	6.76E-07	19	40	0.3601	8.45E-07
		x5	2	5	0.0504	0	35	72	0.4293	6.86E-07	26	54	0.2362	7.4E-07
		x6	2	5	0.0834	0	35	72	0.3353	6.86E-07	26	54	0.2167	7.38E-07
		x7	5	11	0.099187	3.56E-08	36	74	0.36324	6.11E-07	26	54	0.33187	8.58E-07
	100000	x1	1	3	0.0387	0	32	66	0.5790	0	24	50	0.3627	8.52E-07
		x2	1	3	0.0379	2.22E-16	25	52	0.6989	6.83E-07	19	39	0.4397	7.03E-07
		x3	5	11	0.2930	0	1000	2001	41.5945	Inf	33	68	0.8246	0
		x4	2	5	0.0576	0	26	54	0.3538	6.76E-07	19	40	0.3014	8.45E-07
		x5	2	5	0.0638	0	35	72	0.4950	9.71E-07	27	56	0.5657	5.23E-07
		x6	2	5	0.0739	0	35	72	0.7143	9.71E-07	27	56	0.7165	5.24E-07
		x7	3	7	0.10667	0	36	74	0.63267	8.64E-07	28	58	0.52477	5.01E-07

Table 9: Numerical results for problems 5.2.5

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.5	1000	x1	1	3	0.0019	0	10	22	0.0179	2.64E-07	16	34	0.0143	8.17E-07
		x2	1	3	0.0030	2.22E-16	9	20	0.0146	3.85E-07	15	31	0.0070	7.97E-07
		x3	1	3	0.0058	0	12	26	0.0232	4.88E-07	18	38	0.0154	8.51E-07
		x4	2	5	0.0043	0	12	26	0.0167	3.8E-07	17	36	0.0108	4.98E-07
		x5	4	9	0.0111	0	13	28	0.0322	2.71E-07	19	40	0.0305	4.77E-07
		x6	4	9	0.0190	0	13	28	0.0114	2.41E-07	19	40	0.0113	4.89E-07
		x7	6	13	0.026131	7.78E-07	96	193	0.19369	0	19	40	0.012275	8.26E-07
	5000	x1	1	3	0.0130	0	10	22	0.0230	5.91E-07	17	36	0.0429	6.85E-07
		x2	1	3	0.0111	2.22E-16	9	20	0.0216	3.85E-07	15	31	0.0238	7.97E-07
		x3	2	5	0.0118	0	13	28	0.0304	2.18E-07	20	42	0.0681	8.59E-07
		x4	2	5	0.0075	0	12	26	0.0261	3.81E-07	17	36	0.0397	4.99E-07
		x5	4	9	0.0163	0	13	28	0.0318	6.14E-07	20	42	0.0819	4.02E-07
		x6	4	9	0.0141	0	13	28	0.0279	6.71E-07	20	42	0.0566	4.04E-07
		x7	12	25	0.070389	5.52E-07	128	257	0.79955	0	19	40	0.049302	8.36E-07
	10000	x1	1	3	0.0052	0	10	22	0.0434	8.36E-07	17	36	0.2357	9.69E-07
		x2	1	3	0.0061	2.22E-16	9	20	0.0627	3.85E-07	15	31	0.1445	7.97E-07
		x3	2	5	0.0183	0	13	28	0.1303	3.09E-07	21	44	0.2196	4.56E-07
		x4	2	5	0.0153	0	12	26	0.1123	3.82E-07	17	36	0.0756	4.99E-07
		x5	4	9	0.0333	0	13	28	0.1147	8.7E-07	20	42	0.0929	5.69E-07
		x6	4	9	0.1308	0	13	28	0.1170	9.18E-07	20	42	0.1012	5.68E-07
		x7	12	25	0.10803	7.76E-07	128	257	2.0163	0	20	42	0.10385	4.43E-07
	50000	x1	1	3	0.0422	0	11	24	0.3925	3.74E-07	18	38	0.3618	8.13E-07
		x2	1	3	0.0448	2.22E-16	9	20	0.2972	3.85E-07	15	31	0.4860	7.97E-07
		x3	3	7	0.2694	0	13	28	0.3579	6.91E-07	23	48	0.8131	9.93E-07
		x4	2	5	0.1500	0	12	26	0.2054	3.82E-07	17	36	0.2629	4.99E-07
		x5	3	7	0.1946	0	14	30	0.3102	3.9E-07	20	42	0.3717	7.76E-07
		x6	3	7	0.1571	0	14	30	0.4382	3.88E-07	20	42	0.4595	7.75E-07
		x7	13	27	0.65044	8.93E-08	1000	2001	53.6336	226216.3	20	42	0.4938	9.89E-07
	100000	x1	1	3	0.0871	0	11	24	0.6166	5.29E-07	19	40	1.1031	4.31E-07
		x2	1	3	0.0988	2.22E-16	9	20	0.4358	3.85E-07	15	31	0.5085	7.97E-07
		x3	6	13	1.1322	0	13	28	0.4762	9.77E-07	27	56	1.5973	4.72E-07
		x4	2	5	0.2506	0	12	26	0.4179	3.82E-07	17	36	0.6561	4.99E-07
		x5	3	7	0.3017	0	14	30	0.8434	5.51E-07	21	44	0.8204	4.11E-07
		x6	3	7	0.1887	0	14	30	0.7843	5.5E-07	21	44	1.4167	4.11E-07
		x7	3	7	0.24567	0	1000	2001	118.0797	2630442	22	46	1.0335	3.78E-07

Table 10: Numerical results for problems 5.2.6

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.6	1000	x1	11	24	0.0095	9.96E-07	12	26	0.0287	4.58E-07	6	14	0.0029	2.09E-07
		x2	12	25	0.0099	6.25E-07	12	26	0.0120	6.16E-07	34	70	0.0129	6.1E-07
		x3	11	24	0.0100	5.26E-07	13	28	0.0094	2.82E-07	6	14	0.0029	6.55E-07
		x4	12	25	0.0188	6.2E-07	12	26	0.0068	6.07E-07	33	68	0.0109	5.47E-07
		x5	11	24	0.0109	5.52E-07	12	26	0.0045	2.97E-07	48	98	0.0199	8.73E-07
		x6	11	24	0.0093	5.7E-07	12	26	0.0142	2.98E-07	48	98	0.0207	5.83E-07
		x7	12	25	0.010243	7.46E-07	13	28	0.005048	7.18E-07	43	88	0.016828	9.57E-07
	5000	x1	12	26	0.0841	4.56E-07	13	28	0.0184	2.57E-07	6	14	0.0103	4.68E-07
		x2	12	26	0.0841	5.52E-07	13	28	0.0179	3.46E-07	35	72	0.0824	5.59E-07
		x3	12	25	0.0856	6.1E-07	13	28	0.0287	6.31E-07	7	16	0.0273	9.35E-08
		x4	12	26	0.0877	5.51E-07	13	28	0.0250	3.45E-07	36	74	0.1255	6.96E-07
		x5	12	25	0.0362	6.41E-07	12	26	0.0449	6.65E-07	34	70	0.1201	7.37E-07
		x6	12	25	0.0887	6.44E-07	12	26	0.0518	6.72E-07	41	84	0.1007	5.78E-07
		x7	12	26	0.048016	6.62E-07	14	30	0.028524	4.09E-07	51	104	0.08635	6.69E-07
	10000	x1	12	26	0.0789	6.45E-07	13	28	0.1385	3.64E-07	6	14	0.0176	6.62E-07
		x2	12	26	0.0835	7.8E-07	13	28	0.1101	4.9E-07	16	34	0.0809	8.16E-07
		x3	12	26	0.0843	9.31E-07	13	28	0.0380	8.93E-07	7	16	0.0285	1.36E-07
		x4	12	26	0.1742	7.79E-07	13	28	0.0385	4.89E-07	35	72	0.1107	5.62E-07
		x5	12	25	0.1700	9.06E-07	12	26	0.0484	9.4E-07	40	82	0.1919	6.2E-07
		x6	12	25	0.3153	9.05E-07	12	26	0.0468	9.47E-07	48	98	0.1891	8.04E-07
		x7	12	26	0.12039	9.38E-07	14	30	0.044984	5.81E-07	49	100	0.15458	8.86E-07
	50000	x1	13	27	0.6376	7.49E-07	13	28	0.1757	8.14E-07	7	16	0.1551	9.46E-08
		x2	13	27	0.6450	9.06E-07	14	30	0.1603	2.75E-07	28	58	0.6275	7.57E-07
		x3	13	28	0.8244	6.34E-07	14	30	0.3179	5.01E-07	8	18	0.1290	2.69E-07
		x4	13	27	0.5837	9.06E-07	14	30	0.4268	2.75E-07	26	54	0.2961	1.44E-07
		x5	12	26	0.4919	7.99E-07	13	28	0.2059	5.28E-07	37	76	0.4636	7.23E-07
		x6	12	26	0.3301	8.01E-07	13	28	0.1691	5.28E-07	18	38	0.5021	4.52E-07
		x7	13	27	0.33846	5.84E-07	15	32	0.16313	3.27E-07	32	66	0.41821	8.94E-07
	100000	x1	12	25	0.6815	7.57E-07	14	30	0.4714	2.89E-07	7	16	0.3316	8.58E-07
		x2	12	26	1.0329	4.23E-07	14	30	0.4583	3.89E-07	35	72	0.8718	7.61E-07
		x3	14	29	1.2016	6.05E-07	14	30	0.7840	7.09E-07	8	18	0.2379	3.81E-07
		x4	12	26	1.0873	4.23E-07	14	30	0.5282	3.89E-07	29	60	1.2511	5.25E-07
		x5	11	24	0.5025	6.89E-07	13	28	0.3541	7.46E-07	35	72	0.9400	4.43E-07
		x6	11	24	0.7048	6.88E-07	13	28	0.5373	7.48E-07	45	92	1.7498	4.58E-07
		x7	14	29	0.71678	7.31E-07	15	32	0.36039	4.62E-07	54	110	1.4312	5.69E-07

Table 11: Numerical results for problems 5.2.7

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.7	1000	x1	22	45	0.0899	7.3E-07	137	276	0.2295	8.32E-07	139	280	0.1880	9.73E-07
		x2	23	47	0.0910	9.24E-07	89	180	0.1382	9.65E-07	187	376	0.1067	8.84E-07
		x3	37	75	0.1226	7.56E-07	148	298	0.0873	9.51E-07	227	456	0.1466	9.23E-07
		x4	23	48	0.0776	9.85E-07	98	198	0.0547	9.06E-07	218	438	0.2131	9.53E-07
		x5	35	71	0.1615	8.3E-07	151	304	0.0737	8.57E-07	233	468	0.1410	9.99E-07
		x6	39	80	0.1485	6.3E-07	116	234	0.0625	9.92E-07	198	398	0.1130	9.95E-07
		x7	17	36	0.13858	7.49E-07	85	172	0.04465	8.79E-07	181	364	0.1429	9.44E-07
	5000	x1	21	44	0.1854	9.88E-07	142	286	0.3425	8.88E-07	188	378	1.1044	8.86E-07
		x2	23	47	0.1221	9.24E-07	89	180	0.5726	9.65E-07	187	376	0.5214	8.84E-07
		x3	28	58	0.1489	9.74E-07	152	306	0.8365	8.24E-07	277	556	0.7370	9.68E-07
		x4	23	48	0.1341	9.79E-07	96	194	0.5640	9.06E-07	218	438	1.4423	9.56E-07
		x5	39	79	0.1993	9.45E-07	110	222	0.5565	9.23E-07	181	364	1.0790	9.64E-07
		x6	41	84	0.5347	6.48E-07	124	250	0.4367	9.9E-07	199	400	0.5867	9.65E-07
		x7	15	32	0.18016	7.55E-07	90	182	0.25183	8.87E-07	189	380	0.52808	9.27E-07
	10000	x1	21	44	0.4809	9.82E-07	144	290	0.8974	8.97E-07	193	388	1.5689	9.37E-07
		x2	23	47	0.5728	9.24E-07	89	180	1.0957	9.65E-07	187	376	1.3250	8.84E-07
		x3	28	57	0.6823	9.07E-07	165	332	0.8094	9.26E-07	220	442	2.3128	9.39E-07
		x4	23	48	0.4984	9.78E-07	96	194	0.9647	9.06E-07	218	438	1.7953	9.56E-07
		x5	40	81	0.9096	8.75E-07	154	310	1.7712	8.76E-07	232	466	2.2043	9.66E-07
		x6	42	85	0.6842	9.55E-07	130	262	0.7624	9.31E-07	204	410	1.1191	8.87E-07
		x7	13	28	0.15034	6.79E-07	94	190	0.46607	9.58E-07	182	366	1.1317	8.96E-07
	50000	x1	21	44	0.8866	9.78E-07	148	298	3.5497	9.81E-07	190	382	5.2578	9.44E-07
		x2	23	47	1.7829	9.24E-07	89	180	2.3515	9.65E-07	187	376	4.6154	8.84E-07
		x3	28	58	1.6125	7.12E-07	195	392	5.6937	8.16E-07	233	468	5.8264	9.9E-07
		x4	23	48	1.2361	9.77E-07	96	194	2.3908	9.08E-07	218	438	4.6981	9.56E-07
		x5	30	62	2.2800	7.75E-07	177	356	4.3043	9.44E-07	238	478	5.6543	9.93E-07
		x6	43	87	1.9442	9.27E-07	135	272	3.3122	9.1E-07	208	418	4.7476	9.21E-07
		x7	12	25	0.6081	8.89E-07	98	198	2.6726	9.58E-07	197	396	5.5294	9.21E-07
	100000	x1	21	44	2.7656	9.77E-07	153	308	7.4650	8.22E-07	197	396	9.0268	9.98E-07
		x2	23	47	2.5507	9.24E-07	89	180	4.2575	9.65E-07	187	376	8.5329	8.84E-07
		x3	31	64	3.5532	8.28E-07	199	400	11.4463	9.61E-07	184	370	8.4835	9.73E-07
		x4	23	48	2.3358	9.77E-07	99	200	4.4454	9.07E-07	218	438	10.3529	9.56E-07
		x5	29	60	3.4820	9.53E-07	185	372	9.0108	8.44E-07	257	516	12.4792	9.96E-07
		x6	44	90	4.6596	6.74E-07	136	274	5.6578	8.58E-07	206	414	9.6959	9.11E-07
		x7	47	95	4.3416	9.07E-07	100	202	5.3252	9.78E-07	201	404	9.2578	9.48E-07

Table 12: Numerical results for problems 5.2.8

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.8	1000	x1	19	39	0.0275	9.57E-07	124	250	0.0864	9.68E-07	225	452	0.0776	9.68E-07
		x2	22	45	0.0309	8.02E-07	119	240	0.0790	9.99E-07	205	412	0.0708	9.84E-07
		x3	19	39	0.0264	9.17E-07	79	160	0.0567	9.62E-07	152	306	0.0526	9.82E-07
		x4	22	46	0.0308	8.42E-07	117	236	0.0378	9.12E-07	226	454	0.0784	9.59E-07
		x5	24	50	0.0588	9.5E-07	115	232	0.0519	9.91E-07	204	410	0.0725	9.77E-07
		x6	45	92	0.0393	8.13E-07	205	412	0.0667	9.36E-07	333	668	0.1911	9.79E-07
		x7	45	92	0.044892	8.98E-07	243	488	0.082021	9.57E-07	397	796	0.14266	9.69E-07
	5000	x1	23	48	0.0689	9.63E-07	122	246	0.1891	9.19E-07	208	418	0.3759	9.98E-07
		x2	20	41	0.0509	6.83E-07	115	232	0.1999	9.7E-07	208	418	0.4748	9.66E-07
		x3	16	33	0.0514	9.92E-07	75	152	0.1784	9.29E-07	157	316	0.6156	9.77E-07
		x4	20	42	0.0477	8.33E-07	113	228	0.5794	9.88E-07	202	406	0.4927	9.74E-07
		x5	20	41	0.0773	7.68E-07	112	226	0.3357	9.44E-07	205	412	0.3757	9.48E-07
		x6	49	100	0.2380	7.72E-07	217	436	0.3386	9.3E-07	353	708	0.7150	9.7E-07
		x7	49	99	0.16122	7.74E-07	257	516	0.37349	8.9E-07	417	836	0.66291	9.82E-07
	10000	x1	19	40	0.3933	8.84E-07	119	240	0.4528	9.72E-07	219	440	1.5934	9.71E-07
		x2	17	36	0.3484	5.52E-07	114	230	1.1297	8.95E-07	200	402	0.8693	9.98E-07
		x3	16	34	0.3345	9.03E-07	72	146	0.2537	9.78E-07	148	298	1.3977	9.58E-07
		x4	21	44	0.4899	7.68E-07	112	226	0.4053	9.11E-07	222	446	0.9129	9.6E-07
		x5	20	41	0.1616	6.72E-07	111	224	0.7957	9.82E-07	197	396	1.6538	9.86E-07
		x6	45	92	0.3350	6.6E-07	223	448	1.2007	9.28E-07	347	696	1.7237	9.98E-07
		x7	44	90	0.34925	8.48E-07	261	524	1.8976	9.78E-07	414	830	2.6929	9.85E-07
	50000	x1	18	37	0.7895	8.1E-07	116	234	2.4448	9.25E-07	204	410	4.4595	9.76E-07
		x2	17	35	1.1681	8.62E-07	110	222	1.9797	9.8E-07	201	404	3.8075	9.87E-07
		x3	19	40	1.0530	4.46E-07	69	140	1.3805	9.06E-07	152	306	3.2491	9.9E-07
		x4	18	38	0.7011	9.3E-07	107	216	2.3680	9.93E-07	198	398	3.8811	9.96E-07
		x5	17	35	0.8687	7.37E-07	107	216	2.0567	9.57E-07	196	394	3.4828	9.62E-07
		x6	33	68	1.9300	5.95E-07	235	472	4.1514	9.7E-07	364	730	6.3473	9.6E-07
		x7	47	96	1.5811	7.87E-07	275	552	4.8473	9.01E-07	423	848	9.2912	9.73E-07
	100000	x1	17	35	1.8459	8.2E-07	114	230	5.6932	9.81E-07	210	422	8.2434	9.9E-07
		x2	16	34	1.5101	6.25E-07	109	220	4.4860	9.08E-07	215	432	8.1169	1E-06
		x3	18	38	1.6902	5.94E-07	67	136	2.0429	9.6E-07	155	312	6.2953	9.74E-07
		x4	18	38	2.0344	7.9E-07	107	216	4.8187	9.19E-07	211	424	8.0925	9.6E-07
		x5	16	34	1.6648	7.31E-07	106	214	4.4812	9.95E-07	212	426	8.0163	9.92E-07
		x6	37	76	3.1285	9.6E-07	241	484	8.8279	9.16E-07	373	748	14.4183	9.48E-07
		x7	51	104	3.5354	9.71E-07	279	560	10.8699	9.89E-07	427	856	15.0399	9.67E-07

Table 13: Numerical results for problems 5.2.9–5.2.10

			DPP				AFP				PDY			
Problem	**DIM**	**IP**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**	**ITER**	**FEVAL**	**TIME**	**NORM**
5.2.9	1000	x1	13	28	0.0101	7.99E-07	34	70	0.0239	6.42E-07	29	60	0.0063	7.81E-09
		x2	13	28	0.0096	5.78E-07	33	68	0.0202	7.6E-07	26	54	0.0068	6.89E-07
		x3	17	35	0.0110	4.29E-07	34	70	0.0208	9.25E-07	25	52	0.0089	7.61E-07
		x4	13	28	0.0089	6.17E-07	32	66	0.0226	9.26E-07	27	56	0.0067	7.55E-07
		x5	13	28	0.0105	7.94E-07	31	64	0.0178	7.55E-07	31	64	0.0089	6.25E-07
		x6	16	34	0.0234	4.18E-07	44	90	0.0233	6.47E-07	28	58	0.0107	2.59E-07
		x7	16	34	0.04833	9.78E-07	47	96	0.011614	9.75E-07	36	74	0.008849	6.02E-08
	5000	x1	15	32	0.1164	5.81E-07	34	70	0.0393	6.4E-07	34	70	0.0775	8.16E-07
		x2	14	30	0.0727	7.51E-07	33	68	0.0559	7.9E-07	27	56	0.0281	8.45E-08
		x3	17	35	0.0382	6.07E-07	39	80	0.0409	8.14E-07	30	62	0.0259	5.33E-07
		x4	14	29	0.0344	6.97E-07	35	72	0.0372	9.67E-07	41	84	0.0322	7.52E-07
		x5	15	32	0.0349	3.93E-07	36	74	0.0483	6.8E-07	27	56	0.0289	5.59E-07
		x6	17	36	0.0465	4E-07	43	88	0.0493	6.29E-07	41	84	0.1155	5.04E-07
		x7	18	37	0.050259	9.32E-07	47	96	0.046382	8.35E-07	35	72	0.031912	4.88E-07
	10000	x1	16	34	0.0653	3.45E-07	34	70	0.1837	7.33E-07	28	58	0.1479	6.94E-07
		x2	15	32	0.1453	9.55E-07	33	68	0.1782	9.39E-07	28	58	0.1326	6.64E-07
		x3	22	46	0.1089	4.59E-07	44	90	0.2739	7.04E-07	42	86	0.1028	7.31E-11
		x4	16	33	0.2414	5.89E-07	34	70	0.0946	7.36E-07	25	52	0.0468	3.29E-07
		x5	14	30	0.1310	9.23E-07	34	70	0.0732	9.24E-07	27	56	0.0544	6.74E-07
		x6	18	38	0.1740	4.4E-07	48	98	0.1138	6.16E-07	33	68	0.0626	5.81E-08
		x7	18	38	0.17212	7.63E-07	57	116	0.099218	7.2E-07	29	60	0.054973	4.88E-08
	50000	x1	16	34	0.5530	6.76E-07	63	128	1.1209	8.37E-07	32	66	0.3713	9.69E-07
		x2	16	34	0.6400	3.73E-07	61	124	1.5469	9.64E-07	33	68	0.5687	7.92E-07
		x3	16	34	0.5715	9.1E-07	53	108	0.6618	9.68E-07	35	72	0.8102	7.55E-07
		x4	17	35	0.4514	5.86E-07	57	116	0.7697	8.04E-07	33	68	0.3161	5.82E-07
		x5	15	32	0.3028	3.93E-07	36	74	0.3289	9.24E-07	29	60	0.2352	7.67E-07
		x6	17	36	0.3408	4.53E-07	49	100	0.9080	6.18E-07	36	74	0.3400	9.24E-07
		x7	17	36	0.35098	6.45E-07	54	110	0.34574	9.89E-07	41	84	0.30195	5.43E-07
	100000	x1	17	36	1.0030	5.13E-07	81	164	2.8790	7.04E-07	34	70	0.9616	6.98E-07
		x2	17	36	1.0670	6.53E-07	79	160	2.7210	7.76E-07	34	70	0.7890	8.9E-07
		x3	19	39	0.9326	3.62E-07	46	94	1.3439	8.26E-07	62	126	1.1449	7.39E-07
		x4	16	34	0.5609	5.9E-07	99	200	3.8309	7.68E-07	35	72	1.0334	7.19E-07
		x5	16	34	0.9415	4.72E-07	37	76	0.7650	7.97E-07	33	68	0.8900	5.29E-07
		x6	17	36	1.0918	3.48E-07	56	114	1.7541	7.62E-07	43	88	0.7226	2.59E-07
		x7	18	38	0.7502	7.1E-07	56	114	1.0845	8.44E-07	43	88	0.91235	6.08E-07
5.2.10	4	x1	39	79	0.0170	8.05E-07	52	105	0.0245	8.64E-07	57	115	0.0126	8.4E-07
		x2	37	75	0.0109	9.03E-07	56	113	0.0096	9.06E-07	52	105	0.0109	8.24E-07
		x3	50	101	0.0145	9.75E-07	56	113	0.0095	8.89E-07	59	119	0.0113	8.08E-07
		x4	38	77	0.0116	7.84E-07	54	109	0.0090	9.46E-07	57	115	0.0119	8.21E-07
		x5	40	81	0.0114	8.7E-07	40	81	0.0074	7.51E-07	39	79	0.0082	9.28E-07
		x6	28	57	0.0079	9.94E-07	57	115	0.0099	9.86E-07	58	117	0.0112	9.95E-07
		x7	46	93	0.029779	5.97E-07	57	115	0.017793	9.32E-07	62	125	0.047396	7.65E-07