DynIbex v2 Vericomp Benchmark

November 8, 2018

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DISCLAIMER

This document reports the results of the solution of various problems coming from the VERICOMP benchmark[1]. For each problem, different validated methods of Runge-Kutta of order 4 are applied among: the classical formula of Runge-Kutta (explicit), the Lobatto-3a formula (impplicit) and the Lobatto-3c formula (implicit). Moreover, an homemade version of Taylor series, limited to order 5 and using affine arithmetic, is also applied on each problem.

For each problem, we report the following metrics:

- c5t: user time taken to simulate the problem for 1 second.
- c5w: the final diameter of the solution (infinity norm is used).
- c6t: the time to beakdown the method with a maximal limit of 10 seconds.
- c6w: the diameter of the solution a the beakdown time.

[1] `http://vericomp.inf.uni-due.de`

Table 1: Simulation results of Problem 1

Problems	Methods	c5t	c5w	c6t	c6w
system_1	Vnode-LP (5)	0.000	5.7052	10.000	4.8584e+08
system_1	IMIDPOINT (TP8)	0.050	5.8124	10.000	9.638e+08
system_1	IMIDPOINT (TP10)	0.230	5.8142	10.000	9.6378e+08
system_1	IMIDPOINT (TP12)	0.000	0	0.000	0
system_1	IMIDPOINT (TP14)	0.000	0	0.000	0
system_1	HEUN (TP8)	0.090	5.8147	10.000	9.6379e+08
system_1	HEUN (TP10)	0.000	0	0.000	0
system_1	HEUN (TP12)	0.000	0	0.000	0
system_1	HEUN (TP14)	0.000	0	0.000	0
system_1	KUTTA3 (TP8)	0.030	5.8282	10.000	9.721e+08
system_1	KUTTA3 (TP10)	0.090	5.8191	10.000	9.6648e+08
system_1	KUTTA3 (TP12)	0.270	5.8161	10.000	9.6465e+08
system_1	KUTTA3 (TP14)	0.000	0	0.000	0
system_1	RADAU3 (TP8)	0.030	5.816	10.000	9.7759e+08
system_1	RADAU3 (TP10)	0.090	5.815	10.000	9.6795e+08
system_1	RADAU3 (TP12)	0.250	5.8148	10.000	9.6509e+08
system_1	RADAU3 (TP14)	0.000	0	0.000	0
system_1	RK4 (TP8)	0.010	5.8147	10.000	9.6379e+08
system_1	RK4 (TP10)	0.030	5.8147	10.000	9.6379e+08
system_1	RK4 (TP12)	0.080	5.8147	10.000	9.6379e+08
system_1	RK4 (TP14)	0.200	5.8147	10.000	9.6379e+08
system_1	LA3 (TP8)	0.010	5.8101	10.000	9.8516e+08
system_1	LA3 (TP10)	0.030	5.8124	10.000	9.7152e+08
system_1	LA3 (TP12)	0.080	5.8137	10.000	9.6675e+08
system_1	LA3 (TP14)	0.190	5.8143	10.000	9.6495e+08
system_1	LC3 (TP8)	0.010	5.8461	10.000	1.0417e+09
system_1	LC3 (TP10)	0.030	5.8265	10.000	9.9239e+08
system_1	LC3 (TP12)	0.080	5.8193	10.000	9.7483e+08
system_1	LC3 (TP14)	0.210	5.8165	10.000	9.6813e+08
system_1	GL4 (TP8)	0.010	5.8044	10.000	9.7788e+08
system_1	GL4 (TP10)	0.020	5.8104	10.000	9.6901e+08
system_1	GL4 (TP12)	0.050	5.813	10.000	9.6581e+08
system_1	GL4 (TP14)	0.130	5.814	10.000	9.6459e+08
system_1	RADAU5 (TP8)	0.010	5.83	10.000	1.0472e+09
system_1	RADAU5 (TP10)	0.020	5.8202	10.000	9.9792e+08
system_1	RADAU5 (TP12)	0.040	5.817	10.000	9.7877e+08
system_1	RADAU5 (TP14)	0.090	5.8157	10.000	9.7056e+08
system_1	GL6 (TP8)	0.010	5.805	10.000	1.0362e+09
system_1	GL6 (TP10)	0.020	5.8075	10.000	9.9564e+08
system_1	GL6 (TP12)	0.030	5.8103	10.000	9.7899e+08
system_1	GL6 (TP14)	0.060	5.8124	10.000	9.7136e+08
system_1	Riot (02, 1e-11)	0m1.973s	10.059	10.000	1.2112e+10
system_1	Riot (03, 1e-11)	0m2.043s	10.059	10.000	1.2111e+10
system_1	Riot (04, 1e-11)	0m2.102s	10.059	10.000	1.2111e+10
system_1	Riot (05, 1e-11)	0m2.120s	10.059	10.000	1.2111e+10
system_1	Riot (06, 1e-11)	0m2.186s	10.059	10.000	1.2111e+10
system_1	Riot (07, 1e-11)	0m2.270s	10.059	10.000	1.2111e+10
system_1	Riot (09, 1e-11)	0m23.421s	10.059	-0.000	1.2111e+10
system_1	Riot (10, 1e-11)	0m2.524s	10.059	10.000	1.2111e+10
system_1	Riot (11, 1e-11)	0m24.797s	10.059	-0.000	1.2111e+10
system_1	Riot (15, 1e-11)	0m2.874s	10.059	10.000	1.2111e+10
system_1	Riot (18, 1e-11)	0m30.750s	10.059	-0.000	1.2111e+10
system_1	Valencia-IVP (0.00025)	0m1.690s	4.6755	3.469	999.98
system_1	Valencia-IVP (0.0025)	0m0.157s	4.7177	3.460	999.19
system_1	Valencia-IVP (0.025)	0m0.022s	5.1586	3.375	995.68
system_1	Valencia-IVP (0.25)	0m0.010s	14.082	2.250	516.32
system_1	VNODE-LP (12, 1e-1)	0m0.005s	6.2022	10.000	1.6902e+09
system_1	VNODE-LP (13, 1e-1)	0m0.008s	6.9272	10.000	1.7303e+09
system_1	VNODE-LP (14, 1e-1)	0m0.005s	5.4997	10.000	1.0761e+09
system_1	VNODE-LP (15, 1e-14,1e-14)	0m0.006s	6.6718	10.000	1.2705e+09
system_1	VNODE-LP (20, 1e-14,1e-14)	0m0.002s	6.8406	10.000	1.9442e+09
system_1	VNODE-LP (25, 1e-14,1e-14)	0m0.006s	4.6708	10.000	4.8518e+08

Table 2: Simulation results of Problem 2

Problems	Methods	c5t	c5w	c6t	c6w
system_2	Vnode-LP (5)	0.040	0.23254	10.000	0.0004086
system_2	IMIDPOINT (TP8)	0.230	0.23689	10.000	0.0059714
system_2	IMIDPOINT (TP10)	1.030	0.23348	10.000	0.00092981
system_2	IMIDPOINT (TP12)	4.720	0.23275	10.000	0.00080874
system_2	IMIDPOINT (TP14)	0.000	1	0.000	1
system_2	HEUN (TP8)	0.620	0.23255	10.000	0.0004179
system_2	HEUN (TP10)	2.530	0.23254	10.000	0.00040964
system_2	HEUN (TP12)	11.230	0.23254	10.000	0.00040865
system_2	HEUN (TP14)	0.010	1	0.000	1
system_2	KUTTA3 (TP8)	0.360	0.23255	10.000	0.00041179
system_2	KUTTA3 (TP10)	0.960	0.23254	10.000	0.00040878
system_2	KUTTA3 (TP12)	2.710	0.23254	10.000	0.00040861
system_2	KUTTA3 (TP14)	7.980	0.23254	10.000	0.0004086
system_2	RADAU3 (TP8)	0.310	0.24648	10.000	0.013699
system_2	RADAU3 (TP10)	0.830	0.237	10.000	0.011997
system_2	RADAU3 (TP12)	2.610	0.23395	10.000	0.0017529
system_2	RADAU3 (TP14)	7.180	0.23299	10.000	0.0013781
system_2	RK4 (TP8)	0.210	0.23255	10.000	0.00040944
system_2	RK4 (TP10)	0.460	0.23254	10.000	0.00040866
system_2	RK4 (TP12)	1.020	0.23254	10.000	0.0004086
system_2	RK4 (TP14)	2.600	0.23254	10.000	0.0004086
system_2	LA3 (TP8)	0.190	0.26238	10.000	0.026213
system_2	LA3 (TP10)	0.380	0.24415	10.000	0.023057
system_2	LA3 (TP12)	0.850	0.23714	10.000	0.0039711
system_2	LA3 (TP14)	2.160	0.23444	10.000	0.0026686
system_2	LC3 (TP8)	0.160	0.26491	10.000	0.037145
system_2	LC3 (TP10)	0.340	0.24504	10.000	0.027876
system_2	LC3 (TP12)	0.790	0.23747	10.000	0.0041455
system_2	LC3 (TP14)	1.940	0.23452	10.000	0.0029933
system_2	GL4 (TP8)	0.130	0.26373	10.000	0.068829
system_2	GL4 (TP10)	0.270	0.24503	10.000	0.012929
system_2	GL4 (TP12)	0.620	0.23738	10.000	0.012829
system_2	GL4 (TP14)	1.510	0.23452	10.000	0.0011591
system_2	RADAU5 (TP8)	0.210	0.28743	10.000	0.091931
system_2	RADAU5 (TP10)	0.330	0.25877	10.000	0.030232
system_2	RADAU5 (TP12)	0.630	0.24467	10.000	0.028868
system_2	RADAU5 (TP14)	1.260	0.23804	10.000	0.0046754
system_2	GL6 (TP8)	0.350	0.30466	10.000	0.46372
system_2	GL6 (TP10)	0.460	0.27485	10.000	0.066615
system_2	GL6 (TP12)	0.710	0.25357	10.000	0.028615
system_2	GL6 (TP14)	1.180	0.24356	10.000	0.028601
system_2	Riot (03, 1e-11)	35m43.710s	0.24697	0.000	0
system_2	Riot (05, 1e-11)	0m0.734s	0.23588	10.000	3.4736e+08
system_2	Riot (06, 1e-11)	0m0.342s	0.2417	-0.000	0.2417
system_2	Riot (07, 1e-11)	0m9.268s	0.2417	-0.000	0.42672
system_2	Riot (10, 1e-11)	0m0.297s	0.2417	10.000	0.43053
system_2	Riot (15, 1e-11)	0m0.438s	0.2417	10.000	0.69667
system_2	Valencia-IVP (0.00025)	0m3.878s	6.372	2.668	999.81
system_2	Valencia-IVP (0.0025)	0m0.382s	6.4647	2.655	992.41
system_2	Valencia-IVP (0.025)	0m0.046s	7.5087	2.550	986.22
system_2	VNODE-LP (13, 1e-1)	0m0.009s	0.23255	10.000	0.013215
system_2	VNODE-LP (15, 1e-14,1e-14)	0m0.004s	0.23254	10.000	0.013205
system_2	VNODE-LP (20, 1e-14,1e-14)	0m0.003s	0.23254	10.000	0.013205
system_2	VNODE-LP (25, 1e-14,1e-14)	0m0.004s	0.23254	10.000	0.013205

Table 3: Simulation results of Problem 3

Problems	Methods	c5t	c5w	c6t	c6w
system_3	Vnode-LP (5)	0.010	0.79278	10.000	0.65242
system_3	IMIDPOINT (TP8)	0.080	0.6295	10.000	0.12824
system_3	IMIDPOINT (TP10)	0.360	0.62623	10.000	0.12464
system_3	IMIDPOINT (TP12)	0.000	1	0.000	1
system_3	IMIDPOINT (TP14)	0.000	1	0.000	1
system_3	HEUN (TP8)	0.160	0.62534	10.000	0.1237
system_3	HEUN (TP10)	0.680	0.62533	10.000	0.12369
system_3	HEUN (TP12)	0.000	1	0.000	1
system_3	HEUN (TP14)	0.000	1	0.000	1
system_3	KUTTA3 (TP8)	0.070	0.62799	10.000	0.12623
system_3	KUTTA3 (TP10)	0.190	0.62617	10.000	0.12448
system_3	KUTTA3 (TP12)	0.550	0.62559	10.000	0.12393
system_3	KUTTA3 (TP14)	0.000	1	0.000	1
system_3	RADAU3 (TP8)	0.070	0.6389	10.000	0.13934
system_3	RADAU3 (TP10)	0.180	0.62963	10.000	0.12832
system_3	RADAU3 (TP12)	0.580	0.62669	10.000	0.12512
system_3	RADAU3 (TP14)	0.000	1	0.000	1
system_3	RK4 (TP8)	0.040	0.62551	10.000	0.12388
system_3	RK4 (TP10)	0.090	0.62536	10.000	0.12372
system_3	RK4 (TP12)	0.190	0.62533	10.000	0.12369
system_3	RK4 (TP14)	0.490	0.62533	10.000	0.12369
system_3	LA3 (TP8)	0.040	0.64749	10.000	0.15097
system_3	LA3 (TP10)	0.090	0.6344	10.000	0.1337
system_3	LA3 (TP12)	0.190	0.62897	10.000	0.12754
system_3	LA3 (TP14)	0.480	0.62678	10.000	0.1252
system_3	LC3 (TP8)	0.040	0.65676	10.000	0.16568
system_3	LC3 (TP10)	0.080	0.63802	10.000	0.13813
system_3	LC3 (TP12)	0.180	0.63038	10.000	0.12913
system_3	LC3 (TP14)	0.440	0.62734	10.000	0.1258
system_3	GL4 (TP8)	0.030	0.64846	10.000	0.1524
system_3	GL4 (TP10)	0.050	0.63479	10.000	0.13419
system_3	GL4 (TP12)	0.130	0.62914	10.000	0.12773
system_3	GL4 (TP14)	0.310	0.62685	10.000	0.12527
system_3	RADAU5 (TP8)	0.040	0.66539	10.000	0.18205
system_3	RADAU5 (TP10)	0.070	0.64476	10.000	0.14699
system_3	RADAU5 (TP12)	0.130	0.63455	10.000	0.13381
system_3	RADAU5 (TP14)	0.250	0.62964	10.000	0.12825
system_3	GL6 (TP8)	0.050	0.66847	10.000	0.19051
system_3	GL6 (TP10)	0.080	0.64966	10.000	0.15429
system_3	GL6 (TP12)	0.130	0.63848	10.000	0.1386
system_3	GL6 (TP14)	0.230	0.63229	10.000	0.13117
system_3	Riot (05, 1e-11)	0m3.197s	0.44827	10.000	0.13094
system_3	Riot (10, 1e-11)	0m12.763s	0.44389	10.000	0.057421
system_3	Riot (15, 1e-11)	0m40.607s	0.44387	10.000	0.055362
system_3	Valencia-IVP (0.00025)	0m2.780s	2.8979	1.191	3.7768
system_3	Valencia-IVP (0.0025)	0m0.282s	2.9052	1.175	3.694
system_3	Valencia-IVP (0.025)	0m0.042s	2.9872	1.300	5.8585
system_3	VNODE-LP (15, 1e-14,1e-14)	0m0.009s	0.88761	6.361	151.77
system_3	VNODE-LP (20, 1e-14,1e-14)	0m0.007s	0.98714	3.815	218.19
system_3	VNODE-LP (25, 1e-14,1e-14)	0m0.009s	1.1388	2.597	270.43

Table 4: Simulation results of Problem 4

Problems	Methods	c5t	c5w	c6t	c6w
system_4	Vnode-LP (5)	0.030	0.072864	5.822	4.3772e+09
system_4	IMIDPOINT (TP8)	0.120	0.071042	6.401	5729.7
system_4	IMIDPOINT (TP10)	0.570	0.070104	7.690	1246.9
system_4	IMIDPOINT (TP12)	2.670	0.069902	7.575	268.95
system_4	IMIDPOINT (TP14)	0.000	0.2	0.000	0.2
system_4	HEUN (TP8)	0.270	0.069809	8.540	7.9424e+05
system_4	HEUN (TP10)	1.140	0.069847	7.975	994
system_4	HEUN (TP12)	0.000	0.2	0.000	0.2
system_4	HEUN (TP14)	0.000	0.2	0.000	0.2
system_4	KUTTA3 (TP8)	0.150	0.069821	9.126	9.5853e+05
system_4	KUTTA3 (TP10)	0.430	0.069842	9.157	1.075e+06
system_4	KUTTA3 (TP12)	1.220	0.069848	7.877	2386.1
system_4	KUTTA3 (TP14)	3.780	0.069849	7.616	754.41
system_4	RADAU3 (TP8)	0.170	0.073201	5.789	29009
system_4	RADAU3 (TP10)	0.490	0.070939	6.542	9155.3
system_4	RADAU3 (TP12)	1.420	0.070196	7.918	2919.5
system_4	RADAU3 (TP14)	4.390	0.069959	8.062	1.0276e+06
system_4	RK4 (TP8)	0.210	0.069777	9.462	6.7283e+05
system_4	RK4 (TP10)	0.470	0.069816	8.292	6.9052e+05
system_4	RK4 (TP12)	1.110	0.069818	8.749	6.6068e+05
system_4	RK4 (TP14)	2.770	0.069844	8.379	7.0437e+05
system_4	LA3 (TP8)	0.210	0.075841	5.449	79922
system_4	LA3 (TP10)	0.440	0.072443	5.667	32157
system_4	LA3 (TP12)	1.040	0.07093	6.197	12738
system_4	LA3 (TP14)	2.590	0.070281	6.322	5073.3
system_4	LC3 (TP8)	0.180	0.077577	5.474	76680
system_4	LC3 (TP10)	0.380	0.072982	5.697	30658
system_4	LC3 (TP12)	0.910	0.071103	6.024	12128
system_4	LC3 (TP14)	2.260	0.070338	6.636	4842.9
system_4	GL4 (TP8)	0.150	0.077183	5.423	82506
system_4	GL4 (TP10)	0.320	0.072879	6.001	33158
system_4	GL4 (TP12)	0.750	0.071093	6.040	13146
system_4	GL4 (TP14)	1.870	0.070335	7.175	5274.1
system_4	RADAU5 (TP8)	0.500	0.080292	5.367	1.5216e+05
system_4	RADAU5 (TP10)	0.820	0.075202	5.628	74961
system_4	RADAU5 (TP12)	1.550	0.072459	6.305	35098
system_4	RADAU5 (TP14)	3.180	0.071136	6.529	16282
system_4	GL6 (TP8)	1.960	0.080877	5.385	2.6376e+05
system_4	GL6 (TP10)	2.740	0.077086	5.557	1.3354e+05
system_4	GL6 (TP12)	4.160	0.073742	5.789	71890
system_4	GL6 (TP14)	7.290	0.071961	6.235	37572
system_4	Riot (05, 1e-11)	0m37.601s	0.06757	0.000	0
system_4	Riot (10, 1e-11)	0m3.171s	0.06757	10.000	0.18331
system_4	Riot (15, 1e-11)	0m9.102s	0.06757	10.000	0.30021
system_4	Valencia-IVP (0.00025)	0m5.231s	10.971	1.140	910.02
system_4	Valencia-IVP (0.0025)	0m0.679s	13.023	1.105	154.09
system_4	Valencia-IVP (0.025)	0m0.063s	3.2425	0.600	3.2425
system_4	VNODE-LP (15, 1e-14,1e-14)	0m0.012s	0.073974	5.055	10185
system_4	VNODE-LP (20, 1e-14,1e-14)	0m0.014s	0.075043	4.977	21260
system_4	VNODE-LP (25, 1e-14,1e-14)	0m0.012s	0.076265	4.913	30511

Table 5: Simulation results of Problem 5

Problems	Methods	c5t	c5w	c6t	c6w
system_5	Vnode-LP (5)	104.890	0.21527	10.000	0.023856
system_5	IMIDPOINT (TP8)	65.320	0.21723	10.000	0.031919
system_5	IMIDPOINT (TP10)	272.830	0.21569	10.000	0.025453
system_5	IMIDPOINT (TP12)	1350.800	0.21536	10.000	0.024194
system_5	IMIDPOINT (TP14)	6954.100	0.21529	10.000	0.023928
system_5	HEUN (TP8)	395.500	0.21527	10.000	0.02388
system_5	HEUN (TP10)	1538.990	0.21527	10.000	0.023857
system_5	HEUN (TP12)	8076.210	0.21527	10.000	0.023856
system_5	HEUN (TP14)	35485.320	0.21527	10.000	0.023856
system_5	KUTTA3 (TP8)	272.850	0.21527	10.000	0.023862
system_5	KUTTA3 (TP10)	719.650	0.21527	10.000	0.023856
system_5	KUTTA3 (TP12)	1992.550	0.21527	10.000	0.023856
system_5	KUTTA3 (TP14)	6095.900	0.21527	10.000	0.023856
system_5	RADAU3 (TP8)	245.390	0.22142	10.000	0.051184
system_5	RADAU3 (TP10)	630.280	0.21718	10.000	0.030729
system_5	RADAU3 (TP12)	1710.060	0.21587	10.000	0.025881
system_5	RADAU3 (TP14)	4867.290	0.21546	10.000	0.024482
system_5	RK4 (TP8)	150.240	0.21527	10.000	0.023858
system_5	RK4 (TP10)	308.180	0.21527	10.000	0.023856
system_5	RK4 (TP12)	864.420	0.21527	10.000	0.023856
system_5	RK4 (TP14)	1504.820	0.21527	10.000	0.023856
system_5	LA3 (TP8)	128.830	0.22784	10.000	0.09977
system_5	LA3 (TP10)	254.490	0.22032	10.000	0.043463
system_5	LA3 (TP12)	543.270	0.21725	10.000	0.030436
system_5	LA3 (TP14)	1188.470	0.21605	10.000	0.026308
system_5	LC3 (TP8)	75.630	0.22906	10.000	0.10699
system_5	LC3 (TP10)	154.550	0.22056	10.000	0.044554
system_5	LC3 (TP12)	427.030	0.21734	10.000	0.030727
system_5	LC3 (TP14)	763.330	0.21608	10.000	0.026405
system_5	GL4 (TP8)	66.210	0.22889	10.000	0.10144
system_5	GL4 (TP10)	135.400	0.22049	10.000	0.044091
system_5	GL4 (TP12)	303.270	0.21732	10.000	0.030672
system_5	GL4 (TP14)	663.680	0.21608	10.000	0.026399
system_5	RADAU5 (TP8)	110.870	0.24024	10.000	0.25438
system_5	RADAU5 (TP10)	179.320	0.22633	10.000	0.077288
system_5	RADAU5 (TP12)	333.000	0.22024	10.000	0.041858
system_5	RADAU5 (TP14)	608.920	0.21755	10.000	0.031095
system_5	GL6 (TP8)	129.490	0.25006	10.000	0.54691
system_5	GL6 (TP10)	181.590	0.23216	10.000	0.13349
system_5	GL6 (TP12)	297.150	0.22398	10.000	0.06021
system_5	GL6 (TP14)	480.380	0.21968	10.000	0.038831
system_5	Riot				
system_5	Valencia-IVP (0.00025)	24m48.963s	11.771	2.294	999.14
system_5	Valencia-IVP (0.0025)	2m39.317s	11.928	2.282	996.22
system_5	Valencia-IVP (0.025)	0m26.300s	13.735	2.175	989.27
system_5	VNODE-LP (15, 1e-14,1e-14)	0m4.483s	0.21527	10.000	0.023856
system_5	VNODE-LP (20, 1e-14,1e-14)	0m2.273s	0.21527	10.000	0.023856
system_5	VNODE-LP (25, 1e-14,1e-14)	0m1.518s	0.21527	10.000	0.023856

Table 6: Simulation results of Problem 6

Problems	Methods	c5t	c5w	c6t	c6w
system_6	Vnode-LP (5)	1.090	3.121e-05	10.000	0.0032238
system_6	IMIDPOINT (TP8)	23.790	2.9184e-05	10.000	0.0022963
system_6	IMIDPOINT (TP10)	97.310	2.9085e-05	10.000	0.0022862
system_6	IMIDPOINT (TP12)	456.530	2.9084e-05	10.000	0.0022902
system_6	IMIDPOINT (TP14)	2320.060	2.9084e-05	10.000	0.002295
system_6	HEUN (TP8)	45.900	0.00032293	10.000	0.00815
system_6	HEUN (TP10)	180.740	0.00032286	10.000	0.008147
system_6	HEUN (TP12)	802.080	6.1263e-05	10.000	0.0029461
system_6	HEUN (TP14)	4140.740	3.7545e-05	10.000	0.0024743
system_6	KUTTA3 (TP8)	107.860	0.00014231	10.000	0.0045541
system_6	KUTTA3 (TP10)	200.690	0.00014218	10.000	0.0045478
system_6	KUTTA3 (TP12)	509.080	0.00014218	10.000	0.0045475
system_6	KUTTA3 (TP14)	1568.420	9.2215e-05	10.000	0.0035561
system_6	RADAU3 (TP8)	96.110	2.9243e-05	10.000	0.0023052
system_6	RADAU3 (TP10)	156.860	2.9086e-05	10.000	0.0022837
system_6	RADAU3 (TP12)	385.330	2.9084e-05	10.000	0.0022836
system_6	RADAU3 (TP14)	1110.440	2.9084e-05	10.000	0.0022891
system_6	RK4 (TP8)	272.140	0.00012484	10.000	0.0042377
system_6	RK4 (TP10)	306.240	0.00012477	10.000	0.0041959
system_6	RK4 (TP12)	467.840	0.00012476	10.000	0.0041977
system_6	RK4 (TP14)	946.890	0.00012476	10.000	0.0042034
system_6	LA3 (TP8)	270.310	0.00010737	10.000	0.0038991
system_6	LA3 (TP10)	303.100	0.00010734	10.000	0.0038454
system_6	LA3 (TP12)	435.540	0.00010733	10.000	0.0038475
system_6	LA3 (TP14)	800.970	0.00010733	10.000	0.0038484
system_6	LC3 (TP8)	243.010	2.9135e-05	10.000	0.0023349
system_6	LC3 (TP10)	273.230	2.9094e-05	10.000	0.0022845
system_6	LC3 (TP12)	394.260	2.9085e-05	10.000	0.0022841
system_6	LC3 (TP14)	721.520	2.9084e-05	10.000	0.0022898
system_6	GL4 (TP8)	236.790	2.9118e-05	10.000	0.0023279
system_6	GL4 (TP10)	296.440	2.9089e-05	10.000	0.0022845
system_6	GL4 (TP12)	352.810	2.9085e-05	10.000	0.0022837
system_6	GL4 (TP14)	647.660	2.9084e-05	10.000	0.0022851
system_6	RADAU5 (TP8)	1055.990	2.9089e-05	10.000	0.00232
system_6	RADAU5 (TP10)	1054.950	2.9089e-05	10.000	0.0022837
system_6	RADAU5 (TP12)	1183.400	2.9085e-05	10.000	0.0022821
system_6	RADAU5 (TP14)	1711.040	2.9084e-05	10.000	0.0022867
system_6	GL6 (TP8)	4067.390	2.9085e-05	10.000	0.0023078
system_6	GL6 (TP10)	4065.870	2.9085e-05	10.000	0.0022833
system_6	GL6 (TP12)	5074.320	2.9085e-05	10.000	0.0022821
system_6	GL6 (TP14)	6091.990	2.9084e-05	10.000	0.0022841
system_6	Riot				
system_6	Valencia-IVP				
system_6	VNODE-LP				

Table 7: Simulation results of Problem 7

Problems	Methods	c5t	c5w	c6t	c6w
system_7	Vnode-LP (5)	0.000	4.7351e-14	10.000	2.1534e-15
system_7	IMIDPOINT (TP8)	0.010	7.2501e-09	10.000	6.8941e-09
system_7	IMIDPOINT (TP10)	0.040	7.9709e-11	10.000	7.1753e-11
system_7	IMIDPOINT (TP12)	0.000	0	0.000	0
system_7	IMIDPOINT (TP14)	0.000	0	0.000	0
system_7	HEUN (TP8)	0.020	7.2537e-09	10.000	7.1965e-09
system_7	HEUN (TP10)	0.000	0	0.000	0
system_7	HEUN (TP12)	0.000	0	0.000	0
system_7	HEUN (TP14)	0.000	0	0.000	0
system_7	KUTTA3 (TP8)	0.000	8.0192e-09	10.000	7.137e-09
system_7	KUTTA3 (TP10)	0.020	8.7872e-11	10.000	8.1385e-11
system_7	KUTTA3 (TP12)	0.060	2.61e-12	10.000	4.999e-11
system_7	KUTTA3 (TP14)	0.000	0	0.000	0
system_7	RADAU3 (TP8)	0.000	6.4972e-09	10.000	5.7391e-09
system_7	RADAU3 (TP10)	0.020	7.3765e-11	10.000	6.3388e-11
system_7	RADAU3 (TP12)	0.070	2.0942e-12	10.000	4.9787e-11
system_7	RADAU3 (TP14)	0.000	0	0.000	0
system_7	RK4 (TP8)	0.000	6.9778e-09	10.000	6.05e-09
system_7	RK4 (TP10)	0.000	8.3414e-11	10.000	7.3549e-11
system_7	RK4 (TP12)	0.020	2.2066e-12	10.000	4.6162e-11
system_7	RK4 (TP14)	0.040	1.6853e-13	10.000	5.0663e-11
system_7	LA3 (TP8)	0.000	5.1991e-09	10.000	5.0889e-09
system_7	LA3 (TP10)	0.010	6.7611e-11	10.000	5.6102e-11
system_7	LA3 (TP12)	0.020	1.7134e-12	10.000	5.2585e-11
system_7	LA3 (TP14)	0.050	1.2523e-13	10.000	5.0259e-11
system_7	LC3 (TP8)	0.000	5.3556e-09	5.642	6.0181e-09
system_7	LC3 (TP10)	0.010	6.8866e-11	10.000	5.2246e-11
system_7	LC3 (TP12)	0.020	1.7173e-12	10.000	5.216e-11
system_7	LC3 (TP14)	0.060	1.3456e-13	10.000	4.9127e-11
system_7	GL4 (TP8)	0.000	5.1915e-09	5.680	5.9902e-09
system_7	GL4 (TP10)	0.000	6.8879e-11	10.000	5.5829e-11
system_7	GL4 (TP12)	0.010	1.687e-12	10.000	5.1755e-11
system_7	GL4 (TP14)	0.030	1.2479e-13	10.000	5.058e-11
system_7	RADAU5 (TP8)	0.000	3.4973e-09	10.000	4.6608e-09
system_7	RADAU5 (TP10)	0.000	6.0205e-11	10.000	4.5321e-11
system_7	RADAU5 (TP12)	0.010	1.3681e-12	10.000	4.858e-11
system_7	RADAU5 (TP14)	0.020	4.9072e-14	10.000	4.6413e-11
system_7	GL6 (TP8)	0.000	1.1864e-09	7.639	4.7514e-09
system_7	GL6 (TP10)	0.010	5.436e-11	10.000	4.6874e-11
system_7	GL6 (TP12)	0.010	1.0338e-12	10.000	4.8124e-11
system_7	GL6 (TP14)	0.020	2.7533e-14	10.000	5.4144e-11
system_7	Riot (05, 1e-11)	0m0.073s	1.8582e-11	1.000	1.8582e-11
system_7	Riot (10, 1e-11)	0m0.106s	1.199e-14	10.000	1.061e-12
system_7	Riot (15, 1e-11)	0m0.189s	1.7097e-14	0.000	0
system_7	Valencia-IVP (0.00025)	0m1.491s	0.00029389	10.000	2.7571
system_7	Valencia-IVP (0.0025)	0m0.132s	0.0029465	10.000	27.915
system_7	Valencia-IVP (0.025)	0m0.016s	0.030251	10.000	316.61
system_7	VNODE-LP (15, 1e-14,1e-14)	0m0.005s	1.6653e-16	10.000	4.6756e-19
system_7	VNODE-LP (20, 1e-14,1e-14)	0m0.003s	2.7756e-16	10.000	4.0658e-19
system_7	VNODE-LP (25, 1e-14,1e-14)	0m0.007s	1.6653e-16	10.000	2.9138e-19

Table 8: Simulation results of Problem 8

Problems	Methods	c5t	c5w	c6t	c6w
system_8	Vnode-LP (5)	0.020	2.881e-13	10.000	6.6577e-13
system_8	IMIDPOINT (TP8)	0.160	9.2259e-08	10.000	1.2768e-06
system_8	IMIDPOINT (TP10)	0.720	9.3421e-10	10.000	1.2273e-08
system_8	IMIDPOINT (TP12)	3.280	5.0031e-11	10.000	1.5679e-10
system_8	IMIDPOINT (TP14)	0.000	0	0.000	0
system_8	HEUN (TP8)	0.450	9.1432e-08	10.000	7.8181e-07
system_8	HEUN (TP10)	1.830	9.3281e-10	10.000	1.0349e-08
system_8	HEUN (TP12)	7.270	5.0106e-11	10.000	1.505e-10
system_8	HEUN (TP14)	0.010	0	0.000	0
system_8	KUTTA3 (TP8)	0.260	9.6069e-08	10.000	8.0987e-07
system_8	KUTTA3 (TP10)	0.770	1.0256e-09	10.000	1.6976e-08
system_8	KUTTA3 (TP12)	2.050	5.0169e-11	10.000	2.7973e-10
system_8	KUTTA3 (TP14)	6.400	6.333e-12	10.000	5.213e-11
system_8	RADAU3 (TP8)	0.230	7.8863e-08	10.000	1.5642e-06
system_8	RADAU3 (TP10)	0.660	8.3082e-10	10.000	2.0158e-08
system_8	RADAU3 (TP12)	1.760	5.0152e-11	10.000	2.6641e-10
system_8	RADAU3 (TP14)	5.540	5.0735e-12	10.000	5.5725e-11
system_8	RK4 (TP8)	0.180	7.9542e-08	10.000	4.2897e-07
system_8	RK4 (TP10)	0.370	9.1505e-10	10.000	1.248e-08
system_8	RK4 (TP12)	0.880	5.0571e-11	10.000	2.3536e-10
system_8	RK4 (TP14)	1.990	1.7849e-12	10.000	5.0798e-11
system_8	LA3 (TP8)	0.160	6.3572e-08	10.000	1.6498e-06
system_8	LA3 (TP10)	0.310	7.0977e-10	10.000	1.9985e-08
system_8	LA3 (TP12)	0.700	5.0101e-11	10.000	2.6736e-10
system_8	LA3 (TP14)	1.630	1.339e-12	10.000	6.242e-11
system_8	LC3 (TP8)	0.130	6.3672e-08	10.000	2.764e-06
system_8	LC3 (TP10)	0.270	7.1834e-10	10.000	2.3418e-08
system_8	LC3 (TP12)	0.630	5.1349e-11	10.000	2.8613e-10
system_8	LC3 (TP14)	1.540	1.4e-12	10.000	6.3282e-11
system_8	GL4 (TP8)	0.110	6.3749e-08	10.000	1.7878e-06
system_8	GL4 (TP10)	0.220	7.1066e-10	10.000	2.0222e-08
system_8	GL4 (TP12)	0.500	5.0108e-11	10.000	2.7035e-10
system_8	GL4 (TP14)	1.240	1.3266e-12	10.000	6.2414e-11
system_8	RADAU5 (TP8)	0.180	4.2775e-08	10.000	3.4731e-06
system_8	RADAU5 (TP10)	0.290	5.7887e-10	10.000	2.4176e-08
system_8	RADAU5 (TP12)	0.530	4.3954e-11	10.000	2.7229e-10
system_8	RADAU5 (TP14)	1.060	7.3941e-13	10.000	7.5398e-11
system_8	GL6 (TP8)	0.330	2.9492e-08	6.448	5.5875e-07
system_8	GL6 (TP10)	0.420	4.1992e-10	10.000	2.0358e-08
system_8	GL6 (TP12)	0.610	3.1545e-11	10.000	2.7105e-10
system_8	GL6 (TP14)	1.050	5.152e-13	10.000	8.656e-11
system_8	Riot (05, 1e-11)	0m0.296s	9.0226e-11	10.000	8.8003e-05
system_8	Riot (10, 1e-11)	0m0.207s	1.299e-14	10.000	1.3371e-10
system_8	Riot (15, 1e-11)	0m0.253s	1.8319e-14	10.000	8.3085e-15
system_8	Valencia-IVP (0.00025)	0m4.114s	0.0026387	5.269	999.48
system_8	Valencia-IVP (0.0025)	0m0.402s	0.026723	4.485	996.18
system_8	Valencia-IVP (0.025)	0m0.048s	0.30489	3.575	963.25
system_8	VNODE-LP (15, 1e-14,1e-14)	0m0.006s	2.1094e-15	10.000	2.3327e-16
system_8	VNODE-LP (20, 1e-14,1e-14)	0m0.005s	1.1102e-15	10.000	1.0988e-16
system_8	VNODE-LP (25, 1e-14,1e-14)	0m0.003s	8.8818e-16	10.000	8.5489e-17

Table 9: Simulation results of Problem 9

Problems	Methods	c5t	c5w	c6t	c6w
system_9	Vnode-LP (5)	0.000	0	10.000	0
system_9	IMIDPOINT (TP8)	0.170	9.2259e-08	10.000	1.2768e-06
system_9	IMIDPOINT (TP10)	0.720	9.3421e-10	10.000	1.2273e-08
system_9	IMIDPOINT (TP12)	3.280	5.0031e-11	10.000	1.5679e-10
system_9	IMIDPOINT (TP14)	0.000	0	0.000	0
system_9	HEUN (TP8)	0.450	9.1432e-08	10.000	7.8181e-07
system_9	HEUN (TP10)	1.830	9.3281e-10	10.000	1.0349e-08
system_9	HEUN (TP12)	7.250	5.0106e-11	10.000	1.505e-10
system_9	HEUN (TP14)	0.010	0	0.000	0
system_9	KUTTA3 (TP8)	0.260	9.6069e-08	10.000	8.0987e-07
system_9	KUTTA3 (TP10)	0.770	1.0256e-09	10.000	1.6976e-08
system_9	KUTTA3 (TP12)	2.050	5.0169e-11	10.000	2.7973e-10
system_9	KUTTA3 (TP14)	6.440	6.333e-12	10.000	5.213e-11
system_9	RADAU3 (TP8)	0.230	7.8863e-08	10.000	1.5642e-06
system_9	RADAU3 (TP10)	0.660	8.3082e-10	10.000	2.0158e-08
system_9	RADAU3 (TP12)	1.760	5.0152e-11	10.000	2.6641e-10
system_9	RADAU3 (TP14)	5.530	5.0735e-12	10.000	5.5725e-11
system_9	RK4 (TP8)	0.180	7.9542e-08	10.000	4.2897e-07
system_9	RK4 (TP10)	0.370	9.1505e-10	10.000	1.248e-08
system_9	RK4 (TP12)	0.880	5.0571e-11	10.000	2.3536e-10
system_9	RK4 (TP14)	1.990	1.7849e-12	10.000	5.0798e-11
system_9	LA3 (TP8)	0.160	6.3572e-08	10.000	1.6498e-06
system_9	LA3 (TP10)	0.300	7.0977e-10	10.000	1.9985e-08
system_9	LA3 (TP12)	0.700	5.0101e-11	10.000	2.6736e-10
system_9	LA3 (TP14)	1.620	1.339e-12	10.000	6.242e-11
system_9	LC3 (TP8)	0.130	6.3672e-08	10.000	2.764e-06
system_9	LC3 (TP10)	0.270	7.1834e-10	10.000	2.3418e-08
system_9	LC3 (TP12)	0.630	5.1349e-11	10.000	2.8613e-10
system_9	LC3 (TP14)	1.540	1.4e-12	10.000	6.3282e-11
system_9	GL4 (TP8)	0.110	6.3749e-08	10.000	1.7878e-06
system_9	GL4 (TP10)	0.220	7.1066e-10	10.000	2.0222e-08
system_9	GL4 (TP12)	0.500	5.0108e-11	10.000	2.7035e-10
system_9	GL4 (TP14)	1.240	1.3266e-12	10.000	6.2414e-11
system_9	RADAU5 (TP8)	0.180	4.2775e-08	10.000	3.4731e-06
system_9	RADAU5 (TP10)	0.290	5.7887e-10	10.000	2.4176e-08
system_9	RADAU5 (TP12)	0.530	4.3954e-11	10.000	2.7229e-10
system_9	RADAU5 (TP14)	1.060	7.3941e-13	10.000	7.5398e-11
system_9	GL6 (TP8)	0.340	2.9492e-08	6.448	5.5875e-07
system_9	GL6 (TP10)	0.410	4.1992e-10	10.000	2.0358e-08
system_9	GL6 (TP12)	0.620	3.1545e-11	10.000	2.7105e-10
system_9	GL6 (TP14)	1.050	5.152e-13	10.000	8.656e-11
system_9	Riot				
system_9	Valencia-IVP				
system_9	VNODE-LP				

Table 10: Simulation results of Problem 10

Problems	Methods	c5t	c5w	c6t	c6w
system_10	Vnode-LP (5)	0.000	9.0483e-14	10.000	6.2061e-14
system_10	IMIDPOINT (TP8)	0.020	1.9617e-08	10.000	2.306e-08
system_10	IMIDPOINT (TP10)	0.080	2.0157e-10	10.000	2.3389e-10
system_10	IMIDPOINT (TP12)	0.000	0	0.000	0
system_10	IMIDPOINT (TP14)	0.000	0	0.000	0
system_10	HEUN (TP8)	0.050	2.2481e-08	10.000	2.6421e-08
system_10	HEUN (TP10)	0.210	2.2984e-10	10.000	2.6774e-10
system_10	HEUN (TP12)	0.000	0	0.000	0
system_10	HEUN (TP14)	0.000	0	0.000	0
system_10	KUTTA3 (TP8)	0.010	2.7584e-08	10.000	3.2717e-08
system_10	KUTTA3 (TP10)	0.040	2.8579e-10	10.000	3.3549e-10
system_10	KUTTA3 (TP12)	0.130	8.4845e-12	10.000	4.9788e-11
system_10	KUTTA3 (TP14)	0.410	6.6769e-13	10.000	1.2106e-11
system_10	RADAU3 (TP8)	0.010	2.1016e-08	10.000	2.5343e-08
system_10	RADAU3 (TP10)	0.050	2.286e-10	10.000	2.664e-10
system_10	RADAU3 (TP12)	0.160	6.8279e-12	10.000	5.0126e-11
system_10	RADAU3 (TP14)	0.490	6.7124e-13	10.000	1.2161e-11
system_10	RK4 (TP8)	0.010	5.0319e-08	10.000	5.9076e-08
system_10	RK4 (TP10)	0.010	5.3908e-10	10.000	6.5826e-10
system_10	RK4 (TP12)	0.030	1.2648e-11	10.000	4.9651e-11
system_10	RK4 (TP14)	0.080	2.0139e-13	10.000	3.6794e-12
system_10	LA3 (TP8)	0.010	1.8167e-08	10.000	2.3348e-08
system_10	LA3 (TP10)	0.020	2.2851e-10	10.000	2.753e-10
system_10	LA3 (TP12)	0.050	7.0102e-12	10.000	4.9797e-11
system_10	LA3 (TP14)	0.140	1.9407e-13	10.000	3.534e-12
system_10	LC3 (TP8)	0.010	2.7151e-08	10.000	3.2705e-08
system_10	LC3 (TP10)	0.020	2.9599e-10	10.000	3.5716e-10
system_10	LC3 (TP12)	0.040	7.7898e-12	10.000	5.0472e-11
system_10	LC3 (TP14)	0.100	1.7186e-13	10.000	3.1298e-12
system_10	GL4 (TP8)	0.010	2.4149e-08	10.000	3.2989e-08
system_10	GL4 (TP10)	0.010	2.8614e-10	10.000	3.5271e-10
system_10	GL4 (TP12)	0.030	7.7658e-12	10.000	5.0467e-11
system_10	GL4 (TP14)	0.070	1.6498e-13	10.000	2.9966e-12
system_10	RADAU5 (TP8)	0.010	1.6944e-08	10.000	1.6164e-08
system_10	RADAU5 (TP10)	0.020	3.0308e-10	10.000	3.7185e-10
system_10	RADAU5 (TP12)	0.030	8.7879e-12	10.000	4.9448e-11
system_10	RADAU5 (TP14)	0.060	1.2079e-13	10.000	2.2361e-12
system_10	GL6 (TP8)	0.030	7.2748e-09	10.000	6.1815e-09
system_10	GL6 (TP10)	0.030	2.3701e-10	10.000	2.39e-10
system_10	GL6 (TP12)	0.040	9.5424e-12	10.000	5.267e-11
system_10	GL6 (TP14)	0.060	1.5143e-13	10.000	2.8558e-12
system_10	Riot (05, 1e-11)	0m0.148s	3.2904e-11	10.000	4.4509e-11
system_10	Riot (10, 1e-11)	0m0.154s	2.276e-14	10.000	2.4266e-12
system_10	Riot (15, 1e-11)	0m0.235s	2.1427e-14	10.000	2.0872e-14
system_10	Valencia-IVP (0.00025)	0m1.280s	0.00015473	10.000	0.0022794
system_10	Valencia-IVP (0.0025)	0m0.111s	0.0015521	10.000	0.022876
system_10	Valencia-IVP (0.025)	0m0.014s	0.016012	10.000	0.23397
system_10	VNODE-LP (15, 1e-14,1e-14)	0m0.007s	1.6653e-15	10.000	1.4988e-15
system_10	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	1.2212e-15	10.000	1.1102e-15
system_10	VNODE-LP (25, 1e-14,1e-14)	0m0.004s	9.992e-16	10.000	1.1102e-15

Table 11: Simulation results of Problem 11

Problems	Methods	c5t	c5w	c6t	c6w
system_11	Vnode-LP (5)	0.020	7.5828e-13	10.000	1.164e-10
system_11	IMIDPOINT (TP8)	0.110	1.5292e-07	10.000	0.00016343
system_11	IMIDPOINT (TP10)	0.460	1.5494e-09	10.000	4.4921e-05
system_11	IMIDPOINT (TP12)	2.080	7.7563e-11	10.000	2.5154e-06
system_11	IMIDPOINT (TP14)	0.000	0	0.000	0
system_11	HEUN (TP8)	0.220	1.4073e-07	10.000	0.00027269
system_11	HEUN (TP10)	0.880	1.4316e-09	10.000	3.7675e-05
system_11	HEUN (TP12)	3.580	7.6951e-11	10.000	2.4949e-06
system_11	HEUN (TP14)	0.000	0	0.000	0
system_11	KUTTA3 (TP8)	0.130	1.7792e-07	10.000	8.92e-05
system_11	KUTTA3 (TP10)	0.360	1.8933e-09	10.000	4.0369e-05
system_11	KUTTA3 (TP12)	0.980	7.5373e-11	10.000	2.4337e-06
system_11	KUTTA3 (TP14)	3.070	5.3062e-11	10.000	2.2717e-06
system_11	RADAU3 (TP8)	0.150	1.152e-07	10.000	0.00013745
system_11	RADAU3 (TP10)	0.440	1.2478e-09	10.000	3.8313e-05
system_11	RADAU3 (TP12)	1.230	6.6152e-11	10.000	2.4376e-06
system_11	RADAU3 (TP14)	3.840	5.1602e-11	10.000	2.2759e-06
system_11	RK4 (TP8)	0.190	1.4877e-07	10.000	0.00010442
system_11	RK4 (TP10)	0.420	1.6596e-09	10.000	2.0995e-05
system_11	RK4 (TP12)	1.030	7.3297e-11	10.000	2.4134e-06
system_11	RK4 (TP14)	2.430	5.0783e-11	10.000	2.2155e-06
system_11	LA3 (TP8)	0.190	1.1854e-07	10.000	0.0002684
system_11	LA3 (TP10)	0.400	1.4317e-09	10.000	3.3163e-05
system_11	LA3 (TP12)	0.950	7.7473e-11	10.000	2.6276e-06
system_11	LA3 (TP14)	2.260	5.0735e-11	10.000	2.2631e-06
system_11	LC3 (TP8)	0.170	1.2124e-07	10.000	0.00034215
system_11	LC3 (TP10)	0.350	1.161e-09	10.000	4.4935e-05
system_11	LC3 (TP12)	0.840	6.7225e-11	10.000	2.6049e-06
system_11	LC3 (TP14)	2.050	4.5433e-11	10.000	2.2736e-06
system_11	GL4 (TP8)	0.140	1.1921e-07	10.000	0.00025569
system_11	GL4 (TP10)	0.300	1.1665e-09	10.000	2.3601e-05
system_11	GL4 (TP12)	0.700	6.7465e-11	10.000	2.6031e-06
system_11	GL4 (TP14)	1.710	4.2525e-11	10.000	2.2726e-06
system_11	RADAU5 (TP8)	0.460	1.2073e-07	10.000	0.00047182
system_11	RADAU5 (TP10)	0.760	1.2597e-09	10.000	5.3983e-05
system_11	RADAU5 (TP12)	1.440	7.0553e-11	10.000	2.4415e-06
system_11	RADAU5 (TP14)	2.940	2.2225e-11	10.000	2.3189e-06
system_11	GL6 (TP8)	1.810	9.7115e-08	10.000	0.00042986
system_11	GL6 (TP10)	2.460	1.6795e-09	10.000	3.0249e-05
system_11	GL6 (TP12)	3.740	8.2738e-11	10.000	2.5798e-06
system_11	GL6 (TP14)	6.440	5.1391e-11	10.000	2.3681e-06
system_11	Riot (05, 1e-11)	0m0.593s	3.3225e-10	10.000	3.6967e-08
system_11	Riot (10, 1e-11)	0m0.299s	6.505e-12	10.000	3.2633e-09
system_11	Riot (15, 1e-11)	0m0.436s	3.5971e-14	10.000	5.0365e-10
system_11	Valencia-IVP (0.00025)	0m1.732s	0.011564	4.825	986.14
system_11	Valencia-IVP (0.0025)	0m0.252s	0.11774	2.902	1.5629
system_11	Valencia-IVP (0.025)	0m0.094s	1.5234	1.050	1.7124
system_11	VNODE-LP (15, 1e-14,1e-14)	0m0.015s	1.3101e-14	10.000	2.7778e-12
system_11	VNODE-LP (20, 1e-14,1e-14)	0m0.013s	9.1038e-15	10.000	1.9398e-12
system_11	VNODE-LP (25, 1e-14,1e-14)	0m0.011s	6.8834e-15	10.000	2.2919e-12

Table 12: Simulation results of Problem 12

Problems	Methods	c5t	c5w	c6t	c6w
system_12	Vnode-LP (5)	1.110	7.967e-13	10.000	7.5443e-11
system_12	IMIDPOINT (TP8)	19.010	2.2742e-05	10.000	0.00026666
system_12	IMIDPOINT (TP10)	65.480	2.2705e-05	10.000	0.00026382
system_12	IMIDPOINT (TP12)	304.390	3.7612e-06	10.000	4.3698e-05
system_12	IMIDPOINT (TP14)	1880.130	1.3612e-06	10.000	1.5836e-05
system_12	HEUN (TP8)	35.260	9.959e-05	10.000	0.0011597
system_12	HEUN (TP10)	121.020	9.9552e-05	10.000	0.0011569
system_12	HEUN (TP12)	527.870	2.2996e-05	10.000	0.0002672
system_12	HEUN (TP14)	2833.640	5.8402e-06	10.000	6.7939e-05
system_12	KUTTA3 (TP8)	85.920	3.8577e-05	10.000	0.00045873
system_12	KUTTA3 (TP10)	129.740	3.8413e-05	10.000	0.00044637
system_12	KUTTA3 (TP12)	293.070	3.8412e-05	10.000	0.00044633
system_12	KUTTA3 (TP14)	880.640	3.8412e-05	10.000	0.00044644
system_12	RADAU3 (TP8)	95.000	5.5565e-06	10.000	6.882e-05
system_12	RADAU3 (TP10)	138.740	5.4893e-06	10.000	6.3848e-05
system_12	RADAU3 (TP12)	326.270	5.4889e-06	10.000	6.3855e-05
system_12	RADAU3 (TP14)	1018.810	5.489e-06	10.000	6.3894e-05
system_12	RK4 (TP8)	273.310	3.2515e-05	10.000	0.0004068
system_12	RK4 (TP10)	294.720	3.2503e-05	10.000	0.00037806
system_12	RK4 (TP12)	423.710	3.2499e-05	10.000	0.00037764
system_12	RK4 (TP14)	823.650	3.2499e-05	10.000	0.00037768
system_12	LA3 (TP8)	272.710	3.1648e-05	10.000	0.00038432
system_12	LA3 (TP10)	294.300	3.1642e-05	10.000	0.00036778
system_12	LA3 (TP12)	423.420	3.164e-05	10.000	0.00036759
system_12	LA3 (TP14)	852.120	3.164e-05	10.000	0.00036758
system_12	LC3 (TP8)	244.680	1.8603e-06	10.000	4.0241e-05
system_12	LC3 (TP10)	263.760	1.8536e-06	10.000	2.1697e-05
system_12	LC3 (TP12)	381.860	1.8512e-06	10.000	2.1538e-05
system_12	LC3 (TP14)	734.360	1.8512e-06	10.000	2.1538e-05
system_12	GL4 (TP8)	239.270	1.0315e-05	10.000	0.00014092
system_12	GL4 (TP10)	257.700	1.0312e-05	10.000	0.00012
system_12	GL4 (TP12)	344.370	1.0309e-05	10.000	0.0001198
system_12	GL4 (TP14)	725.060	1.0309e-05	10.000	0.00011979
system_12	RADAU5 (TP8)	1070.970	2.3194e-06	10.000	4.3397e-05
system_12	RADAU5 (TP10)	1026.110	2.3194e-06	10.000	2.7303e-05
system_12	RADAU5 (TP12)	1155.780	2.3188e-06	10.000	2.6958e-05
system_12	RADAU5 (TP14)	1605.770	2.3188e-06	10.000	2.6966e-05
system_12	GL6 (TP8)	4121.250	2.4435e-06	10.000	3.9254e-05
system_12	GL6 (TP10)	3962.000	2.4435e-06	10.000	2.862e-05
system_12	GL6 (TP12)	3958.550	2.4435e-06	10.000	2.8408e-05
system_12	GL6 (TP14)	5148.470	2.4434e-06	10.000	2.8415e-05
system_12	Riot				
system_12	Valencia-IVP				
system_12	VNODE-LP				

Table 13: Simulation results of Problem 13

Problems	Methods	c5t	c5w	c6t	c6w
system_13	Vnode-LP (5)	0.010	1.0512e-12	10.000	1.0026e-11
system_13	IMIDPOINT (TP8)	0.080	8.8072e-08	10.000	8.1707e-05
system_13	IMIDPOINT (TP10)	0.380	8.9175e-10	10.000	8.7619e-05
system_13	IMIDPOINT (TP12)	1.710	3.8935e-11	10.000	0.00021201
system_13	IMIDPOINT (TP14)	0.000	0	0.000	0
system_13	HEUN (TP8)	0.150	8.7787e-08	10.000	5.7958e-05
system_13	HEUN (TP10)	0.640	8.9333e-10	10.000	0.00010273
system_13	HEUN (TP12)	3.020	4.6746e-11	10.000	0.00035235
system_13	HEUN (TP14)	0.000	0	0.000	0
system_13	KUTTA3 (TP8)	0.070	1.231e-07	10.000	2.8841e-05
system_13	KUTTA3 (TP10)	0.190	1.2963e-09	10.000	3.5911e-05
system_13	KUTTA3 (TP12)	0.630	1.5854e-11	10.000	3.5249e-05
system_13	KUTTA3 (TP14)	2.010	8.6331e-12	10.000	9.9308e-05
system_13	RADAU3 (TP8)	0.080	9.9786e-08	10.000	3.8208e-05
system_13	RADAU3 (TP10)	0.230	1.0454e-09	10.000	2.004e-05
system_13	RADAU3 (TP12)	0.690	1.2726e-11	10.000	3.2725e-05
system_13	RADAU3 (TP14)	2.180	6.91e-12	10.000	0.00014074
system_13	RK4 (TP8)	0.100	7.5254e-08	10.000	1.1165e-05
system_13	RK4 (TP10)	0.220	8.6019e-10	10.000	3.382e-06
system_13	RK4 (TP12)	0.530	9.9423e-12	10.000	4.2799e-06
system_13	RK4 (TP14)	1.310	1.7151e-12	10.000	1.186e-05
system_13	LA3 (TP8)	0.080	5.8953e-08	10.000	5.1168e-05
system_13	LA3 (TP10)	0.180	6.6553e-10	10.000	1.9843e-05
system_13	LA3 (TP12)	0.430	7.514e-12	10.000	1.0691e-05
system_13	LA3 (TP14)	1.030	1.2674e-12	10.000	2.7648e-05
system_13	LC3 (TP8)	0.080	5.7959e-08	10.000	7.6788e-05
system_13	LC3 (TP10)	0.180	6.6596e-10	10.000	1.7582e-05
system_13	LC3 (TP12)	0.440	7.5788e-12	10.000	1.9202e-05
system_13	LC3 (TP14)	1.090	1.3687e-12	10.000	2.8134e-05
system_13	GL4 (TP8)	0.070	5.9042e-08	10.000	3.9898e-05
system_13	GL4 (TP10)	0.150	6.6585e-10	10.000	1.3837e-05
system_13	GL4 (TP12)	0.350	7.5104e-12	10.000	9.4854e-06
system_13	GL4 (TP14)	0.890	1.2621e-12	10.000	1.4579e-05
system_13	RADAU5 (TP8)	0.190	5.1842e-08	10.000	0.0001082
system_13	RADAU5 (TP10)	0.320	7.0006e-10	10.000	1.814e-05
system_13	RADAU5 (TP12)	0.600	8.1482e-12	10.000	9.5086e-06
system_13	RADAU5 (TP14)	1.240	4.281e-13	10.000	8.8193e-06
system_13	GL6 (TP8)	0.730	2.0607e-08	10.000	4.4303e-05
system_13	GL6 (TP10)	0.970	3.6968e-10	10.000	9.351e-06
system_13	GL6 (TP12)	1.580	5.0635e-12	10.000	3.2896e-06
system_13	GL6 (TP14)	2.670	2.2027e-13	10.000	3.6132e-06
system_13	Riot (05, 1e-11)	0m0.182s	2.3274e-10	10.000	2.2851e-09
system_13	Riot (10, 1e-11)	0m0.119s	3.5083e-14	10.000	1.236e-10
system_13	Riot (15, 1e-11)	0m0.153s	1.1813e-13	10.000	5.4101e-12
system_13	Valencia-IVP (0.00025)	0m1.141s	0.0044966	7.088	999.86
system_13	Valencia-IVP (0.0025)	0m0.099s	0.045269	5.923	999.03
system_13	Valencia-IVP (0.025)	0m0.017s	0.48459	4.650	990.84
system_13	VNODE-LP (15, 1e-14,1e-14)	0m0.004s	6.2172e-15	10.000	2.4802e-13
system_13	VNODE-LP (20, 1e-14,1e-14)	0m0.005s	3.9968e-15	10.000	2.3404e-13
system_13	VNODE-LP (25, 1e-14,1e-14)	0m0.005s	1.7764e-15	10.000	1.1502e-13

Table 14: Simulation results of Problem 14

Problems	Methods	c5t	c5w	c6t	c6w
system_14	Vnode-LP (5)	0.020	4.7429e-11	10.000	261.38
system_14	IMIDPOINT (TP8)	0.160	8.7538e-07	10.000	4.6638e+06
system_14	IMIDPOINT (TP10)	0.680	8.8461e-09	10.000	47070
system_14	IMIDPOINT (TP12)	2.980	4.7483e-10	10.000	2468.2
system_14	IMIDPOINT (TP14)	0.000	0	0.000	0
system_14	HEUN (TP8)	0.290	8.7444e-07	10.000	4.6557e+06
system_14	HEUN (TP10)	1.090	8.8646e-09	10.000	47165
system_14	HEUN (TP12)	5.000	5.7553e-10	10.000	2988.4
system_14	HEUN (TP14)	0.000	0	0.000	0
system_14	KUTTA3 (TP8)	0.130	1.1477e-06	10.000	5.2658e+06
system_14	KUTTA3 (TP10)	0.300	1.1712e-08	10.000	53173
system_14	KUTTA3 (TP12)	0.980	1.5409e-10	10.000	728.28
system_14	KUTTA3 (TP14)	3.160	1.1565e-10	10.000	622.77
system_14	RADAU3 (TP8)	0.140	9.1872e-07	10.000	4.2336e+06
system_14	RADAU3 (TP10)	0.370	9.4281e-09	10.000	42798
system_14	RADAU3 (TP12)	1.120	1.2393e-10	10.000	585.65
system_14	RADAU3 (TP14)	3.570	9.274e-11	10.000	499.3
system_14	RK4 (TP8)	0.160	8.8627e-07	10.000	4.8031e+06
system_14	RK4 (TP10)	0.360	9.1008e-09	10.000	49016
system_14	RK4 (TP12)	0.870	1.0066e-10	10.000	536.3
system_14	RK4 (TP14)	2.110	2.1302e-11	10.000	110.39
system_14	LA3 (TP8)	0.130	6.5481e-07	10.000	3.6322e+06
system_14	LA3 (TP10)	0.280	6.9144e-09	10.000	37243
system_14	LA3 (TP12)	0.690	7.654e-11	10.000	407.87
system_14	LA3 (TP14)	1.650	1.5845e-11	10.000	81.953
system_14	LC3 (TP8)	0.130	6.5696e-07	10.000	3.6618e+06
system_14	LC3 (TP10)	0.300	6.9049e-09	10.000	37329
system_14	LC3 (TP12)	0.720	7.7222e-11	10.000	410.84
system_14	LC3 (TP14)	1.770	1.711e-11	10.000	88.562
system_14	GL4 (TP8)	0.110	6.5634e-07	10.000	3.6416e+06
system_14	GL4 (TP10)	0.240	6.917e-09	10.000	37257
system_14	GL4 (TP12)	0.590	7.6497e-11	10.000	407.42
system_14	GL4 (TP14)	1.440	1.5717e-11	10.000	81.43
system_14	RADAU5 (TP8)	0.280	6.0766e-07	10.000	3.1656e+06
system_14	RADAU5 (TP10)	0.480	6.8262e-09	10.000	33145
system_14	RADAU5 (TP12)	0.960	7.5303e-11	10.000	350.93
system_14	RADAU5 (TP14)	1.990	5.1727e-12	10.000	26.633
system_14	GL6 (TP8)	0.980	3.9912e-07	10.000	2.622e+06
system_14	GL6 (TP10)	1.400	4.7406e-09	10.000	28089
system_14	GL6 (TP12)	2.320	5.3277e-11	10.000	297.89
system_14	GL6 (TP14)	4.160	2.5011e-12	10.000	12.664
system_14	Riot (03, 1e-11)	0m2.181s	1.0466e-05	-0.000	1.0466e-05
system_14	Riot (04, 1e-11)	0m1.239s	2.1448e-08	-0.000	2.1448e-08
system_14	Riot (05, 1e-11)	0m0.348s	7.1298e-09	8.208	2.2565e+261
system_14	Riot (06, 1e-11)	0m0.194s	2.2129e-09	-0.000	2.2129e-09
system_14	Riot (10, 1e-11)	0m0.126s	4.0075e-12	1.000	4.0075e-12
system_14	Riot (15, 1e-11)	0m0.175s	1.2037e-11	10.000	1.5302e+136
system_14	Valencia-IVP (0.00025)	0m1.778s	0.090273	3.670	999.58
system_14	Valencia-IVP (0.0025)	0m0.165s	0.90282	2.973	998.44
system_14	Valencia-IVP (0.025)	0m0.021s	9.1235	2.275	967.86
system_14	VNODE-LP (15, 1e-14,1e-14)	0m0.008s	1.9185e-13	10.000	1.0508
system_14	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	2.2737e-13	10.000	1.25
system_14	VNODE-LP (25, 1e-14,1e-14)	0m0.005s	9.2371e-14	10.000	0.48828

Table 15: Simulation results of Problem 15

Problems	Methods	c5t	c5w	c6t	c6w
system_15	Vnode-LP (5)	0.010	0.9093	10.000	0.91295
system_15	IMIDPOINT (TP8)	0.090	0.92341	10.000	3.1961
system_15	IMIDPOINT (TP10)	0.440	0.91208	10.000	1.306
system_15	IMIDPOINT (TP12)	2.020	0.90997	10.000	0.98063
system_15	IMIDPOINT (TP14)	0.000	0.5	0.000	0.5
system_15	HEUN (TP8)	0.170	0.9093	10.000	0.91493
system_15	HEUN (TP10)	0.750	0.9093	10.000	0.9132
system_15	HEUN (TP12)	3.200	0.9093	10.000	0.91363
system_15	HEUN (TP14)	0.000	0.5	0.000	0.5
system_15	KUTTA3 (TP8)	0.080	0.9093	10.000	0.91315
system_15	KUTTA3 (TP10)	0.230	0.9093	10.000	0.913
system_15	KUTTA3 (TP12)	0.590	0.9093	10.000	0.913
system_15	KUTTA3 (TP14)	1.910	0.9093	10.000	0.91312
system_15	RADAU3 (TP8)	0.090	0.95903	10.000	10.913
system_15	RADAU3 (TP10)	0.270	0.92644	10.000	3.0107
system_15	RADAU3 (TP12)	0.770	0.91423	10.000	1.5861
system_15	RADAU3 (TP14)	2.430	0.91101	10.000	1.0234
system_15	RK4 (TP8)	0.100	0.9093	10.000	0.91299
system_15	RK4 (TP10)	0.230	0.9093	10.000	0.91295
system_15	RK4 (TP12)	0.560	0.9093	10.000	0.91296
system_15	RK4 (TP14)	1.340	0.9093	10.000	0.91297
system_15	LA3 (TP8)	0.080	0.99928	10.000	33.692
system_15	LA3 (TP10)	0.190	0.95207	10.000	7.3612
system_15	LA3 (TP12)	0.460	0.92563	10.000	2.4498
system_15	LA3 (TP14)	1.140	0.91594	10.000	1.5617
system_15	LC3 (TP8)	0.080	1.0065	10.000	45.273
system_15	LC3 (TP10)	0.190	0.95141	10.000	8.2403
system_15	LC3 (TP12)	0.470	0.92494	10.000	4.7562
system_15	LC3 (TP14)	1.170	0.91676	10.000	2.3089
system_15	GL4 (TP8)	0.070	1.0064	10.000	36.762
system_15	GL4 (TP10)	0.150	0.94879	10.000	9.9769
system_15	GL4 (TP12)	0.370	0.92793	10.000	4.7372
system_15	GL4 (TP14)	0.930	0.91566	10.000	1.5345
system_15	RADAU5 (TP8)	0.200	1.1033	10.000	120.52
system_15	RADAU5 (TP10)	0.320	1.0005	10.000	19.979
system_15	RADAU5 (TP12)	0.610	0.95325	10.000	7.8181
system_15	RADAU5 (TP14)	1.260	0.92923	10.000	3.3902
system_15	GL6 (TP8)	0.730	1.1437	10.000	164.84
system_15	GL6 (TP10)	0.970	1.0423	10.000	37.19
system_15	GL6 (TP12)	1.580	0.98969	10.000	12.537
system_15	GL6 (TP14)	2.690	0.94549	10.000	4.755
system_15	Riot (05, 1e-11)	0m0.360s	0.92101	10.000	0.91295
system_15	Riot (10, 1e-11)	0m0.155s	0.93965	10.000	0.91295
system_15	Riot (15, 1e-11)	0m0.202s	0.93965	10.000	0.91295
system_15	Valencia-IVP (0.00025)	0m0.976s	3.6323	3.799	999.63
system_15	Valencia-IVP (0.0025)	0m0.088s	3.6817	3.785	999.37
system_15	Valencia-IVP (0.025)	0m0.014s	4.2116	3.650	997.82
system_15	VNODE-LP (15, 1e-14,1e-14)	0m0.004s	0.9093	10.000	8.3669
system_15	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	0.9093	10.000	8.3669
system_15	VNODE-LP (25, 1e-14,1e-14)	0m0.003s	0.9093	10.000	8.3669

Table 16: Simulation results of Problem 16

Problems	Methods	c5t	c5w	c6t	c6w
system_16	Vnode-LP (5)	0.020	5.0338	10.000	2.6716e+12
system_16	IMIDPOINT (TP8)	0.170	5.0339	10.000	2.6719e+12
system_16	IMIDPOINT (TP10)	0.770	5.0338	10.000	2.6716e+12
system_16	IMIDPOINT (TP12)	3.510	5.0338	10.000	2.6716e+12
system_16	IMIDPOINT (TP14)	0.000	0.5	0.000	0.5
system_16	HEUN (TP8)	0.310	5.0338	10.000	2.6716e+12
system_16	HEUN (TP10)	1.380	5.0338	10.000	2.6716e+12
system_16	HEUN (TP12)	5.310	5.0338	10.000	2.6716e+12
system_16	HEUN (TP14)	0.000	0.5	0.000	0.5
system_16	KUTTA3 (TP8)	0.130	5.0338	10.000	2.6716e+12
system_16	KUTTA3 (TP10)	0.370	5.0338	10.000	2.6716e+12
system_16	KUTTA3 (TP12)	0.970	5.0338	10.000	2.6716e+12
system_16	KUTTA3 (TP14)	3.110	5.0338	10.000	2.6716e+12
system_16	RADAU3 (TP8)	0.140	5.0348	10.000	2.6763e+12
system_16	RADAU3 (TP10)	0.440	5.0339	10.000	2.6721e+12
system_16	RADAU3 (TP12)	1.240	5.0338	10.000	2.6717e+12
system_16	RADAU3 (TP14)	3.950	5.0338	10.000	2.6716e+12
system_16	RK4 (TP8)	0.160	5.0338	10.000	2.6716e+12
system_16	RK4 (TP10)	0.360	5.0338	10.000	2.6716e+12
system_16	RK4 (TP12)	0.890	5.0338	10.000	2.6716e+12
system_16	RK4 (TP14)	2.120	5.0338	10.000	2.6716e+12
system_16	LA3 (TP8)	0.130	5.0368	10.000	2.6879e+12
system_16	LA3 (TP10)	0.300	5.0343	10.000	2.6742e+12
system_16	LA3 (TP12)	0.730	5.0339	10.000	2.672e+12
system_16	LA3 (TP14)	1.780	5.0338	10.000	2.6717e+12
system_16	LC3 (TP8)	0.130	5.0391	10.000	2.7006e+12
system_16	LC3 (TP10)	0.310	5.0346	10.000	2.676e+12
system_16	LC3 (TP12)	0.760	5.034	10.000	2.6723e+12
system_16	LC3 (TP14)	1.900	5.0339	10.000	2.6717e+12
system_16	GL4 (TP8)	0.110	5.0369	10.000	2.6892e+12
system_16	GL4 (TP10)	0.250	5.0343	10.000	2.6744e+12
system_16	GL4 (TP12)	0.610	5.0339	10.000	2.6721e+12
system_16	GL4 (TP14)	1.520	5.0338	10.000	2.6717e+12
system_16	RADAU5 (TP8)	0.280	5.045	10.000	2.734e+12
system_16	RADAU5 (TP10)	0.490	5.0362	10.000	2.6841e+12
system_16	RADAU5 (TP12)	0.970	5.0343	10.000	2.6742e+12
system_16	RADAU5 (TP14)	2.000	5.0339	10.000	2.6722e+12
system_16	GL6 (TP8)	0.970	5.049	10.000	2.7686e+12
system_16	GL6 (TP10)	1.410	5.0378	10.000	2.6951e+12
system_16	GL6 (TP12)	2.320	5.0349	10.000	2.6776e+12
system_16	GL6 (TP14)	4.170	5.0341	10.000	2.6732e+12
system_16	Riot (05, 1e-11)	0m0.607s	5.0338	-0.000	3.4e+150
system_16	Riot (10, 1e-11)	0m0.160s	5.0338	-0.000	3.3409e+248
system_16	Riot (15, 1e-11)	0m0.204s	5.0338	-0.000	1.3096e+136
system_16	Valencia-IVP (0.00025)	0m1.641s	5.1241	2.748	999.74
system_16	Valencia-IVP (0.0025)	0m0.155s	5.9373	2.635	999.64
system_16	Valencia-IVP (0.025)	0m0.022s	14.218	2.200	938.36
system_16	VNODE-LP (15, 1e-14,1e-14)	0m0.004s	5.0338	10.000	2.6716e+12
system_16	VNODE-LP (20, 1e-14,1e-14)	0m0.004s	5.0338	10.000	2.6716e+12
system_16	VNODE-LP (25, 1e-14,1e-14)	0m0.005s	5.0338	10.000	2.6716e+12

Table 17: Simulation results of Problem 17

Problems	Methods	c5t	c5w	c6t	c6w
system_17	Vnode-LP (5)	0.010	1.2201e-13	10.000	4.86e-14
system_17	IMIDPOINT (TP8)	0.020	2.3055e-08	10.000	2.1646e-08
system_17	IMIDPOINT (TP10)	0.110	2.3542e-10	10.000	2.1967e-10
system_17	IMIDPOINT (TP12)	0.000	0	0.000	0
system_17	IMIDPOINT (TP14)	0.000	0	0.000	0
system_17	HEUN (TP8)	0.060	2.6459e-08	10.000	2.4847e-08
system_17	HEUN (TP10)	0.250	2.6903e-10	10.000	2.5143e-10
system_17	HEUN (TP12)	0.000	0	0.000	0
system_17	HEUN (TP14)	0.000	0	0.000	0
system_17	KUTTA3 (TP8)	0.010	3.3254e-08	10.000	3.0691e-08
system_17	KUTTA3 (TP10)	0.050	3.3855e-10	10.000	3.1591e-10
system_17	KUTTA3 (TP12)	0.160	1.9036e-11	10.000	5.0074e-11
system_17	KUTTA3 (TP14)	0.500	1.5163e-12	10.000	3.2183e-11
system_17	RADAU3 (TP8)	0.020	2.5157e-08	10.000	2.3365e-08
system_17	RADAU3 (TP10)	0.060	2.6862e-10	10.000	2.4919e-10
system_17	RADAU3 (TP12)	0.190	1.5318e-11	10.000	5.0053e-11
system_17	RADAU3 (TP14)	0.620	1.5255e-12	10.000	3.2306e-11
system_17	RK4 (TP8)	0.010	6.1652e-08	10.000	5.8257e-08
system_17	RK4 (TP10)	0.020	6.473e-10	10.000	6.1452e-10
system_17	RK4 (TP12)	0.040	2.8517e-11	10.000	5.0235e-11
system_17	RK4 (TP14)	0.110	4.5497e-13	10.000	9.8038e-12
system_17	LA3 (TP8)	0.010	2.2597e-08	10.000	2.227e-08
system_17	LA3 (TP10)	0.030	2.7243e-10	10.000	2.5387e-10
system_17	LA3 (TP12)	0.070	1.5773e-11	10.000	4.989e-11
system_17	LA3 (TP14)	0.180	4.3987e-13	10.000	9.4049e-12
system_17	LC3 (TP8)	0.010	3.3511e-08	10.000	3.2538e-08
system_17	LC3 (TP10)	0.020	3.4869e-10	10.000	3.3249e-10
system_17	LC3 (TP12)	0.060	1.7599e-11	10.000	4.9875e-11
system_17	LC3 (TP14)	0.140	3.8858e-13	10.000	8.3332e-12
system_17	GL4 (TP8)	0.010	3.1943e-08	10.000	3.0006e-08
system_17	GL4 (TP10)	0.020	3.54e-10	10.000	3.312e-10
system_17	GL4 (TP12)	0.040	1.7624e-11	10.000	5.0606e-11
system_17	GL4 (TP14)	0.100	3.7215e-13	10.000	7.9787e-12
system_17	RADAU5 (TP8)	0.020	2.2213e-08	10.000	1.5406e-08
system_17	RADAU5 (TP10)	0.020	3.5225e-10	10.000	3.3744e-10
system_17	RADAU5 (TP12)	0.040	2.0183e-11	10.000	4.9369e-11
system_17	RADAU5 (TP14)	0.090	2.7511e-13	10.000	5.966e-12
system_17	GL6 (TP8)	0.030	1.4222e-08	10.000	6.0678e-09
system_17	GL6 (TP10)	0.040	2.7957e-10	10.000	2.2333e-10
system_17	GL6 (TP12)	0.060	2.2576e-11	10.000	5.1571e-11
system_17	GL6 (TP14)	0.090	3.4728e-13	10.000	7.6463e-12
system_17	Riot (05, 1e-11)	0m0.209s	4.0267e-11	-0.000	4.3024e-11
system_17	Riot (10, 1e-11)	0m0.153s	3.8114e-13	-0.000	4.3851e-12
system_17	Riot (15, 1e-11)	0m0.249s	1.7208e-14	-0.000	2.2093e-14
system_17	Valencia-IVP (0.00025)	0m1.248s	0.00062591	10.000	0.012037
system_17	Valencia-IVP (0.0025)	0m0.108s	0.0062999	10.000	0.12039
system_17	Valencia-IVP (0.025)	0m0.015s	0.06731	9.275	1.1674
system_17	VNODE-LP (15, 1e-14,1e-14)	0m0.007s	2.1094e-15	10.000	1.0825e-15
system_17	VNODE-LP (20, 1e-14,1e-14)	0m0.009s	1.1102e-15	10.000	9.1593e-16
system_17	VNODE-LP (25, 1e-14,1e-14)	0m0.010s	1.2212e-15	10.000	5.8287e-16

Table 18: Simulation results of Problem 18

Problems	Methods	c5t	c5w	c6t	c6w
system_18	Vnode-LP (5)	0.010	1.3073	1.775	76119
system_18	IMIDPOINT (TP8)	0.110	2.0505	1.310	903.53
system_18	IMIDPOINT (TP10)	0.470	2.0346	1.314	810.83
system_18	IMIDPOINT (TP12)	0.000	1	0.000	1
system_18	IMIDPOINT (TP14)	0.000	1	0.000	1
system_18	HEUN (TP8)	0.210	2.0303	1.316	954.38
system_18	HEUN (TP10)	0.880	2.0302	1.316	932.45
system_18	HEUN (TP12)	0.000	1	0.000	1
system_18	HEUN (TP14)	0.000	1	0.000	1
system_18	KUTTA3 (TP8)	0.090	2.0905	1.297	911.11
system_18	KUTTA3 (TP10)	0.240	2.0489	1.310	1084.2
system_18	KUTTA3 (TP12)	0.780	2.0361	1.314	1127.7
system_18	KUTTA3 (TP14)	0.000	1	0.000	1
system_18	RADAU3 (TP8)	0.090	2.1118	1.293	950.43
system_18	RADAU3 (TP10)	0.240	2.0557	1.308	992.71
system_18	RADAU3 (TP12)	0.770	2.0382	1.313	988.34
system_18	RADAU3 (TP14)	0.000	1	0.000	1
system_18	RK4 (TP8)	0.050	2.032	1.315	983.84
system_18	RK4 (TP10)	0.110	2.0305	1.316	906.95
system_18	RK4 (TP12)	0.260	2.0303	1.316	1015.6
system_18	RK4 (TP14)	0.670	2.0302	1.316	977.31
system_18	LA3 (TP8)	0.050	2.1591	1.281	977.83
system_18	LA3 (TP10)	0.110	2.082	1.301	986.85
system_18	LA3 (TP12)	0.260	2.0508	1.310	990.88
system_18	LA3 (TP14)	0.660	2.0384	1.313	943.62
system_18	LC3 (TP8)	0.050	2.2613	1.255	904.62
system_18	LC3 (TP10)	0.110	2.1184	1.290	947.65
system_18	LC3 (TP12)	0.270	2.0646	1.305	831.93
system_18	LC3 (TP14)	0.640	2.0438	1.312	920.9
system_18	GL4 (TP8)	0.030	2.1595	1.281	891.92
system_18	GL4 (TP10)	0.070	2.0821	1.301	892.67
system_18	GL4 (TP12)	0.180	2.0509	1.310	972.6
system_18	GL4 (TP14)	0.430	2.0385	1.313	913.4
system_18	RADAU5 (TP8)	0.050	2.2988	1.248	876.43
system_18	RADAU5 (TP10)	0.090	2.1538	1.282	863.3
system_18	RADAU5 (TP12)	0.180	2.0874	1.299	955.74
system_18	RADAU5 (TP14)	0.370	2.0567	1.308	993.45
system_18	GL6 (TP8)	0.070	2.2988	1.250	950.08
system_18	GL6 (TP10)	0.110	2.1751	1.277	964.85
system_18	GL6 (TP12)	0.190	2.1067	1.294	954.46
system_18	GL6 (TP14)	0.340	2.0702	1.304	937.32
system_18	Riot (05, 1e-11)	0m3.154s	0.89498	-0.000	5.6525
system_18	Riot (10, 1e-11)	0m12.527s	0.7695	-0.000	13.258
system_18	Riot (15, 1e-11)	0m46.473s	0.76476	-0.000	12.845
system_18	Valencia-IVP (0.00025)	0m3.609s	2.5351	1.309	62.299
system_18	Valencia-IVP (0.0025)	0m0.385s	2.4744	0.983	2.4744
system_18	Valencia-IVP (0.025)	0m0.046s	2.1873	0.875	2.1873
system_18	VNODE-LP (15, 1e-14,1e-14)	0m0.008s	1.952	1.352	106.72
system_18	VNODE-LP (20, 1e-14,1e-14)	0m0.013s	4.4163	1.079	154.57
system_18	VNODE-LP (25, 1e-14,1e-14)	0m0.032s	189.75	0.944	189.75

Table 19: Simulation results of Problem 19

Problems	Methods	c5t	c5w	c6t	c6w
system_19	Vnode-LP (5)	0.010	0.79278	10.000	0.65242
system_19	IMIDPOINT (TP8)	0.080	0.6295	10.000	0.12824
system_19	IMIDPOINT (TP10)	0.350	0.62623	10.000	0.12464
system_19	IMIDPOINT (TP12)	0.000	1	0.000	1
system_19	IMIDPOINT (TP14)	0.000	1	0.000	1
system_19	HEUN (TP8)	0.160	0.62534	10.000	0.1237
system_19	HEUN (TP10)	0.670	0.62533	10.000	0.12369
system_19	HEUN (TP12)	0.000	1	0.000	1
system_19	HEUN (TP14)	0.000	1	0.000	1
system_19	KUTTA3 (TP8)	0.070	0.62799	10.000	0.12623
system_19	KUTTA3 (TP10)	0.180	0.62617	10.000	0.12448
system_19	KUTTA3 (TP12)	0.530	0.62559	10.000	0.12393
system_19	KUTTA3 (TP14)	0.000	1	0.000	1
system_19	RADAU3 (TP8)	0.070	0.6389	10.000	0.13934
system_19	RADAU3 (TP10)	0.180	0.62963	10.000	0.12832
system_19	RADAU3 (TP12)	0.550	0.62669	10.000	0.12512
system_19	RADAU3 (TP14)	0.000	1	0.000	1
system_19	RK4 (TP8)	0.040	0.62551	10.000	0.12388
system_19	RK4 (TP10)	0.090	0.62536	10.000	0.12372
system_19	RK4 (TP12)	0.190	0.62533	10.000	0.12369
system_19	RK4 (TP14)	0.480	0.62533	10.000	0.12369
system_19	LA3 (TP8)	0.040	0.64749	10.000	0.15097
system_19	LA3 (TP10)	0.080	0.6344	10.000	0.1337
system_19	LA3 (TP12)	0.180	0.62897	10.000	0.12754
system_19	LA3 (TP14)	0.470	0.62678	10.000	0.1252
system_19	LC3 (TP8)	0.040	0.65676	10.000	0.16568
system_19	LC3 (TP10)	0.080	0.63802	10.000	0.13813
system_19	LC3 (TP12)	0.180	0.63038	10.000	0.12913
system_19	LC3 (TP14)	0.440	0.62734	10.000	0.1258
system_19	GL4 (TP8)	0.020	0.64846	10.000	0.1524
system_19	GL4 (TP10)	0.050	0.63479	10.000	0.13419
system_19	GL4 (TP12)	0.130	0.62914	10.000	0.12773
system_19	GL4 (TP14)	0.300	0.62685	10.000	0.12527
system_19	RADAU5 (TP8)	0.040	0.66539	10.000	0.18205
system_19	RADAU5 (TP10)	0.070	0.64476	10.000	0.14699
system_19	RADAU5 (TP12)	0.120	0.63455	10.000	0.13381
system_19	RADAU5 (TP14)	0.240	0.62964	10.000	0.12825
system_19	GL6 (TP8)	0.050	0.66847	10.000	0.19051
system_19	GL6 (TP10)	0.080	0.64966	10.000	0.15429
system_19	GL6 (TP12)	0.130	0.63848	10.000	0.1386
system_19	GL6 (TP14)	0.230	0.63229	10.000	0.13117
system_19	Riot (05, 1e-11)	0m3.192s	0.44827	-0.000	0.13094
system_19	Riot (10, 1e-11)	0m12.762s	0.44389	-0.000	0.057421
system_19	Riot (15, 1e-11)	0m40.498s	0.44387	-0.000	0.055362
system_19	Valencia-IVP (0.00025)	0m2.772s	2.8979	1.191	3.7768
system_19	Valencia-IVP (0.0025)	0m0.287s	2.9052	1.175	3.694
system_19	Valencia-IVP (0.025)	0m0.041s	2.9872	1.300	5.8585
system_19	VNODE-LP (15, 1e-14,1e-14)	0m0.008s	0.88761	6.361	151.77
system_19	VNODE-LP (20, 1e-14,1e-14)	0m0.010s	0.98714	3.815	218.19
system_19	VNODE-LP (25, 1e-14,1e-14)	0m0.008s	1.1388	2.597	270.43

Table 20: Simulation results of Problem 20

Problems	Methods	c5t	c5w	c6t	c6w
system_20	Vnode-LP (5)	0.010	0.0053309	10.000	6.8729e-11
system_20	IMIDPOINT (TP8)	0.050	0.0052309	8.024	2.5455e-08
system_20	IMIDPOINT (TP10)	0.490	0.0052289	10.000	2.7037e-10
system_20	IMIDPOINT (TP12)	0.000	0.2	0.000	0.2
system_20	IMIDPOINT (TP14)	0.000	0.2	0.000	0.2
system_20	HEUN (TP8)	0.120	0.0052288	7.448	2.7672e-08
system_20	HEUN (TP10)	1.130	0.0052285	10.000	2.0071e-10
system_20	HEUN (TP12)	0.000	0.2	0.000	0.2
system_20	HEUN (TP14)	0.000	0.2	0.000	0.2
system_20	KUTTA3 (TP8)	0.030	0.0052285	7.910	1.9267e-08
system_20	KUTTA3 (TP10)	0.120	0.0052284	10.000	1.7425e-10
system_20	KUTTA3 (TP12)	0.530	0.0052284	10.000	6.8776e-11
system_20	KUTTA3 (TP14)	0.000	0.2	0.000	0.2
system_20	RADAU3 (TP8)	0.080	0.0052426	7.180	5.4516e-08
system_20	RADAU3 (TP10)	0.120	0.0052313	10.000	2.9316e-10
system_20	RADAU3 (TP12)	0.770	0.0052292	10.000	7.6708e-11
system_20	RADAU3 (TP14)	0.000	0.2	0.000	0.2
system_20	RK4 (TP8)	0.020	0.0052285	6.923	4.6265e-08
system_20	RK4 (TP10)	0.040	0.0052284	10.000	1.6711e-10
system_20	RK4 (TP12)	0.230	0.0052284	10.000	6.8551e-11
system_20	RK4 (TP14)	0.510	0.0052284	10.000	6.7328e-11
system_20	LA3 (TP8)	0.050	0.0052885	6.175	3.4875e-07
system_20	LA3 (TP10)	0.110	0.0052411	8.776	2.4789e-09
system_20	LA3 (TP12)	0.140	0.0052316	10.000	1.0196e-10
system_20	LA3 (TP14)	0.660	0.0052294	10.000	7.1897e-11
system_20	LC3 (TP8)	0.020	0.0053461	3.679	2.3883e-05
system_20	LC3 (TP10)	0.100	0.0052536	6.419	1.046e-07
system_20	LC3 (TP12)	0.230	0.0052347	10.000	1.1666e-10
system_20	LC3 (TP14)	0.330	0.0052303	10.000	7.2458e-11
system_20	GL4 (TP8)	0.030	0.0053242	3.049	7.9e-05
system_20	GL4 (TP10)	0.070	0.0052492	6.669	6.3484e-08
system_20	GL4 (TP12)	0.070	0.0052335	10.000	1.0024e-10
system_20	GL4 (TP14)	0.360	0.0052299	10.000	7.1625e-11
system_20	RADAU5 (TP8)	0.020	0.0054714	4.942	4.0922e-06
system_20	RADAU5 (TP10)	0.080	0.0052961	7.513	2.9349e-08
system_20	RADAU5 (TP12)	0.070	0.0052475	10.000	2.0142e-10
system_20	RADAU5 (TP14)	0.260	0.0052343	10.000	8.4822e-11
system_20	GL6 (TP8)	0.030	0.0056074	3.510	5.2619e-05
system_20	GL6 (TP10)	0.090	0.0053683	6.072	3.8006e-07
system_20	GL6 (TP12)	0.140	0.0052771	8.458	3.3877e-09
system_20	GL6 (TP14)	0.240	0.0052454	10.000	1.087e-10
system_20	Riot (05, 1e-11)	0m2.343s	0.0051337	-0.000	6.9818e-11
system_20	Riot (10, 1e-11)	0m0.506s	0.0051337	-0.000	6.6049e-11
system_20	Riot (15, 1e-11)	0m1.011s	0.0051337	-0.000	6.6032e-11
system_20	Valencia-IVP (0.00025)	0m2.020s	5.7609	1.371	895.46
system_20	Valencia-IVP (0.0025)	0m0.244s	6.1709	1.123	8.035
system_20	Valencia-IVP (0.025)	0m0.030s	7.1228	0.750	7.1228
system_20	VNODE-LP (15, 1e-14,1e-14)	0m0.003s	0.0053622	10.000	6.9172e-11
system_20	VNODE-LP (20, 1e-14,1e-14)	0m0.005s	0.0053887	10.000	6.957e-11
system_20	VNODE-LP (25, 1e-14,1e-14)	0m0.007s	0.0054356	10.000	7.0287e-11

Table 21: Simulation results of Problem 21

Problems	Methods	c5t	c5w	c6t	c6w
system_21	Vnode-LP (5)	0.010	3.0798e-13	10.000	1.8208e-14
system_21	IMIDPOINT (TP8)	0.090	2.5356e-08	8.080	1.651e-08
system_21	IMIDPOINT (TP10)	0.400	2.5607e-10	10.000	1.1301e-10
system_21	IMIDPOINT (TP12)	0.000	0	0.000	0
system_21	IMIDPOINT (TP14)	0.000	0	0.000	0
system_21	HEUN (TP8)	0.110	2.549e-08	7.501	1.479e-08
system_21	HEUN (TP10)	0.850	2.565e-10	10.000	1.2188e-10
system_21	HEUN (TP12)	0.000	0	0.000	0
system_21	HEUN (TP14)	0.000	0	0.000	0
system_21	KUTTA3 (TP8)	0.060	3.1551e-08	7.846	1.4943e-08
system_21	KUTTA3 (TP10)	0.190	3.1929e-10	10.000	1.0213e-10
system_21	KUTTA3 (TP12)	0.610	5.0079e-11	10.000	4.9179e-11
system_21	KUTTA3 (TP14)	0.000	0	0.000	0
system_21	RADAU3 (TP8)	0.070	2.7279e-08	7.469	1.5767e-08
system_21	RADAU3 (TP10)	0.110	2.7984e-10	10.000	1.2591e-10
system_21	RADAU3 (TP12)	0.670	4.9965e-11	10.000	4.7616e-11
system_21	RADAU3 (TP14)	0.000	0	0.000	0
system_21	RK4 (TP8)	0.030	3.3216e-08	6.853	1.4013e-08
system_21	RK4 (TP10)	0.040	3.3859e-10	10.000	8.2983e-11
system_21	RK4 (TP12)	0.100	5.0266e-11	10.000	3.9524e-11
system_21	RK4 (TP14)	0.490	1.3263e-11	10.000	5.1391e-11
system_21	LA3 (TP8)	0.020	2.7639e-08	6.046	1.2743e-08
system_21	LA3 (TP10)	0.050	2.9581e-10	8.605	1.309e-10
system_21	LA3 (TP12)	0.120	5.0085e-11	10.000	3.7411e-11
system_21	LA3 (TP14)	0.570	1.2703e-11	10.000	5.0892e-11
system_21	LC3 (TP8)	0.020	2.9596e-08	3.677	1.2081e-08
system_21	LC3 (TP10)	0.040	2.6237e-10	6.634	1.1925e-10
system_21	LC3 (TP12)	0.100	4.9289e-11	10.000	4.2807e-11
system_21	LC3 (TP14)	0.300	8.7472e-12	10.000	5.257e-11
system_21	GL4 (TP8)	0.030	3.0038e-08	3.339	1.2151e-08
system_21	GL4 (TP10)	0.050	2.6614e-10	6.435	1.1701e-10
system_21	GL4 (TP12)	0.070	5.0454e-11	9.552	3.2627e-11
system_21	GL4 (TP14)	0.310	8.1326e-12	10.000	4.9976e-11
system_21	RADAU5 (TP8)	0.040	2.9612e-08	5.192	1.1635e-08
system_21	RADAU5 (TP10)	0.030	3.296e-10	7.610	1.1753e-10
system_21	RADAU5 (TP12)	0.130	4.8731e-11	10.000	5.311e-11
system_21	RADAU5 (TP14)	0.130	5.2283e-12	10.000	4.4096e-11
system_21	GL6 (TP8)	0.030	2.3457e-08	3.660	9.8472e-09
system_21	GL6 (TP10)	0.040	3.6499e-10	5.999	9.4513e-11
system_21	GL6 (TP12)	0.120	5.335e-11	8.373	6.3238e-11
system_21	GL6 (TP14)	0.210	7.5722e-12	10.000	2.9035e-11
system_21	Riot (05, 1e-11)	0m0.346s	4.0035e-11	-0.000	2.075e-12
system_21	Riot (10, 1e-11)	0m0.168s	4.4511e-12	-0.000	7.0832e-14
system_21	Riot (15, 1e-11)	0m0.211s	2.1094e-14	-0.000	2.1094e-14
system_21	Valencia-IVP (0.00025)	0m1.174s	0.073251	3.678	900.35
system_21	Valencia-IVP (0.0025)	0m0.095s	0.74627	2.210	6.0933
system_21	Valencia-IVP (0.025)	0m0.032s	6.312	0.975	6.312
system_21	VNODE-LP (15, 1e-14,1e-14)	0m0.008s	3.9968e-15	10.000	1.1102e-15
system_21	VNODE-LP (20, 1e-14,1e-14)	0m0.007s	2.8866e-15	10.000	1.1102e-15
system_21	VNODE-LP (25, 1e-14,1e-14)	0m0.006s	1.9984e-15	10.000	1.1102e-15

Table 22: Simulation results of Problem 22

Problems	Methods	c5t	c5w	c6t	c6w
system_22	Vnode-LP (5)	0.000	1.3818	10.000	1.3831
system_22	IMIDPOINT (TP8)	0.040	1.3913	10.000	1.6746
system_22	IMIDPOINT (TP10)	0.200	1.3838	10.000	1.4604
system_22	IMIDPOINT (TP12)	0.000	1	0.000	1
system_22	IMIDPOINT (TP14)	0.000	1	0.000	1
system_22	HEUN (TP8)	0.080	1.3818	10.000	1.3834
system_22	HEUN (TP10)	0.360	1.3818	10.000	1.3831
system_22	HEUN (TP12)	0.000	1	0.000	1
system_22	HEUN (TP14)	0.000	1	0.000	1
system_22	KUTTA3 (TP8)	0.040	1.3818	10.000	1.3832
system_22	KUTTA3 (TP10)	0.200	1.3818	10.000	1.3831
system_22	KUTTA3 (TP12)	0.580	1.3818	10.000	1.3831
system_22	KUTTA3 (TP14)	0.920	1.3818	10.000	1.3831
system_22	RADAU3 (TP8)	0.050	1.4142	10.000	3.946
system_22	RADAU3 (TP10)	0.130	1.3922	10.000	1.8886
system_22	RADAU3 (TP12)	0.770	1.3851	10.000	1.5663
system_22	RADAU3 (TP14)	1.850	1.3828	10.000	1.4288
system_22	RK4 (TP8)	0.100	1.3818	10.000	1.3831
system_22	RK4 (TP10)	0.120	1.3818	10.000	1.3831
system_22	RK4 (TP12)	0.540	1.3818	10.000	1.3831
system_22	RK4 (TP14)	1.250	1.3818	10.000	1.3831
system_22	LA3 (TP8)	0.050	1.4476	10.000	5.314
system_22	LA3 (TP10)	0.210	1.4102	10.000	2.4207
system_22	LA3 (TP12)	0.480	1.3931	10.000	1.7388
system_22	LA3 (TP14)	1.130	1.3865	10.000	1.5189
system_22	LC3 (TP8)	0.090	1.4519	10.000	5.5654
system_22	LC3 (TP10)	0.140	1.4116	10.000	2.2371
system_22	LC3 (TP12)	0.490	1.3935	10.000	1.9789
system_22	LC3 (TP14)	0.930	1.3865	10.000	1.529
system_22	GL4 (TP8)	0.040	1.4502	10.000	4.4138
system_22	GL4 (TP10)	0.080	1.411	10.000	3.0947
system_22	GL4 (TP12)	0.380	1.3938	10.000	1.8664
system_22	GL4 (TP14)	0.640	1.3865	10.000	1.5711
system_22	RADAU5 (TP8)	0.220	1.4984	10.000	7.3121
system_22	RADAU5 (TP10)	0.180	1.4402	10.000	5.7954
system_22	RADAU5 (TP12)	0.630	1.4112	10.000	2.8841
system_22	RADAU5 (TP14)	0.670	1.3954	10.000	1.7695
system_22	GL6 (TP8)	0.510	1.5096	10.000	13.297
system_22	GL6 (TP10)	0.640	1.4695	10.000	9.367
system_22	GL6 (TP12)	1.960	1.4322	10.000	5.2691
system_22	GL6 (TP14)	1.540	1.4088	10.000	2.2739
system_22	Riot (05, 1e-11)	0m0.215s	1.3818	-0.000	1.3831
system_22	Riot (10, 1e-11)	0m0.147s	1.3818	-0.000	1.3831
system_22	Riot (15, 1e-11)	0m0.192s	1.3818	-0.000	1.3831
system_22	Valencia-IVP (0.00025)	0m0.980s	2.7189	6.907	999.97
system_22	Valencia-IVP (0.0025)	0m0.090s	2.724	6.897	999.51
system_22	Valencia-IVP (0.025)	0m0.014s	2.7767	6.800	990.15
system_22	VNODE-LP (15, 1e-14,1e-14)	0m0.003s	1.3818	10.000	25.373
system_22	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	1.3818	10.000	25.373
system_22	VNODE-LP (25, 1e-14,1e-14)	0m0.005s	1.3818	10.000	25.373

Table 23: Simulation results of Problem 23

Problems	Methods	c5t	c5w	c6t	c6w
system_23	Vnode-LP (5)	0.000	2.4664e-13	10.000	2.45e-12
system_23	IMIDPOINT (TP8)	0.040	2.3978e-08	10.000	4.4641e-06
system_23	IMIDPOINT (TP10)	0.290	2.4185e-10	10.000	2.6244e-06
system_23	IMIDPOINT (TP12)	0.000	0	0.000	0
system_23	IMIDPOINT (TP14)	0.000	0	0.000	0
system_23	HEUN (TP8)	0.060	2.3914e-08	10.000	2.4147e-06
system_23	HEUN (TP10)	0.280	2.4183e-10	10.000	2.606e-06
system_23	HEUN (TP12)	0.000	0	0.000	0
system_23	HEUN (TP14)	0.000	0	0.000	0
system_23	KUTTA3 (TP8)	0.030	2.5707e-08	10.000	2.3628e-06
system_23	KUTTA3 (TP10)	0.190	2.6675e-10	10.000	1.3883e-06
system_23	KUTTA3 (TP12)	0.320	3.037e-12	10.000	3.4404e-08
system_23	KUTTA3 (TP14)	1.010	1.6267e-12	10.000	1.75e-08
system_23	RADAU3 (TP8)	0.080	2.0726e-08	10.000	4.5476e-06
system_23	RADAU3 (TP10)	0.230	2.17e-10	10.000	1.6763e-06
system_23	RADAU3 (TP12)	0.690	2.4359e-12	10.000	2.7833e-08
system_23	RADAU3 (TP14)	1.100	1.3034e-12	10.000	1.4042e-08
system_23	RK4 (TP8)	0.050	2.0243e-08	10.000	1.1117e-06
system_23	RK4 (TP10)	0.200	2.4038e-10	10.000	1.4024e-07
system_23	RK4 (TP12)	0.560	2.6543e-12	10.000	2.5541e-08
system_23	RK4 (TP14)	0.660	3.0997e-13	10.000	3.1869e-09
system_23	LA3 (TP8)	0.090	1.5535e-08	10.000	1.7154e-06
system_23	LA3 (TP10)	0.180	1.805e-10	10.000	4.5049e-07
system_23	LA3 (TP12)	0.450	2.0153e-12	10.000	2.0949e-08
system_23	LA3 (TP14)	0.900	2.2737e-13	10.000	2.4126e-09
system_23	LC3 (TP8)	0.090	1.5937e-08	10.000	1.6248e-06
system_23	LC3 (TP10)	0.090	1.8249e-10	10.000	1.7562e-06
system_23	LC3 (TP12)	0.450	2.0144e-12	10.000	2.121e-08
system_23	LC3 (TP14)	1.110	2.4469e-13	10.000	2.6101e-09
system_23	GL4 (TP8)	0.070	1.5546e-08	10.000	2.0388e-06
system_23	GL4 (TP10)	0.070	1.8055e-10	10.000	3.8143e-07
system_23	GL4 (TP12)	0.180	2.0144e-12	10.000	2.0964e-08
system_23	GL4 (TP14)	0.930	2.2649e-13	10.000	2.3997e-09
system_23	RADAU5 (TP8)	0.110	9.6686e-09	10.000	2.4185e-06
system_23	RADAU5 (TP10)	0.370	1.3908e-10	10.000	2.6939e-07
system_23	RADAU5 (TP12)	0.730	1.6064e-12	10.000	1.5829e-08
system_23	RADAU5 (TP14)	0.660	7.5495e-14	10.000	8.4192e-10
system_23	GL6 (TP8)	1.110	3.0805e-09	10.000	1.6158e-06
system_23	GL6 (TP10)	1.390	1.043e-10	10.000	4.9701e-07
system_23	GL6 (TP12)	0.910	1.3309e-12	10.000	1.0761e-08
system_23	GL6 (TP14)	2.960	4.3521e-14	10.000	4.2958e-10
system_23	Riot (05, 1e-11)	0m0.102s	5.6269e-11	-0.000	7.3491e-10
system_23	Riot (10, 1e-11)	0m0.114s	2.7978e-14	-0.000	4.2883e-11
system_23	Riot (15, 1e-11)	0m0.139s	4.1966e-14	-0.000	1.0757e-12
system_23	Valencia-IVP (0.00025)	0m1.130s	0.00046233	10.000	5.0012
system_23	Valencia-IVP (0.0025)	0m0.095s	0.0046322	10.000	50.642
system_23	Valencia-IVP (0.025)	0m0.014s	0.047235	10.000	574.87
system_23	VNODE-LP (15, 1e-14,1e-14)	0m0.003s	1.9984e-15	10.000	8.3933e-14
system_23	VNODE-LP (20, 1e-14,1e-14)	0m0.004s	9.992e-16	10.000	7.5051e-14
system_23	VNODE-LP (25, 1e-14,1e-14)	0m0.006s	6.6613e-16	10.000	4.7073e-14

Table 24: Simulation results of Problem 24

Problems	Methods	c5t	c5w	c6t	c6w
system_24	Vnode-LP (5)	0.000	1.9324	10.000	14317
system_24	IMIDPOINT (TP8)	0.080	1.9324	10.000	14318
system_24	IMIDPOINT (TP10)	0.190	1.9324	10.000	14317
system_24	IMIDPOINT (TP12)	0.000	1.1	0.000	1.1
system_24	IMIDPOINT (TP14)	0.000	1.1	0.000	1.1
system_24	HEUN (TP8)	0.080	1.9324	10.000	14317
system_24	HEUN (TP10)	0.640	1.9324	10.000	14317
system_24	HEUN (TP12)	0.000	1.1	0.000	1.1
system_24	HEUN (TP14)	0.000	1.1	0.000	1.1
system_24	KUTTA3 (TP8)	0.030	1.9324	10.000	14317
system_24	KUTTA3 (TP10)	0.110	1.9324	10.000	14317
system_24	KUTTA3 (TP12)	0.600	1.9324	10.000	14317
system_24	KUTTA3 (TP14)	1.350	1.9324	10.000	14317
system_24	RADAU3 (TP8)	0.060	1.9325	10.000	14326
system_24	RADAU3 (TP10)	0.230	1.9324	10.000	14318
system_24	RADAU3 (TP12)	0.690	1.9324	10.000	14317
system_24	RADAU3 (TP14)	1.610	1.9324	10.000	14317
system_24	RK4 (TP8)	0.050	1.9324	10.000	14317
system_24	RK4 (TP10)	0.210	1.9324	10.000	14317
system_24	RK4 (TP12)	0.450	1.9324	10.000	14317
system_24	RK4 (TP14)	0.640	1.9324	10.000	14317
system_24	LA3 (TP8)	0.090	1.9328	10.000	14347
system_24	LA3 (TP10)	0.170	1.9325	10.000	14322
system_24	LA3 (TP12)	0.460	1.9324	10.000	14318
system_24	LA3 (TP14)	1.150	1.9324	10.000	14317
system_24	LC3 (TP8)	0.090	1.9331	10.000	14371
system_24	LC3 (TP10)	0.180	1.9325	10.000	14325
system_24	LC3 (TP12)	0.220	1.9325	10.000	14318
system_24	LC3 (TP14)	0.560	1.9324	10.000	14317
system_24	GL4 (TP8)	0.080	1.9328	10.000	14348
system_24	GL4 (TP10)	0.070	1.9325	10.000	14322
system_24	GL4 (TP12)	0.390	1.9324	10.000	14318
system_24	GL4 (TP14)	0.530	1.9324	10.000	14317
system_24	RADAU5 (TP8)	0.250	1.9336	10.000	14429
system_24	RADAU5 (TP10)	0.350	1.9327	10.000	14340
system_24	RADAU5 (TP12)	0.610	1.9325	10.000	14322
system_24	RADAU5 (TP14)	1.280	1.9324	10.000	14318
system_24	GL6 (TP8)	0.960	1.9335	10.000	14486
system_24	GL6 (TP10)	1.270	1.9329	10.000	14359
system_24	GL6 (TP12)	1.740	1.9326	10.000	14328
system_24	GL6 (TP14)	1.880	1.9325	10.000	14320
system_24	Riot (05, 1e-11)	0m0.222s	1.9324	-0.000	21721
system_24	Riot (10, 1e-11)	0m0.148s	1.9324	-0.000	21718
system_24	Riot (15, 1e-11)	0m0.193s	1.9324	-0.000	21703
system_24	Valencia-IVP (0.00025)	0m1.214s	1.9329	7.337	999.94
system_24	Valencia-IVP (0.0025)	0m0.114s	1.9368	7.320	998.62
system_24	Valencia-IVP (0.025)	0m0.014s	1.977	7.175	998.34
system_24	VNODE-LP (15, 1e-14,1e-14)	0m0.004s	1.9324	10.000	14317
system_24	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	1.9324	10.000	14317
system_24	VNODE-LP (25, 1e-14,1e-14)	0m0.002s	1.9324	10.000	14317

Table 25: Simulation results of Problem 25

Problems	Methods	c5t	c5w	c6t	c6w
system_25	Vnode-LP (5)	0.000	1.9468e-13	10.000	1.5733e-09
system_25	IMIDPOINT (TP8)	0.050	2.0846e-08	10.000	0.00023854
system_25	IMIDPOINT (TP10)	0.170	2.1054e-10	10.000	2.4028e-06
system_25	IMIDPOINT (TP12)	0.000	0	0.000	0
system_25	IMIDPOINT (TP14)	0.000	0	0.000	0
system_25	HEUN (TP8)	0.120	2.0881e-08	10.000	0.00023867
system_25	HEUN (TP10)	0.240	2.1062e-10	10.000	2.4039e-06
system_25	HEUN (TP12)	0.000	0	0.000	0
system_25	HEUN (TP14)	0.000	0	0.000	0
system_25	KUTTA3 (TP8)	0.050	2.2236e-08	10.000	0.00025696
system_25	KUTTA3 (TP10)	0.080	2.3286e-10	10.000	2.6638e-06
system_25	KUTTA3 (TP12)	0.540	2.6162e-12	10.000	2.9396e-08
system_25	KUTTA3 (TP14)	0.860	8.4532e-13	10.000	7.9145e-09
system_25	RADAU3 (TP8)	0.030	1.7793e-08	10.000	0.00020826
system_25	RADAU3 (TP10)	0.090	1.8881e-10	10.000	2.1602e-06
system_25	RADAU3 (TP12)	0.300	2.0998e-12	10.000	2.3535e-08
system_25	RADAU3 (TP14)	1.610	6.7746e-13	10.000	6.3302e-09
system_25	RK4 (TP8)	0.090	1.7587e-08	10.000	0.00021528
system_25	RK4 (TP10)	0.190	2.0936e-10	10.000	2.4277e-06
system_25	RK4 (TP12)	0.440	2.2603e-12	10.000	2.5784e-08
system_25	RK4 (TP14)	0.580	1.6931e-13	10.000	1.6173e-09
system_25	LA3 (TP8)	0.070	1.2714e-08	10.000	0.00016167
system_25	LA3 (TP10)	0.140	1.537e-10	10.000	1.7994e-06
system_25	LA3 (TP12)	0.330	1.7128e-12	10.000	1.9523e-08
system_25	LA3 (TP14)	0.960	1.2512e-13	10.000	1.2032e-09
system_25	LC3 (TP8)	0.040	1.2974e-08	10.000	0.00016638
system_25	LC3 (TP10)	0.170	1.5617e-10	10.000	1.825e-06
system_25	LC3 (TP12)	0.190	1.7171e-12	10.000	1.9593e-08
system_25	LC3 (TP14)	0.790	1.3456e-13	10.000	1.2891e-09
system_25	GL4 (TP8)	0.030	1.2697e-08	10.000	0.00016096
system_25	GL4 (TP10)	0.140	1.5367e-10	10.000	1.7993e-06
system_25	GL4 (TP12)	0.160	1.7122e-12	10.000	1.9517e-08
system_25	GL4 (TP14)	0.390	1.239e-13	10.000	1.1916e-09
system_25	RADAU5 (TP8)	0.210	6.7934e-09	10.000	0.00011033
system_25	RADAU5 (TP10)	0.300	1.1475e-10	10.000	1.4409e-06
system_25	RADAU5 (TP12)	0.290	1.3685e-12	10.000	1.6096e-08
system_25	RADAU5 (TP14)	1.010	4.9072e-14	10.000	4.8716e-10
system_25	GL6 (TP8)	0.490	1.8927e-09	8.500	1.3873e-05
system_25	GL6 (TP10)	0.550	7.5429e-11	10.000	1.032e-06
system_25	GL6 (TP12)	0.800	1.0345e-12	10.000	1.292e-08
system_25	GL6 (TP14)	2.720	2.7533e-14	10.000	2.8497e-10
system_25	Riot (05, 1e-11)	0m0.104s	5.7086e-11	-0.000	0.0013639
system_25	Riot (10, 1e-11)	0m0.109s	3.7192e-15	-0.000	3.7192e-15
system_25	Riot (15, 1e-11)	0m0.089s	0	-0.000	5.7732e-15
system_25	Valencia-IVP (0.00025)	0m1.087s	0.00029389	10.000	2.7571
system_25	Valencia-IVP (0.0025)	0m0.093s	0.0029465	10.000	27.915
system_25	Valencia-IVP (0.025)	0m0.015s	0.030251	10.000	316.61
system_25	VNODE-LP (15, 1e-14,1e-14)	0m0.004s	9.992e-16	10.000	8.9433e-12
system_25	VNODE-LP (20, 1e-14,1e-14)	0m0.004s	8.8818e-16	10.000	7.9496e-12
system_25	VNODE-LP (25, 1e-14,1e-14)	0m0.004s	8.3267e-16	10.000	6.2134e-12

Table 26: Simulation results of Problem 26

Problems	Methods	c5t	c5w	c6t	c6w
system_26	Vnode-LP (5)	0.040	1.2981	10.000	0.00022699
system_26	IMIDPOINT (TP8)	0.440	1.3755	10.000	1.4187
system_26	IMIDPOINT (TP10)	1.480	1.3124	10.000	0.043726
system_26	IMIDPOINT (TP12)	5.200	1.3016	10.000	0.008337
system_26	IMIDPOINT (TP14)	0.000	1	0.000	1
system_26	HEUN (TP8)	0.760	1.2981	10.000	0.00037357
system_26	HEUN (TP10)	3.000	1.2981	10.000	0.00024325
system_26	HEUN (TP12)	0.000	1	0.000	1
system_26	HEUN (TP14)	0.000	1	0.000	1
system_26	KUTTA3 (TP8)	0.330	1.2981	10.000	0.00024684
system_26	KUTTA3 (TP10)	0.470	1.2981	10.000	0.0002297
system_26	KUTTA3 (TP12)	2.510	1.2981	10.000	0.00023037
system_26	KUTTA3 (TP14)	4.580	1.2981	10.000	0.00025381
system_26	RADAU3 (TP8)	0.240	1.5617	10.000	5.0378
system_26	RADAU3 (TP10)	0.600	1.3883	10.000	1.6844
system_26	RADAU3 (TP12)	3.240	1.3209	10.000	0.15278
system_26	RADAU3 (TP14)	4.540	1.3074	10.000	0.015184
system_26	RK4 (TP8)	0.360	1.2981	10.000	0.00022972
system_26	RK4 (TP10)	0.390	1.2981	10.000	0.00022733
system_26	RK4 (TP12)	1.480	1.2981	10.000	0.00022903
system_26	RK4 (TP14)	2.530	1.2981	10.000	0.00022959
system_26	LA3 (TP8)	0.150	1.8095	10.000	87.307
system_26	LA3 (TP10)	0.330	1.5518	10.000	3.9696
system_26	LA3 (TP12)	0.780	1.383	10.000	0.88571
system_26	LA3 (TP14)	1.950	1.3331	10.000	0.11882
system_26	LC3 (TP8)	0.150	1.8809	10.000	64.274
system_26	LC3 (TP10)	0.660	1.5668	10.000	1.0222
system_26	LC3 (TP12)	1.580	1.3944	10.000	2.2838
system_26	LC3 (TP14)	3.730	1.3335	10.000	0.18795
system_26	GL4 (TP8)	0.170	1.8074	10.000	63.867
system_26	GL4 (TP10)	0.530	1.5454	10.000	2.6926
system_26	GL4 (TP12)	1.370	1.4085	10.000	1.3062
system_26	GL4 (TP14)	1.630	1.3384	10.000	0.21071
system_26	RADAU5 (TP8)	0.320	2.1793	10.000	1653.6
system_26	RADAU5 (TP10)	1.040	1.7733	10.000	48.607
system_26	RADAU5 (TP12)	1.360	1.5259	10.000	3.6461
system_26	RADAU5 (TP14)	2.170	1.3883	10.000	1.0097
system_26	GL6 (TP8)	2.110	2.5572	10.000	4134.3
system_26	GL6 (TP10)	2.040	2.1265	10.000	461.06
system_26	GL6 (TP12)	2.610	1.754	10.000	14.466
system_26	GL6 (TP14)	5.680	1.5472	10.000	4.1249
system_26	Riot (05, 1e-11)	0m0.592s	1.2981	-0.000	0.00023441
system_26	Riot (10, 1e-11)	0m0.217s	1.2981	-0.000	0.00022716
system_26	Riot (15, 1e-11)	0m0.302s	1.2981	-0.000	0.00022731
system_26	Valencia-IVP (0.00025)	0m1.817s	277.25	1.238	999.84
system_26	Valencia-IVP (0.0025)	0m0.156s	287.15	1.230	996.77
system_26	Valencia-IVP (0.025)	0m0.022s	421.64	1.125	867.43
system_26	VNODE-LP (15, 1e-14,1e-14)	0m0.007s	1.2981	10.000	6.8883
system_26	VNODE-LP (20, 1e-14,1e-14)	0m0.008s	1.2981	10.000	6.8883
system_26	VNODE-LP (25, 1e-14,1e-14)	0m0.007s	1.2981	10.000	6.8883

Table 27: Simulation results of Problem 27

Problems	Methods	c5t	c5w	c6t	c6w
system_27	Vnode-LP (5)	0.020	9.3614e-13	10.000	4.6218e-13
system_27	IMIDPOINT (TP8)	0.270	1.5768e-07	10.000	0.000295
system_27	IMIDPOINT (TP10)	1.170	1.594e-09	10.000	5.52e-06
system_27	IMIDPOINT (TP12)	3.060	1.0707e-10	10.000	3.024e-06
system_27	IMIDPOINT (TP14)	0.000	0	0.000	0
system_27	HEUN (TP8)	0.260	1.5474e-07	10.000	2.6801e-06
system_27	HEUN (TP10)	1.740	1.5894e-09	10.000	2.833e-06
system_27	HEUN (TP12)	0.000	0	0.000	0
system_27	HEUN (TP14)	0.000	0	0.000	0
system_27	KUTTA3 (TP8)	0.230	1.6011e-07	10.000	2.848e-06
system_27	KUTTA3 (TP10)	0.300	1.725e-09	10.000	4.2868e-07
system_27	KUTTA3 (TP12)	1.740	7.9714e-11	10.000	2.8117e-06
system_27	KUTTA3 (TP14)	5.040	4.9986e-11	10.000	3.0414e-06
system_27	RADAU3 (TP8)	0.130	1.2723e-07	10.000	0.00095764
system_27	RADAU3 (TP10)	0.700	1.4206e-09	10.000	1.9295e-05
system_27	RADAU3 (TP12)	1.290	7.2224e-11	10.000	5.7491e-06
system_27	RADAU3 (TP14)	4.400	5.0039e-11	10.000	4.6878e-06
system_27	RK4 (TP8)	0.210	1.0742e-07	10.000	1.6404e-06
system_27	RK4 (TP10)	0.540	1.3967e-09	10.000	2.1704e-07
system_27	RK4 (TP12)	1.680	7.2654e-11	10.000	2.2556e-07
system_27	RK4 (TP14)	3.080	1.8682e-11	10.000	1.3202e-06
system_27	LA3 (TP8)	0.120	1.0305e-07	10.000	0.0014237
system_27	LA3 (TP10)	0.500	1.2041e-09	10.000	4.8722e-05
system_27	LA3 (TP12)	0.630	6.496e-11	10.000	3.2033e-06
system_27	LA3 (TP14)	1.500	1.4109e-11	10.000	7.5049e-06
system_27	LC3 (TP8)	0.270	1.0735e-07	10.000	0.0099824
system_27	LC3 (TP10)	0.550	1.2123e-09	10.000	0.00011735
system_27	LC3 (TP12)	0.670	6.5464e-11	10.000	3.9577e-06
system_27	LC3 (TP14)	1.640	1.5198e-11	10.000	9.4644e-06
system_27	GL4 (TP8)	0.110	1.0327e-07	6.741	8.4141e-05
system_27	GL4 (TP10)	0.430	1.2065e-09	10.000	2.9336e-05
system_27	GL4 (TP12)	0.950	6.4987e-11	10.000	1.7565e-06
system_27	GL4 (TP14)	1.320	1.3958e-11	10.000	3.6688e-06
system_27	RADAU5 (TP8)	0.520	7.4456e-08	10.000	0.019733
system_27	RADAU5 (TP10)	0.960	9.3658e-10	10.000	0.00019813
system_27	RADAU5 (TP12)	0.910	5.717e-11	10.000	1.1495e-05
system_27	RADAU5 (TP14)	2.380	5.5844e-12	10.000	1.6489e-06
system_27	GL6 (TP8)	1.960	4.5926e-08	5.125	4.6732e-05
system_27	GL6 (TP10)	1.450	6.5769e-10	10.000	0.0003355
system_27	GL6 (TP12)	3.130	5.0042e-11	10.000	1.353e-05
system_27	GL6 (TP14)	3.910	3.3702e-12	10.000	4.662e-06
system_27	Riot (05, 1e-11)	0m0.256s	1.8868e-10	-0.000	2.7813e+09
system_27	Riot (10, 1e-11)	0m0.164s	1.199e-14	-0.000	3.4514e-08
system_27	Riot (15, 1e-11)	0m0.230s	8.793e-14	-0.000	1.8045e-12
system_27	Valencia-IVP (0.00025)	0m1.391s	0.1407	2.649	999.19
system_27	Valencia-IVP (0.0025)	0m0.126s	1.4595	2.205	988.39
system_27	Valencia-IVP (0.025)	0m0.021s	21.761	1.650	925.46
system_27	VNODE-LP (15, 1e-14,1e-14)	0m0.006s	9.992e-15	10.000	9.4229e-14
system_27	VNODE-LP (20, 1e-14,1e-14)	0m0.005s	5.9952e-15	10.000	5.4546e-14
system_27	VNODE-LP (25, 1e-14,1e-14)	0m0.004s	5.9952e-15	10.000	3.6599e-14

Table 28: Simulation results of Problem 28

Problems	Methods	c5t	c5w	c6t	c6w
system_28	Vnode-LP (5)	96.200	2751.2	0.173	1579.8
system_28	IMIDPOINT (TP8)	3.150	22.484	0.158	22.484
system_28	IMIDPOINT (TP10)	13.120	12.727	0.157	12.727
system_28	IMIDPOINT (TP12)	38.340	6.8857	0.154	6.8857
system_28	IMIDPOINT (TP14)	0.020	0.8	0.000	0.8
system_28	HEUN (TP8)	8.320	20.668	0.159	20.668
system_28	HEUN (TP10)	24.100	11.643	0.157	11.643
system_28	HEUN (TP12)	0.040	0.8	0.000	0.8
system_28	HEUN (TP14)	0.020	0.8	0.000	0.8
system_28	KUTTA3 (TP8)	4.920	36.305	0.157	36.305
system_28	KUTTA3 (TP10)	15.270	24.18	0.158	24.18
system_28	KUTTA3 (TP12)	32.470	15.881	0.158	15.881
system_28	KUTTA3 (TP14)	65.730	10.215	0.157	10.215
system_28	RADAU3 (TP8)	7.300	38.305	0.158	38.305
system_28	RADAU3 (TP10)	12.040	25.701	0.158	25.701
system_28	RADAU3 (TP12)	32.520	16.944	0.158	16.944
system_28	RADAU3 (TP14)	70.820	10.941	0.157	10.941
system_28	RK4 (TP8)	10.840	49.534	0.160	49.534
system_28	RK4 (TP10)	11.050	36.264	0.160	36.264
system_28	RK4 (TP12)	29.610	26.23	0.158	26.23
system_28	RK4 (TP14)	61.270	18.851	0.159	18.851
system_28	LA3 (TP8)	4.650	53.492	0.159	53.492
system_28	LA3 (TP10)	12.470	38.882	0.159	38.882
system_28	LA3 (TP12)	28.230	28.189	0.159	28.189
system_28	LA3 (TP14)	58.160	20.295	0.158	20.295
system_28	LC3 (TP8)	4.970	52.937	0.157	52.937
system_28	LC3 (TP10)	10.360	38.288	0.158	38.288
system_28	LC3 (TP12)	28.710	27.875	0.159	27.875
system_28	LC3 (TP14)	46.430	20.023	0.158	20.023
system_28	GL4 (TP8)	3.530	54.29	0.160	54.29
system_28	GL4 (TP10)	10.430	39.606	0.160	39.606
system_28	GL4 (TP12)	20.160	28.671	0.160	28.671
system_28	GL4 (TP14)	41.280	20.628	0.158	20.628
system_28	RADAU5 (TP8)	21.820	65.259	0.158	65.259
system_28	RADAU5 (TP10)	25.850	50.854	0.159	50.854
system_28	RADAU5 (TP12)	52.630	39.579	0.158	39.579
system_28	RADAU5 (TP14)	81.760	30.261	0.159	30.261
system_28	GL6 (TP8)	130.420	74.674	0.160	74.674
system_28	GL6 (TP10)	97.740	63.371	0.160	63.371
system_28	GL6 (TP12)	121.510	50.332	0.160	50.332
system_28	GL6 (TP14)	214.590	40.072	0.159	40.072
system_28	Riot (05, 1e-11)	0m29.200s	0	-0.000	4.2446
system_28	Riot (10, 1e-11)	18m44.691s	0	-0.000	4.0786
system_28	Riot (15, 1e-11)	210m1.595s	0	-0.000	4.5904
system_28	Valencia-IVP (0.00025)	0m2.126s	1.1713	0.162	1.1713
system_28	Valencia-IVP (0.0025)	0m0.733s	3.1672	0.395	3.1672
system_28	Valencia-IVP (0.025)	0m0.027s	0.95755	0.075	0.95755
system_28	VNODE-LP (15, 1e-14,1e-14)	0m0.309s	18.119	0.155	18.119
system_28	VNODE-LP (20, 1e-14,1e-14)	0m0.299s	22.402	0.140	22.402
system_28	VNODE-LP (25, 1e-14,1e-14)	0m0.301s	25.252	0.128	25.252

Table 29: Simulation results of Problem 29

Problems	Methods	c5t	c5w	c6t	c6w
system_29	Vnode-LP (5)	0.060	1.2108e-12	10.000	4.9552e-13
system_29	IMIDPOINT (TP8)	0.230	2.6155e-07	10.000	2.8732e-07
system_29	IMIDPOINT (TP10)	1.290	2.7281e-09	10.000	2.9382e-09
system_29	IMIDPOINT (TP12)	4.730	9.9295e-11	10.000	1.1849e-10
system_29	IMIDPOINT (TP14)	0.010	0	0.000	0
system_29	HEUN (TP8)	0.470	2.4783e-07	10.000	2.9948e-07
system_29	HEUN (TP10)	2.430	2.6115e-09	10.000	3.1098e-09
system_29	HEUN (TP12)	12.290	9.9476e-11	10.000	1.1994e-10
system_29	HEUN (TP14)	0.010	0	0.000	0
system_29	KUTTA3 (TP8)	0.300	1.6651e-07	10.000	2.5816e-07
system_29	KUTTA3 (TP10)	1.480	1.5578e-09	10.000	2.2972e-09
system_29	KUTTA3 (TP12)	2.880	6.3107e-11	10.000	1.0009e-10
system_29	KUTTA3 (TP14)	10.970	1.7909e-11	10.000	7.1997e-11
system_29	RADAU3 (TP8)	0.660	1.2048e-07	10.000	2.4884e-07
system_29	RADAU3 (TP10)	1.200	1.2469e-09	10.000	2.5807e-09
system_29	RADAU3 (TP12)	4.880	4.9691e-11	10.000	9.9457e-11
system_29	RADAU3 (TP14)	9.880	1.6933e-11	10.000	7.1311e-11
system_29	RK4 (TP8)	0.810	4.9746e-07	10.000	5.7398e-07
system_29	RK4 (TP10)	1.600	5.7788e-09	10.000	6.431e-09
system_29	RK4 (TP12)	1.800	1.3811e-10	10.000	1.4256e-10
system_29	RK4 (TP14)	4.570	5.9998e-12	10.000	5.7015e-11
system_29	LA3 (TP8)	0.730	2.374e-07	10.000	3.1743e-07
system_29	LA3 (TP10)	1.220	2.3176e-09	10.000	3.3227e-09
system_29	LA3 (TP12)	1.970	9.42e-11	10.000	1.1962e-10
system_29	LA3 (TP14)	8.420	4.0909e-12	10.000	5.3502e-11
system_29	LC3 (TP8)	0.730	2.9239e-07	10.000	4.165e-07
system_29	LC3 (TP10)	1.090	2.8068e-09	10.000	4.3452e-09
system_29	LC3 (TP12)	2.400	9.1955e-11	10.000	1.2268e-10
system_29	LC3 (TP14)	4.550	4.0026e-12	10.000	5.3415e-11
system_29	GL4 (TP8)	0.590	2.9094e-07	10.000	4.0588e-07
system_29	GL4 (TP10)	0.650	2.8419e-09	10.000	4.3668e-09
system_29	GL4 (TP12)	1.460	9.1938e-11	10.000	1.2278e-10
system_29	GL4 (TP14)	4.340	3.7901e-12	10.000	5.3142e-11
system_29	RADAU5 (TP8)	1.400	2.387e-07	10.000	2.9939e-07
system_29	RADAU5 (TP10)	2.630	4.7184e-09	10.000	5.7134e-09
system_29	RADAU5 (TP12)	6.580	1.3505e-10	10.000	1.4845e-10
system_29	RADAU5 (TP14)	8.810	3.6035e-12	10.000	5.2885e-11
system_29	GL6 (TP8)	8.100	1.7508e-07	10.000	1.9285e-07
system_29	GL6 (TP10)	7.120	3.8806e-09	10.000	4.3373e-09
system_29	GL6 (TP12)	14.920	1.3981e-10	10.000	1.5053e-10
system_29	GL6 (TP14)	21.240	4.8414e-12	10.000	5.5605e-11
system_29	Riot (05, 1e-11)	0m1.818s	3.2308e-10	-0.000	5.7962e-09
system_29	Riot (10, 1e-11)	0m1.333s	6.1563e-12	-0.000	1.0335e-10
system_29	Riot (15, 1e-11)	0m2.386s	9.6034e-15	-0.000	9.6034e-15
system_29	Valencia-IVP (0.00025)	0m3.140s	0.001153	10.000	0.057922
system_29	Valencia-IVP (0.0025)	0m0.516s	0.01199	6.265	0.2962
system_29	Valencia-IVP (0.025)	0m0.226s	0.17131	1.200	0.2357
system_29	VNODE-LP (15, 1e-14,1e-14)	0m0.080s	1.8485e-14	10.000	1.5952e-14
system_29	VNODE-LP (20, 1e-14,1e-14)	0m0.099s	1.199e-14	10.000	1.1606e-14
system_29	VNODE-LP (25, 1e-14,1e-14)	0m0.107s	9.4924e-15	10.000	8.9239e-15

Table 30: Simulation results of Problem 30

Problems	Methods	c5t	c5w	c6t	c6w
system_30	Vnode-LP (5)	91.010	1.7487e+05	0.280	76119
system_30	IMIDPOINT (TP8)	5.510	881.14	0.301	881.14
system_30	IMIDPOINT (TP10)	27.750	840.62	0.301	840.62
system_30	IMIDPOINT (TP12)	70.690	814.57	0.301	814.57
system_30	IMIDPOINT (TP14)	0.010	1.5	0.000	1.5
system_30	HEUN (TP8)	14.130	1009.1	0.301	1009.1
system_30	HEUN (TP10)	51.980	914.75	0.301	914.75
system_30	HEUN (TP12)	163.000	902.49	0.301	902.49
system_30	HEUN (TP14)	0.030	1.5	0.000	1.5
system_30	KUTTA3 (TP8)	33.460	993.08	0.300	993.08
system_30	KUTTA3 (TP10)	87.330	1596.8	0.300	1596.8
system_30	KUTTA3 (TP12)	149.300	1978.1	0.301	1978.1
system_30	KUTTA3 (TP14)	349.010	1263	0.301	1263
system_30	RADAU3 (TP8)	29.070	1.4736e+05	0.299	1.4736e+05
system_30	RADAU3 (TP10)	68.790	5215.4	0.300	5215.4
system_30	RADAU3 (TP12)	129.130	1093.3	0.301	1093.3
system_30	RADAU3 (TP14)	300.570	2861.3	0.301	2861.3
system_30	RK4 (TP8)	65.010	3.5292e+06	0.301	3.5292e+06
system_30	RK4 (TP10)	116.200	2478.9	0.301	2478.9
system_30	RK4 (TP12)	184.450	9796.1	0.301	9796.1
system_30	RK4 (TP14)	345.890	5.7405e+05	0.301	5.7405e+05
system_30	LA3 (TP8)	54.760	6.8108e+05	0.299	6.8108e+05
system_30	LA3 (TP10)	110.050	1.3221e+08	0.301	1.3221e+08
system_30	LA3 (TP12)	164.200	6.6791e+05	0.301	6.6791e+05
system_30	LA3 (TP14)	309.390	1932.6	0.301	1932.6
system_30	LC3 (TP8)	49.630	90771	0.298	90771
system_30	LC3 (TP10)	95.520	1434.4	0.300	1434.4
system_30	LC3 (TP12)	147.550	2.647e+05	0.300	2.647e+05
system_30	LC3 (TP14)	281.100	9.457e+08	0.301	9.457e+08
system_30	GL4 (TP8)	42.060	1.3329e+10	0.300	1.3329e+10
system_30	GL4 (TP10)	83.030	3888.6	0.301	3888.6
system_30	GL4 (TP12)	129.950	3.39e+05	0.301	3.39e+05
system_30	GL4 (TP14)	247.110	62598	0.301	62598
system_30	RADAU5 (TP8)	378.500	2.939e+07	0.300	2.939e+07
system_30	RADAU5 (TP10)	589.100	7.4498e+12	0.300	7.4498e+12
system_30	RADAU5 (TP12)	763.040	5.7440e+05	0.300	5.7440e+05
system_30	RADAU5 (TP14)	1197.720	1.2479e+22	0.300	1.2479e+22
system_30	GL6 (TP8)	1974.060	5.187e+48	0.299	5.187e+48
system_30	GL6 (TP10)	2704.680	1.2952e+05	0.299	1.2952e+05
system_30	GL6 (TP12)	3513.540	2.9604e+07	0.298	2.9604e+07
system_30	GL6 (TP14)	4986.980	31322	0.298	31322
system_30	Riot				
system_30	Valencia-IVP (0.00025)	0m13.555s	57.455	0.332	57.455
system_30	Valencia-IVP (0.0025)	0m0.494s	4.4295	0.245	4.4295
system_30	Valencia-IVP (0.025)	0m0.108s	3.7929	0.200	3.7929
system_30	VNODE-LP (15, 1e-14,1e-14)	0m0.194s	105.32	0.259	105.32
system_30	VNODE-LP (20, 1e-14,1e-14)	0m0.186s	146.87	0.237	146.87
system_30	VNODE-LP (25, 1e-14,1e-14)	0m0.187s	188.72	0.220	188.72

Table 31: Simulation results of Problem 31

Problems	Methods	c5t	c5w	c6t	c6w
system_31	Vnode-LP (5)	0.070	5.6094e-13	10.000	2.7903e-12
system_31	IMIDPOINT (TP8)	0.480	1.5167e-07	10.000	3.6105e-05
system_31	IMIDPOINT (TP10)	2.120	1.5794e-09	10.000	1.429e-05
system_31	IMIDPOINT (TP12)	9.480	8.7624e-11	10.000	6.8431e-07
system_31	IMIDPOINT (TP14)	0.010	0	0.000	0
system_31	HEUN (TP8)	1.220	1.5141e-07	10.000	5.4731e-05
system_31	HEUN (TP10)	4.990	1.5783e-09	10.000	1.4013e-05
system_31	HEUN (TP12)	19.860	8.761e-11	10.000	6.8342e-07
system_31	HEUN (TP14)	0.030	0	0.000	0
system_31	KUTTA3 (TP8)	1.000	1.716e-07	10.000	1.5453e-05
system_31	KUTTA3 (TP10)	2.830	2.3456e-09	10.000	5.6997e-06
system_31	KUTTA3 (TP12)	7.680	7.3939e-11	10.000	6.8191e-07
system_31	KUTTA3 (TP14)	23.990	1.3907e-11	10.000	4.2768e-07
system_31	RADAU3 (TP8)	0.990	1.0446e-07	10.000	2.2616e-05
system_31	RADAU3 (TP10)	2.810	1.1178e-09	10.000	3.6311e-06
system_31	RADAU3 (TP12)	7.600	6.8475e-11	10.000	6.2904e-07
system_31	RADAU3 (TP14)	23.750	1.2571e-11	10.000	4.2024e-07
system_31	RK4 (TP8)	1.010	1.309e-07	10.000	8.6289e-06
system_31	RK4 (TP10)	2.000	1.5292e-09	10.000	6.4202e-06
system_31	RK4 (TP12)	4.690	7.4969e-11	10.000	5.8767e-07
system_31	RK4 (TP14)	11.020	3.4735e-12	10.000	2.6614e-07
system_31	LA3 (TP8)	0.960	8.5491e-08	10.000	2.3697e-05
system_31	LA3 (TP10)	1.950	9.2003e-10	10.000	5.4738e-06
system_31	LA3 (TP12)	4.540	6.4241e-11	10.000	6.0562e-07
system_31	LA3 (TP14)	10.680	3.0358e-12	10.000	2.5735e-07
system_31	LC3 (TP8)	0.700	2.062e-07	10.000	2.6776e-05
system_31	LC3 (TP10)	1.350	2.3811e-09	10.000	7.9989e-06
system_31	LC3 (TP12)	3.070	9.419e-11	10.000	7.1173e-07
system_31	LC3 (TP14)	7.520	3.2685e-12	10.000	2.6484e-07
system_31	GL4 (TP8)	0.630	1.9903e-07	10.000	1.3854e-05
system_31	GL4 (TP10)	1.190	2.3836e-09	10.000	5.0029e-06
system_31	GL4 (TP12)	2.690	9.3698e-11	10.000	7.003e-07
system_31	GL4 (TP14)	6.580	3.1282e-12	10.000	2.5848e-07
system_31	RADAU5 (TP8)	1.600	1.2571e-07	10.000	1.8907e-05
system_31	RADAU5 (TP10)	2.470	2.4884e-09	10.000	3.308e-06
system_31	RADAU5 (TP12)	4.230	1.1645e-10	10.000	6.8178e-07
system_31	RADAU5 (TP14)	8.150	3.5625e-12	10.000	2.5296e-07
system_31	GL6 (TP8)	4.040	6.8116e-08	10.000	2.4003e-05
system_31	GL6 (TP10)	5.620	1.5383e-09	10.000	2.5189e-06
system_31	GL6 (TP12)	8.260	1.1406e-10	10.000	5.2241e-07
system_31	GL6 (TP14)	12.960	4.9349e-12	10.000	2.4792e-07
system_31	Riot (05, 1e-11)	0m8.552s	1.3195e-10	-0.000	3.7849e-08
system_31	Riot (10, 1e-11)	0m4.423s	4.2645e-12	-0.000	5.8043e-09
system_31	Riot (15, 1e-11)	0m4.983s	1.8874e-15	-0.000	1.2535e-10
system_31	Valencia-IVP (0.00025)	0m55.912s	0.0020183	4.793	1.5566
system_31	Valencia-IVP (0.0025)	0m4.192s	0.020632	3.252	1.8903
system_31	Valencia-IVP (0.025)	0m0.399s	0.25275	1.800	1.0445
system_31	VNODE-LP (15, 1e-14,1e-14)	0m0.160s	9.26e-15	10.000	1.3792e-13
system_31	VNODE-LP (20, 1e-14,1e-14)	0m0.181s	4.9093e-15	10.000	9.2898e-14
system_31	VNODE-LP (25, 1e-14,1e-14)	0m0.205s	4.0697e-15	10.000	7.63e-14

Table 32: Simulation results of Problem 32

Problems	Methods	c5t	c5w	c6t	c6w
system_32	Vnode-LP (5)	0.010	6.0973e-13	10.000	6.0324e-12
system_32	IMIDPOINT (TP8)	0.070	5.9099e-08	10.000	2.1031e-06
system_32	IMIDPOINT (TP10)	0.300	5.967e-10	10.000	2.8472e-08
system_32	IMIDPOINT (TP12)	0.000	0	0.000	0
system_32	IMIDPOINT (TP14)	0.000	0	0.000	0
system_32	HEUN (TP8)	0.110	7.9444e-08	10.000	1.0851e-06
system_32	HEUN (TP10)	0.470	8.0319e-10	10.000	1.2322e-08
system_32	HEUN (TP12)	0.000	0	0.000	0
system_32	HEUN (TP14)	0.000	0	0.000	0
system_32	KUTTA3 (TP8)	0.050	1.4556e-07	10.000	9.6782e-07
system_32	KUTTA3 (TP10)	0.130	2.0732e-09	10.000	1.2377e-08
system_32	KUTTA3 (TP12)	0.410	2.5397e-11	10.000	1.8643e-10
system_32	KUTTA3 (TP14)	1.270	2.0668e-12	10.000	7.602e-11
system_32	RADAU3 (TP8)	0.060	1.3228e-07	10.000	9.7454e-07
system_32	RADAU3 (TP10)	0.150	1.9183e-09	10.000	1.2182e-08
system_32	RADAU3 (TP12)	0.470	2.5917e-11	10.000	1.9523e-10
system_32	RADAU3 (TP14)	1.520	1.8048e-12	10.000	6.7549e-11
system_32	RK4 (TP8)	0.070	1.1569e-07	10.000	1.6157e-06
system_32	RK4 (TP10)	0.140	1.4826e-09	10.000	2.7584e-08
system_32	RK4 (TP12)	0.320	1.6634e-11	10.000	4.2749e-10
system_32	RK4 (TP14)	0.810	4.956e-13	10.000	4.9916e-11
system_32	LA3 (TP8)	0.080	4.8721e-08	10.000	9.5298e-07
system_32	LA3 (TP10)	0.160	5.5251e-10	10.000	1.0334e-08
system_32	LA3 (TP12)	0.380	5.9179e-12	10.000	1.7888e-10
system_32	LA3 (TP14)	0.950	4.059e-13	10.000	4.9934e-11
system_32	LC3 (TP8)	0.060	1.2177e-07	10.000	1.1347e-06
system_32	LC3 (TP10)	0.130	1.6767e-09	10.000	1.4236e-08
system_32	LC3 (TP12)	0.300	2.1624e-11	10.000	2.1317e-10
system_32	LC3 (TP14)	0.730	5.8264e-13	10.000	4.9981e-11
system_32	GL4 (TP8)	0.060	1.1843e-07	10.000	9.841e-07
system_32	GL4 (TP10)	0.110	1.6382e-09	10.000	1.3591e-08
system_32	GL4 (TP12)	0.260	2.1176e-11	10.000	1.9993e-10
system_32	GL4 (TP14)	0.630	5.2935e-13	10.000	4.9973e-11
system_32	RADAU5 (TP8)	0.220	4.1587e-08	10.000	8.4167e-07
system_32	RADAU5 (TP10)	0.320	6.3387e-10	10.000	1.039e-08
system_32	RADAU5 (TP12)	0.550	8.2654e-12	10.000	1.4992e-10
system_32	RADAU5 (TP14)	1.090	2.0606e-13	10.000	4.9803e-11
system_32	GL6 (TP8)	0.880	2.7501e-08	10.000	6.6601e-07
system_32	GL6 (TP10)	0.960	1.0305e-09	10.000	9.9864e-09
system_32	GL6 (TP12)	1.490	9.9183e-12	10.000	1.6582e-10
system_32	GL6 (TP14)	2.280	1.9185e-13	10.000	5.0005e-11
system_32	Riot (05, 1e-11)	0m2.160s	8.7466e-11	-0.000	2.9713e-10
system_32	Riot (10, 1e-11)	0m0.781s	1.2124e-13	-0.000	4.0483e-11
system_32	Riot (15, 1e-11)	0m0.815s	1.3411e-13	-0.000	1.8493e-11
system_32	Valencia-IVP (0.00025)	1m35.630s	0.00026492	10.000	0.28978
system_32	Valencia-IVP (0.0025)	0m2.151s	0.0026499	10.000	2.9143
system_32	Valencia-IVP (0.025)	0m0.272s	0.026604	10.000	31.409
system_32	VNODE-LP (15, 1e-14,1e-14)	0m0.039s	9.77e-15	10.000	6.3727e-14
system_32	VNODE-LP (20, 1e-14,1e-14)	0m0.044s	8.8818e-15	10.000	7.3386e-14
system_32	VNODE-LP (25, 1e-14,1e-14)	0m0.040s	7.9936e-15	10.000	3.586e-14

Table 33: Simulation results of Problem 33

Problems	Methods	c5t	c5w	c6t	c6w
system_33	Vnode-LP (5)	0.010	0.81192	10.000	0.20314
system_33	IMIDPOINT (TP8)	0.080	0.81193	10.000	0.20317
system_33	IMIDPOINT (TP10)	0.340	0.81192	10.000	0.20314
system_33	IMIDPOINT (TP12)	0.000	0.35	0.000	0.35
system_33	IMIDPOINT (TP14)	0.000	0.35	0.000	0.35
system_33	HEUN (TP8)	0.130	0.81192	10.000	0.20316
system_33	HEUN (TP10)	0.580	0.81192	10.000	0.20314
system_33	HEUN (TP12)	0.000	0.35	0.000	0.35
system_33	HEUN (TP14)	0.000	0.35	0.000	0.35
system_33	KUTTA3 (TP8)	0.060	0.81192	10.000	0.20315
system_33	KUTTA3 (TP10)	0.150	0.81192	10.000	0.20314
system_33	KUTTA3 (TP12)	0.440	0.81192	10.000	0.20314
system_33	KUTTA3 (TP14)	1.400	0.81192	10.000	0.20314
system_33	RADAU3 (TP8)	0.060	0.81199	10.000	0.20346
system_33	RADAU3 (TP10)	0.170	0.81193	10.000	0.20318
system_33	RADAU3 (TP12)	0.520	0.81192	10.000	0.20315
system_33	RADAU3 (TP14)	1.640	0.81192	10.000	0.20314
system_33	RK4 (TP8)	0.070	0.81192	10.000	0.20315
system_33	RK4 (TP10)	0.150	0.81192	10.000	0.20314
system_33	RK4 (TP12)	0.360	0.81192	10.000	0.20314
system_33	RK4 (TP14)	0.880	0.81192	10.000	0.20314
system_33	LA3 (TP8)	0.080	0.81202	10.000	0.20448
system_33	LA3 (TP10)	0.180	0.81194	10.000	0.20338
system_33	LA3 (TP12)	0.430	0.81193	10.000	0.20318
system_33	LA3 (TP14)	1.060	0.81192	10.000	0.20315
system_33	LC3 (TP8)	0.070	0.8121	10.000	0.20508
system_33	LC3 (TP10)	0.140	0.81195	10.000	0.20347
system_33	LC3 (TP12)	0.340	0.81193	10.000	0.2032
system_33	LC3 (TP14)	0.860	0.81192	10.000	0.20315
system_33	GL4 (TP8)	0.060	0.81196	10.000	0.20464
system_33	GL4 (TP10)	0.120	0.81193	10.000	0.2034
system_33	GL4 (TP12)	0.290	0.81192	10.000	0.20319
system_33	GL4 (TP14)	0.730	0.81192	10.000	0.20315
system_33	RADAU5 (TP8)	0.230	0.81209	10.000	0.20783
system_33	RADAU5 (TP10)	0.350	0.81197	10.000	0.20426
system_33	RADAU5 (TP12)	0.580	0.81193	10.000	0.2034
system_33	RADAU5 (TP14)	1.200	0.81193	10.000	0.2032
system_33	GL6 (TP8)	0.940	0.81203	10.000	0.2113
system_33	GL6 (TP10)	1.030	0.81198	10.000	0.20557
system_33	GL6 (TP12)	1.500	0.81194	10.000	0.20385
system_33	GL6 (TP14)	2.550	0.81193	10.000	0.20335
system_33	Riot (05, 1e-11)	0m3.466s	0.81192	-0.000	0.20314
system_33	Riot (10, 1e-11)	0m0.842s	0.81192	-0.000	0.20314
system_33	Riot (15, 1e-11)	0m0.886s	0.81192	-0.000	0.20314
system_33	Valencia-IVP (0.00025)	1m30.726s	0.8123	10.000	243.87
system_33	Valencia-IVP (0.0025)	0m1.521s	0.81566	10.000	249.32
system_33	Valencia-IVP (0.025)	0m0.257s	0.85019	10.000	309.55
system_33	VNODE-LP (15, 1e-14,1e-14)	0m0.041s	0.81192	10.000	0.20314
system_33	VNODE-LP (20, 1e-14,1e-14)	0m0.042s	0.81192	10.000	0.20314
system_33	VNODE-LP (25, 1e-14,1e-14)	0m0.039s	0.81192	10.000	0.20314

Table 34: Simulation results of Problem 34

Problems	Methods	c5t	c5w	c6t	c6w
system_34	Vnode-LP (5)	0.000	5.0182e-14	10.000	3.9266e-12
system_34	IMIDPOINT (TP8)	0.010	4.9856e-09	10.000	1.9973e-07
system_34	IMIDPOINT (TP10)	0.040	5.1311e-11	10.000	2.0146e-09
system_34	IMIDPOINT (TP12)	0.000	0	0.000	0
system_34	IMIDPOINT (TP14)	0.000	0	0.000	0
system_34	HEUN (TP8)	0.020	3.0462e-09	10.000	5.592e-08
system_34	HEUN (TP10)	0.000	0	0.000	0
system_34	HEUN (TP12)	0.000	0	0.000	0
system_34	HEUN (TP14)	0.000	0	0.000	0
system_34	KUTTA3 (TP8)	0.000	2.7768e-09	10.000	9.0913e-08
system_34	KUTTA3 (TP10)	0.010	3.1724e-11	10.000	9.6503e-10
system_34	KUTTA3 (TP12)	0.050	4.2144e-13	10.000	2.2171e-11
system_34	KUTTA3 (TP14)	0.000	0	0.000	0
system_34	RADAU3 (TP8)	0.000	1.6984e-09	10.000	1.3299e-07
system_34	RADAU3 (TP10)	0.010	2.0952e-11	10.000	1.5843e-09
system_34	RADAU3 (TP12)	0.040	2.8155e-13	10.000	2.7919e-11
system_34	RADAU3 (TP14)	0.000	0	0.000	0
system_34	RK4 (TP8)	0.000	1.1864e-09	10.000	7.8177e-08
system_34	RK4 (TP10)	0.000	2.3921e-11	10.000	8.5401e-10
system_34	RK4 (TP12)	0.010	2.9621e-13	10.000	1.5717e-11
system_34	RK4 (TP14)	0.040	5.6843e-14	10.000	3.4497e-12
system_34	LA3 (TP8)	0.000	5.5643e-10	10.000	2.4608e-07
system_34	LA3 (TP10)	0.000	6.3136e-12	10.000	2.6461e-09
system_34	LA3 (TP12)	0.010	7.6383e-14	10.000	5.2637e-11
system_34	LA3 (TP14)	0.030	3.6859e-14	10.000	2.8741e-12
system_34	LC3 (TP8)	0.000	8.161e-10	10.000	2.1526e-07
system_34	LC3 (TP10)	0.000	1.5556e-11	10.000	2.5669e-09
system_34	LC3 (TP12)	0.010	2.0783e-13	10.000	4.7793e-11
system_34	LC3 (TP14)	0.030	4.4409e-14	10.000	3.0056e-12
system_34	GL4 (TP8)	0.000	8.4988e-10	10.000	1.4691e-07
system_34	GL4 (TP10)	0.000	1.473e-11	10.000	2.1361e-09
system_34	GL4 (TP12)	0.010	2.0339e-13	10.000	4.4514e-11
system_34	GL4 (TP14)	0.020	4.1744e-14	10.000	2.8155e-12
system_34	RADAU5 (TP8)	0.010	6.4122e-12	10.000	9.769e-08
system_34	RADAU5 (TP10)	0.010	3.7303e-12	10.000	1.976e-09
system_34	RADAU5 (TP12)	0.010	3.4639e-14	10.000	4.6777e-11
system_34	RADAU5 (TP14)	0.020	1.3323e-14	10.000	1.2044e-12
system_34	GL6 (TP8)	0.010	6.6613e-14	10.000	1.8978e-09
system_34	GL6 (TP10)	0.010	6.6613e-14	10.000	1.7573e-09
system_34	GL6 (TP12)	0.010	4.2188e-14	10.000	3.5914e-11
system_34	GL6 (TP14)	0.020	8.4377e-15	10.000	8.1357e-13
system_34	Riot (05, 1e-11)	0m0.304s	1.3289e-12	-0.000	1.8114e-10
system_34	Riot (10, 1e-11)	0m0.241s	5.7954e-14	-0.000	3.439e-12
system_34	Riot (15, 1e-11)	0m0.268s	6.9944e-14	-0.000	6.0574e-13
system_34	Valencia-IVP (0.00025)	0m42.641s	1.6439e-05	10.000	0.0004796
system_34	Valencia-IVP (0.0025)	0m1.277s	0.00016439	10.000	0.0047963
system_34	Valencia-IVP (0.025)	0m0.165s	0.001644	10.000	0.047992
system_34	VNODE-LP (15, 1e-14,1e-14)	0m0.008s	8.8818e-16	10.000	3.5527e-14
system_34	VNODE-LP (20, 1e-14,1e-14)	0m0.010s	8.8818e-16	10.000	3.6415e-14
system_34	VNODE-LP (25, 1e-14,1e-14)	0m0.009s	8.8818e-16	10.000	2.931e-14

Table 35: Simulation results of Problem 35

Problems	Methods	c5t	c5w	c6t	c6w
system_35	Vnode-LP (5)	0.000	0.94953	10.000	5.7375
system_35	IMIDPOINT (TP8)	0.010	0.94451	10.000	4.7965
system_35	IMIDPOINT (TP10)	0.050	0.9445	10.000	4.7952
system_35	IMIDPOINT (TP12)	0.000	0.75	0.000	0.75
system_35	IMIDPOINT (TP14)	0.000	0.75	0.000	0.75
system_35	HEUN (TP8)	0.020	0.94449	10.000	4.7948
system_35	HEUN (TP10)	0.000	0.75	0.000	0.75
system_35	HEUN (TP12)	0.000	0.75	0.000	0.75
system_35	HEUN (TP14)	0.000	0.75	0.000	0.75
system_35	KUTTA3 (TP8)	0.000	0.94449	10.000	4.7959
system_35	KUTTA3 (TP10)	0.020	0.94449	10.000	4.7952
system_35	KUTTA3 (TP12)	0.060	0.94449	10.000	4.7949
system_35	KUTTA3 (TP14)	0.000	0.75	0.000	0.75
system_35	RADAU3 (TP8)	0.000	0.94459	10.000	4.8082
system_35	RADAU3 (TP10)	0.020	0.94452	10.000	4.7989
system_35	RADAU3 (TP12)	0.050	0.9445	10.000	4.7961
system_35	RADAU3 (TP14)	0.000	0.75	0.000	0.75
system_35	RK4 (TP8)	0.000	0.94449	10.000	4.7948
system_35	RK4 (TP10)	0.000	0.94449	10.000	4.7948
system_35	RK4 (TP12)	0.020	0.94449	10.000	4.7948
system_35	RK4 (TP14)	0.040	0.94449	10.000	4.7948
system_35	LA3 (TP8)	0.000	0.94465	10.000	4.818
system_35	LA3 (TP10)	0.010	0.94456	10.000	4.8035
system_35	LA3 (TP12)	0.010	0.94452	10.000	4.7982
system_35	LA3 (TP14)	0.030	0.9445	10.000	4.7962
system_35	LC3 (TP8)	0.000	0.94474	10.000	4.8378
system_35	LC3 (TP10)	0.010	0.94462	10.000	4.8112
system_35	LC3 (TP12)	0.020	0.94454	10.000	4.8012
system_35	LC3 (TP14)	0.040	0.94451	10.000	4.7973
system_35	GL4 (TP8)	0.000	0.9446	10.000	4.8142
system_35	GL4 (TP10)	0.000	0.94455	10.000	4.8025
system_35	GL4 (TP12)	0.010	0.94452	10.000	4.7979
system_35	GL4 (TP14)	0.030	0.9445	10.000	4.796
system_35	RADAU5 (TP8)	0.010	0.94466	10.000	4.8455
system_35	RADAU5 (TP10)	0.010	0.94464	10.000	4.8177
system_35	RADAU5 (TP12)	0.010	0.94458	10.000	4.8053
system_35	RADAU5 (TP14)	0.020	0.94453	10.000	4.7996
system_35	GL6 (TP8)	0.010	0.94459	10.000	4.829
system_35	GL6 (TP10)	0.010	0.94459	10.000	4.8211
system_35	GL6 (TP12)	0.010	0.94458	10.000	4.8082
system_35	GL6 (TP14)	0.020	0.94454	10.000	4.8018
system_35	Riot (05, 1e-11)	0m26.070s	0.93958	-0.000	4.3033
system_35	Riot (10, 1e-11)	0m21.763s	0.93958	-0.000	4.3033
system_35	Riot (15, 1e-11)	0m1.415s	0.93958	-0.000	4.3033
system_35	Valencia-IVP (0.00025)	0m46.038s	0.93957	10.000	4.2038
system_35	Valencia-IVP (0.0025)	0m1.842s	0.93976	10.000	4.2101
system_35	Valencia-IVP (0.025)	0m0.161s	0.94163	10.000	4.2741
system_35	VNODE-LP (15, 1e-14,1e-14)	0m0.010s	0.94965	10.000	5.8441
system_35	VNODE-LP (20, 1e-14,1e-14)	0m0.008s	0.94965	10.000	5.8753
system_35	VNODE-LP (25, 1e-14,1e-14)	0m0.011s	0.94965	10.000	5.8753

Table 36: Simulation results of Problem 36

Problems	Methods	c5t	c5w	c6t	c6w
system_36	Vnode-LP (5)	0.000	6.0663e-13	10.000	4.1451e-12
system_36	IMIDPOINT (TP8)	0.040	1.4746e-05	10.000	3.0191e-05
system_36	IMIDPOINT (TP10)	0.190	3.314e-06	10.000	6.7328e-06
system_36	IMIDPOINT (TP12)	0.000	0	0.000	0
system_36	IMIDPOINT (TP14)	0.000	0	0.000	0
system_36	HEUN (TP8)	0.080	3.7816e-05	10.000	7.7001e-05
system_36	HEUN (TP10)	0.320	4.2331e-06	10.000	8.5989e-06
system_36	HEUN (TP12)	0.000	0	0.000	0
system_36	HEUN (TP14)	0.000	0	0.000	0
system_36	KUTTA3 (TP8)	0.050	0.00010082	10.000	0.00020543
system_36	KUTTA3 (TP10)	0.100	0.00010073	10.000	0.00020458
system_36	KUTTA3 (TP12)	0.270	2.2939e-05	10.000	4.6586e-05
system_36	KUTTA3 (TP14)	0.830	5.5982e-06	10.000	1.1369e-05
system_36	RADAU3 (TP8)	0.090	5.0796e-06	10.000	1.0695e-05
system_36	RADAU3 (TP10)	0.210	2.0629e-06	10.000	4.1934e-06
system_36	RADAU3 (TP12)	0.630	9.2773e-07	10.000	1.8842e-06
system_36	RADAU3 (TP14)	1.960	2.1342e-07	10.000	4.3344e-07
system_36	RK4 (TP8)	0.230	5.0512e-05	10.000	0.0001035
system_36	RK4 (TP10)	0.360	5.0365e-05	10.000	0.00010229
system_36	RK4 (TP12)	0.680	5.0363e-05	10.000	0.00010228
system_36	RK4 (TP14)	1.610	1.1469e-05	10.000	2.3293e-05
system_36	LA3 (TP8)	0.250	4.6419e-06	10.000	1.0092e-05
system_36	LA3 (TP10)	0.380	4.5284e-06	10.000	9.2029e-06
system_36	LA3 (TP12)	0.750	4.5272e-06	10.000	9.1943e-06
system_36	LA3 (TP14)	1.800	7.1045e-07	10.000	1.4429e-06
system_36	LC3 (TP8)	0.240	4.9484e-07	10.000	1.6454e-06
system_36	LC3 (TP10)	0.360	3.7294e-07	10.000	7.6331e-07
system_36	LC3 (TP12)	0.700	3.7159e-07	10.000	7.5471e-07
system_36	LC3 (TP14)	1.650	9.2893e-08	10.000	1.8866e-07
system_36	GL4 (TP8)	0.220	4.762e-06	10.000	1.0365e-05
system_36	GL4 (TP10)	0.330	4.6574e-06	10.000	9.4648e-06
system_36	GL4 (TP12)	0.650	4.6561e-06	10.000	9.456e-06
system_36	GL4 (TP14)	1.480	2.1e-06	10.000	4.2648e-06
system_36	RADAU5 (TP8)	1.530	1.3679e-06	10.000	3.8154e-06
system_36	RADAU5 (TP10)	1.840	1.1983e-06	10.000	2.449e-06
system_36	RADAU5 (TP12)	2.500	1.1954e-06	10.000	2.4279e-06
system_36	RADAU5 (TP14)	4.250	1.1953e-06	10.000	2.4276e-06
system_36	GL6 (TP8)	10.790	9.0289e-07	10.000	2.8199e-06
system_36	GL6 (TP10)	12.000	8.2461e-07	10.000	1.6921e-06
system_36	GL6 (TP12)	13.990	8.2262e-07	10.000	1.6709e-06
system_36	GL6 (TP14)	18.140	8.2256e-07	10.000	1.6706e-06
system_36	Riot (05, 1e-11)	0m1.095s	3.8821e-11	-0.000	2.6445e-10
system_36	Riot (10, 1e-11)	0m0.857s	2.176e-13	-0.000	4.5475e-12
system_36	Riot (15, 1e-11)	0m1.818s	3.1442e-13	-0.000	1.2212e-12
system_36	Valencia-IVP (0.00025)	1m34.728s	8.8326e-05	10.000	0.00054692
system_36	Valencia-IVP (0.0025)	0m1.368s	0.00088326	10.000	0.0054692
system_36	Valencia-IVP (0.025)	0m0.178s	0.0088326	10.000	0.054692
system_36	VNODE-LP (15, 1e-14,1e-14)	0m0.014s	1.3323e-14	10.000	9.4147e-14
system_36	VNODE-LP (20, 1e-14,1e-14)	0m0.014s	1.1546e-14	10.000	8.0824e-14
system_36	VNODE-LP (25, 1e-14,1e-14)	0m0.014s	7.9936e-15	10.000	5.9508e-14

Table 37: Simulation results of Problem 37

Problems	Methods	c5t	c5w	c6t	c6w
system_37	Vnode-LP (5)	0.000	0.26172	10.000	0.53529
system_37	IMIDPOINT (TP8)	0.050	0.26093	10.000	0.52639
system_37	IMIDPOINT (TP10)	0.200	0.26093	10.000	0.52638
system_37	IMIDPOINT (TP12)	0.930	0.26093	10.000	0.52638
system_37	IMIDPOINT (TP14)	0.000	0.25	0.000	0.25
system_37	HEUN (TP8)	0.080	0.26093	10.000	0.52638
system_37	HEUN (TP10)	0.370	0.26093	10.000	0.52638
system_37	HEUN (TP12)	0.000	0.25	0.000	0.25
system_37	HEUN (TP14)	0.000	0.25	0.000	0.25
system_37	KUTTA3 (TP8)	0.050	0.26093	10.000	0.52638
system_37	KUTTA3 (TP10)	0.120	0.26093	10.000	0.52638
system_37	KUTTA3 (TP12)	0.280	0.26093	10.000	0.52638
system_37	KUTTA3 (TP14)	0.860	0.26093	10.000	0.52638
system_37	RADAU3 (TP8)	0.090	0.26093	10.000	0.52644
system_37	RADAU3 (TP10)	0.240	0.26093	10.000	0.5264
system_37	RADAU3 (TP12)	0.650	0.26093	10.000	0.52638
system_37	RADAU3 (TP14)	2.010	0.26093	10.000	0.52638
system_37	RK4 (TP8)	0.260	0.26093	10.000	0.52638
system_37	RK4 (TP10)	0.400	0.26093	10.000	0.52638
system_37	RK4 (TP12)	0.810	0.26093	10.000	0.52638
system_37	RK4 (TP14)	1.820	0.26093	10.000	0.52638
system_37	LA3 (TP8)	0.270	0.26093	10.000	0.52645
system_37	LA3 (TP10)	0.440	0.26093	10.000	0.52641
system_37	LA3 (TP12)	0.880	0.26093	10.000	0.52639
system_37	LA3 (TP14)	1.980	0.26093	10.000	0.52638
system_37	LC3 (TP8)	0.260	0.26094	10.000	0.52656
system_37	LC3 (TP10)	0.390	0.26093	10.000	0.52645
system_37	LC3 (TP12)	0.800	0.26093	10.000	0.52641
system_37	LC3 (TP14)	1.870	0.26093	10.000	0.52639
system_37	GL4 (TP8)	0.240	0.26093	10.000	0.52644
system_37	GL4 (TP10)	0.370	0.26093	10.000	0.5264
system_37	GL4 (TP12)	0.730	0.26093	10.000	0.52639
system_37	GL4 (TP14)	1.700	0.26093	10.000	0.52638
system_37	RADAU5 (TP8)	1.640	0.26093	10.000	0.5265
system_37	RADAU5 (TP10)	2.090	0.26093	10.000	0.52644
system_37	RADAU5 (TP12)	3.290	0.26093	10.000	0.52641
system_37	RADAU5 (TP14)	6.080	0.26093	10.000	0.52639
system_37	GL6 (TP8)	10.920	0.26093	10.000	0.52643
system_37	GL6 (TP10)	13.250	0.26093	10.000	0.52641
system_37	GL6 (TP12)	18.200	0.26093	10.000	0.5264
system_37	GL6 (TP14)	27.690	0.26093	10.000	0.52639
system_37	Riot (05, 1e-11)	1m11.410s	0.25904	-0.000	0.51435
system_37	Riot (10, 1e-11)	0m5.525s	0.25904	-0.000	0.51435
system_37	Riot (15, 1e-11)	0m20.456s	0.25904	-0.000	0.51435
system_37	Valencia-IVP (0.00025)	1m26.397s	0.25956	10.000	0.51575
system_37	Valencia-IVP (0.0025)	0m1.774s	0.26021	10.000	0.52027
system_37	Valencia-IVP (0.025)	0m0.170s	0.26796	10.000	0.56814
system_37	VNODE-LP (15, 1e-14,1e-14)	0m0.012s	0.26197	10.000	0.53714
system_37	VNODE-LP (20, 1e-14,1e-14)	0m0.014s	0.26206	10.000	0.53773
system_37	VNODE-LP (25, 1e-14,1e-14)	0m0.015s	0.26225	10.000	0.53846

Table 38: Simulation results of Problem 38

Problems	Methods	c5t	c5w	c6t	c6w
system_38	Vnode-LP (5)	0.010	1.4555e-13	10.000	5.6413e-14
system_38	IMIDPOINT (TP8)	0.060	1.9747e-08	10.000	6.1329e-08
system_38	IMIDPOINT (TP10)	0.260	2.0918e-10	10.000	6.3825e-10
system_38	IMIDPOINT (TP12)	0.000	0	0.000	0
system_38	IMIDPOINT (TP14)	0.000	0	0.000	0
system_38	HEUN (TP8)	0.120	1.5716e-08	10.000	6.1171e-08
system_38	HEUN (TP10)	0.480	1.6853e-10	10.000	6.3766e-10
system_38	HEUN (TP12)	0.000	0	0.000	0
system_38	HEUN (TP14)	0.000	0	0.000	0
system_38	KUTTA3 (TP8)	0.060	2.0673e-08	10.000	7.1453e-08
system_38	KUTTA3 (TP10)	0.170	2.2051e-10	10.000	7.7175e-10
system_38	KUTTA3 (TP12)	0.510	5.8986e-12	10.000	1.5497e-10
system_38	KUTTA3 (TP14)	1.620	1.1882e-12	10.000	1.5017e-10
system_38	RADAU3 (TP8)	0.070	1.5226e-08	10.000	7.1716e-08
system_38	RADAU3 (TP10)	0.190	1.642e-10	10.000	7.4985e-10
system_38	RADAU3 (TP12)	0.560	4.2246e-12	10.000	1.556e-10
system_38	RADAU3 (TP14)	1.780	9.2082e-13	10.000	1.4974e-10
system_38	RK4 (TP8)	0.080	2.1333e-08	10.000	4.498e-08
system_38	RK4 (TP10)	0.190	2.2921e-10	10.000	4.9926e-10
system_38	RK4 (TP12)	0.470	5.8877e-12	10.000	1.4709e-10
system_38	RK4 (TP14)	1.120	2.6956e-13	10.000	1.4002e-10
system_38	LA3 (TP8)	0.060	2.3226e-08	10.000	5.5003e-08
system_38	LA3 (TP10)	0.130	1.9725e-10	10.000	5.9069e-10
system_38	LA3 (TP12)	0.300	4.6085e-12	10.000	1.5959e-10
system_38	LA3 (TP14)	0.740	1.6631e-13	10.000	1.3862e-10
system_38	LC3 (TP8)	0.070	3.1955e-08	10.000	3.5948e-08
system_38	LC3 (TP10)	0.140	3.6046e-10	10.000	3.7471e-10
system_38	LC3 (TP12)	0.330	1.0777e-11	10.000	1.5743e-10
system_38	LC3 (TP14)	0.810	2.5002e-13	10.000	1.3898e-10
system_38	GL4 (TP8)	0.060	3.2371e-08	10.000	3.3955e-08
system_38	GL4 (TP10)	0.120	3.5808e-10	10.000	3.7675e-10
system_38	GL4 (TP12)	0.270	1.0741e-11	10.000	1.5372e-10
system_38	GL4 (TP14)	0.680	2.3781e-13	10.000	1.3743e-10
system_38	RADAU5 (TP8)	0.180	2.8563e-08	10.000	2.9745e-08
system_38	RADAU5 (TP10)	0.260	3.3978e-10	10.000	3.6233e-10
system_38	RADAU5 (TP12)	0.470	1.0059e-11	10.000	1.5862e-10
system_38	RADAU5 (TP14)	0.960	1.4566e-13	10.000	1.2571e-10
system_38	GL6 (TP8)	0.730	1.3663e-08	10.000	2.0464e-08
system_38	GL6 (TP10)	0.890	2.2093e-10	10.000	3.3831e-10
system_38	GL6 (TP12)	1.380	5.2185e-12	10.000	1.6034e-10
system_38	GL6 (TP14)	2.350	7.3053e-14	10.000	1.1101e-10
system_38	Riot (05, 1e-11)	0m1.119s	8.3338e-11	-0.000	3.9802e-10
system_38	Riot (10, 1e-11)	0m0.599s	3.0975e-14	-0.000	2.307e-11
system_38	Riot (15, 1e-11)	0m0.755s	4.4409e-15	-0.000	4.7198e-14
system_38	Valencia-IVP (0.00025)	1m10.629s	0.00053855	9.927	935.08
system_38	Valencia-IVP (0.0025)	0m4.512s	0.0054036	7.390	83.458
system_38	Valencia-IVP (0.025)	0m0.436s	0.055881	4.675	9.5271
system_38	VNODE-LP (15, 1e-14,1e-14)	0m0.027s	2.3315e-15	10.000	1.7986e-14
system_38	VNODE-LP (20, 1e-14,1e-14)	0m0.023s	1.4433e-15	10.000	1.2323e-14
system_38	VNODE-LP (25, 1e-14,1e-14)	0m0.026s	1.4155e-15	10.000	1.1435e-14

Table 39: Simulation results of Problem 39

Problems	Methods	c5t	c5w	c6t	c6w
system_39	Vnode-LP (5)	0.010	0.10123	10.000	0.0043079
system_39	IMIDPOINT (TP8)	0.070	0.099595	10.000	0.0040733
system_39	IMIDPOINT (TP10)	0.340	0.099015	10.000	0.0039962
system_39	IMIDPOINT (TP12)	0.000	0.25	0.000	0.25
system_39	IMIDPOINT (TP14)	0.000	0.25	0.000	0.25
system_39	HEUN (TP8)	0.140	0.098857	10.000	0.0039765
system_39	HEUN (TP10)	0.630	0.098856	10.000	0.0039756
system_39	HEUN (TP12)	0.000	0.25	0.000	0.25
system_39	HEUN (TP14)	0.000	0.25	0.000	0.25
system_39	KUTTA3 (TP8)	0.070	0.098858	10.000	0.0039759
system_39	KUTTA3 (TP10)	0.210	0.098857	10.000	0.0039756
system_39	KUTTA3 (TP12)	0.580	0.098857	10.000	0.0039756
system_39	KUTTA3 (TP14)	1.900	0.098857	10.000	0.0039756
system_39	RADAU3 (TP8)	0.080	0.10137	10.000	0.0042497
system_39	RADAU3 (TP10)	0.230	0.09966	10.000	0.004058
system_39	RADAU3 (TP12)	0.670	0.099111	10.000	0.0040012
system_39	RADAU3 (TP14)	2.090	0.098937	10.000	0.0039836
system_39	RK4 (TP8)	0.100	0.098857	10.000	0.0039757
system_39	RK4 (TP10)	0.210	0.098857	10.000	0.0039756
system_39	RK4 (TP12)	0.520	0.098856	10.000	0.0039756
system_39	RK4 (TP14)	1.270	0.098856	10.000	0.0039756
system_39	LA3 (TP8)	0.070	0.10447	10.000	0.0045451
system_39	LA3 (TP10)	0.150	0.10124	10.000	0.0041792
system_39	LA3 (TP12)	0.350	0.099832	10.000	0.0040529
system_39	LA3 (TP14)	0.870	0.099246	10.000	0.0040057
system_39	LC3 (TP8)	0.070	0.10474	10.000	0.0046042
system_39	LC3 (TP10)	0.160	0.10123	10.000	0.0041925
system_39	LC3 (TP12)	0.390	0.099818	10.000	0.004057
system_39	LC3 (TP14)	0.970	0.099239	10.000	0.0040072
system_39	GL4 (TP8)	0.060	0.10446	10.000	0.0045507
system_39	GL4 (TP10)	0.130	0.10117	10.000	0.0041812
system_39	GL4 (TP12)	0.320	0.099795	10.000	0.004054
system_39	GL4 (TP14)	0.790	0.099231	10.000	0.0040062
system_39	RADAU5 (TP8)	0.200	0.10813	10.000	0.0051186
system_39	RADAU5 (TP10)	0.300	0.10347	10.000	0.0044156
system_39	RADAU5 (TP12)	0.580	0.10106	10.000	0.0041632
system_39	RADAU5 (TP14)	1.170	0.099889	10.000	0.0040591
system_39	GL6 (TP8)	0.810	0.10972	10.000	0.0055561
system_39	GL6 (TP10)	1.050	0.10503	10.000	0.0046533
system_39	GL6 (TP12)	1.540	0.10224	10.000	0.004293
system_39	GL6 (TP14)	2.680	0.10067	10.000	0.0041313
system_39	Riot (05, 1e-11)	0m3.777s	0.09197	-0.000	1.135e-05
system_39	Riot (10, 1e-11)	6m32.012s	0.09682	-0.000	0.24626
system_39	Riot (15, 1e-11)	13m4.722s	0.09682	-0.000	0.24626
system_39	Valencia-IVP (0.00025)	0m23.487s	0.67999	2.515	881.5
system_39	Valencia-IVP (0.0025)	0m1.379s	0.68374	2.303	6.9672
system_39	Valencia-IVP (0.025)	0m0.247s	0.73359	2.275	9.8884
system_39	VNODE-LP (15, 1e-14,1e-14)	0m0.028s	0.10211	10.000	0.29379
system_39	VNODE-LP (20, 1e-14,1e-14)	0m0.028s	0.10278	10.000	0.30109
system_39	VNODE-LP (25, 1e-14,1e-14)	0m0.025s	0.10322	10.000	0.3087

Table 40: Simulation results of Problem 40

Problems	Methods	c5t	c5w	c6t	c6w
system_40	Vnode-LP (5)	0.040	1.0005e-12	10.000	3.0766e-11
system_40	IMIDPOINT (TP8)	1.550	0.00013694	10.000	0.010683
system_40	IMIDPOINT (TP10)	5.660	3.4539e-05	10.000	0.034268
system_40	IMIDPOINT (TP12)	24.040	4.8621e-06	10.000	0.0096737
system_40	IMIDPOINT (TP14)	0.050	0	0.000	0
system_40	HEUN (TP8)	2.550	0.0027276	10.000	0.24976
system_40	HEUN (TP10)	11.240	0.00040761	10.000	0.010955
system_40	HEUN (TP12)	49.660	0.00012821	10.000	0.093541
system_40	HEUN (TP14)	0.060	0	0.000	0
system_40	KUTTA3 (TP8)	1.740	0.0082501	8.661	0.6397
system_40	KUTTA3 (TP10)	6.470	0.0070515	8.524	0.71074
system_40	KUTTA3 (TP12)	18.010	0.0010309	10.000	0.059889
system_40	KUTTA3 (TP14)	60.740	0.00088258	10.000	0.12656
system_40	RADAU3 (TP8)	2.760	0.00010322	10.000	0.0081279
system_40	RADAU3 (TP10)	6.390	3.8091e-05	10.000	0.0014236
system_40	RADAU3 (TP12)	17.660	1.9238e-05	10.000	0.0039506
system_40	RADAU3 (TP14)	50.930	5.4092e-06	10.000	0.034077
system_40	RK4 (TP8)	1.780	0.0041985	10.000	0.17128
system_40	RK4 (TP10)	5.520	0.0041984	10.000	0.31245
system_40	RK4 (TP12)	8.700	0.0041987	10.000	0.58845
system_40	RK4 (TP14)	23.090	0.0017814	10.000	0.047097
system_40	LA3 (TP8)	2.190	0.00024163	10.000	0.023053
system_40	LA3 (TP10)	3.770	0.00024105	10.000	0.023931
system_40	LA3 (TP12)	11.340	0.0002408	10.000	0.029927
system_40	LA3 (TP14)	20.680	0.00010873	10.000	0.017041
system_40	LC3 (TP8)	2.180	1.2016e-05	10.000	0.0020907
system_40	LC3 (TP10)	4.350	1.1848e-05	10.000	0.0017369
system_40	LC3 (TP12)	9.910	1.1847e-05	10.000	0.0010708
system_40	LC3 (TP14)	19.130	6.6542e-06	10.000	0.012623
system_40	GL4 (TP8)	1.300	5.1158e-05	10.000	0.0064624
system_40	GL4 (TP10)	3.430	5.0887e-05	10.000	0.0040586
system_40	GL4 (TP12)	6.310	5.083e-05	10.000	0.003559
system_40	GL4 (TP14)	21.250	2.5521e-05	10.000	0.0039988
system_40	RADAU5 (TP8)	4.260	2.7012e-05	10.000	0.0035686
system_40	RADAU5 (TP10)	5.570	2.6754e-05	10.000	0.0020516
system_40	RADAU5 (TP12)	9.590	2.6711e-05	10.000	0.0014632
system_40	RADAU5 (TP14)	17.620	2.6692e-05	10.000	0.0020073
system_40	GL6 (TP8)	20.290	1.5953e-05	10.000	0.0013457
system_40	GL6 (TP10)	20.800	1.5813e-05	10.000	0.0012565
system_40	GL6 (TP12)	31.780	1.5789e-05	10.000	0.00096542
system_40	GL6 (TP14)	40.780	1.5774e-05	10.000	0.00097121
system_40	Riot (05, 1e-11)	0m26.087s	1.9465e-10	0.000	0
system_40	Riot (10, 1e-11)	11m50.212s	5.0149e-12	0.000	0
system_40	Riot (15, 1e-11)	60m12.975s	7.1054e-15	0.000	0
system_40	Valencia-IVP (0.00025)	0m12.132s	0.0010009	0.000	0
system_40	Valencia-IVP (0.0025)	0m0.366s	0.010036	0.000	0
system_40	Valencia-IVP (0.025)	0m0.035s	0.10322	0.000	0
system_40	VNODE-LP (15, 1e-14,1e-14)	0m0.046s	3.8192e-14	3.000	2.9702e-10
system_40	VNODE-LP (20, 1e-14,1e-14)	0m3.850s	2.7978e-14	0.000	0
system_40	VNODE-LP (25, 1e-14,1e-14)	0m4.400s	2.1316e-14	0.000	0

Table 41: Simulation results of Problem 41

Problems	Methods	c5t	c5w	c6t	c6w
system_41	Vnode-LP (5)	0.060	0.2404	0.000	0
system_41	IMIDPOINT (TP8)	1.720	0.21956	3.309	0.85527
system_41	IMIDPOINT (TP10)	4.930	0.21839	3.233	0.85752
system_41	IMIDPOINT (TP12)	24.700	0.21814	3.246	0.85298
system_41	IMIDPOINT (TP14)	0.030	0.25	0.000	0.25
system_41	HEUN (TP8)	2.820	0.21805	3.227	0.70287
system_41	HEUN (TP10)	13.760	0.21807	3.178	0.70923
system_41	HEUN (TP12)	47.410	0.21807	3.144	0.72241
system_41	HEUN (TP14)	0.060	0.25	0.000	0.25
system_41	KUTTA3 (TP8)	2.690	0.2178	3.261	0.71265
system_41	KUTTA3 (TP10)	7.220	0.218	3.183	0.71288
system_41	KUTTA3 (TP12)	21.900	0.21805	3.014	0.68694
system_41	KUTTA3 (TP14)	64.140	0.21807	3.157	0.72199
system_41	RADAU3 (TP8)	1.830	0.22256	3.083	0.70868
system_41	RADAU3 (TP10)	6.810	0.21946	3.088	0.70501
system_41	RADAU3 (TP12)	15.310	0.21851	3.040	0.69322
system_41	RADAU3 (TP14)	56.500	0.21821	3.165	0.71357
system_41	RK4 (TP8)	1.690	0.21781	3.309	0.69502
system_41	RK4 (TP10)	5.380	0.21779	3.296	0.71084
system_41	RK4 (TP12)	11.990	0.21796	3.208	0.71786
system_41	RK4 (TP14)	30.290	0.21803	3.192	0.72351
system_41	LA3 (TP8)	3.000	0.22663	2.961	0.69814
system_41	LA3 (TP10)	4.090	0.22174	3.128	0.73382
system_41	LA3 (TP12)	12.340	0.21956	3.114	0.72668
system_41	LA3 (TP14)	27.800	0.21866	3.155	0.73067
system_41	LC3 (TP8)	1.910	0.22824	2.922	0.68838
system_41	LC3 (TP10)	3.460	0.22251	3.068	0.72167
system_41	LC3 (TP12)	10.080	0.21989	3.121	0.7285
system_41	LC3 (TP14)	17.810	0.21877	3.157	0.72974
system_41	GL4 (TP8)	1.900	0.22744	2.976	0.69998
system_41	GL4 (TP10)	2.770	0.22237	3.092	0.71455
system_41	GL4 (TP12)	6.220	0.21978	3.118	0.71259
system_41	GL4 (TP14)	14.080	0.21877	3.157	0.71762
system_41	RADAU5 (TP8)	4.340	0.22934	2.952	0.69986
system_41	RADAU5 (TP10)	7.280	0.22479	3.082	0.71981
system_41	RADAU5 (TP12)	11.960	0.22149	3.181	0.73401
system_41	RADAU5 (TP14)	20.710	0.21977	3.168	0.72687
system_41	GL6 (TP8)	23.920	0.22766	2.942	0.69395
system_41	GL6 (TP10)	22.320	0.22549	3.127	0.72889
system_41	GL6 (TP12)	33.100	0.22238	3.152	0.73701
system_41	GL6 (TP14)	43.550	0.22045	3.189	0.72391
system_41	Riot (05, 1e-11)	4m0.951s	0.22004	0.000	0
system_41	Riot (10, 1e-11)	81m51.368s	0.22004	0.000	0
system_41	Riot (15, 1e-11)	305m35.205s	0.22004	0.000	0
system_41	Valencia-IVP (0.00025)	0m10.623s	0.3966	0.000	0
system_41	Valencia-IVP (0.0025)	0m0.275s	0.4067	0.000	0
system_41	Valencia-IVP (0.025)	0m0.029s	0.51161	0.000	0
system_41	VNODE-LP (15, 1e-14,1e-14)	0m0.056s	0.24701	2.251	1.0915
system_41	VNODE-LP (20, 1e-14,1e-14)	0m0.061s	0.24758	2.240	1.1135
system_41	VNODE-LP (25, 1e-14,1e-14)	0m0.068s	0.24797	2.231	1.1282

Table 42: Simulation results of Problem 42

Problems	Methods	c5t	c5w	c6t	c6w
system_42	Vnode-LP (5)	0.020	3.9768e-13	10.000	1.7006e-11
system_42	IMIDPOINT (TP8)	0.170	3.8669e-08	10.000	0.00039502
system_42	IMIDPOINT (TP10)	0.790	3.8984e-10	10.000	3.2748e-05
system_42	IMIDPOINT (TP12)	3.660	6.9378e-12	10.000	6.584e-07
system_42	IMIDPOINT (TP14)	0.000	0	0.000	0
system_42	HEUN (TP8)	0.440	3.8368e-08	10.000	0.00043761
system_42	HEUN (TP10)	1.820	3.8965e-10	10.000	3.2883e-05
system_42	HEUN (TP12)	8.050	7.7265e-12	10.000	7.1147e-07
system_42	HEUN (TP14)	0.010	0	0.000	0
system_42	KUTTA3 (TP8)	0.280	6.1909e-08	10.000	0.00010979
system_42	KUTTA3 (TP10)	0.820	6.4283e-10	10.000	1.1237e-05
system_42	KUTTA3 (TP12)	2.210	6.823e-12	10.000	3.0942e-07
system_42	KUTTA3 (TP14)	6.970	1.0625e-12	10.000	6.8061e-08
system_42	RADAU3 (TP8)	0.270	6.7051e-08	10.000	0.00015291
system_42	RADAU3 (TP10)	0.760	7.0496e-10	10.000	1.6893e-05
system_42	RADAU3 (TP12)	2.050	7.3237e-12	10.000	3.774e-07
system_42	RADAU3 (TP14)	6.420	9.4324e-13	10.000	6.0834e-08
system_42	RK4 (TP8)	0.210	4.6861e-08	10.000	1.879e-05
system_42	RK4 (TP10)	0.420	5.4785e-10	10.000	9.2704e-06
system_42	RK4 (TP12)	1.010	5.8931e-12	10.000	3.3821e-07
system_42	RK4 (TP14)	2.340	2.3625e-13	10.000	1.4865e-08
system_42	LA3 (TP8)	0.200	5.3426e-08	10.000	8.7336e-05
system_42	LA3 (TP10)	0.400	6.2741e-10	10.000	1.499e-05
system_42	LA3 (TP12)	0.900	6.5905e-12	10.000	3.5184e-07
system_42	LA3 (TP14)	2.130	2.196e-13	10.000	1.3935e-08
system_42	LC3 (TP8)	0.130	5.1713e-08	10.000	0.00011749
system_42	LC3 (TP10)	0.270	4.5944e-10	10.000	1.7565e-05
system_42	LC3 (TP12)	0.620	4.3119e-12	10.000	2.4231e-07
system_42	LC3 (TP14)	1.570	1.7808e-13	10.000	1.1475e-08
system_42	GL4 (TP8)	0.110	5.1231e-08	10.000	4.9502e-05
system_42	GL4 (TP10)	0.230	4.6171e-10	10.000	9.4836e-06
system_42	GL4 (TP12)	0.530	4.3385e-12	10.000	2.415e-07
system_42	GL4 (TP14)	1.310	1.6564e-13	10.000	1.0682e-08
system_42	RADAU5 (TP8)	0.280	5.4021e-08	10.000	5.6866e-05
system_42	RADAU5 (TP10)	0.420	5.3884e-10	10.000	8.9923e-06
system_42	RADAU5 (TP12)	0.710	4.8339e-12	10.000	4.2087e-07
system_42	RADAU5 (TP14)	1.410	9.0372e-14	10.000	7.478e-09
system_42	GL6 (TP8)	0.620	4.4885e-08	10.000	4.7088e-05
system_42	GL6 (TP10)	0.750	6.3088e-10	10.000	4.6432e-06
system_42	GL6 (TP12)	1.020	6.7957e-12	10.000	3.3701e-07
system_42	GL6 (TP14)	1.690	8.3933e-14	10.000	5.6562e-09
system_42	Riot (05, 1e-11)	0m0.410s	1.4272e-10	-0.000	2.2876e-08
system_42	Riot (10, 1e-11)	0m0.197s	4.0634e-14	-0.000	1.0613e-09
system_42	Riot (15, 1e-11)	0m0.264s	1.8874e-15	-0.000	1.1936e-09
system_42	Valencia-IVP (0.00025)	0m4.192s	0.00030347	9.119	981.67
system_42	Valencia-IVP (0.0025)	0m0.741s	0.0030419	7.175	270.69
system_42	Valencia-IVP (0.025)	0m0.118s	0.031193	5.000	19.406
system_42	VNODE-LP (15, 1e-14,1e-14)	0m0.010s	5.5511e-15	10.000	3.5123e-12
system_42	VNODE-LP (20, 1e-14,1e-14)	0m0.007s	3.7748e-15	10.000	2.3554e-12
system_42	VNODE-LP (25, 1e-14,1e-14)	0m0.010s	3.6637e-15	10.000	2.6627e-12

Table 43: Simulation results of Problem 43

Problems	Methods	c5t	c5w	c6t	c6w
system_43	Vnode-LP (5)	0.030	0.55107	2.918	6.1294e+09
system_43	IMIDPOINT (TP8)	0.230	0.40793	3.265	8060.2
system_43	IMIDPOINT (TP10)	1.060	0.40619	3.295	1739.5
system_43	IMIDPOINT (TP12)	4.920	0.40581	3.278	374.11
system_43	IMIDPOINT (TP14)	0.000	0.25	0.000	0.25
system_43	HEUN (TP8)	0.610	0.40553	3.298	6407.3
system_43	HEUN (TP10)	2.690	0.40567	3.298	1380.4
system_43	HEUN (TP12)	11.830	0.40569	3.282	296.76
system_43	HEUN (TP14)	0.010	0.25	0.000	0.25
system_43	KUTTA3 (TP8)	0.400	0.40474	3.320	5527.4
system_43	KUTTA3 (TP10)	1.080	0.40547	3.294	2199.3
system_43	KUTTA3 (TP12)	3.040	0.40563	3.277	874.18
system_43	KUTTA3 (TP14)	9.280	0.40568	3.273	346.93
system_43	RADAU3 (TP8)	0.360	0.41264	3.285	6872.3
system_43	RADAU3 (TP10)	0.980	0.40809	3.291	2738
system_43	RADAU3 (TP12)	2.850	0.40647	3.287	1089.4
system_43	RADAU3 (TP14)	8.500	0.40595	3.282	432.38
system_43	RK4 (TP8)	0.290	0.40357	3.362	4653.1
system_43	RK4 (TP10)	0.610	0.40462	3.324	2411.5
system_43	RK4 (TP12)	1.370	0.40536	3.291	1248.7
system_43	RK4 (TP14)	3.490	0.40558	3.300	646.18
system_43	LA3 (TP8)	0.260	0.41712	3.286	5877.2
system_43	LA3 (TP10)	0.560	0.41077	3.293	3042.7
system_43	LA3 (TP12)	1.250	0.40774	3.278	1575.6
system_43	LA3 (TP14)	3.130	0.40656	3.276	815.33
system_43	LC3 (TP8)	0.200	0.42206	3.268	5542.9
system_43	LC3 (TP10)	0.400	0.41278	3.285	2872.8
system_43	LC3 (TP12)	0.940	0.40858	3.285	1487
system_43	LC3 (TP14)	2.350	0.40689	3.294	769.49
system_43	GL4 (TP8)	0.160	0.41964	3.278	5876.8
system_43	GL4 (TP10)	0.330	0.41062	3.273	3042.2
system_43	GL4 (TP12)	0.780	0.40827	3.291	1575.3
system_43	GL4 (TP14)	1.950	0.40641	3.256	815.51
system_43	RADAU5 (TP8)	0.350	0.42574	3.279	1281.9
system_43	RADAU5 (TP10)	0.570	0.41598	3.306	842.96
system_43	RADAU5 (TP12)	1.060	0.41083	3.299	554.07
system_43	RADAU5 (TP14)	2.100	0.40826	3.297	364.04
system_43	GL6 (TP8)	0.690	0.42568	3.284	619.71
system_43	GL6 (TP10)	0.970	0.41784	3.307	455.56
system_43	GL6 (TP12)	1.510	0.41262	3.319	334.79
system_43	GL6 (TP14)	2.590	0.40936	3.296	245.91
system_43	Riot (05, 1e-11)	0m57.400s	0.36095	0.000	0
system_43	Riot (10, 1e-11)	42m34.441s	0.36736	0.000	0
system_43	Riot (15, 1e-11)	335m18.382s	0.36736	0.000	0
system_43	Valencia-IVP (0.00025)	0m4.077s	0.63512	2.885	954.65
system_43	Valencia-IVP (0.0025)	0m0.463s	0.63944	2.860	300.15
system_43	Valencia-IVP (0.025)	0m0.116s	0.68415	2.650	29.66
system_43	VNODE-LP (15, 1e-14,1e-14)	0m0.010s	0.55406	2.715	13888
system_43	VNODE-LP (20, 1e-14,1e-14)	0m0.011s	0.55889	2.580	29046
system_43	VNODE-LP (25, 1e-14,1e-14)	0m0.009s	0.52831	2.438	43755

Table 44: Simulation results of Problem 44

Problems	Methods	c5t	c5w	c6t	c6w
system_44	Vnode-LP (5)	0.340	1.4849e-13	10.000	2.0246e-12
system_44	IMIDPOINT (TP8)	0.760	1.8731e-08	10.000	8.3096e-07
system_44	IMIDPOINT (TP10)	3.430	1.9749e-10	10.000	8.8953e-09
system_44	IMIDPOINT (TP12)	15.910	7.7768e-12	10.000	1.3922e-10
system_44	IMIDPOINT (TP14)	72.790	1.6081e-11	10.000	5.4606e-11
system_44	HEUN (TP8)	2.410	1.8747e-08	10.000	7.7586e-07
system_44	HEUN (TP10)	9.950	1.9751e-10	10.000	8.7772e-09
system_44	HEUN (TP12)	45.220	8.2334e-12	10.000	1.3875e-10
system_44	HEUN (TP14)	191.090	2.0252e-11	10.000	5.5564e-11
system_44	KUTTA3 (TP8)	1.550	2.4665e-08	10.000	1.1342e-06
system_44	KUTTA3 (TP10)	4.380	2.5848e-10	10.000	1.8613e-08
system_44	KUTTA3 (TP12)	12.760	7.8699e-12	10.000	2.9255e-10
system_44	KUTTA3 (TP14)	37.500	1.2541e-12	10.000	5.3015e-11
system_44	RADAU3 (TP8)	0.030	0	0.000	0
system_44	RADAU3 (TP10)	0.060	0	0.000	0
system_44	RADAU3 (TP12)	0.110	0	0.000	0
system_44	RADAU3 (TP14)	0.140	0	0.000	0
system_44	RK4 (TP8)	1.020	2.1697e-08	10.000	6.5382e-07
system_44	RK4 (TP10)	2.130	2.4112e-10	10.000	1.2036e-08
system_44	RK4 (TP12)	5.030	7.535e-12	10.000	2.5091e-10
system_44	RK4 (TP14)	12.080	2.4458e-13	10.000	5.3316e-11
system_44	LA3 (TP8)	0.870	1.6985e-08	10.000	5.8316e-07
system_44	LA3 (TP10)	1.720	1.8908e-10	10.000	8.7159e-09
system_44	LA3 (TP12)	3.890	5.8753e-12	10.000	1.9437e-10
system_44	LA3 (TP14)	0.130	0	0.000	0
system_44	LC3 (TP8)	0.660	1.7199e-08	10.000	6.3152e-07
system_44	LC3 (TP10)	1.360	1.9003e-10	10.000	9.2207e-09
system_44	LC3 (TP12)	3.170	5.8027e-12	10.000	2.0117e-10
system_44	LC3 (TP14)	0.090	0	0.000	0
system_44	GL4 (TP8)	0.580	1.699e-08	10.000	5.8245e-07
system_44	GL4 (TP10)	1.150	1.8913e-10	10.000	8.7391e-09
system_44	GL4 (TP12)	2.670	5.8749e-12	10.000	1.9484e-10
system_44	GL4 (TP14)	0.080	0	0.000	0
system_44	RADAU5 (TP8)	1.000	1.2845e-08	10.000	4.129e-07
system_44	RADAU5 (TP10)	1.560	1.7635e-10	10.000	5.3431e-09
system_44	RADAU5 (TP12)	2.900	5.128e-12	10.000	1.4742e-10
system_44	RADAU5 (TP14)	5.730	6.0285e-14	10.000	5.9146e-11
system_44	GL6 (TP8)	1.740	8.1432e-09	10.000	2.5121e-07
system_44	GL6 (TP10)	2.270	1.4023e-10	10.000	3.0819e-09
system_44	GL6 (TP12)	3.350	4.0202e-12	10.000	1.1865e-10
system_44	GL6 (TP14)	5.660	4.7204e-14	10.000	6.2979e-11
system_44	Riot				
system_44	Valencia-IVP (0.00025)	0m17.732s	0.00067987	8.555	999.95
system_44	Valencia-IVP (0.0025)	0m1.845s	0.0068261	7.338	997.5
system_44	Valencia-IVP (0.025)	0m0.222s	0.071092	6.000	977.47
system_44	VNODE-LP (15, 1e-14,1e-14)	0m0.026s	8.3267e-16	10.000	1.0658e-14
system_44	VNODE-LP (20, 1e-14,1e-14)	0m0.019s	4.996e-16	10.000	5.5511e-15
system_44	VNODE-LP (25, 1e-14,1e-14)	0m0.014s	1.9429e-16	10.000	3.9968e-15

Table 45: Simulation results of Problem 45

Problems	Methods	c5t	c5w	c6t	c6w
system_45	Vnode-LP (5)	0.390	0.36788	10.000	0.1126
system_45	IMIDPOINT (TP8)	0.880	0.37085	10.000	0.12264
system_45	IMIDPOINT (TP10)	4.010	0.36852	10.000	0.11472
system_45	IMIDPOINT (TP12)	18.670	0.36802	10.000	0.11305
system_45	IMIDPOINT (TP14)	86.160	0.36791	10.000	0.1127
system_45	HEUN (TP8)	2.900	0.36788	10.000	0.11262
system_45	HEUN (TP10)	11.950	0.36788	10.000	0.1126
system_45	HEUN (TP12)	51.050	0.36788	10.000	0.1126
system_45	HEUN (TP14)	232.260	0.36788	10.000	0.1126
system_45	KUTTA3 (TP8)	1.910	0.36788	10.000	0.1126
system_45	KUTTA3 (TP10)	5.300	0.36788	10.000	0.1126
system_45	KUTTA3 (TP12)	14.800	0.36788	10.000	0.1126
system_45	KUTTA3 (TP14)	45.950	0.36788	10.000	0.1126
system_45	RADAU3 (TP8)	1.640	0.37733	10.000	0.14488
system_45	RADAU3 (TP10)	4.420	0.37089	10.000	0.12215
system_45	RADAU3 (TP12)	12.420	0.36883	10.000	0.11556
system_45	RADAU3 (TP14)	37.680	0.36818	10.000	0.11353
system_45	RK4 (TP8)	1.170	0.36788	10.000	0.1126
system_45	RK4 (TP10)	2.490	0.36788	10.000	0.1126
system_45	RK4 (TP12)	5.710	0.36788	10.000	0.1126
system_45	RK4 (TP14)	13.470	0.36788	10.000	0.1126
system_45	LA3 (TP8)	0.980	0.38776	10.000	0.18759
system_45	LA3 (TP10)	1.990	0.37603	10.000	0.13858
system_45	LA3 (TP12)	4.360	0.37115	10.000	0.12237
system_45	LA3 (TP14)	10.610	0.36917	10.000	0.1164
system_45	LC3 (TP8)	0.720	0.38885	10.000	0.19218
system_45	LC3 (TP10)	1.540	0.37637	10.000	0.13974
system_45	LC3 (TP12)	3.580	0.37127	10.000	0.12276
system_45	LC3 (TP14)	8.710	0.36922	10.000	0.11655
system_45	GL4 (TP8)	0.640	0.38874	10.000	0.18962
system_45	GL4 (TP10)	1.320	0.37633	10.000	0.13943
system_45	GL4 (TP12)	2.990	0.37127	10.000	0.12272
system_45	GL4 (TP14)	7.370	0.36922	10.000	0.11654
system_45	RADAU5 (TP8)	1.110	0.40326	10.000	0.27871
system_45	RADAU5 (TP10)	1.770	0.38524	10.000	0.17338
system_45	RADAU5 (TP12)	3.250	0.37594	10.000	0.13787
system_45	RADAU5 (TP14)	6.430	0.37164	10.000	0.12376
system_45	GL6 (TP8)	1.750	0.41158	10.000	0.38655
system_45	GL6 (TP10)	2.310	0.39363	10.000	0.2188
system_45	GL6 (TP12)	3.590	0.38162	10.000	0.15928
system_45	GL6 (TP14)	6.110	0.37526	10.000	0.13491
system_45	Riot				
system_45	Valencia-IVP (0.00025)	0m17.383s	2.72	4.274	999.57
system_45	Valencia-IVP (0.0025)	0m1.838s	2.7353	4.263	997.63
system_45	Valencia-IVP (0.025)	0m0.222s	2.8947	4.150	973.41
system_45	VNODE-LP (15, 1e-14,1e-14)	0m0.024s	0.36788	10.000	0.66718
system_45	VNODE-LP (20, 1e-14,1e-14)	0m0.020s	0.36788	10.000	0.66718
system_45	VNODE-LP (25, 1e-14,1e-14)	0m0.013s	0.36788	10.000	0.66718

Table 46: Simulation results of Problem 46

Problems	Methods	c5t	c5w	c6t	c6w
system_46	Vnode-LP (5)	0.670	3.1528e-13	10.000	1.0913e-12
system_46	IMIDPOINT (TP8)	1.300	6.2265e-07	10.000	2.8526e-07
system_46	IMIDPOINT (TP10)	5.610	5.7387e-09	10.000	5.3893e-09
system_46	IMIDPOINT (TP12)	24.970	8.3378e-11	10.000	1.5631e-10
system_46	IMIDPOINT (TP14)	113.010	5.0049e-11	10.000	5.0696e-11
system_46	HEUN (TP8)	3.880	5.547e-07	10.000	1.699e-07
system_46	HEUN (TP10)	15.280	5.5915e-09	10.000	5.0546e-09
system_46	HEUN (TP12)	63.860	8.2747e-11	10.000	1.6444e-10
system_46	HEUN (TP14)	277.560	5.0063e-11	10.000	5.0276e-11
system_46	KUTTA3 (TP8)	3.540	6.7629e-07	10.000	9.6997e-08
system_46	KUTTA3 (TP10)	8.240	1.3777e-08	10.000	2.4344e-09
system_46	KUTTA3 (TP12)	21.520	2.7748e-10	10.000	8.621e-11
system_46	KUTTA3 (TP14)	64.760	5.0395e-11	10.000	5.1194e-11
system_46	RADAU3 (TP8)	0.030	0	0.000	0
system_46	RADAU3 (TP10)	0.030	0	0.000	0
system_46	RADAU3 (TP12)	0.030	0	0.000	0
system_46	RADAU3 (TP14)	0.100	0	0.000	0
system_46	RK4 (TP8)	3.050	3.4997e-07	10.000	5.7141e-08
system_46	RK4 (TP10)	5.540	7.1428e-09	10.000	1.1686e-09
system_46	RK4 (TP12)	11.380	1.6098e-10	10.000	6.1616e-11
system_46	RK4 (TP14)	24.970	5.161e-11	10.000	5.332e-11
system_46	LA3 (TP8)	0.050	0	0.000	0
system_46	LA3 (TP10)	0.050	0	0.000	0
system_46	LA3 (TP12)	0.050	0	0.000	0
system_46	LA3 (TP14)	0.050	0	0.000	0
system_46	LC3 (TP8)	2.030	3.3124e-07	10.000	9.3546e-08
system_46	LC3 (TP10)	3.660	5.2057e-09	10.000	1.0846e-09
system_46	LC3 (TP12)	7.480	1.2167e-10	10.000	6.7366e-11
system_46	LC3 (TP14)	16.670	5.0967e-11	10.000	5.445e-11
system_46	GL4 (TP8)	0.030	0	0.000	0
system_46	GL4 (TP10)	0.030	0	0.000	0
system_46	GL4 (TP12)	0.030	0	0.000	0
system_46	GL4 (TP14)	0.030	0	0.000	0
system_46	RADAU5 (TP8)	3.280	1.7583e-07	9.325	6.9644e-08
system_46	RADAU5 (TP10)	5.160	2.3556e-09	10.000	6.6214e-10
system_46	RADAU5 (TP12)	8.820	7.5457e-11	10.000	6.7765e-11
system_46	RADAU5 (TP14)	16.240	5.2609e-11	10.000	5.5302e-11
system_46	GL6 (TP8)	5.590	8.3492e-08	7.633	3.7369e-08
system_46	GL6 (TP10)	7.400	1.1948e-09	10.000	5.4557e-10
system_46	GL6 (TP12)	11.640	6.2431e-11	10.000	7.8092e-11
system_46	GL6 (TP14)	19.270	5.0654e-11	10.000	5.9977e-11
system_46	Riot				
system_46	Valencia-IVP (0.00025)	0m19.620s	0.90083	1.613	998.27
system_46	Valencia-IVP (0.0025)	0m2.097s	10.696	1.383	994.33
system_46	Valencia-IVP (0.025)	0m0.280s	717.1	1.000	717.1
system_46	VNODE-LP (15, 1e-14,1e-14)	0m0.112s	2.9109e-15	10.000	8.7708e-14
system_46	VNODE-LP (20, 1e-14,1e-14)	0m0.064s	1.5613e-15	10.000	3.9968e-14
system_46	VNODE-LP (25, 1e-14,1e-14)	0m0.040s	8.3267e-16	10.000	2.4092e-14

Table 47: Simulation results of Problem 47

Problems	Methods	c5t	c5w	c6t	c6w
system_47	Vnode-LP (5)	1.160	0.073576	10.000	9.08e-06
system_47	IMIDPOINT (TP8)	1.770	0.073576	10.000	2.1915e-05
system_47	IMIDPOINT (TP10)	7.540	0.073576	10.000	1.1356e-05
system_47	IMIDPOINT (TP12)	34.730	0.073576	10.000	9.5461e-06
system_47	IMIDPOINT (TP14)	162.050	0.073576	10.000	9.1768e-06
system_47	HEUN (TP8)	5.260	0.073576	10.000	9.4331e-06
system_47	HEUN (TP10)	20.820	0.073576	10.000	9.0929e-06
system_47	HEUN (TP12)	88.590	0.073576	10.000	9.08e-06
system_47	HEUN (TP14)	404.160	0.073576	10.000	9.08e-06
system_47	KUTTA3 (TP8)	4.560	0.073576	10.000	9.2223e-06
system_47	KUTTA3 (TP10)	11.850	0.073576	10.000	9.0812e-06
system_47	KUTTA3 (TP12)	33.150	0.073576	10.000	9.08e-06
system_47	KUTTA3 (TP14)	99.460	0.073576	10.000	9.08e-06
system_47	RADAU3 (TP8)	0.040	0.2	0.000	0.2
system_47	RADAU3 (TP10)	0.030	0.2	0.000	0.2
system_47	RADAU3 (TP12)	0.030	0.2	0.000	0.2
system_47	RADAU3 (TP14)	0.110	0.2	0.000	0.2
system_47	RK4 (TP8)	3.580	0.073576	10.000	9.1487e-06
system_47	RK4 (TP10)	7.220	0.073576	10.000	9.08e-06
system_47	RK4 (TP12)	16.390	0.073576	10.000	9.08e-06
system_47	RK4 (TP14)	38.390	0.073576	10.000	9.08e-06
system_47	LA3 (TP8)	3.170	0.073587	10.000	5.1379e-05
system_47	LA3 (TP10)	6.070	0.073578	10.000	1.9432e-05
system_47	LA3 (TP12)	12.910	0.073576	10.000	1.2484e-05
system_47	LA3 (TP14)	29.710	0.073576	10.000	1.0316e-05
system_47	LC3 (TP8)	2.460	0.073588	10.000	5.8084e-05
system_47	LC3 (TP10)	4.790	0.073578	10.000	2.0417e-05
system_47	LC3 (TP12)	10.700	0.073576	10.000	1.2656e-05
system_47	LC3 (TP14)	25.190	0.073576	10.000	1.0372e-05
system_47	GL4 (TP8)	2.060	0.073586	10.000	5.1502e-05
system_47	GL4 (TP10)	4.040	0.073578	10.000	1.9851e-05
system_47	GL4 (TP12)	8.920	0.073576	10.000	1.2558e-05
system_47	GL4 (TP14)	20.970	0.073576	10.000	1.036e-05
system_47	RADAU5 (TP8)	3.760	0.073602	10.000	9.2078e-05
system_47	RADAU5 (TP10)	6.140	0.073582	10.000	3.0172e-05
system_47	RADAU5 (TP12)	11.200	0.073577	10.000	1.6242e-05
system_47	RADAU5 (TP14)	21.850	0.073576	10.000	1.1941e-05
system_47	GL6 (TP8)	6.080	0.073616	10.000	0.00015995
system_47	GL6 (TP10)	8.340	0.07359	10.000	4.349e-05
system_47	GL6 (TP12)	13.590	0.07358	10.000	2.0572e-05
system_47	GL6 (TP14)	23.680	0.073577	10.000	1.3953e-05
system_47	Riot				
system_47	Valencia-IVP (0.00025)	0m19.696s	43.149	1.244	998.7
system_47	Valencia-IVP (0.0025)	0m2.122s	62.436	1.215	989.09
system_47	Valencia-IVP (0.025)	0m0.270s	832.17	0.975	832.17
system_47	VNODE-LP (15, 1e-14,1e-14)	0m0.112s	0.073576	10.000	0.19992
system_47	VNODE-LP (20, 1e-14,1e-14)	0m0.063s	0.073576	10.000	0.19992
system_47	VNODE-LP (25, 1e-14,1e-14)	0m0.038s	0.073576	10.000	0.19992

Table 48: Simulation results of Problem 48

Problems	Methods	c5t	c5w	c6t	c6w
system_48	Vnode-LP (5)	0.790	1.3398e-13	10.000	1.5464e-12
system_48	IMIDPOINT (TP8)	1.920	3.3957e-08	10.000	4.2996e-06
system_48	IMIDPOINT (TP10)	8.580	3.4907e-10	10.000	5.5345e-08
system_48	IMIDPOINT (TP12)	39.170	5.0002e-11	10.000	9.4051e-10
system_48	IMIDPOINT (TP14)	179.050	5.0002e-11	10.000	6.2487e-11
system_48	HEUN (TP8)	5.800	3.3649e-08	10.000	2.2492e-06
system_48	HEUN (TP10)	24.210	3.4839e-10	10.000	5.1496e-08
system_48	HEUN (TP12)	102.940	5.0029e-11	10.000	9.6101e-10
system_48	HEUN (TP14)	462.960	5.0007e-11	10.000	6.1751e-11
system_48	KUTTA3 (TP8)	4.010	4.6748e-08	10.000	1.4912e-06
system_48	KUTTA3 (TP10)	10.890	4.8805e-10	10.000	3.5029e-08
system_48	KUTTA3 (TP12)	31.180	4.9993e-11	10.000	8.2524e-10
system_48	KUTTA3 (TP14)	103.510	5.24e-12	10.000	6.5387e-11
system_48	RADAU3 (TP8)	0.050	0	0.000	0
system_48	RADAU3 (TP10)	0.100	0	0.000	0
system_48	RADAU3 (TP12)	0.150	0	0.000	0
system_48	RADAU3 (TP14)	0.240	0	0.000	0
system_48	RK4 (TP8)	2.600	4.4686e-08	10.000	8.9947e-07
system_48	RK4 (TP10)	5.500	5.0697e-10	10.000	1.8897e-08
system_48	RK4 (TP12)	12.730	5.0563e-11	10.000	4.2168e-10
system_48	RK4 (TP14)	30.330	1.3225e-12	10.000	5.7312e-11
system_48	LA3 (TP8)	2.280	3.4777e-08	10.000	5.7004e-06
system_48	LA3 (TP10)	4.440	3.9571e-10	10.000	2.5836e-08
system_48	LA3 (TP12)	10.010	3.8795e-11	10.000	3.8421e-10
system_48	LA3 (TP14)	0.210	0	0.000	0
system_48	LC3 (TP8)	1.720	3.6614e-08	10.000	9.155e-06
system_48	LC3 (TP10)	3.520	3.9778e-10	10.000	2.9857e-08
system_48	LC3 (TP12)	8.210	3.9114e-11	10.000	4.1581e-10
system_48	LC3 (TP14)	0.150	0	0.000	0
system_48	GL4 (TP8)	1.450	3.4818e-08	10.000	5.4095e-06
system_48	GL4 (TP10)	2.990	3.9602e-10	10.000	2.6258e-08
system_48	GL4 (TP12)	6.970	3.8797e-11	10.000	3.8832e-10
system_48	GL4 (TP14)	0.150	0	0.000	0
system_48	RADAU5 (TP8)	2.590	2.7519e-08	10.000	1.623e-05
system_48	RADAU5 (TP10)	4.150	3.4922e-10	10.000	2.7686e-08
system_48	RADAU5 (TP12)	7.520	3.308e-11	10.000	3.3146e-10
system_48	RADAU5 (TP14)	15.230	5.5161e-13	10.000	8.4472e-11
system_48	GL6 (TP8)	3.950	1.9009e-08	10.000	2.2071e-05
system_48	GL6 (TP10)	5.400	2.6525e-10	10.000	2.8555e-08
system_48	GL6 (TP12)	8.580	2.4992e-11	10.000	3.6107e-10
system_48	GL6 (TP14)	15.010	3.9396e-13	10.000	1.084e-10
system_48	Riot				
system_48	Valencia-IVP (0.00025)	0m24.122s	0.004682	4.352	999.44
system_48	Valencia-IVP (0.0025)	0m2.676s	0.047669	3.725	994.41
system_48	Valencia-IVP (0.025)	0m0.311s	0.57528	2.950	913.46
system_48	VNODE-LP (15, 1e-14,1e-14)	0m0.041s	8.0491e-16	10.000	9.194e-16
system_48	VNODE-LP (20, 1e-14,1e-14)	0m0.029s	7.2164e-16	10.000	3.4001e-16
system_48	VNODE-LP (25, 1e-14,1e-14)	0m0.023s	3.0531e-16	10.000	2.498e-16

Table 49: Simulation results of Problem 49

Problems	Methods	c5t	c5w	c6t	c6w
system_49	Vnode-LP (5)	0.910	0.10763	10.000	0.011895
system_49	IMIDPOINT (TP8)	2.230	0.10873	10.000	0.017022
system_49	IMIDPOINT (TP10)	9.990	0.10787	10.000	0.012891
system_49	IMIDPOINT (TP12)	46.540	0.10769	10.000	0.012105
system_49	IMIDPOINT (TP14)	202.450	0.10765	10.000	0.01194
system_49	HEUN (TP8)	6.880	0.10764	10.000	0.011914
system_49	HEUN (TP10)	28.380	0.10763	10.000	0.011896
system_49	HEUN (TP12)	124.410	0.10763	10.000	0.011895
system_49	HEUN (TP14)	545.180	0.10763	10.000	0.011895
system_49	KUTTA3 (TP8)	4.640	0.10763	10.000	0.0119
system_49	KUTTA3 (TP10)	12.990	0.10763	10.000	0.011895
system_49	KUTTA3 (TP12)	36.190	0.10763	10.000	0.011895
system_49	KUTTA3 (TP14)	114.300	0.10763	10.000	0.011895
system_49	RADAU3 (TP8)	4.110	0.11097	10.000	0.028729
system_49	RADAU3 (TP10)	11.110	0.10868	10.000	0.016
system_49	RADAU3 (TP12)	31.260	0.10796	10.000	0.01309
system_49	RADAU3 (TP14)	97.810	0.10774	10.000	0.012263
system_49	RK4 (TP8)	3.080	0.10763	10.000	0.011897
system_49	RK4 (TP10)	6.380	0.10763	10.000	0.011895
system_49	RK4 (TP12)	14.310	0.10763	10.000	0.011895
system_49	RK4 (TP14)	35.140	0.10763	10.000	0.011895
system_49	LA3 (TP8)	2.640	0.11434	10.000	0.059108
system_49	LA3 (TP10)	5.350	0.11034	10.000	0.023423
system_49	LA3 (TP12)	11.470	0.1087	10.000	0.015688
system_49	LA3 (TP14)	28.100	0.10805	10.000	0.013295
system_49	LC3 (TP8)	1.980	0.11526	10.000	0.064135
system_49	LC3 (TP10)	4.150	0.11048	10.000	0.02411
system_49	LC3 (TP12)	9.420	0.10874	10.000	0.01586
system_49	LC3 (TP14)	23.600	0.10807	10.000	0.013352
system_49	GL4 (TP8)	1.690	0.11492	10.000	0.059894
system_49	GL4 (TP10)	3.490	0.11046	10.000	0.023778
system_49	GL4 (TP12)	7.810	0.10874	10.000	0.015822
system_49	GL4 (TP14)	19.380	0.10807	10.000	0.013347
system_49	RADAU5 (TP8)	2.780	0.12008	10.000	0.15752
system_49	RADAU5 (TP10)	4.560	0.11355	10.000	0.043486
system_49	RADAU5 (TP12)	8.430	0.11029	10.000	0.022189
system_49	RADAU5 (TP14)	16.950	0.10884	10.000	0.015972
system_49	GL6 (TP8)	4.240	0.12698	10.000	0.34399
system_49	GL6 (TP10)	5.740	0.1166	10.000	0.077061
system_49	GL6 (TP12)	8.990	0.11222	10.000	0.032569
system_49	GL6 (TP14)	16.070	0.10996	10.000	0.020272
system_49	Riot				
system_49	Valencia-IVP (0.00025)	0m24.032s	5.8874	2.488	999.56
system_49	Valencia-IVP (0.0025)	0m2.571s	5.9852	2.475	998.38
system_49	Valencia-IVP (0.025)	0m0.314s	7.1174	2.350	997.96
system_49	VNODE-LP (15, 1e-14,1e-14)	0m0.044s	0.10763	10.000	0.011895
system_49	VNODE-LP (20, 1e-14,1e-14)	0m0.030s	0.10763	10.000	0.011895
system_49	VNODE-LP (25, 1e-14,1e-14)	0m0.021s	0.10763	10.000	0.011895

Table 50: Simulation results of Problem 50

Problems	Methods	c5t	c5w	c6t	c6w
system_50	Vnode-LP (5)	23.210	1.1235e-11	3.161	23.685
system_50	IMIDPOINT (TP8)	0.000	0	0.000	0
system_50	IMIDPOINT (TP10)	0.000	0	0.000	0
system_50	IMIDPOINT (TP12)	0.000	0	0.000	0
system_50	IMIDPOINT (TP14)	0.000	0	0.000	0
system_50	HEUN (TP8)	0.000	0	0.000	0
system_50	HEUN (TP10)	0.000	0	0.000	0
system_50	HEUN (TP12)	0.000	0	0.000	0
system_50	HEUN (TP14)	0.000	0	0.000	0
system_50	KUTTA3 (TP8)	0.000	0	0.000	0
system_50	KUTTA3 (TP10)	0.000	0	0.000	0
system_50	KUTTA3 (TP12)	0.000	0	0.000	0
system_50	KUTTA3 (TP14)	0.000	0	0.000	0
system_50	RADAU3 (TP8)	0.000	0	0.000	0
system_50	RADAU3 (TP10)	0.000	0	0.000	0
system_50	RADAU3 (TP12)	0.000	0	0.000	0
system_50	RADAU3 (TP14)	0.000	0	0.000	0
system_50	RK4 (TP8)	0.000	0	0.000	0
system_50	RK4 (TP10)	0.000	0	0.000	0
system_50	RK4 (TP12)	0.000	0	0.000	0
system_50	RK4 (TP14)	0.000	0	0.000	0
system_50	LA3 (TP8)	0.000	0	0.000	0
system_50	LA3 (TP10)	0.000	0	0.000	0
system_50	LA3 (TP12)	0.000	0	0.000	0
system_50	LA3 (TP14)	0.000	0	0.000	0
system_50	LC3 (TP8)	0.000	0	0.000	0
system_50	LC3 (TP10)	0.000	0	0.000	0
system_50	LC3 (TP12)	0.000	0	0.000	0
system_50	LC3 (TP14)	0.000	0	0.000	0
system_50	GL4 (TP8)	0.000	0	0.000	0
system_50	GL4 (TP10)	0.000	0	0.000	0
system_50	GL4 (TP12)	0.000	0	0.000	0
system_50	GL4 (TP14)	0.000	0	0.000	0
system_50	RADAU5 (TP8)	0.000	0	0.000	0
system_50	RADAU5 (TP10)	0.000	0	0.000	0
system_50	RADAU5 (TP12)	0.000	0	0.000	0
system_50	RADAU5 (TP14)	0.000	0	0.000	0
system_50	GL6 (TP8)	0.000	0	0.000	0
system_50	GL6 (TP10)	0.000	0	0.000	0
system_50	GL6 (TP12)	0.000	0	0.000	0
system_50	GL6 (TP14)	0.000	0	0.000	0
system_50	Riot				
system_50	Valencia-IVP				
system_50	VNODE-LP				

Table 51: Simulation results of Problem 51

Problems	Methods	c5t	c5w	c6t	c6w
system_51	Vnode-LP (5)	1090.090	6.0665	1.042	14.066
system_51	IMIDPOINT (TP8)	300.700	1.3573	1.034	5.9882
system_51	IMIDPOINT (TP10)	1483.360	1.3536	1.035	9.8839
system_51	IMIDPOINT (TP12)	7324.710	1.3528	1.035	2.0531
system_51	IMIDPOINT (TP14)	77647.030	1.3526	1.035	4.5396
system_51	HEUN (TP8)	301.760	0.65133	0.807	0.65133
system_51	HEUN (TP10)	1392.230	0.65689	0.810	0.65689
system_51	HEUN (TP12)	6750.700	0.65822	0.810	0.65822
system_51	HEUN (TP14)	43654.780	0.65843	0.810	0.65843
system_51	KUTTA3 (TP8)	385.460	0.63541	0.799	0.63541
system_51	KUTTA3 (TP10)	1054.320	0.64887	0.806	0.64887
system_51	KUTTA3 (TP12)	3159.790	0.65561	0.809	0.65561
system_51	KUTTA3 (TP14)	9844.630	0.65761	0.810	0.65761
system_51	RADAU3 (TP8)	329.640	0.63136	0.795	0.63136
system_51	RADAU3 (TP10)	884.080	0.64936	0.805	0.64936
system_51	RADAU3 (TP12)	2598.380	0.65526	0.809	0.65526
system_51	RADAU3 (TP14)	8167.160	0.65764	0.810	0.65764
system_51	RK4 (TP8)	543.750	0.60698	0.785	0.60698
system_51	RK4 (TP10)	1161.700	0.63449	0.799	0.63449
system_51	RK4 (TP12)	2573.460	0.65062	0.807	0.65062
system_51	RK4 (TP14)	6520.580	0.65524	0.809	0.65524
system_51	LA3 (TP8)	505.410	0.59327	0.775	0.59327
system_51	LA3 (TP10)	1093.580	0.63233	0.797	0.63233
system_51	LA3 (TP12)	2406.740	0.64869	0.805	0.64869
system_51	LA3 (TP14)	6102.190	0.65424	0.808	0.65424
system_51	LC3 (TP8)	431.240	0.60485	0.779	0.60485
system_51	LC3 (TP10)	951.870	0.63824	0.799	0.63824
system_51	LC3 (TP12)	2160.750	0.6504	0.806	0.6504
system_51	LC3 (TP14)	5447.310	0.65555	0.809	0.65555
system_51	GL4 (TP8)	389.580	0.59134	0.774	0.59134
system_51	GL4 (TP10)	854.540	0.63444	0.798	0.63444
system_51	GL4 (TP12)	1926.060	0.64694	0.804	0.64694
system_51	GL4 (TP14)	4893.680	0.65485	0.809	0.65485
system_51	RADAU5 (TP8)	1259.370	0.56286	0.757	0.56286
system_51	RADAU5 (TP10)	2317.810	0.62123	0.790	0.62123
system_51	RADAU5 (TP12)	4321.450	0.64041	0.801	0.64041
system_51	RADAU5 (TP14)	8993.000	0.65149	0.807	0.65149
system_51	GL6 (TP8)	4260.560	0.58182	0.768	0.58182
system_51	GL6 (TP10)	6660.630	0.6072	0.783	0.6072
system_51	GL6 (TP12)	11089.850	0.6367	0.799	0.6367
system_51	GL6 (TP14)	20382.570	0.64731	0.805	0.64731
system_51	Riot				
system_51	Valencia-IVP				
system_51	VNODE-LP				

Table 52: Simulation results of Problem 52

Problems	Methods	c5t	c5w	c6t	c6w
system_52	Vnode-LP (5)	0.000	0	0.000	0
system_52	IMIDPOINT (TP8)	39.220	0.0031338	2.180	337.86
system_52	IMIDPOINT (TP10)	171.190	0.0047416	2.093	88.643
system_52	IMIDPOINT (TP12)	808.060	0.0034064	2.188	31.181
system_52	IMIDPOINT (TP14)	3806.430	0.0028031	2.185	8.0784
system_52	HEUN (TP8)	80.770	0.025119	1.747	22605
system_52	HEUN (TP10)	352.370	0.027324	1.671	24112
system_52	HEUN (TP12)	1501.740	0.0052722	2.046	23.375
system_52	HEUN (TP14)	6961.520	0.0037282	2.080	6.1749
system_52	KUTTA3 (TP8)	112.010	0.0052795	2.228	308.02
system_52	KUTTA3 (TP10)	291.920	0.0090028	1.971	71283
system_52	KUTTA3 (TP12)	819.510	0.053688	1.663	15180
system_52	KUTTA3 (TP14)	2637.680	0.0099568	1.916	25198
system_52	RADAU3 (TP8)	102.760	0.0037815	2.161	276.69
system_52	RADAU3 (TP10)	267.710	0.0054326	2.143	128.74
system_52	RADAU3 (TP12)	754.340	0.0068702	2.000	117
system_52	RADAU3 (TP14)	2431.510	0.0044835	2.130	31.5
system_52	RK4 (TP8)	217.660	0.0072385	2.199	226.28
system_52	RK4 (TP10)	360.030	0.0074287	2.235	157.27
system_52	RK4 (TP12)	789.760	0.0080304	2.130	68.162
system_52	RK4 (TP14)	1832.700	0.0094901	2.056	40.95
system_52	LA3 (TP8)	192.780	0.0082181	2.161	226.53
system_52	LA3 (TP10)	333.870	0.0091384	2.060	128.96
system_52	LA3 (TP12)	718.490	0.010651	1.926	34228
system_52	LA3 (TP14)	1647.810	0.032019	1.762	5.0832e+06
system_52	LC3 (TP8)	175.600	0.0091663	2.039	217.34
system_52	LC3 (TP10)	294.450	0.0091899	2.087	121.8
system_52	LC3 (TP12)	621.690	0.012536	1.902	1.1023e+06
system_52	LC3 (TP14)	1441.290	0.014411	1.890	7.5014e+05
system_52	GL4 (TP8)	158.660	0.0081662	1.992	4.1957e+07
system_52	GL4 (TP10)	273.290	0.0059387	2.118	127.26
system_52	GL4 (TP12)	567.240	0.0065754	2.058	78.586
system_52	GL4 (TP14)	1308.280	0.025871	1.793	9.6639e+06
system_52	RADAU5 (TP8)	850.530	0.0068794	1.985	3.3398e+14
system_52	RADAU5 (TP10)	1263.350	0.0062355	2.030	52.832
system_52	RADAU5 (TP12)	2260.630	0.0094413	2.089	37.755
system_52	RADAU5 (TP14)	3878.910	0.010096	2.007	27.626
system_52	GL6 (TP8)	4895.350	0.001957	2.289	64.982
system_52	GL6 (TP10)	7495.770	0.0016308	2.283	48.635
system_52	GL6 (TP12)	11674.600	0.0028948	2.280	37.099
system_52	GL6 (TP14)	18412.000	0.0030839	0.000	0
system_52	Riot				
system_52	Valencia-IVP				
system_52	VNODE-LP				

Table 53: Simulation results of Problem 53

Problems	Methods	c5t	c5w	c6t	c6w
system_53	Vnode-LP (5)	0.000	0	0.000	0
system_53	IMIDPOINT (TP8)	0.000	0	0.000	0
system_53	IMIDPOINT (TP10)	0.000	0	0.000	0
system_53	IMIDPOINT (TP12)	0.000	0	0.000	0
system_53	IMIDPOINT (TP14)	0.000	0	0.000	0
system_53	HEUN (TP8)	0.000	0	0.000	0
system_53	HEUN (TP10)	0.000	0	0.000	0
system_53	HEUN (TP12)	0.000	0	0.000	0
system_53	HEUN (TP14)	0.000	0	0.000	0
system_53	KUTTA3 (TP8)	0.000	0	0.000	0
system_53	KUTTA3 (TP10)	0.000	0	0.000	0
system_53	KUTTA3 (TP12)	0.000	0	0.000	0
system_53	KUTTA3 (TP14)	0.000	0	0.000	0
system_53	RADAU3 (TP8)	0.000	0	0.000	0
system_53	RADAU3 (TP10)	0.000	0	0.000	0
system_53	RADAU3 (TP12)	0.000	0	0.000	0
system_53	RADAU3 (TP14)	0.000	0	0.000	0
system_53	RK4 (TP8)	0.000	0	0.000	0
system_53	RK4 (TP10)	0.000	0	0.000	0
system_53	RK4 (TP12)	0.000	0	0.000	0
system_53	RK4 (TP14)	0.000	0	0.000	0
system_53	LA3 (TP8)	0.000	0	0.000	0
system_53	LA3 (TP10)	0.000	0	0.000	0
system_53	LA3 (TP12)	0.000	0	0.000	0
system_53	LA3 (TP14)	0.000	0	0.000	0
system_53	LC3 (TP8)	0.000	0	0.000	0
system_53	LC3 (TP10)	0.000	0	0.000	0
system_53	LC3 (TP12)	0.000	0	0.000	0
system_53	LC3 (TP14)	0.000	0	0.000	0
system_53	GL4 (TP8)	0.000	0	0.000	0
system_53	GL4 (TP10)	0.000	0	0.000	0
system_53	GL4 (TP12)	0.000	0	0.000	0
system_53	GL4 (TP14)	0.000	0	0.000	0
system_53	RADAU5 (TP8)	0.000	0	0.000	0
system_53	RADAU5 (TP10)	0.000	0	0.000	0
system_53	RADAU5 (TP12)	0.000	0	0.000	0
system_53	RADAU5 (TP14)	0.000	0	0.000	0
system_53	GL6 (TP8)	0.000	0	0.000	0
system_53	GL6 (TP10)	0.000	0	0.000	0
system_53	GL6 (TP12)	0.000	0	0.000	0
system_53	GL6 (TP14)	0.000	0	0.000	0
system_53	Riot				
system_53	Valencia-IVP				
system_53	VNODE-LP				

Table 54: Simulation results of Problem 56

Problems	Methods	c5t	c5w	c6t	c6w
system_56	Vnode-LP (5)	0.020	1.6298e-13	10.000	1.2825e-12
system_56	IMIDPOINT (TP8)	0.210	0.02382	10.000	0.32558
system_56	IMIDPOINT (TP10)	0.830	0.019008	10.000	0.33975
system_56	IMIDPOINT (TP12)	3.510	0.017725	10.000	0.14099
system_56	IMIDPOINT (TP14)	16.020	0.018104	10.000	0.20637
system_56	HEUN (TP8)	0.410	0.019505	10.000	0.042732
system_56	HEUN (TP10)	1.920	0.023214	10.000	0.039612
system_56	HEUN (TP12)	7.600	0.023772	10.000	0.16389
system_56	HEUN (TP14)	0.020	0	0.000	0
system_56	KUTTA3 (TP8)	0.390	0.001427	10.000	0.0069277
system_56	KUTTA3 (TP10)	0.940	0.001296	10.000	0.0044631
system_56	KUTTA3 (TP12)	2.740	0.001461	10.000	0.0045704
system_56	KUTTA3 (TP14)	8.580	0.0014118	10.000	0.0069552
system_56	RADAU3 (TP8)	0.330	0.0078117	10.000	0.11203
system_56	RADAU3 (TP10)	0.790	0.0072653	10.000	0.077263
system_56	RADAU3 (TP12)	2.120	0.0082813	10.000	0.048027
system_56	RADAU3 (TP14)	6.710	0.0089905	10.000	0.040457
system_56	RK4 (TP8)	0.300	0.0014376	10.000	0.0032169
system_56	RK4 (TP10)	0.520	0.0016487	10.000	0.0044193
system_56	RK4 (TP12)	1.090	0.00033905	10.000	0.00063835
system_56	RK4 (TP14)	2.490	0.00099999	10.000	0.0035933
system_56	LA3 (TP8)	0.280	0.00071986	10.000	0.013445
system_56	LA3 (TP10)	0.450	0.00081323	10.000	0.0098665
system_56	LA3 (TP12)	0.890	0.00088638	10.000	0.0074057
system_56	LA3 (TP14)	1.960	0.00088667	10.000	0.003605
system_56	LC3 (TP8)	0.250	0.00080484	10.000	0.015062
system_56	LC3 (TP10)	0.370	0.00076507	10.000	0.0045993
system_56	LC3 (TP12)	0.910	0.00073197	10.000	0.0077358
system_56	LC3 (TP14)	2.060	0.000731	10.000	0.0059376
system_56	GL4 (TP8)	0.170	0.0035302	10.000	0.08274
system_56	GL4 (TP10)	0.380	0.0048615	10.000	0.05354
system_56	GL4 (TP12)	0.780	0.0039687	10.000	0.050858
system_56	GL4 (TP14)	1.850	0.0041259	10.000	0.035301
system_56	RADAU5 (TP8)	0.460	0.00087479	10.000	0.028505
system_56	RADAU5 (TP10)	0.590	0.001056	10.000	0.010191
system_56	RADAU5 (TP12)	0.930	0.00079809	10.000	0.0067618
system_56	RADAU5 (TP14)	1.670	0.0008681	10.000	0.01074
system_56	GL6 (TP8)	0.910	0.0015863	10.000	0.021667
system_56	GL6 (TP10)	1.310	0.0010252	10.000	0.011919
system_56	GL6 (TP12)	1.590	0.001033	10.000	0.0077322
system_56	GL6 (TP14)	2.460	0.0011653	10.000	0.0080694
system_56	Riot (02, 1e-11)	0m2.480s	2.643e-07	-0.000	0.001449
system_56	Riot (05, 1e-11)	0m0.300s	6.8263e-11	-0.000	2.0833e-07
system_56	Riot (10, 1e-11)	0m0.259s	1.0353e-12	-0.000	1.1906e-09
system_56	Riot (15, 1e-11)	0m0.375s	4.563e-14	-0.000	6.2571e-12
system_56	Valencia-IVP (0.00025)	0m1.982s	0.00019354	10.000	4.7911
system_56	Valencia-IVP (0.0025)	0m0.184s	0.0019484	10.000	48.755
system_56	Valencia-IVP (0.025)	0m0.026s	0.020834	10.000	582.16
system_56	VNODE-LP (15, 1e-14,1e-14)	0m0.015s	4.6629e-15	10.000	6.9611e-14
system_56	VNODE-LP (20, 1e-14,1e-14)	0m0.017s	3.5527e-15	10.000	5.948e-14
system_56	VNODE-LP (25, 1e-14,1e-14)	0m0.019s	2.7756e-15	10.000	3.9801e-14

Table 55: Simulation results of Problem 57

Problems	Methods	c5t	c5w	c6t	c6w
system_57	Vnode-LP (5)	0.020	0.0067956	10.000	0.00335
system_57	IMIDPOINT (TP8)	0.240	0.027046	10.000	0.44975
system_57	IMIDPOINT (TP10)	0.850	0.02356	10.000	0.28235
system_57	IMIDPOINT (TP12)	3.600	0.023758	10.000	0.37749
system_57	IMIDPOINT (TP14)	16.370	0.024236	10.000	0.27359
system_57	HEUN (TP8)	0.490	0.034959	10.000	0.49829
system_57	HEUN (TP10)	2.030	0.029451	10.000	0.21141
system_57	HEUN (TP12)	7.900	0.030313	10.000	0.21292
system_57	HEUN (TP14)	0.040	0.01	0.000	0.01
system_57	KUTTA3 (TP8)	0.400	0.0074756	10.000	0.0079158
system_57	KUTTA3 (TP10)	0.980	0.0074748	10.000	0.0097617
system_57	KUTTA3 (TP12)	2.790	0.0075163	10.000	0.01226
system_57	KUTTA3 (TP14)	8.710	0.0075539	10.000	0.022022
system_57	RADAU3 (TP8)	0.280	0.012436	10.000	0.13374
system_57	RADAU3 (TP10)	0.850	0.014948	10.000	0.040178
system_57	RADAU3 (TP12)	2.190	0.014918	10.000	0.052796
system_57	RADAU3 (TP14)	6.890	0.014679	10.000	0.059399
system_57	RK4 (TP8)	0.300	0.0076027	10.000	0.0064196
system_57	RK4 (TP10)	0.530	0.0076136	10.000	0.0080314
system_57	RK4 (TP12)	1.140	0.0072049	10.000	0.0037575
system_57	RK4 (TP14)	2.530	0.0073942	10.000	0.0043719
system_57	LA3 (TP8)	0.220	0.0074955	10.000	0.07469
system_57	LA3 (TP10)	0.460	0.0074724	10.000	0.029861
system_57	LA3 (TP12)	0.860	0.0073857	10.000	0.013944
system_57	LA3 (TP14)	2.010	0.0073006	10.000	0.014154
system_57	LC3 (TP8)	0.260	0.0075755	10.000	0.058976
system_57	LC3 (TP10)	0.370	0.0073727	10.000	0.017626
system_57	LC3 (TP12)	0.930	0.0072998	10.000	0.013699
system_57	LC3 (TP14)	2.170	0.0072887	10.000	0.0075879
system_57	GL4 (TP8)	0.230	0.013174	10.000	0.13438
system_57	GL4 (TP10)	0.390	0.010321	10.000	0.089145
system_57	GL4 (TP12)	0.800	0.010331	10.000	0.038819
system_57	GL4 (TP14)	1.960	0.0096922	10.000	0.035013
system_57	RADAU5 (TP8)	0.460	0.0076844	10.000	0.085118
system_57	RADAU5 (TP10)	0.540	0.0075447	10.000	0.07437
system_57	RADAU5 (TP12)	0.880	0.0073901	10.000	0.022215
system_57	RADAU5 (TP14)	1.770	0.0073821	10.000	0.016264
system_57	GL6 (TP8)	0.930	0.0078692	10.000	0.0861
system_57	GL6 (TP10)	1.210	0.0075966	10.000	0.048879
system_57	GL6 (TP12)	1.660	0.0076019	10.000	0.030761
system_57	GL6 (TP14)	2.510	0.0074356	10.000	0.024746
system_57	Riot (05, 1e-11)	0m0.342s	0.013481	-0.000	33.434
system_57	Riot (10, 1e-11)	0m0.308s	0.012937	-0.000	4.2549
system_57	Riot (15, 1e-11)	0m0.517s	0.012937	-0.000	1.078
system_57	Valencia-IVP (0.00025)	0m1.863s	0.015962	10.000	288.91
system_57	Valencia-IVP (0.0025)	0m0.180s	0.017692	10.000	337.44
system_57	Valencia-IVP (0.025)	0m0.024s	0.035905	10.000	921.84
system_57	VNODE-LP (15, 1e-14,1e-14)	0m0.015s	0.0067956	10.000	0.054773
system_57	VNODE-LP (20, 1e-14,1e-14)	0m0.018s	0.0067956	10.000	0.054773
system_57	VNODE-LP (25, 1e-14,1e-14)	0m0.018s	0.0067956	10.000	0.054773

Table 56: Simulation results of Problem 58

Problems	Methods	c5t	c5w	c6t	c6w
system_58	Vnode-LP (5)	0.010	6.8412e-13	10.000	2.3371e-11
system_58	IMIDPOINT (TP8)	0.140	2.4665e-07	10.000	3.3742e-05
system_58	IMIDPOINT (TP10)	0.410	2.7397e-09	10.000	1.8853e-05
system_58	IMIDPOINT (TP12)	1.560	7.1528e-11	10.000	1.2902e-06
system_58	IMIDPOINT (TP14)	0.000	0	0.000	0
system_58	HEUN (TP8)	0.170	2.0173e-07	10.000	6.2655e-05
system_58	HEUN (TP10)	0.690	2.2581e-09	10.000	1.6822e-05
system_58	HEUN (TP12)	0.000	0	0.000	0
system_58	HEUN (TP14)	0.000	0	0.000	0
system_58	KUTTA3 (TP8)	0.160	1.0198e-07	10.000	1.0096e-05
system_58	KUTTA3 (TP10)	0.340	1.1295e-09	10.000	5.6789e-06
system_58	KUTTA3 (TP12)	0.850	5.4042e-11	10.000	1.012e-06
system_58	KUTTA3 (TP14)	2.610	1.1732e-11	10.000	4.4638e-07
system_58	RADAU3 (TP8)	0.190	6.1484e-08	10.000	2.9959e-05
system_58	RADAU3 (TP10)	0.350	6.6103e-10	10.000	4.7985e-06
system_58	RADAU3 (TP12)	1.040	4.5238e-11	10.000	9.065e-07
system_58	RADAU3 (TP14)	3.160	9.8572e-12	10.000	3.9543e-07
system_58	RK4 (TP8)	0.230	1.1594e-07	10.000	1.8407e-05
system_58	RK4 (TP10)	0.390	1.8196e-09	10.000	7.9743e-06
system_58	RK4 (TP12)	0.890	6.356e-11	10.000	1.1266e-06
system_58	RK4 (TP14)	1.920	3.2261e-12	10.000	1.2496e-07
system_58	LA3 (TP8)	0.200	6.8173e-08	10.000	2.1467e-05
system_58	LA3 (TP10)	0.340	1.0268e-09	10.000	7.8527e-06
system_58	LA3 (TP12)	0.720	5.4597e-11	10.000	1.1249e-06
system_58	LA3 (TP14)	1.550	2.2833e-12	10.000	9.7656e-08
system_58	LC3 (TP8)	0.190	7.1726e-08	10.000	4.0579e-05
system_58	LC3 (TP10)	0.340	7.6228e-10	10.000	8.2697e-06
system_58	LC3 (TP12)	0.690	5.0689e-11	10.000	9.893e-07
system_58	LC3 (TP14)	1.600	2.2855e-12	10.000	9.2599e-08
system_58	GL4 (TP8)	0.170	7.6189e-08	10.000	2.8751e-05
system_58	GL4 (TP10)	0.290	7.5887e-10	10.000	6.9437e-06
system_58	GL4 (TP12)	0.590	5.0782e-11	10.000	9.8355e-07
system_58	GL4 (TP14)	1.300	2.1436e-12	10.000	8.777e-08
system_58	RADAU5 (TP8)	0.400	6.6994e-08	10.000	6.5576e-05
system_58	RADAU5 (TP10)	0.590	1.0518e-09	10.000	7.8319e-06
system_58	RADAU5 (TP12)	0.970	5.4497e-11	10.000	1.0203e-06
system_58	RADAU5 (TP14)	2.040	1.1025e-12	10.000	5.9218e-08
system_58	GL6 (TP8)	1.320	6.6634e-08	10.000	3.3857e-05
system_58	GL6 (TP10)	1.770	1.0759e-09	10.000	3.9417e-06
system_58	GL6 (TP12)	2.620	5.9315e-11	10.000	8.4303e-07
system_58	GL6 (TP14)	4.140	1.3964e-12	10.000	6.1386e-08
system_58	Riot (05, 1e-11)	0m0.386s	6.7986e-11	-0.000	1.8892e-06
system_58	Riot (10, 1e-11)	0m0.225s	7.1609e-13	-0.000	3.3649e-08
system_58	Riot (15, 1e-11)	0m0.310s	2.1094e-14	-0.000	7.9267e-07
system_58	Valencia-IVP (0.00025)	0m1.907s	0.0032029	4.129	968.02
system_58	Valencia-IVP (0.0025)	0m0.289s	0.032453	3.468	825.8
system_58	Valencia-IVP (0.025)	0m0.063s	0.36874	2.325	2.7348
system_58	VNODE-LP (15, 1e-14,1e-14)	0m0.007s	9.992e-15	10.000	5.2854e-13
system_58	VNODE-LP (20, 1e-14,1e-14)	0m0.007s	5.9952e-15	10.000	3.5797e-13
system_58	VNODE-LP (25, 1e-14,1e-14)	0m0.008s	5.107e-15	10.000	2.6821e-13

Table 57: Simulation results of Problem 59

Problems	Methods	c5t	c5w	c6t	c6w
system_59	Vnode-LP (5)	0.040	1.0626	1.757	36587
system_59	IMIDPOINT (TP8)	0.200	0.61861	2.358	1.306e+05
system_59	IMIDPOINT (TP10)	0.780	0.61604	2.362	13105
system_59	IMIDPOINT (TP12)	3.230	0.61634	2.354	1319.4
system_59	IMIDPOINT (TP14)	0.000	0.5	0.000	0.5
system_59	HEUN (TP8)	0.370	0.6163	2.363	92448
system_59	HEUN (TP10)	1.250	0.61558	2.363	9270.2
system_59	HEUN (TP12)	5.890	0.61569	2.353	935.42
system_59	HEUN (TP14)	0.010	0.5	0.000	0.5
system_59	KUTTA3 (TP8)	0.250	0.61569	2.361	10186
system_59	KUTTA3 (TP10)	0.570	0.61557	2.364	38753
system_59	KUTTA3 (TP12)	1.540	0.61572	2.364	36761
system_59	KUTTA3 (TP14)	4.440	0.61558	2.362	6551.1
system_59	RADAU3 (TP8)	0.200	0.62279	2.344	8533.5
system_59	RADAU3 (TP10)	0.610	0.61786	2.358	32663
system_59	RADAU3 (TP12)	1.670	0.61624	2.363	49919
system_59	RADAU3 (TP14)	4.820	0.61575	2.362	8890.5
system_59	RK4 (TP8)	0.300	0.61554	2.359	2971.1
system_59	RK4 (TP10)	0.530	0.61552	2.363	9182.8
system_59	RK4 (TP12)	1.310	0.61551	2.364	26898
system_59	RK4 (TP14)	3.190	0.61551	2.365	77085
system_59	LA3 (TP8)	0.280	0.62859	2.326	2365.8
system_59	LA3 (TP10)	0.450	0.62078	2.349	7378.3
system_59	LA3 (TP12)	1.110	0.61762	2.358	21670
system_59	LA3 (TP14)	2.680	0.61635	2.362	62066
system_59	LC3 (TP8)	0.240	0.6317	2.313	5853.3
system_59	LC3 (TP10)	0.510	0.62189	2.345	25409
system_59	LC3 (TP12)	1.120	0.62134	2.352	1.0341e+05
system_59	LC3 (TP14)	2.650	0.61676	2.361	1.124e+05
system_59	GL4 (TP8)	0.240	0.62931	2.328	5172.1
system_59	GL4 (TP10)	0.440	0.62109	2.351	22102
system_59	GL4 (TP12)	0.940	0.61775	2.359	91477
system_59	GL4 (TP14)	2.210	0.6164	2.363	1.2688e+05
system_59	RADAU5 (TP8)	0.480	0.63832	2.290	879.1
system_59	RADAU5 (TP10)	0.920	0.62651	2.330	2470.7
system_59	RADAU5 (TP12)	1.700	0.62064	2.349	6518.4
system_59	RADAU5 (TP14)	3.440	0.6179	2.358	15996
system_59	GL6 (TP8)	1.780	0.64216	2.267	245.04
system_59	GL6 (TP10)	2.620	0.62997	2.318	1078.1
system_59	GL6 (TP12)	4.330	0.62316	2.341	2563.4
system_59	GL6 (TP14)	7.780	0.61953	2.353	5740.2
system_59	Riot (05, 1e-11)	0m7.354s	0	0.000	0
system_59	Riot (10, 1e-11)	6m33.869s	0.58244	0.000	0
system_59	Riot (15, 1e-11)	53m34.326s	0.58244	0.000	0
system_59	Valencia-IVP (0.00025)	0m3.563s	1.4356	1.733	990.17
system_59	Valencia-IVP (0.0025)	0m0.469s	1.5086	1.698	818.5
system_59	Valencia-IVP (0.025)	0m0.100s	3.003	1.300	23.135
system_59	VNODE-LP (15, 1e-14,1e-14)	0m0.013s	1.4378	1.641	3.7929e+05
system_59	VNODE-LP (20, 1e-14,1e-14)	0m0.013s	1.8859	1.527	1.176e+06
system_59	VNODE-LP (25, 1e-14,1e-14)	0m0.011s	2.2062	1.455	1.9992e+06

Table 58: Simulation results of Problem 60

Problems	Methods	c5t	c5w	c6t	c6w
system_60	Vnode-LP (5)	0.060	5.5267e-13	10.000	3.9281e-11
system_60	IMIDPOINT (TP8)	0.390	4.203e-08	10.000	2.931e-05
system_60	IMIDPOINT (TP10)	1.780	4.2201e-10	10.000	2.7161e-06
system_60	IMIDPOINT (TP12)	8.310	7.1467e-12	10.000	6.7397e-08
system_60	IMIDPOINT (TP14)	38.010	1.4768e-11	10.000	1.0216e-07
system_60	HEUN (TP8)	0.890	4.2033e-08	10.000	3.2214e-05
system_60	HEUN (TP10)	3.860	4.221e-10	10.000	2.7034e-06
system_60	HEUN (TP12)	17.830	7.9701e-12	10.000	7.2792e-08
system_60	HEUN (TP14)	83.350	1.8596e-11	10.000	1.2029e-07
system_60	KUTTA3 (TP8)	0.460	7.9894e-08	10.000	1.1352e-05
system_60	KUTTA3 (TP10)	1.360	8.1171e-10	10.000	3.2981e-06
system_60	KUTTA3 (TP12)	3.770	8.6224e-12	10.000	6.2495e-08
system_60	KUTTA3 (TP14)	12.070	8.793e-13	10.000	7.8645e-09
system_60	RADAU3 (TP8)	0.520	3.8698e-08	10.000	1.0113e-05
system_60	RADAU3 (TP10)	1.470	4.0334e-10	10.000	2.3649e-06
system_60	RADAU3 (TP12)	4.260	4.263e-12	10.000	4.4963e-08
system_60	RADAU3 (TP14)	13.490	9.3969e-13	10.000	8.3541e-09
system_60	RK4 (TP8)	0.380	5.3286e-08	10.000	1.1632e-05
system_60	RK4 (TP10)	0.780	5.5153e-10	10.000	3.3945e-06
system_60	RK4 (TP12)	1.890	5.6708e-12	10.000	6.5718e-08
system_60	RK4 (TP14)	4.320	2.2826e-13	10.000	4.4087e-09
system_60	LA3 (TP8)	0.360	4.9729e-08	10.000	9.68e-06
system_60	LA3 (TP10)	0.750	5.1618e-10	10.000	2.5185e-06
system_60	LA3 (TP12)	1.810	5.3131e-12	10.000	4.4032e-08
system_60	LA3 (TP14)	4.180	1.9007e-13	10.000	3.3532e-09
system_60	LC3 (TP8)	0.290	2.9234e-08	10.000	1.074e-05
system_60	LC3 (TP10)	0.610	3.2028e-10	10.000	2.3807e-06
system_60	LC3 (TP12)	1.500	3.4794e-12	10.000	3.8106e-08
system_60	LC3 (TP14)	3.700	2.0961e-13	10.000	3.3565e-09
system_60	GL4 (TP8)	0.250	2.9424e-08	10.000	8.5658e-06
system_60	GL4 (TP10)	0.540	3.1736e-10	10.000	2.1529e-06
system_60	GL4 (TP12)	1.290	3.4781e-12	10.000	3.7865e-08
system_60	GL4 (TP14)	3.190	1.9362e-13	10.000	3.1809e-09
system_60	RADAU5 (TP8)	0.480	5.2952e-08	10.000	1.3931e-05
system_60	RADAU5 (TP10)	0.770	4.8953e-10	10.000	1.4512e-06
system_60	RADAU5 (TP12)	1.450	4.726e-12	10.000	3.6936e-08
system_60	RADAU5 (TP14)	2.970	9.992e-14	10.000	1.6634e-09
system_60	GL6 (TP8)	0.970	7.7461e-08	10.000	1.5217e-05
system_60	GL6 (TP10)	1.260	8.8076e-10	10.000	1.0012e-06
system_60	GL6 (TP12)	1.920	8.4959e-12	10.000	5.8658e-08
system_60	GL6 (TP14)	3.250	9.1926e-14	10.000	1.5265e-09
system_60	Riot (05, 1e-11)	0m0.401s	1.0846e-10	-0.000	4.1356e-07
system_60	Riot (10, 1e-11)	0m0.208s	1.3138e-12	-0.000	1.4383e-08
system_60	Riot (15, 1e-11)	0m0.293s	2.3981e-14	-0.000	1.4009e-09
system_60	Valencia-IVP (0.00025)	0m2.208s	0.0012113	10.000	21.282
system_60	Valencia-IVP (0.0025)	0m0.282s	0.012152	8.033	944.65
system_60	Valencia-IVP (0.025)	0m0.049s	0.12493	5.225	615.14
system_60	VNODE-LP (15, 1e-14,1e-14)	0m0.015s	6.3283e-15	10.000	1.8436e-12
system_60	VNODE-LP (20, 1e-14,1e-14)	0m0.013s	5.9952e-15	10.000	2.2619e-12
system_60	VNODE-LP (25, 1e-14,1e-14)	0m0.013s	3.9968e-15	10.000	1.127e-12

Table 59: Simulation results of Problem 61

Problems	Methods	c5t	c5w	c6t	c6w
system_61	Vnode-LP (5)	0.060	0.0050537	10.000	1.1119
system_61	IMIDPOINT (TP8)	0.460	0.0053771	10.000	86.805
system_61	IMIDPOINT (TP10)	2.130	0.0053773	10.000	205.77
system_61	IMIDPOINT (TP12)	9.960	0.0053966	10.000	1720
system_61	IMIDPOINT (TP14)	45.900	0.0054158	9.936	2.4329e+07
system_61	HEUN (TP8)	1.070	0.0055794	9.900	3.4382e+07
system_61	HEUN (TP10)	4.690	0.0055002	9.529	3.4456e+07
system_61	HEUN (TP12)	21.840	0.0054176	10.000	6739.2
system_61	HEUN (TP14)	102.380	0.0054275	10.000	1264
system_61	KUTTA3 (TP8)	0.560	0.0054375	10.000	5.1368
system_61	KUTTA3 (TP10)	1.670	0.0055837	10.000	4.6873
system_61	KUTTA3 (TP12)	4.680	0.0056042	10.000	38.064
system_61	KUTTA3 (TP14)	14.310	0.0056132	10.000	704.59
system_61	RADAU3 (TP8)	0.610	0.0054681	10.000	118.15
system_61	RADAU3 (TP10)	1.760	0.0056055	9.761	7.7666e+07
system_61	RADAU3 (TP12)	5.160	0.0056191	10.000	25.254
system_61	RADAU3 (TP14)	15.750	0.0056188	10.000	32.929
system_61	RK4 (TP8)	0.460	0.0053622	10.000	2.4959
system_61	RK4 (TP10)	0.960	0.0054318	10.000	6.9605
system_61	RK4 (TP12)	2.330	0.0054343	9.568	7.7908e+07
system_61	RK4 (TP14)	5.180	0.0055842	10.000	22.543
system_61	LA3 (TP8)	0.440	0.0053813	10.000	11.599
system_61	LA3 (TP10)	0.920	0.0054002	10.000	11.97
system_61	LA3 (TP12)	2.230	0.0054558	10.000	8.3404
system_61	LA3 (TP14)	4.990	0.0054459	10.000	34.055
system_61	LC3 (TP8)	0.350	0.0053157	10.000	8.483
system_61	LC3 (TP10)	0.770	0.005349	10.000	8.2071
system_61	LC3 (TP12)	1.850	0.0054241	10.000	314.02
system_61	LC3 (TP14)	4.420	0.0054369	10.000	595.66
system_61	GL4 (TP8)	0.300	0.0055194	10.000	5.0998
system_61	GL4 (TP10)	0.660	0.005428	10.000	3.8618
system_61	GL4 (TP12)	1.580	0.0055926	9.912	3.4462e+07
system_61	GL4 (TP14)	3.830	0.0055354	10.000	1976.6
system_61	RADAU5 (TP8)	0.590	0.0054216	10.000	6.4044
system_61	RADAU5 (TP10)	0.990	0.0052979	10.000	7.2129
system_61	RADAU5 (TP12)	1.790	0.005352	10.000	6.8607
system_61	RADAU5 (TP14)	3.550	0.0054678	10.000	8.5834
system_61	GL6 (TP8)	1.200	0.0055042	10.000	6.2057
system_61	GL6 (TP10)	1.580	0.005411	10.000	4.4055
system_61	GL6 (TP12)	2.410	0.0052965	10.000	9.9609
system_61	GL6 (TP14)	3.950	0.0053666	10.000	9.1203
system_61	Riot (05, 1e-11)	0m29.113s	0.016523	0.000	0
system_61	Riot (10, 1e-11)	2m2.447s	0.016523	0.000	0
system_61	Riot (15, 1e-11)	9m16.121s	0.016523	0.000	0
system_61	Valencia-IVP (0.00025)	0m2.193s	0.0070886	7.850	995.84
system_61	Valencia-IVP (0.0025)	0m0.314s	0.018078	7.098	938.56
system_61	Valencia-IVP (0.025)	0m0.049s	0.13117	5.150	535.8
system_61	VNODE-LP (15, 1e-14,1e-14)	0m0.015s	0.0064256	9.464	1.0425e+08
system_61	VNODE-LP (20, 1e-14,1e-14)	0m0.011s	0.007766	9.213	4.7889e+08
system_61	VNODE-LP (25, 1e-14,1e-14)	0m0.012s	0.0087521	9.173	1.0624e+09

Table 60: Simulation results of Problem 62

Problems	Methods	c5t	c5w	c6t	c6w
system_62	Vnode-LP (5)	0.000	3.6238e-13	10.000	4.8743e-12
system_62	IMIDPOINT (TP8)	0.000	2.9593e-07	10.000	1.5867e-06
system_62	IMIDPOINT (TP10)	0.000	3.6966e-09	10.000	1.6274e-08
system_62	IMIDPOINT (TP12)	0.030	4.0394e-11	10.000	2.5409e-10
system_62	IMIDPOINT (TP14)	0.150	8.491e-12	10.000	1.3416e-10
system_62	HEUN (TP8)	0.000	2.9773e-07	10.000	8.0907e-07
system_62	HEUN (TP10)	0.010	3.6917e-09	10.000	8.5351e-09
system_62	HEUN (TP12)	0.060	4.0004e-11	10.000	1.3566e-10
system_62	HEUN (TP14)	0.270	1.0587e-11	10.000	1.671e-10
system_62	KUTTA3 (TP8)	0.010	6.0692e-09	10.000	1.0362e-06
system_62	KUTTA3 (TP10)	0.010	1.5201e-09	10.000	2.4075e-08
system_62	KUTTA3 (TP12)	0.010	6.0034e-11	10.000	6.0656e-10
system_62	KUTTA3 (TP14)	0.030	1.3429e-12	10.000	2.3789e-11
system_62	RADAU3 (TP8)	0.010	4.6254e-09	10.000	9.0149e-07
system_62	RADAU3 (TP10)	0.010	9.4189e-11	10.000	1.579e-08
system_62	RADAU3 (TP12)	0.030	1.4424e-12	10.000	2.0021e-10
system_62	RADAU3 (TP14)	0.110	1.2506e-12	10.000	1.1759e-11
system_62	RK4 (TP8)	0.020	7.5453e-11	10.000	6.0009e-07
system_62	RK4 (TP10)	0.020	7.5453e-11	10.000	2.6421e-08
system_62	RK4 (TP12)	0.030	1.1994e-11	10.000	4.1205e-10
system_62	RK4 (TP14)	0.050	4.0501e-13	10.000	6.5725e-12
system_62	LA3 (TP8)	0.030	2.0744e-10	10.000	3.7513e-07
system_62	LA3 (TP10)	0.030	2.0744e-10	10.000	8.2312e-09
system_62	LA3 (TP12)	0.030	2.4023e-11	10.000	1.2199e-10
system_62	LA3 (TP14)	0.050	6.0396e-13	10.000	3.638e-12
system_62	LC3 (TP8)	0.020	8.4029e-11	10.000	3.8823e-07
system_62	LC3 (TP10)	0.020	8.4029e-11	10.000	1.107e-08
system_62	LC3 (TP12)	0.030	1.1291e-11	10.000	1.8534e-10
system_62	LC3 (TP14)	0.050	3.8369e-13	10.000	4.0643e-12
system_62	GL4 (TP8)	0.020	5.6062e-11	10.000	2.5778e-07
system_62	GL4 (TP10)	0.020	5.6062e-11	10.000	1.1191e-08
system_62	GL4 (TP12)	0.020	1.0509e-11	10.000	1.8532e-10
system_62	GL4 (TP14)	0.040	3.6238e-13	10.000	3.8867e-12
system_62	RADAU5 (TP8)	0.110	3.7659e-13	10.000	8.7381e-09
system_62	RADAU5 (TP10)	0.110	3.7659e-13	10.000	6.7779e-09
system_62	RADAU5 (TP12)	0.110	3.7659e-13	10.000	1.8395e-10
system_62	RADAU5 (TP14)	0.140	1.5632e-13	10.000	2.963e-12
system_62	GL6 (TP8)	0.560	1.279e-13	10.000	2.2385e-10
system_62	GL6 (TP10)	0.560	1.279e-13	10.000	2.2385e-10
system_62	GL6 (TP12)	0.560	1.279e-13	10.000	1.0044e-10
system_62	GL6 (TP14)	0.570	1.279e-13	10.000	1.7764e-12
system_62	Riot (05, 1e-11)	0m0.096s	7.887e-13	-0.000	3.9957e-11
system_62	Riot (10, 1e-11)	0m0.116s	7.9226e-13	-0.000	2.2027e-13
system_62	Riot (15, 1e-11)	0m0.139s	9.3081e-13	-0.000	5.0093e-13
system_62	Valencia-IVP (0.00025)	0m1.501s	8e-06	10.000	9.0701e-05
system_62	Valencia-IVP (0.0025)	0m0.135s	8.0004e-05	10.000	0.00090724
system_62	Valencia-IVP (0.025)	0m0.017s	0.00080027	10.000	0.0090954
system_62	VNODE-LP (15, 1e-14,1e-14)	0m0.006s	1.0658e-14	10.000	1.0303e-13
system_62	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	1.0658e-14	10.000	1.1013e-13
system_62	VNODE-LP (25, 1e-14,1e-14)	0m0.005s	1.0658e-14	10.000	1.1013e-13

Table 61: Simulation results of Problem 63

Problems	Methods	c5t	c5w	c6t	c6w
system_63	Vnode-LP (5)	0.000	1.0288	7.724	5.4715e+09
system_63	IMIDPOINT (TP8)	0.010	0.91565	10.000	4.5496
system_63	IMIDPOINT (TP10)	0.070	0.90974	10.000	4.4704
system_63	IMIDPOINT (TP12)	0.310	0.90843	10.000	4.4534
system_63	IMIDPOINT (TP14)	0.000	1	0.000	1
system_63	HEUN (TP8)	0.030	0.9081	10.000	4.4493
system_63	HEUN (TP10)	0.130	0.90807	10.000	4.4488
system_63	HEUN (TP12)	0.560	0.90807	10.000	4.4488
system_63	HEUN (TP14)	0.000	1	0.000	1
system_63	KUTTA3 (TP8)	0.020	0.90878	10.000	4.4732
system_63	KUTTA3 (TP10)	0.050	0.90832	10.000	4.4565
system_63	KUTTA3 (TP12)	0.160	0.90815	10.000	4.4512
system_63	KUTTA3 (TP14)	0.440	0.90809	10.000	4.4495
system_63	RADAU3 (TP8)	0.020	0.92513	10.000	4.7151
system_63	RADAU3 (TP10)	0.060	0.91402	10.000	4.5327
system_63	RADAU3 (TP12)	0.180	0.90999	10.000	4.4752
system_63	RADAU3 (TP14)	0.540	0.90868	10.000	4.4571
system_63	RK4 (TP8)	0.030	0.90814	10.000	4.452
system_63	RK4 (TP10)	0.060	0.90808	10.000	4.4493
system_63	RK4 (TP12)	0.140	0.90807	10.000	4.4489
system_63	RK4 (TP14)	0.320	0.90807	10.000	4.4488
system_63	LA3 (TP8)	0.030	0.93215	10.000	4.8656
system_63	LA3 (TP10)	0.060	0.91937	10.000	4.6164
system_63	LA3 (TP12)	0.120	0.91296	10.000	4.516
system_63	LA3 (TP14)	0.290	0.91007	10.000	4.4756
system_63	LC3 (TP8)	0.030	0.93625	10.000	5.0059
system_63	LC3 (TP10)	0.060	0.92116	10.000	4.6662
system_63	LC3 (TP12)	0.110	0.91374	10.000	4.535
system_63	LC3 (TP14)	0.280	0.91038	10.000	4.483
system_63	GL4 (TP8)	0.030	0.93296	10.000	4.8907
system_63	GL4 (TP10)	0.050	0.92014	10.000	4.629
system_63	GL4 (TP12)	0.100	0.91332	10.000	4.5213
system_63	GL4 (TP14)	0.230	0.91022	10.000	4.4777
system_63	RADAU5 (TP8)	0.110	0.93844	10.000	5.1468
system_63	RADAU5 (TP10)	0.140	0.92696	10.000	4.7802
system_63	RADAU5 (TP12)	0.230	0.91822	10.000	4.6043
system_63	RADAU5 (TP14)	0.420	0.91311	10.000	4.5214
system_63	GL6 (TP8)	0.560	0.9316	10.000	5.1771
system_63	GL6 (TP10)	0.630	0.92941	10.000	4.8546
system_63	GL6 (TP12)	0.760	0.92141	10.000	4.6678
system_63	GL6 (TP14)	1.110	0.91592	10.000	4.5645
system_63	Riot (05, 1e-11)	0m0.226s	6.1391e-12	-0.000	2.1793e-10
system_63	Riot (10, 1e-11)	0m0.219s	6.1391e-12	-0.000	8.3134e-13
system_63	Riot (15, 1e-11)	0m0.222s	3.6238e-13	-0.000	3.979e-13
system_63	Valencia-IVP (0.00025)	0m3.804s	1.4207	4.983	939.4
system_63	Valencia-IVP (0.0025)	0m0.416s	1.4208	4.960	184.88
system_63	Valencia-IVP (0.025)	0m0.067s	1.4224	3.675	6.8657
system_63	VNODE-LP (15, 1e-14,1e-14)	0m0.006s	1.1898	5.765	12397
system_63	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	1.1582	4.716	24367
system_63	VNODE-LP (25, 1e-14,1e-14)	0m0.004s	1.161	4.394	39403

Table 62: Simulation results of Problem 64

Problems	Methods	c5t	c5w	c6t	c6w
system_64	Vnode-LP (5)	0.000	2.5535e-15	10.000	3.8813e-13
system_64	IMIDPOINT (TP8)	0.020	0.010339	10.000	0.35033
system_64	IMIDPOINT (TP10)	0.110	0.0099121	10.000	0.34541
system_64	IMIDPOINT (TP12)	0.520	0.0093928	10.000	0.33065
system_64	IMIDPOINT (TP14)	2.400	0.0094677	10.000	0.33076
system_64	HEUN (TP8)	0.060	0.0081542	10.000	0.35085
system_64	HEUN (TP10)	0.270	0.0098845	10.000	0.34609
system_64	HEUN (TP12)	1.120	0.0098081	10.000	0.33697
system_64	HEUN (TP14)	5.270	0.0097773	10.000	0.34069
system_64	KUTTA3 (TP8)	0.050	0.0037669	10.000	0.099571
system_64	KUTTA3 (TP10)	0.070	0.0062882	10.000	0.10903
system_64	KUTTA3 (TP12)	0.140	0.0080948	10.000	0.14864
system_64	KUTTA3 (TP14)	0.360	0.0076969	10.000	0.13439
system_64	RADAU3 (TP8)	0.060	0.011282	10.000	0.27273
system_64	RADAU3 (TP10)	0.110	0.0088406	10.000	0.24783
system_64	RADAU3 (TP12)	0.270	0.009325	10.000	0.26111
system_64	RADAU3 (TP14)	0.840	0.009322	10.000	0.24456
system_64	RK4 (TP8)	0.100	0.007745	10.000	0.12797
system_64	RK4 (TP10)	0.100	0.005718	10.000	0.12595
system_64	RK4 (TP12)	0.160	0.0077138	10.000	0.12625
system_64	RK4 (TP14)	0.300	0.0069543	10.000	0.0966
system_64	LA3 (TP8)	0.110	0.0036697	10.000	0.087619
system_64	LA3 (TP10)	0.120	0.0045719	10.000	0.085906
system_64	LA3 (TP12)	0.160	0.005582	10.000	0.09833
system_64	LA3 (TP14)	0.320	0.0086908	10.000	0.12796
system_64	LC3 (TP8)	0.090	0.0028364	10.000	0.066342
system_64	LC3 (TP10)	0.100	0.0049266	10.000	0.078657
system_64	LC3 (TP12)	0.130	0.0050951	10.000	0.092736
system_64	LC3 (TP14)	0.260	0.0064706	10.000	0.10031
system_64	GL4 (TP8)	0.080	0.0075863	10.000	0.25353
system_64	GL4 (TP10)	0.080	0.0081413	10.000	0.2189
system_64	GL4 (TP12)	0.120	0.0107	10.000	0.22704
system_64	GL4 (TP14)	0.230	0.008599	10.000	0.21742
system_64	RADAU5 (TP8)	0.280	0.0064678	10.000	0.12121
system_64	RADAU5 (TP10)	0.280	0.0064678	10.000	0.13265
system_64	RADAU5 (TP12)	0.280	0.0064678	10.000	0.11974
system_64	RADAU5 (TP14)	0.350	0.0073364	10.000	0.11754
system_64	GL6 (TP8)	0.850	0.0050686	10.000	0.11409
system_64	GL6 (TP10)	0.840	0.0050686	10.000	0.11401
system_64	GL6 (TP12)	0.850	0.0050686	10.000	0.093549
system_64	GL6 (TP14)	0.850	0.0050686	10.000	0.11709
system_64	Riot (05, 1e-11)	0m0.136s	3.194e-14	-0.000	1.1558e-10
system_64	Riot (10, 1e-11)	0m0.253s	5.4123e-16	-0.000	1.35e-13
system_64	Riot (15, 1e-11)	0m0.252s	5.4123e-16	-0.000	6.9278e-14
system_64	Valencia-IVP (0.00025)	0m1.721s	1.0417e-05	10.000	0.00016797
system_64	Valencia-IVP (0.0025)	0m0.165s	0.00010417	10.000	0.0016797
system_64	Valencia-IVP (0.025)	0m0.019s	0.0010417	10.000	0.016797
system_64	VNODE-LP (15, 1e-14,1e-14)	0m0.004s	6.245e-17	10.000	9.77e-15
system_64	VNODE-LP (20, 1e-14,1e-14)	0m0.005s	6.9389e-17	10.000	1.199e-14
system_64	VNODE-LP (25, 1e-14,1e-14)	0m0.004s	6.9389e-17	10.000	1.0658e-14

Table 63: Simulation results of Problem 65

Problems	Methods	c5t	c5w	c6t	c6w
system_65	Vnode-LP (5)	0.000	0.25273	10.000	2.7611
system_65	IMIDPOINT (TP8)	0.030	0.26038	10.000	3.0523
system_65	IMIDPOINT (TP10)	0.130	0.26193	10.000	3.0636
system_65	IMIDPOINT (TP12)	0.600	0.26168	10.000	3.0541
system_65	IMIDPOINT (TP14)	2.790	0.2618	10.000	3.0567
system_65	HEUN (TP8)	0.070	0.26252	10.000	3.0802
system_65	HEUN (TP10)	0.310	0.26204	10.000	3.0736
system_65	HEUN (TP12)	1.290	0.26186	10.000	3.0686
system_65	HEUN (TP14)	5.980	0.26194	10.000	3.0651
system_65	KUTTA3 (TP8)	0.050	0.25613	10.000	2.8368
system_65	KUTTA3 (TP10)	0.090	0.25757	10.000	2.8356
system_65	KUTTA3 (TP12)	0.210	0.26005	10.000	2.8685
system_65	KUTTA3 (TP14)	0.650	0.25982	10.000	2.8527
system_65	RADAU3 (TP8)	0.060	0.26146	10.000	2.9934
system_65	RADAU3 (TP10)	0.120	0.26147	10.000	2.9884
system_65	RADAU3 (TP12)	0.300	0.26165	10.000	2.9774
system_65	RADAU3 (TP14)	0.950	0.26154	10.000	2.9766
system_65	RK4 (TP8)	0.110	0.25977	10.000	2.8534
system_65	RK4 (TP10)	0.130	0.25825	10.000	2.8442
system_65	RK4 (TP12)	0.170	0.25838	10.000	2.8063
system_65	RK4 (TP14)	0.350	0.26083	10.000	2.8295
system_65	LA3 (TP8)	0.120	0.25517	10.000	2.792
system_65	LA3 (TP10)	0.130	0.25738	10.000	2.8052
system_65	LA3 (TP12)	0.190	0.25838	10.000	2.8249
system_65	LA3 (TP14)	0.370	0.25849	10.000	2.8196
system_65	LC3 (TP8)	0.090	0.25493	10.000	2.8055
system_65	LC3 (TP10)	0.110	0.255	10.000	2.7711
system_65	LC3 (TP12)	0.160	0.25853	10.000	2.8167
system_65	LC3 (TP14)	0.310	0.25833	10.000	2.8113
system_65	GL4 (TP8)	0.090	0.25952	10.000	2.9143
system_65	GL4 (TP10)	0.100	0.26174	10.000	2.9768
system_65	GL4 (TP12)	0.140	0.26197	10.000	2.9652
system_65	GL4 (TP14)	0.280	0.26191	10.000	2.9458
system_65	RADAU5 (TP8)	0.310	0.25828	10.000	2.8321
system_65	RADAU5 (TP10)	0.310	0.25828	10.000	2.8368
system_65	RADAU5 (TP12)	0.350	0.25778	10.000	2.805
system_65	RADAU5 (TP14)	0.470	0.25943	10.000	2.8277
system_65	GL6 (TP8)	0.960	0.25696	10.000	2.826
system_65	GL6 (TP10)	0.960	0.25696	10.000	2.7988
system_65	GL6 (TP12)	0.960	0.25696	10.000	2.8106
system_65	GL6 (TP14)	1.210	0.25758	10.000	2.8155
system_65	Riot (05, 1e-11)	0m5.669s	0.25147	-0.000	2.6697
system_65	Riot (10, 1e-11)	0m1.551s	0.25147	-0.000	2.6698
system_65	Riot (15, 1e-11)	0m5.042s	0.25147	-0.000	2.6698
system_65	Valencia-IVP (0.00025)	0m1.576s	0.25147	10.000	2.6699
system_65	Valencia-IVP (0.0025)	0m0.146s	0.25147	10.000	2.6716
system_65	Valencia-IVP (0.025)	0m0.021s	0.25177	10.000	2.6883
system_65	VNODE-LP (15, 1e-14,1e-14)	0m0.006s	0.25278	10.000	2.7636
system_65	VNODE-LP (20, 1e-14,1e-14)	0m0.006s	0.25278	10.000	2.7636
system_65	VNODE-LP (25, 1e-14,1e-14)	0m0.005s	0.25278	10.000	2.7636

Table 64: Simulation results of Problem 66

Problems	Methods	c5t	c5w	c6t	c6w
system_66	Vnode-LP (5)	0.000	0	0.000	0
system_66	IMIDPOINT (TP8)	775.370	0	0.000	0
system_66	IMIDPOINT (TP10)	0.000	0	0.000	0
system_66	IMIDPOINT (TP12)	0.000	0	0.000	0
system_66	IMIDPOINT (TP14)	0.000	0	0.000	0
system_66	HEUN (TP8)	0.000	0	0.000	0
system_66	HEUN (TP10)	0.000	0	0.000	0
system_66	HEUN (TP12)	0.000	0	0.000	0
system_66	HEUN (TP14)	0.000	0	0.000	0
system_66	KUTTA3 (TP8)	0.000	0	0.000	0
system_66	KUTTA3 (TP10)	0.000	0	0.000	0
system_66	KUTTA3 (TP12)	0.000	0	0.000	0
system_66	KUTTA3 (TP14)	0.000	0	0.000	0
system_66	RADAU3 (TP8)	0.000	0	0.000	0
system_66	RADAU3 (TP10)	0.000	0	0.000	0
system_66	RADAU3 (TP12)	0.000	0	0.000	0
system_66	RADAU3 (TP14)	0.000	0	0.000	0
system_66	RK4 (TP8)	0.000	0	0.000	0
system_66	RK4 (TP10)	0.000	0	0.000	0
system_66	RK4 (TP12)	0.000	0	0.000	0
system_66	RK4 (TP14)	0.000	0	0.000	0
system_66	LA3 (TP8)	0.000	0	0.000	0
system_66	LA3 (TP10)	0.000	0	0.000	0
system_66	LA3 (TP12)	0.000	0	0.000	0
system_66	LA3 (TP14)	0.000	0	0.000	0
system_66	LC3 (TP8)	0.000	0	0.000	0
system_66	LC3 (TP10)	0.000	0	0.000	0
system_66	LC3 (TP12)	0.000	0	0.000	0
system_66	LC3 (TP14)	0.000	0	0.000	0
system_66	GL4 (TP8)	0.000	0	0.000	0
system_66	GL4 (TP10)	0.000	0	0.000	0
system_66	GL4 (TP12)	0.000	0	0.000	0
system_66	GL4 (TP14)	0.000	0	0.000	0
system_66	RADAU5 (TP8)	0.000	0	0.000	0
system_66	RADAU5 (TP10)	0.000	0	0.000	0
system_66	RADAU5 (TP12)	0.000	0	0.000	0
system_66	RADAU5 (TP14)	0.000	0	0.000	0
system_66	GL6 (TP8)	0.000	0	0.000	0
system_66	GL6 (TP10)	0.000	0	0.000	0
system_66	GL6 (TP12)	0.000	0	0.000	0
system_66	GL6 (TP14)	0.000	0	0.000	0
system_66	Riot (05, 1e-11)	15m23.187s	9.2719e-10	-0.000	6.2664e-08
system_66	Riot (10, 1e-11)	11m19.359s	3.3361e-10	-0.000	8.5863e-08
system_66	Riot (15, 1e-11)	0m1.044s	0	0.000	0
system_66	Valencia-IVP (0.00025)	7m22.611s	0.082473	1.849	822.94
system_66	Valencia-IVP (0.0025)	1m19.425s	1.0853	1.210	5.751
system_66	Valencia-IVP (0.025)	0m18.290s	3.4929	0.650	3.4929
system_66	VNODE-LP (15, 1e-14,1e-14)	0m9.343s	5.258e-13	10.000	2.5465e-09
system_66	VNODE-LP (20, 1e-14,1e-14)	0m10.907s	4.9794e-13	10.000	2.4156e-09
system_66	VNODE-LP (25, 1e-14,1e-14)	0m12.359s	5.0648e-13	10.000	2.4244e-09

Table 65: Simulation results of Problem 67

Problems	Methods	c5t	c5w	c6t	c6w
system_67	Vnode-LP (5)	0.000	0	0.000	0
system_67	IMIDPOINT (TP8)	0.000	0	0.000	0
system_67	IMIDPOINT (TP10)	0.000	0	0.000	0
system_67	IMIDPOINT (TP12)	0.000	0	0.000	0
system_67	IMIDPOINT (TP14)	0.000	0	0.000	0
system_67	HEUN (TP8)	0.000	0	0.000	0
system_67	HEUN (TP10)	0.000	0	0.000	0
system_67	HEUN (TP12)	0.000	0	0.000	0
system_67	HEUN (TP14)	0.000	0	0.000	0
system_67	KUTTA3 (TP8)	0.000	0	0.000	0
system_67	KUTTA3 (TP10)	0.000	0	0.000	0
system_67	KUTTA3 (TP12)	0.000	0	0.000	0
system_67	KUTTA3 (TP14)	0.000	0	0.000	0
system_67	RADAU3 (TP8)	0.000	0	0.000	0
system_67	RADAU3 (TP10)	0.000	0	0.000	0
system_67	RADAU3 (TP12)	0.000	0	0.000	0
system_67	RADAU3 (TP14)	0.000	0	0.000	0
system_67	RK4 (TP8)	0.000	0	0.000	0
system_67	RK4 (TP10)	0.000	0	0.000	0
system_67	RK4 (TP12)	0.000	0	0.000	0
system_67	RK4 (TP14)	0.000	0	0.000	0
system_67	LA3 (TP8)	0.000	0	0.000	0
system_67	LA3 (TP10)	0.000	0	0.000	0
system_67	LA3 (TP12)	0.000	0	0.000	0
system_67	LA3 (TP14)	0.000	0	0.000	0
system_67	LC3 (TP8)	0.000	0	0.000	0
system_67	LC3 (TP10)	0.000	0	0.000	0
system_67	LC3 (TP12)	0.000	0	0.000	0
system_67	LC3 (TP14)	0.000	0	0.000	0
system_67	GL4 (TP8)	0.000	0	0.000	0
system_67	GL4 (TP10)	0.000	0	0.000	0
system_67	GL4 (TP12)	0.000	0	0.000	0
system_67	GL4 (TP14)	0.000	0	0.000	0
system_67	RADAU5 (TP8)	0.000	0	0.000	0
system_67	RADAU5 (TP10)	0.000	0	0.000	0
system_67	RADAU5 (TP12)	0.000	0	0.000	0
system_67	RADAU5 (TP14)	0.000	0	0.000	0
system_67	GL6 (TP8)	0.000	0	0.000	0
system_67	GL6 (TP10)	0.000	0	0.000	0
system_67	GL6 (TP12)	0.000	0	0.000	0
system_67	GL6 (TP14)	0.000	0	0.000	0
system_67	Riot				
system_67	Valencia-IVP (0.00025)	12m42.251s	10.481	1.091	924.45
system_67	Valencia-IVP (0.0025)	1m32.811s	20.56	0.993	20.56
system_67	Valencia-IVP (0.025)	0m11.785s	3.5286	0.600	3.5286
system_67	VNODE-LP (15, 1e-14,1e-14)	0m57.801s	0.085516	1.832	2805.1
system_67	VNODE-LP (20, 1e-14,1e-14)	1m2.193s	0.09398	1.778	5688.9
system_67	VNODE-LP (25, 1e-14,1e-14)	1m3.349s	0.10123	1.735	8154.8

Table 66: Simulation results of Problem 68

Problems	Methods	c5t	c5w	c6t	c6w
system_68	Vnode-LP (5)	0.000	0	0.000	0
system_68	IMIDPOINT (TP8)	23.030	1.6689e-08	0.000	0
system_68	IMIDPOINT (TP10)	250.240	1.259e-06	0.000	0
system_68	IMIDPOINT (TP12)	613.410	1.8557e-07	0.000	0
system_68	IMIDPOINT (TP14)	1701.230	2.2252e-05	0.000	0
system_68	HEUN (TP8)	830.870	6.705e-06	0.000	0
system_68	HEUN (TP10)	1303.910	2.9171e-07	0.000	0
system_68	HEUN (TP12)	3359.070	1.1838e-07	0.000	0
system_68	HEUN (TP14)	8354.260	9.6705e-05	0.000	0
system_68	KUTTA3 (TP8)	3616.800	2.7793e-06	0.000	0
system_68	KUTTA3 (TP10)	4559.950	1.3995e-07	0.000	0
system_68	KUTTA3 (TP12)	8105.800	7.8062e-08	0.000	0
system_68	KUTTA3 (TP14)	5055.200	0.00010811	0.000	0
system_68	RADAU3 (TP8)	3817.570	0.00010846	0.000	0
system_68	RADAU3 (TP10)	4308.520	1.0942e-06	0.000	0
system_68	RADAU3 (TP12)	7193.450	1.7281e-07	0.000	0
system_68	RADAU3 (TP14)	4221.020	0.00011001	0.000	0
system_68	RK4 (TP8)	4520.030	1.1678e-06	0.000	0
system_68	RK4 (TP10)	4537.570	6.3222e-08	0.000	0
system_68	RK4 (TP12)	6787.190	4.2029e-08	0.000	0
system_68	RK4 (TP14)	2818.300	0.0010961	0.000	0
system_68	LA3 (TP8)	4905.130	0.0002215	0.000	0
system_68	LA3 (TP10)	4299.380	1.5573e-06	0.000	0
system_68	LA3 (TP12)	5961.800	2.4161e-07	0.000	0
system_68	LA3 (TP14)	1955.360	0.00014596	0.000	0
system_68	LC3 (TP8)	229.800	9.5148e-09	0.000	0
system_68	LC3 (TP10)	1418.170	3.1982e-06	0.000	0
system_68	LC3 (TP12)	2273.150	2.8468e-07	0.000	0
system_68	LC3 (TP14)	1043.310	0.00051387	0.000	0
system_68	GL4 (TP8)	240.720	8.633e-09	0.000	0
system_68	GL4 (TP10)	1338.570	1.3612e-06	0.000	0
system_68	GL4 (TP12)	2110.490	2.5006e-07	0.000	0
system_68	GL4 (TP14)	937.080	0.00015629	0.000	0
system_68	RADAU5 (TP8)	9970.150	0.00093077	0.000	0
system_68	RADAU5 (TP10)	6714.330	4.8697e-06	0.000	0
system_68	RADAU5 (TP12)	8557.670	3.9388e-07	0.000	0
system_68	RADAU5 (TP14)	1451.550	0.00087208	0.000	0
system_68	GL6 (TP8)	7042.980	4.9399e-09	0.000	0
system_68	GL6 (TP10)	16208.030	3.8488e-06	0.000	0
system_68	GL6 (TP12)	19971.920	3.6675e-07	0.000	0
system_68	GL6 (TP14)	1352.320	0.0013063	0.000	0
system_68	Riot				
system_68	Valencia-IVP (0.00025)	4m43.246s	245.19	0.782	245.19
system_68	Valencia-IVP (0.0025)	0m41.930s	58.458	0.662	58.458
system_68	Valencia-IVP (0.025)	0m2.585s	0	0.000	0
system_68	VNODE-LP (15, 1e-14,1e-14)	0m16.237s	1.0906e-12	10.000	4.4537e-12
system_68	VNODE-LP (20, 1e-14,1e-14)	0m18.703s	1.4713e-12	10.000	4.993e-12
system_68	VNODE-LP (25, 1e-14,1e-14)	0m19.106s	1.5481e-12	10.000	8.2576e-12

Table 67: Simulation results of Problem 69

Problems	Methods	c5t	c5w	c6t	c6w
system_69	Vnode-LP (5)	0.000	0	0.000	0
system_69	IMIDPOINT (TP8)	1601.680	838.83	0.000	0
system_69	IMIDPOINT (TP10)	5021.720	0.078049	0.000	0
system_69	IMIDPOINT (TP12)	28747.710	0.3765	0.000	0
system_69	IMIDPOINT (TP14)	58850.500	0.0063293	0.000	0
system_69	HEUN (TP8)	4114.330	8.4293	0.000	0
system_69	HEUN (TP10)	21758.690	0.011272	0.000	0
system_69	HEUN (TP12)	138536.210	0.47451	0.000	0
system_69	HEUN (TP14)	433110.920	0	0.000	0
system_69	KUTTA3 (TP8)	2848.590	2.4669	0.000	0
system_69	KUTTA3 (TP10)	28200.170	0.0049596	0.000	0
system_69	KUTTA3 (TP12)	78883.470	0.031899	0.000	0
system_69	KUTTA3 (TP14)	165102.330	0.0097469	0.000	0
system_69	RADAU3 (TP8)	2574.330	16.895	0.000	0
system_69	RADAU3 (TP10)	29941.210	0.19232	0.000	0
system_69	RADAU3 (TP12)	69474.350	0.072194	0.000	0
system_69	RADAU3 (TP14)	140309.070	0.032299	0.000	0
system_69	RK4 (TP8)	1716.740	1.5394	0.000	0
system_69	RK4 (TP10)	18398.660	0.0041713	0.000	0
system_69	RK4 (TP12)	38739.100	0.013666	0.000	0
system_69	RK4 (TP14)	64041.410	0.0037677	0.000	0
system_69	LA3 (TP8)	1775.820	16.69	0.000	0
system_69	LA3 (TP10)	19211.280	0.29862	0.000	0
system_69	LA3 (TP12)	36025.220	0.17968	0.000	0
system_69	LA3 (TP14)	55523.650	0.079987	0.000	0
system_69	LC3 (TP8)	823.900	16.672	0.000	0
system_69	LC3 (TP10)	9269.220	0.28858	0.000	0
system_69	LC3 (TP12)	18327.410	0.16888	0.000	0
system_69	LC3 (TP14)	29522.190	0.084921	0.000	0
system_69	GL4 (TP8)	831.430	16.553	0.000	0
system_69	GL4 (TP10)	8418.890	0.28082	0.000	0
system_69	GL4 (TP12)	16210.650	0.12582	0.000	0
system_69	GL4 (TP14)	25838.800	0.073167	0.000	0
system_69	RADAU5 (TP8)	2660.590	16.753	0.000	0
system_69	RADAU5 (TP10)	39256.180	0.32571	0.000	0
system_69	RADAU5 (TP12)	63318.240	0.1532	0.000	0
system_69	RADAU5 (TP14)	86155.950	0.15689	0.000	0
system_69	GL6 (TP8)	6668.150	16.976	0.000	0
system_69	GL6 (TP10)	177819.970	0.2444	0.000	0
system_69	GL6 (TP12)	172023.040	0	0.000	0
system_69	GL6 (TP14)	252998.540	0	0.000	0
system_69	Riot				
system_69	Valencia-IVP (0.00025)	1m47.676s	244.44	0.293	244.44
system_69	Valencia-IVP (0.0025)	0m15.459s	38.294	0.270	38.294
system_69	Valencia-IVP (0.025)	0m2.012s	0	0.000	0
system_69	VNODE-LP (15, 1e-14,1e-14)	0m39.846s	0.0030898	10.000	0.0001968
system_69	VNODE-LP (20, 1e-14,1e-14)	0m45.996s	0.0032038	10.000	0.00019549
system_69	VNODE-LP (25, 1e-14,1e-14)	0m50.612s	0.0033121	10.000	0.00020246

Table 68: Simulation results of Problem 71

Problems	Methods	c5t	c5w	c6t	c6w
system_71	Vnode-LP (5)	0.010	0.092027	1.095	0.07505
system_71	IMIDPOINT (TP8)	0.070	0.079595	1.166	0.046017
system_71	IMIDPOINT (TP10)	0.000	0.2	0.000	0.2
system_71	IMIDPOINT (TP12)	0.000	0.2	0.000	0.2
system_71	IMIDPOINT (TP14)	0.000	0.2	0.000	0.2
system_71	HEUN (TP8)	0.130	0.079526	1.115	0.056791
system_71	HEUN (TP10)	0.000	0.2	0.000	0.2
system_71	HEUN (TP12)	0.000	0.2	0.000	0.2
system_71	HEUN (TP14)	0.000	0.2	0.000	0.2
system_71	KUTTA3 (TP8)	0.060	0.079533	1.105	0.058798
system_71	KUTTA3 (TP10)	0.180	0.079527	1.113	0.057013
system_71	KUTTA3 (TP12)	0.000	0.2	0.000	0.2
system_71	KUTTA3 (TP14)	0.000	0.2	0.000	0.2
system_71	RADAU3 (TP8)	0.080	0.079755	1.109	0.058233
system_71	RADAU3 (TP10)	0.230	0.079596	1.114	0.056987
system_71	RADAU3 (TP12)	0.000	0.2	0.000	0.2
system_71	RADAU3 (TP14)	0.000	0.2	0.000	0.2
system_71	RK4 (TP8)	0.180	0.079526	1.109	0.058002
system_71	RK4 (TP10)	0.210	0.079525	1.114	0.056914
system_71	RK4 (TP12)	0.530	0.079525	1.116	0.056539
system_71	RK4 (TP14)	1.230	0.079525	1.116	0.056441
system_71	LA3 (TP8)	0.100	0.079846	1.107	0.058611
system_71	LA3 (TP10)	0.210	0.079648	1.113	0.057127
system_71	LA3 (TP12)	0.530	0.079573	1.116	0.056609
system_71	LA3 (TP14)	1.260	0.079544	1.116	0.056461
system_71	LC3 (TP8)	0.080	0.079952	1.107	0.058653
system_71	LC3 (TP10)	0.190	0.079688	1.113	0.057232
system_71	LC3 (TP12)	0.480	0.079589	1.115	0.056658
system_71	LC3 (TP14)	1.160	0.07955	1.116	0.056467
system_71	GL4 (TP8)	0.070	0.079861	1.109	0.058246
system_71	GL4 (TP10)	0.160	0.079654	1.113	0.057223
system_71	GL4 (TP12)	0.400	0.079575	1.115	0.056652
system_71	GL4 (TP14)	1.010	0.079545	1.116	0.05648
system_71	RADAU5 (TP8)	0.540	0.079839	1.113	0.057313
system_71	RADAU5 (TP10)	0.570	0.079721	1.115	0.056869
system_71	RADAU5 (TP12)	1.170	0.079616	1.116	0.056606
system_71	RADAU5 (TP14)	2.390	0.079567	1.116	0.056453
system_71	GL6 (TP8)	3.080	0.079688	1.116	0.056626
system_71	GL6 (TP10)	3.840	0.079641	1.116	0.05653
system_71	GL6 (TP12)	6.120	0.079603	1.116	0.056467
system_71	GL6 (TP14)	11.230	0.079566	1.117	0.05641
system_71	Riot				
system_71	Valencia-IVP (0.00025)	0m9.028s	0	0.000	0
system_71	Valencia-IVP (0.0025)	0m0.112s	0	0.000	0
system_71	Valencia-IVP (0.025)	0m0.007s	0	0.000	0
system_71	VNODE-LP (15, 1e-14,1e-14)	0m0.028s	0.093606	1.088	0.078438
system_71	VNODE-LP (20, 1e-14,1e-14)	0m0.035s	0.094651	1.085	0.080607
system_71	VNODE-LP (25, 1e-14,1e-14)	0m0.034s	0.095228	1.083	0.081672

Table 69: Simulation results of Problem 72

Problems	Methods	c5t	c5w	c6t	c6w
system_72	Vnode-LP (5)	0.010	1.1005e-13	10.000	2.6596e-13
system_72	IMIDPOINT (TP8)	0.090	2.5317e-08	10.000	1.785e-06
system_72	IMIDPOINT (TP10)	0.430	2.5813e-10	10.000	1.337e-07
system_72	IMIDPOINT (TP12)	1.940	5.002e-11	10.000	9.3606e-09
system_72	IMIDPOINT (TP14)	0.000	0	0.000	0
system_72	HEUN (TP8)	0.190	2.518e-08	10.000	6.3235e-07
system_72	HEUN (TP10)	0.820	2.581e-10	10.000	2.2522e-07
system_72	HEUN (TP12)	0.000	0	0.000	0
system_72	HEUN (TP14)	0.000	0	0.000	0
system_72	KUTTA3 (TP8)	0.090	2.7848e-08	10.000	2.7707e-07
system_72	KUTTA3 (TP10)	0.240	2.9231e-10	10.000	6.0141e-08
system_72	KUTTA3 (TP12)	0.730	4.8405e-11	10.000	9.2659e-09
system_72	KUTTA3 (TP14)	2.420	8.8174e-12	10.000	4.455e-09
system_72	RADAU3 (TP8)	0.100	2.2731e-08	10.000	1.8914e-06
system_72	RADAU3 (TP10)	0.290	2.3815e-10	10.000	1.4907e-07
system_72	RADAU3 (TP12)	0.830	3.9012e-11	10.000	1.0611e-08
system_72	RADAU3 (TP14)	2.610	7.0504e-12	10.000	4.6893e-09
system_72	RK4 (TP8)	0.120	2.2781e-08	10.000	1.3571e-07
system_72	RK4 (TP10)	0.260	2.5792e-10	10.000	5.8997e-08
system_72	RK4 (TP12)	0.630	4.1201e-11	10.000	4.2479e-09
system_72	RK4 (TP14)	1.520	1.8707e-12	10.000	2.5365e-09
system_72	LA3 (TP8)	0.100	1.817e-08	10.000	9.4878e-07
system_72	LA3 (TP10)	0.210	2.0813e-10	10.000	2.2344e-07
system_72	LA3 (TP12)	0.500	3.24e-11	10.000	8.7993e-09
system_72	LA3 (TP14)	1.210	1.41e-12	10.000	3.6375e-09
system_72	LC3 (TP8)	0.100	1.8756e-08	7.013	7.8274e-07
system_72	LC3 (TP10)	0.230	2.0962e-10	10.000	2.3273e-07
system_72	LC3 (TP12)	0.530	3.2798e-11	10.000	9.6025e-09
system_72	LC3 (TP14)	1.310	1.4931e-12	10.000	3.8083e-09
system_72	GL4 (TP8)	0.080	1.8182e-08	7.138	4.6535e-07
system_72	GL4 (TP10)	0.180	2.0829e-10	10.000	1.3208e-07
system_72	GL4 (TP12)	0.430	3.2386e-11	10.000	8.9203e-09
system_72	GL4 (TP14)	1.060	1.3918e-12	10.000	3.6731e-09
system_72	RADAU5 (TP8)	0.230	1.3427e-08	7.987	1.5373e-06
system_72	RADAU5 (TP10)	0.380	1.6911e-10	10.000	1.6649e-07
system_72	RADAU5 (TP12)	0.740	2.5868e-11	10.000	7.7332e-09
system_72	RADAU5 (TP14)	1.490	6.21e-13	10.000	3.19e-09
system_72	GL6 (TP8)	0.900	8.7321e-09	4.779	2.6257e-07
system_72	GL6 (TP10)	1.190	1.2697e-10	9.556	6.8535e-08
system_72	GL6 (TP12)	1.860	1.7536e-11	10.000	5.4844e-09
system_72	GL6 (TP14)	3.190	3.8453e-13	10.000	2.575e-09
system_72	Riot (05, 1e-11)	0m1.648s	6.8875e-11	-0.000	0.0018269
system_72	Riot (10, 1e-11)	0m1.461s	4.1078e-15	-0.000	7.1333e-13
system_72	Riot (15, 1e-11)	0m1.542s	1.4155e-15	-0.000	9.9245e-15
system_72	Valencia-IVP (0.00025)	1m10.076s	0.011379	4.194	999.68
system_72	Valencia-IVP (0.0025)	0m0.692s	0.11581	3.530	992.01
system_72	Valencia-IVP (0.025)	0m0.061s	1.3941	2.750	956.94
system_72	VNODE-LP (15, 1e-14,1e-14)	0m0.014s	9.1593e-16	10.000	1.9629e-16
system_72	VNODE-LP (20, 1e-14,1e-14)	0m0.010s	9.1593e-16	10.000	1.4984e-16
system_72	VNODE-LP (25, 1e-14,1e-14)	0m0.010s	3.8858e-16	10.000	7.7839e-17

Table 70: Simulation results of Problem 73

Problems	Methods	c5t	c5w	c6t	c6w
system_73	Vnode-LP (5)	0.030	0.64903	10.000	0.0001135
system_73	IMIDPOINT (TP8)	0.200	0.68515	10.000	0.25789
system_73	IMIDPOINT (TP10)	0.890	0.65781	10.000	0.029249
system_73	IMIDPOINT (TP12)	0.000	0.5	0.000	0.5
system_73	IMIDPOINT (TP14)	0.000	0.5	0.000	0.5
system_73	HEUN (TP8)	0.360	0.64905	10.000	0.00021517
system_73	HEUN (TP10)	1.530	0.64903	10.000	0.00012856
system_73	HEUN (TP12)	0.000	0.5	0.000	0.5
system_73	HEUN (TP14)	0.000	0.5	0.000	0.5
system_73	KUTTA3 (TP8)	0.140	0.64903	10.000	0.00012449
system_73	KUTTA3 (TP10)	0.430	0.64903	10.000	0.00011586
system_73	KUTTA3 (TP12)	1.070	0.64903	10.000	0.000116
system_73	KUTTA3 (TP14)	3.390	0.64903	10.000	0.000134
system_73	RADAU3 (TP8)	0.160	0.79247	10.000	2.1038
system_73	RADAU3 (TP10)	0.470	0.69088	10.000	0.32749
system_73	RADAU3 (TP12)	1.360	0.66409	10.000	0.095424
system_73	RADAU3 (TP14)	4.250	0.65383	10.000	0.01362
system_73	RK4 (TP8)	0.160	0.64903	10.000	0.00012085
system_73	RK4 (TP10)	0.370	0.64903	10.000	0.00011379
system_73	RK4 (TP12)	0.880	0.64903	10.000	0.00011458
system_73	RK4 (TP14)	2.160	0.64903	10.000	0.00011565
system_73	LA3 (TP8)	0.140	0.93438	10.000	30.316
system_73	LA3 (TP10)	0.310	0.76874	10.000	3.2975
system_73	LA3 (TP12)	0.740	0.69372	10.000	0.88371
system_73	LA3 (TP14)	1.860	0.67134	10.000	0.13979
system_73	LC3 (TP8)	0.150	0.9723	10.000	49.155
system_73	LC3 (TP10)	0.330	0.76962	10.000	1.4984
system_73	LC3 (TP12)	0.790	0.69533	10.000	0.86628
system_73	LC3 (TP14)	1.970	0.67231	10.000	0.084024
system_73	GL4 (TP8)	0.120	0.92757	10.000	23.76
system_73	GL4 (TP10)	0.260	0.78192	10.000	2.792
system_73	GL4 (TP12)	0.620	0.69629	10.000	0.49388
system_73	GL4 (TP14)	1.540	0.67108	10.000	0.12002
system_73	RADAU5 (TP8)	0.300	1.1629	10.000	1194.5
system_73	RADAU5 (TP10)	0.520	0.92648	10.000	15.672
system_73	RADAU5 (TP12)	1.000	0.74608	10.000	1.0732
system_73	RADAU5 (TP14)	2.060	0.70742	10.000	0.99163
system_73	GL6 (TP8)	1.120	1.2428	10.000	2474.6
system_73	GL6 (TP10)	1.550	1.0176	10.000	184.54
system_73	GL6 (TP12)	2.410	0.84517	10.000	12.14
system_73	GL6 (TP14)	4.210	0.75438	10.000	1.0485
system_73	Riot (05, 1e-11)	0m1.815s	0.64903	-0.000	0.00011995
system_73	Riot (10, 1e-11)	0m2.136s	0.64903	-0.000	0.0001136
system_73	Riot (15, 1e-11)	0m3.216s	0.64903	-0.000	0.00011366
system_73	Valencia-IVP (0.00025)	1m1.164s	138.84	1.367	999.11
system_73	Valencia-IVP (0.0025)	0m0.278s	145.77	1.355	994.94
system_73	Valencia-IVP (0.025)	0m0.029s	243.46	1.225	891.88
system_73	VNODE-LP (15, 1e-14,1e-14)	0m0.024s	0.64903	10.000	3.4442
system_73	VNODE-LP (20, 1e-14,1e-14)	0m0.015s	0.64903	10.000	3.4442
system_73	VNODE-LP (25, 1e-14,1e-14)	0m0.016s	0.64903	10.000	3.4442

Table 71: Simulation results of Problem 74

Problems	Methods	c5t	c5w	c6t	c6w
system_74	Vnode-LP (5)	12.790	5.7718e+07	0.785	2.0719e+06
system_74	IMIDPOINT (TP8)	0.360	0.51464	0.785	0.51464
system_74	IMIDPOINT (TP10)	0.000	0	0.000	0
system_74	IMIDPOINT (TP12)	0.000	0	0.000	0
system_74	IMIDPOINT (TP14)	0.000	0	0.000	0
system_74	HEUN (TP8)	0.580	0.2663	0.785	0.2663
system_74	HEUN (TP10)	0.000	0	0.000	0
system_74	HEUN (TP12)	0.000	0	0.000	0
system_74	HEUN (TP14)	0.000	0	0.000	0
system_74	KUTTA3 (TP8)	0.250	9.0527	0.785	9.0527
system_74	KUTTA3 (TP10)	0.610	0.010266	0.785	0.010266
system_74	KUTTA3 (TP12)	1.300	1.2579e-05	0.785	1.2579e-05
system_74	KUTTA3 (TP14)	0.000	0	0.000	0
system_74	RADAU3 (TP8)	0.290	9.8653	0.785	9.8653
system_74	RADAU3 (TP10)	0.730	0.011337	0.785	0.011337
system_74	RADAU3 (TP12)	1.630	1.2551e-05	0.785	1.2551e-05
system_74	RADAU3 (TP14)	4.100	1.7134e-07	0.784	1.7134e-07
system_74	RK4 (TP8)	0.170	90.573	0.785	90.573
system_74	RK4 (TP10)	0.300	0.1744	0.785	0.1744
system_74	RK4 (TP12)	0.600	0.00029484	0.785	0.00029484
system_74	RK4 (TP14)	1.180	1.3169e-06	0.785	1.3169e-06
system_74	LA3 (TP8)	0.200	67.105	0.785	67.105
system_74	LA3 (TP10)	0.380	0.11227	0.785	0.11227
system_74	LA3 (TP12)	0.810	0.00020692	0.785	0.00020692
system_74	LA3 (TP14)	1.600	1.2235e-06	0.785	1.2235e-06
system_74	LC3 (TP8)	0.130	277.25	0.785	277.25
system_74	LC3 (TP10)	0.230	0.78913	0.785	0.78913
system_74	LC3 (TP12)	0.430	0.0020506	0.785	0.0020506
system_74	LC3 (TP14)	0.830	1.5388e-05	0.785	1.5388e-05
system_74	GL4 (TP8)	0.090	353.19	0.785	353.19
system_74	GL4 (TP10)	0.150	0.83716	0.785	0.83716
system_74	GL4 (TP12)	0.280	0.0022302	0.785	0.0022302
system_74	GL4 (TP14)	0.550	1.606e-05	0.785	1.606e-05
system_74	RADAU5 (TP8)	0.260	676.9	0.785	676.9
system_74	RADAU5 (TP10)	0.240	2.7025	0.785	2.7025
system_74	RADAU5 (TP12)	0.390	0.0081109	0.785	0.0081109
system_74	RADAU5 (TP14)	0.670	3.9589e-05	0.785	3.9589e-05
system_74	GL6 (TP8)	0.540	753.37	0.785	753.37
system_74	GL6 (TP10)	0.560	4.6964	0.785	4.6964
system_74	GL6 (TP12)	0.470	0.035826	0.785	0.035826
system_74	GL6 (TP14)	0.740	0.00016134	0.785	0.00016134
system_74	Riot (05, 1e-11)	0m0.791s	0	0.000	0
system_74	Riot (10, 1e-11)	0m0.430s	0	0.000	0
system_74	Riot (15, 1e-11)	0m0.613s	0	0.000	0
system_74	Valencia-IVP (0.00025)	0m9.104s	668.07	0.783	668.07
system_74	Valencia-IVP (0.0025)	0m0.165s	60.454	0.765	60.454
system_74	Valencia-IVP (0.025)	0m0.014s	5.325	0.650	5.325
system_74	VNODE-LP (15, 1e-14,1e-14)	0m0.014s	4992.7	0.015	4992.7
system_74	VNODE-LP (20, 1e-14,1e-14)	0m0.023s	2.2247e-07	0.785	2.2247e-07
system_74	VNODE-LP (25, 1e-14,1e-14)	0m0.010s	16182	0.001	16182