

Notes: ‘n’ represents the dimension of the corresponding problem. ‘Itr’ represents the total number of iterations. ‘NF’ represents the number of the function evaluation. ‘Time’ represents the running time of the algorithm. ‘||g*||’ represents the gradient value for the solution.

Table 1: Numerical results for Group A					
Problem(n)	Case	irhCGP-I-1 Itr/NF/Time/ g*	irhCGP-I-2 Itr/NF/Time/ g*	irhCGP-I-3 Itr/NF/Time/ g*	irhCGP-I-4 Itr/NF/Time/ g*
Problem 1(10000)	I	8/35/0.030/4.02e-07	14/62/0.022/4.93e-07	15/66/0.018/4.43e-07	13/56/0.015/5.15e-07
Problem 1(10000)	II	10/44/0.011/6.50e-08	13/57/0.015/5.22e-07	13/55/0.014/5.43e-07	12/51/0.013/7.50e-07
Problem 1(10000)	III	8/35/0.009/4.77e-08	14/61/0.016/2.61e-07	13/55/0.015/9.20e-07	13/55/0.015/2.04e-07
Problem 1(10000)	IV	9/41/0.011/3.05e-07	15/68/0.018/4.14e-07	15/67/0.018/9.75e-07	14/61/0.016/5.52e-07
Problem 1(10000)	V	8/35/0.009/2.44e-07	14/62/0.016/5.36e-07	14/59/0.015/5.33e-07	13/55/0.014/5.92e-07
Problem 1(50000)	I	8/35/0.046/8.92e-07	15/67/0.081/3.79e-07	15/66/0.084/9.93e-07	14/60/0.074/3.02e-07
Problem 1(50000)	II	9/40/0.049/1.62e-07	13/57/0.069/4.94e-07	12/51/0.064/9.91e-07	12/51/0.064/3.65e-07
Problem 1(50000)	III	9/39/0.050/3.41e-09	14/61/0.075/3.91e-07	14/59/0.074/4.24e-07	13/55/0.072/3.23e-07
Problem 1(50000)	IV	10/45/0.058/4.87e-08	15/68/0.089/8.25e-07	16/72/0.094/8.53e-07	15/65/0.083/2.03e-07
Problem 1(50000)	V	8/35/0.046/5.28e-07	15/66/0.079/2.09e-07	15/63/0.078/3.49e-07	14/59/0.075/2.45e-07
Problem 1(100000)	I	9/39/0.093/7.94e-08	15/66/0.161/3.13e-07	16/70/0.168/4.70e-07	14/60/0.143/3.70e-07
Problem 1(100000)	II	7/31/0.076/7.82e-07	13/57/0.139/5.27e-07	13/55/0.126/3.59e-07	12/51/0.126/3.73e-07
Problem 1(100000)	III	9/39/0.096/1.08e-08	14/61/0.145/4.45e-07	14/59/0.141/4.65e-07	13/55/0.136/3.66e-07
Problem 1(100000)	IV	10/45/0.123/7.10e-08	16/72/0.176/2.56e-07	17/76/0.185/4.09e-07	15/65/0.160/2.69e-07
Problem 1(100000)	V	8/35/0.089/8.33e-07	15/66/0.160/2.84e-07	15/63/0.149/4.41e-07	14/59/0.145/3.14e-07
Problem 2(10000)	I	14/58/0.015/6.60e-07	16/66/0.019/4.10e-07	16/66/0.020/2.56e-07	14/58/0.018/8.93e-07
Problem 2(10000)	II	14/59/0.019/1.50e-07	16/67/0.020/2.47e-07	15/63/0.020/6.60e-07	15/63/0.020/4.59e-07
Problem 2(10000)	III	13/55/0.017/5.20e-07	14/59/0.019/3.29e-07	13/55/0.017/8.25e-07	16/67/0.021/2.34e-07
Problem 2(10000)	IV	14/61/0.020/2.10e-07	15/65/0.021/8.80e-07	15/65/0.020/5.83e-07	16/69/0.022/1.76e-07
Problem 2(10000)	V	15/62/0.020/6.37e-07	17/71/0.023/2.78e-07	16/66/0.022/8.84e-07	16/66/0.021/9.44e-07
Problem 2(50000)	I	15/62/0.101/5.22e-07	15/62/0.106/6.67e-07	16/66/0.116/2.54e-07	18/74/0.127/2.33e-07
Problem 2(50000)	II	15/63/0.099/6.11e-07	16/67/0.105/6.83e-07	17/71/0.111/3.86e-07	18/75/0.117/1.98e-07
Problem 2(50000)	III	16/67/0.105/1.68e-07	17/71/0.111/5.43e-07	17/71/0.112/4.06e-07	17/71/0.111/3.80e-07
Problem 2(50000)	IV	15/65/0.104/6.02e-07	16/69/0.109/9.63e-07	17/73/0.116/4.24e-07	17/73/0.116/9.00e-07
Problem 2(50000)	V	15/62/0.100/7.82e-07	16/66/0.107/3.71e-07	15/62/0.101/9.09e-07	17/70/0.112/4.77e-07
Problem 2(100000)	I	16/66/0.209/9.02e-07	18/74/0.231/5.88e-07	18/74/0.220/4.56e-07	18/74/0.220/9.02e-07
Problem 2(100000)	II	17/71/0.216/2.61e-07	18/75/0.236/4.76e-07	18/75/0.233/3.01e-07	18/75/0.230/2.94e-07
Problem 2(100000)	III	15/63/0.190/6.68e-07	17/71/0.215/4.90e-07	16/67/0.214/7.23e-07	17/71/0.217/3.09e-07
Problem 2(100000)	IV	17/73/0.228/2.48e-07	18/77/0.247/4.47e-07	18/77/0.243/2.82e-07	17/73/0.224/2.04e-07
Problem 2(100000)	V	16/66/0.200/5.64e-07	19/79/0.242/2.16e-07	18/74/0.218/4.53e-07	17/70/0.207/3.23e-07
Problem 3(10000)	I	8/34/0.007/5.42e-08	13/56/0.007/5.56e-07	13/54/0.007/7.55e-07	12/50/0.007/2.25e-07
Problem 3(10000)	II	9/38/0.006/7.43e-07	13/55/0.008/8.63e-07	14/58/0.009/4.15e-07	12/50/0.007/3.48e-07
Problem 3(10000)	III	10/43/0.006/6.78e-07	13/55/0.008/4.73e-07	13/54/0.008/8.45e-07	13/54/0.010/5.31e-07
Problem 3(10000)	IV	11/47/0.010/4.16e-07	13/55/0.012/4.46e-07	13/54/0.012/7.15e-07	14/58/0.013/2.91e-07
Problem 3(10000)	V	8/34/0.008/3.64e-07	8/34/0.008/8.35e-08	8/34/0.008/8.48e-08	10/42/0.010/6.77e-07
Problem 3(50000)	I	8/34/0.040/1.98e-07	14/60/0.063/2.92e-07	14/58/0.061/3.17e-07	12/50/0.055/4.19e-07
Problem 3(50000)	II	8/34/0.037/6.96e-07	13/55/0.058/9.91e-07	14/58/0.060/5.09e-07	11/46/0.051/9.99e-07
Problem 3(50000)	III	11/47/0.050/4.24e-07	13/55/0.059/5.03e-07	13/54/0.055/4.04e-07	13/54/0.057/5.80e-07
Problem 3(50000)	IV	12/51/0.052/2.71e-07	13/55/0.056/4.48e-07	14/58/0.058/2.89e-07	14/58/0.058/3.12e-07
Problem 3(50000)	V	9/38/0.039/3.53e-08	8/34/0.037/5.09e-07	8/34/0.037/5.11e-07	10/42/0.043/7.15e-07
Problem 3(100000)	I	9/38/0.082/7.01e-07	14/60/0.126/3.32e-07	14/58/0.121/3.62e-07	12/50/0.108/4.30e-07
Problem 3(100000)	II	9/38/0.084/6.52e-07	14/60/0.123/4.18e-07	14/58/0.122/6.14e-07	11/46/0.100/9.47e-07
Problem 3(100000)	III	10/42/0.090/5.87e-07	13/55/0.118/7.82e-07	13/54/0.109/6.10e-07	13/54/0.114/6.82e-07
Problem 3(100000)	IV	11/46/0.096/2.98e-07	13/55/0.114/5.11e-07	14/58/0.119/4.15e-07	14/58/0.115/3.72e-07
Problem 3(100000)	V	9/38/0.077/5.69e-08	9/38/0.075/1.51e-07	9/38/0.075/1.57e-07	10/42/0.087/7.17e-07
Problem 4(10000)	I	17/78/0.028/4.55e-07	16/74/0.026/7.30e-07	16/74/0.026/7.31e-07	17/78/0.028/3.99e-07
Problem 4(10000)	II	15/69/0.024/8.54e-07	15/70/0.024/6.23e-07	15/70/0.024/6.79e-07	15/68/0.026/8.38e-07
Problem 4(10000)	III	16/73/0.025/5.71e-07	15/69/0.024/7.66e-07	15/69/0.024/7.62e-07	16/73/0.026/6.34e-07
Problem 4(10000)	IV	16/73/0.025/8.84e-07	16/73/0.026/4.98e-07	16/73/0.026/4.98e-07	16/73/0.026/6.79e-07
Problem 4(10000)	V	17/77/0.028/5.20e-07	16/74/0.025/6.43e-07	16/74/0.026/6.37e-07	16/73/0.025/9.11e-07
Problem 4(50000)	I	17/78/0.140/6.59e-07	17/78/0.138/3.33e-07	17/78/0.140/3.44e-07	17/78/0.137/6.04e-07
Problem 4(50000)	II	16/72/0.131/4.49e-07	15/68/0.124/6.29e-07	15/68/0.123/4.90e-07	15/66/0.119/7.28e-07
Problem 4(50000)	III	16/73/0.403/5.30e-07	15/69/0.375/6.18e-07	15/69/0.364/6.72e-07	16/73/0.382/5.29e-07
Problem 4(50000)	IV	16/73/0.387/6.38e-07	16/73/0.376/5.08e-07	16/73/0.386/5.06e-07	17/78/0.404/4.94e-07
Problem 4(50000)	V	17/78/0.404/5.72e-07	17/78/0.404/4.84e-07	17/78/0.400/4.37e-07	17/77/0.347/4.21e-07
Problem 4(100000)	I	18/83/0.762/5.31e-07	17/78/0.710/7.18e-07	17/78/0.696/7.87e-07	18/81/0.805/4.25e-07
Problem 4(100000)	II	16/74/0.710/4.58e-07	15/68/0.617/6.09e-07	15/68/0.540/6.79e-07	15/68/0.521/8.83e-07
Problem 4(100000)	III	16/73/0.615/4.64e-07	15/69/0.638/8.59e-07	15/69/0.614/9.59e-07	16/73/0.673/6.23e-07
Problem 4(100000)	IV	16/73/0.653/7.15e-07	16/73/0.666/5.13e-07	16/73/0.698/5.11e-07	16/73/0.667/6.50e-07
Problem 4(100000)	V	18/82/0.739/6.40e-07	17/77/0.693/7.47e-07	17/78/0.699/6.86e-07	18/82/0.791/7.15e-07
Problem 5(10000)	I	10/49/0.044/7.30e-07	13/65/0.032/3.31e-07	14/69/0.024/2.36e-07	13/64/0.022/9.20e-07
Problem 5(10000)	II	12/60/0.019/1.11e-07	16/82/0.026/5.38e-07	17/87/0.028/2.80e-07	14/71/0.024/8.28e-07
Problem 5(10000)	III	12/59/0.020/6.31e-07	15/77/0.024/2.68e-07	14/71/0.024/3.82e-07	13/66/0.022/6.53e-07
Problem 5(10000)	IV	10/51/0.018/8.66e-07	13/65/0.025/4.26e-07	13/65/0.021/6.83e-07	13/64/0.021/5.56e-07
Problem 5(10000)	V	12/59/0.019/8.32e-07	15/77/0.025/2.63e-07	15/78/0.026/5.55e-07	14/71/0.024/3.77e-07
Problem 5(50000)	I	10/49/0.076/8.11e-07	14/70/0.114/7.75e-07	13/65/0.106/7.51e-07	13/65/0.112/4.89e-07
Problem 5(50000)	II	11/55/0.101/7.73e-07	17/86/0.170/5.38e-07	16/83/0.296/5.81e-07	15/76/0.281/1.56e-07
Problem 5(50000)	III	12/60/0.214/8.66e-08	15/76/0.263/8.26e-07	15/77/0.266/5.74e-07	14/71/0.268/7.18e-07
Problem 5(50000)	IV	11/56/0.251/5.79e-07	14/69/0.260/5.69e-07	14/70/0.242/9.99e-07	13/65/0.224/4.89e-07
Problem 5(50000)	V	11/56/0.105/2.32e-07	15/79/0.132/7.85e-07	16/84/0.130/6.39e-07	15/76/0.114/8.33e-07
Problem 5(100000)	I	10/50/0.251/8.32e-07	15/75/0.478/5.15e-07	14/69/0.489/8.65e-07	13/65/0.461/2.14e-07
Problem 5(100000)	II	10/51/0.328/8.24e-07	15/78/0.521/8.18e-07	17/88/0.651/8.80e-07	15/76/0.519/2.03e-07
Problem 5(100000)	III	11/56/0.357/8.29e-07	16/81/0.582/7.80e-07	16/81/0.571/4.91e-07	14/71/0.482/1.70e-07
Problem 5(100000)	IV	11/55/0.383/4.29e-07	13/65/0.493/6.51e-07	14/70/0.448/6.16e-07	13/64/0.343/5.59e-07
Problem 5(100000)	V	10/51/0.432/7.74e-07	16/83/0.542/2.02e-07	16/83/0.511/3.07e-07	15/76/0.498/2.15e-07
Problem 6(10000)	I	11/66/0.033/5.91e-07	9/52/0.012/5.25e-07	9/52/0.011/9.82e-07	9/53/0.011/9.42e-07
Problem 6(10000)	II	12/70/0.015/3.46e-07	11/55/0.013/1.15e-07	11/59/0.012/4.09e-07	11/54/0.012/5.31e-07
Problem 6(10000)	III	13/76/0.020/4.56e-07	12/59/0.016/8.88e-07	12/63/0.017/9.41e-07	10/54/0.015/5.99e-07
Problem 6(10000)	IV	12/71/0.020/9.33e-07	12/59/0.017/7.34e-07	10/53/0.015/8.64e-07	9/48/0.014/6.86e-07
Problem 6(10000)	V	12/71/0.019/4.62e-07	12/62/0.017/3.93e-07	11/56/0.017/1.00e-06	11/58/0.016/4.29e-07
Problem 6(50000)	I	12/71/0.082/3.83e-07	10/56/0.065/4.92e-07	11/60/0.069/6.62e-07	10/58/0.064/9.72e-07
Problem 6(50000)	II	12/70/0.081/6.33e-07	11/55/0.069/1.77e-07	12/65/0.079/9.09e-07	9/47/0.059/1.44e-07
Problem 6(50000)	III	13/76/0.087/8.17e-07	13/64/0.074/6.28e-07	12/64/0.077/4.89e-07	9/48/0.060/6.99e-07
Problem 6(50000)	IV	13/76/0.089/4.94e-07	12/60/0.073/9.00e-08	11/59/0.073/8.57e-07	11/59/0.071/7.06e-07
Problem 6(50000)	V	12/71/0.082/9.49e-07	11/58/0.069/9.64e-07	11/58/0.069/8.43e-07	10/53/0.063/9.54e-07
Problem 6(100000)	I	12/71/0.240/4.34e-07	10/55/0.238/6.27e-07	10/54/0.282/5.84e-07	8/48/0.260/4.15e-07
Problem 6(100000)	II	12/70/0.343/8.82e-07	11/55/0.277/1.68e-07	11/60/0.276/6.83e-07	11/59/0.366/6.96e-07
Problem 6(100000)	III	13/77/0.348/5.28e-07	13/64/0.325/9.06e-07	11/57/0.298/3.03e-07	11/59/0.277/3.36e-07
Problem 6(100000)	IV	13/76/0.319/5.96e-07	12/60/0.283/1.07e-07	13/69/0.341/3.55e-07	9/48/0.226/8.75e-07
Problem 6(100000)	V	11/60/0.225/1.72e-07	11/56/0.257/9.28e-07	12/61/0.309/3.76e-07	10/49/0.233/4.85e-07
Problem 7(10000)	I	8/34/0.034/9.18e-07	13/56/0.037/3.81e-07	14/59/0.037/5.37e-07	13/54/0.035/3.04e-07
Problem 7(10000)	II	9/39/0.024/1.43e-07	13/56/0.035/3.59e-07	14/59/0.036/5.37e-07	13/54/0.035/3.41e-07
Problem 7(10000)	III	9/39/0.025/1.51e-07	13/56/0.034/3.54e-07	14/58/0.037/2.52e-07	13/54/0.032/3.58e-07
Problem 7(10000)	IV	9/38/0.018/2.22e-07	10/43/0.020/3.44e-07	10/42/0.020/9.90e-07	8/34/0.016/8.27e-07
Problem 7(10000)	V	9/38/0.018/1.35e-07	13/56/0.026/3.97e-07	14/59/0.028/5.13e-07	12/50/0.023/9.95e-07
Problem 7(50000)	I	7/30/0.070/2.52e-07	13/56/0.163/4.60e-07	13/54/0.251/4.28e-07	12/50/0.210/4.41e-07
Problem 7(50000)	II	8/34/0.087/4.05e-07	13/56/0.227/4.05e-07	14/59/0.285/5.88e-07	12/50/0.235/8.64e-07

Table 2: Numerical results for Group B

Problem(n)	Case	irhCGP-II-1	irhCGP-II-2	irhCGP-II-3	irhCGP-II-4
		Iter/NF/Time/ $\ g^*\ $	Iter/NF/Time/ $\ g^*\ $	Iter/NF/Time/ $\ g^*\ $	Iter/NF/Time/ $\ g^*\ $
Problem 1(10000)	I	8/35/0.030/4.02e-07	14/62/0.022/4.93e-07	15/66/0.018/4.43e-07	13/56/0.015/5.15e-07
Problem 1(10000)	II	10/44/0.011/6.50e-08	13/57/0.015/5.22e-07	13/55/0.014/5.43e-07	12/51/0.013/7.50e-07
Problem 1(10000)	III	8/35/0.009/4.77e-08	14/61/0.016/2.61e-07	13/55/0.015/9.20e-07	13/55/0.015/2.04e-07
Problem 1(10000)	IV	9/41/0.011/3.05e-07	15/68/0.018/4.14e-07	15/67/0.018/9.75e-07	14/61/0.016/5.52e-07
Problem 1(10000)	V	8/35/0.009/2.44e-07	14/62/0.016/5.36e-07	14/59/0.015/5.33e-07	13/55/0.014/5.92e-07
Problem 1(50000)	I	8/35/0.046/8.92e-07	15/67/0.081/3.79e-07	15/66/0.084/9.93e-07	14/60/0.074/3.02e-07
Problem 1(50000)	II	9/40/0.049/1.62e-07	13/57/0.069/4.94e-07	12/51/0.064/9.91e-07	12/51/0.064/3.65e-07
Problem 1(50000)	III	9/39/0.050/3.41e-09	14/61/0.075/3.91e-07	14/59/0.074/4.24e-07	13/55/0.072/3.23e-07
Problem 1(50000)	IV	10/45/0.058/4.87e-08	15/68/0.089/8.25e-07	16/72/0.094/8.53e-07	15/65/0.083/2.03e-07
Problem 1(50000)	V	8/35/0.046/5.28e-07	15/66/0.079/2.09e-07	15/63/0.078/3.49e-07	14/59/0.075/2.45e-07
Problem 1(100000)	I	9/39/0.093/7.94e-08	15/66/0.161/3.13e-07	16/70/0.168/4.70e-07	14/60/0.143/3.70e-07
Problem 1(100000)	II	7/31/0.076/7.82e-07	13/57/0.139/5.27e-07	13/55/0.126/3.59e-07	12/51/0.126/3.73e-07
Problem 1(100000)	III	9/39/0.096/1.08e-08	14/61/0.145/4.45e-07	14/59/0.141/4.65e-07	13/55/0.136/3.66e-07
Problem 1(100000)	IV	10/45/0.123/7.10e-08	16/72/0.176/2.56e-07	17/76/0.185/4.09e-07	15/65/0.160/2.69e-07
Problem 1(100000)	V	8/35/0.089/8.33e-07	15/66/0.160/2.84e-07	15/63/0.149/4.41e-07	14/59/0.145/3.14e-07
Problem 2(10000)	I	14/58/0.015/6.60e-07	16/66/0.019/4.10e-07	16/66/0.020/2.56e-07	14/58/0.018/8.93e-07
Problem 2(10000)	II	14/59/0.019/1.50e-07	16/67/0.020/2.47e-07	15/63/0.020/6.60e-07	15/63/0.020/4.59e-07
Problem 2(10000)	III	13/55/0.017/5.20e-07	14/59/0.019/3.29e-07	13/55/0.017/8.25e-07	16/67/0.021/2.34e-07
Problem 2(10000)	IV	14/61/0.020/2.10e-07	15/65/0.021/8.80e-07	15/65/0.020/5.83e-07	16/69/0.022/1.76e-07
Problem 2(10000)	V	15/62/0.020/6.37e-07	17/71/0.023/2.78e-07	16/66/0.022/8.84e-07	16/66/0.021/9.44e-07
Problem 2(50000)	I	15/62/0.101/5.22e-07	15/62/0.106/6.67e-07	16/66/0.116/2.54e-07	18/74/0.127/2.33e-07
Problem 2(50000)	II	15/63/0.099/6.11e-07	16/67/0.105/6.83e-07	17/71/0.111/3.86e-07	18/75/0.117/1.98e-07
Problem 2(50000)	III	16/67/0.105/1.68e-07	17/71/0.111/5.43e-07	17/71/0.112/4.06e-07	17/71/0.111/3.80e-07
Problem 2(50000)	IV	15/65/0.104/6.02e-07	16/69/0.109/9.63e-07	17/73/0.116/4.24e-07	17/73/0.116/9.00e-07
Problem 2(50000)	V	15/62/0.100/7.82e-07	16/66/0.107/3.71e-07	15/62/0.101/9.09e-07	17/70/0.112/4.77e-07
Problem 2(100000)	I	16/66/0.209/9.02e-07	18/74/0.231/5.88e-07	18/74/0.220/4.56e-07	18/74/0.220/9.02e-07
Problem 2(100000)	II	17/71/0.216/2.61e-07	18/75/0.236/4.76e-07	18/75/0.233/3.01e-07	18/75/0.230/2.94e-07
Problem 2(100000)	III	15/63/0.190/6.68e-07	17/71/0.215/4.90e-07	16/67/0.214/7.23e-07	17/71/0.217/3.09e-07
Problem 2(100000)	IV	17/73/0.228/2.48e-07	18/77/0.247/4.47e-07	18/77/0.243/2.82e-07	17/73/0.224/2.04e-07
Problem 2(100000)	V	16/66/0.200/5.64e-07	19/79/0.242/2.16e-07	18/74/0.218/4.53e-07	17/70/0.207/3.23e-07
Problem 3(10000)	I	8/34/0.007/5.42e-08	13/56/0.007/5.56e-07	13/54/0.007/7.55e-07	12/50/0.007/2.25e-07
Problem 3(10000)	II	9/38/0.006/7.43e-07	13/55/0.008/8.63e-07	14/58/0.009/4.15e-07	12/50/0.007/3.48e-07
Problem 3(10000)	III	10/43/0.006/6.78e-07	13/55/0.008/4.73e-07	13/54/0.008/8.45e-07	13/54/0.010/5.31e-07
Problem 3(10000)	IV	11/47/0.010/4.16e-07	13/55/0.012/4.46e-07	13/54/0.012/7.15e-07	14/58/0.013/2.91e-07
Problem 3(10000)	V	8/34/0.008/3.64e-07	8/34/0.008/8.35e-08	8/34/0.008/8.48e-08	10/42/0.010/6.77e-07
Problem 3(50000)	I	8/34/0.040/1.98e-07	14/60/0.063/2.92e-07	14/58/0.061/3.17e-07	12/50/0.055/4.19e-07
Problem 3(50000)	II	8/34/0.037/6.96e-07	13/55/0.058/9.91e-07	14/58/0.060/5.09e-07	11/46/0.051/9.99e-07
Problem 3(50000)	III	11/47/0.050/4.24e-07	13/55/0.059/5.03e-07	13/54/0.055/4.04e-07	13/54/0.057/5.80e-07
Problem 3(50000)	IV	12/51/0.052/2.71e-07	13/55/0.056/4.48e-07	14/58/0.058/2.89e-07	14/58/0.058/3.12e-07
Problem 3(50000)	V	9/38/0.039/3.53e-08	8/34/0.037/5.09e-07	8/34/0.037/5.11e-07	10/42/0.043/7.15e-07
Problem 3(100000)	I	9/38/0.082/7.01e-07	14/60/0.126/3.32e-07	14/58/0.121/3.62e-07	12/50/0.108/4.30e-07
Problem 3(100000)	II	9/38/0.084/6.52e-07	14/60/0.123/4.18e-07	14/58/0.122/6.14e-07	11/46/0.100/9.47e-07
Problem 3(100000)	III	10/42/0.090/5.87e-07	13/55/0.118/7.82e-07	13/54/0.109/6.10e-07	13/54/0.114/6.82e-07
Problem 3(100000)	IV	11/46/0.096/2.98e-07	13/55/0.114/5.11e-07	14/58/0.119/4.15e-07	14/58/0.115/3.72e-07
Problem 3(100000)	V	9/38/0.077/5.69e-08	9/38/0.075/1.51e-07	9/38/0.075/1.57e-07	10/42/0.087/7.17e-07
Problem 4(10000)	I	17/78/0.028/4.55e-07	16/74/0.026/7.30e-07	16/74/0.026/7.31e-07	17/78/0.028/3.99e-07
Problem 4(10000)	II	15/69/0.024/8.54e-07	15/70/0.024/6.23e-07	15/70/0.024/6.79e-07	15/68/0.026/8.38e-07
Problem 4(10000)	III	16/73/0.025/5.71e-07	15/69/0.024/7.66e-07	15/69/0.024/7.62e-07	16/73/0.026/6.34e-07
Problem 4(10000)	IV	16/73/0.025/8.84e-07	16/73/0.026/4.98e-07	16/73/0.026/4.98e-07	16/73/0.026/6.79e-07
Problem 4(10000)	V	17/77/0.028/5.20e-07	16/74/0.025/6.43e-07	16/74/0.026/6.37e-07	16/73/0.025/9.11e-07
Problem 4(50000)	I	17/78/0.140/6.59e-07	17/78/0.138/3.33e-07	17/78/0.140/3.44e-07	17/78/0.137/6.04e-07
Problem 4(50000)	II	16/72/0.131/4.49e-07	15/68/0.124/6.29e-07	15/68/0.123/4.90e-07	15/66/0.119/7.28e-07
Problem 4(50000)	III	16/73/0.403/5.30e-07	15/69/0.375/6.18e-07	15/69/0.364/6.72e-07	16/73/0.382/5.29e-07
Problem 4(50000)	IV	16/73/0.387/6.38e-07	16/73/0.376/5.08e-07	16/73/0.386/5.06e-07	17/78/0.404/4.94e-07
Problem 4(50000)	V	17/78/0.404/5.72e-07	17/78/0.404/4.84e-07	17/78/0.400/4.37e-07	17/77/0.347/4.21e-07
Problem 4(100000)	I	18/83/0.762/5.31e-07	17/78/0.710/7.18e-07	17/78/0.696/7.87e-07	18/81/0.805/4.25e-07
Problem 4(100000)	II	16/74/0.710/4.58e-07	15/68/0.617/6.09e-07	15/68/0.540/6.79e-07	15/68/0.521/8.83e-07
Problem 4(100000)	III	16/73/0.615/4.64e-07	15/69/0.638/8.59e-07	15/69/0.614/9.59e-07	16/73/0.673/6.23e-07
Problem 4(100000)	IV	16/73/0.653/7.15e-07	16/73/0.666/5.13e-07	16/73/0.698/5.11e-07	16/73/0.667/6.50e-07
Problem 4(100000)	V	18/82/0.739/6.40e-07	17/77/0.693/7.47e-07	17/78/0.699/6.86e-07	18/82/0.791/7.15e-07
Problem 5(10000)	I	10/49/0.044/7.30e-07	13/65/0.032/3.31e-07	14/69/0.024/2.36e-07	13/64/0.022/9.20e-07
Problem 5(10000)	II	12/60/0.019/1.11e-07	16/82/0.026/5.38e-07	17/87/0.028/2.80e-07	14/71/0.024/8.28e-07
Problem 5(10000)	III	12/59/0.020/6.31e-07	15/77/0.024/2.68e-07	14/71/0.024/3.82e-07	13/66/0.022/6.53e-07
Problem 5(10000)	IV	10/51/0.018/8.66e-07	13/65/0.025/4.26e-07	13/65/0.021/6.83e-07	13/64/0.021/5.56e-07
Problem 5(10000)	V	12/59/0.019/8.32e-07	15/77/0.025/2.63e-07	15/78/0.026/5.55e-07	14/71/0.024/3.77e-07
Problem 5(50000)	I	10/49/0.076/8.11e-07	14/70/0.114/7.75e-07	13/65/0.106/7.51e-07	13/65/0.112/4.89e-07
Problem 5(50000)	II	11/55/0.101/7.73e-07	17/86/0.170/5.38e-07	16/83/0.296/5.81e-07	15/76/0.281/1.56e-07
Problem 5(50000)	III	12/60/0.214/8.66e-08	15/76/0.263/8.26e-07	15/77/0.266/5.74e-07	14/71/0.268/7.18e-07
Problem 5(50000)	IV	11/56/0.251/5.79e-07	14/69/0.260/5.69e-07	14/70/0.242/9.99e-07	13/65/0.224/4.89e-07
Problem 5(50000)	V	11/56/0.105/2.32e-07	15/79/0.132/7.85e-07	16/84/0.130/6.39e-07	15/76/0.114/8.33e-07
Problem 5(100000)	I	10/50/0.251/8.32e-07	15/75/0.478/5.15e-07	14/69/0.489/8.65e-07	13/65/0.461/2.14e-07
Problem 5(100000)	II	10/51/0.328/8.24e-07	15/78/0.521/8.18e-07	17/88/0.651/8.80e-07	15/76/0.519/2.03e-07
Problem 5(100000)	III	11/56/0.357/8.29e-07	16/81/0.582/7.80e-07	16/81/0.571/4.91e-07	14/71/0.482/1.70e-07
Problem 5(100000)	IV	11/55/0.383/4.29e-07	13/65/0.493/6.51e-07	14/70/0.448/6.16e-07	13/64/0.343/5.59e-07
Problem 5(100000)	V	10/51/0.432/7.74e-07	16/83/0.542/2.02e-07	16/83/0.511/3.07e-07	15/76/0.498/2.15e-07
Problem 6(10000)	I	11/66/0.033/5.91e-07	9/52/0.012/5.25e-07	9/52/0.011/9.82e-07	9/53/0.011/9.42e-07
Problem 6(10000)	II	12/70/0.015/3.46e-07	11/55/0.013/1.15e-07	11/59/0.012/4.09e-07	11/54/0.012/5.31e-07
Problem 6(10000)	III	13/76/0.020/4.56e-07	12/59/0.016/8.88e-07	12/63/0.017/9.41e-07	10/54/0.015/5.99e-07
Problem 6(10000)	IV	12/71/0.020/9.33e-07	12/59/0.017/7.34e-07	10/53/0.015/8.64e-07	9/48/0.014/6.86e-07
Problem 6(10000)	V	12/71/0.019/4.62e-07	12/62/0.017/3.93e-07	11/56/0.017/1.00e-06	11/58/0.016/4.29e-07
Problem 6(50000)	I	12/71/0.082/3.83e-07	10/56/0.065/4.92e-07	11/60/0.069/6.62e-07	10/58/0.064/9.72e-07
Problem 6(50000)	II	12/70/0.081/6.33e-07	11/55/0.069/1.77e-07	12/65/0.079/9.09e-07	9/47/0.059/1.44e-07
Problem 6(50000)	III	13/76/0.087/8.17e-07	13/64/0.074/6.28e-07	12/64/0.077/4.89e-07	9/48/0.060/6.99e-07
Problem 6(50000)	IV	13/76/0.089/4.94e-07	12/60/0.073/9.00e-08	11/59/0.073/8.57e-07	11/59/0.071/7.06e-07
Problem 6(50000)	V	12/71/0.082/9.49e-07	11/58/0.069/9.64e-07	11/58/0.069/8.43e-07	10/53/0.063/9.54e-07
Problem 6(100000)	I	12/71/0.240/4.34e-07	10/55/0.238/6.27e-07	10/54/0.282/5.84e-07	8/48/0.260/4.15e-07
Problem 6(100000)	II	12/70/0.343/8.82e-07	11/55/0.277/1.68e-07	11/60/0.276/6.83e-07	11/59/0.366/6.96e-07
Problem 6(100000)	III	13/77/0.348/5.28e-07	13/64/0.325/9.06e-07	11/57/0.298/3.03e-07	11/59/0.277/3.36e-07
Problem 6(100000)	IV	13/76/0.319/5.96e-07	12/60/0.283/1.07e-07	13/69/0.341/3.55e-07	9/48/0.226/8.75e-07
Problem 6(100000)	V	11/60/0.225/1.72e-07	11/56/0.257/9.28e-07	12/61/0.309/3.76e-07	10/49/0.233/4.85e-07
Problem 7(10000)	I	8/34/0.034/9.18e-07	13/56/0.037/3.81e-07	14/59/0.037/5.37e-07	13/54/0.035/3.04e-07
Problem 7(10000)	II	9/39/0.024/1.43e-07	13/56/0.035/3.59e-07	14/59/0.036/5.37e-07	13/54/0.035/3.41e-07
Problem 7(10000)	III	9/39/0.025/1.51e-07	13/56/0.034/3.54e-07	14/58/0.037/2.52e-07	13/54/0.032/3.58e-07
Problem 7(10000)	IV	9/38/0.018/2.22e-07	10/43/0.020/3.44e-07	10/42/0.020/9.90e-07	8/34/0.016/8.27e-07
Problem 7(10000)	V	9/38/0.018/1.35e-07	13/56/0.026/3.97e-07	14/59/0.028/5.13e-07	12/50/0.023/9.95e-07
Problem 7(50000)	I	7/30/0.070/2.52e-07	13/56/0.163/4.60e-07	13/54/0.251/4.28e-07	12/50/0.210/4.41e-07
Problem 7(50000)	II	8/34/0.087/4.05e-07	13/56/0.227/4.05e-07	14/59/0.285/5.88e-07	12/50/0.235/8.64e-07
Problem 7(50000)	III	9/39/0.194/1.17e-07	13/56/0		

Table 3: Numerical results for Group C

Problem(n)	Case	irhCGP-I-1 Itr/NF/Time/ g*	irhCGP-II-2 Itr/NF/Time/ g*	irhCGP-I-NR Itr/NF/Time/ g*	irhCGP-II-NR Itr/NF/Time/ g*	MITTCGP Itr/NF/Time/ g*	IM3TFR2 Itr/NF/Time/ g*
Problem 1(10000)	I	8/35/0.030/4.02e-07	9/39/0.011/7.13e-08	11/48/0.021/8.15e-07	10/43/0.014/1.77e-07	11/47/0.022/1.04e-06	14/66/0.021/6.75e-07
Problem 1(10000)	II	10/44/0.011/6.50e-08	7/31/0.008/9.35e-07	11/47/0.013/3.61e-07	9/39/0.012/7.55e-07	15/61/0.023/7.76e-07	15/76/0.021/2.64e-07
Problem 1(10000)	III	8/35/0.009/4.77e-08	8/35/0.009/7.60e-08	11/47/0.014/3.16e-07	10/43/0.011/2.20e-07	13/56/0.015/1.26e-06	15/72/0.019/3.00e-08
Problem 1(10000)	IV	9/41/0.011/3.05e-07	9/41/0.011/7.78e-07	11/49/0.014/3.50e-07	10/45/0.013/7.81e-07	16/66/0.019/7.22e-07	10/47/0.012/7.03e-09
Problem 1(10000)	V	8/35/0.009/2.44e-07	9/39/0.010/5.58e-08	10/43/0.011/9.08e-07	10/43/0.011/2.00e-07	12/51/0.015/1.43e-06	16/69/0.017/6.25e-07
Problem 1(50000)	I	8/35/0.046/8.92e-07	9/39/0.047/1.72e-07	12/52/0.065/3.27e-07	10/43/0.053/3.95e-07	13/53/0.065/6.55e-07	14/69/0.082/7.14e-07
Problem 1(50000)	II	9/40/0.049/1.62e-07	8/35/0.044/7.23e-07	11/47/0.058/8.06e-07	10/43/0.053/2.48e-07	16/65/0.084/3.34e-07	10/45/0.057/2.49e-07
Problem 1(50000)	III	9/39/0.050/3.41e-09	8/35/0.045/4.70e-07	11/47/0.058/7.06e-07	10/43/0.054/4.91e-07	14/58/0.075/7.14e-07	16/80/0.098/1.83e-07
Problem 1(50000)	IV	10/45/0.058/4.87e-08	10/45/0.059/1.24e-07	11/49/0.064/7.82e-07	11/49/0.065/2.56e-07	17/70/0.094/3.33e-07	17/75/0.099/7.22e-07
Problem 1(50000)	V	8/35/0.046/5.28e-07	9/39/0.048/1.29e-07	11/47/0.058/3.63e-07	10/43/0.052/4.46e-07	13/53/0.066/6.19e-07	19/83/0.099/7.53e-07
Problem 1(100000)	I	9/39/0.093/7.94e-08	9/39/0.092/2.48e-07	12/52/0.127/4.62e-07	10/43/0.103/5.58e-07	13/53/0.129/9.26e-07	15/61/0.141/3.80e-07
Problem 1(100000)	II	7/31/0.076/7.82e-07	9/39/0.086/5.55e-08	12/51/0.116/2.05e-07	10/43/0.104/3.50e-07	16/65/0.162/5.39e-07	16/68/0.169/5.02e-07
Problem 1(100000)	III	9/39/0.096/1.08e-08	8/35/0.088/8.40e-07	11/47/0.119/9.99e-07	10/43/0.108/6.95e-07	14/60/0.149/1.06e-06	17/78/0.195/6.61e-09
Problem 1(100000)	IV	10/45/0.123/7.10e-08	10/45/0.111/1.79e-07	12/53/0.126/1.98e-07	11/49/0.125/3.62e-07	17/70/0.192/4.97e-07	17/89/0.227/2.44e-07
Problem 1(100000)	V	8/35/0.089/8.33e-07	9/39/0.092/1.53e-07	11/47/0.115/5.15e-07	10/43/0.104/6.31e-07	13/55/0.130/1.04e-06	19/82/0.188/2.12e-07
Problem 2(10000)	I	14/58/0.015/6.60e-07	14/58/0.017/3.07e-07	19/78/0.023/2.32e-07	18/74/0.023/9.26e-07	16/67/0.021/1.18e-06	19/82/0.024/7.96e-07
Problem 2(10000)	II	14/59/0.019/1.50e-07	14/59/0.018/2.66e-08	18/75/0.024/8.30e-07	18/75/0.024/4.95e-07	14/59/0.020/1.16e-06	20/87/0.027/4.97e-07
Problem 2(10000)	III	13/55/0.017/5.20e-07	14/59/0.018/1.39e-07	18/75/0.024/4.83e-07	18/75/0.023/2.58e-07	17/74/0.026/6.99e-07	17/74/0.023/7.83e-07
Problem 2(10000)	IV	14/61/0.020/2.10e-07	14/61/0.019/1.06e-07	18/77/0.024/6.39e-07	18/77/0.024/3.33e-07	13/54/0.019/8.03e-07	20/85/0.026/5.64e-07
Problem 2(10000)	V	15/62/0.020/6.37e-07	15/62/0.019/9.02e-09	19/78/0.024/3.28e-07	19/78/0.025/1.97e-07	16/67/0.021/1.15e-06	19/84/0.027/5.52e-07
Problem 2(50000)	I	15/62/0.101/5.22e-07	16/66/0.107/1.78e-07	20/82/0.129/9.65e-07	20/82/0.128/7.66e-07	17/69/0.109/3.20e-07	20/83/0.130/9.19e-07
Problem 2(50000)	II	15/63/0.099/6.11e-07	16/67/0.106/7.49e-08	20/83/0.132/6.20e-07	20/83/0.130/4.10e-07	15/61/0.096/9.81e-07	20/85/0.136/1.08e-07
Problem 2(50000)	III	16/67/0.105/1.68e-07	16/67/0.106/2.04e-08	20/83/0.132/3.61e-07	20/83/0.130/2.13e-07	22/100/0.156/8.98e-07	16/71/0.110/4.06e-07
Problem 2(50000)	IV	15/65/0.104/6.02e-07	16/69/0.108/6.02e-08	20/85/0.149/4.77e-07	20/85/0.136/2.76e-07	13/56/0.095/1.13e-06	18/80/0.129/8.40e-08
Problem 2(50000)	V	15/62/0.100/7.82e-07	16/66/0.105/2.37e-07	21/86/0.135/3.14e-07	21/86/0.134/2.19e-07	18/73/0.117/3.25e-07	20/88/0.138/9.55e-07
Problem 2(100000)	I	16/66/0.209/9.02e-07	17/70/0.217/3.36e-08	21/86/0.263/6.70e-07	21/86/0.257/5.41e-07	18/75/0.230/1.06e-06	20/86/0.257/4.55e-07
Problem 2(100000)	II	17/71/0.216/2.61e-07	16/67/0.208/9.28e-07	21/87/0.260/4.31e-07	21/87/0.266/2.89e-07	16/65/0.201/8.17e-07	20/85/0.254/5.13e-07
Problem 2(100000)	III	15/63/0.190/6.68e-07	16/67/0.203/9.16e-08	21/87/0.263/2.51e-07	21/87/0.266/1.51e-07	23/98/0.311/5.43e-08	20/86/0.276/2.69e-07
Problem 2(100000)	IV	17/73/0.228/2.48e-07	16/69/0.206/7.24e-07	21/89/0.274/3.31e-07	21/89/0.269/1.95e-07	14/60/0.178/1.20e-06	22/97/0.283/5.34e-07
Problem 2(100000)	V	16/66/0.200/5.64e-07	16/66/0.197/8.47e-07	21/86/0.262/5.24e-07	21/86/0.267/3.80e-07	18/73/0.243/3.18e-07	20/88/0.270/7.51e-07
Problem 3(10000)	I	8/34/0.007/5.42e-08	8/34/0.005/1.62e-07	11/46/0.007/7.88e-07	11/46/0.007/1.67e-07	14/57/0.006/8.31e-07	14/59/0.005/5.79e-07
Problem 3(10000)	II	9/38/0.006/7.43e-07	9/38/0.006/9.99e-08	13/54/0.008/3.00e-07	12/50/0.008/4.22e-07	16/65/0.008/3.47e-07	10/44/0.005/7.22e-07
Problem 3(10000)	III	10/43/0.006/6.78e-07	10/42/0.009/1.57e-07	13/54/0.012/9.06e-07	13/54/0.012/2.01e-07	16/67/0.015/1.04e-06	13/50/0.011/4.83e-07
Problem 3(10000)	IV	11/47/0.010/4.16e-07	11/46/0.011/1.10e-07	14/58/0.013/9.90e-07	14/58/0.013/2.03e-07	18/73/0.017/6.11e-07	15/61/0.013/8.15e-07
Problem 3(10000)	V	8/34/0.008/3.64e-07	8/34/0.008/1.46e-07	12/50/0.013/3.31e-07	11/46/0.011/4.73e-07	14/59/0.014/1.17e-06	14/59/0.013/8.91e-07
Problem 3(50000)	I	8/34/0.040/1.98e-07	8/34/0.037/2.81e-07	12/50/0.055/3.16e-07	11/46/0.050/3.73e-07	15/61/0.063/4.01e-07	14/61/0.059/1.56e-07
Problem 3(50000)	II	8/34/0.037/6.96e-07	8/34/0.037/2.05e-07	13/54/0.060/6.70e-07	12/50/0.054/9.45e-07	16/65/0.069/8.29e-07	15/81/0.081/4.12e-07
Problem 3(50000)	III	11/47/0.050/4.24e-07	10/42/0.041/1.83e-07	14/58/0.062/3.64e-07	13/54/0.057/4.50e-07	17/69/0.069/5.61e-07	15/69/0.064/7.56e-07
Problem 3(50000)	IV	12/51/0.052/2.71e-07	9/38/0.039/2.13e-07	15/62/0.065/3.97e-07	14/58/0.060/4.54e-07	18/75/0.072/1.59e-06	18/75/0.070/3.19e-08
Problem 3(50000)	V	9/38/0.039/3.53e-08	8/34/0.035/4.24e-07	12/50/0.054/7.39e-07	12/50/0.051/1.55e-07	15/61/0.065/5.78e-07	16/68/0.065/5.23e-07
Problem 3(100000)	I	9/38/0.082/7.01e-07	8/34/0.075/1.76e-07	12/50/0.110/4.47e-07	11/46/0.104/5.27e-07	15/61/0.135/5.90e-07	15/61/0.128/8.78e-07
Problem 3(100000)	II	9/38/0.084/6.52e-07	9/38/0.083/8.46e-07	13/54/0.127/9.48e-07	13/54/0.113/1.96e-07	16/67/0.140/1.21e-06	17/74/0.146/6.07e-08
Problem 3(100000)	III	10/42/0.090/5.87e-07	10/42/0.083/1.98e-07	14/58/0.123/5.14e-07	13/54/0.117/6.36e-07	17/69/0.143/8.57e-07	18/81/0.154/1.57e-07
Problem 3(100000)	IV	11/46/0.096/2.98e-07	11/46/0.088/1.76e-07	15/62/0.132/5.61e-07	14/58/0.122/6.43e-07	19/77/0.146/4.24e-07	14/64/0.125/2.44e-07
Problem 3(100000)	V	9/38/0.077/5.69e-08	8/34/0.074/5.41e-07	13/54/0.116/1.89e-07	12/50/0.107/2.21e-07	15/61/0.133/8.62e-07	17/76/0.150/5.88e-07
Problem 4(10000)	I	17/78/0.028/4.55e-07	16/73/0.026/9.81e-07	21/92/0.032/5.73e-07	21/92/0.033/7.29e-07	22/90/0.033/6.25e-07	24/117/0.040/7.11e-07
Problem 4(10000)	II	15/69/0.024/8.54e-07	15/69/0.024/9.30e-07	18/79/0.028/7.77e-07	18/79/0.028/7.70e-07	14/59/0.021/2.08e-06	21/103/0.035/8.13e-07
Problem 4(10000)	III	16/73/0.025/5.71e-07	16/74/0.028/6.71e-07	19/84/0.029/7.04e-07	19/84/0.029/8.75e-07	15/63/0.023/3.27e-06	25/121/0.041/9.09e-07
Problem 4(10000)	IV	16/73/0.025/8.84e-07	16/73/0.026/5.58e-07	20/88/0.031/6.73e-07	20/88/0.030/6.12e-07	14/59/0.021/1.26e-06	20/96/0.033/4.07e-07
Problem 4(10000)	V	17/77/0.028/5.20e-07	17/78/0.028/4.52e-07	21/92/0.032/6.98e-07	21/92/0.033/7.12e-07	19/78/0.028/6.81e-07	24/113/0.039/3.28e-07
Problem 4(50000)	I	17/78/0.140/6.59e-07	17/78/0.137/4.64e-07	21/92/0.164/6.51e-07	21/92/0.161/8.07e-07	20/85/0.156/2.48e-06	24/120/0.017/7.68e-07
Problem 4(50000)	II	16/72/0.131/4.49e-07	15/70/0.130/9.98e-07	18/79/0.143/8.45e-07	18/79/0.143/8.35e-07	16/67/0.365/5.79e-06	25/124/0.650/5.77e-07
Problem 4(50000)	III	16/73/0.403/5.30e-07	16/74/0.379/5.59e-07	20/88/0.470/4.44e-07	19/83/0.439/6.82e-07	17/71/0.375/1.27e-06	19/95/0.493/7.49e-07
Problem 4(50000)	IV	16/73/0.387/6.38e-07	16/73/0.379/5.67e-07	20/88/0.465/6.08e-07	20/88/0.456/7.92e-07	16/67/0.369/2.28e-06	23/108/0.541/5.33e-07
Problem 4(50000)	V	17/78/0.404/5.72e-07	17/77/0.405/4.83e-07	21/92/0.499/8.21e-07	21/92/0.478/9.37e-07	18/76/0.423/2.54e-06	26/128/0.676/5.83e-07
Problem 4(100000)	I	18/83/0.762/5.31e-07	18/82/0.757/5.11e-07	21/92/0.827/6.12e-07	21/92/0.874/6.81e-07	19/81/0.796/1.93e-06	29/147/1.320/8.06e-07
Problem 4(100000)	II	16/74/0.710/4.58e-07	16/74/0.659/4.91e-07	18/79/0.726/9.19e-07	18/79/0.730/7.55e-07	14/59/0.595/2.83e-06	23/117/1.136/9.49e-07
Problem 4(100000)	III	16/73/0.615/4.64e-07	16/74/0.653/6.12e-07	20/88/0.803/4.25e-07	20/88/0.800/4.88e-07	14/59/0.561/3.62e-06	24/118/1.043/8.36e-07
Problem 4(100000)	IV	16/73/0.653/7.15e-07	16/72/0.655/5.09e-07	20/88/0.851/6.79e-07	20/88/0.833/7.65e-07	17/72/0.686/2.94e-06	23/108/0.979/1.31e-07
Problem 4(100000)	V	18/82/0.739/6.40e-07	18/82/0.717/4.84e-07	21/92/0.815/8.14e-07	21/92/0.845/7.66e-07	19/81/0.820/4.33e-06	28/142/1.260/7.75e-07
Problem 5(10000)	I	10/49/0.044/7.30e-07	10/49/0.016/3.34e-08	14/68/0.022/6.81e-07	14/68/0.022/8.76e-07	14/57/0.020/9.55e-08	16/82/0.026/8.82e-07
Problem 5(10000)	II	12/60/0.019/1.11e-07	11/55/0.018/5.54e-07	14/69/0.029/8.64e-07	15/73/0.024/3.26e-07	12/52/0.019/2.41e-06	16/80/0.026/9.12e-07
Problem 5(10000)	III	12/59/0.020/6.31e-07	11/56/0.018/5.03e-07	15/74/0.026/6.00e-07	15/73/0.024/3.02e-07	14/60/0.022/1.06e-06	17/88/0.028/1.77e-07
Problem 5(10000)	IV	10/51/0.018/8.66e-07	10/51/0.017/6.04e-07	15/74/0.024/6.64e-07	15/73/0.023/4.97e-07	12/53/0.019/1.92e-06	18/95/0.031/2.06e-07
Problem 5(10000)	V	12/59/0.019/8.32e-07	11/55/0.018/9.61e-07	14/69/0.024/9.39e-07	15/73/0.025/4.29e-07	20/85/0.030/3.69e-06	16/86/0.028/7.68e-07
Problem 5(50000)	I	10/49/0.076/8.11e-07	9/45/0.070/5.00e-07	15/73/0.126/2.84e-07	14/68/0.107/9.57e-07	13/55/0.094/1.72e-06	17/85/0.131/3.82e-07
Problem 5(50000)	II	11/55/0.101/7.73e-07	11/55/0.186/3.83e-07	15/74/0.259/5.56e-07	15/73/0.260/5.26e-07	12/52/0.203/1.18e-06	17/91/0.306/9.86e-07
Problem 5(50000)	III	12/60/0.214/8.66e-08	11/55/0.202/2.65e-07	15/74/0.261/8.10e-07	15/73/0.180/4.72e-07	13/56/0.130/2.63e-06	18/91/0.295/3.70e-07
Problem 5(50000)	IV	11/56/0.251/5.79e-07	10/50/0.175/2.71e-07	16/78/0.274/8.12e-07	16/77/0.266/9.87e-07	14/61/0.204/1.38e-06	23/117/0.238/2.18e-07
Problem 5(50000)	V	11/56/0.105/2.32e-07	11/56/0.087/1.54e-07	14/70/0.112/5.21e-07	14/70/0.126/7.85e-07		