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Roll No-244103315

These results are for time step 0.5 minutes.

Calculated time: 56.50000 minutes by Euler's method.

Calculated time: 57.50000 minutes by Heun's method.

1. Results of both methods at each step with exact solution are in given below tabular form.
2. Local truncation error of both methods is in given below tabular form.
3. Percentage relative error at each step length in given below tabular form.
4. Function evaluations of both methods are in given below tabular form.
5. Step length      calculated time      calculated time  
                                 by EM                                   by HM

.....		
0.1	57.4	57.7
0.3	57.0	57.6
0.5	56.5	57.5
0.7	56.0	57.4
0.8	56.0	57.6

After looking data, I found that if I increase the step length local truncation error increases.

### Euler's method

Time	Func. Eval. (y)	Comparison	Truncation error	Percentage relative error
.....				
0.00000	3.00000	57.73503	-0.00217	100.00000
0.50000	2.94804	57.23503	-0.00218	99.13397
1.00000	2.89653	56.73503	-0.00220	98.26795
1.50000	2.84547	56.23503	-0.00222	97.40192
2.00000	2.79487	55.73503	-0.00224	96.53590

2.50000	2.74471	55.23503	-0.00226	95.66987
3.00000	2.69501	54.73503	-0.00228	94.80385
3.50000	2.64576	54.23503	-0.00231	93.93782
4.00000	2.59696	53.73503	-0.00233	93.07180
4.50000	2.54862	53.23503	-0.00235	92.20577
5.00000	2.50073	52.73503	-0.00237	91.33975
5.50000	2.45328	52.23503	-0.00239	90.47372
6.00000	2.40630	51.73503	-0.00242	89.60770
6.50000	2.35976	51.23503	-0.00244	88.74167
7.00000	2.31367	50.73503	-0.00247	87.87564
7.50000	2.26804	50.23503	-0.00249	87.00962
8.00000	2.22286	49.73503	-0.00252	86.14359
8.50000	2.17813	49.23503	-0.00254	85.27757
9.00000	2.13386	48.73503	-0.00257	84.41154
9.50000	2.09004	48.23503	-0.00259	83.54552
10.00000	2.04666	47.73503	-0.00262	82.67949
10.50000	2.00375	47.23503	-0.00265	81.81347
11.00000	1.96128	46.73503	-0.00268	80.94744
11.50000	1.91927	46.23503	-0.00271	80.08142
12.00000	1.87770	45.73503	-0.00274	79.21539
12.50000	1.83660	45.23503	-0.00277	78.34936
13.00000	1.79594	44.73503	-0.00280	77.48334
13.50000	1.75574	44.23503	-0.00283	76.61731
14.00000	1.71598	43.73503	-0.00286	75.75129
14.50000	1.67669	43.23503	-0.00290	74.88526

15.00000	1.63784	42.73503	-0.00293	74.01924
15.50000	1.59945	42.23503	-0.00297	73.15321
16.00000	1.56151	41.73503	-0.00300	72.28719
16.50000	1.52402	41.23503	-0.00304	71.42116
17.00000	1.48698	40.73503	-0.00308	70.55514
17.50000	1.45040	40.23503	-0.00311	69.68911
18.00000	1.41427	39.73503	-0.00315	68.82309
18.50000	1.37859	39.23503	-0.00319	67.95706
19.00000	1.34337	38.73503	-0.00324	67.09103
19.50000	1.30860	38.23503	-0.00328	66.22501
20.00000	1.27428	37.73503	-0.00332	65.35898
20.50000	1.24041	37.23503	-0.00337	64.49296
21.00000	1.20700	36.73503	-0.00341	63.62693
21.50000	1.17404	36.23503	-0.00346	62.76091
22.00000	1.14154	35.73503	-0.00351	61.89488
22.50000	1.10948	35.23503	-0.00356	61.02886
23.00000	1.07788	34.73503	-0.00361	60.16283
23.50000	1.04674	34.23503	-0.00367	59.29681
24.00000	1.01605	33.73503	-0.00372	58.43078
24.50000	0.98581	33.23503	-0.00378	57.56476
25.00000	0.95602	32.73503	-0.00384	56.69873
25.50000	0.92669	32.23503	-0.00390	55.83270
26.00000	0.89781	31.73503	-0.00396	54.96668
26.50000	0.86938	31.23503	-0.00402	54.10065
27.00000	0.84141	30.73503	-0.00409	53.23463

27.50000	0.81389	30.23503	-0.00416	52.36860
28.00000	0.78683	29.73503	-0.00423	51.50258
28.50000	0.76021	29.23503	-0.00430	50.63655
29.00000	0.73406	28.73503	-0.00438	49.77053
29.50000	0.70835	28.23503	-0.00446	48.90450
30.00000	0.68311	27.73503	-0.00454	48.03848
30.50000	0.65831	27.23503	-0.00462	47.17245
31.00000	0.63397	26.73503	-0.00471	46.30642
31.50000	0.61008	26.23503	-0.00480	45.44040
32.00000	0.58665	25.73503	-0.00490	44.57437
32.50000	0.56367	25.23503	-0.00499	43.70835
33.00000	0.54115	24.73503	-0.00510	42.84232
33.50000	0.51908	24.23503	-0.00520	41.97630
34.00000	0.49747	23.73503	-0.00532	41.11027
34.50000	0.47631	23.23503	-0.00543	40.24425
35.00000	0.45560	22.73503	-0.00556	39.37822
35.50000	0.43535	22.23503	-0.00568	38.51220
36.00000	0.41556	21.73503	-0.00582	37.64617
36.50000	0.39622	21.23503	-0.00596	36.78015
37.00000	0.37734	20.73503	-0.00610	35.91412
37.50000	0.35891	20.23503	-0.00626	35.04809
38.00000	0.34093	19.73503	-0.00642	34.18207
38.50000	0.32342	19.23503	-0.00659	33.31604
39.00000	0.30636	18.73503	-0.00678	32.45002
39.50000	0.28975	18.23503	-0.00697	31.58399

40.00000	0.27360	17.73503	-0.00717	30.71797
40.50000	0.25791	17.23503	-0.00738	29.85194
41.00000	0.24268	16.73503	-0.00761	28.98592
41.50000	0.22790	16.23503	-0.00786	28.11989
42.00000	0.21358	15.73503	-0.00811	27.25387
42.50000	0.19971	15.23503	-0.00839	26.38784
43.00000	0.18630	14.73503	-0.00869	25.52182
43.50000	0.17336	14.23503	-0.00901	24.65579
44.00000	0.16086	13.73503	-0.00935	23.78976
44.50000	0.14883	13.23503	-0.00972	22.92374
45.00000	0.13726	12.73503	-0.01012	22.05771
45.50000	0.12614	12.23503	-0.01056	21.19169
46.00000	0.11549	11.73503	-0.01103	20.32566
46.50000	0.10529	11.23503	-0.01156	19.45964
47.00000	0.09556	10.73503	-0.01213	18.59361
47.50000	0.08629	10.23503	-0.01277	17.72759
48.00000	0.07747	9.73503	-0.01347	16.86156
48.50000	0.06912	9.23503	-0.01426	15.99554
49.00000	0.06124	8.73503	-0.01515	15.12951
49.50000	0.05381	8.23503	-0.01617	14.26349
50.00000	0.04685	7.73503	-0.01732	13.39746
50.50000	0.04036	7.23503	-0.01867	12.53143
51.00000	0.03433	6.73503	-0.02024	11.66541
51.50000	0.02877	6.23503	-0.02211	10.79938
52.00000	0.02368	5.73503	-0.02437	9.93336

52.50000	0.01907	5.23503	-0.02716	9.06733
53.00000	0.01493	4.73503	-0.03070	8.20131
53.50000	0.01126	4.23503	-0.03534	7.33528
54.00000	0.00808	3.73503	-0.04173	6.46926
54.50000	0.00538	3.23503	-0.05112	5.60323
55.00000	0.00318	2.73503	-0.06650	4.73721
55.50000	0.00149	2.23503	-0.09721	3.87118
56.00000	0.00033	1.73503	-0.20615	3.00515

### Heun's method

Time	Func. Eval. (y)	Comparison	Truncation error	Percentage relative error
.....				
0.00000	3.00000	57.73503	-0.00217	100.00000
0.50000	2.94826	57.23503	-0.00218	99.13397
1.00000	2.89698	56.73503	-0.00220	98.26795
1.50000	2.84614	56.23503	-0.00222	97.40192
2.00000	2.79576	55.73503	-0.00224	96.53590
2.50000	2.74582	55.23503	-0.00226	95.66987
3.00000	2.69634	54.73503	-0.00228	94.80385
3.50000	2.64730	54.23503	-0.00230	93.93782
4.00000	2.59872	53.73503	-0.00233	93.07180
4.50000	2.55058	53.23503	-0.00235	92.20577
5.00000	2.50289	52.73503	-0.00237	91.33975
5.50000	2.45566	52.23503	-0.00239	90.47372

6.00000	2.40887	51.73503	-0.00242	89.60770
6.50000	2.36254	51.23503	-0.00244	88.74167
7.00000	2.31665	50.73503	-0.00246	87.87564
7.50000	2.27122	50.23503	-0.00249	87.00962
8.00000	2.22623	49.73503	-0.00251	86.14359
8.50000	2.18170	49.23503	-0.00254	85.27757
9.00000	2.13761	48.73503	-0.00256	84.41154
9.50000	2.09397	48.23503	-0.00259	83.54552
10.00000	2.05079	47.73503	-0.00262	82.67949
10.50000	2.00805	47.23503	-0.00265	81.81347
11.00000	1.96577	46.73503	-0.00267	80.94744
11.50000	1.92393	46.23503	-0.00270	80.08142
12.00000	1.88255	45.73503	-0.00273	79.21539
12.50000	1.84161	45.23503	-0.00276	78.34936
13.00000	1.80113	44.73503	-0.00279	77.48334
13.50000	1.76109	44.23503	-0.00283	76.61731
14.00000	1.72150	43.73503	-0.00286	75.75129
14.50000	1.68237	43.23503	-0.00289	74.88526
15.00000	1.64368	42.73503	-0.00292	74.01924
15.50000	1.60545	42.23503	-0.00296	73.15321
16.00000	1.56766	41.73503	-0.00300	72.28719
16.50000	1.53033	41.23503	-0.00303	71.42116
17.00000	1.49344	40.73503	-0.00307	70.55514
17.50000	1.45701	40.23503	-0.00311	69.68911
18.00000	1.42102	39.73503	-0.00315	68.82309

18.50000	1.38549	39.23503	-0.00319	67.95706
19.00000	1.35040	38.73503	-0.00323	67.09103
19.50000	1.31576	38.23503	-0.00327	66.22501
20.00000	1.28158	37.73503	-0.00331	65.35898
20.50000	1.24784	37.23503	-0.00336	64.49296
21.00000	1.21456	36.73503	-0.00340	63.62693
21.50000	1.18172	36.23503	-0.00345	62.76091
22.00000	1.14934	35.73503	-0.00350	61.89488
22.50000	1.11740	35.23503	-0.00355	61.02886
23.00000	1.08592	34.73503	-0.00360	60.16283
23.50000	1.05488	34.23503	-0.00365	59.29681
24.00000	1.02429	33.73503	-0.00371	58.43078
24.50000	0.99416	33.23503	-0.00376	57.56476
25.00000	0.96447	32.73503	-0.00382	56.69873
25.50000	0.93524	32.23503	-0.00388	55.83270
26.00000	0.90645	31.73503	-0.00394	54.96668
26.50000	0.87812	31.23503	-0.00400	54.10065
27.00000	0.85023	30.73503	-0.00407	53.23463
27.50000	0.82280	30.23503	-0.00413	52.36860
28.00000	0.79581	29.73503	-0.00420	51.50258
28.50000	0.76927	29.23503	-0.00428	50.63655
29.00000	0.74319	28.73503	-0.00435	49.77053
29.50000	0.71755	28.23503	-0.00443	48.90450
30.00000	0.69237	27.73503	-0.00451	48.03848
30.50000	0.66763	27.23503	-0.00459	47.17245



31.00000	0.64335	26.73503	-0.00468	46.30642
31.50000	0.61951	26.23503	-0.00476	45.44040
32.00000	0.59613	25.73503	-0.00486	44.57437
32.50000	0.57319	25.23503	-0.00495	43.70835
33.00000	0.55070	24.73503	-0.00505	42.84232
33.50000	0.52867	24.23503	-0.00516	41.97630
34.00000	0.50708	23.73503	-0.00527	41.11027
34.50000	0.48595	23.23503	-0.00538	40.24425
35.00000	0.46526	22.73503	-0.00550	39.37822
35.50000	0.44503	22.23503	-0.00562	38.51220
36.00000	0.42524	21.73503	-0.00575	37.64617
36.50000	0.40591	21.23503	-0.00589	36.78015
37.00000	0.38702	20.73503	-0.00603	35.91412
37.50000	0.36858	20.23503	-0.00618	35.04809
38.00000	0.35060	19.73503	-0.00633	34.18207
38.50000	0.33306	19.23503	-0.00650	33.31604
39.00000	0.31598	18.73503	-0.00667	32.45002
39.50000	0.29934	18.23503	-0.00685	31.58399
40.00000	0.28316	17.73503	-0.00705	30.71797
40.50000	0.26742	17.23503	-0.00725	29.85194
41.00000	0.25214	16.73503	-0.00747	28.98592
41.50000	0.23730	16.23503	-0.00770	28.11989
42.00000	0.22292	15.73503	-0.00794	27.25387
42.50000	0.20898	15.23503	-0.00820	26.38784
43.00000	0.19549	14.73503	-0.00848	25.52182

43.50000	0.18246	14.23503	-0.00878	24.65579
44.00000	0.16987	13.73503	-0.00910	23.78976
44.50000	0.15774	13.23503	-0.00944	22.92374
45.00000	0.14605	12.73503	-0.00981	22.05771
45.50000	0.13482	12.23503	-0.01021	21.19169
46.00000	0.12403	11.73503	-0.01065	20.32566
46.50000	0.11370	11.23503	-0.01112	19.45964
47.00000	0.10381	10.73503	-0.01164	18.59361
47.50000	0.09438	10.23503	-0.01221	17.72759
48.00000	0.08539	9.73503	-0.01283	16.86156
48.50000	0.07685	9.23503	-0.01353	15.99554
49.00000	0.06877	8.73503	-0.01430	15.12951
49.50000	0.06113	8.23503	-0.01517	14.26349
50.00000	0.05395	7.73503	-0.01615	13.39746
50.50000	0.04721	7.23503	-0.01726	12.53143
51.00000	0.04093	6.73503	-0.01854	11.66541
51.50000	0.03509	6.23503	-0.02002	10.79938
52.00000	0.02971	5.73503	-0.02176	9.93336
52.50000	0.02477	5.23503	-0.02383	9.06733
53.00000	0.02029	4.73503	-0.02633	8.20131
53.50000	0.01625	4.23503	-0.02941	7.33528
54.00000	0.01267	3.73503	-0.03332	6.46926
54.50000	0.00953	3.23503	-0.03840	5.60323
55.00000	0.00685	2.73503	-0.04531	4.73721
55.50000	0.00462	2.23503	-0.05518	3.87118

56.00000	0.00284	1.73503	-0.07041	3.00515
56.50000	0.00151	1.23503	-0.09651	2.13913
57.00000	0.00065	0.73503	-0.14723	1.27310

For step size = 0.3

For EM

0.00000	3.00000	57.73503	-0.00078	100.00000
0.30000	2.96882	57.43503	-0.00078	99.48038
0.60000	2.93781	57.13503	-0.00079	98.96077
0.90000	2.90696	56.83503	-0.00079	98.44115
1.20000	2.87627	56.53503	-0.00080	97.92154
1.50000	2.84574	56.23503	-0.00080	97.40192
1.80000	2.81537	55.93503	-0.00080	96.88231
2.10000	2.78517	55.63503	-0.00081	96.36269
2.40000	2.75513	55.33503	-0.00081	95.84308
2.70000	2.72526	55.03503	-0.00082	95.32346
3.00000	2.69554	54.73503	-0.00082	94.80385
3.30000	2.66599	54.43503	-0.00083	94.28423
3.60000	2.63660	54.13503	-0.00083	93.76462
3.90000	2.60737	53.83503	-0.00084	93.24500
4.20000	2.57830	53.53503	-0.00084	92.72539
4.50000	2.54940	53.23503	-0.00085	92.20577
4.80000	2.52066	52.93503	-0.00085	91.68616
5.10000	2.49208	52.63503	-0.00086	91.16654
5.40000	2.46367	52.33503	-0.00086	90.64693
5.70000	2.43542	52.03503	-0.00087	90.12731

6.00000	2.40732	51.73503	-0.00087	89.60770
6.30000	2.37940	51.43503	-0.00088	89.08808
6.60000	2.35163	51.13503	-0.00088	88.56846
6.90000	2.32403	50.83503	-0.00089	88.04885
7.20000	2.29659	50.53503	-0.00089	87.52923
7.50000	2.26931	50.23503	-0.00090	87.00962
7.80000	2.24219	49.93503	-0.00090	86.49000
8.10000	2.21524	49.63503	-0.00091	85.97039
8.40000	2.18845	49.33503	-0.00091	85.45077
8.70000	2.16182	49.03503	-0.00092	84.93116
9.00000	2.13536	48.73503	-0.00092	84.41154
9.30000	2.10905	48.43503	-0.00093	83.89193
9.60000	2.08291	48.13503	-0.00094	83.37231
9.90000	2.05693	47.83503	-0.00094	82.85270
10.20000	2.03112	47.53503	-0.00095	82.33308
10.50000	2.00547	47.23503	-0.00095	81.81347
10.80000	1.97998	46.93503	-0.00096	81.29385
11.10000	1.95465	46.63503	-0.00097	80.77424
11.40000	1.92948	46.33503	-0.00097	80.25462
11.70000	1.90448	46.03503	-0.00098	79.73501
12.00000	1.87964	45.73503	-0.00098	79.21539
12.30000	1.85496	45.43503	-0.00099	78.69578
12.60000	1.83044	45.13503	-0.00100	78.17616
12.90000	1.80609	44.83503	-0.00100	77.65654
13.20000	1.78190	44.53503	-0.00101	77.13693

13.50000	1.75787	44.23503	-0.00102	76.61731
13.80000	1.73401	43.93503	-0.00103	76.09770
14.10000	1.71031	43.63503	-0.00103	75.57808
14.40000	1.68677	43.33503	-0.00104	75.05847
14.70000	1.66339	43.03503	-0.00105	74.53885
15.00000	1.64017	42.73503	-0.00105	74.01924
15.30000	1.61712	42.43503	-0.00106	73.49962
15.60000	1.59423	42.13503	-0.00107	72.98001
15.90000	1.57150	41.83503	-0.00108	72.46039
16.20000	1.54894	41.53503	-0.00108	71.94078
16.50000	1.52654	41.23503	-0.00109	71.42116
16.80000	1.50430	40.93503	-0.00110	70.90155
17.10000	1.48222	40.63503	-0.00111	70.38193
17.40000	1.46031	40.33503	-0.00112	69.86232
17.70000	1.43855	40.03503	-0.00113	69.34270
18.00000	1.41696	39.73503	-0.00113	68.82309
18.30000	1.39554	39.43503	-0.00114	68.30347
18.60000	1.37427	39.13503	-0.00115	67.78385
18.90000	1.35317	38.83503	-0.00116	67.26424
19.20000	1.33223	38.53503	-0.00117	66.74462
19.50000	1.31146	38.23503	-0.00118	66.22501
19.80000	1.29084	37.93503	-0.00119	65.70539
20.10000	1.27039	37.63503	-0.00120	65.18578
20.40000	1.25011	37.33503	-0.00121	64.66616
20.70000	1.22998	37.03503	-0.00122	64.14655

21.00000	1.21002	36.73503	-0.00123	63.62693
21.30000	1.19022	36.43503	-0.00124	63.10732
21.60000	1.17058	36.13503	-0.00125	62.58770
21.90000	1.15110	35.83503	-0.00126	62.06809
22.20000	1.13179	35.53503	-0.00127	61.54847
22.50000	1.11264	35.23503	-0.00128	61.02886
22.80000	1.09366	34.93503	-0.00129	60.50924
23.10000	1.07483	34.63503	-0.00130	59.98963
23.40000	1.05617	34.33503	-0.00131	59.47001
23.70000	1.03767	34.03503	-0.00133	58.95040
24.00000	1.01934	33.73503	-0.00134	58.43078
24.30000	1.00116	33.43503	-0.00135	57.91117
24.60000	0.98315	33.13503	-0.00136	57.39155
24.90000	0.96531	32.83503	-0.00137	56.87193
25.20000	0.94762	32.53503	-0.00139	56.35232
25.50000	0.93010	32.23503	-0.00140	55.83270
25.80000	0.91274	31.93503	-0.00141	55.31309
26.10000	0.89554	31.63503	-0.00143	54.79347
26.40000	0.87851	31.33503	-0.00144	54.27386
26.70000	0.86164	31.03503	-0.00145	53.75424
27.00000	0.84493	30.73503	-0.00147	53.23463
27.30000	0.82838	30.43503	-0.00148	52.71501
27.60000	0.81200	30.13503	-0.00150	52.19540
27.90000	0.79578	29.83503	-0.00151	51.67578
28.20000	0.77972	29.53503	-0.00153	51.15617

28.50000	0.76383	29.23503	-0.00154	50.63655
28.80000	0.74810	28.93503	-0.00156	50.11694
29.10000	0.73253	28.63503	-0.00158	49.59732
29.40000	0.71712	28.33503	-0.00159	49.07771
29.70000	0.70188	28.03503	-0.00161	48.55809
30.00000	0.68680	27.73503	-0.00163	48.03848
30.30000	0.67188	27.43503	-0.00165	47.51886
30.60000	0.65713	27.13503	-0.00167	46.99925
30.90000	0.64254	26.83503	-0.00168	46.47963
31.20000	0.62811	26.53503	-0.00170	45.96001
31.50000	0.61384	26.23503	-0.00172	45.44040
31.80000	0.59974	25.93503	-0.00174	44.92078
32.10000	0.58580	25.63503	-0.00176	44.40117
32.40000	0.57202	25.33503	-0.00178	43.88155
32.70000	0.55841	25.03503	-0.00181	43.36194
33.00000	0.54496	24.73503	-0.00183	42.84232
33.30000	0.53167	24.43503	-0.00185	42.32271
33.60000	0.51855	24.13503	-0.00187	41.80309
33.90000	0.50558	23.83503	-0.00190	41.28348
34.20000	0.49279	23.53503	-0.00192	40.76386
34.50000	0.48015	23.23503	-0.00195	40.24425
34.80000	0.46768	22.93503	-0.00197	39.72463
35.10000	0.45537	22.63503	-0.00200	39.20502
35.40000	0.44322	22.33503	-0.00203	38.68540
35.70000	0.43124	22.03503	-0.00206	38.16579

36.00000	0.41942	21.73503	-0.00208	37.64617
36.30000	0.40776	21.43503	-0.00211	37.12656
36.60000	0.39627	21.13503	-0.00214	36.60694
36.90000	0.38493	20.83503	-0.00218	36.08733
37.20000	0.37377	20.53503	-0.00221	35.56771
37.50000	0.36276	20.23503	-0.00224	35.04809
37.80000	0.35192	19.93503	-0.00228	34.52848
38.10000	0.34124	19.63503	-0.00231	34.00886
38.40000	0.33073	19.33503	-0.00235	33.48925
38.70000	0.32038	19.03503	-0.00239	32.96963
39.00000	0.31019	18.73503	-0.00242	32.45002
39.30000	0.30016	18.43503	-0.00246	31.93040
39.60000	0.29030	18.13503	-0.00251	31.41079
39.90000	0.28060	17.83503	-0.00255	30.89117
40.20000	0.27107	17.53503	-0.00259	30.37156
40.50000	0.26170	17.23503	-0.00264	29.85194
40.80000	0.25249	16.93503	-0.00269	29.33233
41.10000	0.24344	16.63503	-0.00274	28.81271
41.40000	0.23456	16.33503	-0.00279	28.29310
41.70000	0.22584	16.03503	-0.00284	27.77348
42.00000	0.21729	15.73503	-0.00290	27.25387
42.30000	0.20890	15.43503	-0.00295	26.73425
42.60000	0.20067	15.13503	-0.00301	26.21464
42.90000	0.19261	14.83503	-0.00308	25.69502
43.20000	0.18471	14.53503	-0.00314	25.17541



43.50000	0.17697	14.23503	-0.00321	24.65579
43.80000	0.16940	13.93503	-0.00328	24.13617
44.10000	0.16199	13.63503	-0.00335	23.61656
44.40000	0.15475	13.33503	-0.00343	23.09694
44.70000	0.14767	13.03503	-0.00351	22.57733
45.00000	0.14075	12.73503	-0.00360	22.05771
45.30000	0.13400	12.43503	-0.00369	21.53810
45.60000	0.12741	12.13503	-0.00378	21.01848
45.90000	0.12098	11.83503	-0.00388	20.49887
46.20000	0.11472	11.53503	-0.00399	19.97925
46.50000	0.10863	11.23503	-0.00410	19.45964
46.80000	0.10269	10.93503	-0.00421	18.94002
47.10000	0.09693	10.63503	-0.00434	18.42041
47.40000	0.09132	10.33503	-0.00447	17.90079
47.70000	0.08588	10.03503	-0.00461	17.38118
48.00000	0.08061	9.73503	-0.00475	16.86156
48.30000	0.07550	9.43503	-0.00491	16.34195
48.60000	0.07055	9.13503	-0.00508	15.82233
48.90000	0.06577	8.83503	-0.00526	15.30272
49.20000	0.06115	8.53503	-0.00546	14.78310
49.50000	0.05670	8.23503	-0.00567	14.26349
49.80000	0.05242	7.93503	-0.00590	13.74387
50.10000	0.04829	7.63503	-0.00614	13.22425
50.40000	0.04434	7.33503	-0.00641	12.70464
50.70000	0.04055	7.03503	-0.00670	12.18502

51.00000	0.03692	6.73503	-0.00703	11.66541
51.30000	0.03347	6.43503	-0.00738	11.14579
51.60000	0.03017	6.13503	-0.00777	10.62618
51.90000	0.02705	5.83503	-0.00821	10.10656
52.20000	0.02409	5.53503	-0.00870	9.58695
52.50000	0.02129	5.23503	-0.00925	9.06733
52.80000	0.01867	4.93503	-0.00988	8.54772
53.10000	0.01621	4.63503	-0.01060	8.02810
53.40000	0.01391	4.33503	-0.01144	7.50849
53.70000	0.01179	4.03503	-0.01243	6.98887
54.00000	0.00984	3.73503	-0.01361	6.46926
54.30000	0.00805	3.43503	-0.01504	5.94964
54.60000	0.00644	3.13503	-0.01683	5.43003
54.90000	0.00499	2.83503	-0.01911	4.91041
55.20000	0.00372	2.53503	-0.02213	4.39080
55.50000	0.00262	2.23503	-0.02636	3.87118
55.80000	0.00170	1.93503	-0.03273	3.35156
56.10000	0.00096	1.63503	-0.04360	2.83195
56.40000	0.00040	1.33503	-0.06739	2.31233
56.70000	0.00004	1.03503	-0.21164	1.79272

Taking Time: 57.00000 minutes.

For HM

0.00000	3.00000	57.73503	-0.00078	100.00000
0.30000	2.96890	57.43503	-0.00078	99.48038
0.60000	2.93797	57.13503	-0.00079	98.96077

0.90000	2.90720	56.83503	-0.00079	98.44115
1.20000	2.87659	56.53503	-0.00080	97.92154
1.50000	2.84614	56.23503	-0.00080	97.40192
1.80000	2.81586	55.93503	-0.00080	96.88231
2.10000	2.78573	55.63503	-0.00081	96.36269
2.40000	2.75577	55.33503	-0.00081	95.84308
2.70000	2.72597	55.03503	-0.00082	95.32346
3.00000	2.69633	54.73503	-0.00082	94.80385
3.30000	2.66686	54.43503	-0.00083	94.28423
3.60000	2.63754	54.13503	-0.00083	93.76462
3.90000	2.60839	53.83503	-0.00084	93.24500
4.20000	2.57940	53.53503	-0.00084	92.72539
4.50000	2.55057	53.23503	-0.00085	92.20577
4.80000	2.52191	52.93503	-0.00085	91.68616
5.10000	2.49341	52.63503	-0.00085	91.16654
5.40000	2.46506	52.33503	-0.00086	90.64693
5.70000	2.43688	52.03503	-0.00086	90.12731
6.00000	2.40887	51.73503	-0.00087	89.60770
6.30000	2.38101	51.43503	-0.00087	89.08808
6.60000	2.35332	51.13503	-0.00088	88.56846
6.90000	2.32578	50.83503	-0.00089	88.04885
7.20000	2.29842	50.53503	-0.00089	87.52923
7.50000	2.27121	50.23503	-0.00090	87.00962
7.80000	2.24416	49.93503	-0.00090	86.49000
8.10000	2.21728	49.63503	-0.00091	85.97039

8.40000	2.19056	49.33503	-0.00091	85.45077
8.70000	2.16400	49.03503	-0.00092	84.93116
9.00000	2.13760	48.73503	-0.00092	84.41154
9.30000	2.11136	48.43503	-0.00093	83.89193
9.60000	2.08529	48.13503	-0.00093	83.37231
9.90000	2.05938	47.83503	-0.00094	82.85270
10.20000	2.03363	47.53503	-0.00095	82.33308
10.50000	2.00804	47.23503	-0.00095	81.81347
10.80000	1.98261	46.93503	-0.00096	81.29385
11.10000	1.95735	46.63503	-0.00096	80.77424
11.40000	1.93225	46.33503	-0.00097	80.25462
11.70000	1.90731	46.03503	-0.00098	79.73501
12.00000	1.88253	45.73503	-0.00098	79.21539
12.30000	1.85792	45.43503	-0.00099	78.69578
12.60000	1.83346	45.13503	-0.00100	78.17616
12.90000	1.80917	44.83503	-0.00100	77.65654
13.20000	1.78504	44.53503	-0.00101	77.13693
13.50000	1.76107	44.23503	-0.00102	76.61731
13.80000	1.73727	43.93503	-0.00102	76.09770
14.10000	1.71362	43.63503	-0.00103	75.57808
14.40000	1.69014	43.33503	-0.00104	75.05847
14.70000	1.66682	43.03503	-0.00105	74.53885
15.00000	1.64366	42.73503	-0.00105	74.01924
15.30000	1.62067	42.43503	-0.00106	73.49962
15.60000	1.59784	42.13503	-0.00107	72.98001

15.90000	1.57516	41.83503	-0.00108	72.46039
16.20000	1.55265	41.53503	-0.00108	71.94078
16.50000	1.53031	41.23503	-0.00109	71.42116
16.80000	1.50812	40.93503	-0.00110	70.90155
17.10000	1.48610	40.63503	-0.00111	70.38193
17.40000	1.46424	40.33503	-0.00112	69.86232
17.70000	1.44254	40.03503	-0.00112	69.34270
18.00000	1.42100	39.73503	-0.00113	68.82309
18.30000	1.39962	39.43503	-0.00114	68.30347
18.60000	1.37841	39.13503	-0.00115	67.78385
18.90000	1.35736	38.83503	-0.00116	67.26424
19.20000	1.33647	38.53503	-0.00117	66.74462
19.50000	1.31574	38.23503	-0.00118	66.22501
19.80000	1.29517	37.93503	-0.00119	65.70539
20.10000	1.27477	37.63503	-0.00120	65.18578
20.40000	1.25453	37.33503	-0.00121	64.66616
20.70000	1.23445	37.03503	-0.00122	64.14655
21.00000	1.21453	36.73503	-0.00122	63.62693
21.30000	1.19478	36.43503	-0.00124	63.10732
21.60000	1.17518	36.13503	-0.00125	62.58770
21.90000	1.15575	35.83503	-0.00126	62.06809
22.20000	1.13648	35.53503	-0.00127	61.54847
22.50000	1.11737	35.23503	-0.00128	61.02886
22.80000	1.09843	34.93503	-0.00129	60.50924
23.10000	1.07964	34.63503	-0.00130	59.98963

23.40000	1.06102	34.33503	-0.00131	59.47001
23.70000	1.04256	34.03503	-0.00132	58.95040
24.00000	1.02426	33.73503	-0.00133	58.43078
24.30000	1.00613	33.43503	-0.00135	57.91117
24.60000	0.98815	33.13503	-0.00136	57.39155
24.90000	0.97034	32.83503	-0.00137	56.87193
25.20000	0.95269	32.53503	-0.00138	56.35232
25.50000	0.93521	32.23503	-0.00140	55.83270
25.80000	0.91788	31.93503	-0.00141	55.31309
26.10000	0.90072	31.63503	-0.00142	54.79347
26.40000	0.88371	31.33503	-0.00144	54.27386
26.70000	0.86687	31.03503	-0.00145	53.75424
27.00000	0.85020	30.73503	-0.00146	53.23463
27.30000	0.83368	30.43503	-0.00148	52.71501
27.60000	0.81733	30.13503	-0.00149	52.19540
27.90000	0.80114	29.83503	-0.00151	51.67578
28.20000	0.78511	29.53503	-0.00152	51.15617
28.50000	0.76924	29.23503	-0.00154	50.63655
28.80000	0.75353	28.93503	-0.00156	50.11694
29.10000	0.73799	28.63503	-0.00157	49.59732
29.40000	0.72261	28.33503	-0.00159	49.07771
29.70000	0.70739	28.03503	-0.00161	48.55809
30.00000	0.69233	27.73503	-0.00162	48.03848
30.30000	0.67743	27.43503	-0.00164	47.51886
30.60000	0.66270	27.13503	-0.00166	46.99925

30.90000	0.64813	26.83503	-0.00168	46.47963
31.20000	0.63372	26.53503	-0.00170	45.96001
31.50000	0.61947	26.23503	-0.00172	45.44040
31.80000	0.60539	25.93503	-0.00174	44.92078
32.10000	0.59146	25.63503	-0.00176	44.40117
32.40000	0.57770	25.33503	-0.00178	43.88155
32.70000	0.56410	25.03503	-0.00180	43.36194
33.00000	0.55066	24.73503	-0.00182	42.84232
33.30000	0.53739	24.43503	-0.00184	42.32271
33.60000	0.52427	24.13503	-0.00186	41.80309
33.90000	0.51132	23.83503	-0.00189	41.28348
34.20000	0.49853	23.53503	-0.00191	40.76386
34.50000	0.48590	23.23503	-0.00194	40.24425
34.80000	0.47344	22.93503	-0.00196	39.72463
35.10000	0.46113	22.63503	-0.00199	39.20502
35.40000	0.44899	22.33503	-0.00201	38.68540
35.70000	0.43701	22.03503	-0.00204	38.16579
36.00000	0.42520	21.73503	-0.00207	37.64617
36.30000	0.41354	21.43503	-0.00210	37.12656
36.60000	0.40205	21.13503	-0.00213	36.60694
36.90000	0.39071	20.83503	-0.00216	36.08733
37.20000	0.37954	20.53503	-0.00219	35.56771
37.50000	0.36854	20.23503	-0.00222	35.04809
37.80000	0.35769	19.93503	-0.00226	34.52848
38.10000	0.34701	19.63503	-0.00229	34.00886

38.40000	0.33649	19.33503	-0.00233	33.48925
38.70000	0.32613	19.03503	-0.00236	32.96963
39.00000	0.31593	18.73503	-0.00240	32.45002
39.30000	0.30589	18.43503	-0.00244	31.93040
39.60000	0.29602	18.13503	-0.00248	31.41079
39.90000	0.28631	17.83503	-0.00252	30.89117
40.20000	0.27676	17.53503	-0.00257	30.37156
40.50000	0.26737	17.23503	-0.00261	29.85194
40.80000	0.25814	16.93503	-0.00266	29.33233
41.10000	0.24908	16.63503	-0.00270	28.81271
41.40000	0.24018	16.33503	-0.00275	28.29310
41.70000	0.23144	16.03503	-0.00281	27.77348
42.00000	0.22286	15.73503	-0.00286	27.25387
42.30000	0.21445	15.43503	-0.00292	26.73425
42.60000	0.20619	15.13503	-0.00297	26.21464
42.90000	0.19810	14.83503	-0.00303	25.69502
43.20000	0.19017	14.53503	-0.00310	25.17541
43.50000	0.18240	14.23503	-0.00316	24.65579
43.80000	0.17480	13.93503	-0.00323	24.13617
44.10000	0.16735	13.63503	-0.00330	23.61656
44.40000	0.16007	13.33503	-0.00337	23.09694
44.70000	0.15295	13.03503	-0.00345	22.57733
45.00000	0.14599	12.73503	-0.00353	22.05771
45.30000	0.13920	12.43503	-0.00362	21.53810
45.60000	0.13257	12.13503	-0.00371	21.01848



45.90000	0.12609	11.83503	-0.00380	20.49887
46.20000	0.11978	11.53503	-0.00390	19.97925
46.50000	0.11364	11.23503	-0.00400	19.45964
46.80000	0.10765	10.93503	-0.00411	18.94002
47.10000	0.10183	10.63503	-0.00423	18.42041
47.40000	0.09617	10.33503	-0.00435	17.90079
47.70000	0.09067	10.03503	-0.00448	17.38118
48.00000	0.08533	9.73503	-0.00462	16.86156
48.30000	0.08015	9.43503	-0.00477	16.34195
48.60000	0.07514	9.13503	-0.00492	15.82233
48.90000	0.07029	8.83503	-0.00509	15.30272
49.20000	0.06560	8.53503	-0.00527	14.78310
49.50000	0.06107	8.23503	-0.00546	14.26349
49.80000	0.05670	7.93503	-0.00567	13.74387
50.10000	0.05250	7.63503	-0.00589	13.22425
50.40000	0.04846	7.33503	-0.00613	12.70464
50.70000	0.04458	7.03503	-0.00639	12.18502
51.00000	0.04086	6.73503	-0.00668	11.66541
51.30000	0.03731	6.43503	-0.00699	11.14579
51.60000	0.03391	6.13503	-0.00733	10.62618
51.90000	0.03068	5.83503	-0.00771	10.10656
52.20000	0.02761	5.53503	-0.00812	9.58695
52.50000	0.02470	5.23503	-0.00859	9.06733
52.80000	0.02196	4.93503	-0.00911	8.54772
53.10000	0.01937	4.63503	-0.00970	8.02810

53.40000	0.01695	4.33503	-0.01037	7.50849
53.70000	0.01469	4.03503	-0.01114	6.98887
54.00000	0.01259	3.73503	-0.01203	6.46926
54.30000	0.01066	3.43503	-0.01308	5.94964
54.60000	0.00889	3.13503	-0.01432	5.43003
54.90000	0.00727	2.83503	-0.01583	4.91041
55.20000	0.00582	2.53503	-0.01769	4.39080
55.50000	0.00454	2.23503	-0.02004	3.87118
55.80000	0.00341	1.93503	-0.02311	3.35156
56.10000	0.00245	1.63503	-0.02728	2.83195
56.40000	0.00165	1.33503	-0.03325	2.31233
56.70000	0.00101	1.03503	-0.04247	1.79272
57.00000	0.00054	0.73503	-0.05831	1.27310
57.30000	0.00023	0.43503	-0.08914	0.75349

Taking time: 57.60000 minutes.

Time step = 0.7

For EM

0.00000	3.00000	57.73503	-0.00424	100.00000
0.70000	2.92725	57.03503	-0.00430	98.78756
1.40000	2.85540	56.33503	-0.00435	97.57513
2.10000	2.78442	55.63503	-0.00440	96.36269
2.80000	2.71434	54.93503	-0.00446	95.15026
3.50000	2.64514	54.23503	-0.00452	93.93782
4.20000	2.57684	53.53503	-0.00458	92.72539
4.90000	2.50942	52.83503	-0.00464	91.51295

5.60000	2.44288	52.13503	-0.00470	90.30052
6.30000	2.37724	51.43503	-0.00477	89.08808
7.00000	2.31248	50.73503	-0.00483	87.87564
7.70000	2.24861	50.03503	-0.00490	86.66321
8.40000	2.18563	49.33503	-0.00497	85.45077
9.10000	2.12354	48.63503	-0.00504	84.23834
9.80000	2.06234	47.93503	-0.00512	83.02590
10.50000	2.00202	47.23503	-0.00519	81.81347
11.20000	1.94259	46.53503	-0.00527	80.60103
11.90000	1.88405	45.83503	-0.00535	79.38860
12.60000	1.82640	45.13503	-0.00544	78.17616
13.30000	1.76964	44.43503	-0.00553	76.96372
14.00000	1.71377	43.73503	-0.00561	75.75129
14.70000	1.65879	43.03503	-0.00571	74.53885
15.40000	1.60470	42.33503	-0.00580	73.32642
16.10000	1.55149	41.63503	-0.00590	72.11398
16.80000	1.49918	40.93503	-0.00600	70.90155
17.50000	1.44775	40.23503	-0.00611	69.68911
18.20000	1.39722	39.53503	-0.00622	68.47668
18.90000	1.34757	38.83503	-0.00633	67.26424
19.60000	1.29882	38.13503	-0.00645	66.05180
20.30000	1.25095	37.43503	-0.00657	64.83937
21.00000	1.20397	36.73503	-0.00670	63.62693
21.70000	1.15789	36.03503	-0.00683	62.41450
22.40000	1.11270	35.33503	-0.00697	61.20206

23.10000	1.06839	34.63503	-0.00711	59.98963
23.80000	1.02498	33.93503	-0.00726	58.77719
24.50000	0.98246	33.23503	-0.00742	57.56476
25.20000	0.94083	32.53503	-0.00758	56.35232
25.90000	0.90009	31.83503	-0.00775	55.13988
26.60000	0.86024	31.13503	-0.00792	53.92745
27.30000	0.82129	30.43503	-0.00811	52.71501
28.00000	0.78323	29.73503	-0.00831	51.50258
28.70000	0.74606	29.03503	-0.00851	50.29014
29.40000	0.70978	28.33503	-0.00872	49.07771
30.10000	0.67439	27.63503	-0.00895	47.86527
30.80000	0.63990	26.93503	-0.00919	46.65284
31.50000	0.60631	26.23503	-0.00944	45.44040
32.20000	0.57360	25.53503	-0.00970	44.22796
32.90000	0.54179	24.83503	-0.00999	43.01553
33.60000	0.51088	24.13503	-0.01028	41.80309
34.30000	0.48086	23.43503	-0.01060	40.59066
35.00000	0.45173	22.73503	-0.01094	39.37822
35.70000	0.42351	22.03503	-0.01129	38.16579
36.40000	0.39617	21.33503	-0.01168	36.95335
37.10000	0.36974	20.63503	-0.01209	35.74092
37.80000	0.34420	19.93503	-0.01253	34.52848
38.50000	0.31956	19.23503	-0.01300	33.31604
39.20000	0.29582	18.53503	-0.01351	32.10361
39.90000	0.27297	17.83503	-0.01407	30.89117

40.60000	0.25103	17.13503	-0.01467	29.67874
41.30000	0.22999	16.43503	-0.01533	28.46630
42.00000	0.20984	15.73503	-0.01604	27.25387
42.70000	0.19060	15.03503	-0.01684	26.04143
43.40000	0.17227	14.33503	-0.01771	24.82899
44.10000	0.15484	13.63503	-0.01868	23.61656
44.80000	0.13831	12.93503	-0.01976	22.40412
45.50000	0.12269	12.23503	-0.02098	21.19169
46.20000	0.10798	11.53503	-0.02237	19.97925
46.90000	0.09418	10.83503	-0.02395	18.76682
47.60000	0.08129	10.13503	-0.02578	17.55438
48.30000	0.06931	9.43503	-0.02792	16.34195
49.00000	0.05826	8.73503	-0.03045	15.12951
49.70000	0.04812	8.03503	-0.03351	13.91707
50.40000	0.03891	7.33503	-0.03726	12.70464
51.10000	0.03062	6.63503	-0.04200	11.49220
51.80000	0.02327	5.93503	-0.04818	10.27977
52.50000	0.01686	5.23503	-0.05660	9.06733
53.20000	0.01141	4.53503	-0.06881	7.85490
53.90000	0.00692	3.83503	-0.08833	6.64246
54.60000	0.00343	3.13503	-0.12552	5.43003
55.30000	0.00097	2.43503	-0.23605	4.21759

Taking Time: 56.00000 minutes.

For HM

0.00000	3.00000	57.73503	-0.00424	100.00000
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0.70000	2.92770	57.03503	-0.00430	98.78756
1.40000	2.85628	56.33503	-0.00435	97.57513
2.10000	2.78574	55.63503	-0.00440	96.36269
2.80000	2.71608	54.93503	-0.00446	95.15026
3.50000	2.64731	54.23503	-0.00452	93.93782
4.20000	2.57942	53.53503	-0.00458	92.72539
4.90000	2.51241	52.83503	-0.00464	91.51295
5.60000	2.44628	52.13503	-0.00470	90.30052
6.30000	2.38103	51.43503	-0.00476	89.08808
7.00000	2.31667	50.73503	-0.00483	87.87564
7.70000	2.25318	50.03503	-0.00490	86.66321
8.40000	2.19058	49.33503	-0.00497	85.45077
9.10000	2.12886	48.63503	-0.00504	84.23834
9.80000	2.06803	47.93503	-0.00511	83.02590
10.50000	2.00807	47.23503	-0.00519	81.81347
11.20000	1.94900	46.53503	-0.00526	80.60103
11.90000	1.89081	45.83503	-0.00535	79.38860
12.60000	1.83350	45.13503	-0.00543	78.17616
13.30000	1.77708	44.43503	-0.00551	76.96372
14.00000	1.72153	43.73503	-0.00560	75.75129
14.70000	1.66687	43.03503	-0.00569	74.53885
15.40000	1.61309	42.33503	-0.00579	73.32642
16.10000	1.56019	41.63503	-0.00588	72.11398
16.80000	1.50817	40.93503	-0.00598	70.90155
17.50000	1.45704	40.23503	-0.00609	69.68911

18.20000	1.40679	39.53503	-0.00620	68.47668
18.90000	1.35742	38.83503	-0.00631	67.26424
19.60000	1.30893	38.13503	-0.00642	66.05180
20.30000	1.26132	37.43503	-0.00654	64.83937
21.00000	1.21460	36.73503	-0.00667	63.62693
21.70000	1.16876	36.03503	-0.00680	62.41450
22.40000	1.12379	35.33503	-0.00693	61.20206
23.10000	1.07972	34.63503	-0.00707	59.98963
23.80000	1.03652	33.93503	-0.00722	58.77719
24.50000	0.99421	33.23503	-0.00737	57.56476
25.20000	0.95277	32.53503	-0.00753	56.35232
25.90000	0.91222	31.83503	-0.00770	55.13988
26.60000	0.87255	31.13503	-0.00787	53.92745
27.30000	0.83377	30.43503	-0.00805	52.71501
28.00000	0.79586	29.73503	-0.00824	51.50258
28.70000	0.75884	29.03503	-0.00844	50.29014
29.40000	0.72270	28.33503	-0.00865	49.07771
30.10000	0.68744	27.63503	-0.00886	47.86527
30.80000	0.65307	26.93503	-0.00910	46.65284
31.50000	0.61957	26.23503	-0.00934	45.44040
32.20000	0.58696	25.53503	-0.00959	44.22796
32.90000	0.55523	24.83503	-0.00986	43.01553
33.60000	0.52438	24.13503	-0.01015	41.80309
34.30000	0.49441	23.43503	-0.01045	40.59066
35.00000	0.46533	22.73503	-0.01077	39.37822

35.70000	0.43713	22.03503	-0.01112	38.16579
36.40000	0.40981	21.33503	-0.01148	36.95335
37.10000	0.38337	20.63503	-0.01187	35.74092
37.80000	0.35781	19.93503	-0.01229	34.52848
38.50000	0.33314	19.23503	-0.01273	33.31604
39.20000	0.30935	18.53503	-0.01321	32.10361
39.90000	0.28644	17.83503	-0.01373	30.89117
40.60000	0.26441	17.13503	-0.01429	29.67874
41.30000	0.24326	16.43503	-0.01490	28.46630
42.00000	0.22300	15.73503	-0.01556	27.25387
42.70000	0.20361	15.03503	-0.01629	26.04143
43.40000	0.18511	14.33503	-0.01708	24.82899
44.10000	0.16750	13.63503	-0.01796	23.61656
44.80000	0.15076	12.93503	-0.01893	22.40412
45.50000	0.13491	12.23503	-0.02001	21.19169
46.20000	0.11993	11.53503	-0.02122	19.97925
46.90000	0.10584	10.83503	-0.02259	18.76682
47.60000	0.09264	10.13503	-0.02415	17.55438
48.30000	0.08031	9.43503	-0.02594	16.34195
49.00000	0.06887	8.73503	-0.02801	15.12951
49.70000	0.05831	8.03503	-0.03044	13.91707
50.40000	0.04863	7.33503	-0.03333	12.70464
51.10000	0.03983	6.63503	-0.03683	11.49220
51.80000	0.03191	5.93503	-0.04114	10.27977
52.50000	0.02488	5.23503	-0.04660	9.06733



53.20000	0.01873	4.53503	-0.05370	7.85490
53.90000	0.01346	3.83503	-0.06334	6.64246
54.60000	0.00908	3.13503	-0.07713	5.43003
55.30000	0.00558	2.43503	-0.09837	4.21759
56.00000	0.00298	1.73503	-0.13474	3.00515
56.70000	0.00128	1.03503	-0.20538	1.79272

Taking time: 57.40000 minutes.

Step size = 0.8

For EM

0.00000	3.00000	57.73503	-0.00554	100.00000
0.80000	2.91686	56.93503	-0.00562	98.61436
1.60000	2.83488	56.13503	-0.00570	97.22872
2.40000	2.75407	55.33503	-0.00578	95.84308
3.20000	2.67441	54.53503	-0.00587	94.45744
4.00000	2.59591	53.73503	-0.00596	93.07180
4.80000	2.51857	52.93503	-0.00605	91.68616
5.60000	2.44240	52.13503	-0.00614	90.30052
6.40000	2.36738	51.33503	-0.00624	88.91487
7.20000	2.29353	50.53503	-0.00634	87.52923
8.00000	2.22083	49.73503	-0.00644	86.14359
8.80000	2.14930	48.93503	-0.00655	84.75795
9.60000	2.07893	48.13503	-0.00666	83.37231
10.40000	2.00972	47.33503	-0.00677	81.98667
11.20000	1.94168	46.53503	-0.00689	80.60103
12.00000	1.87479	45.73503	-0.00701	79.21539

12.80000	1.80907	44.93503	-0.00714	77.82975
13.60000	1.74451	44.13503	-0.00727	76.44411
14.40000	1.68111	43.33503	-0.00740	75.05847
15.20000	1.61887	42.53503	-0.00755	73.67283
16.00000	1.55780	41.73503	-0.00769	72.28719
16.80000	1.49789	40.93503	-0.00784	70.90155
17.60000	1.43914	40.13503	-0.00800	69.51591
18.40000	1.38156	39.33503	-0.00817	68.13027
19.20000	1.32514	38.53503	-0.00834	66.74462
20.00000	1.26989	37.73503	-0.00852	65.35898
20.80000	1.21580	36.93503	-0.00871	63.97334
21.60000	1.16287	36.13503	-0.00890	62.58770
22.40000	1.11111	35.33503	-0.00911	61.20206
23.20000	1.06051	34.53503	-0.00932	59.81642
24.00000	1.01108	33.73503	-0.00955	58.43078
24.80000	0.96282	32.93503	-0.00978	57.04514
25.60000	0.91572	32.13503	-0.01003	55.65950
26.40000	0.86978	31.33503	-0.01029	54.27386
27.20000	0.82502	30.53503	-0.01057	52.88822
28.00000	0.78142	29.73503	-0.01086	51.50258
28.80000	0.73899	28.93503	-0.01117	50.11694
29.60000	0.69773	28.13503	-0.01149	48.73130
30.40000	0.65763	27.33503	-0.01184	47.34566
31.20000	0.61871	26.53503	-0.01220	45.96001
32.00000	0.58095	25.73503	-0.01260	44.57437

32.80000	0.54436	24.93503	-0.01301	43.18873
33.60000	0.50895	24.13503	-0.01346	41.80309
34.40000	0.47471	23.33503	-0.01393	40.41745
35.20000	0.44163	22.53503	-0.01445	39.03181
36.00000	0.40974	21.73503	-0.01500	37.64617
36.80000	0.37901	20.93503	-0.01559	36.26053
37.60000	0.34946	20.13503	-0.01624	34.87489
38.40000	0.32109	19.33503	-0.01694	33.48925
39.20000	0.29389	18.53503	-0.01771	32.10361
40.00000	0.26786	17.73503	-0.01855	30.71797
40.80000	0.24302	16.93503	-0.01947	29.33233
41.60000	0.21936	16.13503	-0.02050	27.94669
42.40000	0.19688	15.33503	-0.02164	26.56105
43.20000	0.17558	14.53503	-0.02291	25.17541
44.00000	0.15547	13.73503	-0.02435	23.78976
44.80000	0.13654	12.93503	-0.02598	22.40412
45.60000	0.11880	12.13503	-0.02785	21.01848
46.40000	0.10226	11.33503	-0.03002	19.63284
47.20000	0.08691	10.53503	-0.03256	18.24720
48.00000	0.07276	9.73503	-0.03559	16.86156
48.80000	0.05981	8.93503	-0.03925	15.47592
49.60000	0.04807	8.13503	-0.04378	14.09028
50.40000	0.03755	7.33503	-0.04954	12.70464
51.20000	0.02825	6.53503	-0.05712	11.31900
52.00000	0.02018	5.73503	-0.06758	9.93336

52.80000	0.01336	4.93503	-0.08305	8.54772
53.60000	0.00781	4.13503	-0.10861	7.16208
54.40000	0.00357	3.33503	-0.16067	5.77644
55.20000	0.00070	2.53503	-0.36229	4.39080

Taking Time: 56.00000 minutes.

### For HM

0.00000	3.00000	57.73503	-0.00554	100.00000
0.80000	2.91744	56.93503	-0.00562	98.61436
1.60000	2.83604	56.13503	-0.00570	97.22872
2.40000	2.75578	55.33503	-0.00578	95.84308
3.20000	2.67668	54.53503	-0.00587	94.45744
4.00000	2.59873	53.73503	-0.00596	93.07180
4.80000	2.52193	52.93503	-0.00605	91.68616
5.60000	2.44628	52.13503	-0.00614	90.30052
6.40000	2.37179	51.33503	-0.00623	88.91487
7.20000	2.29845	50.53503	-0.00633	87.52923
8.00000	2.22626	49.73503	-0.00643	86.14359
8.80000	2.15522	48.93503	-0.00654	84.75795
9.60000	2.08533	48.13503	-0.00665	83.37231
10.40000	2.01660	47.33503	-0.00676	81.98667
11.20000	1.94901	46.53503	-0.00688	80.60103
12.00000	1.88258	45.73503	-0.00700	79.21539
12.80000	1.81731	44.93503	-0.00712	77.82975
13.60000	1.75318	44.13503	-0.00725	76.44411
14.40000	1.69021	43.33503	-0.00738	75.05847

15.20000	1.62838	42.53503	-0.00752	73.67283
16.00000	1.56771	41.73503	-0.00767	72.28719
16.80000	1.50819	40.93503	-0.00782	70.90155
17.60000	1.44983	40.13503	-0.00797	69.51591
18.40000	1.39261	39.33503	-0.00813	68.13027
19.20000	1.33655	38.53503	-0.00830	66.74462
20.00000	1.28164	37.73503	-0.00848	65.35898
20.80000	1.22788	36.93503	-0.00866	63.97334
21.60000	1.17528	36.13503	-0.00886	62.58770
22.40000	1.12382	35.33503	-0.00906	61.20206
23.20000	1.07352	34.53503	-0.00927	59.81642
24.00000	1.02437	33.73503	-0.00949	58.43078
24.80000	0.97637	32.93503	-0.00972	57.04514
25.60000	0.92952	32.13503	-0.00996	55.65950
26.40000	0.88383	31.33503	-0.01021	54.27386
27.20000	0.83929	30.53503	-0.01048	52.88822
28.00000	0.79590	29.73503	-0.01076	51.50258
28.80000	0.75366	28.93503	-0.01106	50.11694
29.60000	0.71257	28.13503	-0.01137	48.73130
30.40000	0.67264	27.33503	-0.01171	47.34566
31.20000	0.63386	26.53503	-0.01206	45.96001
32.00000	0.59623	25.73503	-0.01243	44.57437
32.80000	0.55975	24.93503	-0.01283	43.18873
33.60000	0.52442	24.13503	-0.01326	41.80309
34.40000	0.49025	23.33503	-0.01371	40.41745

35.20000	0.45722	22.53503	-0.01420	39.03181
36.00000	0.42535	21.73503	-0.01472	37.64617
36.80000	0.39464	20.93503	-0.01528	36.26053
37.60000	0.36507	20.13503	-0.01589	34.87489
38.40000	0.33666	19.33503	-0.01655	33.48925
39.20000	0.30939	18.53503	-0.01726	32.10361
40.00000	0.28328	17.73503	-0.01804	30.71797
40.80000	0.25833	16.93503	-0.01889	29.33233
41.60000	0.23452	16.13503	-0.01982	27.94669
42.40000	0.21187	15.33503	-0.02086	26.56105
43.20000	0.19036	14.53503	-0.02200	25.17541
44.00000	0.17001	13.73503	-0.02328	23.78976
44.80000	0.15082	12.93503	-0.02472	22.40412
45.60000	0.13277	12.13503	-0.02635	21.01848
46.40000	0.11588	11.33503	-0.02820	19.63284
47.20000	0.10013	10.53503	-0.03034	18.24720
48.00000	0.08555	9.73503	-0.03282	16.86156
48.80000	0.07211	8.93503	-0.03575	15.47592
49.60000	0.05982	8.13503	-0.03925	14.09028
50.40000	0.04869	7.33503	-0.04351	12.70464
51.20000	0.03871	6.53503	-0.04879	11.31900
52.00000	0.02988	5.73503	-0.05553	9.93336
52.80000	0.02221	4.93503	-0.06442	8.54772
53.60000	0.01569	4.13503	-0.07665	7.16208
54.40000	0.01032	3.33503	-0.09450	5.77644

55.20000	0.00611	2.53503	-0.12281	4.39080
56.00000	0.00307	1.73503	-0.17329	3.00515
56.80000	0.00125	0.93503	-0.27114	1.61951

Taking time: 57.60000 minutes.