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HW 5

Aero 300 Liam Hood

6.1.1.e

6.2.1

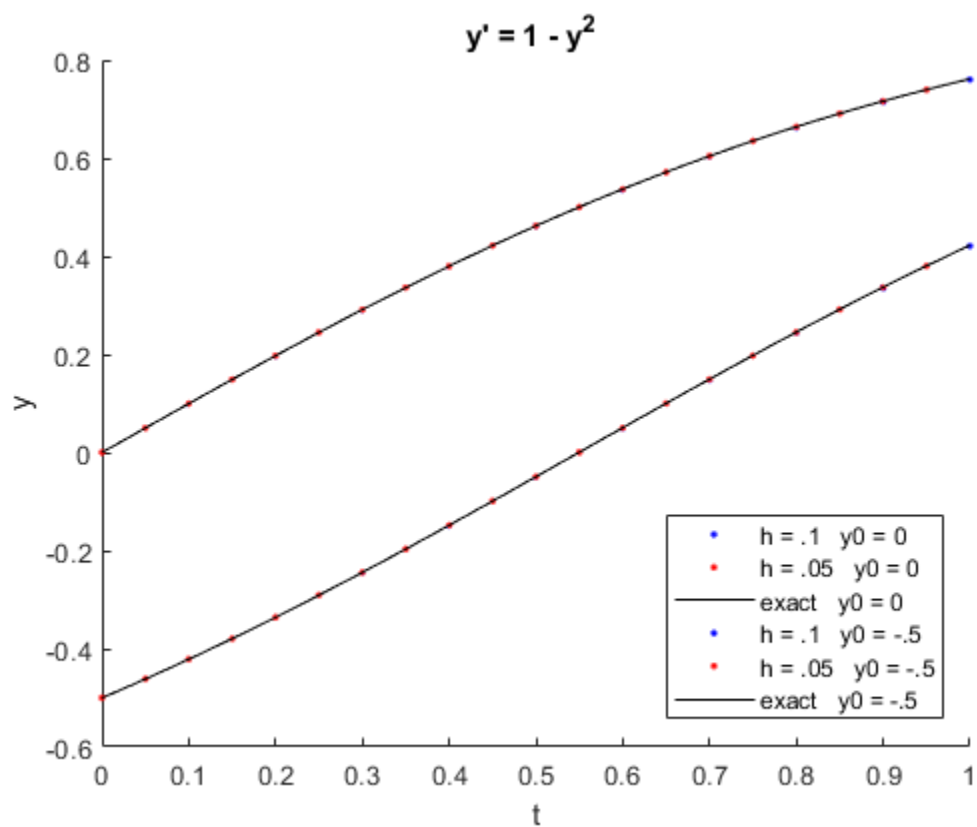
6.2.1.a				
Step	t_i	w_i	y_i	e_i
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
0	0	1	1	0
1	0.1	1.005	1.005	0
2	0.2	1.02	1.02	2.2204e-16
3	0.3	1.045	1.045	2.2204e-16
4	0.4	1.08	1.08	4.4409e-16
5	0.5	1.125	1.125	4.4409e-16
6	0.6	1.18	1.18	4.4409e-16
7	0.7	1.245	1.245	4.4409e-16
8	0.8	1.32	1.32	4.4409e-16
9	0.9	1.405	1.405	4.4409e-16
10	1	1.5	1.5	6.6613e-16

6.2.1.b				
Step	t_i	w_i	y_i	e_i
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
0	0	1	1	0
1	0.1	1.0005	1.0003	0.00016661
2	0.2	1.003	1.0027	0.00033303
3	0.3	1.0095	1.009	0.0005002
4	0.4	1.0222	1.0216	0.00067026
5	0.5	1.0434	1.0425	0.00084609
6	0.6	1.0757	1.0747	0.0010307
7	0.7	1.1224	1.1211	0.0012256
8	0.8	1.1875	1.1861	0.0014288
9	0.9	1.2767	1.2751	0.0016291
10	1	1.3974	1.3956	0.001797

6.2.1.c

Step	t_i	w_i	y_i	e_i
0	0	1	1	0
1	0.1	1.232	1.2337	0.0016781
2	0.2	1.5479	1.5527	0.0048224
3	0.3	1.9832	1.9937	0.010566
4	0.4	2.5908	2.6117	0.020909
5	0.5	3.4509	3.4903	0.039414
6	0.6	4.6864	4.7588	0.07246
7	0.7	6.4878	6.6194	0.13157
8	0.8	9.1556	9.3933	0.23775
9	0.9	13.169	13.599	0.42966
10	1	19.306	20.086	0.77922

6.2.6



6.4.3

6.4.3

RK4 approximation of $@(t,y)$ with step size 0.1

Step	t_i	w_i	y_i	e_i
------	-------	-------	-------	-------

0	0	1	1	0
1	0.1	1.005	1.005	0
2	0.2	1.02	1.02	2.2204e-16
3	0.3	1.045	1.045	2.2204e-16
4	0.4	1.08	1.08	4.4409e-16
5	0.5	1.125	1.125	4.4409e-16
6	0.6	1.18	1.18	4.4409e-16
7	0.7	1.245	1.245	4.4409e-16
8	0.8	1.32	1.32	4.4409e-16
9	0.9	1.405	1.405	4.4409e-16
10	1	1.5	1.5	6.6613e-16
11	1.1	1.605	1.605	6.6613e-16

6.4.3

RK4 approximation of $@(t,y)$ with step size 0.05

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.05	1.0012	1.0012	0
2	0.1	1.005	1.005	0
3	0.15	1.0112	1.0112	0
4	0.2	1.02	1.02	0
5	0.25	1.0313	1.0313	0
6	0.3	1.045	1.045	0
7	0.35	1.0613	1.0613	0
8	0.4	1.08	1.08	0
9	0.45	1.1013	1.1013	0
10	0.5	1.125	1.125	0
11	0.55	1.1513	1.1512	2.2204e-16
12	0.6	1.18	1.18	2.2204e-16
13	0.65	1.2113	1.2112	2.2204e-16
14	0.7	1.245	1.245	0
15	0.75	1.2813	1.2813	0
16	0.8	1.32	1.32	0
17	0.85	1.3613	1.3613	0
18	0.9	1.405	1.405	2.2204e-16
19	0.95	1.4512	1.4513	4.4409e-16
20	1	1.5	1.5	2.2204e-16

6.4.3

RK4 approximation of $@(t,y)$ with step size 0.025

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.025	1.0003	1.0003	0
2	0.05	1.0012	1.0012	0
3	0.075	1.0028	1.0028	2.2204e-16
4	0.1	1.005	1.005	0
5	0.125	1.0078	1.0078	0
6	0.15	1.0112	1.0112	0
7	0.175	1.0153	1.0153	0

8	0.2	1.02	1.02	0
9	0.225	1.0253	1.0253	0
10	0.25	1.0313	1.0313	0
11	0.275	1.0378	1.0378	0
12	0.3	1.045	1.045	0
13	0.325	1.0528	1.0528	0
14	0.35	1.0613	1.0613	0
15	0.375	1.0703	1.0703	0
16	0.4	1.08	1.08	0
17	0.425	1.0903	1.0903	0
18	0.45	1.1013	1.1013	0
19	0.475	1.1128	1.1128	0
20	0.5	1.125	1.125	0
21	0.525	1.1378	1.1378	2.2204e-16
22	0.55	1.1512	1.1513	2.2204e-16
23	0.575	1.1653	1.1653	2.2204e-16
24	0.6	1.18	1.18	2.2204e-16
25	0.625	1.1953	1.1953	2.2204e-16
26	0.65	1.2112	1.2113	2.2204e-16
27	0.675	1.2278	1.2278	2.2204e-16
28	0.7	1.245	1.245	2.2204e-16
29	0.725	1.2628	1.2628	4.4409e-16
30	0.75	1.2813	1.2813	2.2204e-16
31	0.775	1.3003	1.3003	2.2204e-16
32	0.8	1.32	1.32	2.2204e-16
33	0.825	1.3403	1.3403	4.4409e-16
34	0.85	1.3613	1.3613	2.2204e-16
35	0.875	1.3828	1.3828	4.4409e-16
36	0.9	1.405	1.405	4.4409e-16
37	0.925	1.4278	1.4278	4.4409e-16
38	0.95	1.4512	1.4513	4.4409e-16
39	0.975	1.4753	1.4753	4.4409e-16
40	1	1.5	1.5	4.4409e-16

6.4.3

RK4 approximation of $@(t,y)t^2*y$ with step size 0.1

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.1	1.0003	1.0003	3.4732e-09
2	0.2	1.0027	1.0027	6.963e-09
3	0.3	1.009	1.009	1.0519e-08
4	0.4	1.0216	1.0216	1.4263e-08
5	0.5	1.0425	1.0425	1.8499e-08
6	0.6	1.0747	1.0747	2.4024e-08
7	0.7	1.1211	1.1211	3.299e-08
8	0.8	1.1861	1.1861	5.129e-08
9	0.9	1.2751	1.2751	9.4891e-08
10	1	1.3956	1.3956	2.0611e-07
11	1.1	1.5584	1.5584	4.9417e-07

6.4.3

RK4 approximation of $@(t,y)t^2*y$ with step size 0.05

Step	t_i	w_i	y_i	e_i
0	0	1	1	0
1	0.05	1	1	5.4255e-11
2	0.1	1.0003	1.0003	1.0854e-10
3	0.15	1.0011	1.0011	1.6294e-10
4	0.2	1.0027	1.0027	2.1761e-10
5	0.25	1.0052	1.0052	2.7277e-10
6	0.3	1.009	1.009	3.2879e-10
7	0.35	1.0144	1.0144	3.8625e-10
8	0.4	1.0216	1.0216	4.4608e-10
9	0.45	1.0308	1.0308	5.0983e-10
10	0.5	1.0425	1.0425	5.8018e-10
11	0.55	1.057	1.057	6.6177e-10
12	0.6	1.0747	1.0747	7.6276e-10
13	0.65	1.0959	1.0959	8.9761e-10
14	0.7	1.1211	1.1211	1.0917e-09
15	0.75	1.151	1.151	1.3894e-09
16	0.8	1.1861	1.1861	1.8673e-09
17	0.85	1.2272	1.2272	2.6558e-09
18	0.9	1.2751	1.2751	3.9746e-09
19	0.95	1.3308	1.3308	6.1893e-09
20	1	1.3956	1.3956	9.9015e-09

6.4.3

RK4 approximation of $@(t,y)t^2*y$ with step size 0.025

Step	t_i	w_i	y_i	e_i
0	0	1	1	0
1	0.025	1	1	8.4754e-13
2	0.05	1	1	1.6955e-12
3	0.075	1.0001	1.0001	2.5433e-12
4	0.1	1.0003	1.0003	3.392e-12
5	0.125	1.0007	1.0007	4.2413e-12
6	0.15	1.0011	1.0011	5.0921e-12
7	0.175	1.0018	1.0018	5.945e-12
8	0.2	1.0027	1.0027	6.8003e-12
9	0.225	1.0038	1.0038	7.6599e-12
10	0.25	1.0052	1.0052	8.5243e-12
11	0.275	1.007	1.007	9.3956e-12
12	0.3	1.009	1.009	1.0276e-11
13	0.325	1.0115	1.0115	1.1167e-11
14	0.35	1.0144	1.0144	1.2073e-11
15	0.375	1.0177	1.0177	1.2998e-11
16	0.4	1.0216	1.0216	1.3948e-11
17	0.425	1.0259	1.0259	1.4932e-11
18	0.45	1.0308	1.0308	1.596e-11
19	0.475	1.0364	1.0364	1.7048e-11
20	0.5	1.0425	1.0425	1.8215e-11
21	0.525	1.0494	1.0494	1.9491e-11
22	0.55	1.057	1.057	2.0915e-11
23	0.575	1.0654	1.0654	2.2542e-11

24	0.6	1.0747	1.0747	2.4445e-11
25	0.625	1.0848	1.0848	2.6727e-11
26	0.65	1.0959	1.0959	2.9527e-11
27	0.675	1.108	1.108	3.3034e-11
28	0.7	1.1211	1.1211	3.7501e-11
29	0.725	1.1354	1.1354	4.327e-11
30	0.75	1.151	1.151	5.0798e-11
31	0.775	1.1678	1.1678	6.069e-11
32	0.8	1.1861	1.1861	7.3749e-11
33	0.825	1.2058	1.2058	9.1031e-11
34	0.85	1.2272	1.2272	1.1392e-10
35	0.875	1.2502	1.2502	1.4423e-10
36	0.9	1.2751	1.2751	1.8432e-10
37	0.925	1.3019	1.3019	2.3723e-10
38	0.95	1.3308	1.3308	3.0691e-10
39	0.975	1.362	1.362	3.9843e-10
40	1	1.3956	1.3956	5.1831e-10

6.4.3

RK4 approximation of $@(t,y)2*(t+1)*y$ with step size 0.1

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.1	1.2337	1.2337	3.71e-06
2	0.2	1.5527	1.5527	1.182e-05
3	0.3	1.9937	1.9937	2.8764e-05
4	0.4	2.6116	2.6117	6.324e-05
5	0.5	3.4902	3.4903	0.00013232
6	0.6	4.7586	4.7588	0.00026958
7	0.7	6.6188	6.6194	0.00054128
8	0.8	9.3923	9.3933	0.001079
9	0.9	13.597	13.599	0.0021455
10	1	20.081	20.086	0.0042701
11	1.1	30.257	30.265	0.0085278

6.4.3

RK4 approximation of $@(t,y)2*(t+1)*y$ with step size 0.05

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.05	1.1079	1.1079	9.8655e-08
2	0.1	1.2337	1.2337	2.4815e-07
3	0.15	1.3806	1.3806	4.7055e-07
4	0.2	1.5527	1.5527	7.9699e-07
5	0.25	1.7551	1.7551	1.2713e-06
6	0.3	1.9937	1.9937	1.955e-06
7	0.35	2.2762	2.2762	2.9349e-06
8	0.4	2.6117	2.6117	4.3328e-06
9	0.45	3.0117	3.0117	6.32e-06
10	0.5	3.4903	3.4903	9.1378e-06
11	0.55	4.0653	4.0654	1.3126e-05
12	0.6	4.7588	4.7588	1.8762e-05

13	0.65	5.5985	5.5985	2.6724e-05
14	0.7	6.6193	6.6194	3.7965e-05
15	0.75	7.8656	7.8656	5.3837e-05
16	0.8	9.3933	9.3933	7.6258e-05
17	0.85	11.274	11.274	0.00010795
18	0.9	13.599	13.599	0.00015279
19	0.95	16.486	16.486	0.00021629
20	1	20.085	20.086	0.00030637

6.4.3

RK4 approximation of $y'' = 2y(t+1)y$ with step size 0.025

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.025	1.0519	1.0519	2.8363e-09
2	0.05	1.1079	1.1079	6.3551e-09
3	0.075	1.1684	1.1684	1.0694e-08
4	0.1	1.2337	1.2337	1.6019e-08
5	0.125	1.3042	1.3042	2.2523e-08
6	0.15	1.3806	1.3806	3.044e-08
7	0.175	1.4632	1.4632	4.0045e-08
8	0.2	1.5527	1.5527	5.1666e-08
9	0.225	1.6498	1.6498	6.5693e-08
10	0.25	1.7551	1.7551	8.2587e-08
11	0.275	1.8694	1.8694	1.029e-07
12	0.3	1.9937	1.9937	1.2728e-07
13	0.325	2.1289	2.1289	1.5649e-07
14	0.35	2.2762	2.2762	1.9147e-07
15	0.375	2.4367	2.4367	2.3329e-07
16	0.4	2.6117	2.6117	2.8325e-07
17	0.425	2.8028	2.8028	3.4289e-07
18	0.45	3.0117	3.0117	4.1402e-07
19	0.475	3.2402	3.2402	4.9882e-07
20	0.5	3.4903	3.4903	5.9984e-07
21	0.525	3.7645	3.7645	7.2015e-07
22	0.55	4.0653	4.0654	8.6338e-07
23	0.575	4.3957	4.3957	1.0338e-06
24	0.6	4.7588	4.7588	1.2367e-06
25	0.625	5.1584	5.1584	1.4779e-06
26	0.65	5.5985	5.5985	1.7649e-06
27	0.675	6.0838	6.0838	2.1063e-06
28	0.7	6.6194	6.6194	2.5123e-06
29	0.725	7.2111	7.2111	2.9953e-06
30	0.75	7.8656	7.8656	3.5697e-06
31	0.775	8.5902	8.5902	4.2531e-06
32	0.8	9.3933	9.3933	5.0663e-06
33	0.825	10.284	10.284	6.0339e-06
34	0.85	11.274	11.274	7.1857e-06
35	0.875	12.374	12.374	8.557e-06
36	0.9	13.599	13.599	1.019e-05
37	0.925	14.964	14.964	1.2135e-05
38	0.95	16.486	16.486	1.4453e-05
39	0.975	18.185	18.186	1.7217e-05

40	1	20.086	20.086	2.0512e-05
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6.4.3

RK4 approximation of $@(t,y)5*t^4*y$ with step size 0.1

Step	t_i	w_i	y_i	e_i
0	0	1	1	0
1	0.1	1	1	4.1664e-07
2	0.2	1.0003	1.0003	8.3193e-07
3	0.3	1.0024	1.0024	1.239e-06
4	0.4	1.0103	1.0103	1.6219e-06
5	0.5	1.0317	1.0317	1.9524e-06
6	0.6	1.0809	1.0809	2.1654e-06
7	0.7	1.183	1.183	1.9449e-06
8	0.8	1.3877	1.3877	1.2053e-06
9	0.9	1.8048	1.8049	3.0038e-05
10	1	2.718	2.7183	0.00030542
11	1.1	5.0022	5.0054	0.0031338

6.4.3

RK4 approximation of $@(t,y)5*t^4*y$ with step size 0.05

Step	t_i	w_i	y_i	e_i
0	0	1	1	0
1	0.05	1	1	1.3021e-08
2	0.1	1	1	2.604e-08
3	0.15	1.0001	1.0001	3.9052e-08
4	0.2	1.0003	1.0003	5.204e-08
5	0.25	1.001	1.001	6.4982e-08
6	0.3	1.0024	1.0024	7.7848e-08
7	0.35	1.0053	1.0053	9.0609e-08
8	0.4	1.0103	1.0103	1.0324e-07
9	0.45	1.0186	1.0186	1.1572e-07
10	0.5	1.0317	1.0317	1.2804e-07
11	0.55	1.0516	1.0516	1.4012e-07
12	0.6	1.0809	1.0809	1.5163e-07
13	0.65	1.123	1.123	1.6122e-07
14	0.7	1.183	1.183	1.6405e-07
15	0.75	1.2678	1.2678	1.4335e-07
16	0.8	1.3877	1.3877	4.2235e-08
17	0.85	1.5585	1.5585	3.3005e-07
18	0.9	1.8049	1.8049	1.6107e-06
19	0.95	2.1679	2.1679	5.9325e-06
20	1	2.7183	2.7183	2.0499e-05

6.4.3

RK4 approximation of $@(t,y)5*t^4*y$ with step size 0.025

Step	t_i	w_i	y_i	e_i
0	0	1	1	0
1	0.025	1	1	4.069e-10

2	0.05	1	1	8.138e-10
3	0.075	1	1	1.2207e-09
4	0.1	1	1	1.6276e-09
5	0.125	1	1	2.0344e-09
6	0.15	1.0001	1.0001	2.4411e-09
7	0.175	1.0002	1.0002	2.8478e-09
8	0.2	1.0003	1.0003	3.2543e-09
9	0.225	1.0006	1.0006	3.6607e-09
10	0.25	1.001	1.001	4.0671e-09
11	0.275	1.0016	1.0016	4.4734e-09
12	0.3	1.0024	1.0024	4.8799e-09
13	0.325	1.0036	1.0036	5.2868e-09
14	0.35	1.0053	1.0053	5.6945e-09
15	0.375	1.0074	1.0074	6.1035e-09
16	0.4	1.0103	1.0103	6.5144e-09
17	0.425	1.014	1.014	6.9282e-09
18	0.45	1.0186	1.0186	7.3458e-09
19	0.475	1.0245	1.0245	7.7686e-09
20	0.5	1.0317	1.0317	8.1981e-09
21	0.525	1.0407	1.0407	8.6358e-09
22	0.55	1.0516	1.0516	9.0829e-09
23	0.575	1.0649	1.0649	9.5403e-09
24	0.6	1.0809	1.0809	1.0007e-08
25	0.625	1.1001	1.1001	1.0477e-08
26	0.65	1.123	1.123	1.0938e-08
27	0.675	1.1504	1.1504	1.136e-08
28	0.7	1.183	1.183	1.1682e-08
29	0.725	1.2218	1.2218	1.1781e-08
30	0.75	1.2678	1.2678	1.1416e-08
31	0.775	1.3226	1.3226	1.0126e-08
32	0.8	1.3877	1.3877	7.0327e-09
33	0.825	1.4655	1.4655	4.7724e-10
34	0.85	1.5585	1.5585	1.2654e-08
35	0.875	1.6701	1.6701	3.8188e-08
36	0.9	1.8049	1.8049	8.7006e-08
37	0.925	1.9683	1.9683	1.7943e-07
38	0.95	2.1679	2.1679	3.5341e-07
39	0.975	2.4135	2.4135	6.8006e-07
40	1	2.7183	2.7183	1.2931e-06

6.4.3

RK4 approximation of $@(t,y)y^{-2}$ with step size 0.1

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.1	1.0914	1.0914	1.0859e-06
2	0.2	1.1696	1.1696	1.2961e-06
3	0.3	1.2386	1.2386	1.2971e-06
4	0.4	1.3006	1.3006	1.2424e-06
5	0.5	1.3572	1.3572	1.1752e-06
6	0.6	1.4095	1.4095	1.1091e-06
7	0.7	1.4581	1.4581	1.048e-06
8	0.8	1.5037	1.5037	9.9273e-07

9	0.9	1.5467	1.5467	9.4315e-07
10	1	1.5874	1.5874	8.9867e-07
11	1.1	1.6261	1.6261	8.5868e-07

6.4.3

RK4 approximation of $@(t,y)y^{-2}$ with step size 0.05

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.05	1.0477	1.0477	4.1734e-08
2	0.1	1.0914	1.0914	6.0815e-08
3	0.15	1.1319	1.1319	6.9438e-08
4	0.2	1.1696	1.1696	7.2909e-08
5	0.25	1.2051	1.2051	7.373e-08
6	0.3	1.2386	1.2386	7.316e-08
7	0.35	1.2703	1.2703	7.186e-08
8	0.4	1.3006	1.3006	7.0193e-08
9	0.45	1.3295	1.3295	6.8359e-08
10	0.5	1.3572	1.3572	6.6474e-08
11	0.55	1.3838	1.3838	6.4603e-08
12	0.6	1.4095	1.4095	6.2781e-08
13	0.65	1.4342	1.4342	6.1028e-08
14	0.7	1.4581	1.4581	5.9352e-08
15	0.75	1.4812	1.4812	5.7758e-08
16	0.8	1.5037	1.5037	5.6245e-08
17	0.85	1.5255	1.5255	5.4811e-08
18	0.9	1.5467	1.5467	5.3451e-08
19	0.95	1.5673	1.5673	5.2163e-08
20	1	1.5874	1.5874	5.0942e-08

6.4.3

RK4 approximation of $@(t,y)y^{-2}$ with step size 0.025

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.025	1.0244	1.0244	1.4542e-09
2	0.05	1.0477	1.0477	2.4359e-09
3	0.075	1.07	1.07	3.104e-09
4	0.1	1.0914	1.0914	3.5591e-09
5	0.125	1.112	1.112	3.867e-09
6	0.15	1.1319	1.1319	4.0717e-09
7	0.175	1.151	1.151	4.2028e-09
8	0.2	1.1696	1.1696	4.2813e-09
9	0.225	1.1876	1.1876	4.3217e-09
10	0.25	1.2051	1.2051	4.3343e-09
11	0.275	1.222	1.222	4.3267e-09
12	0.3	1.2386	1.2386	4.3044e-09
13	0.325	1.2546	1.2546	4.2714e-09
14	0.35	1.2703	1.2703	4.2308e-09
15	0.375	1.2856	1.2856	4.1847e-09
16	0.4	1.3006	1.3006	4.1348e-09
17	0.425	1.3152	1.3152	4.0824e-09

18	0.45	1.3295	1.3295	4.0285e-09
19	0.475	1.3435	1.3435	3.9738e-09
20	0.5	1.3572	1.3572	3.9188e-09
21	0.525	1.3706	1.3706	3.8639e-09
22	0.55	1.3838	1.3838	3.8095e-09
23	0.575	1.3968	1.3968	3.7558e-09
24	0.6	1.4095	1.4095	3.7029e-09
25	0.625	1.4219	1.4219	3.6511e-09
26	0.65	1.4342	1.4342	3.6002e-09
27	0.675	1.4462	1.4462	3.5505e-09
28	0.7	1.4581	1.4581	3.502e-09
29	0.725	1.4698	1.4698	3.4546e-09
30	0.75	1.4812	1.4812	3.4084e-09
31	0.775	1.4926	1.4926	3.3634e-09
32	0.8	1.5037	1.5037	3.3195e-09
33	0.825	1.5147	1.5147	3.2768e-09
34	0.85	1.5255	1.5255	3.2352e-09
35	0.875	1.5362	1.5362	3.1947e-09
36	0.9	1.5467	1.5467	3.1552e-09
37	0.925	1.5571	1.5571	3.1168e-09
38	0.95	1.5673	1.5673	3.0794e-09
39	0.975	1.5774	1.5774	3.043e-09
40	1	1.5874	1.5874	3.0075e-09

6.4.3

RK4 approximation of $@(t,y)t^3/y^2$ with step size 0.1

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.1	1	1	1.5624e-10
2	0.2	1.0004	1.0004	1.5645e-09
3	0.3	1.002	1.002	5.6522e-09
4	0.4	1.0064	1.0064	1.5619e-08
5	0.5	1.0154	1.0154	4.2061e-08
6	0.6	1.0314	1.0314	1.1241e-07
7	0.7	1.0567	1.0567	2.7305e-07
8	0.8	1.0934	1.0934	5.6582e-07
9	0.9	1.1427	1.1427	9.8464e-07
10	1	1.2051	1.2051	1.4581e-06
11	1.1	1.2802	1.2802	1.8868e-06

6.4.3

RK4 approximation of $@(t,y)t^3/y^2$ with step size 0.05

Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.05	1	1	6.1018e-13
2	0.1	1	1	6.1038e-12
3	0.15	1.0001	1.0001	2.1407e-11
4	0.2	1.0004	1.0004	5.1901e-11
5	0.25	1.001	1.001	1.051e-10
6	0.3	1.002	1.002	1.951e-10

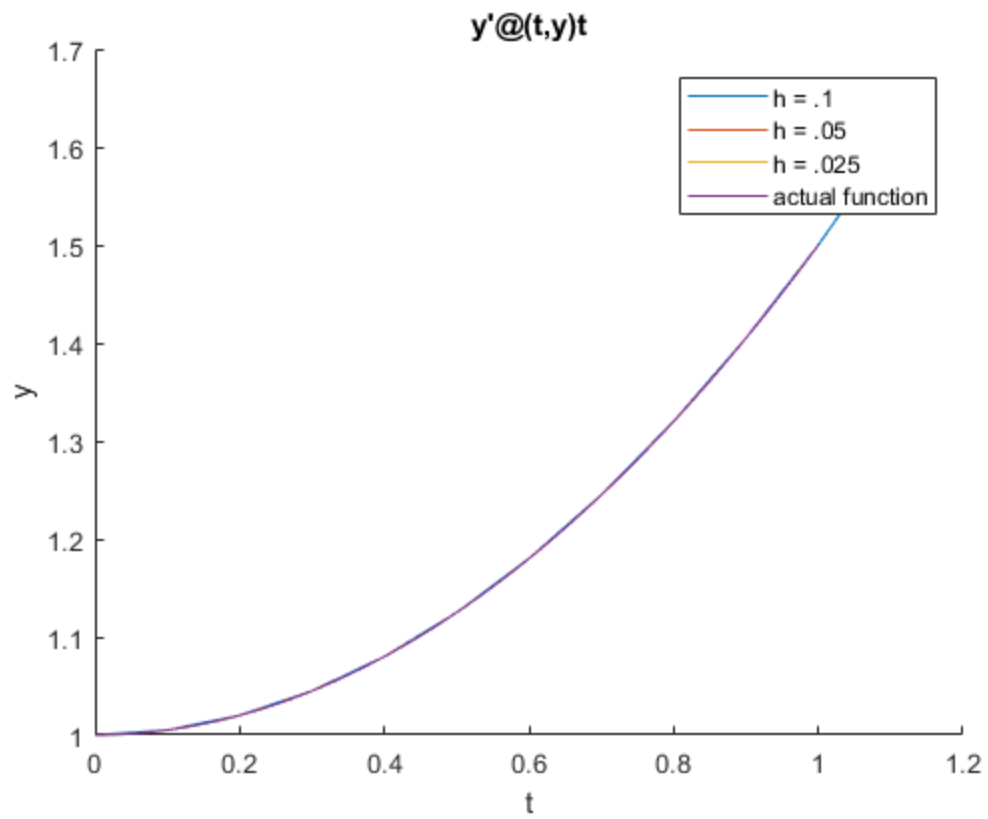
7	0.35	1.0037	1.0037	3.5149e-10
8	0.4	1.0064	1.0064	6.3404e-10
9	0.45	1.0101	1.0101	1.1528e-09
10	0.5	1.0154	1.0154	2.0897e-09
11	0.55	1.0224	1.0224	3.7134e-09
12	0.6	1.0314	1.0314	6.3758e-09
13	0.65	1.0428	1.0428	1.0478e-08
14	0.7	1.0567	1.0567	1.6399e-08
15	0.75	1.0736	1.0736	2.4405e-08
16	0.8	1.0934	1.0934	3.4552e-08
17	0.85	1.1164	1.1164	4.6623e-08
18	0.9	1.1427	1.1427	6.0133e-08
19	0.95	1.1723	1.1723	7.4389e-08
20	1	1.2051	1.2051	8.8606e-08

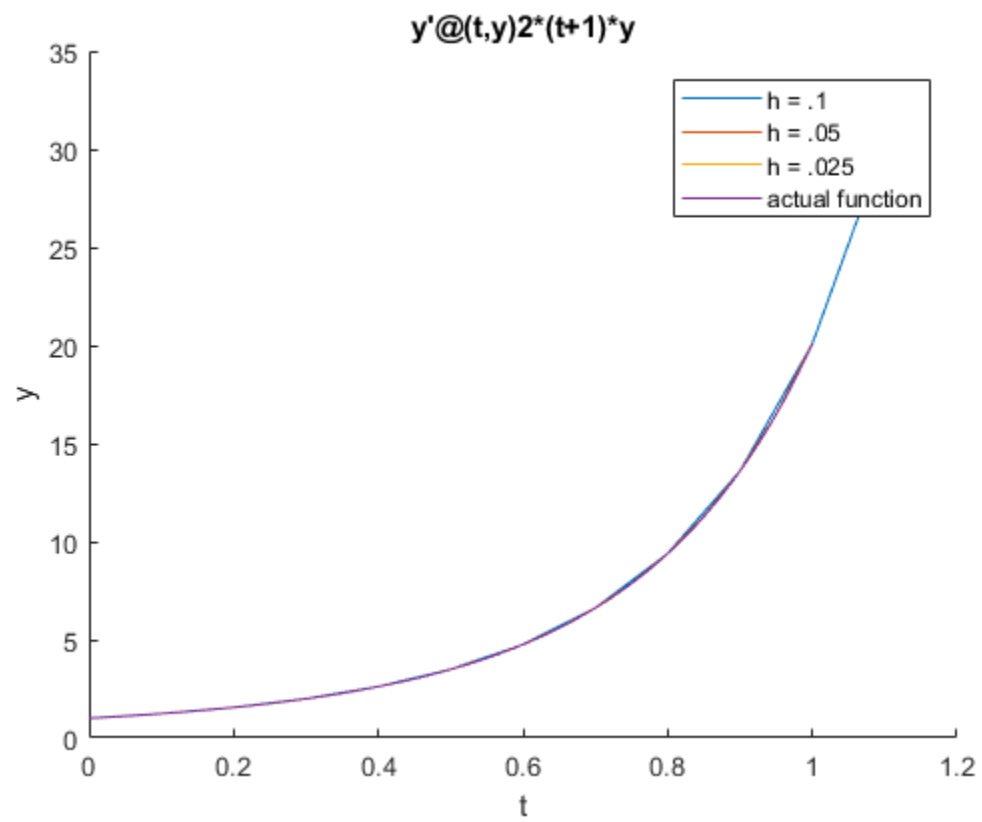
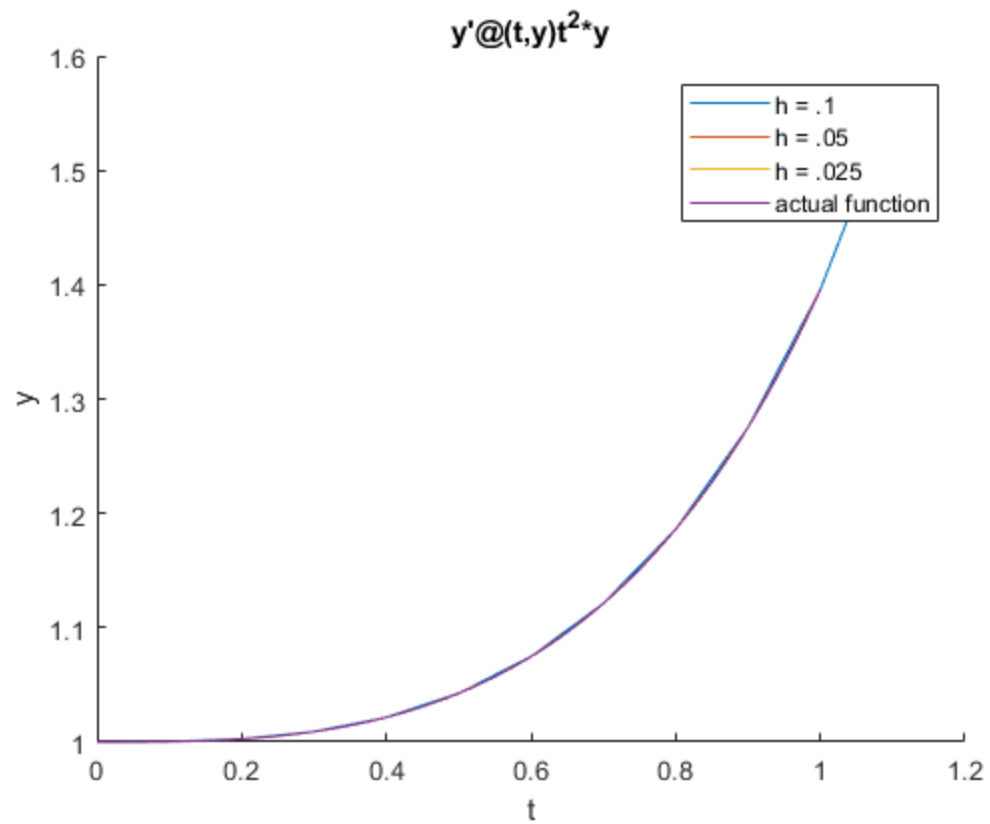
6.4.3

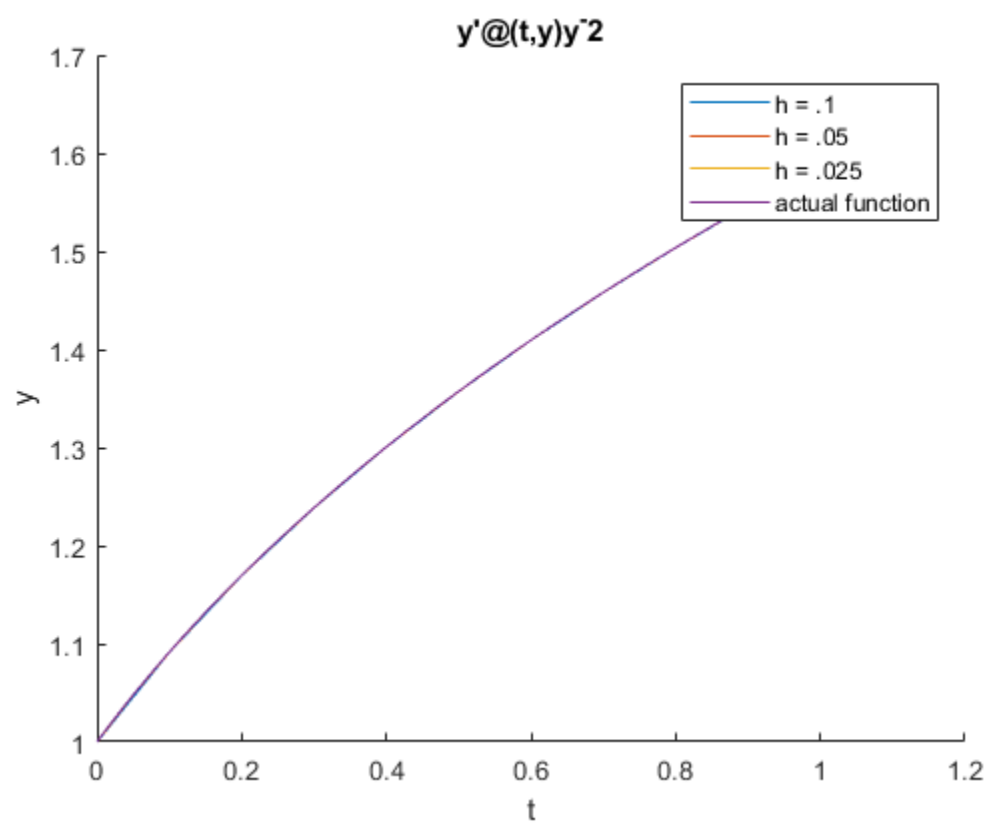
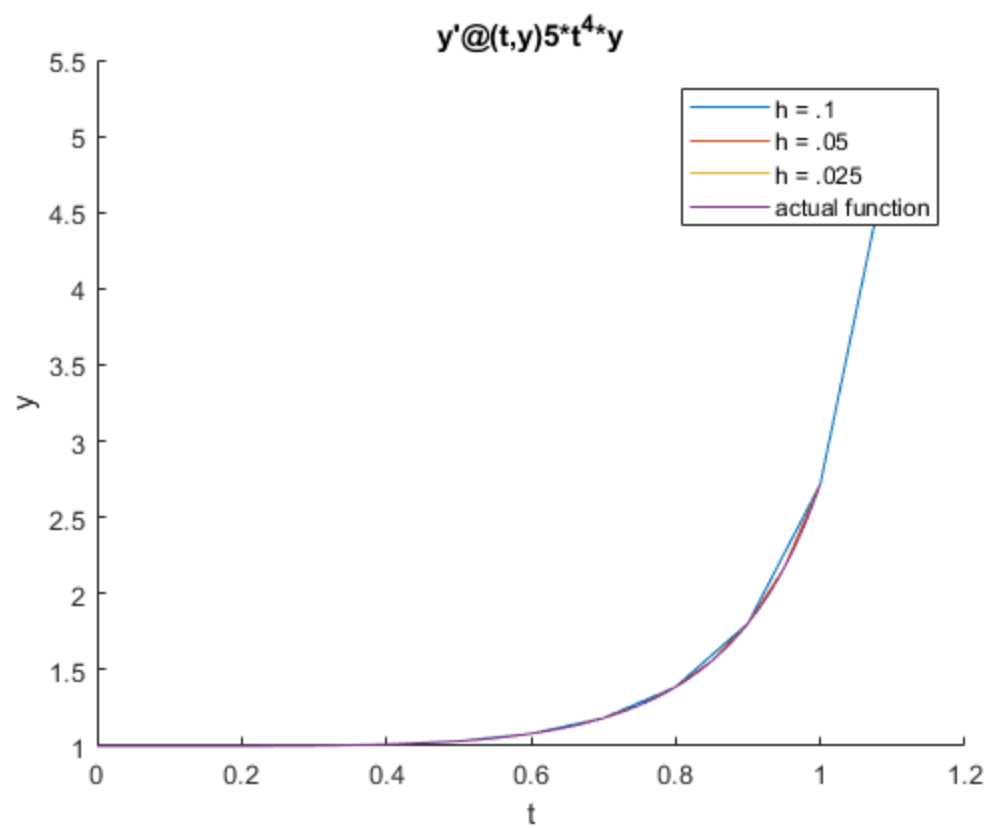
RK4 approximation of $@(t,y)t^3/y^2$ with step size 0.025

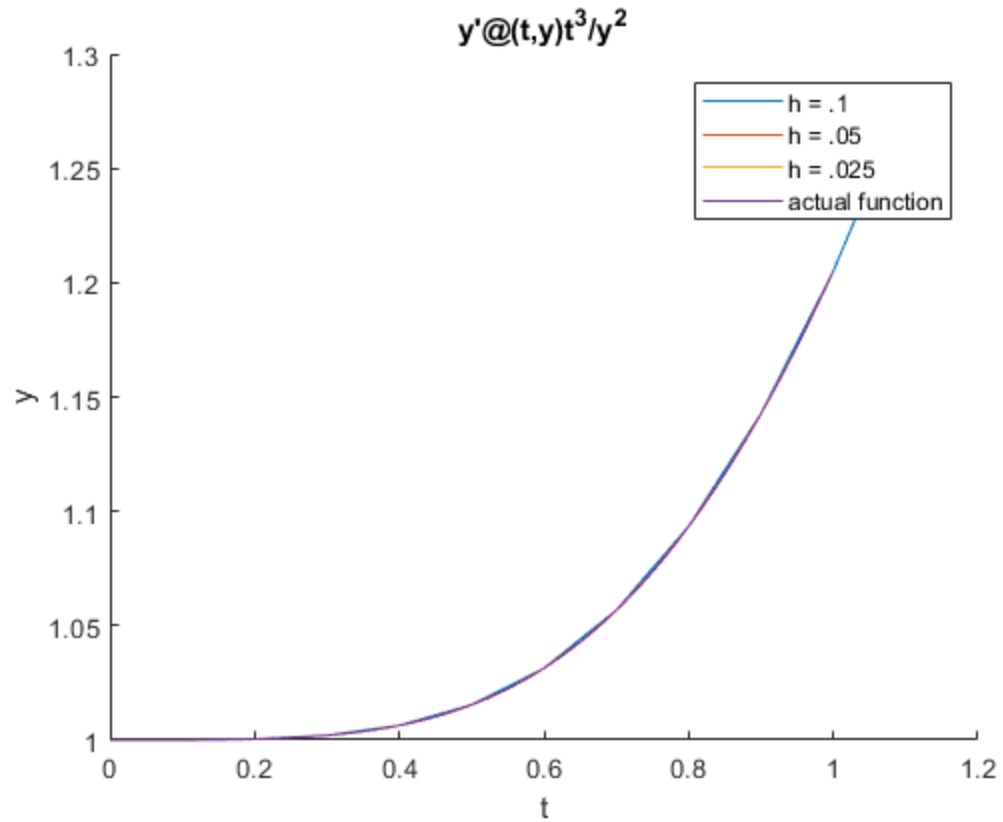
Step	t_i	w_i	y_i	e_i
<hr/>				
0	0	1	1	0
1	0.025	1	1	2.4425e-15
2	0.05	1	1	2.3759e-14
3	0.075	1	1	8.3489e-14
4	0.1	1	1	2.0051e-13
5	0.125	1.0001	1.0001	3.948e-13
6	0.15	1.0001	1.0001	6.8723e-13
7	0.175	1.0002	1.0002	1.1036e-12
8	0.2	1.0004	1.0004	1.6775e-12
9	0.225	1.0006	1.0006	2.4585e-12
10	0.25	1.001	1.001	3.5218e-12
11	0.275	1.0014	1.0014	4.9853e-12
12	0.3	1.002	1.002	7.0286e-12
13	0.325	1.0028	1.0028	9.9216e-12
14	0.35	1.0037	1.0037	1.4055e-11
15	0.375	1.0049	1.0049	1.9983e-11
16	0.4	1.0064	1.0064	2.8461e-11
17	0.425	1.0081	1.0081	4.0493e-11
18	0.45	1.0101	1.0101	5.7375e-11
19	0.475	1.0126	1.0126	8.0727e-11
20	0.5	1.0154	1.0154	1.1252e-10
21	0.525	1.0186	1.0186	1.5509e-10
22	0.55	1.0224	1.0224	2.1108e-10
23	0.575	1.0266	1.0266	2.8343e-10
24	0.6	1.0314	1.0314	3.7526e-10
25	0.625	1.0368	1.0368	4.8977e-10
26	0.65	1.0428	1.0428	6.3005e-10
27	0.675	1.0494	1.0494	7.9891e-10
28	0.7	1.0567	1.0567	9.9869e-10
29	0.725	1.0648	1.0648	1.231e-09
30	0.75	1.0736	1.0736	1.4968e-09
31	0.775	1.0831	1.0831	1.7957e-09
32	0.8	1.0934	1.0934	2.1266e-09
33	0.825	1.1045	1.1045	2.487e-09

34	0.85	1.1164	1.1164	2.8735e-09
35	0.875	1.1291	1.1291	3.2818e-09
36	0.9	1.1427	1.1427	3.7066e-09
37	0.925	1.1571	1.1571	4.1422e-09
38	0.95	1.1723	1.1723	4.5826e-09
39	0.975	1.1883	1.1883	5.0217e-09
40	1	1.2051	1.2051	5.4534e-09









Functions

6.1.1.1.e

Step	t_i	w_i	y_i	e_i
0	0	1	1	0
1	0.1	1.1	1.1402	0.040175
2	0.2	1.1826	1.2649	0.082266
3	0.3	1.2541	1.3784	0.12426
4	0.4	1.3177	1.4832	0.16552
5	0.5	1.3753	1.5811	0.20583
6	0.6	1.4282	1.6733	0.24514
7	0.7	1.4772	1.7607	0.28348
8	0.8	1.523	1.8439	0.32088
9	0.9	1.5661	1.9235	0.35739
10	1	1.6069	2	0.39309

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