

Comparison of methods for the IVP $\frac{dy}{dx} = \sqrt{x+y}$, $y(0)=1$, with $h=0.2$

x	EM (T-1)		T-2		IEM		T-3		T-4		RK-4		correct	
	y	1	y	1	y	1	y	1	y	1	y	1	y	1
0		1		1		1		1		1		1		1
error		0		0		0		0		0		0		
0.2	1.200000		1.220000		1.218322		1.219333		1.219417		1.219403		1.219405	
error	0.019405		-0.000595		0.001083		0.000072		-0.000012		0.000002			
0.4	1.436643		1.476719		1.473669		1.475567		1.475698		1.475678		1.475681	
error	0.039038		-0.001038		0.002012		0.000114		-0.000017		0.000003			
0.6	1.707689		1.768006		1.763764		1.766464		1.766628		1.766604		1.766607	
	0.058918		-0.001399		0.002843		0.000143		-0.000021		0.000003			
0.8	2.011510		2.092271		2.086957		2.090398		2.090587		2.090560		2.090565	
	0.079055		-0.001706		0.003608		0.000167		-0.000022		0.000005			
1	2.346862		2.448284		2.441983		2.446120		2.446331		2.446301		2.446306	
	0.099444		-0.001978		0.004323		0.000186		-0.000025		0.000005			
1.2	2.712750		2.835061		2.827835		2.832633		2.832862		2.832830		2.832835	
	0.120085		-0.002226		0.005000		0.000202		-0.000027		0.000005			
1.4	3.108364		3.251768		3.243686		3.249117		3.249363		3.249329		3.249335	
	0.140971		-0.002433		0.005649		0.000218		-0.000028		0.000006			
1.6	3.533022		3.697785		3.688844		3.694886		3.695147		3.695111		3.695118	
	0.162096		-0.002667		0.006274		0.000232		-0.000029		0.000007			
1.8	3.986145		4.172468		4.162721		4.169354		4.169630		4.169592		4.169599	
	0.183454		-0.002869		0.006878		0.000245		-0.000031		0.000007			
2	4.467233		4.675332		4.664805		4.672014		4.672302		4.672264		4.672271	
	0.205038		-0.003061		0.007466		0.000257		-0.000031		0.000007			
order1		order2		order2		order3		order4		order4				