'-----------10^1 matrix: -----------
time_speedy= 2.5272369384765625e-05
time_std= 3.600120544433594e-05
time_LU= 0.00018405914306640625

---- difference between the speedy solver ------
LU: 0.00015878677368164062
Standard: 1.0728836059570312e-05

-----------10^2 matrix: -----------
time_speedy= 0.00012683868408203125
time_std= 0.000209808349609375
time_LU= 0.0006561279296875

---- difference between the speedy solver ------
LU: 0.0005292892456054688
Standard: 8.296966552734375e-05

-----------10^3 matrix: -----------
time_speedy= 0.001138925552368164
time_std= 0.002460956573486328
time_LU= 0.05413484573364258

---- difference between the speedy solver ------
LU: 0.052995920181274414
Standard: 0.001322031021118164

-----------10^4 matrix: -----------
time_speedy= 0.02215409278869629
time_std= 0.033178091049194336
time_LU= 16.395947217941284

---- difference between the speedy solver ------
LU: 16.373793125152588
Standard: 0.011023998260498047

Speedy solver vs standard solver
-----------10^5 matrix: -----------
time_speedy= 0.11815381050109863
time_std= 0.20401906967163086

---- difference between the speedy solver ------
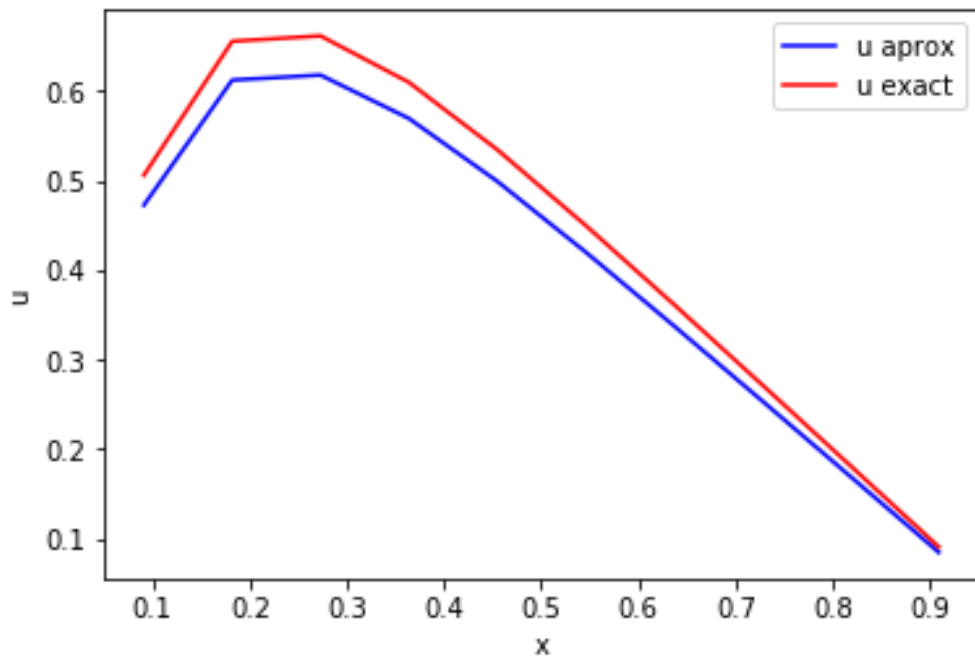Standard: 0.08586525917053223

-----------10^6 matrix: -----------
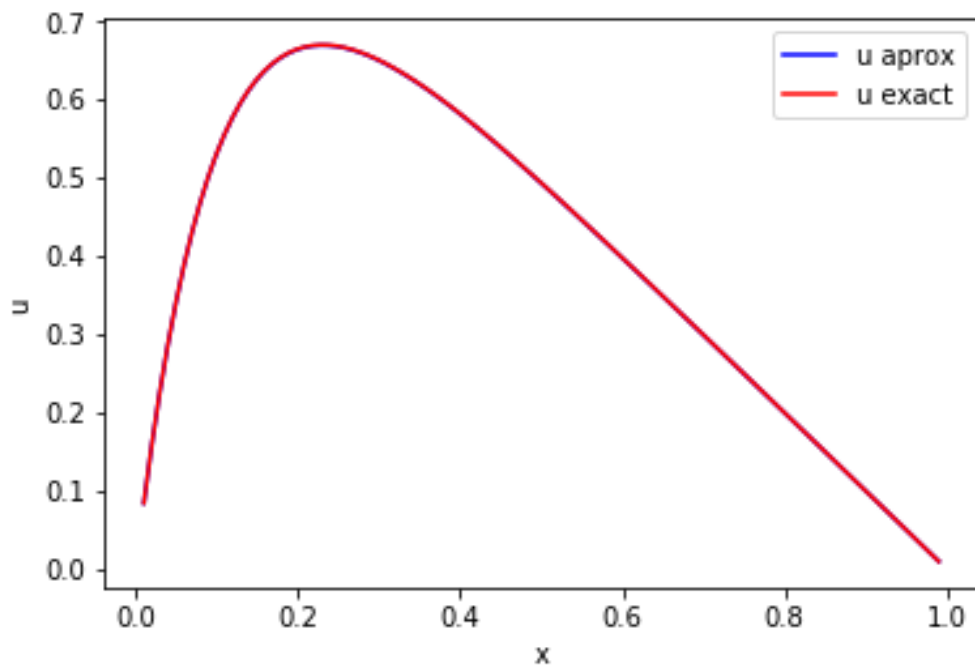time_speedy= 1.2248408794403076
time_std= 2.1686089038848877

---- difference between the speedy solver ------
Standard: 0.9437680244445801

----------10^1 matrix ---------
rel_max = 0.06611533728553903

----------10^2 matrix ---------
rel_max = 0.0008165131217430525

----------10^3 matrix ---------
rel_max = 8.316650166120728e-06
----------10^4 matrix ---------
rel_max = 8.331744595067102e-08
----------10^5 matrix ---------
rel_max = 8.363932312013947e-10

-----------10^6 matrix ---------
rel_max = 7.545573684892511e-11
-----------10^7 matrix ---------
rel_max = 8.125214568343274e-10
----Relativ Error-----

Log plot of Relativ error