Script file named “HW6” displays L1 error and multiple graphs comparing approximate and exact solution. Results are shown below for M=1, but the script works for other M values as well as long as the number of points and iterations is increased.

L1 error = 1.4544\*10-4







\*note because exact solution and approximate solution are close to each other the 3d figure is bugged when pasting into a word document, but if the MATLAB script file is ran it can be seen that the exact and approximate solution coincide.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x value | 0.06220976 | 0.06220976 | 0.06220976 | 0.06220976 | 0.06220976 |
| y value | 0.06220976 | 0.09331463 | 0.12441951 | 0.15552439 | 0.18662927 |
| Exact | 0.00300944 | 0.00596157 | 0.00885917 | 0.01170488 | 0.01450127 |
| Approximate | 0.00300922 | 0.00596114 | 0.00885853 | 0.01170405 | 0.01450025 |