

Python 3.7.4 (default, Aug 9 2019, 18:34:13) [MSC v.1915 64 bit (AMD64)]  
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IPython 7.8.0 -- An enhanced Interactive Python.

In [1]: runfile('D:/\_First\_Semester\_of\_Senior\_Year/Numerical\_Analysis(1)/homeworks/hw1/hw1\_Q3.py',  
 wdir='D:/\_First\_Semester\_of\_Senior\_Year/Numerical\_Analysis(1)/homeworks/hw1')

----- (a) -----

```
1 : 1 0.6375398756657026
2 : 1.9523809523809523 0.292339757252086
3 : 2.1217542737896267 0.23094868211538497
4 : 2.242849692023859 0.1870564217658913
5 : 2.334839672527244 0.15371372199512492
6 : 2.4070933802042798 0.12752463412689247
7 : 2.465059287507692 0.10651430415854733
8 : 2.512243462947621 0.08941192206197938
9 : 2.551057096383374 0.07534352766099053
10 : 2.583237767202747 0.0636793177146394
11 : 2.610081444615138 0.05394955506215438
12 : 2.632580300988204 0.04579461678379341
13 : 2.651509504414566 0.038933535356325044
14 : 2.667484487618559 0.033143240957967494
15 : 2.6810002018890304 0.02824433348302552
16 : 2.6924588873718474 0.024091016918216086
17 : 2.702190249310728 0.020563786259907384
18 : 2.710466452525252 0.017563992613755006
19 : 2.717513483076536 0.015009725043949105
20 : 2.7235199021356973 0.012832637644961595
21 : 2.7286436885337966 0.010975469390044143
22 : 2.733017654464709 0.009390081154891679
```

----- (b) -----

```
1 : 1 0.6375398756657026
2 : 7.666666666666667 1.7788609532296136
3 : 5.2302037387103555 0.8957402974266627
4 : 3.7426969186952115 0.3565783904958582
5 : 2.9948535682764033 0.08551499672047944
6 : 2.777022225866664 0.006559821266738485
```

----- (c) -----

```
1 : 1 0.6375398756657026
2 : 0.0 1.0
3 : 0.0 1.0
4 : 0.0 1.0
5 : 0.0 1.0
6 : 0.0 1.0
7 : 0.0 1.0
8 : 0.0 1.0
9 : 0.0 1.0
10 : 0.0 1.0
11 : 0.0 1.0
12 : 0.0 1.0
13 : 0.0 1.0
14 : 0.0 1.0
15 : 0.0 1.0
16 : 0.0 1.0
17 : 0.0 1.0
18 : 0.0 1.0
19 : 0.0 1.0
20 : 0.0 1.0
21 : 0.0 1.0
22 : 0.0 1.0
23 : 0.0 1.0
24 : 0.0 1.0
```

```
25 : 0.0 1.0
26 : 0.0 1.0
27 : 0.0 1.0
28 : 0.0 1.0
29 : 0.0 1.0
30 : 0.0 1.0
31 : 0.0 1.0
```

```
------(d)-----
1 : 1 0.6375398756657026
2 : 4.58257569495584 0.6610009561650232
3 : 2.1406951429280725 0.22408337233246423
4 : 3.132075594919797 0.1352525095590482
5 : 2.5893665274210145 0.06145788652391112
6 : 2.847822274447193 0.03222201567811121
7 : 2.715521252632272 0.015731829138479647
8 : 2.7808850947101225 0.007959957188025472
```

In [2]: