

Homework #2

#1

X =

0.0933
0.3841
-1.2857
0.058
0.0493
0.0382
0.2905
-0.4883
0.5828

Mean = -0.0309

#2

LU

```
>> [L, U] = LUcalculator(A, dim1, dim2)
```

L =

1.0000	0	0	0	0	0	0	0	0
0.8095	1.0000	0	0	0	0	0	0	0
1.9524	1.6514	1.0000	0	0	0	0	0	0
0.5714	0.3048	0.2247	1.0000	0	0	0	0	0
0.6667	0.5996	0.4910	1.0246	1.0000	0	0	0	0
0.0952	-0.2072	-0.3371	0.0046	-1.1718	1.0000	0	0	0
0.5238	0.4084	-0.3430	-1.6101	-2.9945	1.6818	1.0000	0	0
1.0952	1.4243	0.6327	2.2333	-1.4168	-1.2830	-0.7508	1.0000	0
1.4762	1.7669	0.3145	-1.7193	-3.5746	1.6217	1.8093	0.3741	1.0000

U =

21.0000	32.0000	14.0000	8.0000	6.0000	9.0000	11.0000	3.0000	5.0000
0	-23.9048	-3.3333	7.5238	50.1429	15.7143	10.0952	-1.4286	1.9524
0	0	-8.8287	-23.0438	-83.5199	-21.5219	-12.1474	3.5020	-3.9861
0	0	0	6.3141	3.0582	9.9043	0.3673	22.9341	16.4436
0	0	0	0	14.8070	7.9966	0.2013	-19.3608	-10.3948
0	0	0	0.0000	0	17.4688	20.1832	-11.1936	3.3285
0	0	0	-0.0000	0	0	-20.8012	10.9883	1.9667
-0.0000	0	0	0.0000	0	0	0.0000	-84.2266	-35.4390
0.0000	0	0	0.0000	0	0	-0.0000	0	-3.1609

Y:

Y =

2.0000
3.3810
-2.4880
-0.6142
4.4903
13.9359
-10.2622
20.4759
-1.8421

X:

0.0933
0.3841
-1.2857
0.0580
0.0493
0.0382
0.2905
-0.4883
0.5828

#3

Actual values:

0.0933
0.3841
-1.2857
0.058
0.0493
0.0382
0.2905
-0.4883
0.5828

Margin of error = 0 for all x, all values are the same.

Problem 2

#1

$$\frac{\ln\left(\frac{(2-0)}{2(10^{-6})}\right)}{\ln 2} = 19.9315685693$$

= 20 minimum iterations.

#2

Initial guess: $1(2-0)/2 = 1$

```
result =
  1.0000  1.5000  1.2500  1.3750  1.4375  1.4062  1.3906  1.3984  1.3945  1.3965  1.3955  1.3950  1.3953  1.3951  1.3951  1.3951  1.3951  1.3951  1.3951  1.3951
>> |
```

#3

