

MA 374 Lab 3 Report

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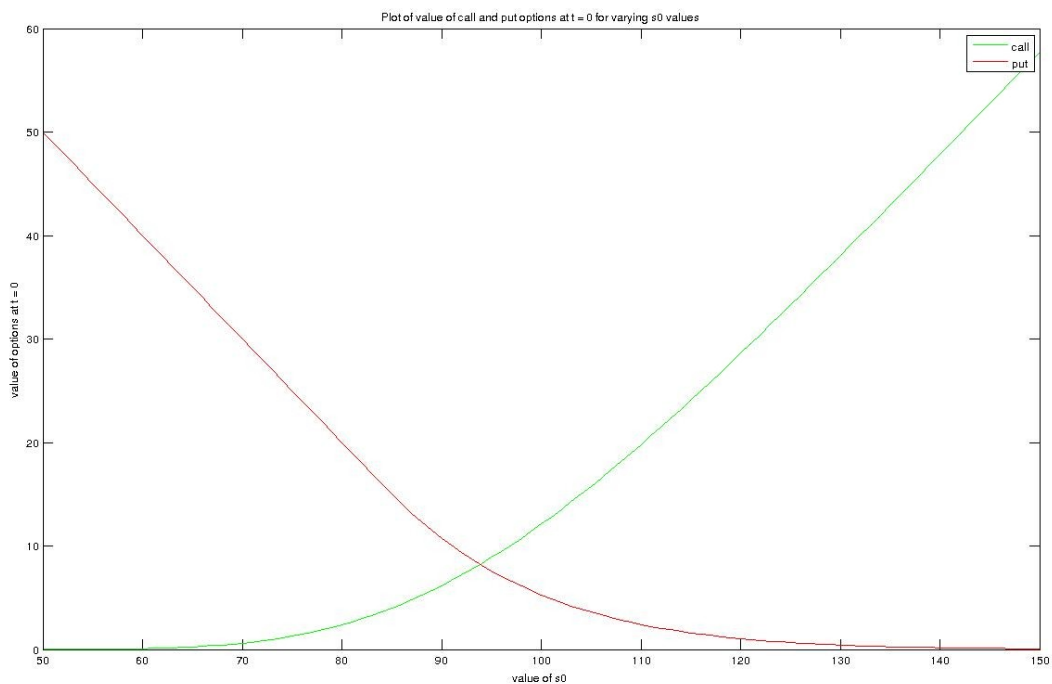
Q1)

The initial value of American call option for the specifically mentioned data is : 12.123047

The initial value of American put option for the specifically mentioned data is : 5.279837

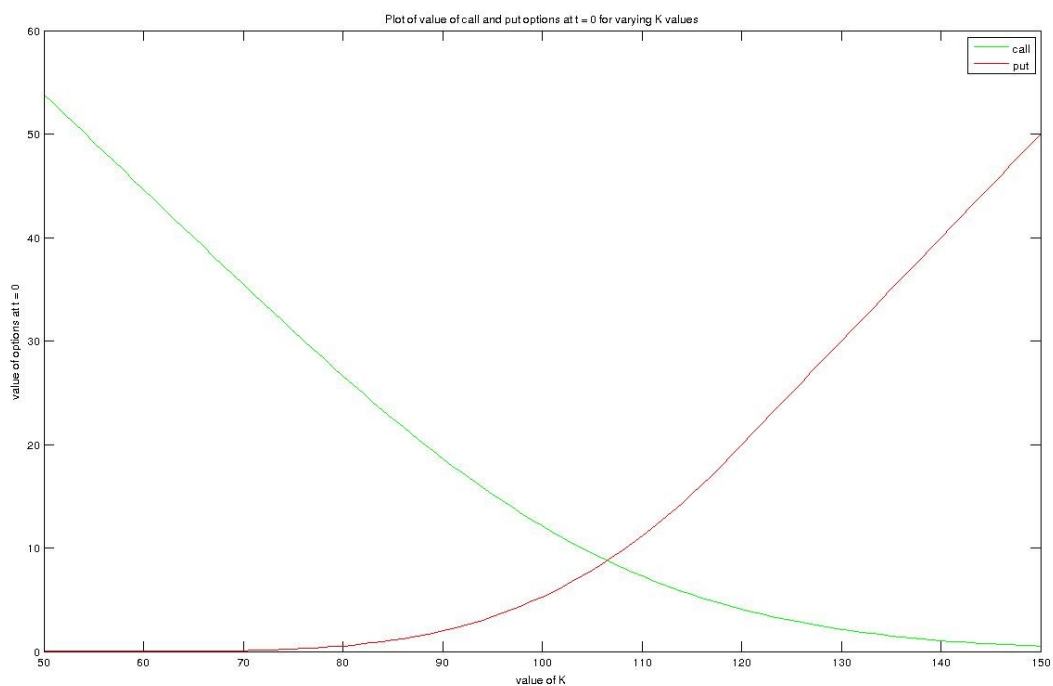
a)

By changing $S(0)$ value and keeping others constant, we get the following graphs



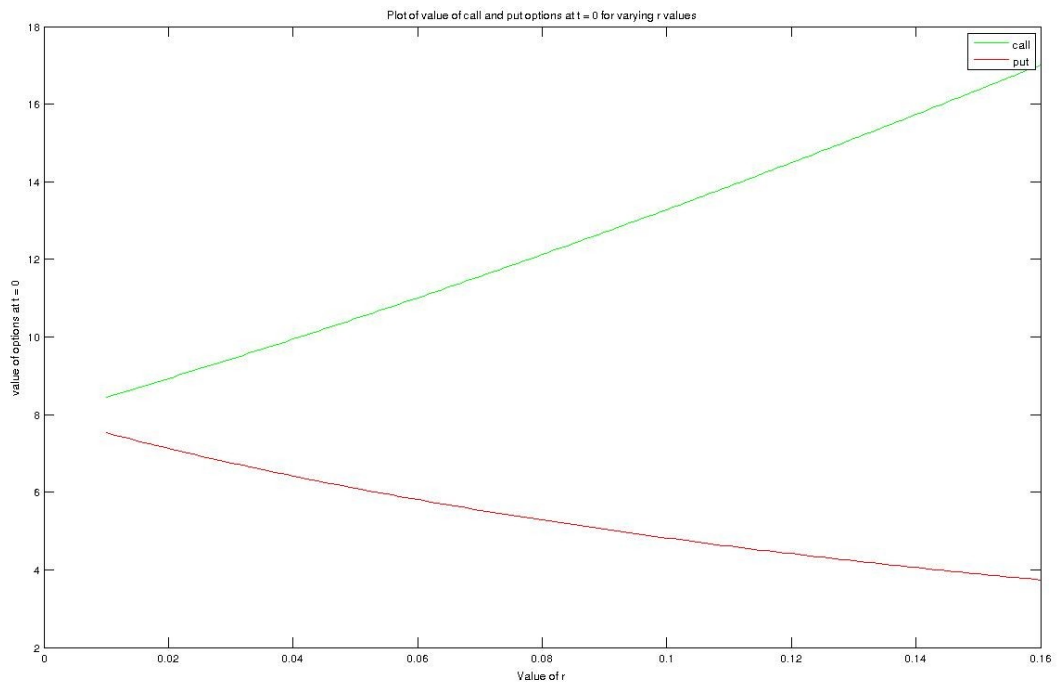
b)

By changing K and keeping other values constant, we get following graph

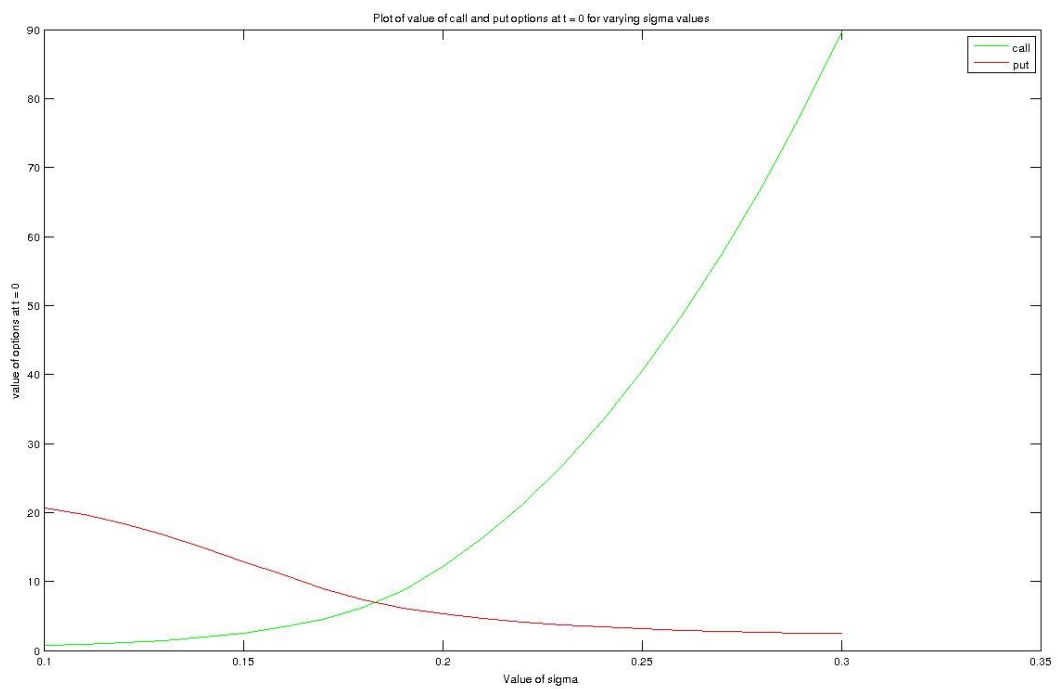


c)

By changing r and keeping other values constant, we get following graph



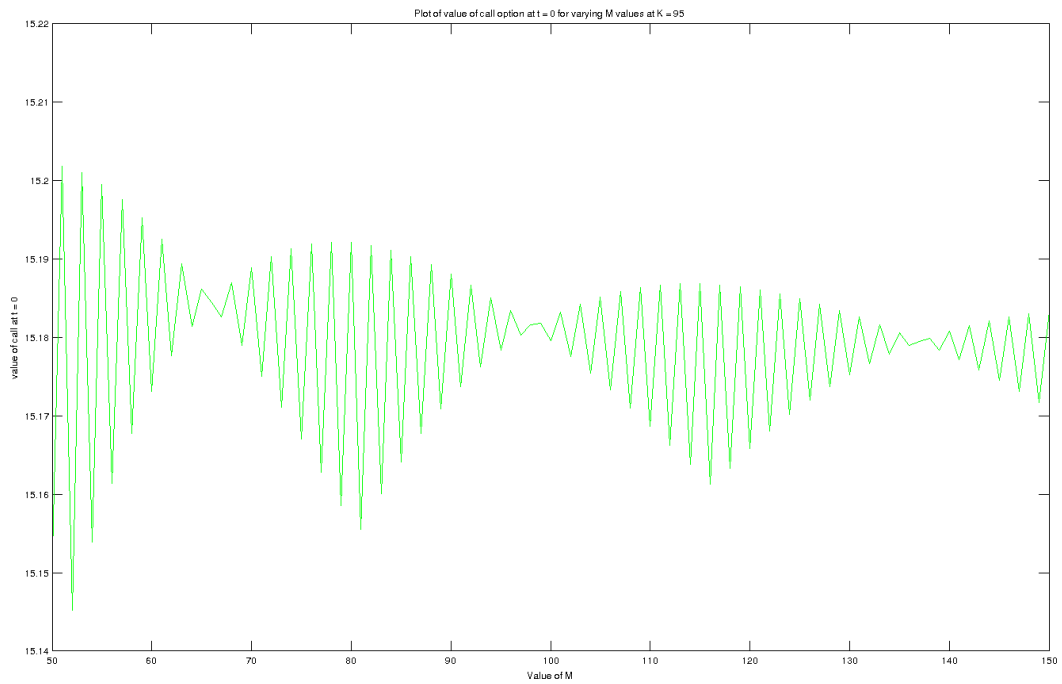
d)
By changing sigma and keeping other values constant, we get the following graph



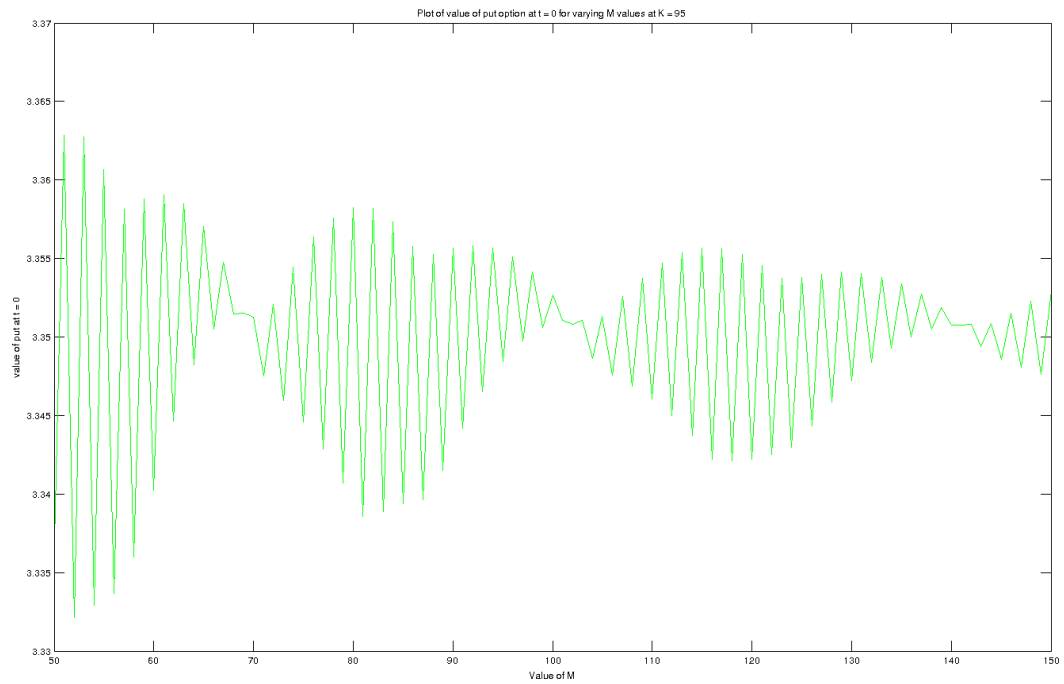
e)

By changing M and for $K = 95$, we get following graphs

call :

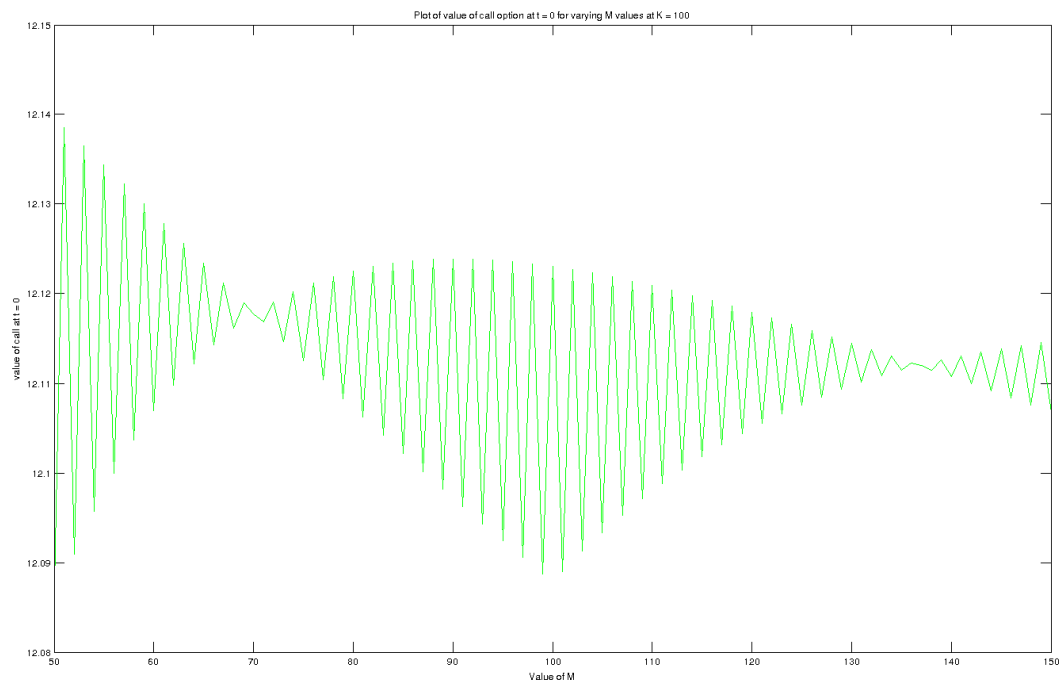


put :

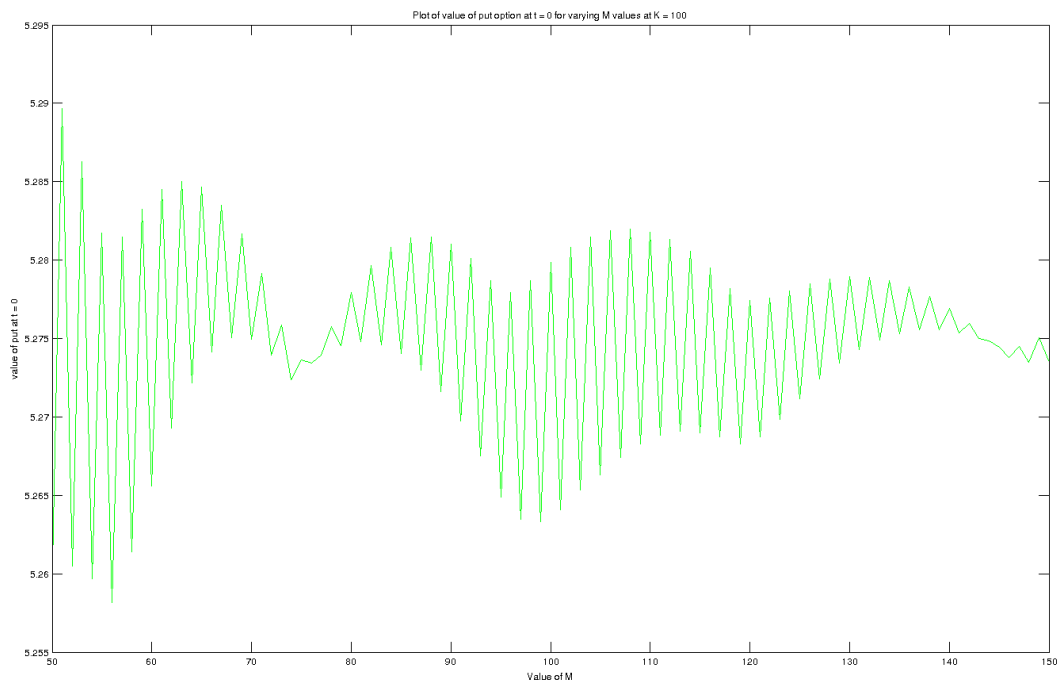


By changing M and $K = 100$, we get following graphs

call :

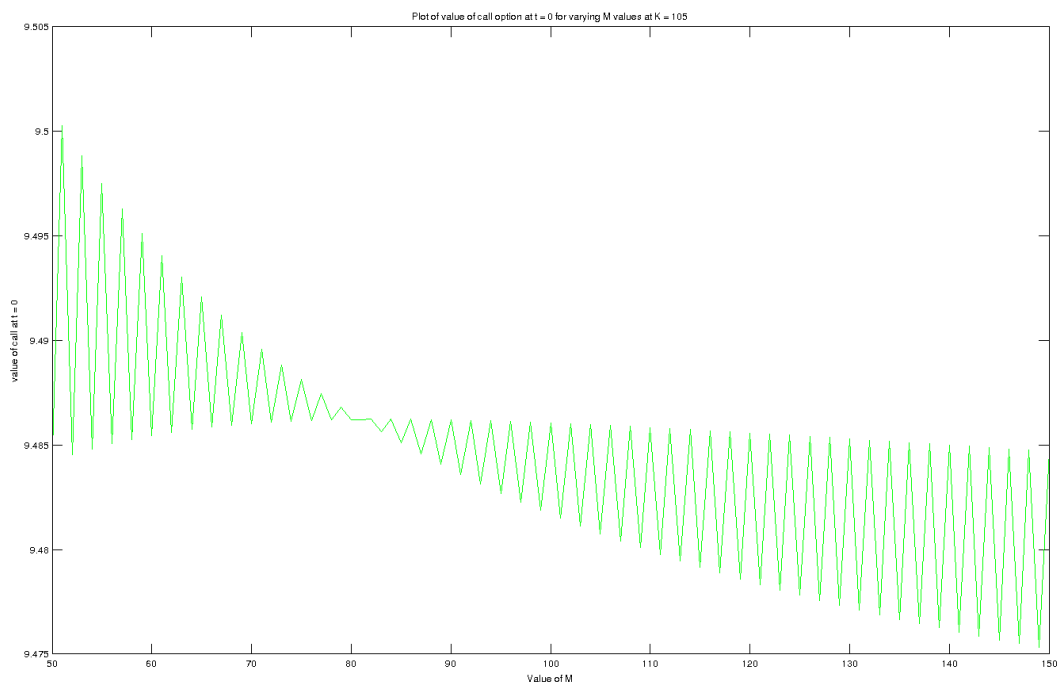


put :

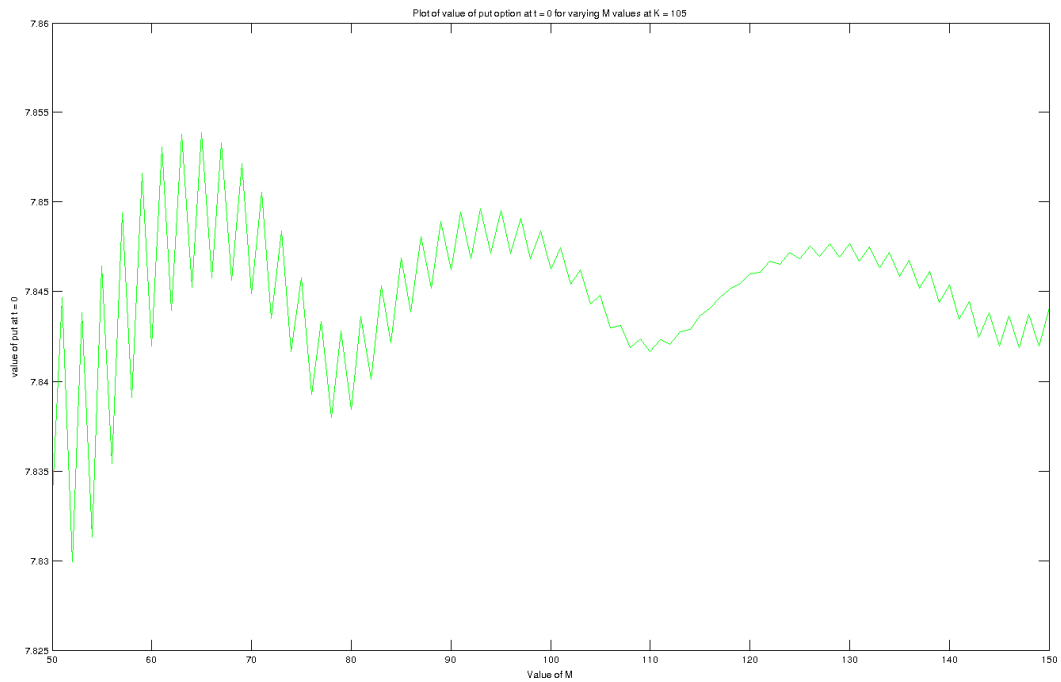


By changing M and $K = 105$, we get the following graphs

call :



put :



Q2)

A)

For $M = 5$, initial lookback option value is 9.1192989

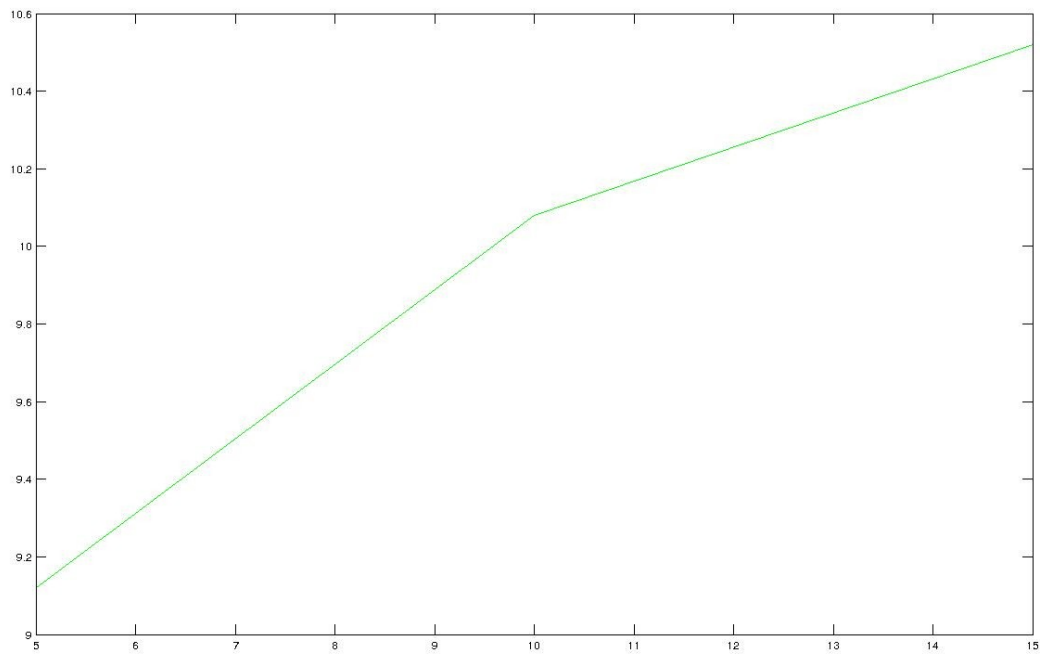
For $M = 10$, initial lookback option value is 10.080582

For $M = 20$, initial lookback option value is 10.519165

The system isn't handling further higher M values

B)

The plot is as follows



C)

The intermediate values of lookback option for $M = 5$ are :

8.1571	9.0280	8.5481	7.4168	5.5016	0
0	7.5492	9.7991	9.9553	9.5714	11.1814
0	0	7.1479	6.2019	4.6005	0
0	0	8.1940	13.7129	15.6319	19.4527
0	0	0	6.2019	4.6005	0
0	0	0	8.3246	8.0036	9.3499
0	0	0	5.1861	6.6808	6.3745
0	0	0	11.4667	21.1881	25.3946
0	0	0	0	4.6005	0
0	0	0	0	8.0036	9.3499
0	0	0	0	3.8469	0
0	0	0	0	13.0714	16.2664
0	0	0	0	3.8469	0
0	0	0	0	6.6926	13.5780
0	0	0	0	5.5865	13.5780
0	0	0	0	17.7175	29.4826
0	0	0	0	0	0

0	0	0	0	0	9.3499
0	0	0	0	0	0
0	0	0	0	0	16.2664
0	0	0	0	0	0
0	0	0	0	0	7.8184
0	0	0	0	0	5.3304
0	0	0	0	0	21.2350
0	0	0	0	0	0
0	0	0	0	0	7.8184
0	0	0	0	0	0
0	0	0	0	0	13.6020
0	0	0	0	0	0
0	0	0	0	0	11.3539
0	0	0	0	0	11.3539
0	0	0	0	0	24.6534

Q3)