

MA374-LAB1

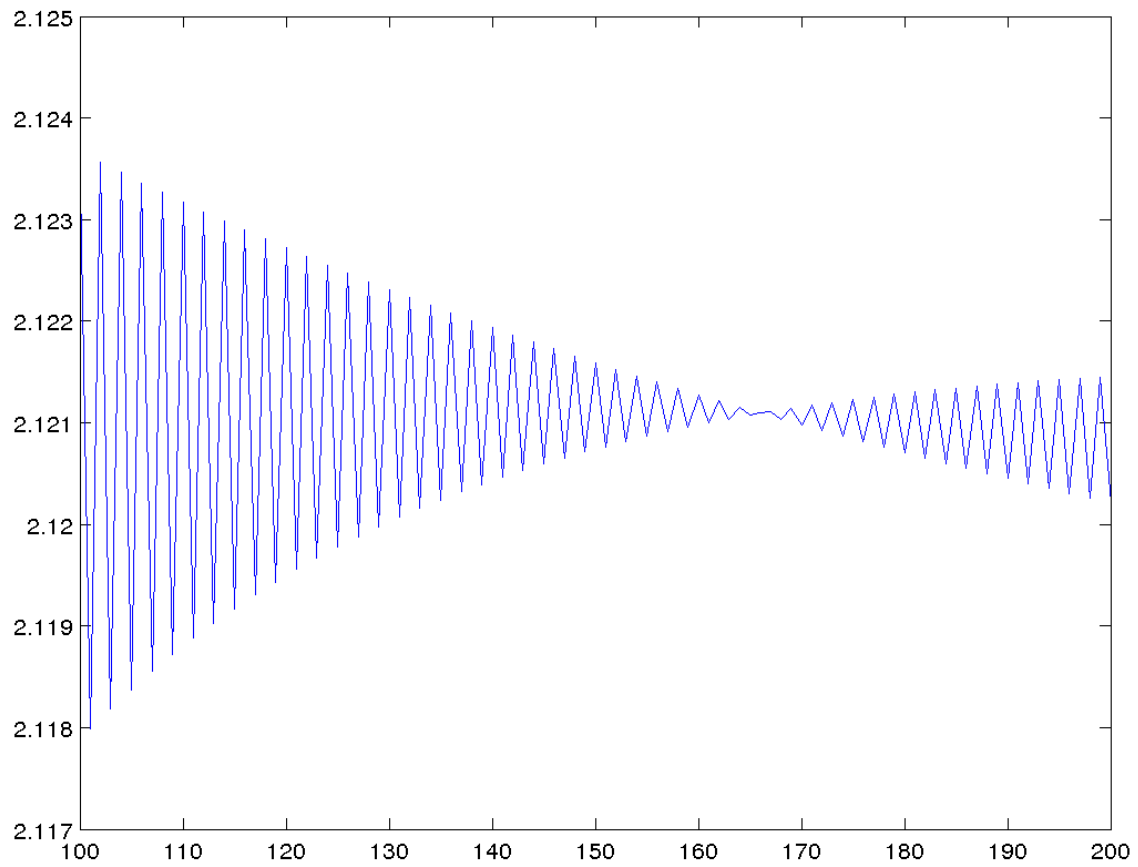
Nikhil Agarwal

Roll:11012323

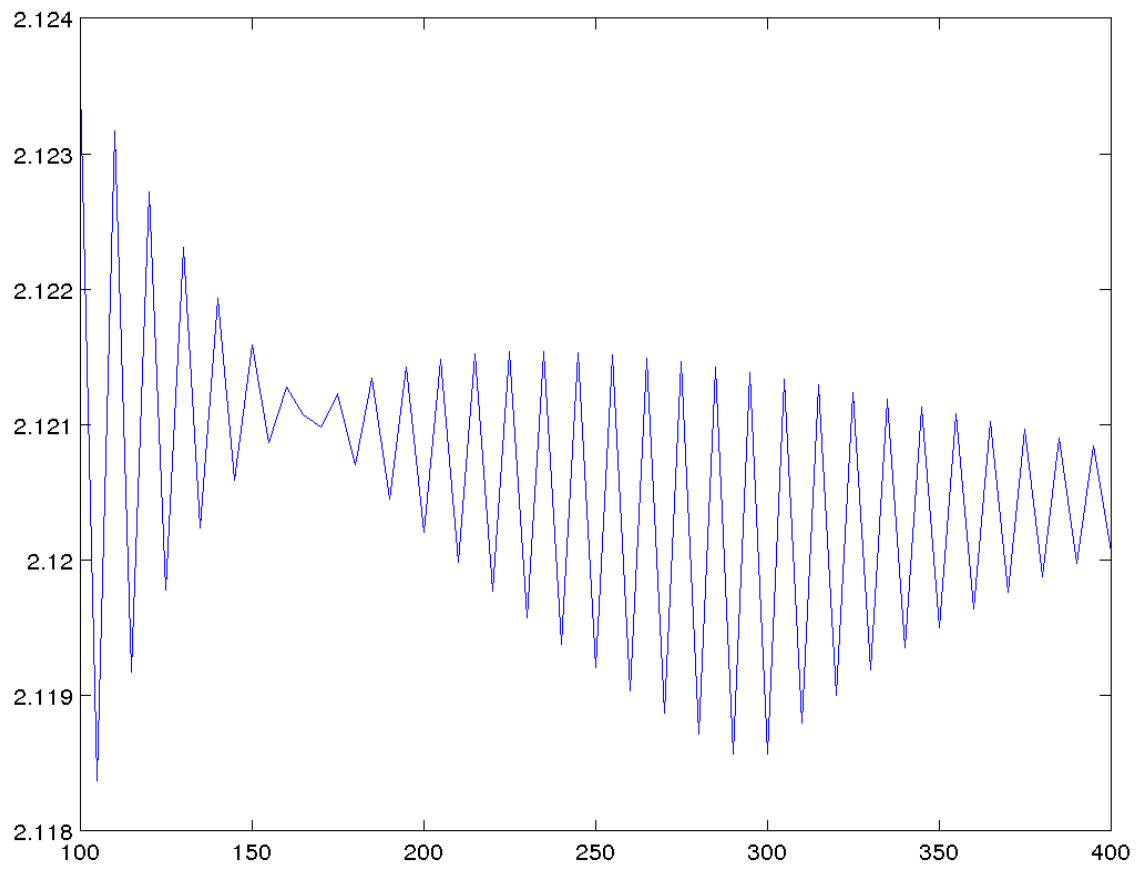
1.

M	Initial European call Value	Initial European put Value
1	2.46336686	1.81606897
5	2.18324492	1.53594704
10	2.12483539	1.47753751
20	2.12958331	1.48228543
50	2.12721517	1.47991728
100	2.12366674	1.47636886
200	2.12020950	1.47291161
400	2.12006478	1.47276689

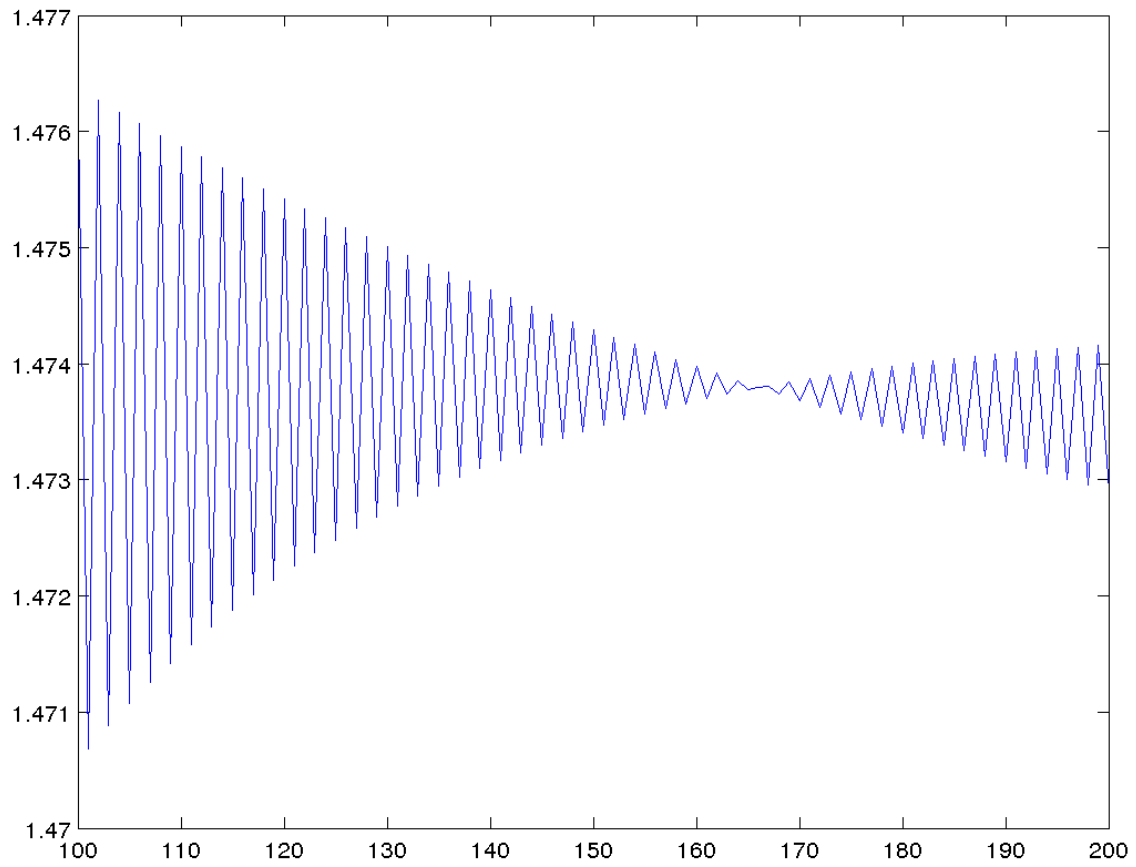
2.



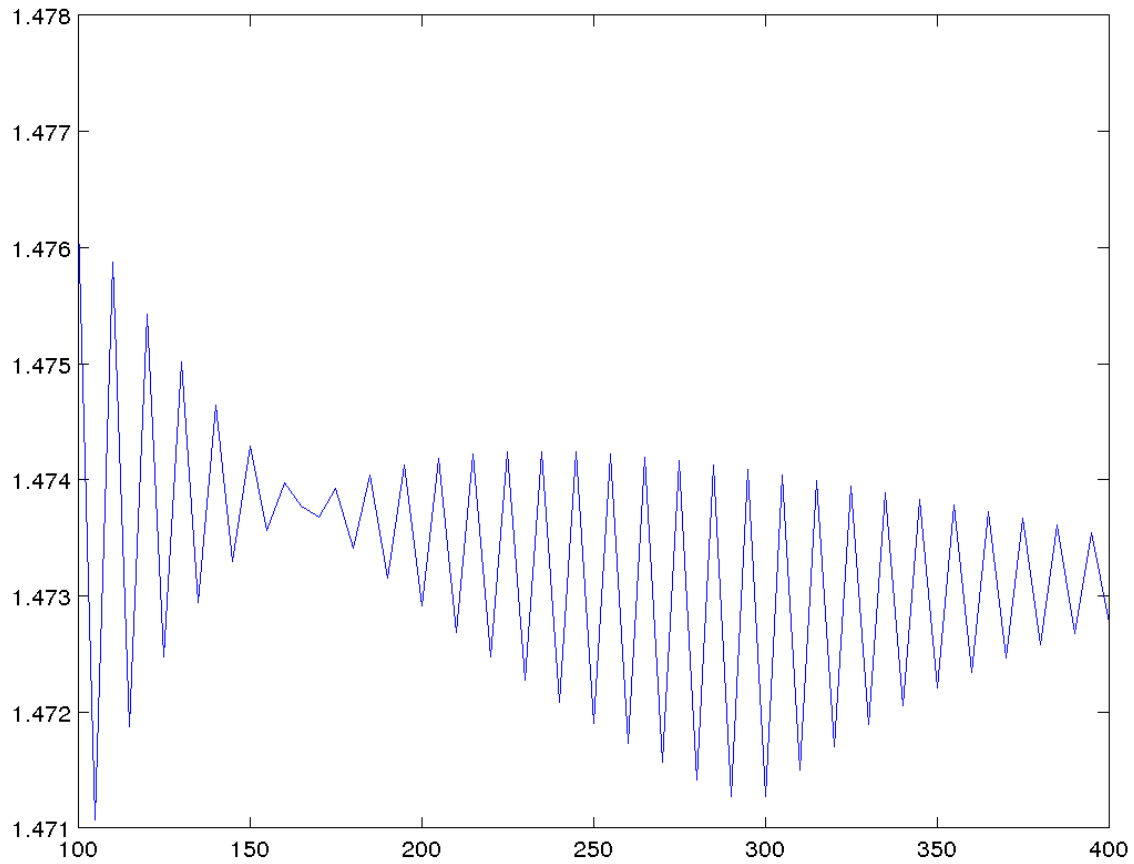
Graph obtained by varying the values of M from 100 to 200 by step1 and plotting the initial value of the European call option.



Graph obtained by varying the values of M from 100 to 400 by step 5 and plotting the initial value of the European call option.



Graph obtained by varying the values of M from 100 to 200 by step 1 and plotting the initial value of the European put option.



Graph obtained by varying the values of M from 100 to 400 by step 5 and plotting the initial value of the European put option.

From all the above graphs we observe that the value of European call option converges to 2.12006478 and the value of European put option converges to 1.47276689.

3.

t	Values of European call	Values of European put
0	2.12958331	1.48228543
0.30	3.72475024 1.99916798 0.94923909	0.82357237 1.46298877 2.28766577
0.75	7.74065626 4.67517654 2.54429843 1.21102726 0.48772601 0.15996339	0.20620200 0.51471205 1.05821226 1.84477543 2.80175167 3.80585369
1.50	20.27958825 14.18652208 9.39365148 5.71701249 3.07175858 1.38553229 0.49339033 0.12793143 0.02122405 0.00167743 0.00000000	0.00052210 0.00748449 0.04977501 0.20570547 0.59832106 1.32004884 2.33656120 3.48398885 4.57646441 5.50744495 6.25919873
2.70	66.05705718 50.32328563 37.85198001 27.96665382 20.13109298 13.92026975 8.99728771 5.09510740 2.14584853 0.46099915 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.14378739 0.91062768 2.39294970 3.93331477 5.15427845 6.12207000 6.88918577 7.49723675 7.97920571

	0.00000000 0.00000000	8.36123632 8.66405122
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