FE LAB: Lab02

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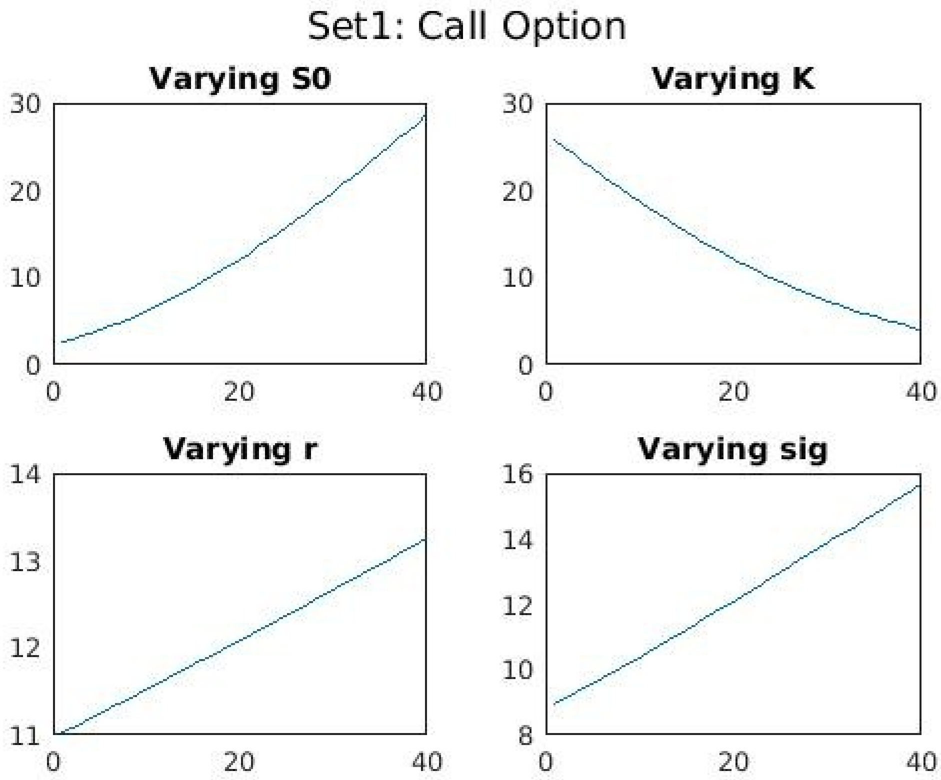
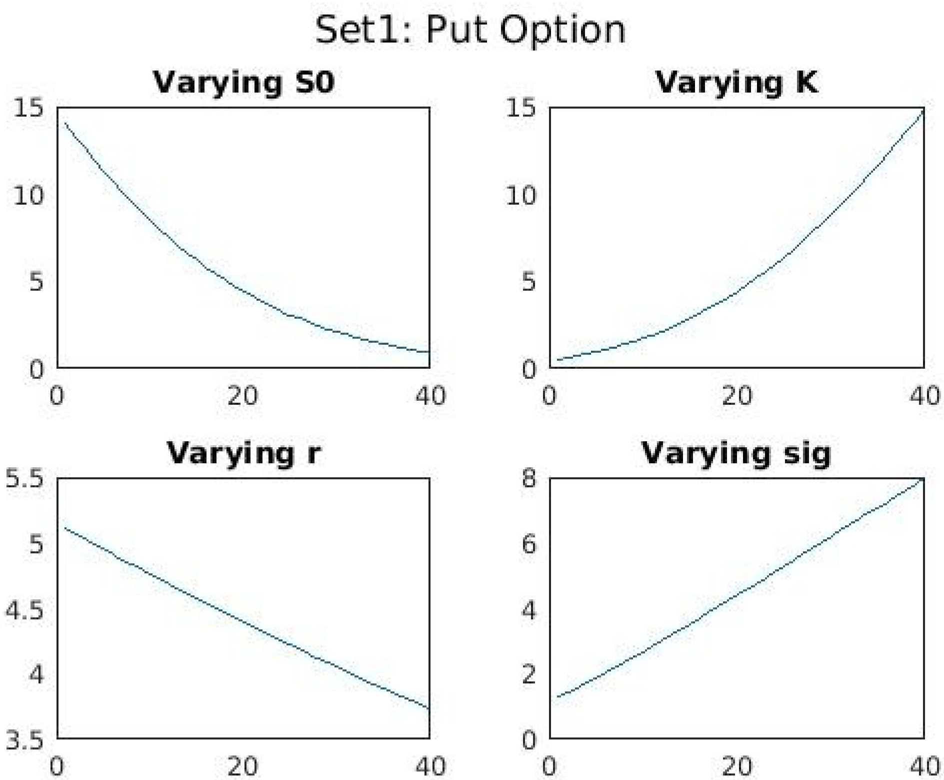
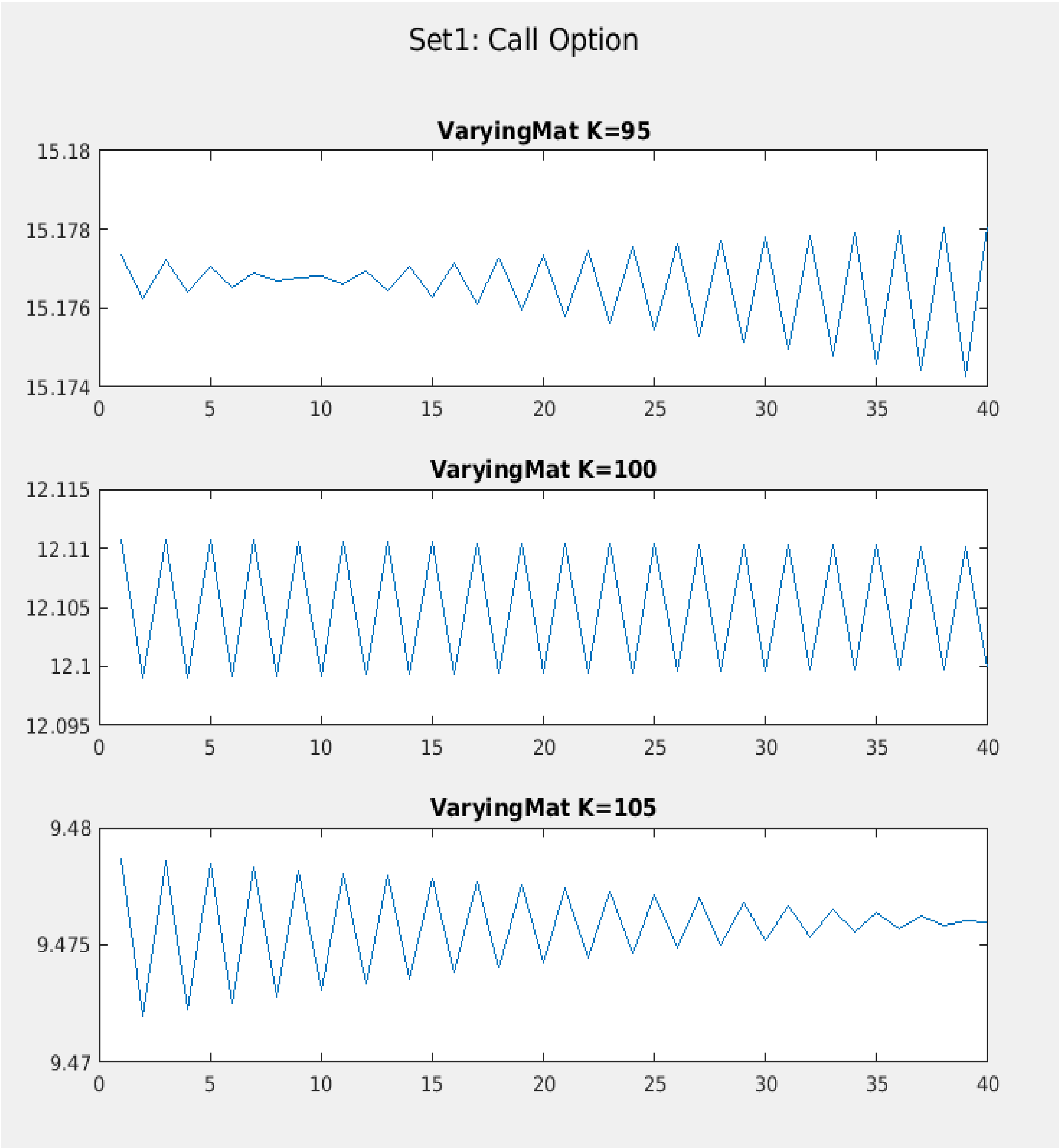
Question 01

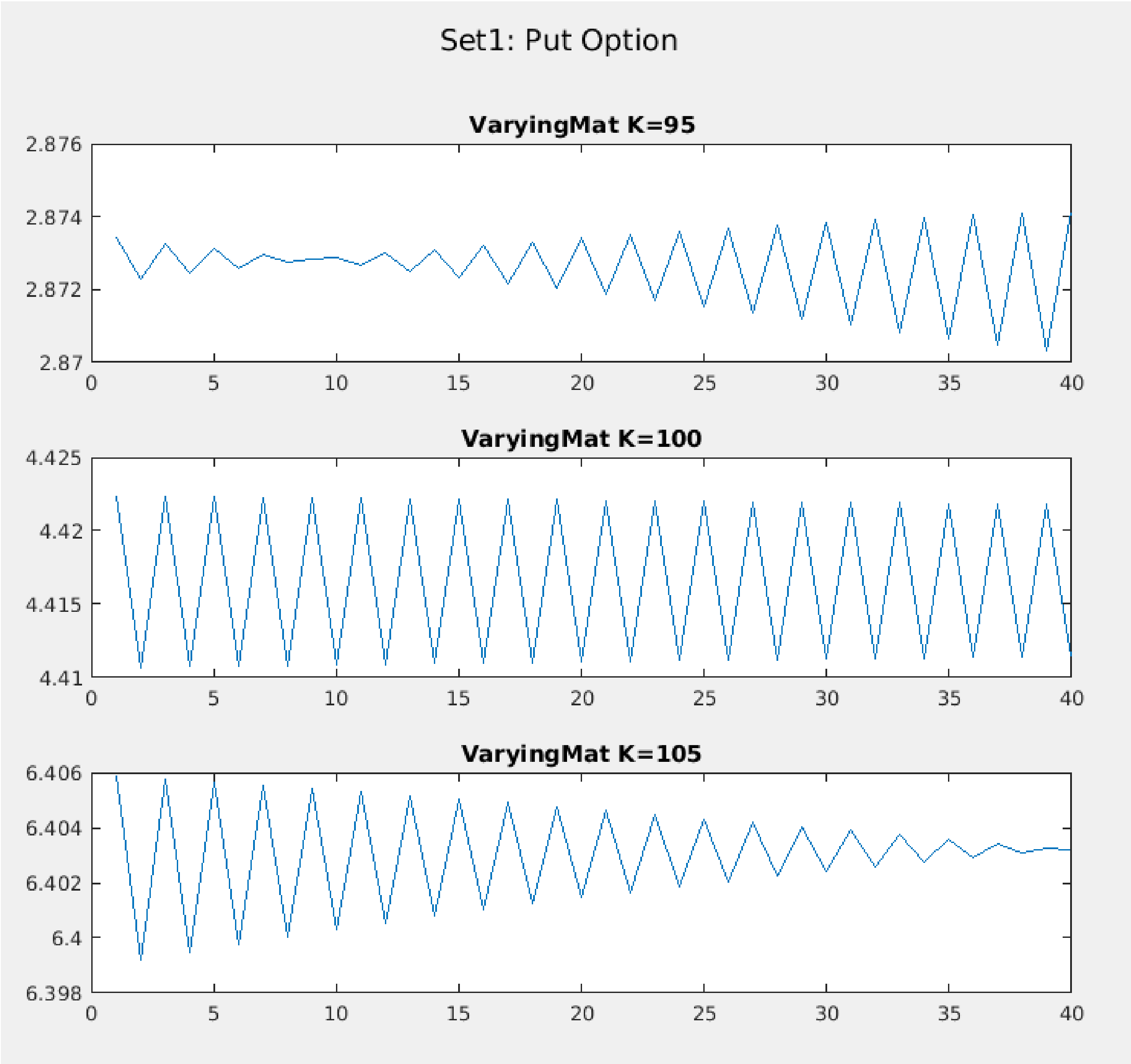
Plots of the initial prices of both call and put options (for both the above sets of u and d) by varying one of the parameters at a time (as given below) while keeping the others fixed are



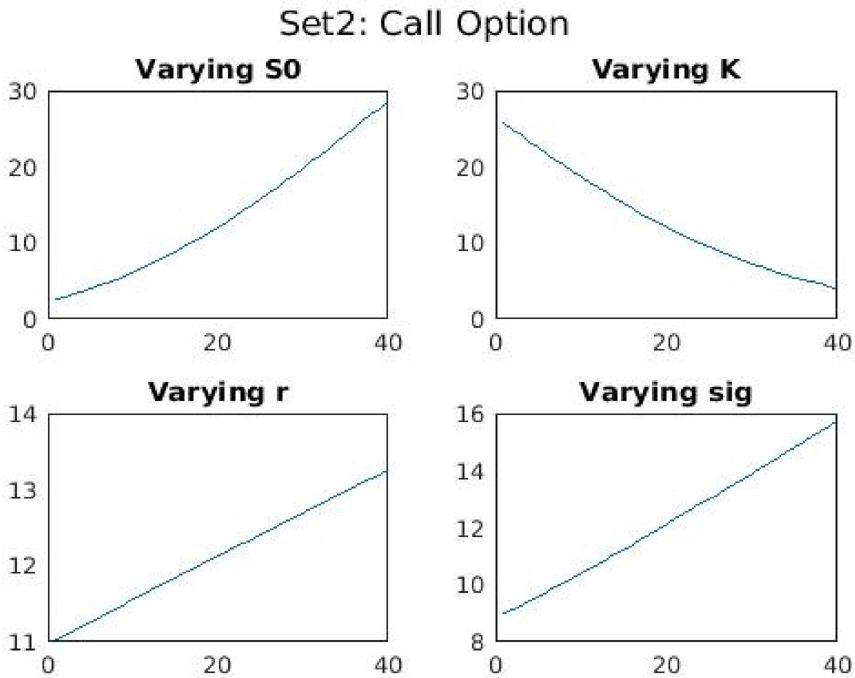


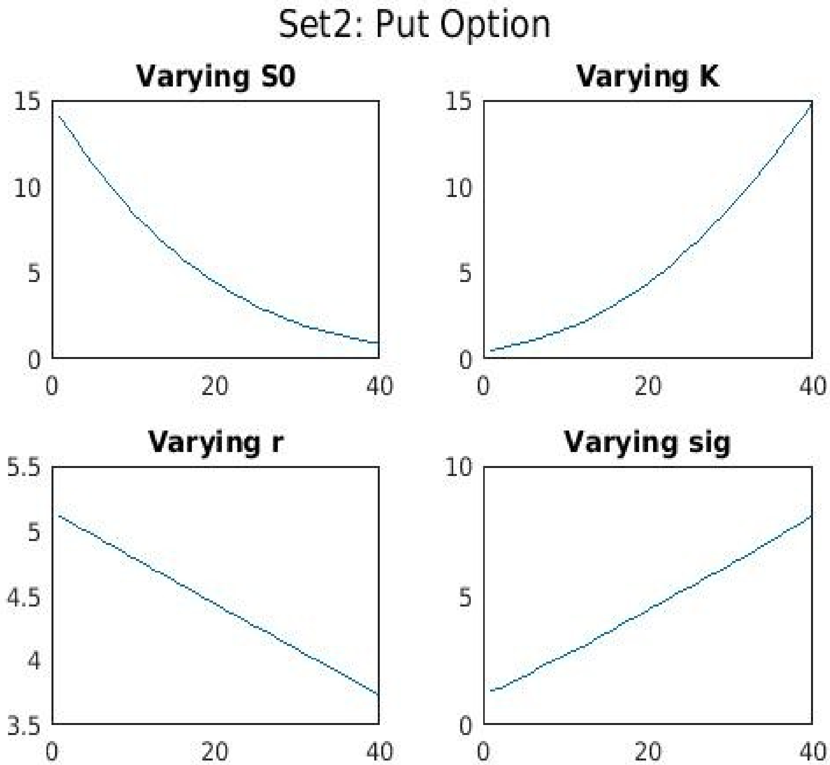


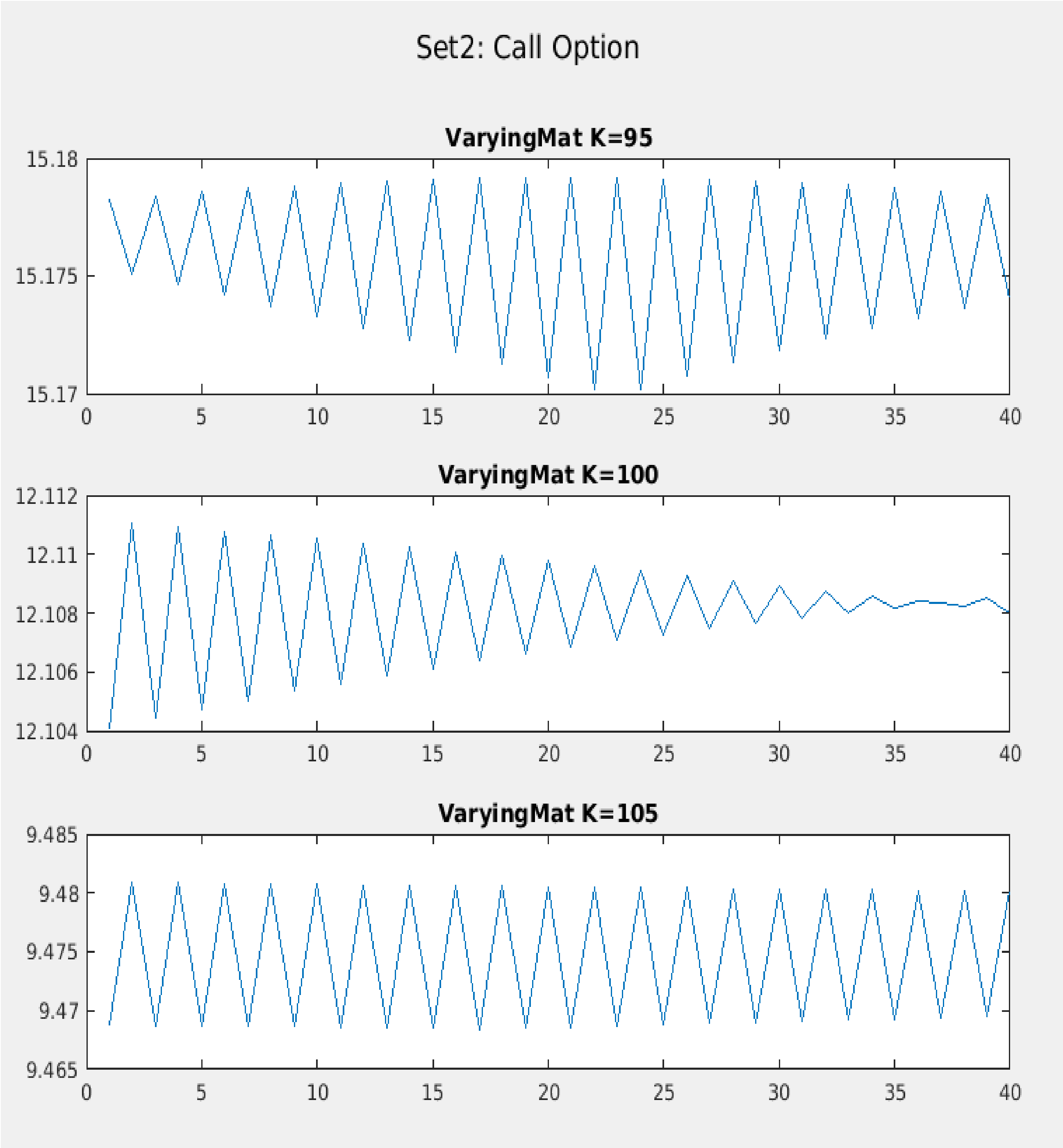
Set1: Call Option
VaryingMat K=95
15.18
15.178
15.176
15.174
0
5
10
15
20
25
30
35
40
VaryingMat K=100
12.115
12.11
12.105
12.1
12.095
0
5
10
15
20
25
30
35
40
VaryingMat K=105
9.48
9.475
9.47
0
5
10
15
20
25
30
35
40

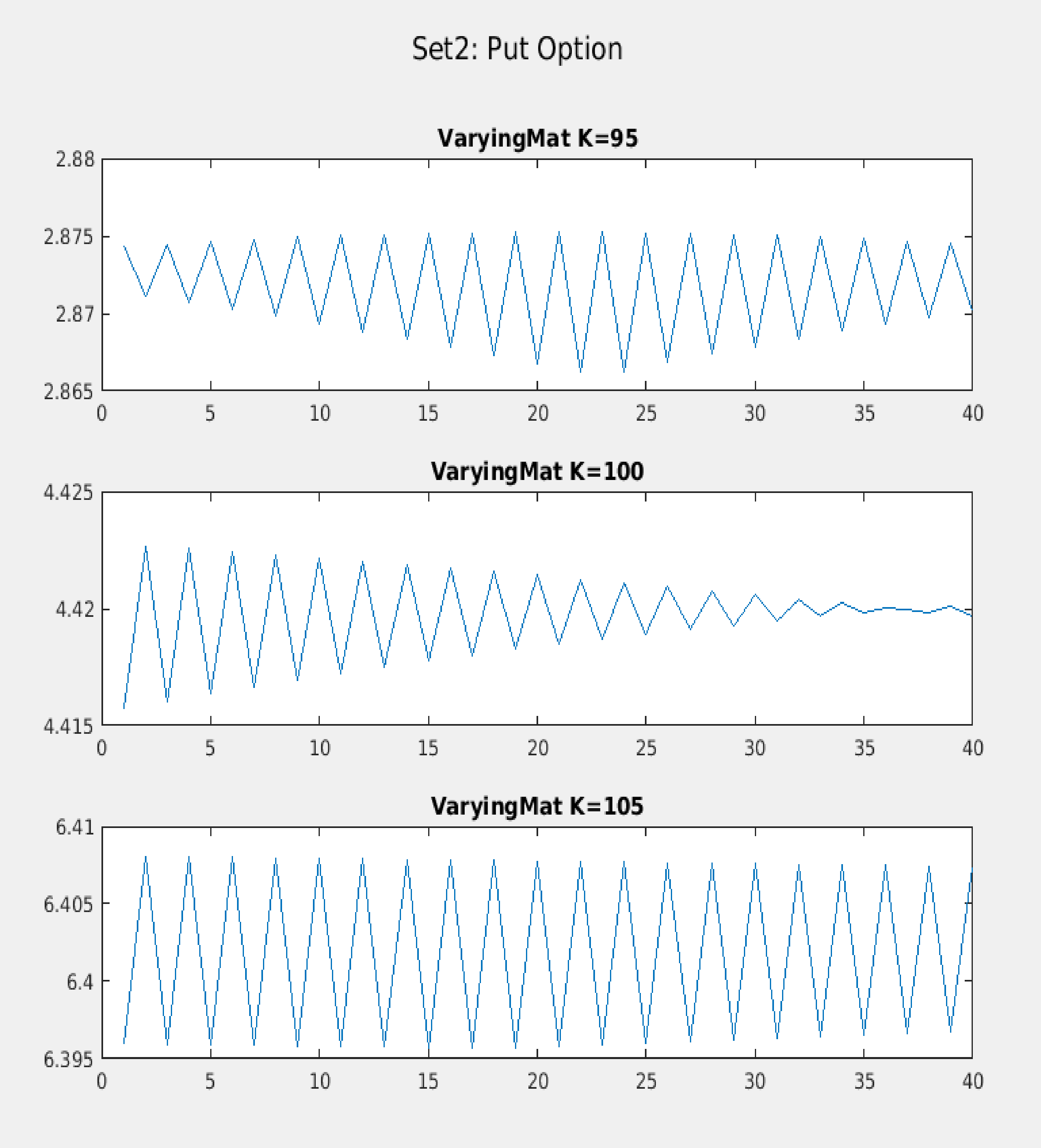


Set1: Put Option
VaryingMat K=95
2.876
2.874
2.872
2.87
0
5
10
15
20
25
30
35
40
VaryingMat K=100
4.425
4.42
4.415
4.41
0
5
10
15
20
25
30
35
40
VaryingMat K=105
6.406
6.404
6.402
6.4
6.398
0
5
10
15
20
25
30
35
40


Set2: Call Option
Varying S0
Varying K
Varying r
Varying sig
30
20
10
0
20
40
14
13
12
11
16
8


Set2: Put Option
Varying S0
Varying K
Varying r
Varying sig
15
10
5
0
20
40
5.5
4.5
4
3.5


Set2: Call Option
VaryingMat K=95
15.18
15.175
15.17
0 5 10 15 20 25 30 35 40
VaryingMat K=100
12.112
12.11
12.108
12.106
12.104
0 5 10 15 20 25 30 35 40
VaryingMat K=105
9.485
9.48
9.475
9.47
9.465
0 5 10 15 20 25 30 35 40

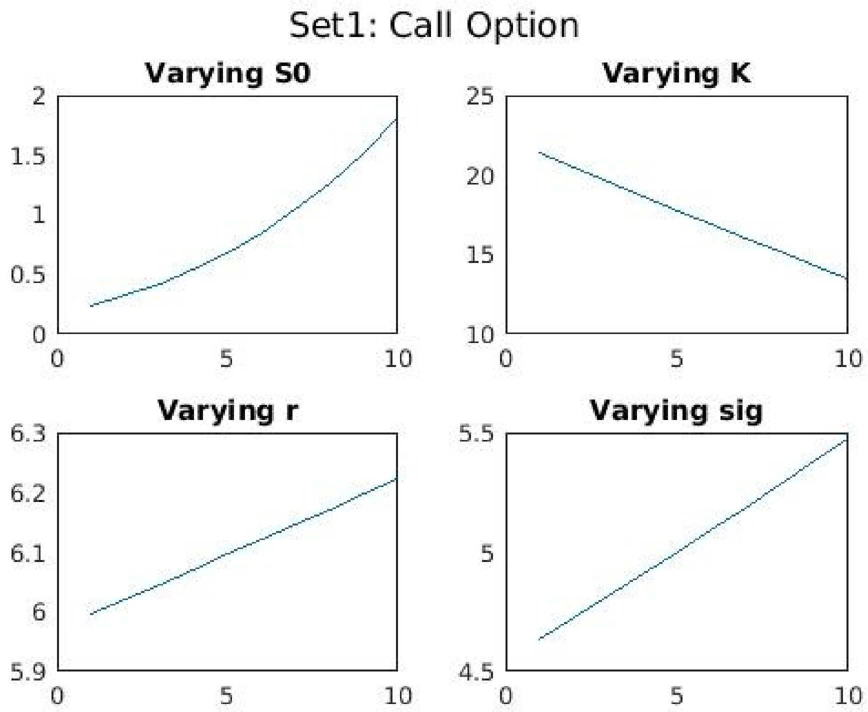

Set2: Put Option
VaryingMat K=95
2.88
2.875
2.87
2.865
0
5
10
15
20
25
30
35
40
VaryingMat K=100
4.425
4.42
4.415
VaryingMat K=105
6.41
6.405
6.4
6.395

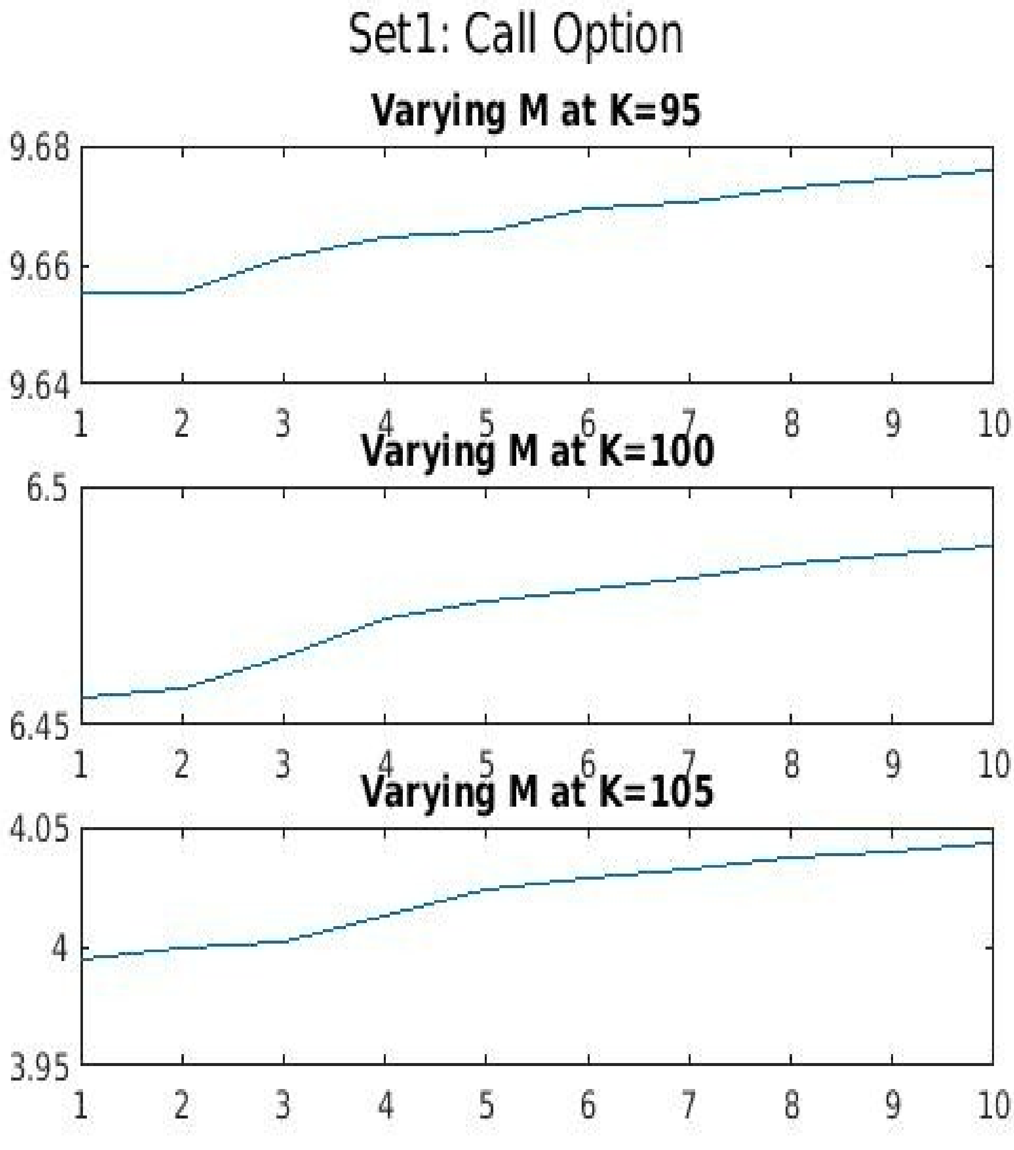
Question 02

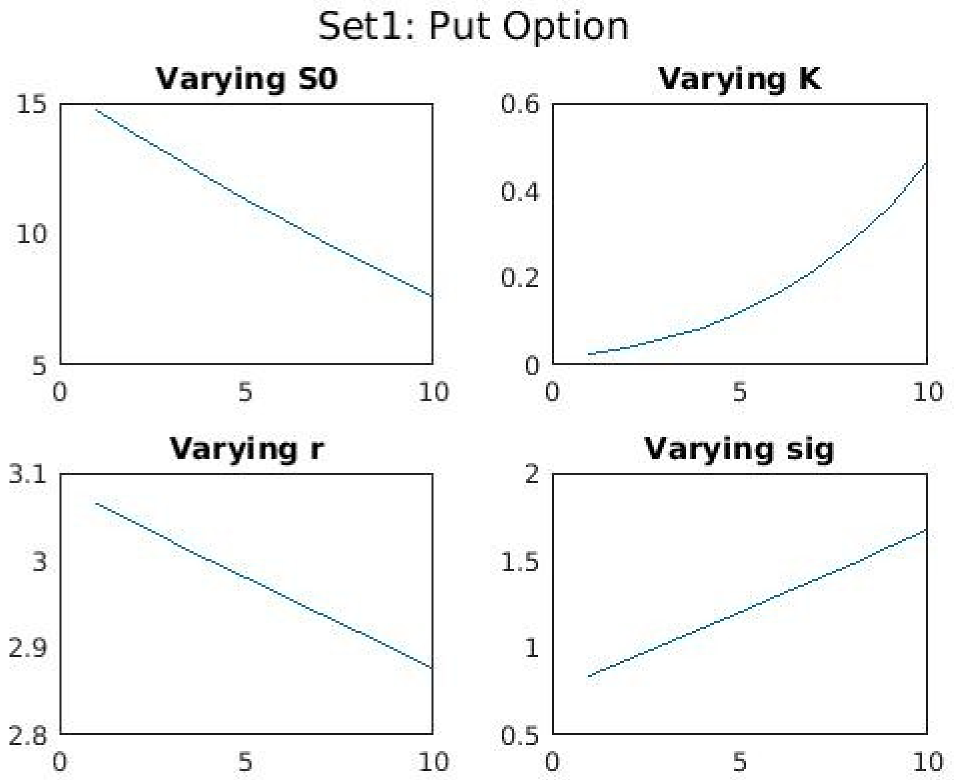
Consider the asian look-back option, with parameters

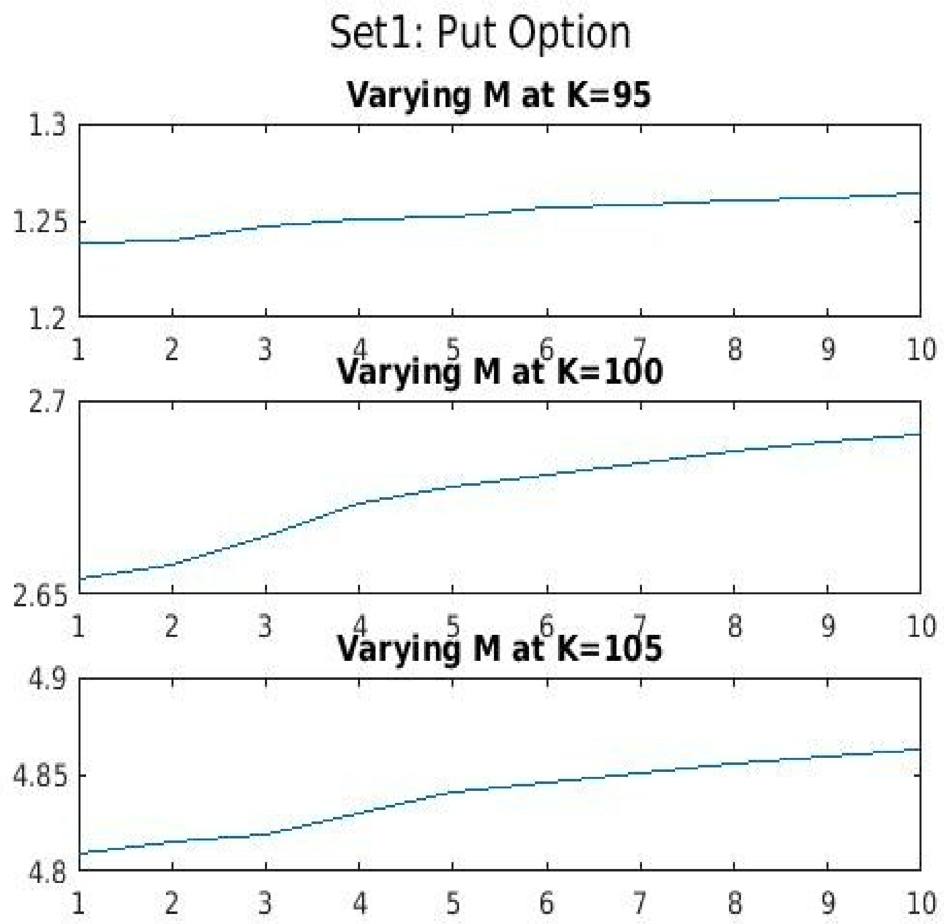
S0 = 100;K = 100;T = 1;M = 10;r = 0.08;sig = 0.20;

The sensitivity plots are given by




Set1: Call Option
Varying M at K=95
9.68
9.66
9.64
1 2 3 4 5 6 7 8 9 10
Varying M at K=100
6.5
6.45
1 2 3 4 5 6 7 8 9 10
Varying M at K=105
4.05
4
3.95
1 2 3 4 5 6 7 8 9 10


Set1: Put Option
Varying S0
Varying K
Varying r
Varying sig


Set1: Put Option
Varying M at K=95
Varying M at K=100
Varying M at K=105