Output 1

Q1.

Call Option Price at t=0 for M=1 = 38.16764

Call Option Price at t=0 for M=5 = 34.90653

Call Option Price at t=0 for M=10 = 33.62502

Call Option Price at t=0 for M=20 = 33.85945

Call Option Price at t=0 for M=50 = 33.98118

Call Option Price at t=0 for M=100 = 34.01116

Call Option Price at t=0 for M=200 = 34.01958

Call Option Price at t=0 for M=400 = 34.01913

Put Option Price at t=0 for M=1 = 19.94172

Put Option Price at t=0 for M=5 = 16.68061

Put Option Price at t=0 for M=10 = 15.39910

Put Option Price at t=0 for M=20 = 15.63353
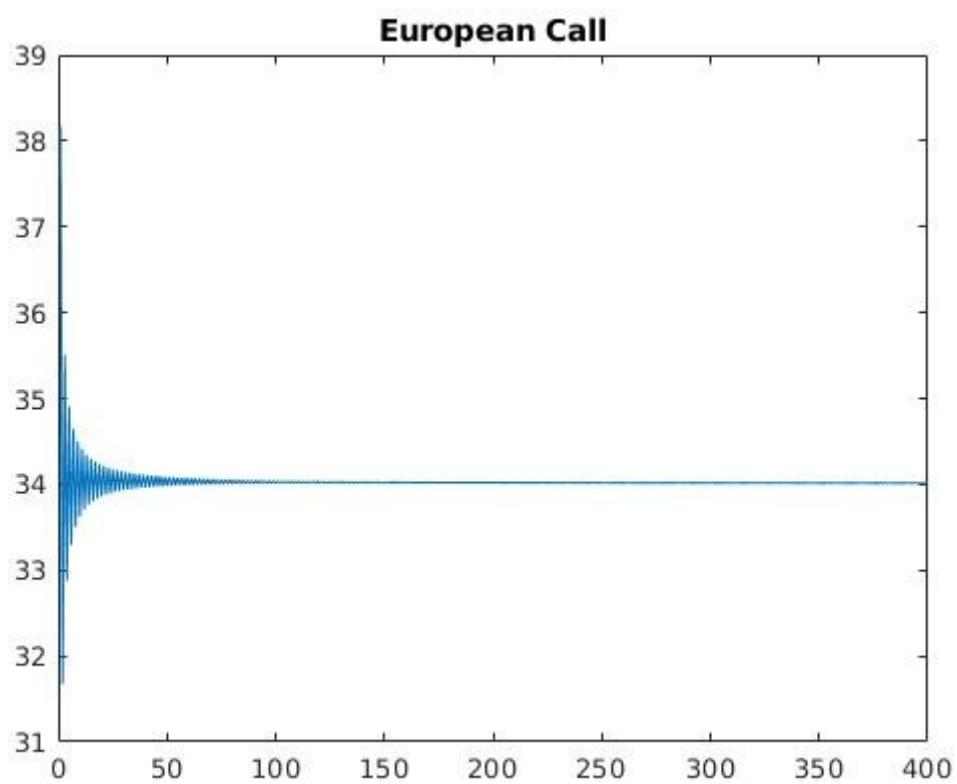
Put Option Price at t=0 for M=50 = 15.75527

Put Option Price at t=0 for M=100 = 15.78524
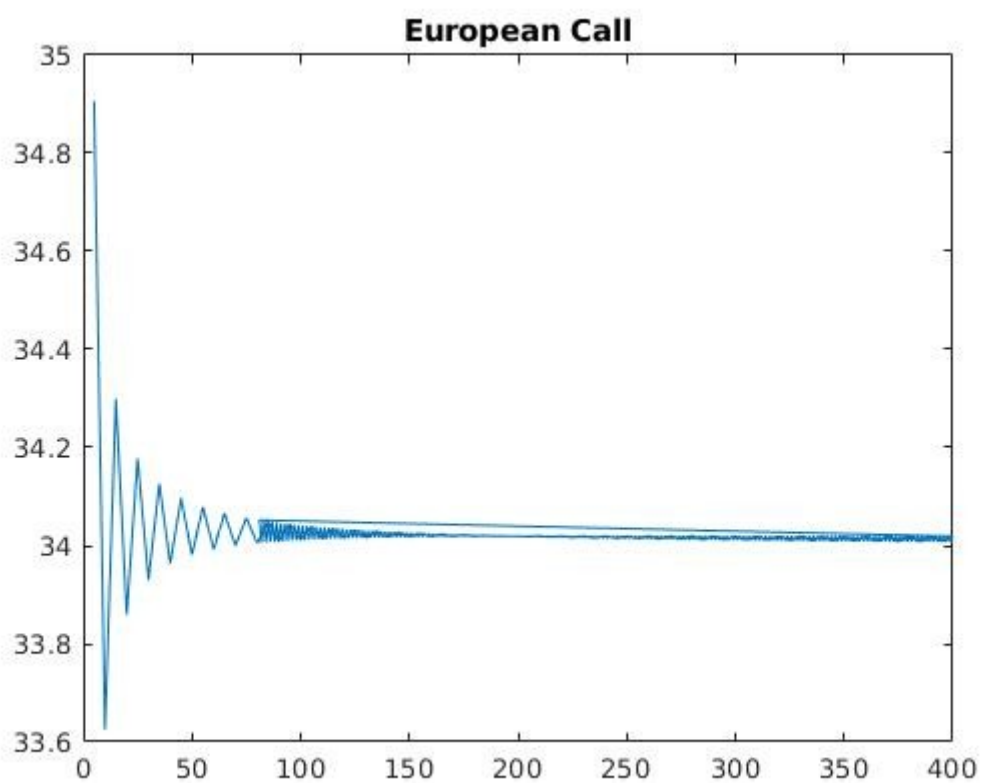
Put Option Price at t=0 for M=200 = 15.79366

Put Option Price at t=0 for M=400 = 15.79321

Q2.

step = 1
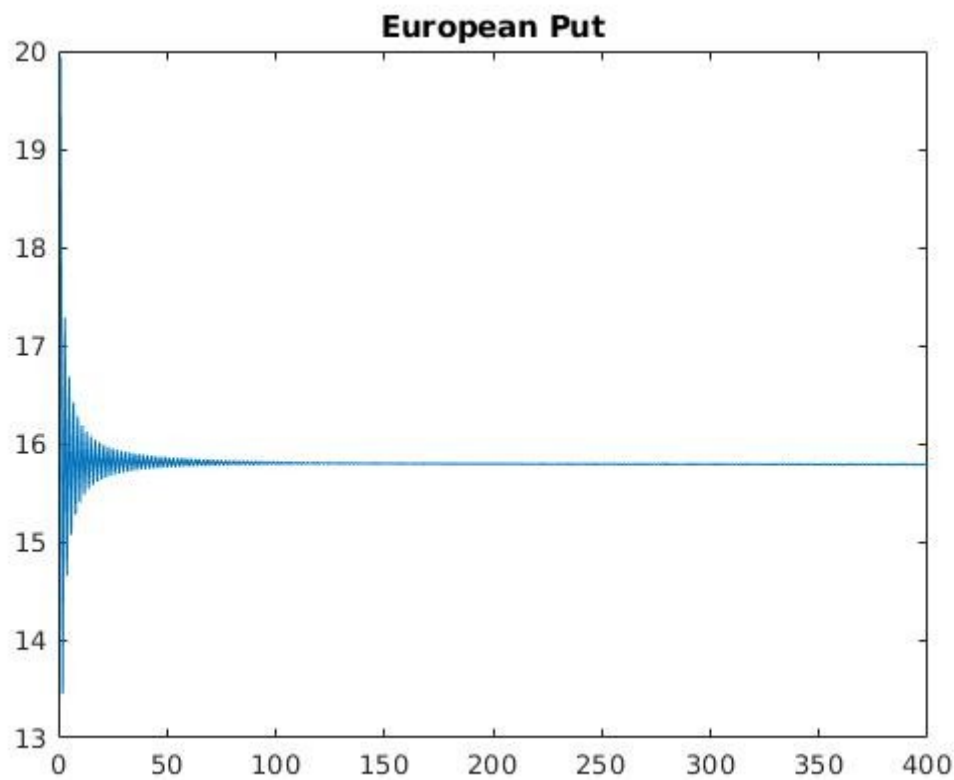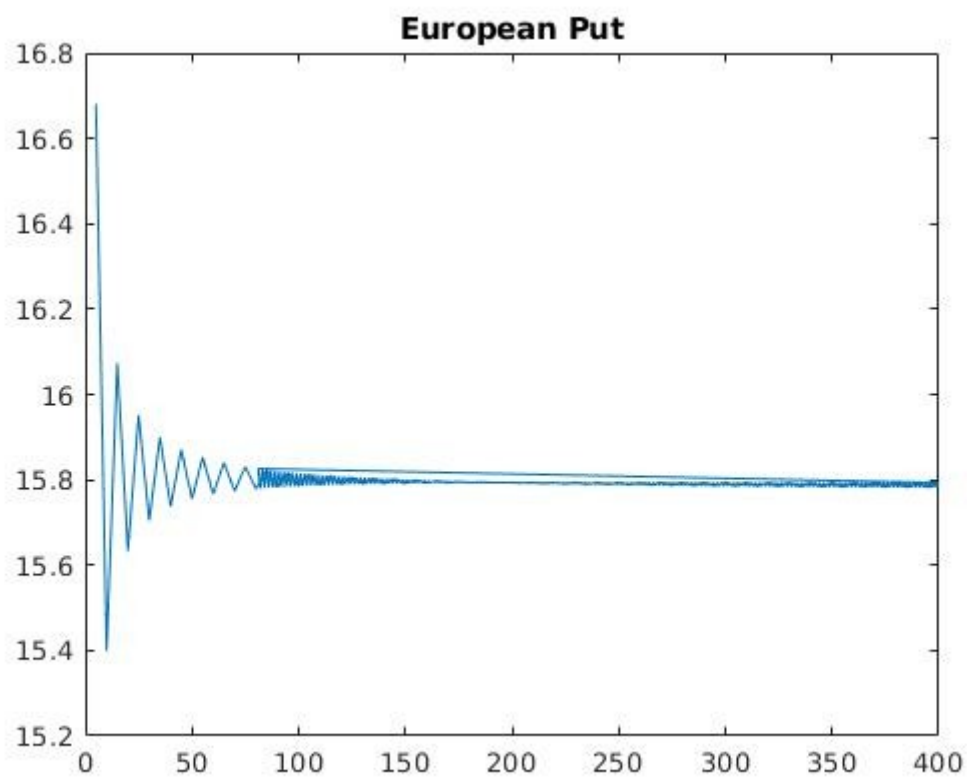

European Call

Step = 5

European Call

Step = 1

European Put

Step = 5

European Put

Q3.

M = 20

CALL OPTION PRICES

Option Price at t=0 :

  33.8594

Option Price at t=0.5 :

  59.9588

  31.8933

  15.0959

Option Price at t=1 :

  100.6627

  57.7000

  29.8040

  13.4697

  5.1548

Option Price at t=1.5 :

  160.6114

  98.4389

  55.2954

  27.5732

  11.7675

  4.1214

  1.1250

Option Price at t=3 :

  519.0997

  359.9342

  242.0302

  154.8417

91.1934

46.9762

19.7252

6.1485

1.2360

0.1183

0

0

0

Option Price at t=4.5 :

1.0e+03 *

1.4194

1.0250

0.7328

0.5163

0.3560

0.2372

0.1491

0.0840

0.0363

0.0081

0

0

0

0

0

0

0

0

0

PUT OPTION PRICES

Option Price at t=0 :

   15.6335

Option Price at t=0.5 :

   8.4792

  15.4871

  24.6728

Option Price at t=1 :

   3.5042

   8.0042

  15.2694

  24.9833

  35.9653

Option Price at t=1.5 :

   0.9424

   2.9982

   7.4363

  14.9634

  25.2710

  36.9701

  48.3050

Option Price at t=3 :

    0

    0

   0.0087

0.1721

1.2357

4.9582

13.2218

25.9550

40.5333

53.8548

64.4333

72.3577

78.2282

Option Price at t=4.5 :

0

0

0

0

0

0

0

0

0.6015

8.2812

26.6400

46.2776

60.8254

71.6028

79.5868

85.5015

89.8832

93.1293

95.5341