

LAB 10 REPORT

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QUESTION NO: 01

Price of call option with strike price:90 is 12.067154
Price of call option with strike price:90 is 0.166322
Price of call option with strike price:105 is 2.342011
Price of call option with strike price:105 is 4.477174
Price of call option with strike price:110 is 0.323496
Price of call option with strike price:110 is 8.844254

The graphs are attached in the output pdf.

QUESTION NO: 02

$Srv = (S1 + S2) / 2$

Here Srv = Prices with reduced variance,

S1, S2 = Stock prices following GBM.

Advantage of using these variance reduction techniques is to decrease the time of the above algorithms.

Stock prices which follow GBM require generation of a greater number of paths for smoother graphs as they have high variance. To reduce the strokes in the graphs and to make the curve more smoother we require more number of paths.

But in Stock prices with reduced variance, this is not the case, only a few numbers of paths are sufficient to get the sensitivity graph smoother.

Variance using normal method is greater than Variance using variance reduction techniques.

The graphs are attached in the output pdf.