MA473: Computational Finance : Lab 10
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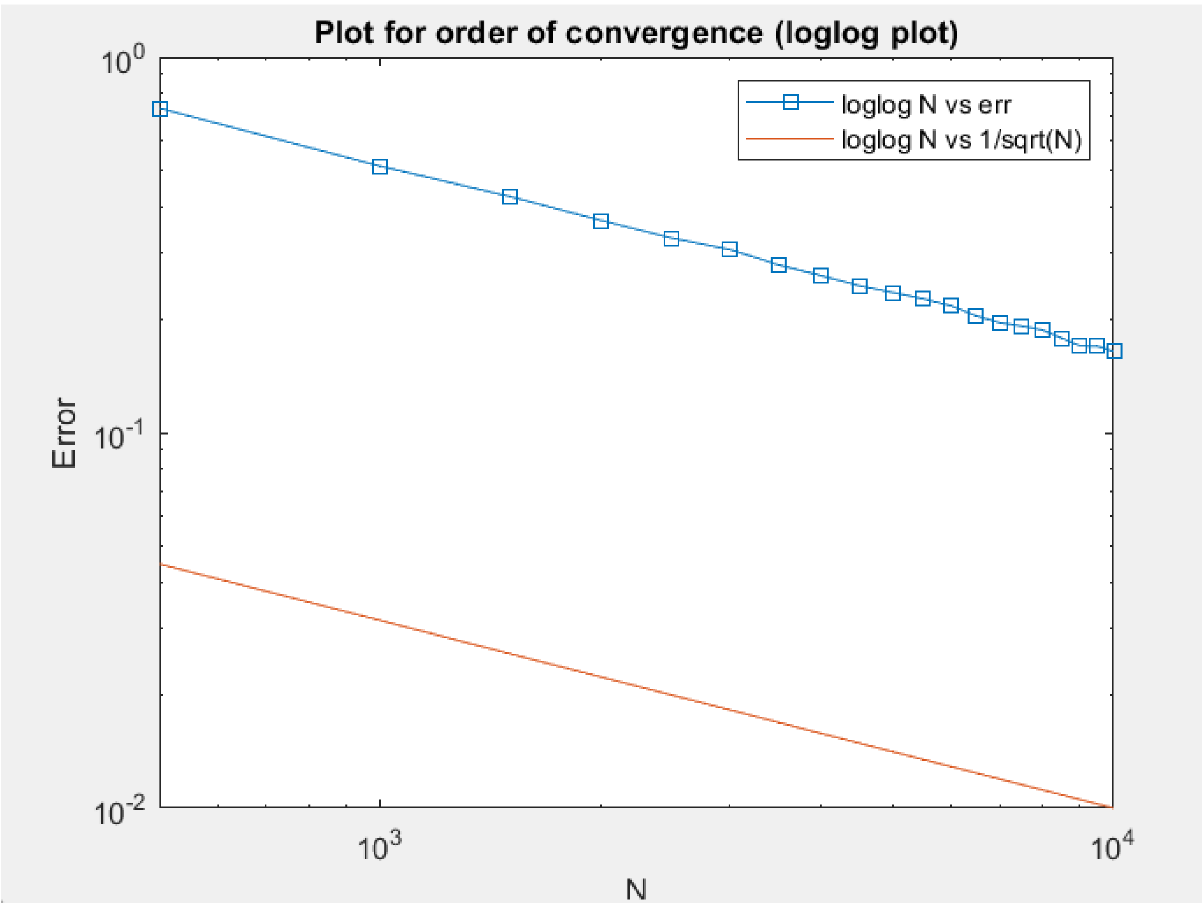
Question 1:

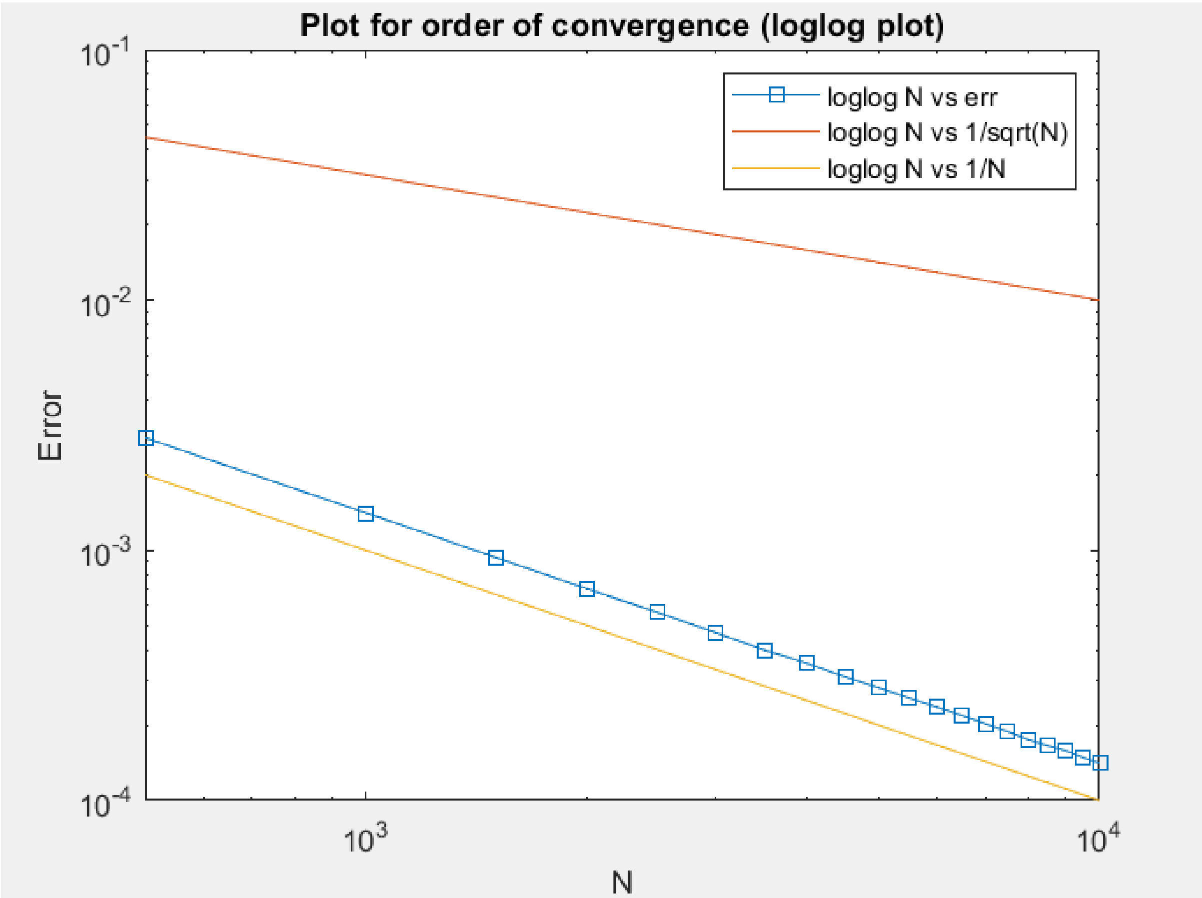
The exact solution of the Black-Scholes diffusion equation is:

$$X(t) = X(0)\exp((\mu - 0.5\sigma^2)t + \sigma W(t))$$

After solving the SDE using Euler-Maruyama method Scheme, following order of convergence plot was constructed (loglog plot):



Question 2:


Plot for order of convergence (loglog plot)
loglog N vs err
loglog N vs 1/sqrt(N)
loglog N vs 1/N
Error
N
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{3}
10^{4}