Project5

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2/22/2019

problem 1

Laguerre polynomial:
s0 = 36, t = 0.5, k = 2: 3.9878
s0 = 36, t = 0.5, k = 3: 4.06671
s0 = 36, t = 0.5, k = 4: 3.97735

Hermite polynomial:
s0 = 36, t = 0.5, k = 2: 4.18446
s0 = 36, t = 0.5, k = 3: 4.20282
s0 = 36, t = 0.5, k = 4: 3.97649

Simple Monomials:
s0 = 36, t = 0.5, k = 2: 4.18446
s0 = 36, t = 0.5, k = 3: 4.20283
s0 = 36, t = 0.5, k = 4: 3.98421

Laguerre polynomial:
s0 = 40, t = 1, k = 2: 1.20568
s0 = 40, t = 1, k = 3: 1.8338
s0 = 40, t = 1, k = 4: 2.12168

Hermite polynomial:
s0 = 40, t = 1, k = 2: 2.20474
s0 = 40, t = 1, k = 3: 2.29459
s0 = 40, t = 1, k = 4: 1.81504

Simple Monomials:
s0 = 40, t = 1, k = 2: 2.20474
s0 = 40, t = 1, k = 3: 2.29459
s0 = 40, t = 1, k = 4: 1.57861

Laguerre polynomial:
s0 = 44, t = 2, k = 2: 0.747789
s0 = 44, t = 2, k = 3: 1.01222
s0 = 44, t = 2, k = 4: 1.27127

Hermite polynomial:
s0 = 44, t = 2, k = 2: 1.47854
s0 = 44, t = 2, k = 3: 1.65052
s0 = 44, t = 2, k = 4: 1.62111

Simple Monomials:
s0 = 44, t = 2, k = 2: 1.47854
s0 = 44, t = 2, k = 3: 1.65052
s0 = 44, t = 2, k = 4: 1.67863

Hermite polynomials and Simple polynomials product very similar result, while Laguerre polynomial's results are little bit different.
When K = 3, the results are more stable and accurate than K = 2 or K = 4.

Problem 2

European Forward start: 3.1345
American Forward start: 3.41272