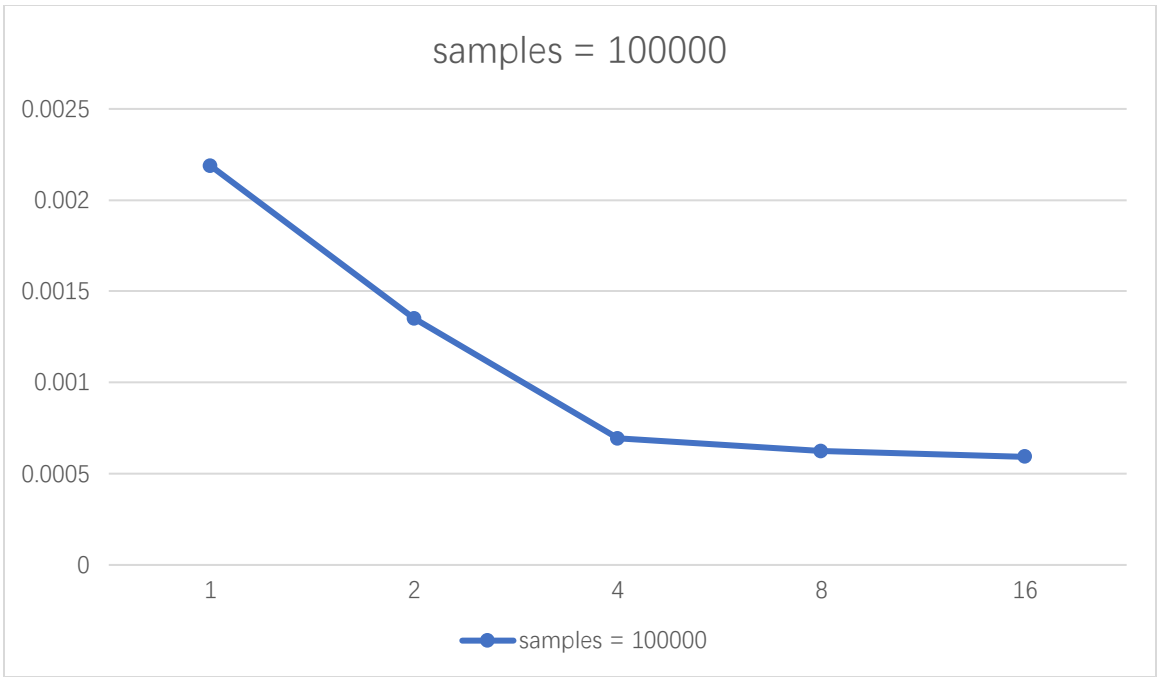
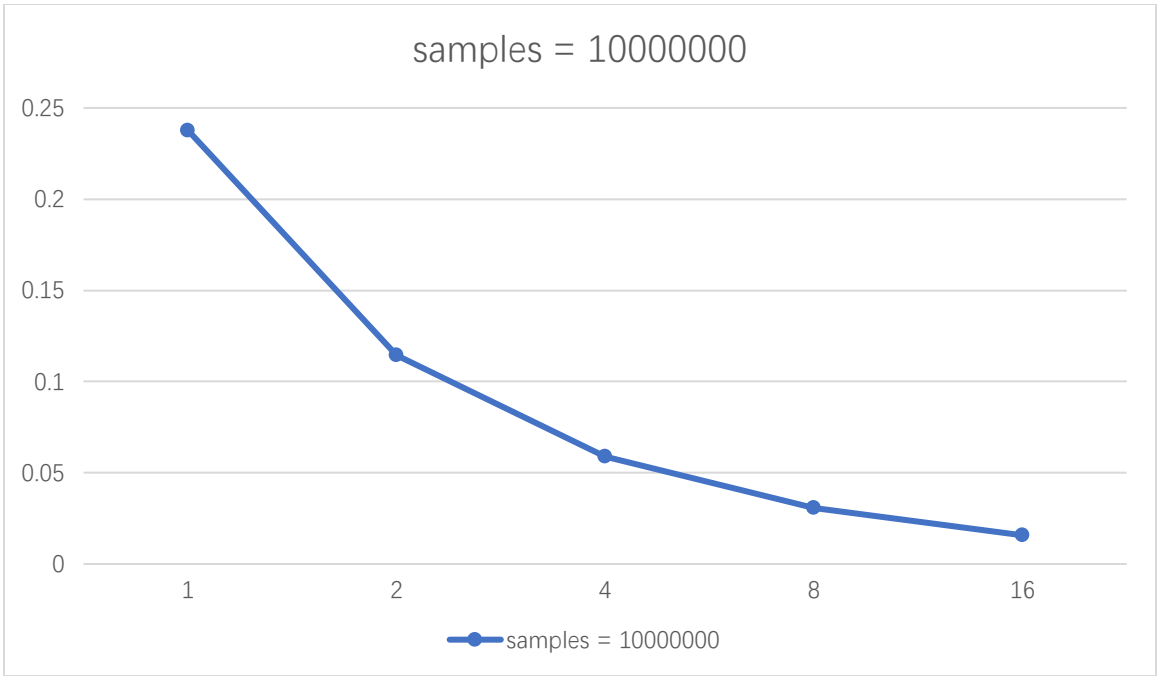
# Assignment #1

## Monte Carlo Method for $\pi$

| Sec | 100 | 100000 | 10000000 |
|---|---|---|---|
| 1 | elapsed time: 9.104609489440918e-06 Count = 81, Samples = 100, Estimate of pi = 3.24000 | elapsed time: 0.002188162878155708 Count = 78642, Samples = 100000, Estimate of pi = 3.14568 | elapsed time: 0.2377902045845985 Count = 7855063, Samples = 10000000, Estimate of pi = 3.14203 |
| 2 | 8.860602974891663e-06 Count = 81, Samples = 100, Estimate of pi = 3.24000 | elapsed time: 0.001351060345768929 Count = 78633, Samples = 100000, Estimate of pi = 3.14532 | elapsed time: 0.1145117226988077 Count = 7855264, Samples = 10000000, Estimate of pi = 3.14211 |
| 4 | elapsed time: 1.301243901252747e-05 Count = 81, Samples = 100, Estimate of pi = 3.24000 | elapsed time: 0.0006941072642803192 Count = 78403, Samples = 100000, Estimate of pi = 3.13612 | elapsed time: 0.0589402299374342 Count = 7853239, Samples = 10000000, Estimate of pi = 3.14130 |
| 8 | elapsed time: 1.006573438644409e-05 Count = 81, Samples = 100, Estimate of pi = 3.24000 | elapsed time: 0.0006232671439647675 Count = 78388, Samples = 100000, Estimate of pi = 3.13552 | elapsed time: 0.03083029389381409 Count = 7855329, Samples = 10000000, Estimate of pi = 3.14213 |
| 16 | elapsed time: 1.096352934837341e-05 Count = 81, Samples = 100, Estimate of pi = 3.24000 | elapsed time: 0.0005925707519054413 Count = 78333, Samples = 100000, Estimate of pi = 3.13332 | elapsed time: 0.01573502272367477 Count = 7855224, Samples = 10000000, Estimate of pi = 3.14209 |


samples = 100000
0.0025
0.002
0.0015
0.001
0.0005
0
1
2
4
8
16
samples = 100000


samples = 10000000
0.25
0.2
0.15
0.1
0.05
0
1
2
4
8
16
samples = 10000000