Monte Carlo Simulation - MA 323

Lab 11 - Report - Lakshya Kohli - 210123077

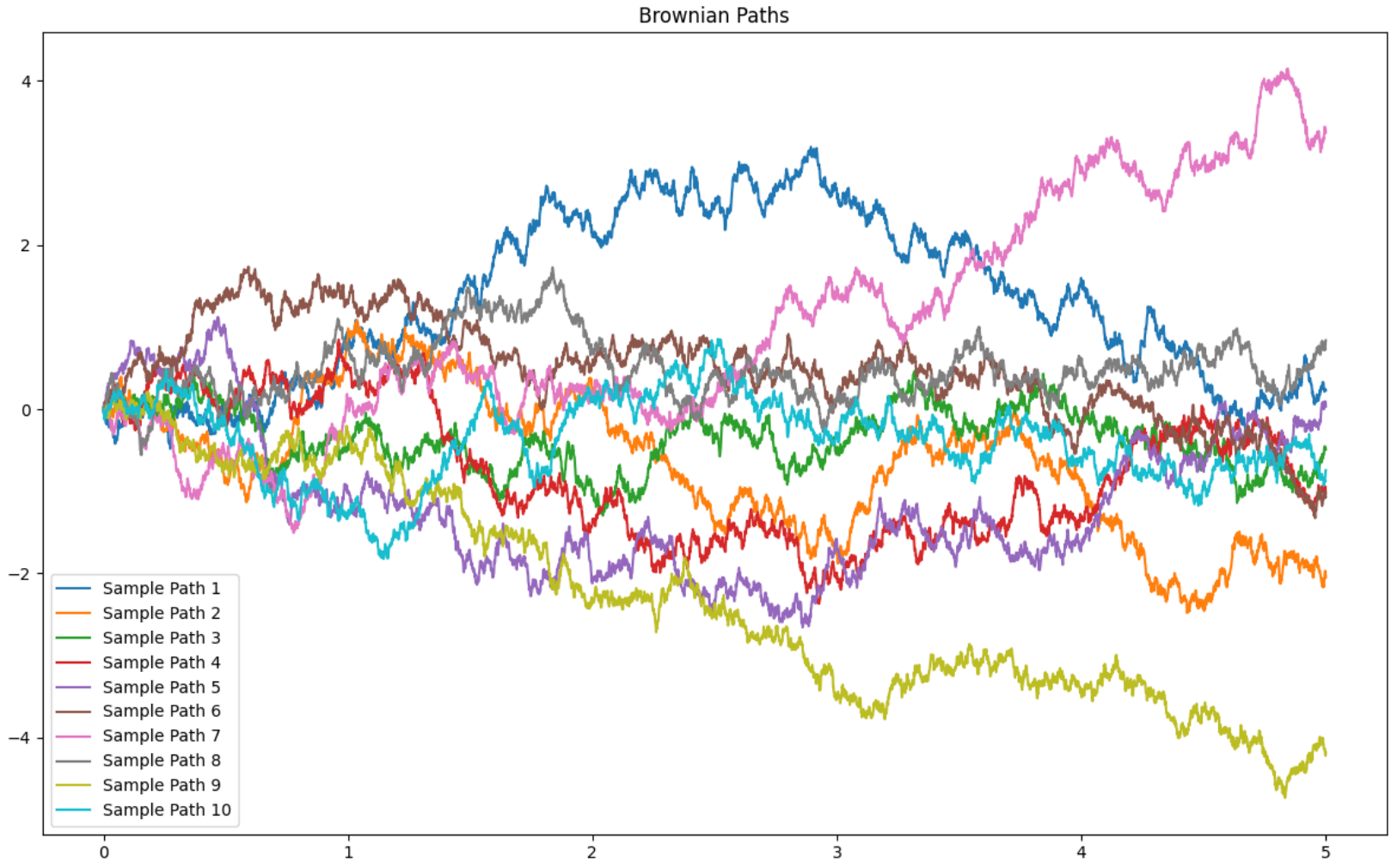
Answer 1.

$$f(x) = \sum_{k=1}^{3} \pi_i \frac{1}{\sigma_i} \phi\left(\frac{x-\mu_i}{\sigma_i}\right), \quad x \in \mathbb{R},$$

Each of the above individual functions are $N(\boldsymbol{\mu}_i, \boldsymbol{\sigma}_i^2)$.

So, using the mixed distribution generator, the average of generated random numbers is -0.3319681559157397.

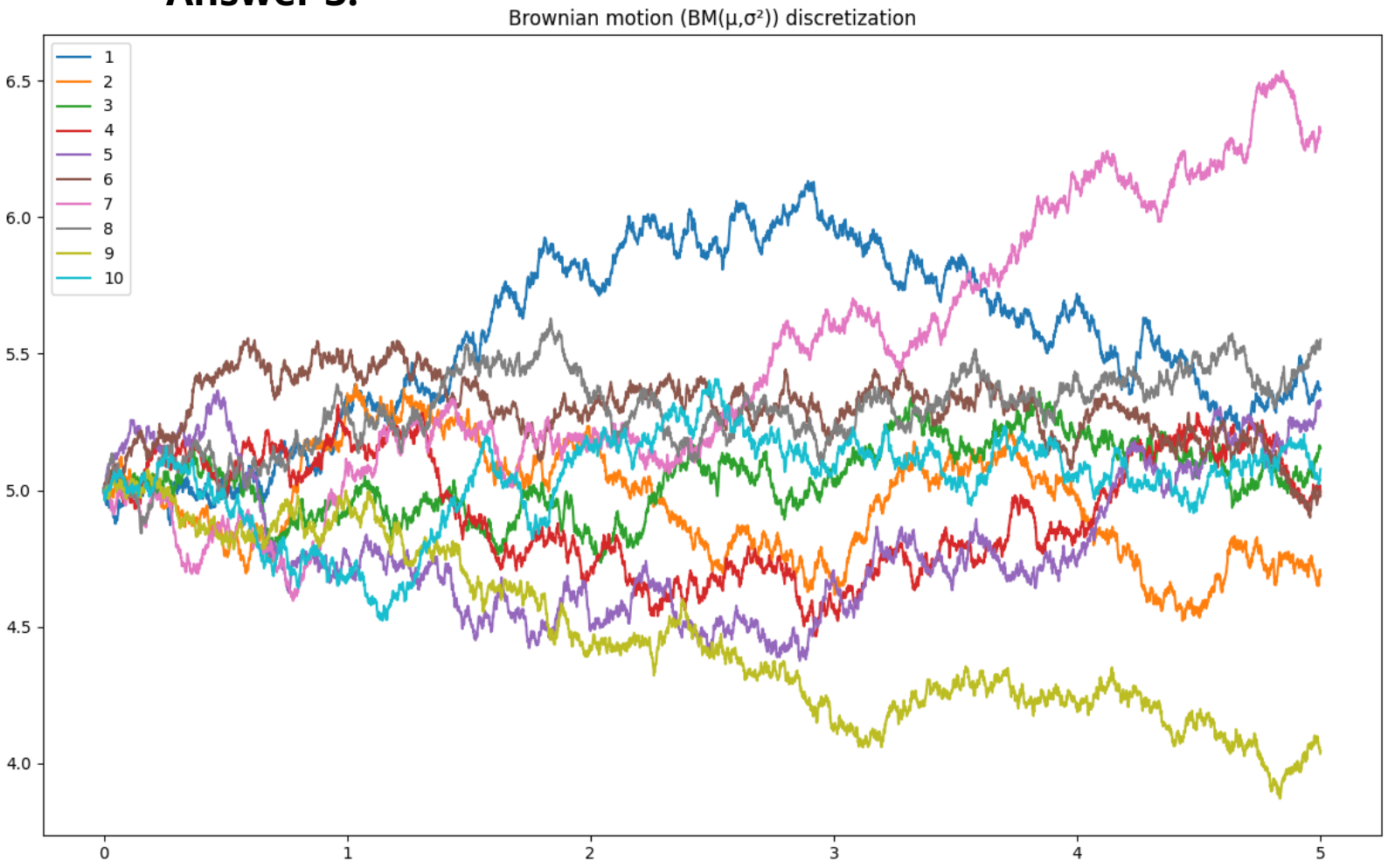
Answer 2.



Estimated value of E[W(2)] from the 10 paths that you generated is -0.3085961558649597.

Estimated value of E[W(5)]from the 10 paths that you generated is -0.5048175025828556.

Answer 3.



Estimated value of E[X(2)] from the 10 paths that you generated is 5.027421153241297.

Estimated value of E[X(5)]from the 10 paths that you generated is 5.148554749227107.
Such an estimated value is evident from the initial value of X i.e X(0) which is 5.