Assignment 11

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Question 1

Mixture PDF = f(x) = =

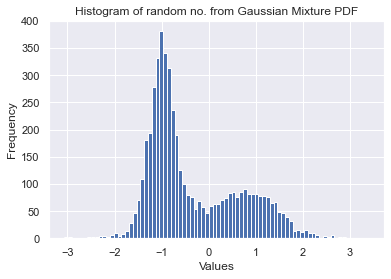
where fi is PDF of N () and

(µ1, µ2, µ3) = (-1,0,1)

(σ1, σ2, σ3) = (1/4,1,1/2)

(π1, π2, π3) = (1/2, 1/3, 1/6)

Average of generated random numbers = -0.33683669692866525



Question 2

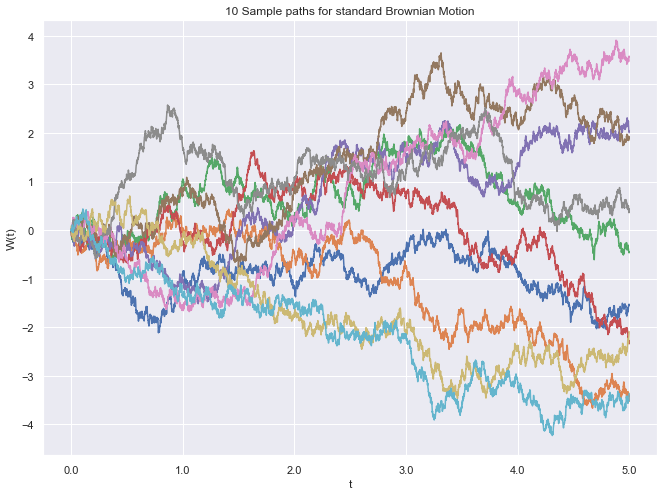
Taking ti = i/1000 generated W(t) for time interval [0,5] from the following formula-

where Zi are independent standard normal and W (0) = 0

Estimated values of E [W (2)] and E [W (5)] are given below-

E [W (2)] = -0.14948703718606832

E [W (5)] = -0.5467512325552152



Question 3

Taking ti = i/1000 generated X(t) for time interval [0,5] from the following formula-

where Zi are independent standard normal and X (0) = 5 and µ = 0.06 and σ = 0.3.

Estimated values of E [X (2)] and E [X (5)] are given below-

E[X(2)] = 4.904035253073413

E[X(5)] = 4.9971940234649415

