

MATH512 - Project 4

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Question 1

Refer to Figure 1

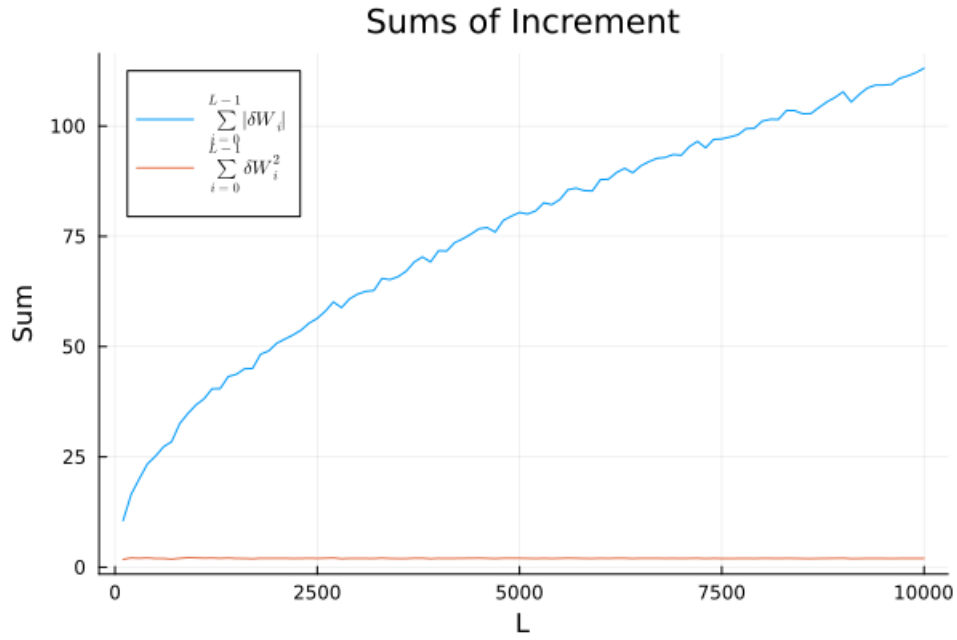


Figure 1: Stochastic Plots

Notice that as the L parameter increases, the $|\delta W_i|$ term is unbounded while δW_i^2 converges to 2 in probability.

Question 2

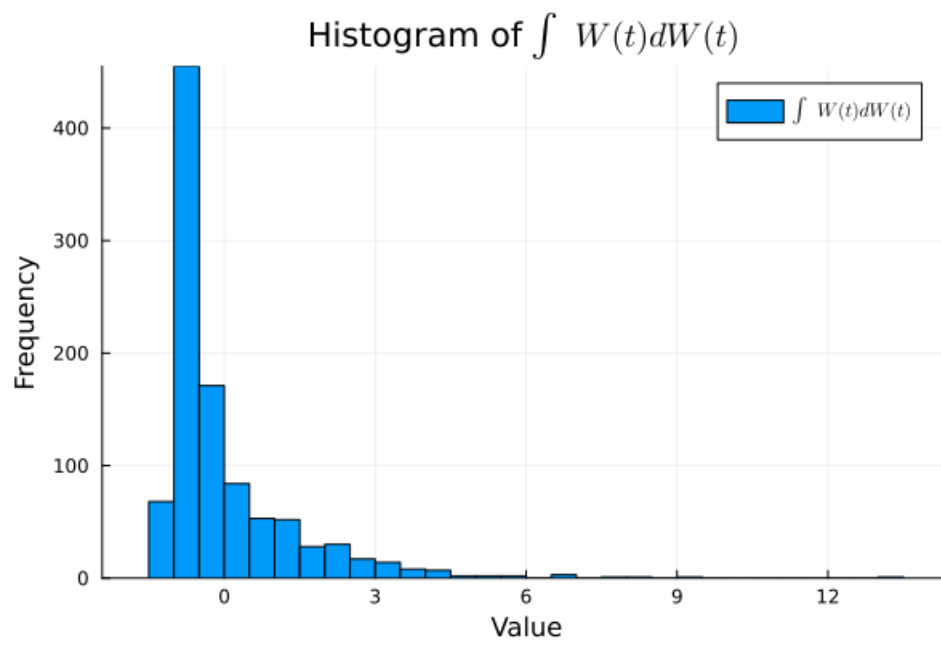


Figure 2: 2a

1.

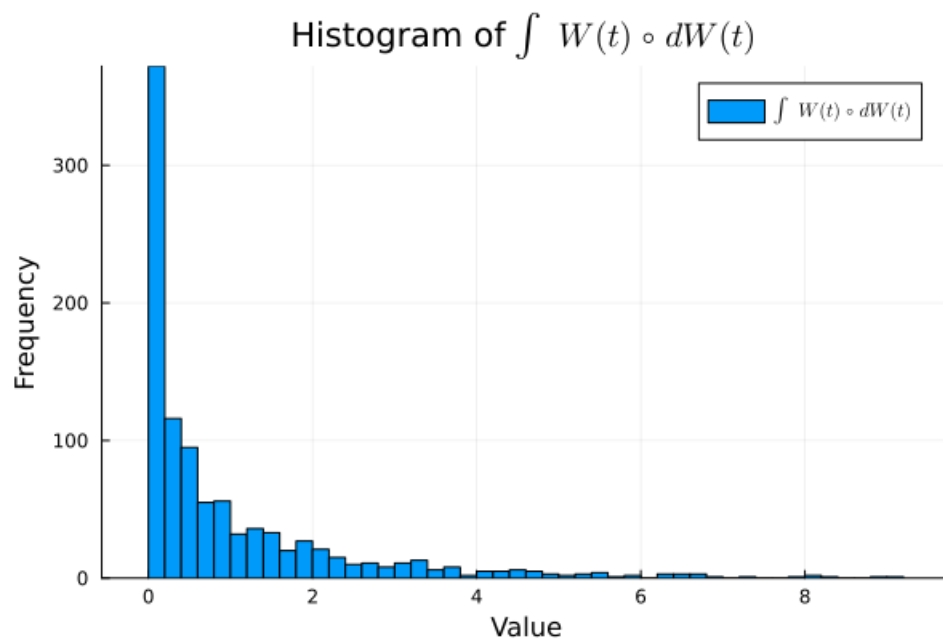


Figure 3: 2b

2.

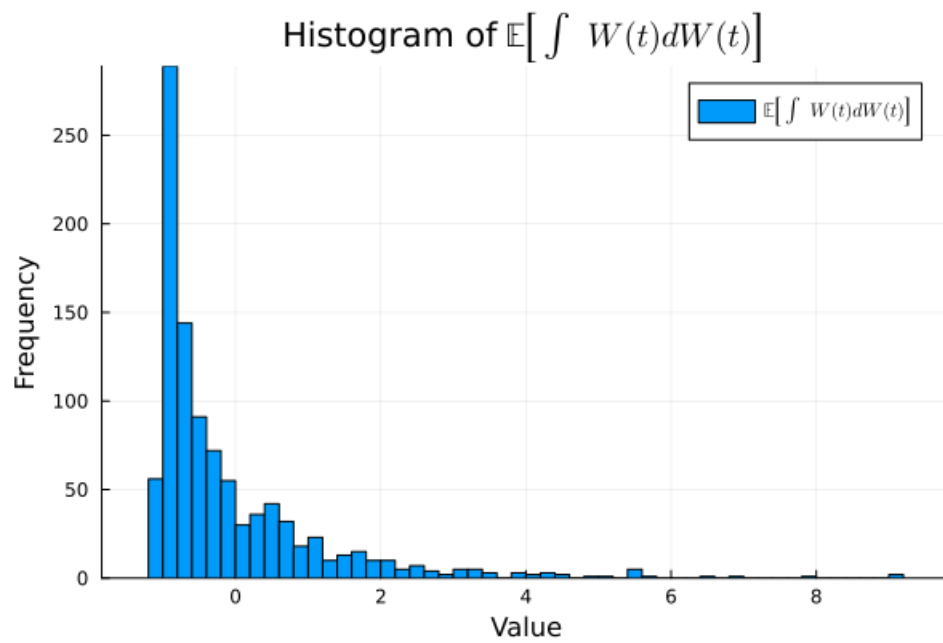


Figure 4: 2c

3.

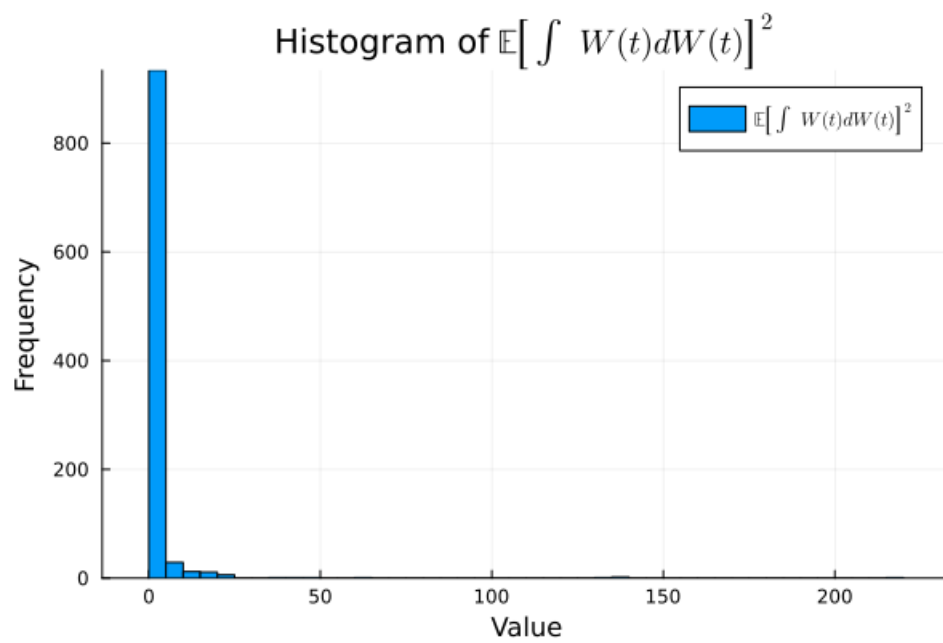


Figure 5: 2d

4.

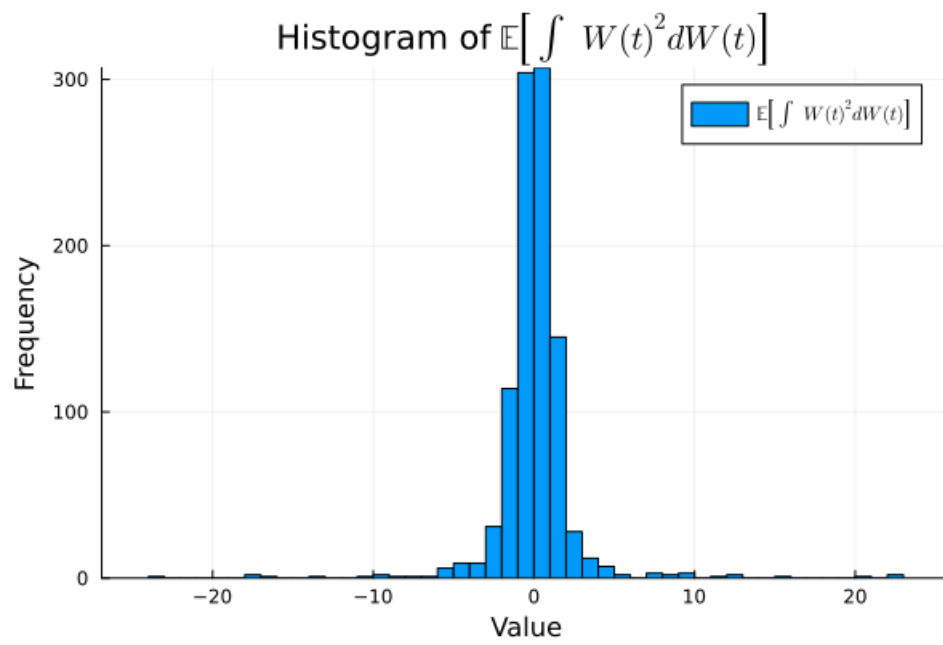


Figure 6: 2e

5.

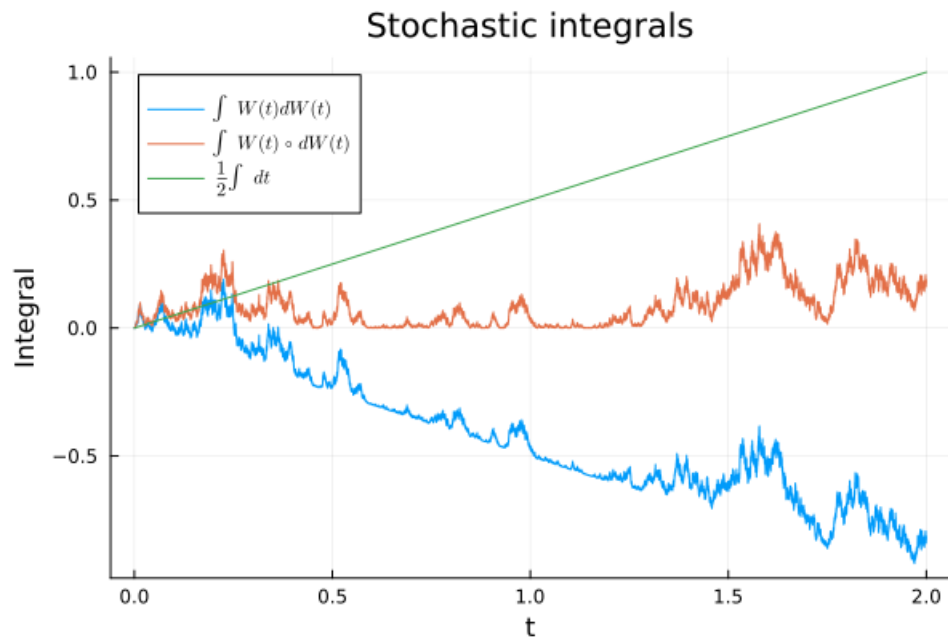


Figure 7: 2f

6.

Question 3

Question 4

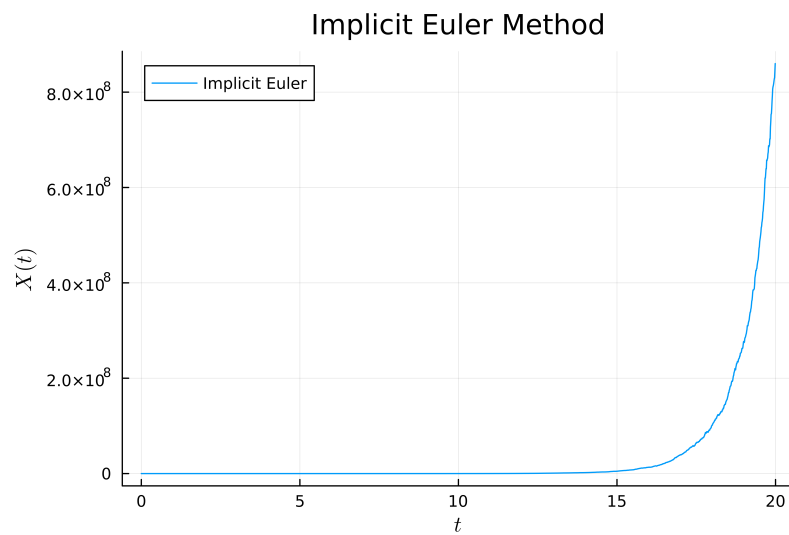


Figure 8: Implicit Euler

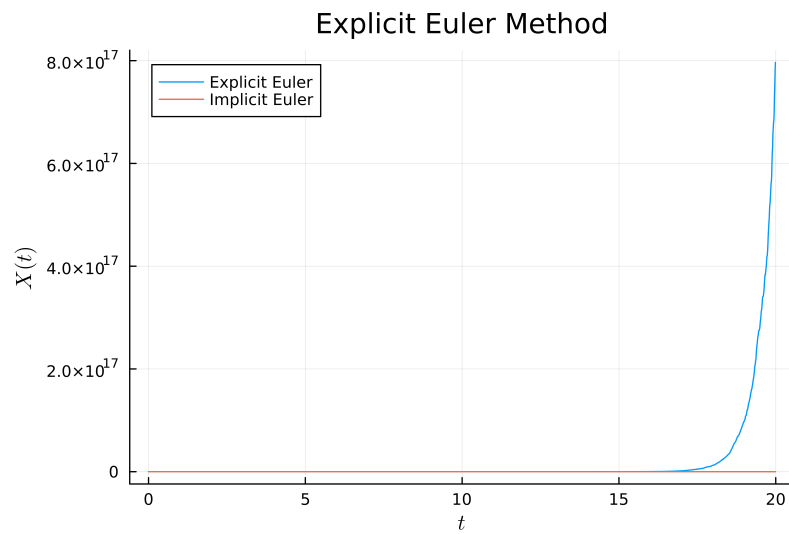


Figure 9: Explicit Euler

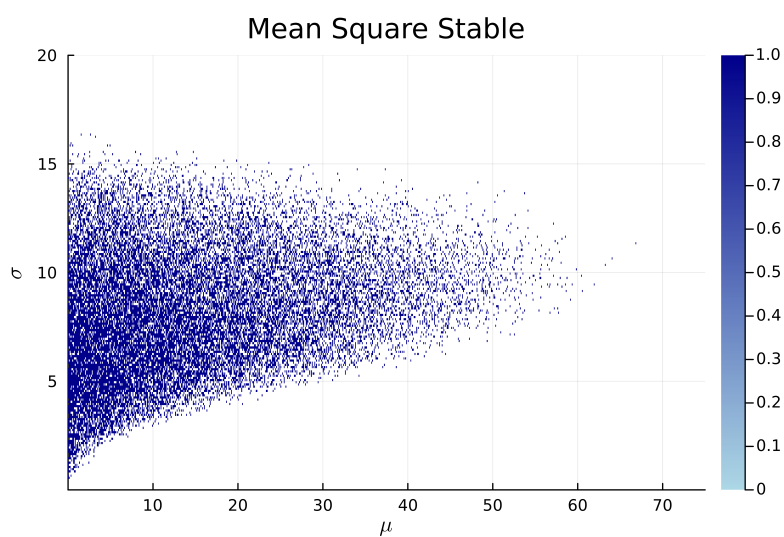


Figure 10: Mean Square Stable Values

Question 5

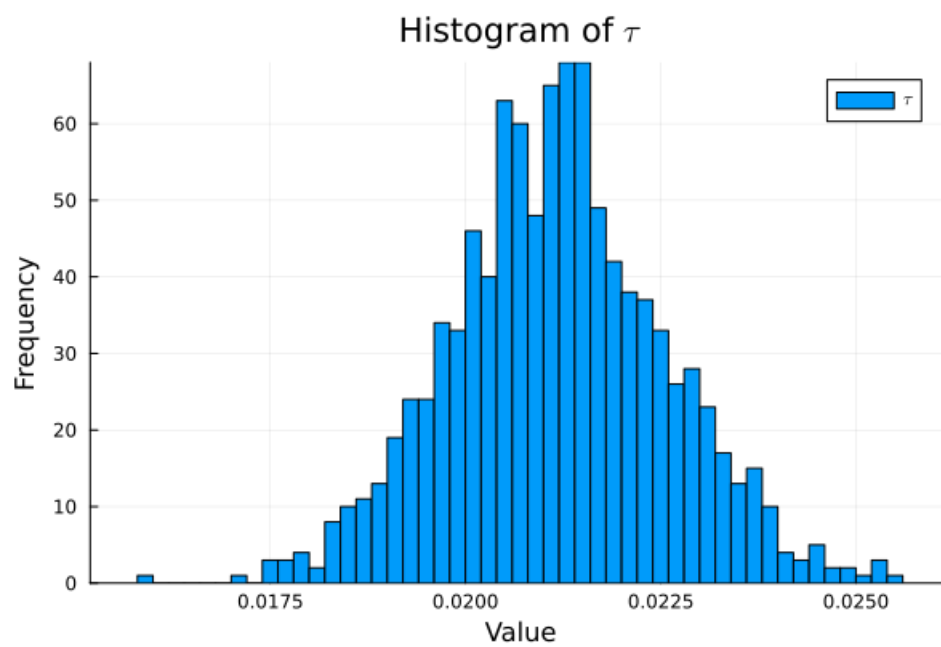


Figure 11: 5