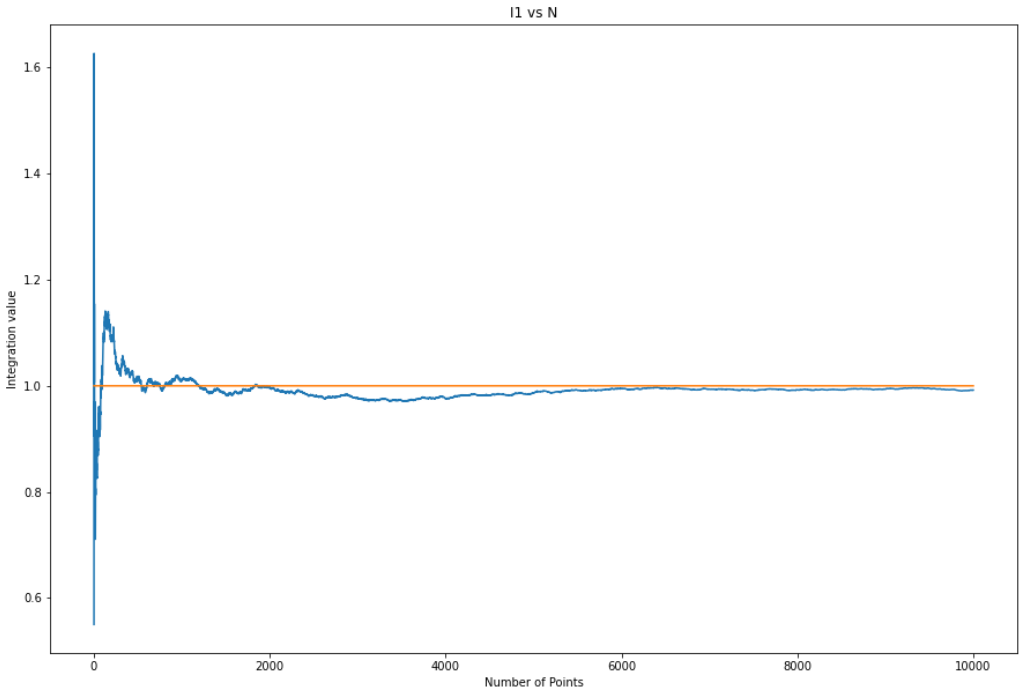
Question 6

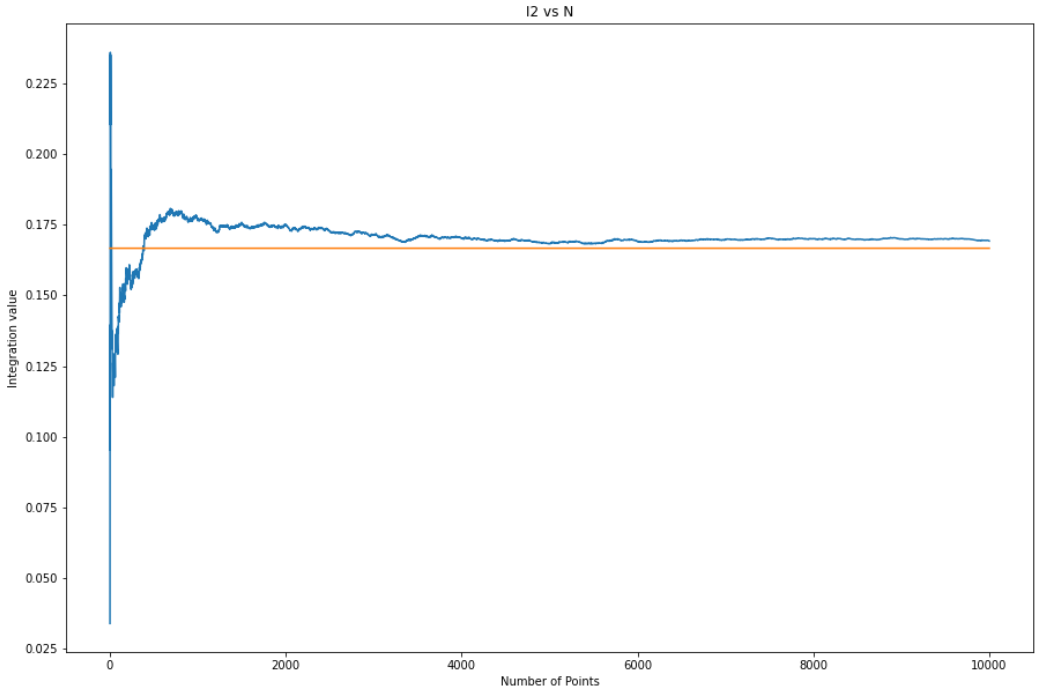
$$I_1 = \int 3x^2 dx$$

$$I_2 = \int \int x^2 y dx dy$$

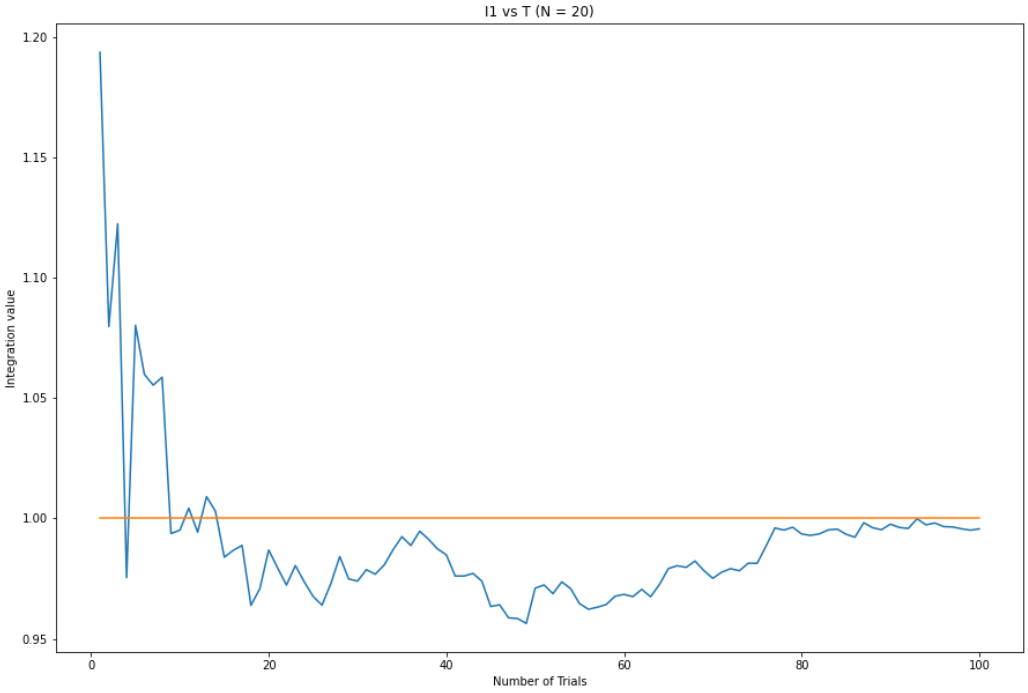
I_1 v N



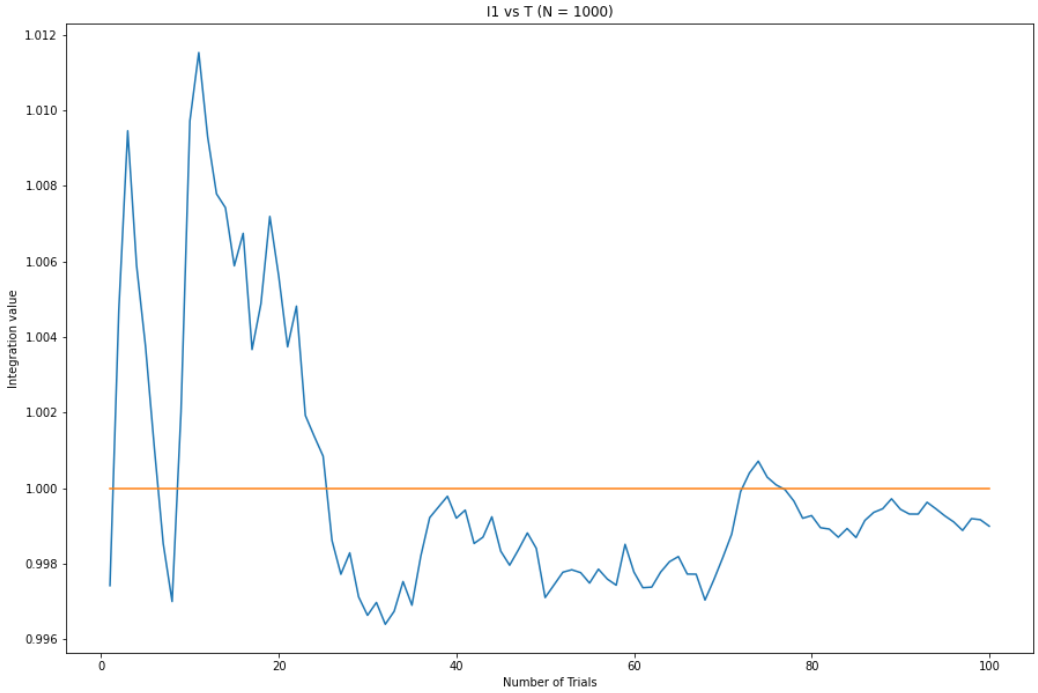
I_2 v N



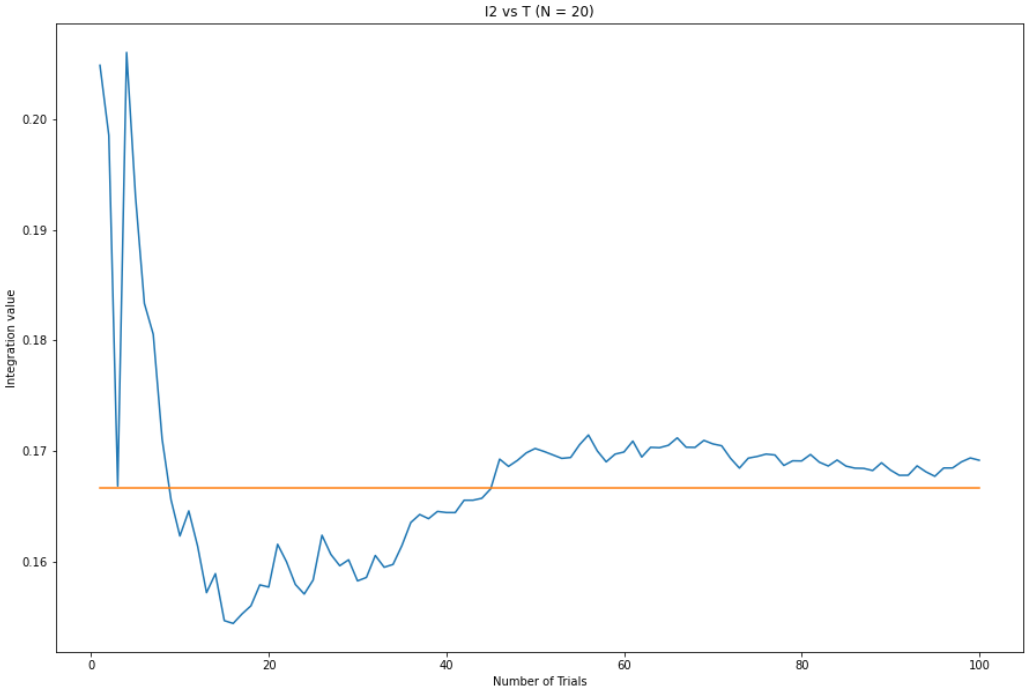
$$I_1 \text{ v } T : (N = 20)$$



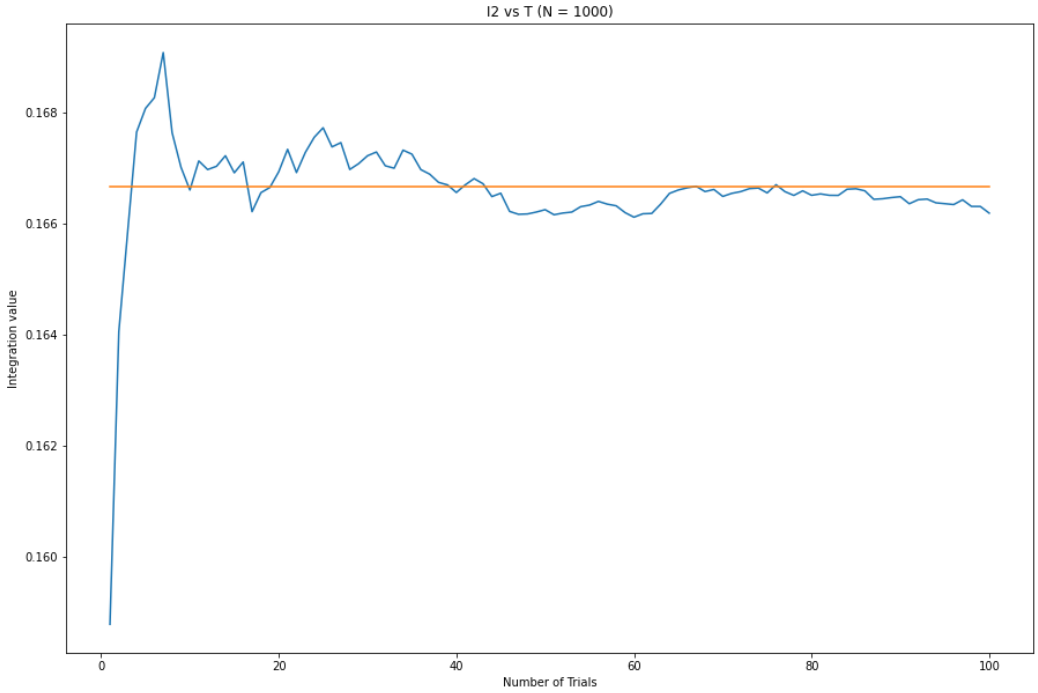
$$I_1 \text{v } T : (N = 1000)$$



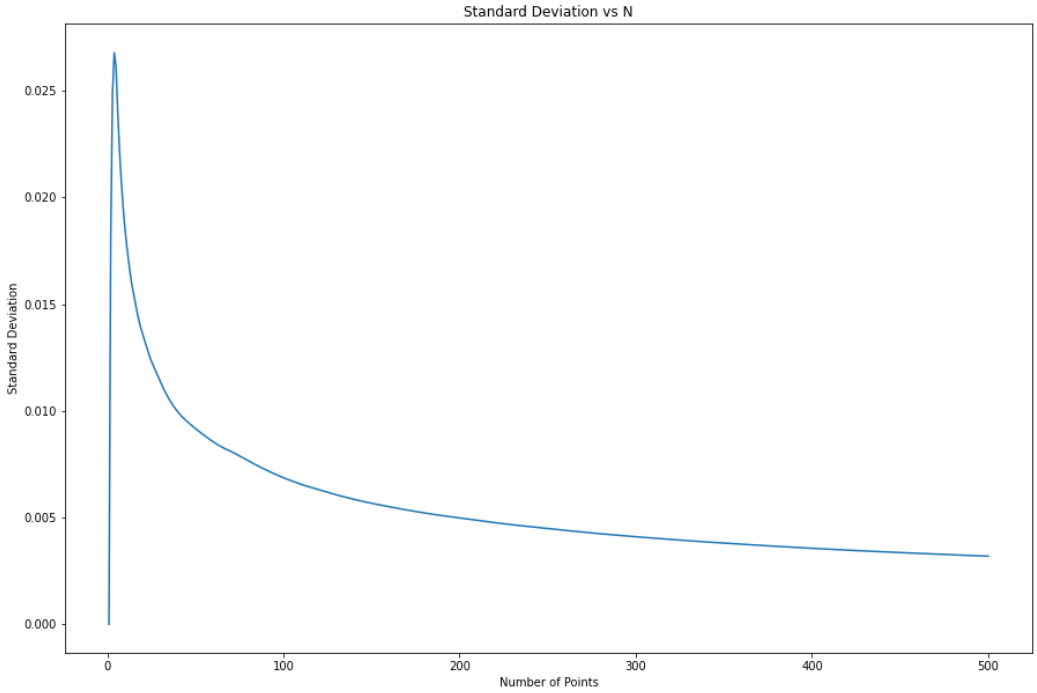
$$I_1 \text{ v } T : (N = 20)$$


I2 vs T (N = 20)
Integration value
0.20
0.19
0.18
0.17
0.16
0
20
40
60
80
100
Number of Trials

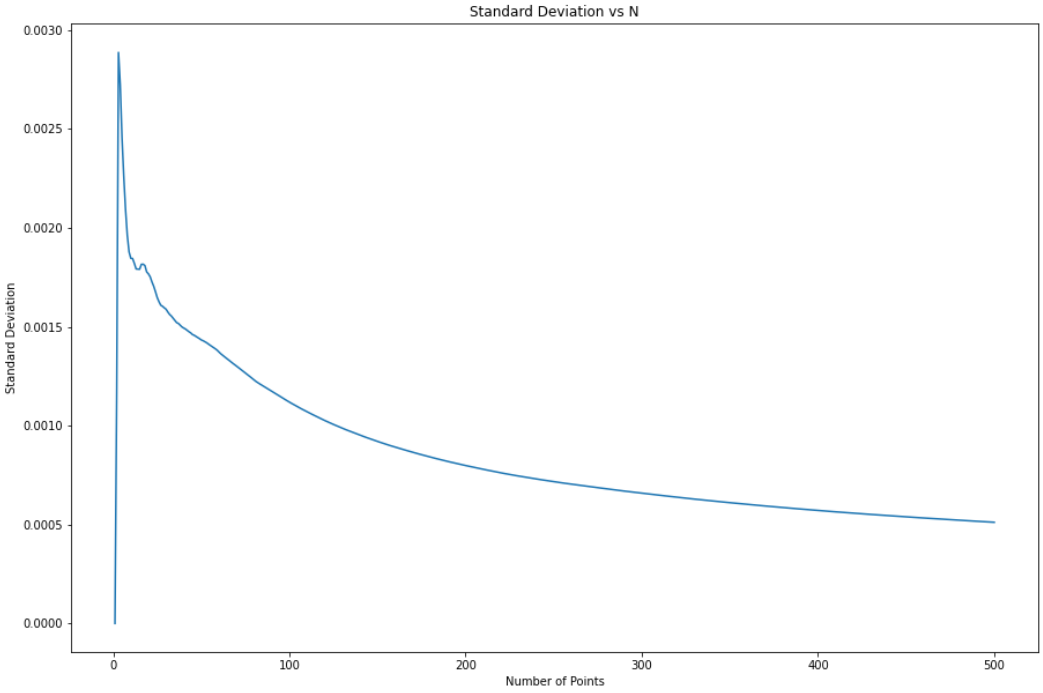
I_1 v T : $(N = 20)$



$$\sigma \text{ v } N(T = 1000, I_1)$$



$$\sigma \text{ v } N(T = 1000, I_2)$$



NOTE : σ is proportional to $\frac{1}{\sqrt{N}}$.