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PS C:\Users\danie> & C:/Users/danie/anaconda3/envs/main/python.exe c:/Users/danie/數值作業/E94101088_Hw4/1.py
Composite Trapezoidal Rule: 0.396148
Composite Simpson's Rule: 0.385664
Composite Midpoint Rule: 0.380805
PS C:\Users\danie> & C:/Users/danie/anaconda3/envs/main/python.exe c:/Users/danie/數值作業/E94101088_Hw4/2.py
Gaussian Quadrature (n=3): 0.1922594
Gaussian Quadrature (n=4): 0.1922594
Exact Value: 0.1922594
Error (n=3): 1.952408e-08
Error (n=4): 7.206716e-11
PS C:\Users\danie> & C:/Users/danie/anaconda3/envs/main/python.exe c:/Users/danie/數值作業/E94101088_Hw4/3.py
Exact Value: 0.5118446
Simpson's Rule (n = m = 4): 0.5119875
Gaussian Quadrature (n = m = 3): 0.5118655
Error (Simpson): 1.43e-04
Error (Gaussian): 2.09e-05
PS C:\Users\danie> & C:/Users/danie/anaconda3/envs/main/python.exe c:/Users/danie/數值作業/E94101088_Hw4/4.py
a)  $\approx 0.5259289$ 
b)  $\approx 0.2744816$ 
```