1.
Composite Trapezoidal Rule: 0.3961475922149065
Composite Simpson's Rule: 0.3856635960237503
Composite Midpoint Rule: 0.38080479837729897

```
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Composite Simpson's Rule:  0.3856635960237503
Composite Midpoint Rule:  0.38080479837729897
```

2.
n=3:   0.19225937725687903 error: 1.9524082989219593e-08
n=4:   0.19225935780486314 error: 7.206710228579993e-11

```
n=3:  0.19225937725687903 error:  1.9524082989219593e-08
n=4:  0.19225935780486314 error:  7.206710228579993e-11
```

3.
Composite Simpson's Rule: 0.5119875440121252
Gaussian Quadrature: 0.511865539945296
Error of Composite Simpson's Rule: 0.023905046871078084
Error of Gaussian Quadrature: 0.024027050937907246

```
Composite Simpson's Rule:  0.5119875440121252
Gaussian Quadrature:  0.511865539945296
Error of Composite Simpson's Rule:  0.023905046871078084
Error of Gaussian Quadrature:  0.024027050937907246
```

4.
a: 0.5245906509751541
b: 0.13009030529450022

```
4a:  0.5245906509751541
4b:  0.13009030529450022
```