

Neel Sanghvi – Lab 11

Link to Github: [NeelSanghvi/APPM-4600 \(github.com\)](https://github.com/NeelSanghvi/APPM-4600)

All the adaptive models have a error less than $1E-3$ with only 3 nodes. And when the number of nodes are 5

The composite trapezoid model needed 7 intervals.

The composite simpsons model needed 6 intervals.

The guassian quadrature needed 5 intervals.

The non-adaptive gaussian quadrature decreases the order of relative error linearly with increasing n and it takes 17 nodes to reach absolute error less than $1E-3$

The non-adaptive composite trapezoid quadrature does not reach an error tolerance of $< 1E-3$.

The non-adaptive composite Simpsons also does not each an error tolerance $< 1E-3$.

All plots and codes are uploaded to the Github