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Assignment 02
CS-3200
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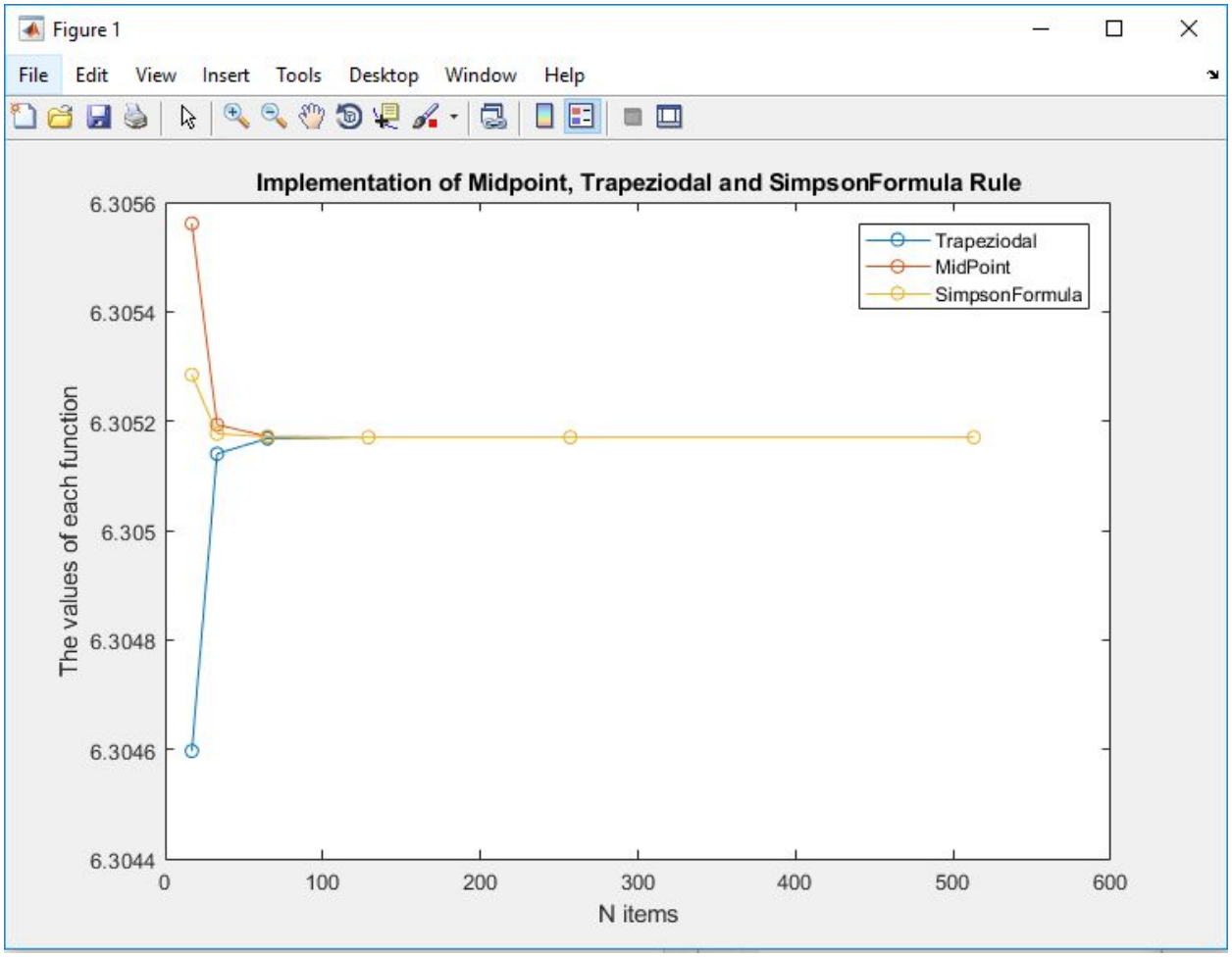
Assignment 02 Report

In my matlab files, those are called programs are my source code. And the readme notes are in the matlab file too. I wrote those readme files as comments.

3.



So the above graph shows how quickly the methods go to a common final value. As a result, the Simpson Formula converges fastest.
So Simpson Formula Rule is that in line with the theoretical error. The answer is yes because Simpson Formula Rule has the smallest error which is theoretical smallest error.

Here are the table of the values for the graph:

	17	33	65	129	257	513
Trapezoidal	6.3046	6.3051	6.3052	6.3052	6.3052	6.3052
Midpoint	6.3056	6.3052	6.3052	6.3052	6.3052	6.3052
Simpson Formula	6.3053	6.3052	6.3052	6.3052	6.3052	6.3052

The Richardson Extrapolation was in matlab program richardsonExtrapolation.m

Richardson Extrapolation is more accurate. Because it is much easier to obtain a given precision by using R(h) rather than A(h') with a much smaller h' , which can cause problems due to limited precision (rounding errors) and/or due to the increasing number of calculations needed.

	2	3	4	5
Gaussian quadratures	7.1742	6.3010	5.1585	6.6448

So if we want to make the Gaussian quadratures give better results. We do not have to use a fixed value of width, we can use different width for different strips if the resulting integral gives better approximation.